imagePROGRAF iPF6400

SERVICE MANUAL



Canon

February 27, 2017
Rev. 2

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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.

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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.
	Indicates an item intended to provide notes assisting the understanding of the topic in question.
	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."

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Chapter 1 PRODUCT DESCRIPTION

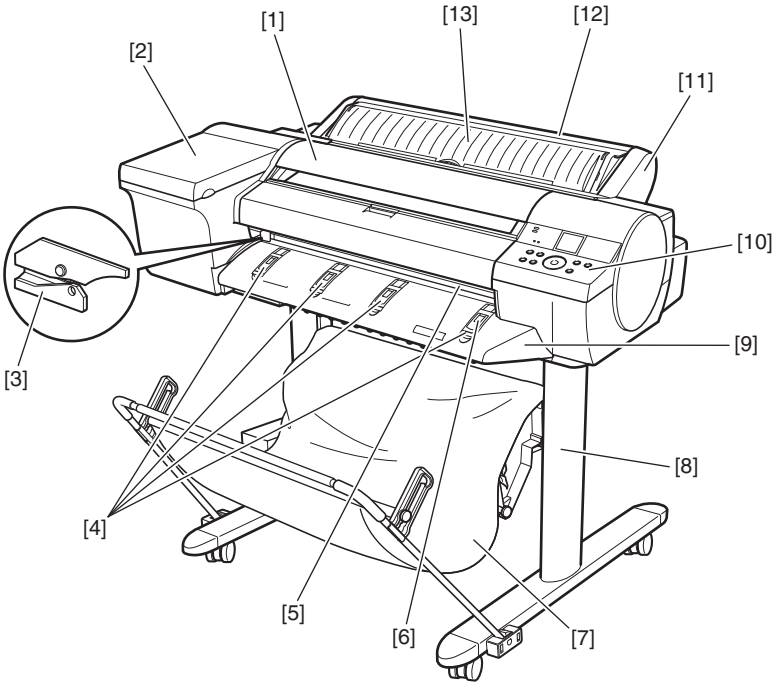
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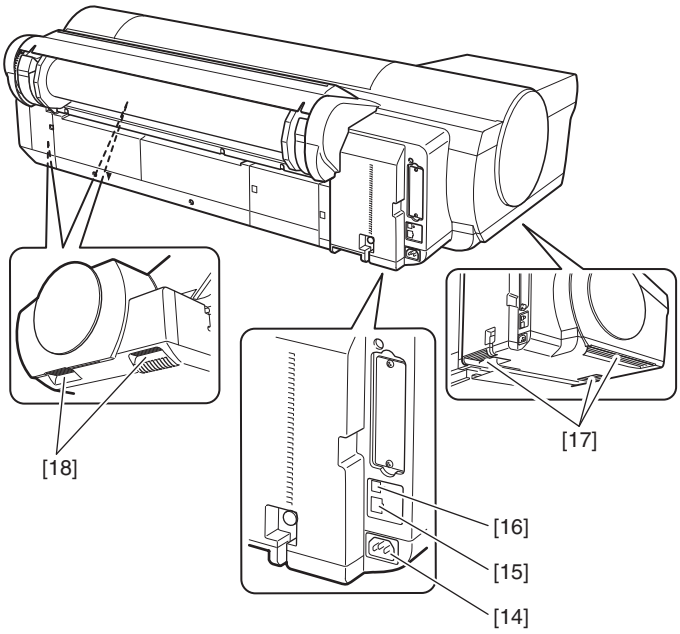
1.1 Product Overview

1.1.1 Product Overview

This printer is capable of printing on A4- to A1-size cut sheets and its maximum print width is 24 inches. This printer is a desktop large-format printer twelve-colors (pigment-based colors) printer that can be used to print office documents as well as handy POP and posters. This printer equips with the auto roll feed unit and is capable of output to either roll media or cut sheet.



F-1-1



F-1-2

[1] Top Cover
[2] Ink Tank Cover
[3] Cutter
[4] Front Manual Feed Guide
[5] Peper Eject Slot
[6] Paper Alignment Line
[7] Basket
[8] Stand
[9] Output Guide
[10] Operation Panel
[11] Roll Feed Unit
[12] Roll Feed Unit Cover
[13] Manual Feed Cover
[14] Power Connector
[15] Ethernet Connector
[16] USB Port
[17] Carrying Handle

1.2 Features

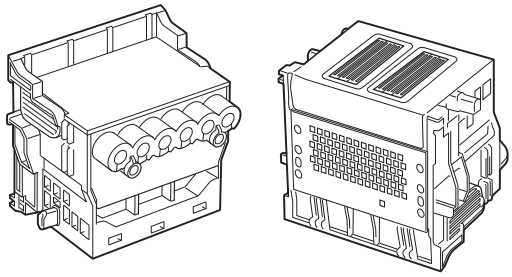
1.2.1 Features

- Two types of black ink, vividly glossy "black ink" and "mat black ink" produce a higher quality, are loaded concurrently and are selected automatically to suit paper types. There is no need to manually change inks.
- BK (black)/GY (gray)/PGY (photo gray) ink are mainly used to offer a drastically enhanced power of halftoning, achieving an equivalent of the high picture quality of monochrome silver-salt films.
- A 12-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.
- The color calibration feature adds to the faithfulness of color reproduction.
- The operation panel that equipped a 160 x 128-dot large LCD allows you to operate the printer intuitively.
- One-inch wide printhead having 2,560 nozzles per color. High-density printhead technology "FINE" that can satisfy both of beautiful and fast printing requirements of a high order is employed for accurate ejection of ultrasmall 4-pl drops of ink to the target positions. Prints with 2400 x 1200 dpi resolution can be made at a high speed.
- A printhead having nozzles (I-shaped nozzle) with a new shape reduces ink mist, ensuring superfine printing.
- Imaging processor "L-COA" incorporated for high-speed image data processing. High-speed processing of 12-color, 2-bit large-size images and printer control for high-accuracy operation of high-density double head can be performed with a single chip.
- Support for roll media, manual feed from front, and manual feed from top (3-way paper supply). A maximum of 1.5 mm thick of paper (POP Board) can be manually fed from the front.
- Borderless printing on and auto cutting of roll media.
- Data scanned using CanoScan can be easily printed on large-size paper just like a dedicated copier. Just pressing the Start button allows you to blow up an original of up to A3 size in collaboration with Canon Image RUNNER.
- 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.

Functional enhancements new to this model include:
- A subtank is provided, allowing you to replace an ink tank without stopping printing.
- Compatible with a large-capacity 300-ml ink tank in addition to the existing 130-ml ink tank.
- The processing ability of the printed data will enhance by improvement of throughput.
- A newly multi sensor has been able to perform a high accurate color calibration.

1.2.2 Printhead

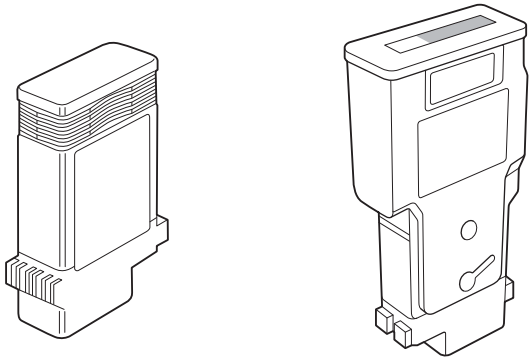
The printhead that mounts on the carriage is an integrated six-color disposable printhead.
It has 2,560 nozzles for each color, comprising two rows of 1,280 nozzles each arranged in a staggerd pattern.
If print quality does not improve despite carrying out the specified cleaning, the printhead must be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



F-1-3

1.2.3 Ink Tank

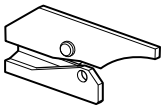
The ink tank is disposable.
There are twelve pigment-based ink colors (matte black, black, photo cyan, cyan, photo magenta, magenta, yellow, red, blue, green, gray, and photo gray).
The two types of ink tanks (130 ml and 300 ml ink tank) are available for each color.
This printer features a mechanism by which only the correct color ink tank will fit in the given slot.
When the message that ink tank is empty is displayed, replace the ink tank with a new one.



F-1-4

1.2.4 Cutter

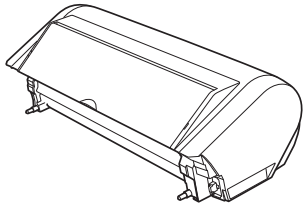
A round-blade cuter comes with the cutter unit.



F-1-5

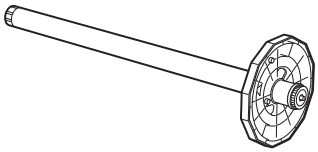
1.2.5 Roll Feed Unit

Roll Feed Unit
The roll feed unit is optionally available to use roll media with this printer.



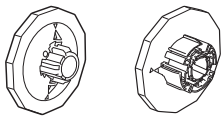
F-1-6

Roll Holder Set
This set consists of roll holder, holder stopper, 3-inch paper tube attachment, and borderless printing spacer (commonly used for 2-inch paper tube and 3-inch paper tube).
[Roll holder]



F-1-7

[Holder stopper](for 2-inch paper tube and 3-inch paper tube)



F-1-8

[3-inch paper tube attachment]



F-1-9

[Borderless printing spacer]

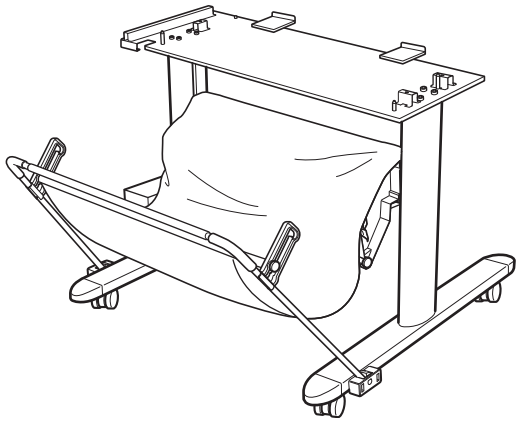


F-1-10

MEMO:
A borderless printing spacer is used to perform borderless printing on A1-size (594 mm) and A2-size (420 mm) roll media. This printer is furnished with a number of borderless printing ink receiving channels on the platen to address multi-sized borderless printing needs. Borderless printing on A1 or A2-size roll media is made possible by using a spacer, without needing to produce a new borderless printing ink receiving channel.

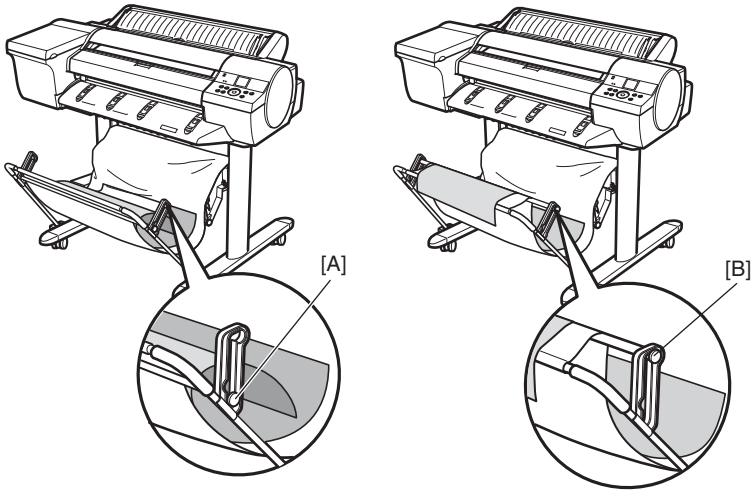
1.2.6 Stand

Stand (Option)
The stand is equipped with casters so that the printer can be easily moved. The output stacker included with stand can use by the two ways of the regular position or extended position.



F-1-11

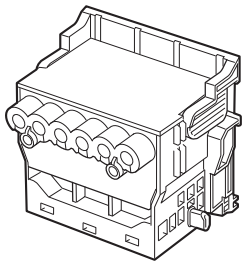
MEMO:
- Use the output stacker in the regular position [A]. However, for the specified media, it can also be used in the extended position [B]. The media can be removed more easily when the output stacker is in the extended position.
- The output stacker can accommodate one sheet. Remove each sheet before printing if you are printing a series of documents.



F-1-12

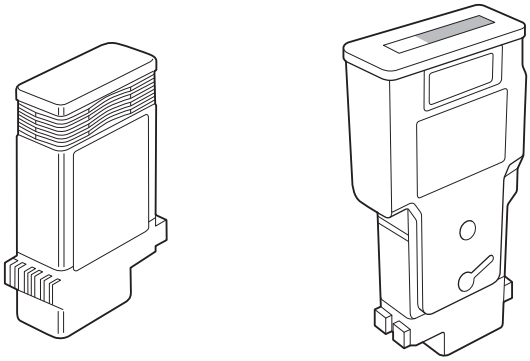
1.2.7 Consumables

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



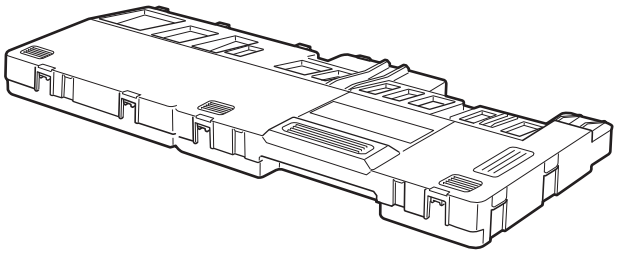
F-1-13

Ink Tanks
The consumable ink tanks are available in twelve colors (matte black, black, photo cyan, cyan, photo magenta, magenta, yellow, red, blue, green, photo gray and gray). They are the same as those supplied with the printer.



F-1-14

Maintenance cartridge
The consumable maintenance cartridge is the same as that supplied with the printer.



F-1-15

1.3 Product Specifications

1.3.1 Product Specifications

Type	Bubble jet large-sized paper printer
Feeding system	Automatic feeding of one roll media/One cut sheet (manual feed from front)/One cut sheet (manual feed from top)
Feeding capacity	- Roll media One roll at the back/Outer diameter of roll: 150 mm or less/Inner diameter of paper tube: 2 or 3 inches - Cut sheet 1 sheet
Delivery method	Delivers the media with its printed side up in the forward direction.
Sheet delivery capability	Using the stand (option) basket: - Roll media 1 sheet - Cut sheet 1 sheet
Cutter	Automatically cuts paper laterally. Cartridge-type (with round blade)
Type of media	- Roll media Plain Paper, Economy Bond Paper, Universal Bond Paper, Plain Paper (High Quality), Plain Paper (High Grade), Recycled Coated Paper, Matte Coated Paper 90gsm, Coated Paper, Premium Coated Paper, Heavyweight Coated Paper, Extra Heavyweight Coated Paper, Premium Matte Paper, Glossy Photographic Paper 190gsm, Satin Photographic Paper 190gsm, Glossy Photographic Paper 240gsm, Satin Photographic Paper 240gsm, HW Glossy Photo Paper, HW Satin Photo Paper, Premium RC Photo Luster, Glossy Photo Paper, Semi-Glossy Photo Paper, Heavyweight Glossy Photo Paper 2, Heavywght SemiGlos Photo Paper 2, Poster Semi-Glossy Photo Paper, Fine Art Photo, Fine Art Heavyweight Photo, Fine Art Textured, Fine Art Watercolor, Fine Art Block Print, Graphic Canvas, Canvas Matte 2, Japanese Paper Washi, Commercial Proofing Paper, Commercial RC Proofing 210gsm, Commercial RC Proofing 270gsm, Proofing Paper, Newsprint for Proofing1, Newsprint for Proofing2, Newsprint for Proofing3, Durable Banner, Synthetic Paper, Adhesive Synthetic Paper, Flame-Resistant Cloth, Thin Fabric Banner 2, Backlit Film, Durable Backlit Film, Backprint Film, Colored Coated Paper, CAD Tracing Paper, CAD Translucent Matte Film - Cut sheet (manual feed from top) Plain Paper, Economy Bond Paper, Universal Bond Paper, Plain Paper (High Quality), Plain Paper (High Grade), Recycled Coated Paper, Matte Coated Paper 90gsm, High Resolution Paper, Coated Paper, Premium Coated Paper, Heavyweight Coated Paper, Extra Heavyweight Coated Paper, Premium Matte Paper, Matte Photo Paper , Glossy Photographic Paper 190gsm, Satin Photographic Paper 190gsm, Glossy Photographic Paper 240gsm, Satin Photographic Paper 240gsm, HW Glossy Photo Paper, HW Satin Photo Paper, Premium RC Photo Luster, Glossy Photo Paper, Semi-Glossy Photo Paper, Heavyweight Glossy Photo Paper 2, Heavywght SemiGlos Photo Paper 2, Poster Semi-Glossy Photo Paper, Photo Paper Plus, Photo Paper Plus Semi-Gloss, Fine Art Photo, Fine Art Heavyweight Photo, Fine Art Textured, Fine Art Watercolor, Fine Art Block Print, Graphic Canvas, Canvas Matte 2, Japanese Paper Washi, Commercial Proofing Paper, Commercial RC Proofing 210gsm, Commercial RC Proofing 270gsm, Proofing Paper, Newsprint for Proofing1, Newsprint for Proofing2, Newsprint for Proofing3, Durable Banner, Synthetic Paper, Adhesive Synthetic Paper, Flame-Resistant Cloth, Thin Fabric Banner 2, Backlit Film, Durable Backlit Film, Backprint Film, Colored Coated Paper, CAD Tracing Paper, CAD Translucent Matte Film - Cut sheet (manual feed from front) POP Board
Supported thickness	Roll media: 0.07 to 0.8 mm Manual feed from top: 0.07 to 0.8 mm Manual feed from front: 0.5 to 1.5 mm
Media size (Roll media)	Width: 203 mm X 610 mm (24inch) Lengh: 203 mm X 18 m Maximum outside diameter: 150 mm
Media size (Cut sheet)	- Manual feed from top Width: 203 mm (8inch) X 610 mm (24inch) Lengh: 279 mm X 1600 mm - Manual feed from front Width: 250 mm (8inch) X 610 mm (24inch) Lengh: 350 mm X 914 mm

Printable area (Roll media)	Area excluding 3 mm from the leading edge, 3 mm from the trailing edge, and 3 mm from the left and right edges. Borderless printing: 0 mm from the leading edge, trailing edge, and left and right edges. Width of media allowing borderless printing: 10"(254 mm), B4(257 mm), 14"(355.6 mm), 16"(406.4 mm), A2(420 mm)*1, A2+/17"(431.8 mm), B2(515 mm), A1(594 mm)*1, 24"(609.6 mm) *1: uses the borderless printing spacer Media type allowing borderless printing: Premium Coated Paper, Heavyweight Coated Paper, Extra Heavyweight Coated Paper, Premium Matte Paper, Glossy Photographic Paper 190gsm, Satin Photographic Paper 190gsm, Glossy Photographic Paper 240gsm, Satin Photographic Paper 240gsm, HW Glossy Photo Paper, HW Satin Photo Paper, Premium RC Photo Luster, Glossy Photo Paper, Semi-Glossy Photo Paper, Heavyweight Glossy Photo Paper 2, Heavywght SemiGlos Photo Paper 2, Poster Semi-Glossy Photo Paper, Fine Art Photo, Fine Art Heavyweight Photo, Fine Art Textured, Fine Art Watercolor, Fine Art Block Print
Printable area (Cut sheet)	Area excluding 3 mm from the leading edge, 3 mm from the trailing edge (23 mm when supplied from manual feed from top or selected the fine art), and 3 mm from the left and right edges.
Printing recommendation area (Roll media)	Area excluding 20 mm from leading edge, 5 mm from the trailing edge and 5 mm from the left and right edges (standard size).
Printing recommendation area (Cut sheet)	Area excluding 20 mm from the leading edge, 23 mm from the trailing edge, and 5 mm from the left and right edges (standard size).
Memory	384MB Increase of memory: none
Firmware	Flash ROM (update from USB or Ethernet) - Printer description language GARO (Graphic Arts language with Raster Operation)
Interface	USB2.0, Ethernet
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] Number nozzles: 2,560 nozzles per color
Ink tank	[PFI-106/8106] MBK, BK, C, M, Y, PC, PM, GY, PGY, R, G, B [PFI-206/8206] MBK, BK, C, M, Y, PC, PM, GY, PGY, R, G, B Ink type: Pigment ink Ink tank capacity: [PFI-106/8106] 130 ml [PFI-206/8206] 300 ml (Ink tanks supplied with the printer contain 90 ml of each color.)
Detection functions (Cover system)	Detects opening/closing of the top cover and ink tank cover.
Detection functions (Ink passage system)	Detects presence/absence of ink tank, ink level (dot count and electrode), presence/absence of the maintenance cartridge, waste ink full level, and opening/closing of the supply valve.
Detection functions (Carriage system)	Detects the carriage position, presence/absence of the printhead, height of the printhead, the ambient temperature, head temperature, and no ink ejection.
Detection functions (Paper path system)	Detects presence/absence of paper, leading/trailing edge of paper, paper width, skew, cutter position, height of the cutter, height of the spur, rotation of the feed roller.
Operating noise	During printing: Approx. 47 dB (A) or less During standby: Approx. 35 dB (A) or less
Operating environment	Temperature: 15 to 30 degrees centigrade Humidity: 10% to 80% without dew condensation
Print quality guaranteed environment	Temperature: 15 to 30 degrees centigrade Humidity: 10% to 80%RH
Power supply	100-120 VAC (50/60 Hz), 220-240 VAC (50/60 Hz)
Power consumption (Maximum)	During printing: Max. 100 W
Power consumption	In power save (sleep) mode: 5 W or less(220-240 VAC: 6 W or less) During standby: 0.5 W or less
Printer unit dimensions (WxDxH)	1227 x 702 x 344 mm With stand (option): 1227 x 751 x 1001 mm
Weight	Approx. 54 kg With stand (option): Approx. 70 kg

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))

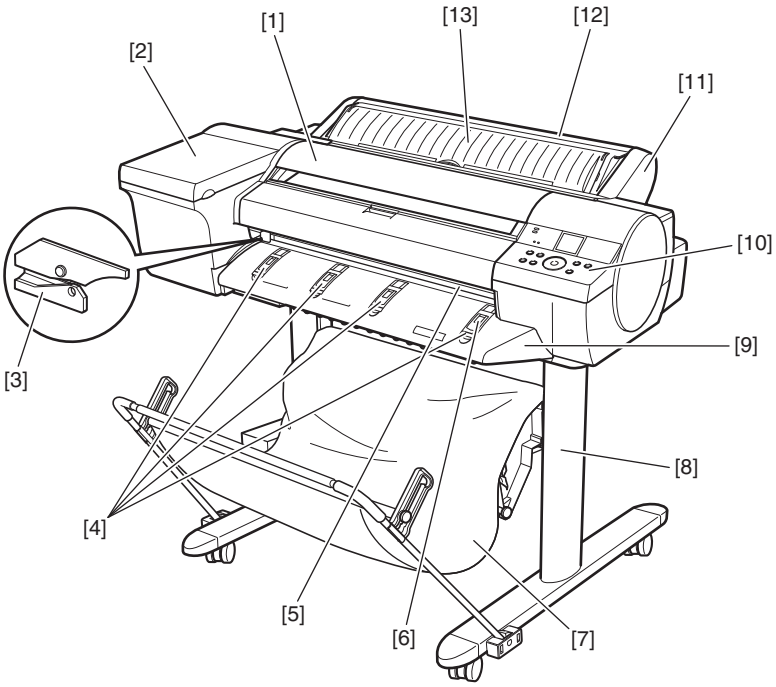
(2) Data transfer system

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(IPv4/IPv6), AppleTalk, HTTP

1.5 Names and Functions of Components

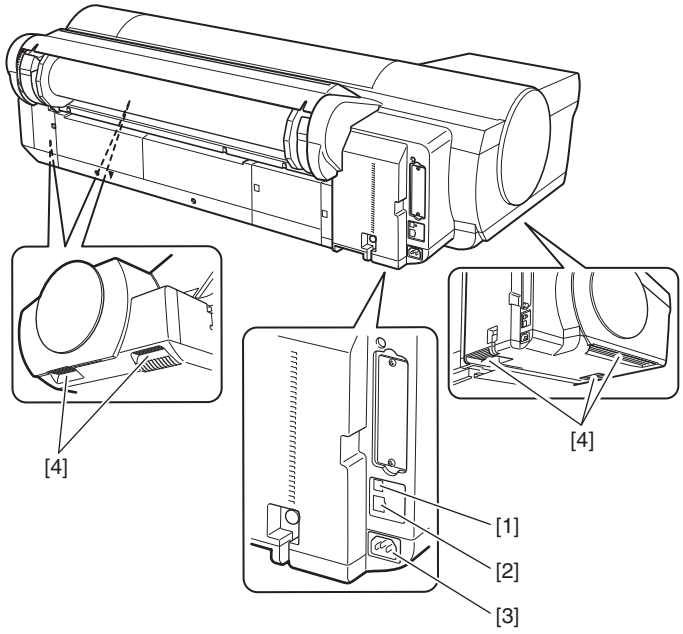
1.5.1 Front



F-1-16

[1] Top cover
Open this cover when installing the printhead or remove the media jammed inside the printer.
[2] Ink tank cover
Open this cover when replacing ink tanks.
[3] Cutter
A round-blade cutter cuts roll media automatically.
[4] Front manual feed guides
Erect all these guides to print on thick paper. Place thick paper along the guides and insert it up to the alignment lines while pressing the paper to the right side.
[5] Paper eject slot (paper tray front loading port)
All printed matter is ejected from this port. In loading thick paper, insert it into this port.
[6] Paper alignment line
Load thick paper in a paper tray to stay parallel with this line.
[7] Basket
Receives printed matter as it is ejected. Only one sheet can be housed in the basket.
[8] Stand
The base on which the printer is mounted. The stand equipped with casters is easy to move.
[9] Output guide
Holds ejected paper from lifting.
[10] Operation panel
Contains the power button, online button display and so on.
[11] Roll feed unit
Load roll media on this unit.
[12] Roll feed unit cover
Load roll media with this cover open.
[13] Paper tray cover
Load cut sheet at the paper tray top loading port with this cover open. This cover is opened, and the cut sheet is set at top manual feed slot.

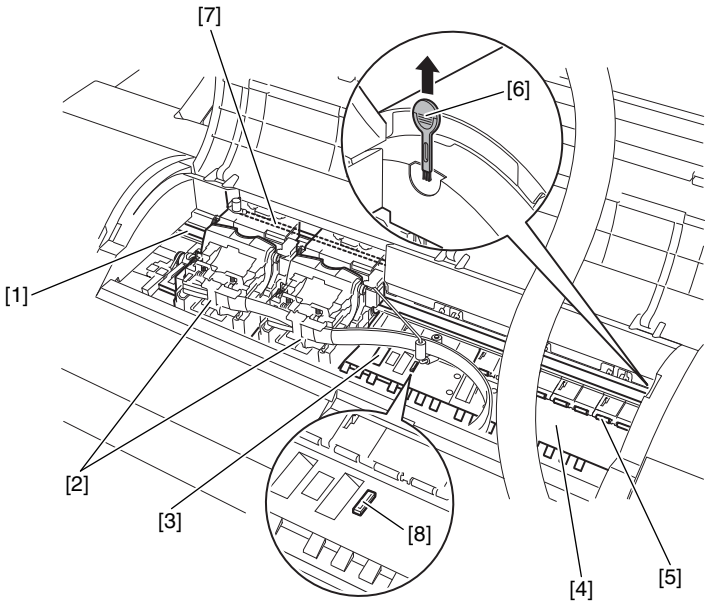
1.5.2 Rear



F-1-17

[1] USB port
Connect the USB cable to this port.
[2] Ethernet connector
Connect the Ethernet cable to this connector.
[3] Power connector
Connect the power cord to this connector.
[4] Carrying handle (5)
The printer is carried with this handles of a right and left bottom.

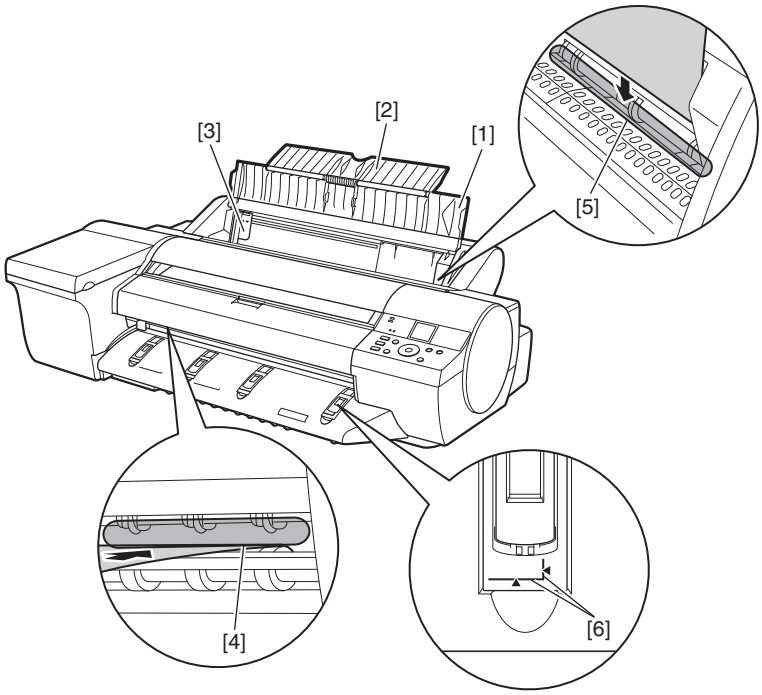
1.5.3 Top Cover (Inside)



F-1-18

[1] Carriage shaft
The carriage travels in this area.
[2] Carriage
Moves the printheads.
[3] Borderless printing ink receiving channel
Receives inks overflowing the edges of the paper during borderless printing.
[4] Platen
Paper and the printheads travel over the platen to execute printing. Suction holes on the surface prevent the paper from lifting.
[5] Pinch roller
A vital part needed to feed paper.
[6] Cleaner brush
Use this brush to wipe off paper dust from the platen when cleaning the inside of the top cover.
[7] Linear scale
This is an important component used to detect the carriage position. Never touch it when cleaning the parts or removing jammed media inside the upper cover.
[8] 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.

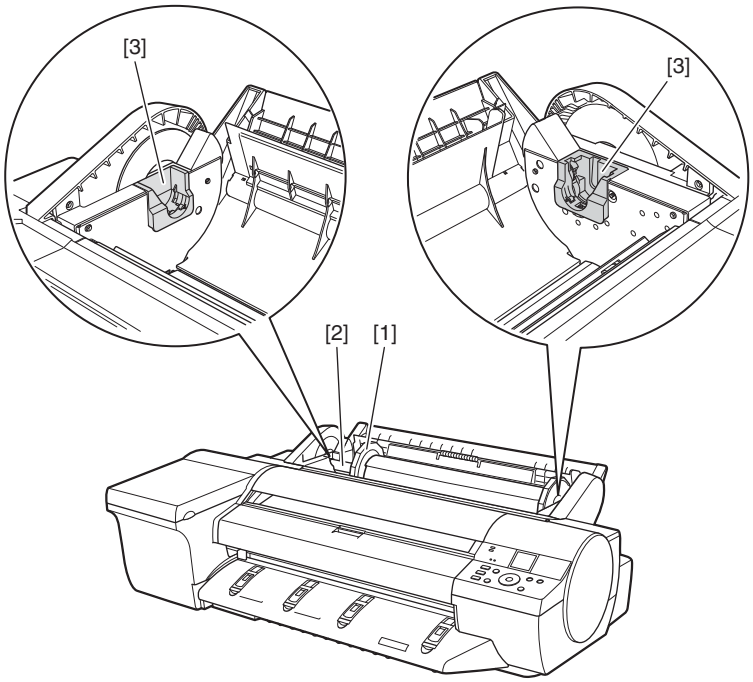
1.5.4 Manual Loading Area



F-1-19

[1] Paper tray cover
In loading paper in a paper tray, open this cover.
[2] Paper support
In loading paper in a paper tray, open the paper tray cover and then this tray.
[3] Width guides
In loading cut sheet, move the guide to adjust to the paper size.
[4] Paper tray front loading port (Paper eject slot)
In loading thick paper, insert it into this port. All printed matter is ejected from this port.
[5] Paper tray top loading port
In loading cut sheet, insert them into this port.
[6] Paper alignment line
Load heavyweight sheets parallel to this line.

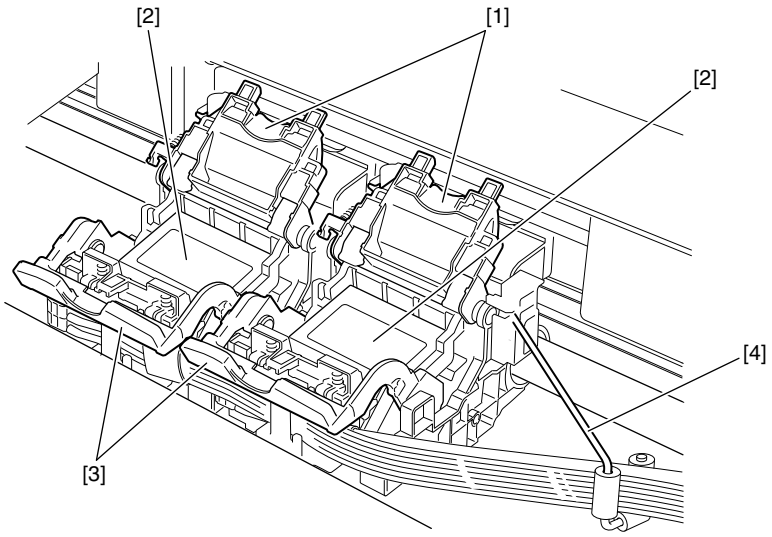
1.5.5 Roll Feed Unit Cover (Inside)



F-1-20

[1] Roller holder
Set roll media on this holder.
[2] Holder stopper
Use to secure roll media to the roller holder.
[3] Roller holder slot
Set the roller holder in this guide groove.

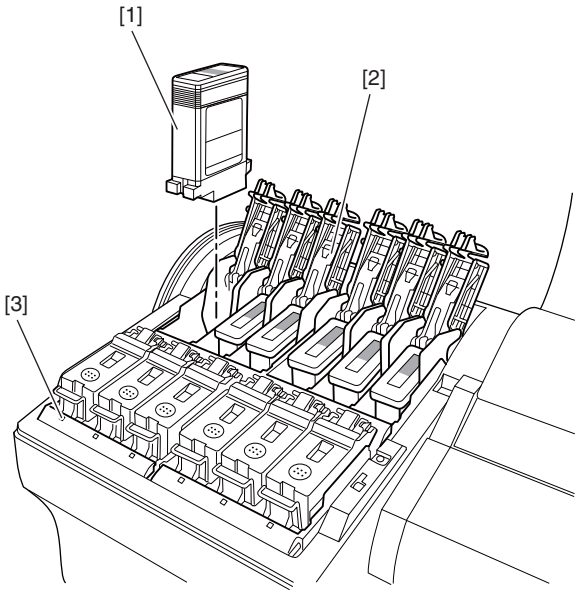
1.5.6 Carriage



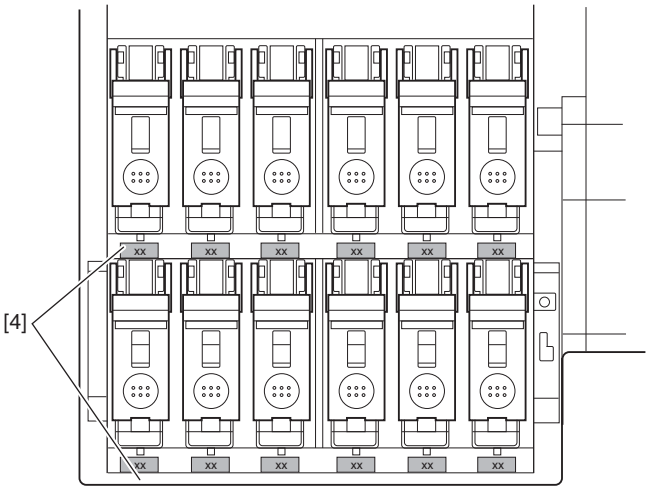
F-1-21

[1] Printhead lock cover
This cover is used to lock the printhead. Open this cover when installing the printhead.
[2] Printhead
The printhead incorporated nozzles. It is an important part for printing.
[3] Printhead lock lever
This lever is used to lock the printhead. Open this lever when installing the printhead.
[4] Wire guide
This stay is used as an ink tube guide.

1.5.7 Ink Tank Cover (Inside)



F-1-22

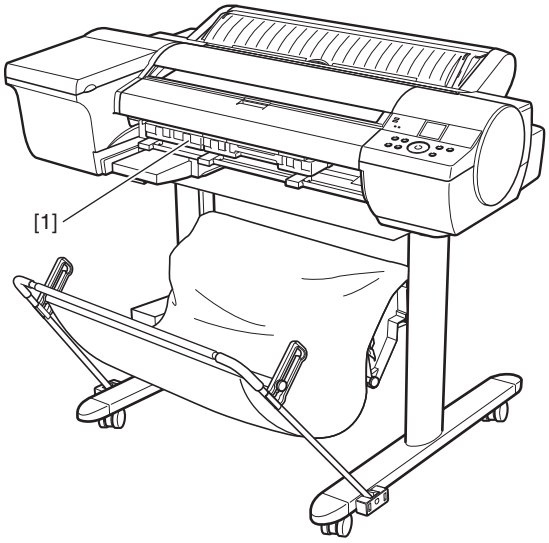


F-1-23

[1] Ink Tank
Cartridges of ink in various 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.
[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.

1.5.8 Inside



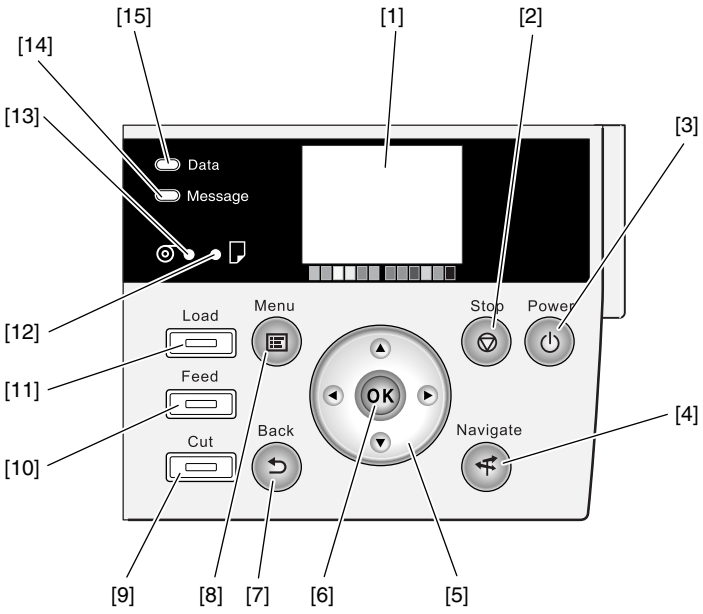
F-1-24

[1] Maintenance cartridge
Absorbs excess ink

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-1-25

[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.

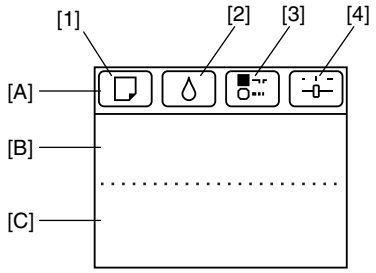
[15] Data reception lamp (green)
- Blinking: When the printer is making prints, this lamp indicates that a print job is being received or processed. When the printer is not making prints, this lamp indicates that the print job is suspended or the firmware data is being received.
- Not lit: This lamp 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-1-26

[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 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]			
	[Manual Paper]			
[Eject Paper]				
[Chg. Paper Type]	[Roll Paper]	(The paper type is displayed here.)		
	[Manual Paper]			
[Chg. Paper Size]	[Manual PaperSize]	(The paper type is displayed here.)		
		[CustomPaperSize]	(Set the length and width)	
	[Roll Length]*1	(Set the length)		
[ManageRemainRoll]	[Off]*			
	[On]			
[Paper Details]	(The paper type is displayed here.)	[Head Height]	[Automatic]*	
			[Highest]	
			[High]	
			[Standard]	
			[Low]	
			[Lowest]	
			[Super Low]	
		[Skew Check Lv.]	[High Accuracy]	
			[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]	

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]	[Entire area]*
				[Leading edge]
		[Roll DryingTime]	[Off]	
			[30 sec.]	
			[1 min.]	
			[3 min.]	
			[5 min.]	
			[10 min.]	
			[30 min.]	
			[60 min.]	
		[NearEnd RollMrgn]	[3mm]	
			[20mm]	
		[NearEnd Sht Mrgn]	[3mm]	
			[20mm]	
		[BordlessOversize]	[Standard]*	
			[Little]	
		[Manual Feed]	[Front]	
			[Top]	
		[Return Defaults]		
[Print 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]*2	[Job List]	(Select Print Job.)	[Delete]	
			[Preempt Jobs]*11	
[Stored Job]*2	[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]	(The image size is displayed)	
		[Media Type]		
		[Paper Consumed]		
		[Paper Length]		
		[Paper Width]		
		[Interface]	[USB]	
			[Network]	
			[HDD]*2	
		[Ink Consumed]	[Tot.Ink Consumed]	xxx.xxx ml
			(The ink color is displayed here.)	xxx.xxx ml
		[Print settings]		
		[Head Height]		
		[Temp./Humidity]		
		[Adjustment req.]		
[Print Job Log]				
[Pause Print]	[Off]*			
	[On]			
[HDD Information]*2	[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]			
	[ColorCheck Print]*15			
	[Status Print]			
	[Interface Print]			
	[Paper Details]			
	[Print Job Log]			
	[Menu Map]			
[Adjust Printer]	[Head Posi. Adj.]	[Standard]		
		[Simple]		
		[Other]	[Initial adjustment]	
			[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]
	[Adj Far Ed Feed]			
	[Calibration]	[Auto Adjst(HiPrc)]*15		
		[Auto Adjust]		
		[ColorCheck Print]*15		
		[Pattern Size]*15	[Standard]*	
			[Large]	
		[Calibration Log]	[Date]	
			[Paper Type]	
			[Adjustment Type]	
		[Use Adj. Value]	[Disabled]	
			[Enabled]*	
		[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]		
	[Repl. maint cart]			
	[Clean Platen]			
[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]	[DNS Dync update]	[On]	
					[Off]*	
				[Pri. DNS SrvAddr]		
				[Sec. DNS SrvAddr]		
				[DNS Host Name]		
				[DNS Domain Name]		
		[IPv6]	[IPv6 Support]	[On]		
				[Off]*		
			[IPv6 StlessAddrs]	[On]*		
				[Off]		
			[DHCPv6]	[On]		
				[Off]*		
			[DNS Settings]	[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]	[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]	[Roll Selection 1]	[ISO A3 (297mm)]*	
			[300mm Roll]	
		[Roll Selection 2]	[10in. (254mm)]*	
			[JIS B4 (257mm)]	
	[Keep Paper Size]	[Off]*		
		[On]		
	[TrimEdge Reload]	[Automatic]		
		[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]	
	[Use RemoteUI]*12	[On]*		
		[Off]		
	[Reset PaprSetngs]*12			
	[Erase HDD Data]*2*12	[High Speed]		
		[Secure High Spd.]		
		[Secure]		
	[Output Method]*2	[Print]*		
		[Print (Auto Del)]		
		[Save: Box XX]		
	[Print After Recv]*2	[Off]*		
		[On]		
	[Common Box Set.]*2*12	[Print]*		
		[Print (Auto Del)]		
	[Show Job Log]*12	[Off]		
		[On]*		
[Prep.MovePrinter]				
[Admin. Menu]*12	[Change Password]*13	(The screen for setting the password is displayed)		
	[Init.Admin.Pswd]*13			
[Adj. Fine Feed]				
[Printer Info]	[Paper Info]			
	[Ink Info]			
	[Head Info]			
	[System Info]			
	[Error Log]			
	[Other Counter]			

*1: Available only if ManageRemainRoll is On.
*2: Displays only on models not equipped with HDD.
*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: This is displayed when the Automatic spectrophotometer unit (option) is mounted.

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 manually loaded sheets or rolls and load the paper.
[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.
	[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 3mm, 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 3mm, 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]	Select the margin during borderless printing.
	[Manual Feed]	Select the Paper Feed Slot to use when printing on sheets. Normally, select Top. When printing on heavyweight paper such as POP Board, select Front.
	[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]		Indicates the job print settings.
		[Head Height]		Indicates the head height when jobs were printed.
		[Temp./Humidity]		Indicates the temperature and humidity when jobs were printed.
		[Adjustment reg.]		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.
	[ColorCheck Print]			Print a color check print 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.
	[Adj Far Ed Feed]			Choose Yes to adjust the feed amount for the trailing edge.
	[Calibration]	[AutoAdjst (HiPrc)]		A pattern for color calibration adjustment is printed, and color calibration is performed by the automatic spectrophotometer unit.
		[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.
		[ColorCheck Print]		A color check print pattern is printed, and measurement is performed by automatic spectrophotometer unit. After measurement in this mode, the measurement result is displayed on display.
		[Pattern Size]		The size of the pattern for color calibration is changed.
		[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.
	[Clean Platen]			The carriage unit shifts so that the cleaning of platen can perform easily.

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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.

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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]	[Roll Selection 1]	When the size of roll paper is detected, select which roll width to use if the roll width is between [ISO A3 (297mm)] and [300mm Roll].
		[Roll Selection 2]	When the size of roll paper is detected, select which roll width to use if the roll width is between [10inch (254mm)] and [JIS B4 (257mm)].
	[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.
	[TrimEdge Reload]		Select whether cut the leading edge of the paper when the paper at the standby position has loaded. Cut it when the roller trace at the standby position attract attention. Choose On to cut it everytime when the paper at the standby position has loaded. Choose Automatic to cut it when the paper at the standby position during two days or more has loaded.
	[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.

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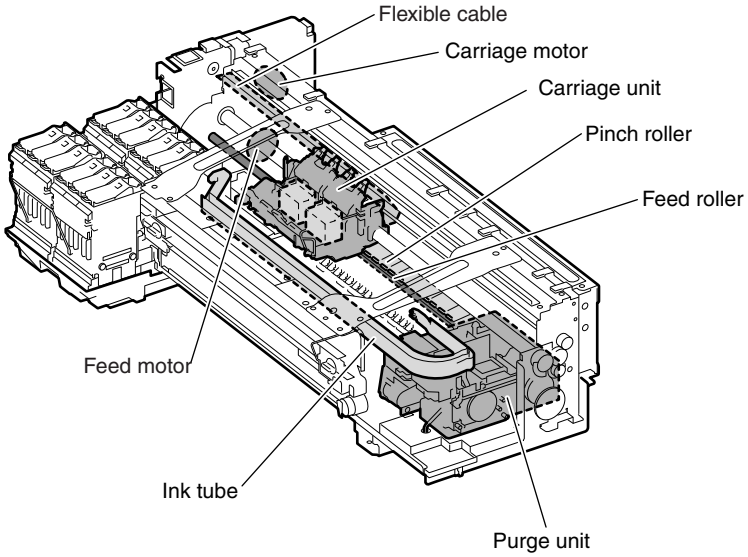
Setting Item			Description/Instructions
[System Setup]	[Erase HDD Data]	[High Speed]	Delete the file management information of the saved data in the HDD.
		[Secure High Spd.]	Overwrite the random data in the whole of the hard disk drive.
		[Secure]	Overwrite 00 and FF and random data in the whole of 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.
[Prep.MovePrinter]			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.
[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.

1.7 Safety and Precautions

1.7.1 Safety Precautions

1.7.1.1 Moving Parts

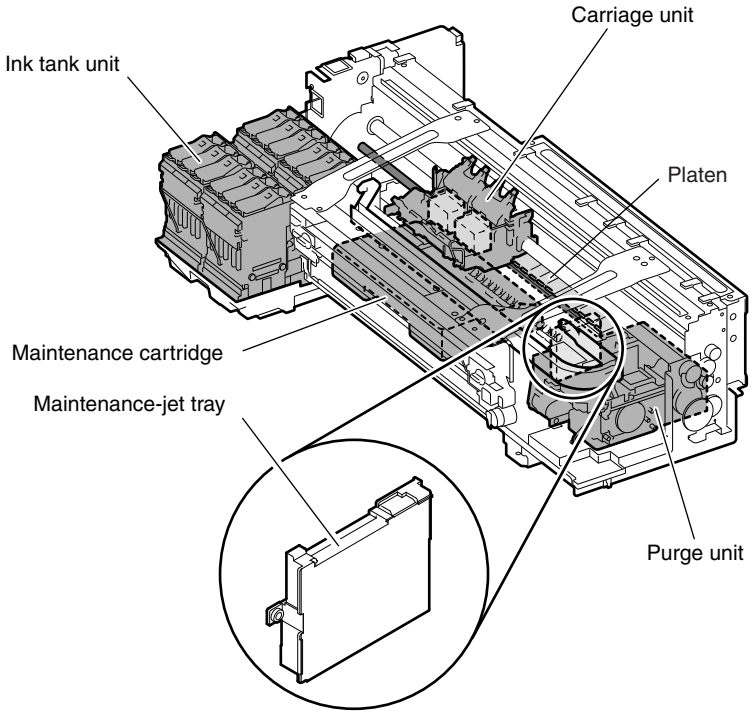
Moving parts of the printer include the carriage unit driven by the carriage motor, the carriage belt, the ink tube, the flexible cable, the feed roller driven by the feed motor, the pinch roller, and the purge unit driven by the purge motor.
To prevent accidents, if the top cover is opened in the online/offline mode, the carriage motor, feed motor, and other driving power supplies are turned off.



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1.7.1.2 Adhesion of Ink

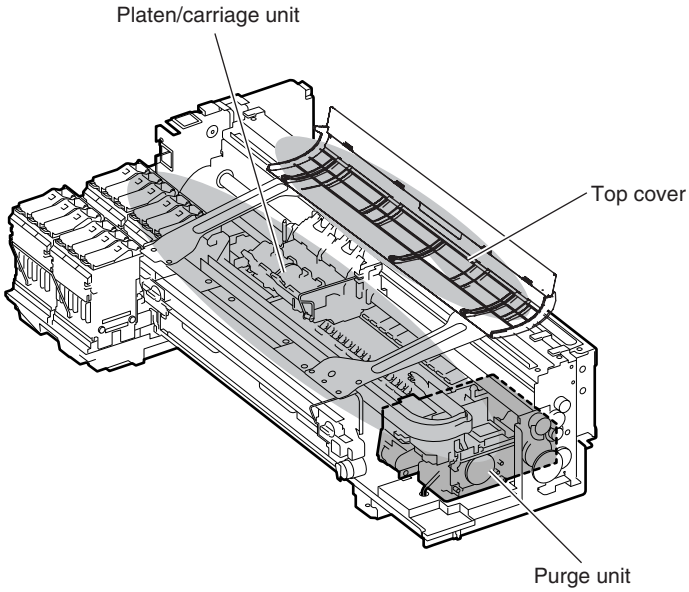
(1) Ink passages
Be careful not to touch the ink passages of the printer to prevent the printer, workbench, ands, and clothes from being stained with ink.
The ink flows through the ink tank unit, carriage unit, purge unit, maintenance jet tray, maintenance cartridge, and the ink tubes that relay ink to individual units.



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⚠
- Although the ink is not harmful to the human body, it contains organic solvents.
Ink may contaminate the surrounding parts. Carry out the work with due caution. If your hands are stained with ink, wash them with a plenty of water.
Be careful not to allow the ink to get into your mouth or eyes.
If the ink gets into your eyes, flush them with water well and see a doctor.
In case of accidental ingestion of a large quantity of ink, see a doctor immediately.
- It is also effective to use gloves to prevent ink from adhering when working.
- Since this ink contains pigment, stains will not come out of clothing.

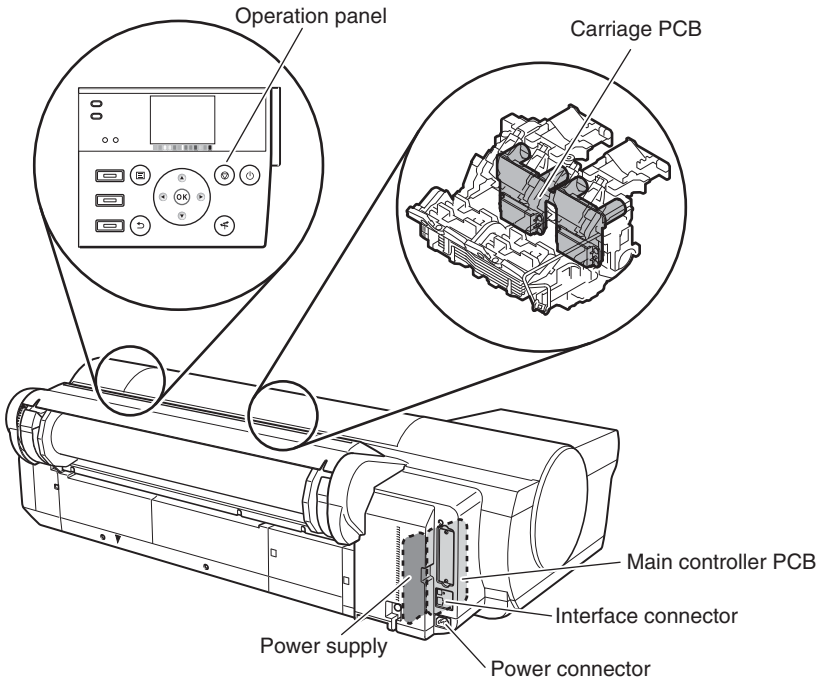
(2) Ink Mist
Since the printhead prints by squirting ink onto the media, a minute amount of ink mist is generated in the printing unit during printing. The generated ink mist is collected in the printer by the airflow. However, uncollected ink mist may stain the platen, carriage unit, exterior, and purge 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 cloth.



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1.7.1.3 Electric Parts

The electric parts of the printer are activated when the printer is connected to the AC power supply.
At the left rear of the printer are the main controller, power supply, and interface connector. The carriage PCB is incorporated in the carriage unit, and the operation panel is on the upper right top cover.
When serving the printer with the cover removed, be extremely careful to avoid electric shock and shorting electrical devices.



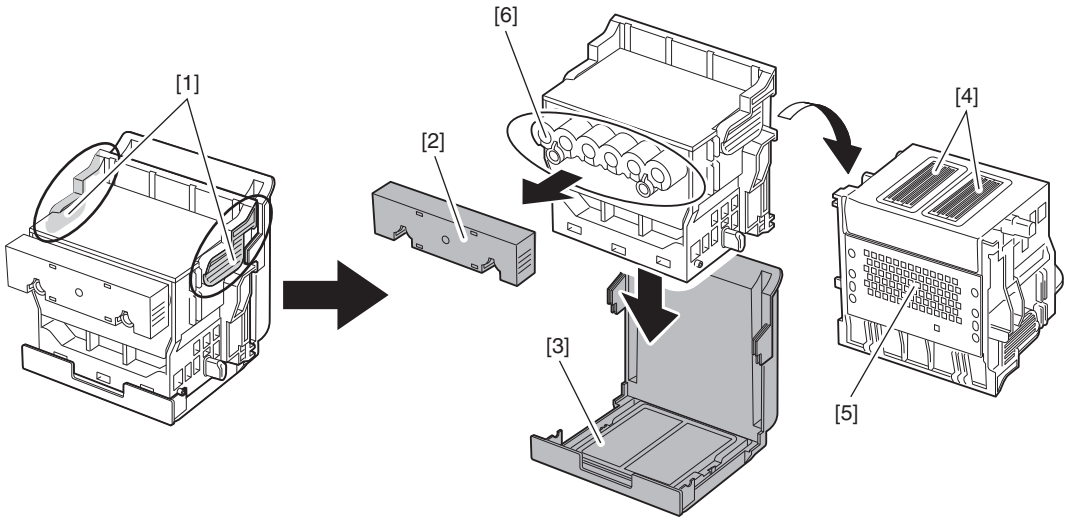
F-1-30

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 Electrical 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-1-31

[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.

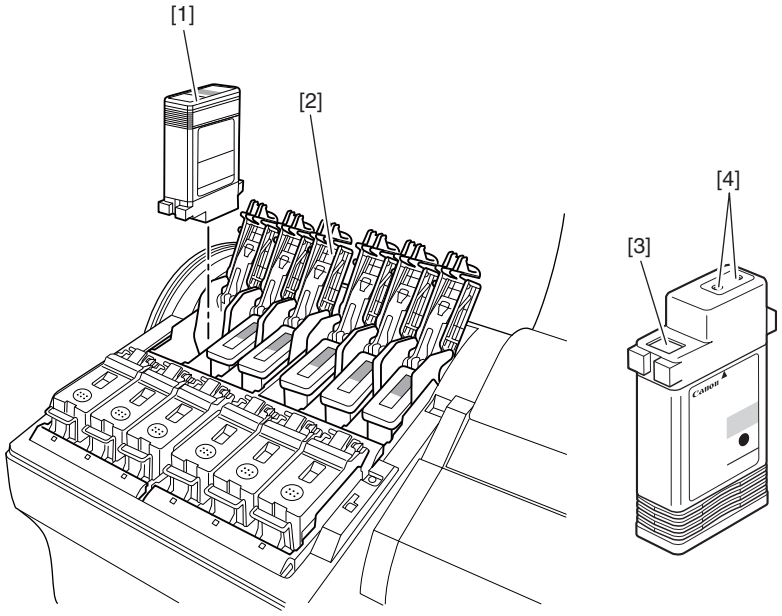
4. Conductivity of Ink
The ink used in this printer is electrically conductive. If ink leaks to into the mechanical unit, wipe clean with a soft, well-wrung damp cloth. If ink leaks onto electrical units, wipe them completely using tissue paper. If you cannot remove ink completely, replace the electrical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

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 lock lever, the needle enters the ink port, allowing ink to flow between the printer and ink tank.
Do not raise or lower the ink tank lock lever except when replacing the ink tank.

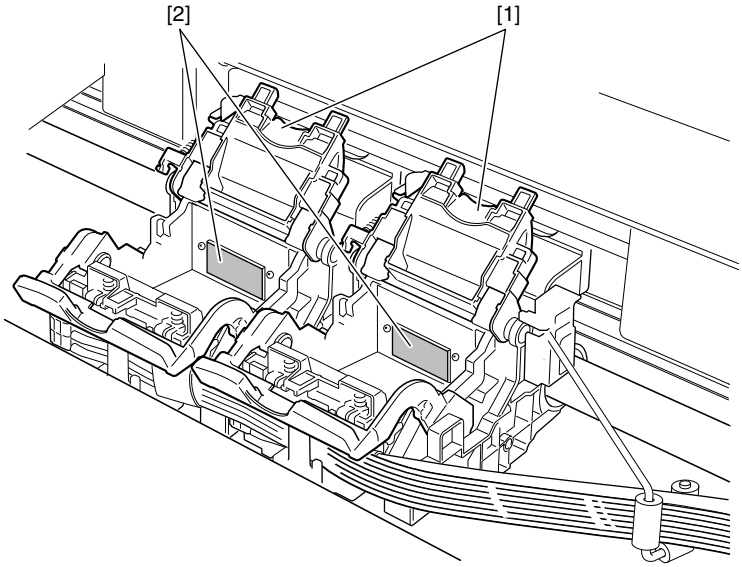


F-1-32

[1] Ink tank
[2] Ink tank lock lever
[3] Contacts
[4] Ink port

1.7.2.3 Handling the Printer

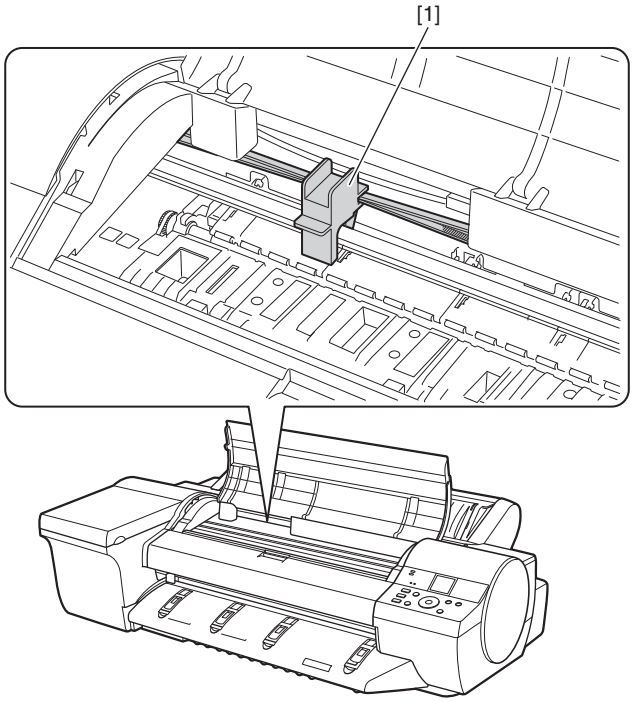
1. Precautions against Static Electricity
Certain clothing may generate static electricity, causing an electrical charge to build up on your body. Such a charge can damage electrical devices or change their electrical characteristics.
In particular, never touch the printhead contacts.



F-1-33

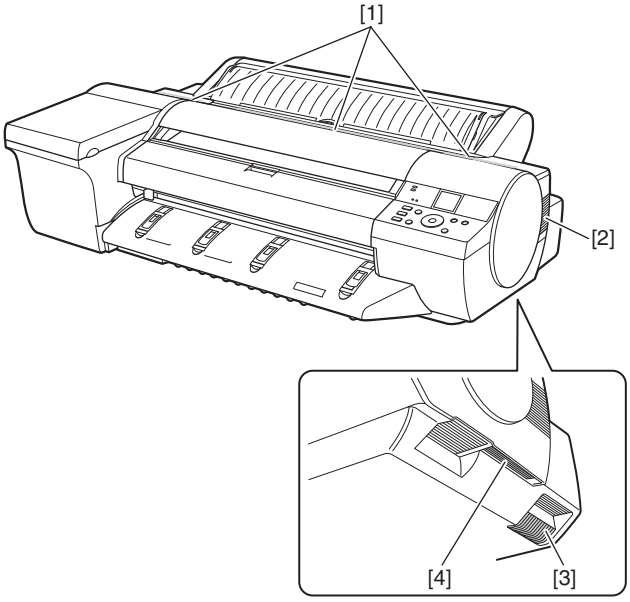
[1] Carriage unit
[2] Printhead contacts

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.



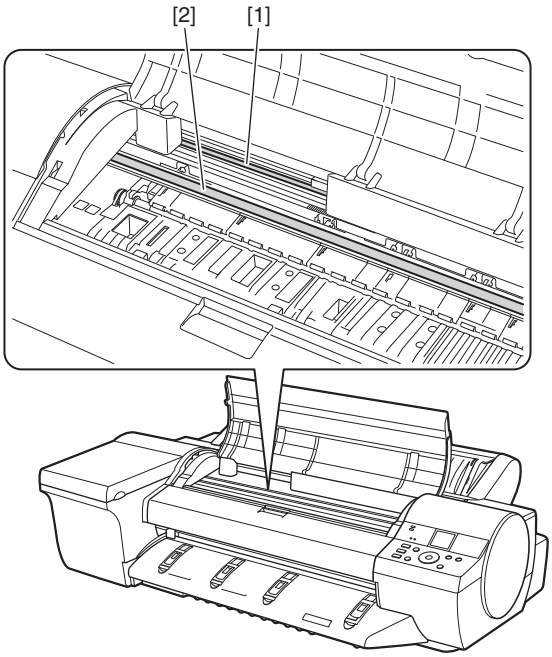
F-1-34

3. Vent Holes
This printer has four vent holes, [1] to [4]. Do not block the vent holes when the printer is in operation.



F-1-35

4. 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-1-36

[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.

5. Handling the Maintenance Cartridge
When removing the maintenance cartridge from the printer, use caution so that waste ink does not spatter.

6. Refilling the Printer with Ink
After draining the ink from inside the printer using the automatic or manual ink draining procedure for disassemble/reassemble or transport the printer, refill the printer with ink as soon as possible upon completion of the work.
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, number of cleaning operations, number of cutter operations, and so on and stores them in the main controller's EEPROM as a service mode counter.
This 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 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.

(3) 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 or change their electrical characteristics.
Before disassembling the printer for servicing, discharge any static buildup by touching a grounded metal fitting or the like.

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

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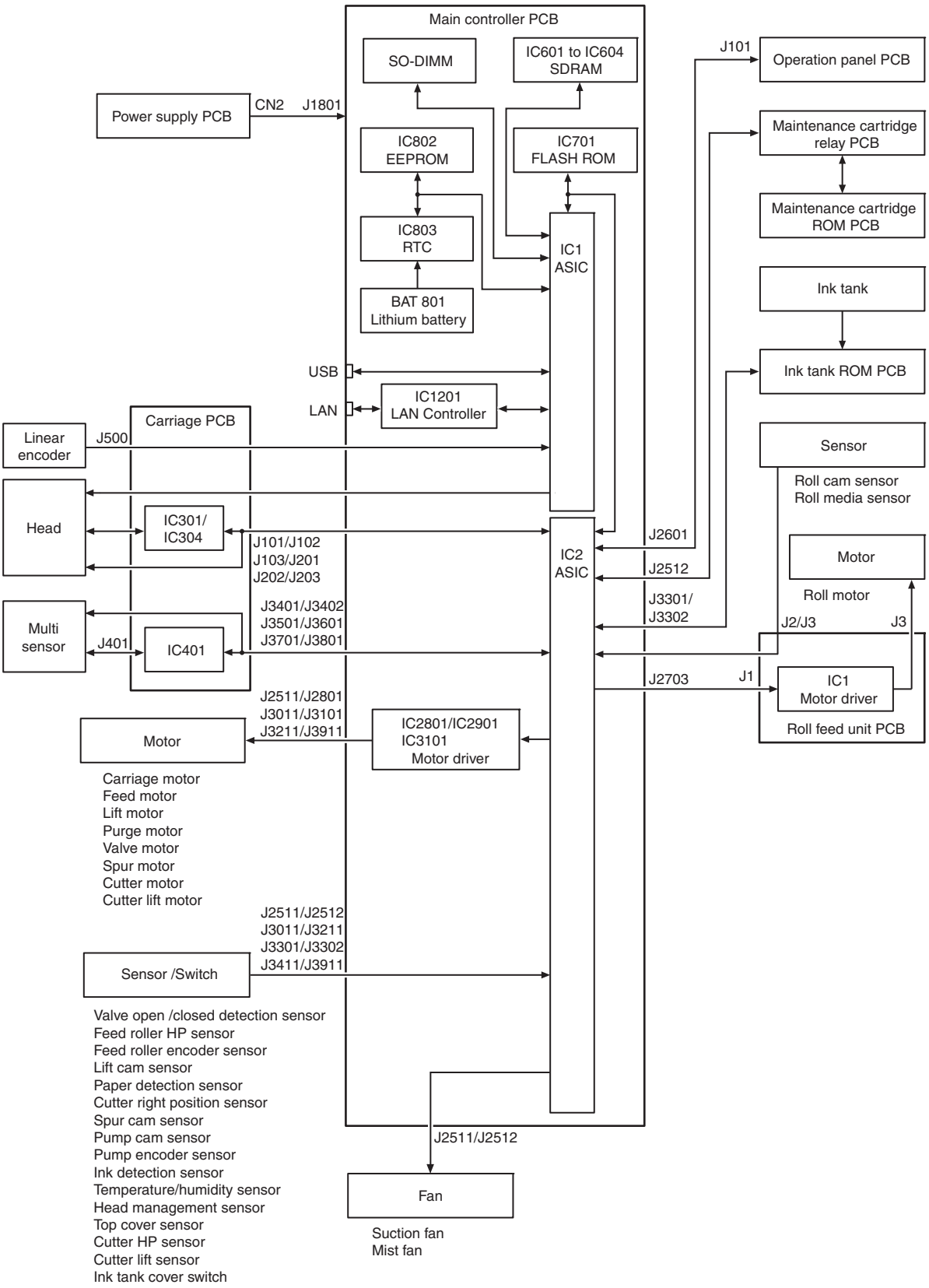
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2.1 Basic Operation Outline

2.1.1 Printer Diagram

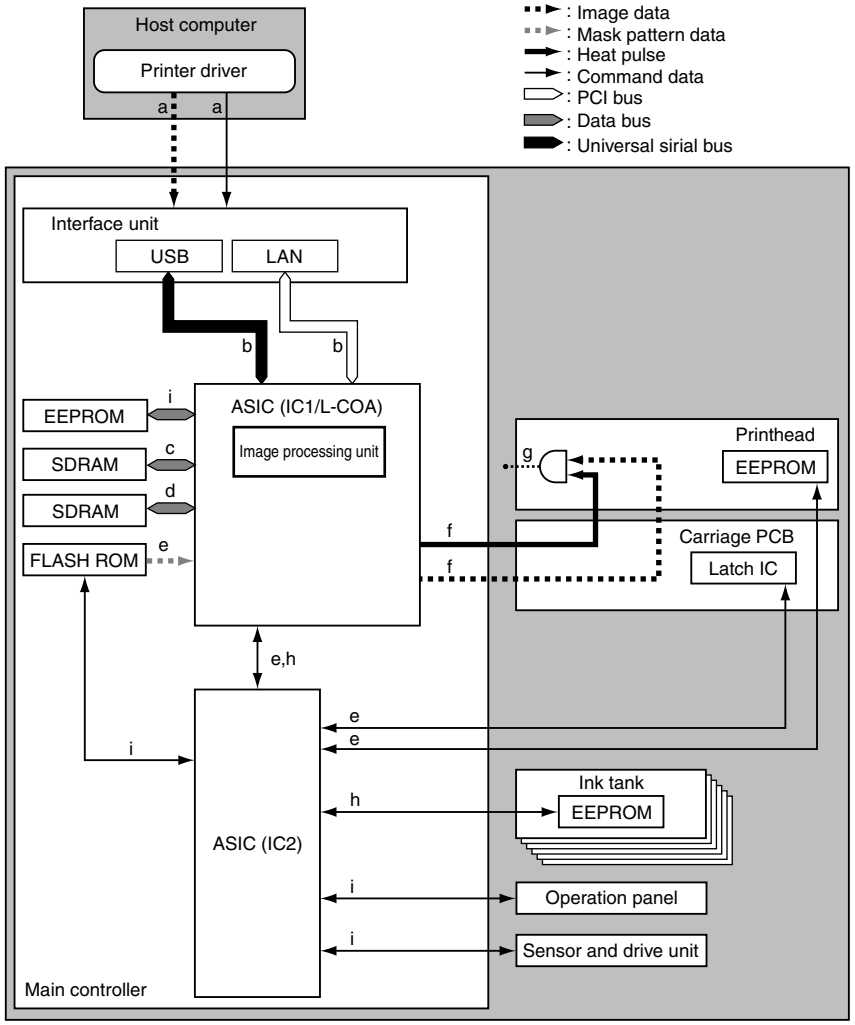
Shown below is a printer diagram.



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.



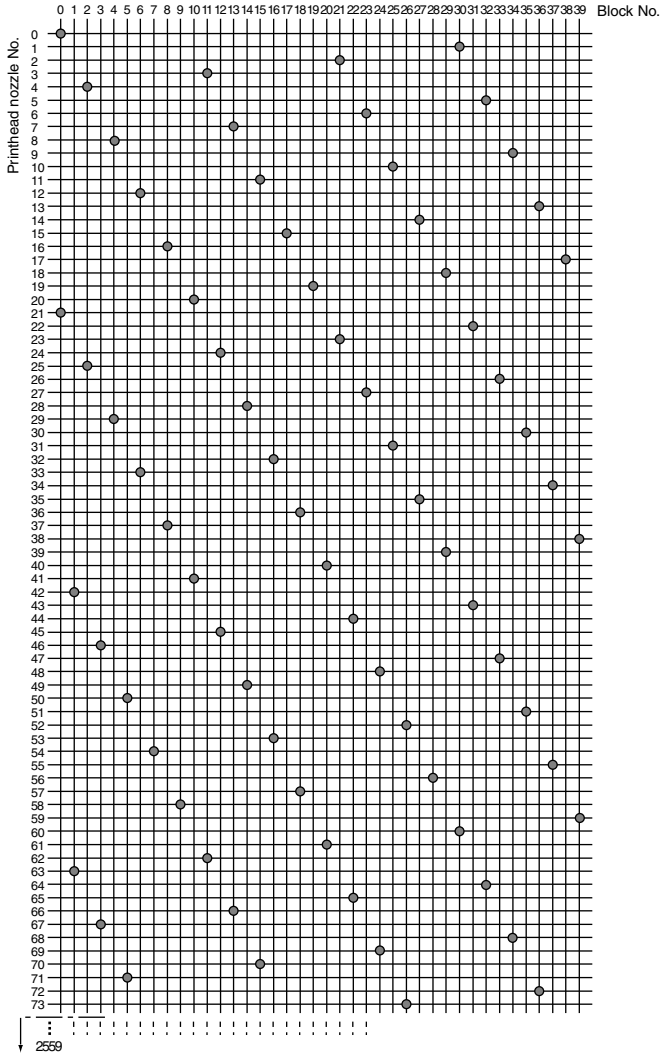
F-2-2

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 12-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 12-color binarization conversion while loading the data into SDRAM from time to time.
It also converts the print data to 12-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, Y, PC, C, PGY, GY, BK, PM, M, MBK, R, G, B)
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.

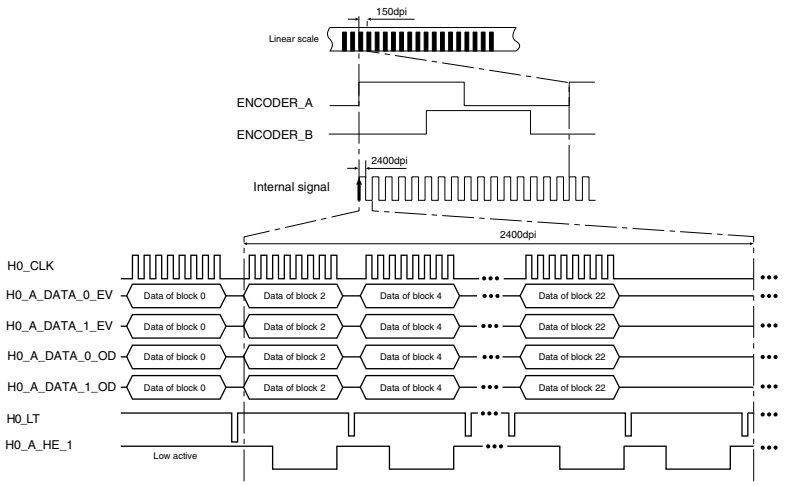
1. Pint drive control
Each train of nozzles in a printhead has 2,560 nozzles.
Ink discharge nozzles are selected split in 40-, 20- or 10-nozzle blocks according to the Block Enable information in the even-numbered nozzle data and odd-numbered nozzle data.
Each selected block of nozzles is impressed with 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 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 execute the print position adjustments, 10-inches size or larger roll media or two sheets of A4/LTR-size or larger cut sheet are needed. However, in case of A2-size or larger cut sheet, one sheet is needed.
The print position adjustment function is executed by the following menu.

[Set./Adj. Menu]

First Level	Second Level	Third Level	Fourth Level	Fifth Level
[Adjust Printer]	[Head Posi. Adj.]	[Auto(Standard)]		
		[Auto(Advanced)]		
		[Manual]*4		
	[Head Inc. Adj.]			
	[Feed Priority]	[Adj. Priority]	[Automatic]*	
			[Print Quality]	
			[Print Length]	
		[Adj. Quality]*5	[Auto(GenuinePpr)]	
			[Auto(OtherPaper)]	
			[Manual]	
		[Adjust Length]*6	[AdjustmentPrint]	[A:High]
				[B:Standard/Draft]
			[Change Settings]	[A:High]
				[B:Standard/Draft]

2.2.2 Head Management

This printer has a nozzle check function to detect any non-discharging nozzle. When a non-discharging nozzle is detected, the printer performs the print head cleaning operation. If the problem persists after completion of the print head cleaning operation, the non-discharged nozzles are automatically backed up by other nozzles.

2.2.3 Printhead Overheating Protection Control

This printer performs printhead overheating protection control when an abnormally high temperature is detected in the printhead.
The printhead can overheat, for instance, when the print operation continues for some time with no ink supplied to the nozzles.
The overheating protection control function prevents a printhead nozzle from becoming clogged or damaged due to excessive heat.
Overheating protection control is performed based on the temperatures detected by the head temperature sensors in the nozzle arrays. If overheating is detected in a single nozzle array, overheating protection control is performed at either of the following levels according to the temperature.

Protection level 1:
If the printhead temperature sensor detects a temperature above the limit, the carriage stops at the scan end position printer in the direction of travel according to the carriage's scan status.
Then, wait control is performed to allow the printhead to cool naturally. When the printhead temperature drops below the prescribed value or 30 seconds have lapsed since detection of the abnormal temperature, printing resumes.

Protection level 2:
When the head temperature sensor detects an abnormally high temperature, printing stops immediately, the carriage is moved to the home position, and the printhead is capped. In this case, an error code is shown on the display.

2.2.4 Pause between Pages

To prevent ink blots form forming, this printer has a "pause between pages" function to hang down the printed paper from the platen to dry it and delivers it after lapse of the specified wait time.
The user can set the wait time using the printer drive. This function is particularly useful for printing on film-type sheets that requires extra long time to dry.
For borderless printing, 30 seconds of drying time is automatically set.

2.2.5 White Raster Skip

To improve the printing throughput, this printer has a white raster skip function to skip the carriage scan operation for continuous blank segments in print data.

2.2.6 Sleep Mode

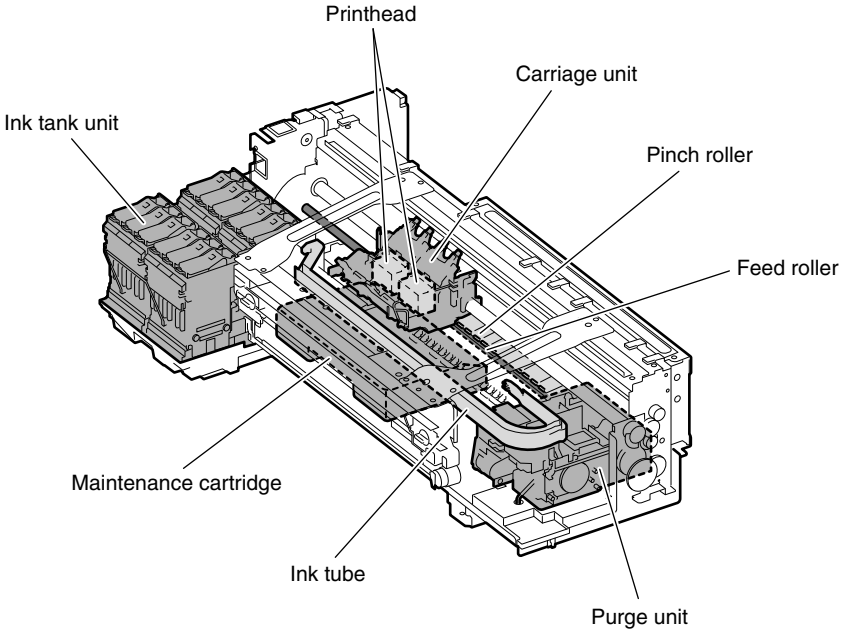
This printer has a Sleep mode to reduce the standby power.
The printer automatically enters the Sleep mode (Power Save mode) when neither user operation nor data reception occurs for a preset period of time in the online or offline mode.
The printer wakes from the Sleep mode when the user presses any button on the operation panel or data is received from the host computer.
The time until the printer enters the Sleep mode can be changed from the operation panel. (Default: 5 minutes)

2.3 Printer Mechanical System

2.3.1 Outline

2.3.1.1 Outline

The printer mechanism can be broadly divided into two major components: the ink passage and paper path.
The ink passage consists of the ink tank, the carriage unit having the printhead, the purge unit. and the maintenance cartridge unit which are used to supply, circulate, and suck ink.
The paper path consists of the roll feed unit, paper feed unit to support three types of media feeding, transport, and ejection.
This section provides an overview of these mechanical components.



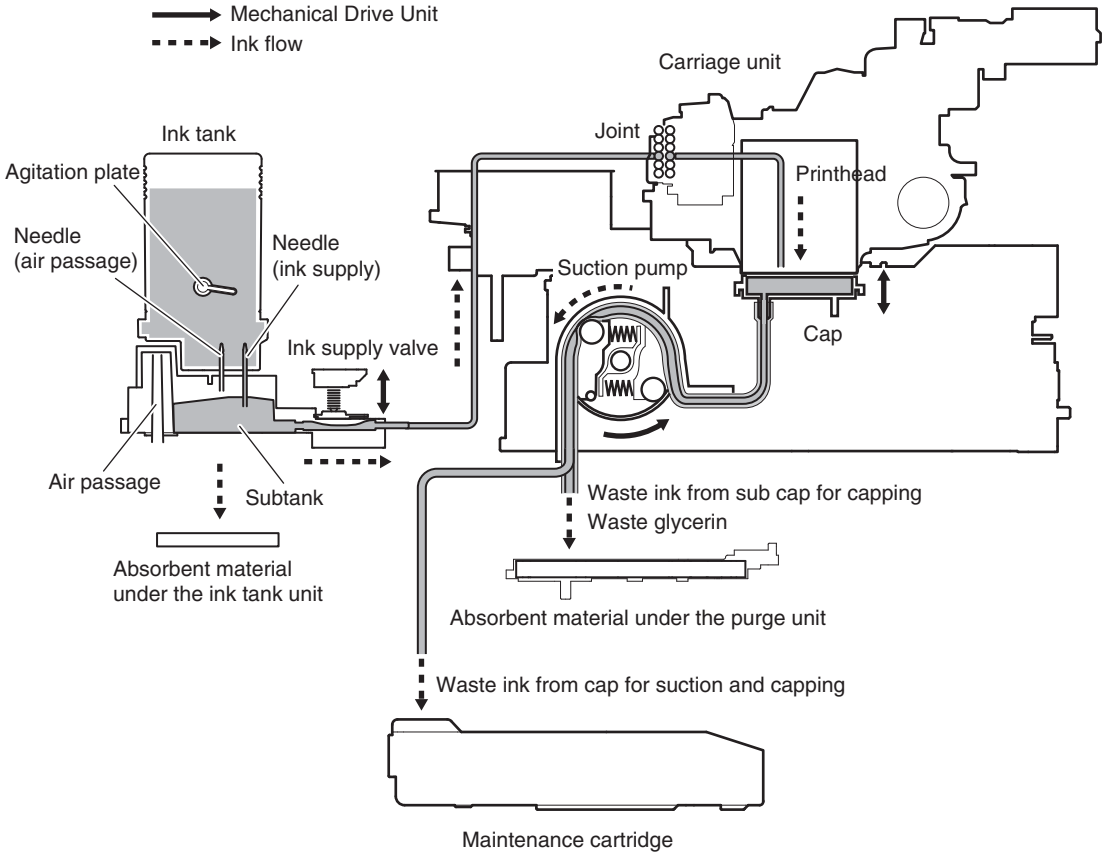
F-2-5

2.3.2 Ink Passage

2.3.2.1 Ink Passage

2.3.2.1.1 Overview of Ink Passage

The ink passage consists of ink tanks, printhead, cap, waste ink collection unit, ink tubes for connecting the mechanical components, and an ink suction pump which is operated to suck ink. These components are used to supply, circulate, and suck ink.
A schematic diagram of the ink passage (for one color) and the ink flow are shown below.



F-2-6

a) Supplying inks from the ink tanks to the ink supply valve assembly
The each ink tanks contain ink to supply to the printhead.
Ink of the ink tanks is supplied to the subtanks and then ink of the subtanks is supplied to the ink supply valves by the fluid level difference.
On this occasion, 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
Ink is filled from the ink tank to the printhead by driving the suction pump after the ink supply valve is opened and the printhead is capped.
The ink sucked from the caps flows to the maintenance cartridge.

c) Ink supply during printing
During printing, the ink supply valve is held open to allow ink to flow from the ink tank to the printhead constantly due to the negative pressure generated by discharging of ink.
The waste ink used for printhead cleaning and borderless printing flows to the waste ink absorbent materials under the maintenance cartridge in addition to the waste ink box.

⚠

If all of ink passages are opened (no ink tank is installed, the ink supply valve is opened, and the printhead fixer lever is opened) when the ink tube is filled with ink, the ink in the ink tube may reverse-flow due to the fluid level difference and ink may leak from the hollow needle of the ink tank.
Do not open all of the ink passages at the same time when the ink tube is filled with ink.

---

d) Agitation of ink in the ink tank
Ink in the ink tank and subtank is agitated to prevent precipitation of pigment-based ink in the ink tank and subtank.
This function is implemented by reverse-flowing ink to the ink tank and subtank by opening and closing the supply valve in succession. Inside the ink tank is provided with an agitation plate to assist agitation of ink. (The agitation plate is also provided in the dye ink tank.)
- Operation timing: When a new ink tank is installed or when 168 hours have lapsed since the previous agitation (the agitation is performed irrespective of the condition whether the printer is printing or cleaning its printhead.)
- Ink supply valve opening/closing count: 30 times (every 30 seconds)
If 336 or more hours have lapsed, the ink valve opening/closing count and the time until the next agitation are changed according to the length of the tame lapsed.

2.3.2.2 Ink Tank Unit

2.3.2.2.1 Structure of Ink Tank Unit

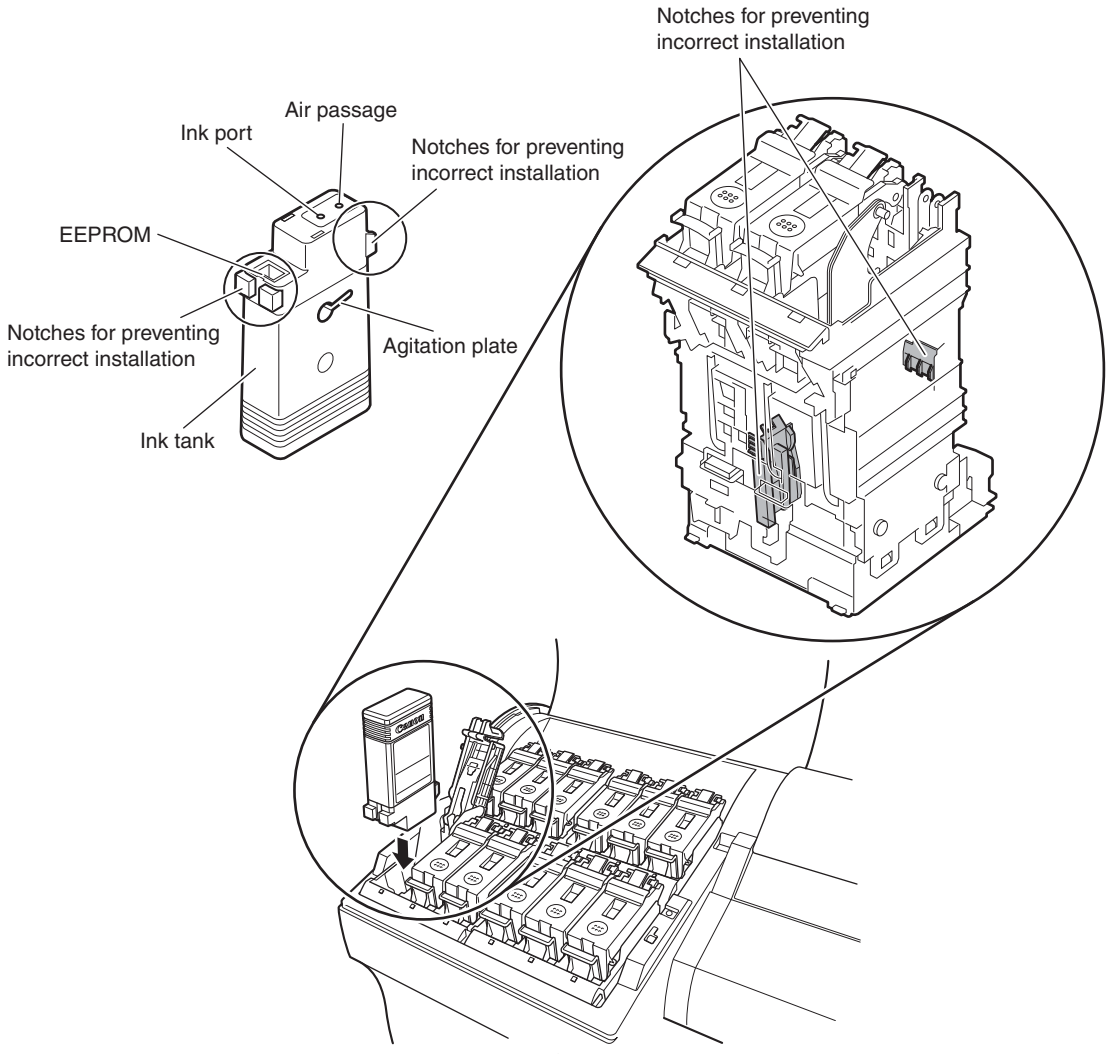
a) Ink tank
Each ink tank contains 130 ml or 300 ml of ink (the starter ink tank supplied with the printer contains 90 ml of ink) for each color. The amount of ink is memorized in the EEPROM mounted to the ink tank.
The amount of the ink remaining in the ink tank is detected as a dot count according to the data memorized in the EEPROM.
When the electrodes mounted to the hollow needle detect a con-conductive state, a message appears on the display to indicate that the ink is nearly empty. If the dot count reaches the prescribed value, the ink tank is considered to be empty.

b) Ink port
When the ink tank lock lever is pressed down, the hollow needle enters the ink port (covered with a rubber plug), establishing an ink passage between the printer and ink tank.

c) Air passage
When the ink tank lever of the printer is pressed down, the hollow needle enters the air passage (covered with a rubber plug) and thus the internal pressure of the ink tank is released, maintaining the internal pressure constant.

d) Notches for preventing incorrect insertion
The ink tanks have notches for preventing incorrect location. Wrong ink tanks cannot be installed in place due to these notches.
The ink tank lock lever can lowered to start ink supply only when the ink tank has been installed in place.

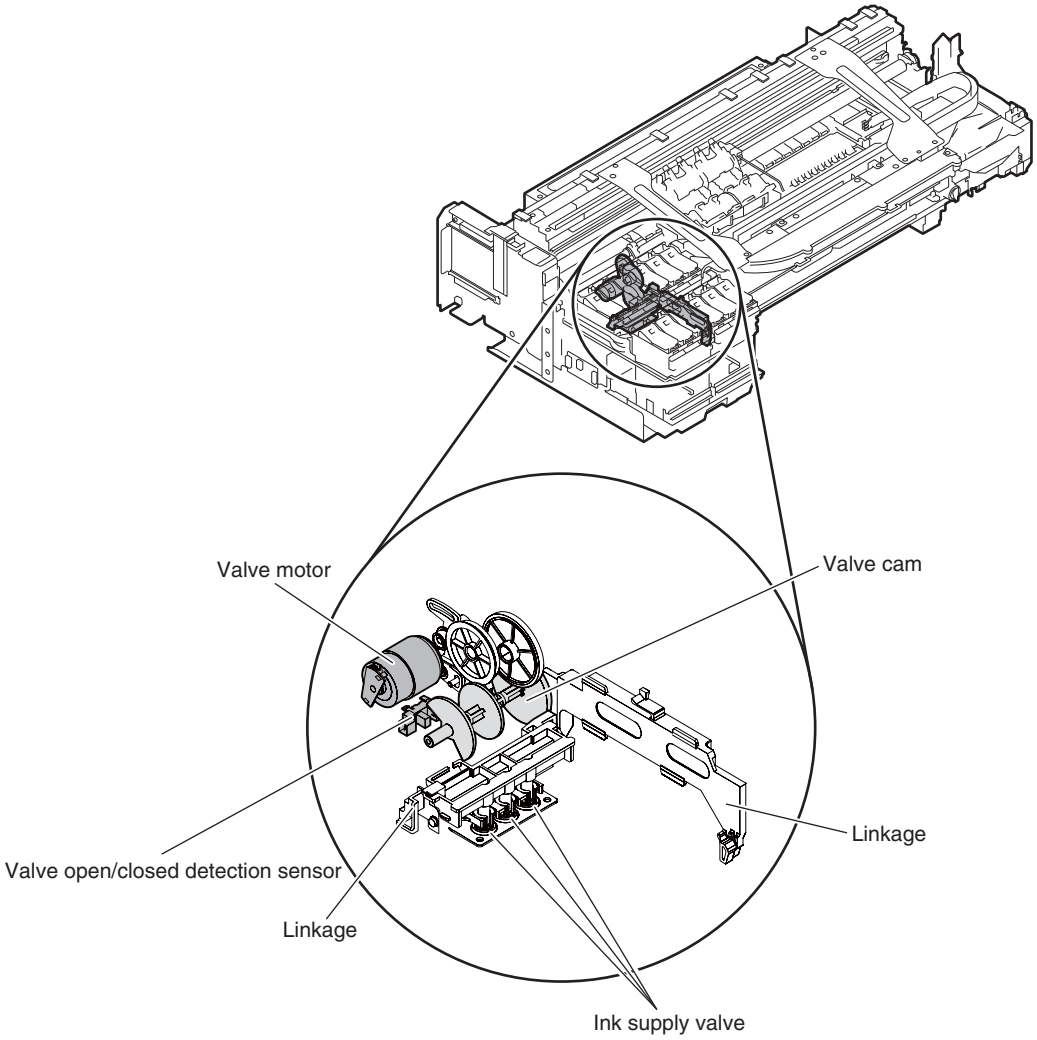
e) Agitation plate
The agitation plate assists the ink agitation which is performed to prevent precipitation of ink.



F-2-7

f) 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.

g) Ink supply valve
The ink supply valve is located between the ink tank and ink tube to prevent ink leakage from occurring when the ink tube on the ink tank side is opened during replacement of the ink tank.
The ink supply valve is opened and closed by the valve open/close mechanism which is driven by the valve motor.
The ink tank unit consists of two tank bases each of which contains ink tanks for three colors and the ink tubes for six colors.
The ink supply valve for each color is driven by the valve cam though a link. Ink supply valves for all colors are opened and closed at the same time.



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2.3.2.3 Carriage Unit

2.3.2.3.1 Functions of Carriage Unit

a) Printhead mounting function
The carriage mechanically locks the printhead and is connected to the printhead via the terminals on the carriage PCB.

b) Control function
The carriage incorporates a carriage PCB that relays the signal from the main controller, a linear encoder that generates a print timing signal based on the detected carriage position, and a multi sensor that detects the media width and skewing to adjust the registration and height.
The carriage PCB and main controller PCB are connected with a flexible cable.

c) Carriage drive function
The carriage motor moves the carriage back and forth on the platen via the carriage belt.

d) Printhead maintenance function
The printer performs the printhead cleaning operation such as printhead wiping and suction at the home position of the carriage.
The cleaning operation accompanied by ink suction is performed only at the left cap.

e) Nozzle check function
The printer detects a non-discharging nozzle using the head management sensor attached to the maintenance jet tray by discharging ink with the carriage stopped at the maintenance jet tray.

f) Media thickness adjustment function
If the gap between the printhead face and the media increases due to the difference in media thickness, cockling, curling, and so on, more ink mist is generated. In reverse, if the gap decreases, the head can touch the media surface more frequently.
To maintain the proper gap, the remote lifter is driven to adjust the head height automatically according to the selected media type, media supply method, printing conditions (borderless/priority print type), environmental conditions (temperature/humidity), and the result of measurement by the multi sensor.
The relationship between media types and head heights (from the platen) is summarized in the table below. Note that the head height is adjusted with priority given to the media gap measured by the multi sensor.

T-2-1

Head height (mm)	Media type (Value in parentheses:mm)
1.0	Glossy paper(0.2),plain paper(line drawing)(0.1)
1.4	Initial position
1.8	Plain paper(0.1)
2	Coated paper(0.5)
2.2	Semi-glossy canvas(0.5)
3.2	Board paper(1.5)

g) Paper leading edge detection function/paper width detection function/skewing detection function
The leading edge, width, and skewing of the paper fed to the platen is detected by the multi sensor mounted at the lower left of the carriage.

h) Auto printing position adjustment function
The adjustment pattern printed on paper is read by the multi sensor mounted at the lower left of the carriage, thus adjusting the printing timings of each printhead automatically.

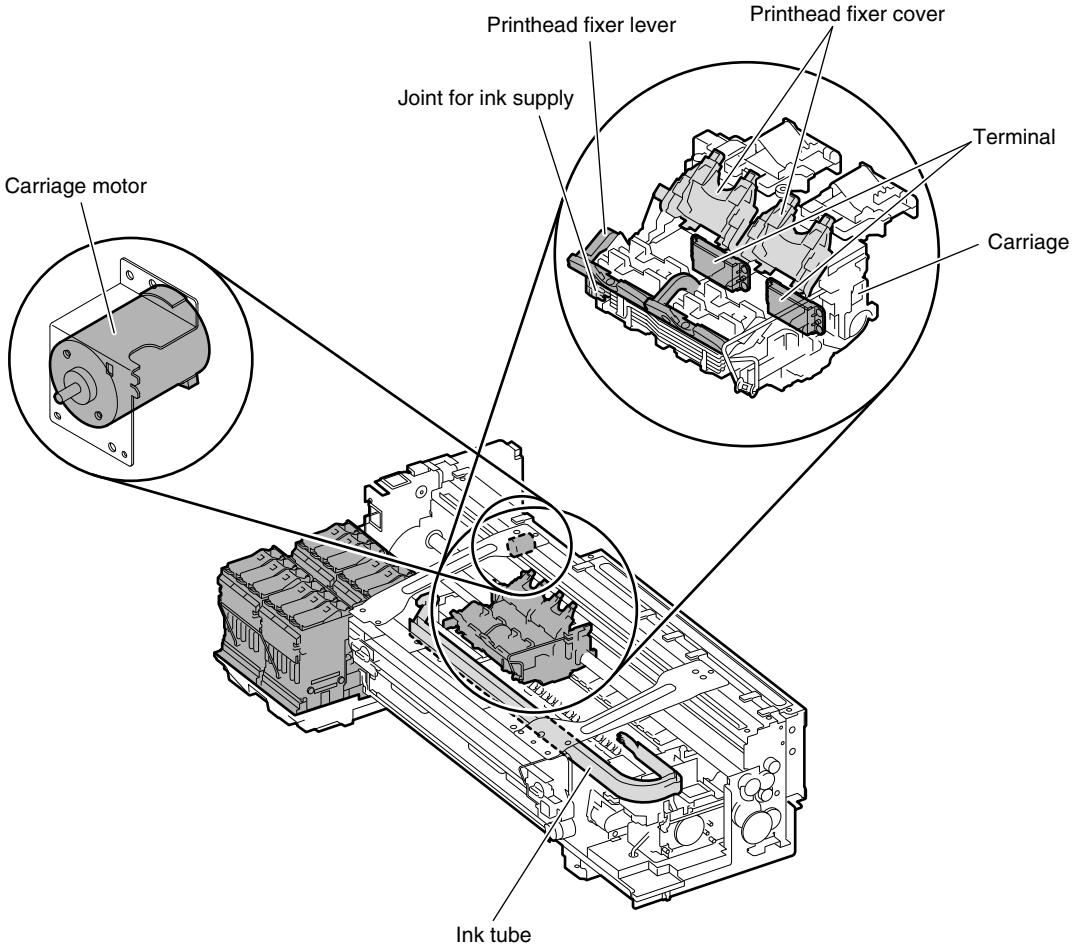
i) Color calibration function
A multi sensor installed in the lower left part of the carriage reads the adjustment pattern printed on paper and corrects the coloring of the printed matter automatically.
The main menu choice "Calibration" can be executed to correct the coloring of printed matter in the wake of initial installation of the printer, the replacement of its printheads or otherwise changes in the coloring of printed matter.

j) Remaining roll media detection function
The amount of the remaining roll paper can be detected using the multi sensor mounted at the lower left of the carriage by printing a barcode at delivery of the roll media.

k) Internal temperature detection function
The internal temperature around the printhead is detected using the thermistor mounted on the carriage PCB.

2.3.2.3.2 Structure of Carriage Unit

a) Printhead mounting unit
The printhead is secured to the carriage by the printhead fixer lever.
When the printhead is secured to the carriage, the signal contact of the carriage PCB touches the signal contact point of the printhead, allowing print signals to be transmitted.
The ink passage from the ink tank is connected to the printhead through the ink tube and joint.

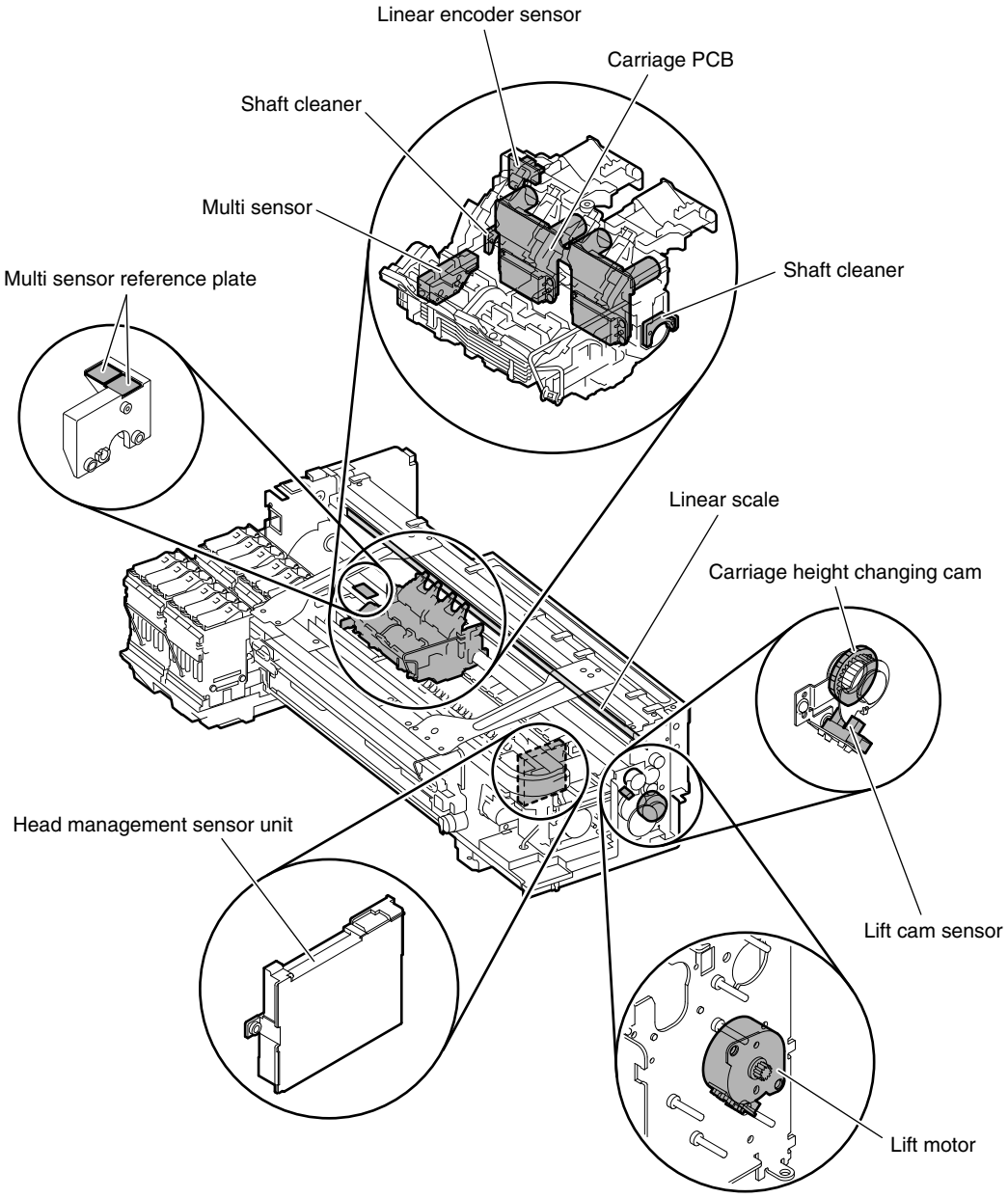


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b) Ink port
Ink is supplied to the printhead through the ink tubes.
Ink tube run through the ink tube guide mounted on the carriage and move in conjunction with the carriage.

c) Control unit
The carriage PCB is connected to the main controller PCB with a flexible cable. The flexible cable moves in conjunction with the carriage.
A photo-coupler-type encoder is mounted at the top of the rear of the carriage to detect the slit on the linear scale during carriage movement, thus controlling the print timing.

d) Carriage drive unit
Mechanical misalignment of the printhead in the vertical and horizontal direction and in bidirectional printing can be corrected by changing the print timing using the "Adjust Printer" option in the Main menu.
The carriage motor (DC motor) moves the carriage back and forth on the platen via the carriage belt.
The carriage home position is the capping position to which the carriage is slowly moved when the power is turned on.
When the position read on the linear scale is set as the home position for position control, the carriage motor moves based on control signal output from the main controller.



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e) Printhead maintenance unit
The printer performs the printhead cleaning operation at the home position of the carriage.
The purge motor is used for wiping. When the carriage is stationary at the home position, the printhead installed in the carriage is wiped with the wiper blade. The wiper blade is pressed against the absorbent material soaked with glycerin so that the wiper blade is moistened with glycerin, thus improving the wiping performance.
Idle ejection of ink is performed on the cap, the borderless ink tray of the platen, and paper.
The suction operation is performed by rotating the pump motor after completion of capping. (Note that the cleaning operation accompanied by suction is performed only at the left cap.)

f) Carriage height adjustment
When the lift motor is driven to rotate the carriage height changing cams installed at both ends of the shaft, the height of the carriage shaft is varied to change the spacing between the face of the printheads and the paper.
The printhead height is detected by the multisensor installed in the lower left part of the carriage.

g) Multi sensor unit
The multi sensor mounted at the lower left of the carriage is composed of four LEDs and four light-sensitive elements which are used to detect the leading edge, width, and skewing of paper and adjust the color calibration and head height.
The multi sensor reference plate is provided with a white plate. By measuring the quantity of the reflected light from the white plate, the reference value for gap measurement is computed.
(Service mode: SERVICE MODE> ADJUST> GAP CALIB.)

h) Shaft cleaner units
The shaft cleaners mounted at the left and right of the carriage are used to clean the carriage and apply oil to the shaft.

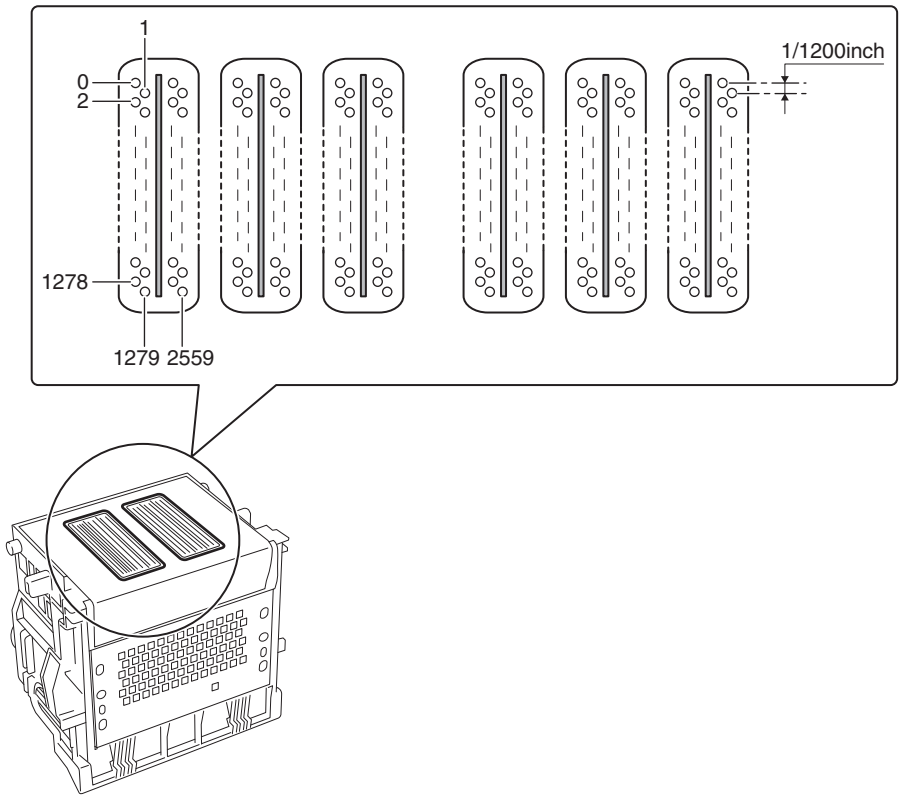
i) Internal temperature detection
A themistor for measuring the internal temperature is mounted on the carriage PCB on the rear of the head holder.

2.3.2.4 Printhead

2.3.2.4.1 Structure of Printhead

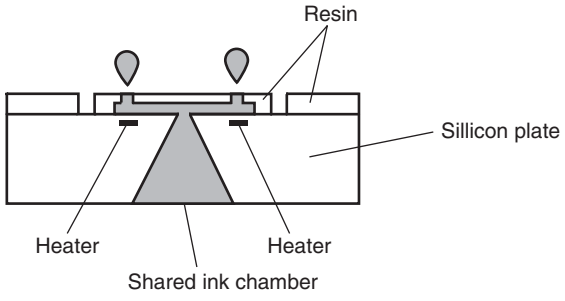
A printhead incorporates six nozzle arrays. Each nozzle can be controlled individually so that a six-color discharge action can be performed by a single printhead.

a) Nozzle arrays
A total of 2560 nozzles are arranged in a two-column staggered pattern.
In each column, 1280 nozzles are arranged in a staggered pattern at intervals of 600 dpi, forming a 2560-nozzle arranged at intervals of 1200 dpi.



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b) Nozzle structure
Ink supplied from the ink tank is filtered by a mesh ink filter, and the supplied to the nozzles.
Ink is supplied from the shared ink chamber to the nozzles. When the head driving current is applied to the nozzle heater, ink boils and form bubbles so that ink droplets are discharged from the nozzles.



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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.

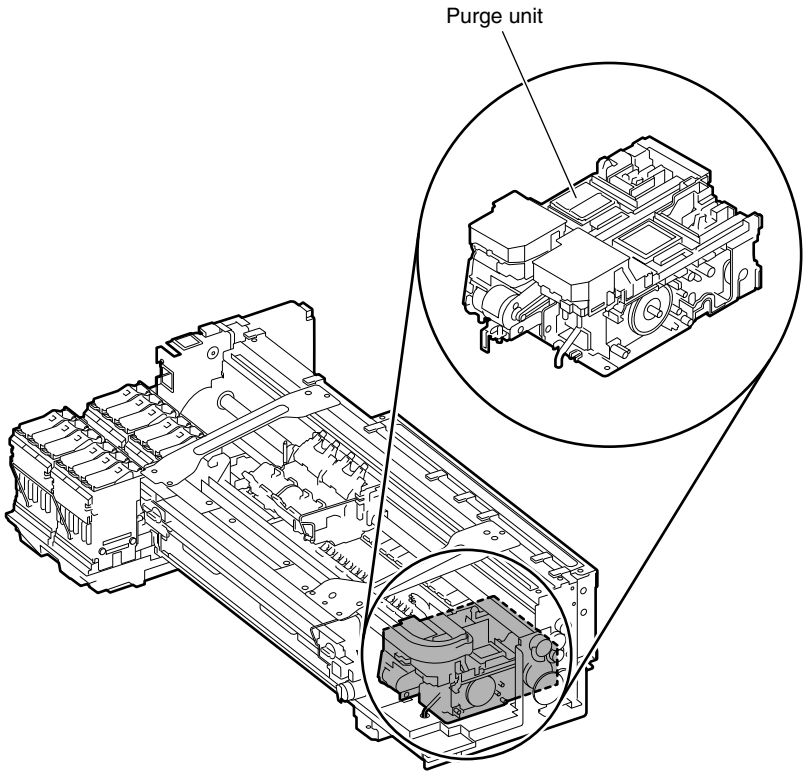
Cleaning mode	Name of Service mode or PRINT INF (Name of Main Menu)	Operation	Description of cleaning
Cleaning 1	CLN-A-1/CLN-M-1 (Head Cleaning A)	Normal cleaning	Removes dried ink from nozzles, thick ink accumulated on the face, and paper particles.
Cleaning 2	CLN-A-2	Ink level adjustment and cleaning	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	Ink consumption (typ.)*1
Standby	168 hours elapsed capped			Cleaning 1 (Normal Cleaning)	1g
	At least 720 hours elapsed since the last session of Cleaning 2, 3, 6 or 10 (360 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)	15g
	Both heads and inks available	The print operation has completed.	168 to 720 hours elapsed capped	Cleaning 1 (Normal Cleaning)	1g
			At least 720 hours elapsed since the last session of Cleaning 2, 3, 6 or 10 (360 hours after initial installation)	Cleaning 6 (Normal (strong) Cleaning)	5g
			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)	15g
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

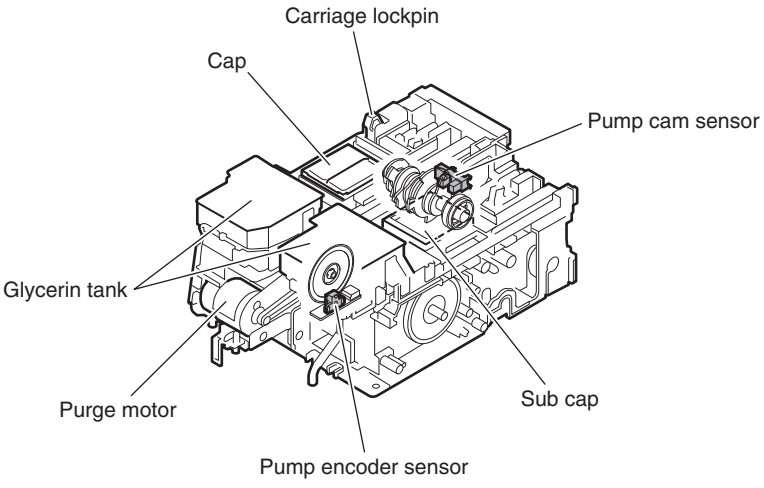
*1: Quantities of ink consumption by nozzle train

2.3.2.5.2 Structure of Purge Unit



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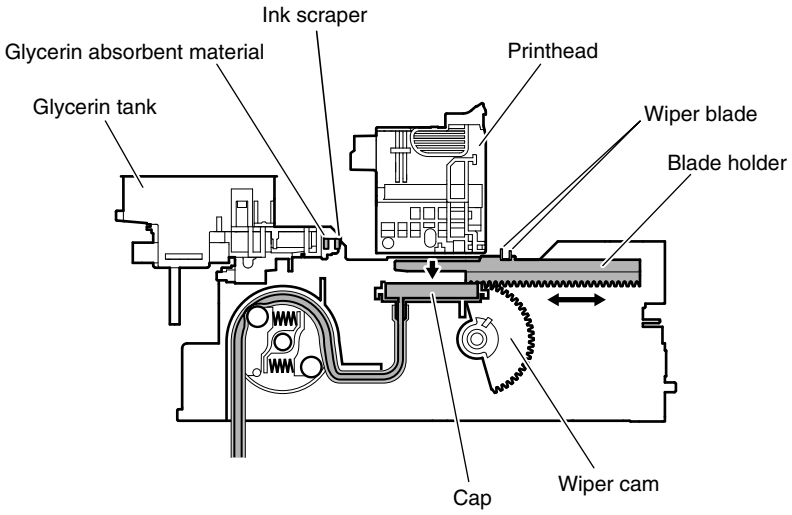
a) Cap unit
The cap unit is used to cap the print head nozzles during capping and cleaning. The portion that touches the face plate is made from rubber. Two left caps are arranged for the printhead (six arrays of nozzles) installed in the carriage.
During cleaning, the caps used for both suction and capping are used to suck ink from the printhead using the suction pump.
Each of the right caps is used to cap the six arrays of nozzles.
This cap is used only for capping.
During capping, the caps are raised by the cap cams operated by the purge motor to cover the arrays when the carriage has moved to the home position, thus protecting the nozzles.



F-2-14

b) Wiper unit

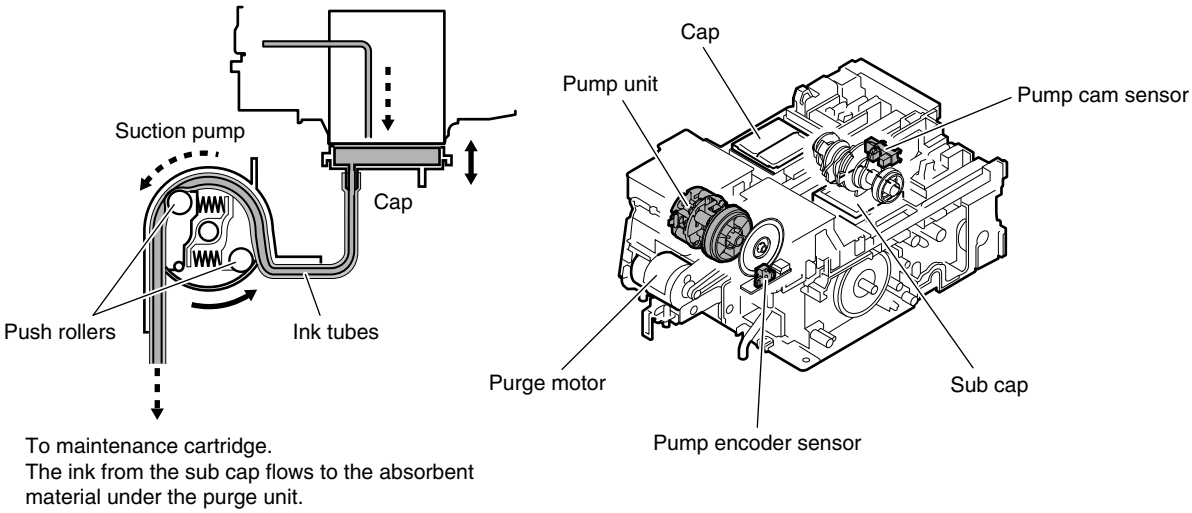
The wiper unit operated by the purge motor wipes the print head face.
The printer is provided with a pair of wiper blades for better wiping performance.
The wiping operation is performed by a "slide wipe" method by which the purge motor rotates (in the normal direction) to slide the wiper blade via the wiper cam. It is performed by a constant-speed movement toward the front of the printer as viewed from the printer front.
The wiper blade, which is positioned at right angles to the print head, wipes the entire printhead face, and then the narrow blade is used to wipe the nozzle arrays.
After wiping, the wipe blades are cleaned before they are set at the wiping position so that the maximum wiping performance is obtained.
During the wiper blade cleaning, the ink removed form the head is rubbed off by the in scraper.
Absorbent material soaked with glycerin is pressed against the wiper blades to enhance the wiping performance. The amount of glycerin used (tank capacity: 50 ml) is managed by counting the number of times the wiper blade is pressed against the absorbent material. When this count reaches to the specified values, either a replacement warning (continued print available) or replacement required indication (service call error) is issued.



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c) Pump unit

This printer uses tube pumps (suction pumps) that press on the ink tubes using rollers to produce negative pressure, thus sucking ink.
Two rollers are used to press on a single tube one after another to control the amount of ink sucked.
The roller rotation timing is detected by the pump cam sensor, and the amount of rotation is controlled by the driving of the purge motor.



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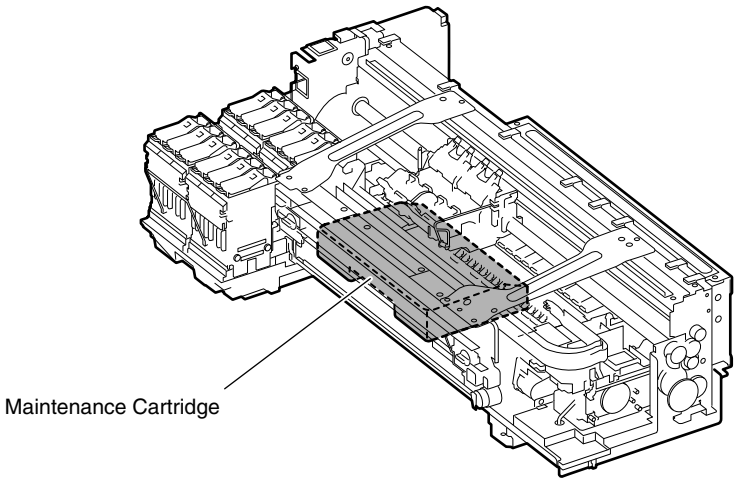
2.3.2.6 Maintenance Cartridge

2.3.2.6.1 Maintenance Cartridge

a) Maintenance cartridge
The maintenance cartridge can store waste ink.

b) Detection of waste ink in maintenance cartridge
The quantity of waste ink in the maintenance cartridge is measured by counting dots.
When the quantity of waste ink collected in the maintenance cartridge reaches 80% of the cartridge capacity, a warning message "MTCart Full Soon" appears to indicate that the maintenance cartridge is nearly full.
If printing is continued, an error message "Maint Cartridge Replace Cart" appears to indicate that the maintenance cartridge is full.
When this error occurs, the printer judges the maintenance cartridge as being full of waste ink and stops printing immediately. The printer stops even if printing is in progress, and it will not operate until the maintenance cartridge is replaced with a new one.

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.

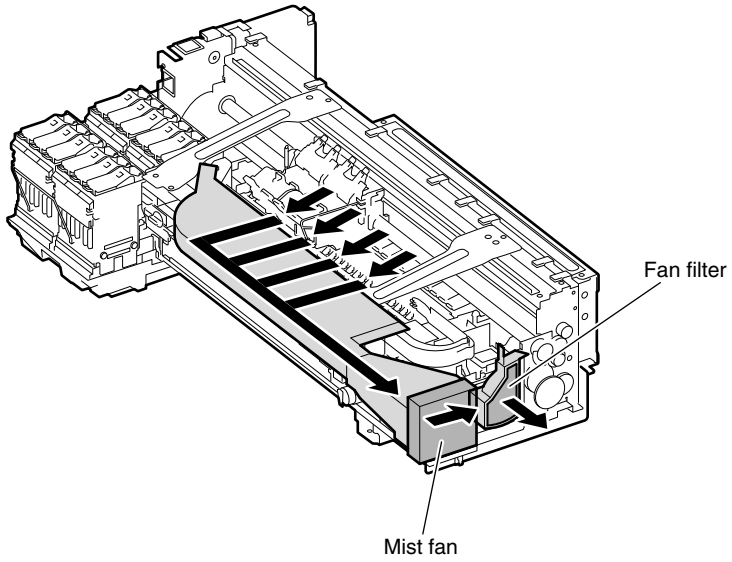


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2.3.2.7 Air Flow

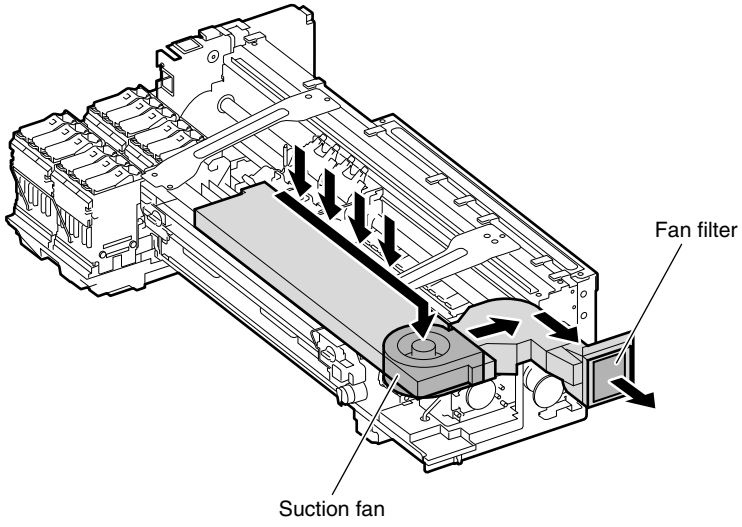
2.3.2.7.1 Air flow

This printer has two fans, a mist fan used to collect mist and a suction fan used to suck media onto the platen.
Ink mist that floats inside the printer and ink splashes from the media are collected in the filter through the front duct and the air flow path inside the printer by the driving of the mist fan, thus preventing mist from discharged outside the printer.



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During operation of the suction fan, suspended substances are collected in the filter through the airflow path inside the printer, preventing them from being emitted to outside of the printer.



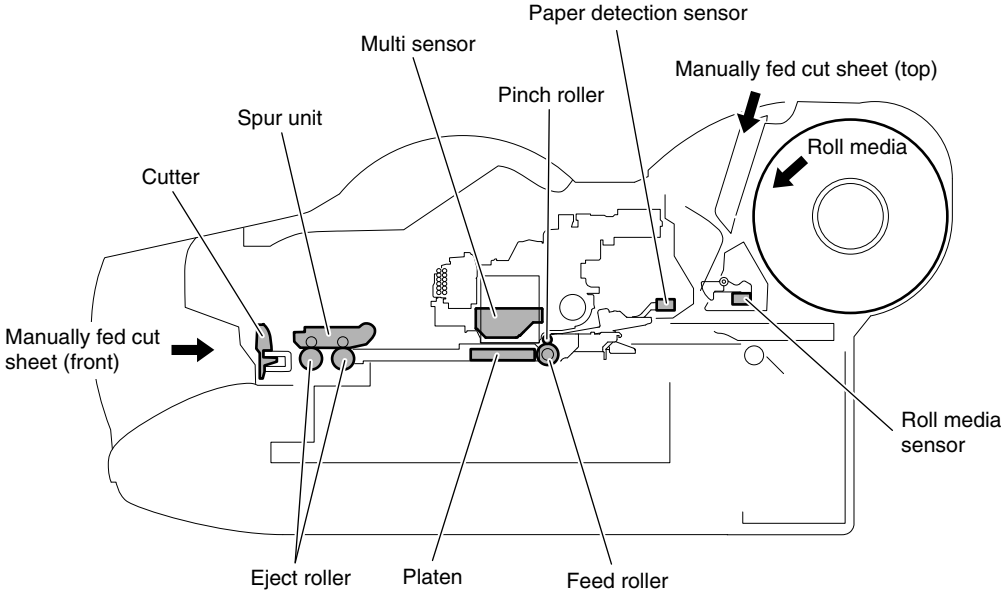
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2.3.3 Paper Path

2.3.3.1 Outline

2.3.3.1.1 Overview of Paper Path

The paper path consist of roll feed unit, feed roller unit, pinch roller drive unit that applies/releases pressure to/from the pinch roller, spur drive unit that moves the spur up/down, and various sensors that detect the media feed status, allowing media to be fed in three ways, fed, and ejected.

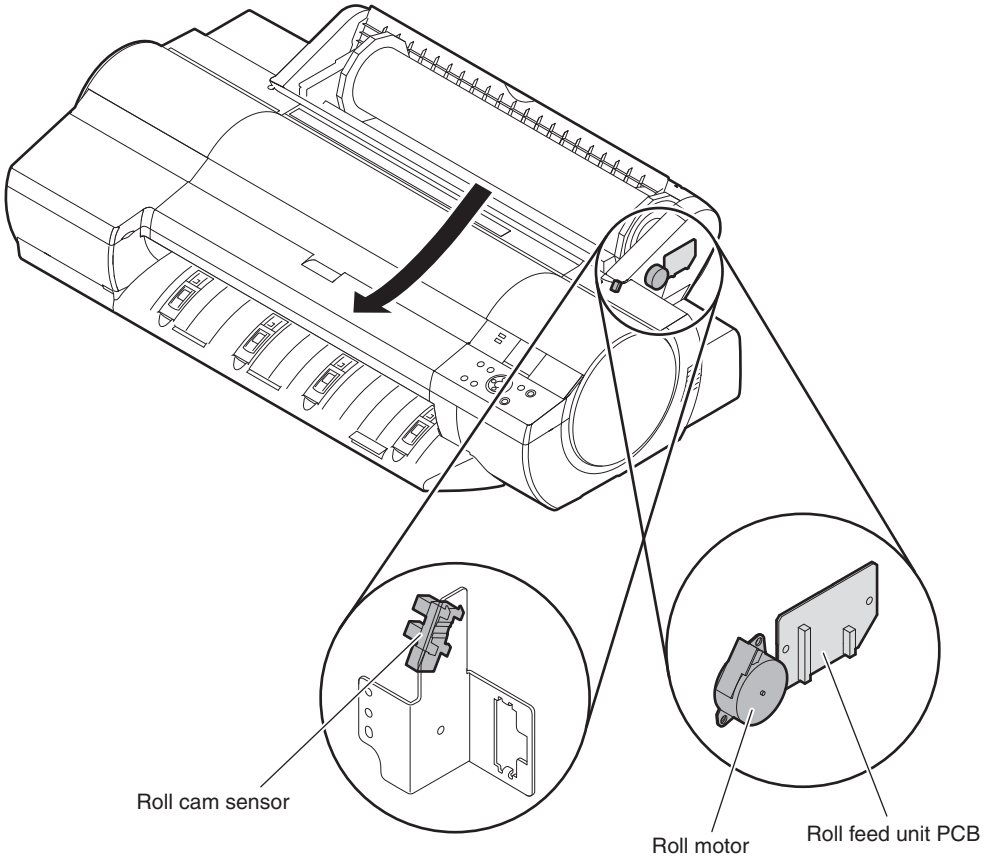


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2.3.3.2 Paper Path

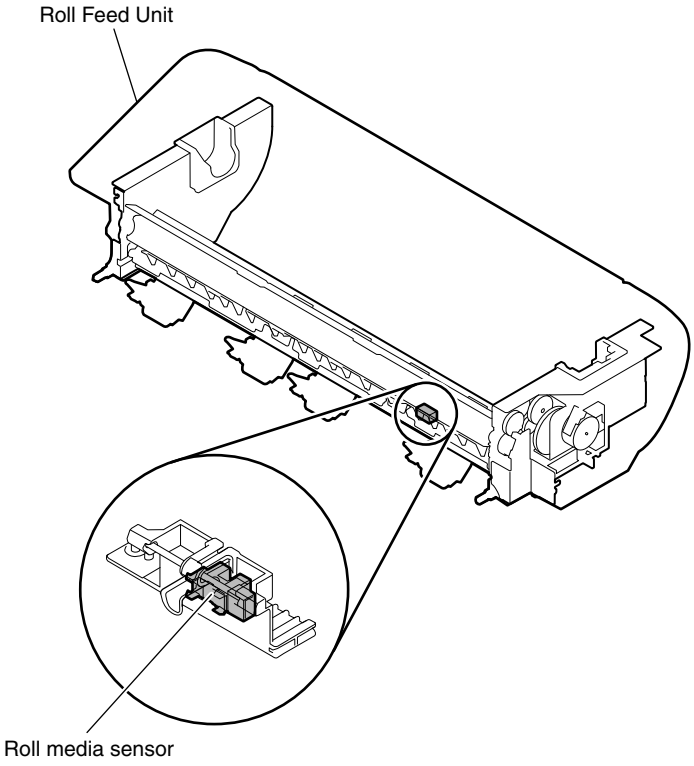
2.3.3.2.1 Structure of Roll Media Pick-up Unit

When the roll media sensor detects media loaded with the printer powered, the roll media pick-up roller touches the media to rotate the roll media feed roller, thus feeding the roll media onto the platen. Roll media feeding is controlled by the roll motor and roll feed unit PCB.
The roll media pick-up roller is moved up and down by the cam, and the cam movement is detected by the roll media cam sensor.
When the printer is turned on with roll media loaded, the roll media pick-up operation starts automatically.



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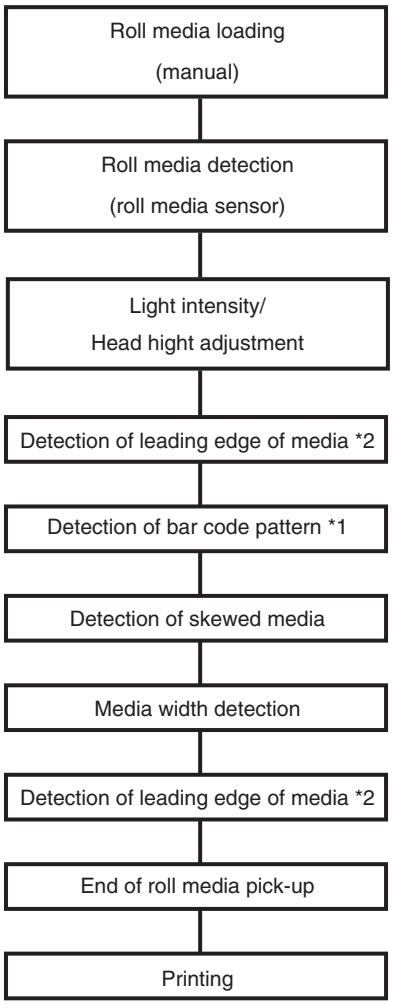
If the roll media sensor detects that there is no roll during roll media pick-up operation, the roll media is ejected.



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2.3.3.2.2 Roll Media Pick-up Sequence

When the roll media detects the loaded roll media, roll media pick-up operation starts.
When media is fed from the auto roll feed unit by the specified length, the multi sensor performs the adjustments and detection shown below, thus completing the roll media pick-up operation.
Roll media is fed by controlling the roll motor and feed motor of the auto roll feed unit.



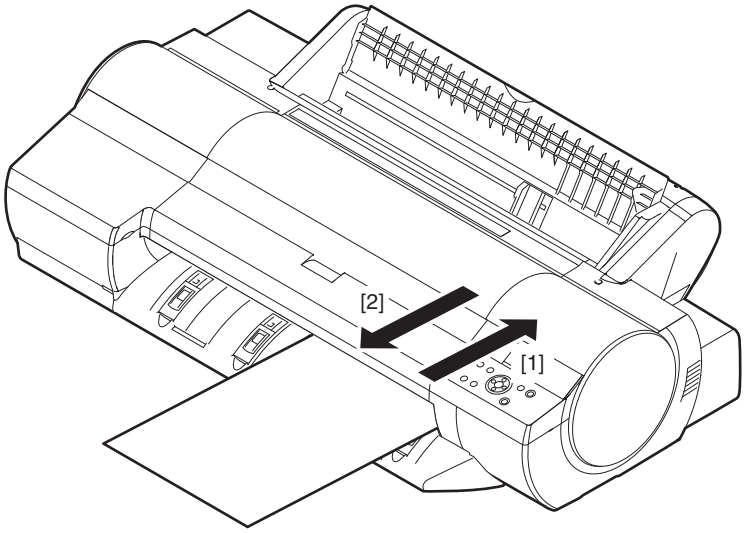
*1
- This operation is performed only when "ON" is selected for "Detect Remaining Roll Media".
- If the roll media does not have a bar code pattern on it, enter the length of the roll media using the menu on the operation panel.

*2
- The purpose of the first leading edge detection is to detect presence of media.
- The purpose of the second leading edge detection is to detect the printing start position.

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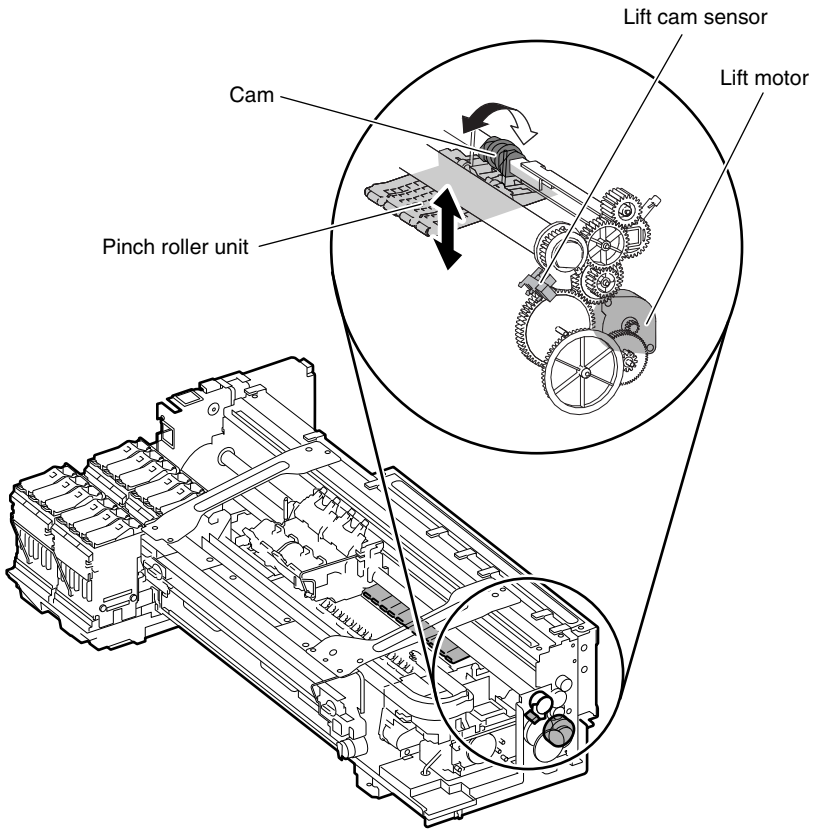
2.3.3.2.3 Structure of Manual Feed Unit

a) Manual feed (from front)
The cut sheet fed from the front (ejection unit) of the printer is fed to the rear of the printer [1], and then fed onto to platen [2] for printing.



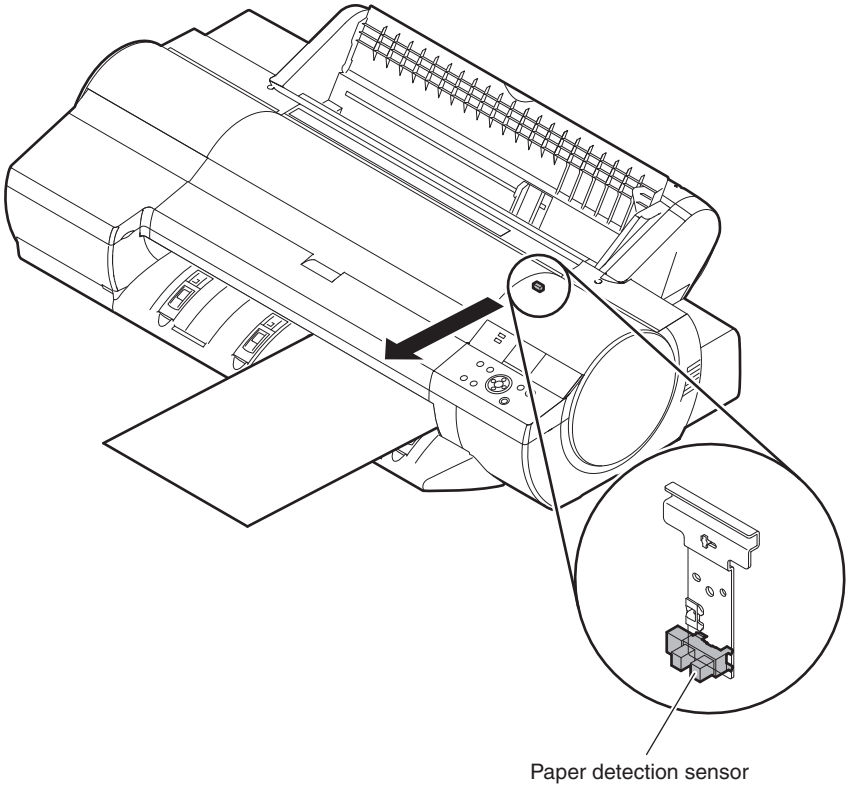
F-2-24

This method of feeding paper can be used only when an accept media type is selected from the Manual Feed menu in the use mode. If you select the Manual Feed menu, the pinch roller unit moves up to allow you to feed paper from the front of the printer according to the message shown on the operation panel.
The pinch roller unit is moved up and down by the lift motor. The cam which is also operated by the lift motor via gears moves up and down the pinch roller.



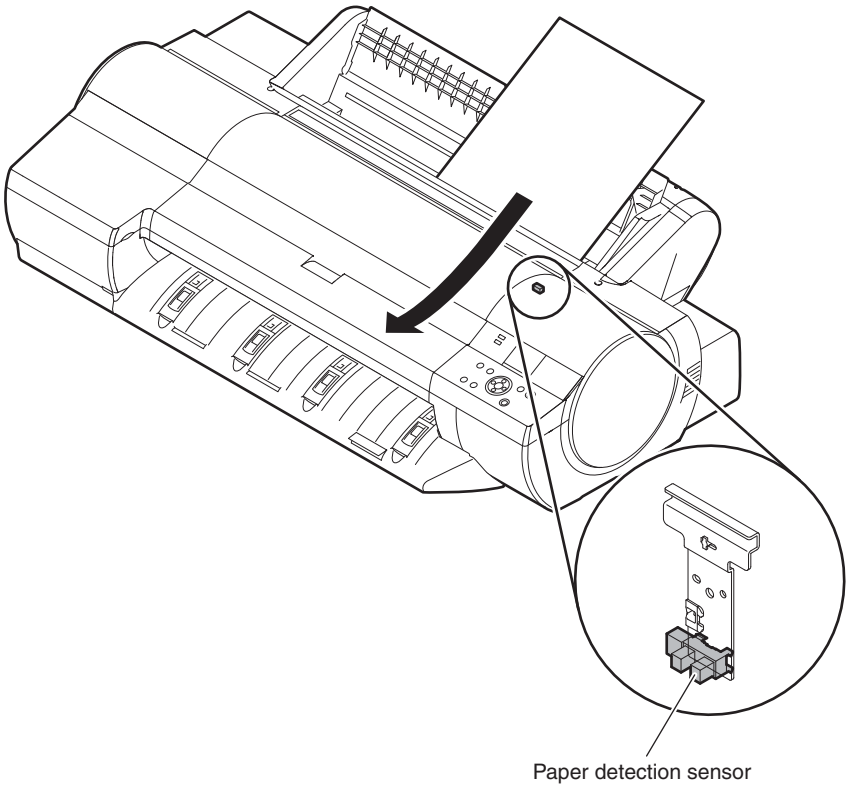
F-2-25

The pick-up timing of the paper fed to the rear of the printer is controlled by the paper detection sensor.



F-2-26

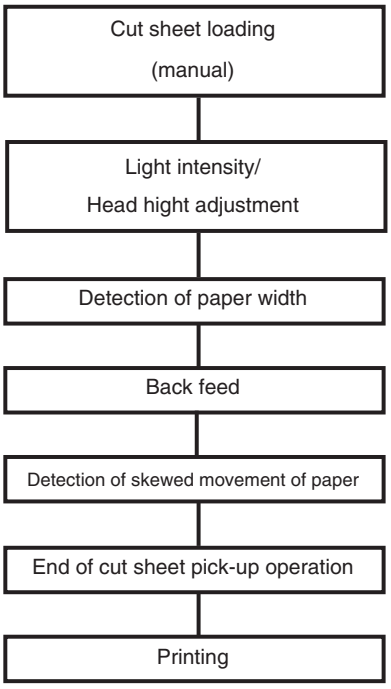
b) Manual feed (from rear)
The paper loaded in the paper tray provided at the rear of the printer is fed onto the platen for printing.
This method of feeding paper can be used only when an acceptable media type is selected from the Manual Feed menu in the user mode. The pick-up timing of the paper loaded in the rear paper tray according to the message shown on the operation panel is controlled by the paper detection sensor.



F-2-27

2.3.3.2.4 Manual Feed (from Front) Sequence

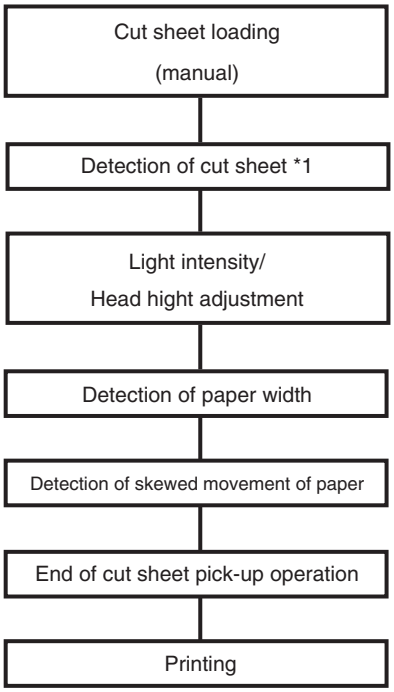
This sequence can be performed according to the messages shown on the operation panel only when a specific type of media is selected after selecting the manual feed mode from the menu shown on the operation panel. When a cut sheet is loaded according to the message shown on the operation panel, the printer performs various adjustments and detection using the multi sensor and then feeds the cut sheet to the rear of the printer. At this time, the multi sensor detects skewed feeding and leading edge of the cut sheet, thus completing the paper pick-up operation.
During printing, the cut sheet is fed by controlling the rotation of the feed roller according to the selected print mode.



F-2-28

2.3.3.2.5 Manual Feed (from Rear) Sequence

This sequence can be performed according to the messages shown on the operation panel only when a specific type of media is selected after selecting the manual feed mode from the menu shown on the operation panel. When the cut sheet loaded at the back of the printer is detected by the sensor, the printer starts feeding the cut sheet. After this, the printer performs various adjustments and detection using the multi sensor, thus completing the paper pick-up operation.
During printing, the cut sheet is fed by controlling the rotation of the feed roller according to the selected print mode.

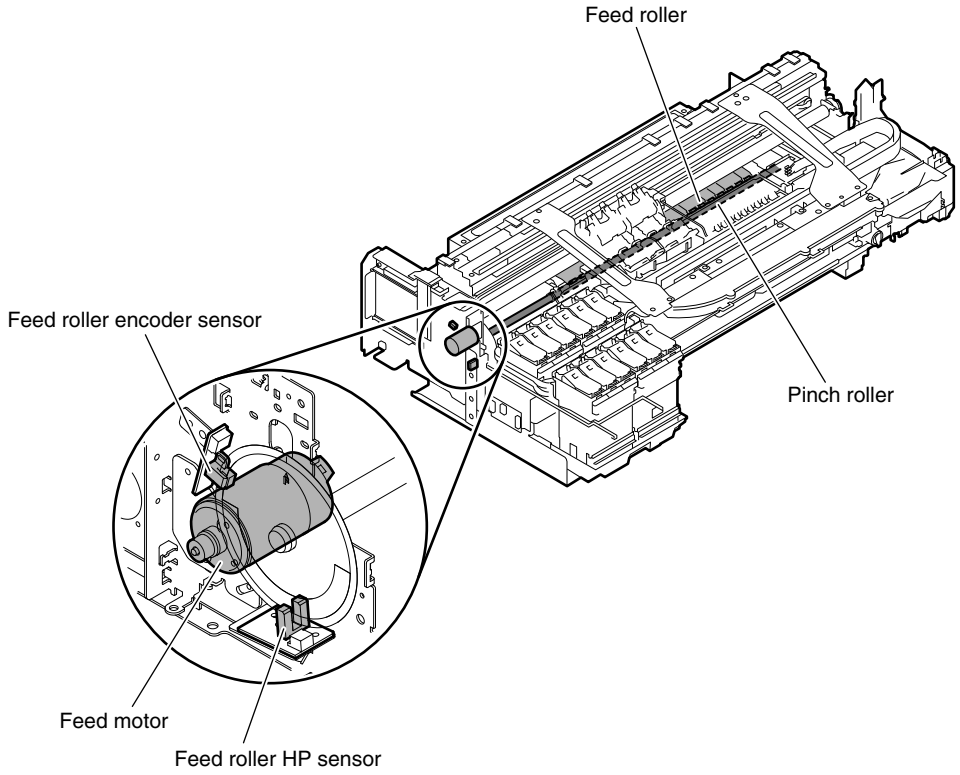


*1
The auto roll feed unit starts feeding the cut sheet when the roll media detection sensor detects the media. When the auto roll feed unit is not mounted, the printer starts feeding the media when the paper detection sensor detects the media.

F-2-29

2.3.3.2.6 Structure of Feed Roller Unit

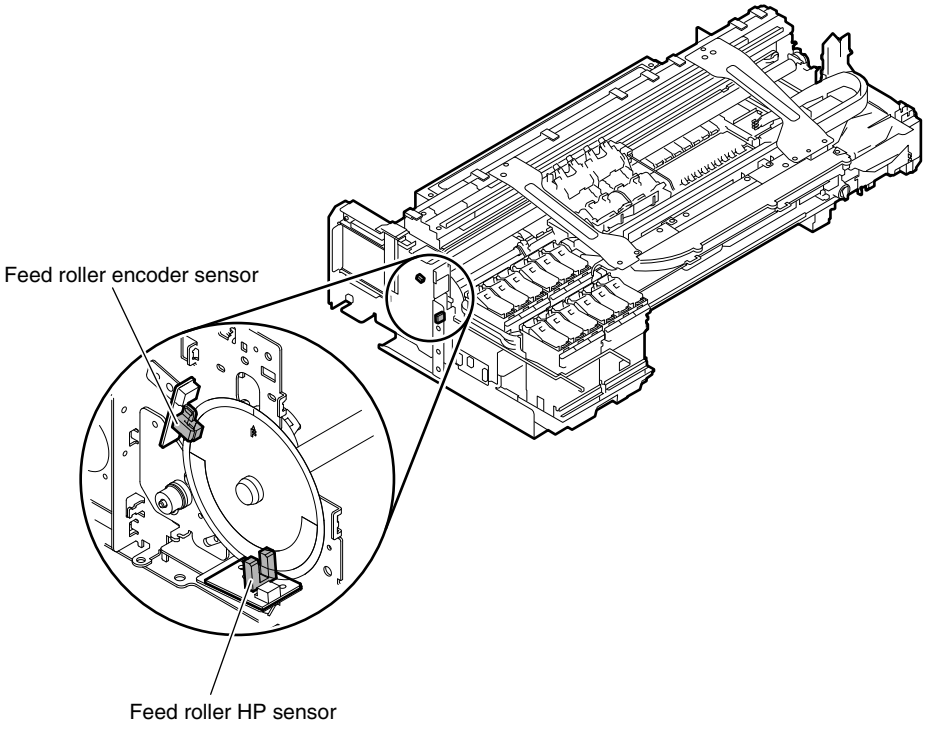
The feed roller unit consists of media feeding mechanisms such as feed rollers driven by the feed motor and the pinch roller unit operating in conjunction with the feed rollers.
While being held flat on the platen, media is fed horizontally under the printhead.
The feed roller unit has a sensor that detects the media feed status and a sensor that detects the status of the mechanisms that constitute the paper path.



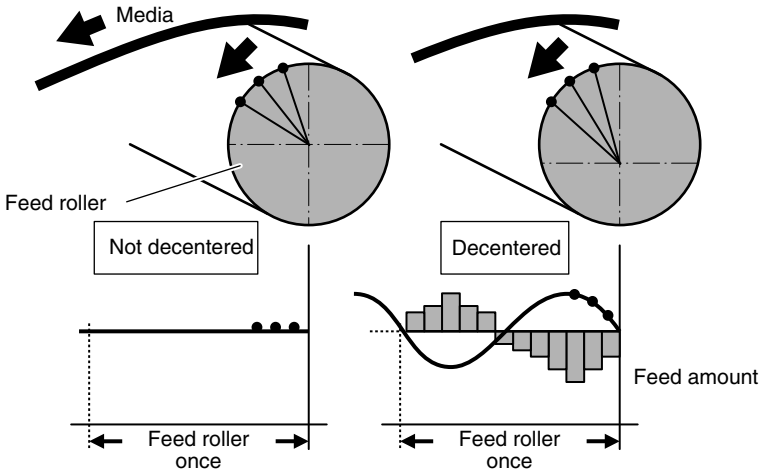
F-2-30

2.3.3.2.7 Feed Roller Eccentricity Detection Function

Media are fed by the feed roller at regular intervals.
Irregular feeding of media due to the feed roller eccentricity problem, irregular printing can occur in the media feeding direction periodically.
To prevent this, the feed roller encoder sensor and feed roller HP sensor detect the presence and amount of feed roller eccentricity every rotation of the feed roller. This function is called the feed roller eccentricity detection function. If eccentricity is detected, the media feed mount is compensated for according to the amount of eccentricity.



F-2-31



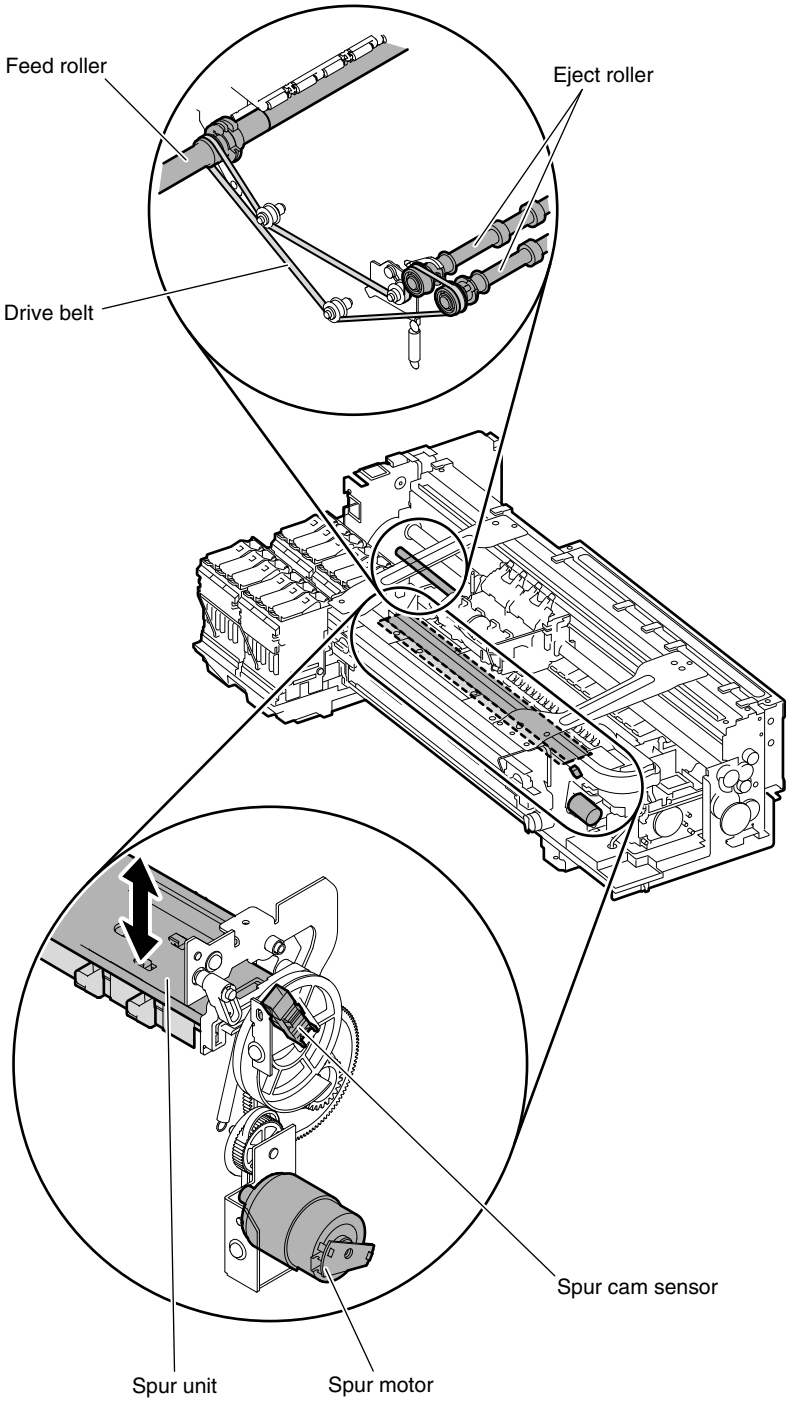
F-2-32

2.3.3.2.8 Structure of Ejection Spur

a) Outline
The ejection spur unit consists of a spur, a spur motor that moves the spur, a spur cam sensor, and an eject roller.

b) Spur lift mechanism
The spur must be moved up and down according to the selected media type and feed mode. The spur motor and spur cam sensor are used to control the spur stop position.
- In case of manual feed from front
When the above mode is selected in the user mode, the spur moves to the upper limit position and then stops.
- Stop position depending on media type
To prevent the spur from damaging the media, the spur stops at a proper position according to the media type selected in the user mode.

c) Eject roller drive
The drive power of the eject roller is transmitted from the feed roller via the drive belt.

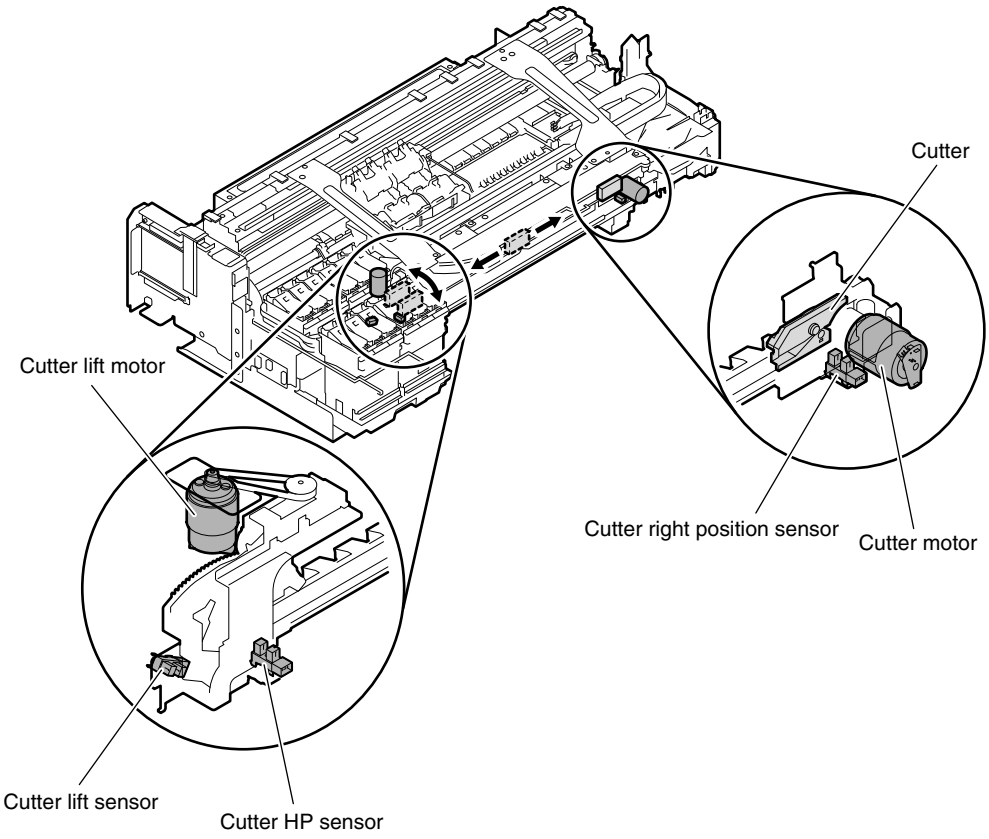


F-2-33

2.3.3.3 Cutter Unit

2.3.3.3.1 Structure of Cutter Unit

If roll media are used, the cutter unit attached on the front of the spur unit cuts the leading end of the media on loading and cuts the media on ejection. Whether to perform cutting or not is determined by the choice of the main menu and the specifications of the printer driver.
The cutter unit is moved up and down by the cutter lift motor.
When cut sheets are used, the spur is raised at the trailing edge of the cut sheet due to its stiffness and therefore the force to feed paper becomes weak, resulting in printing of defective images. To prevent this, the cutter unit is evacuated (moved up) to the specified position.
The cutter in the cutter unit stands by at the cutter home position, except when it cuts roll media. Power from the cutter drive motor is imparted to the circular belt to move the cutter from left to right for cutting roll media.



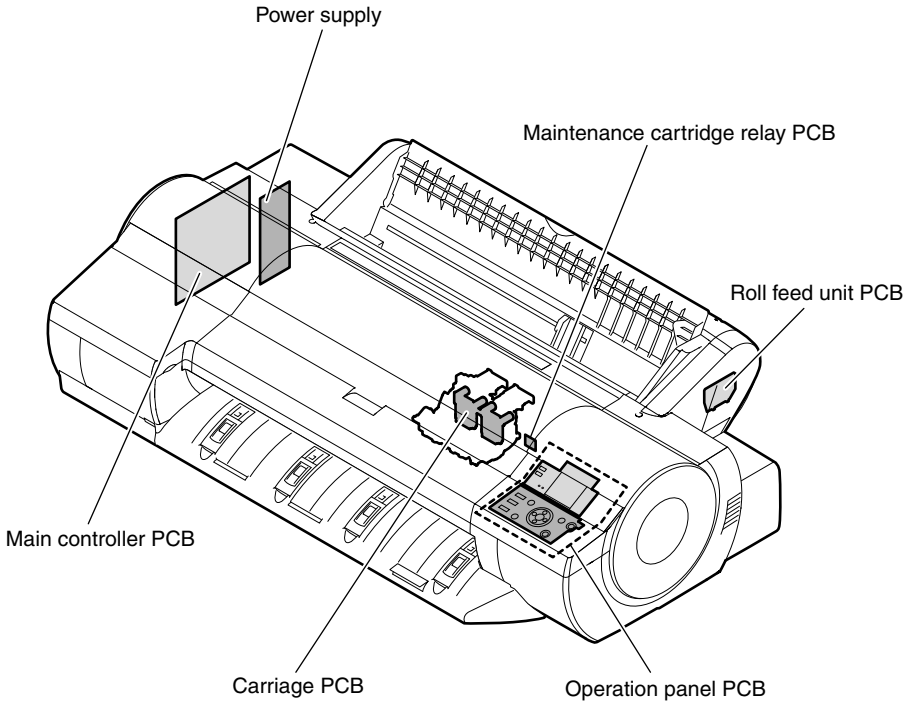
F-2-34

2.4 Printer Electrical System

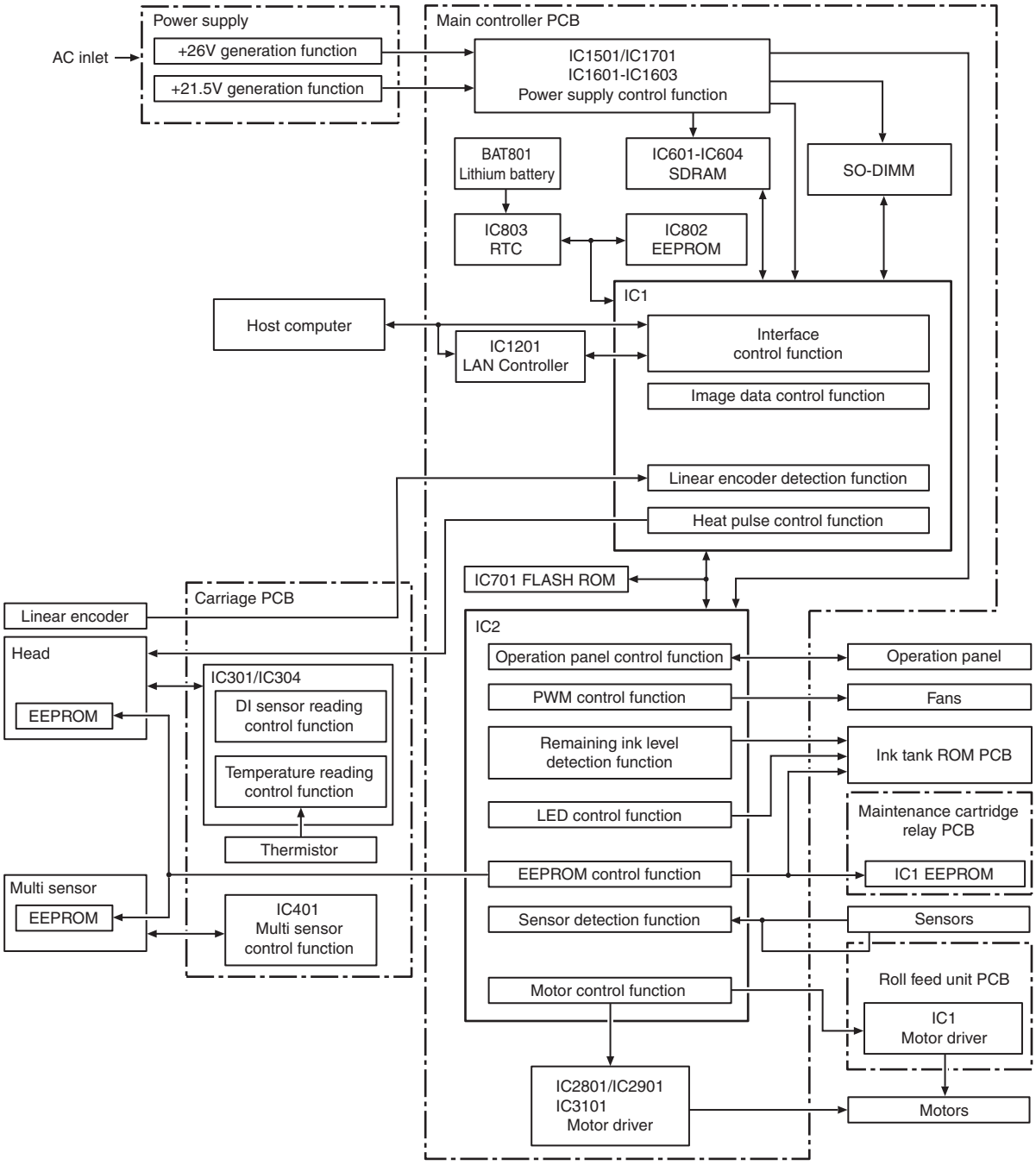
2.4.1 Outline

2.4.1.1 Overview

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



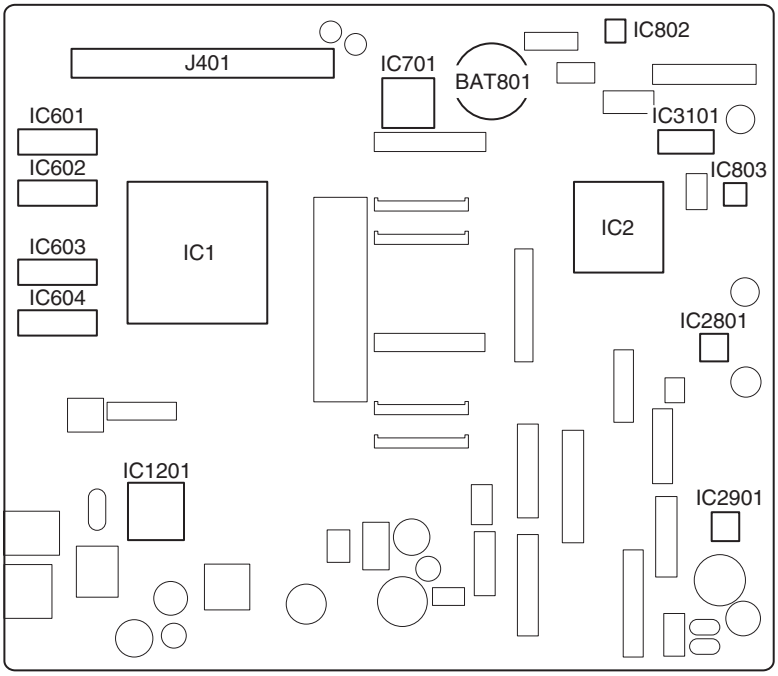
F-2-35


Power supply
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
IC1201
LAN Controller
Interface
control function
Image data control function
Linear encoder detection function
Heat pulse control function
IC701 FLASH ROM
Carriage PCB
Linear encoder
Head
EEPROM
IC301/IC304
DI sensor reading
control function
Temperature reading
control function
Thermistor
IC2
Operation panel control function
Operation panel
PWM control function
Fans
Remaining ink level
detection function
Ink tank ROM PCB
LED control function
Maintenance cartridge
relay PCB
EEPROM control function
IC1 EEPROM
Multi sensor
EEPROM
IC401
Multi sensor
control function
Sensor detection function
Sensors
Roll feed unit PCB
Motor control function
IC1
Motor driver
IC2801/IC2901
IC3101
Motor driver
Motors

F-2-36

2.4.2 Main Controller

2.4.2.1 Main controller PCB components



F-2-37

a) ASIC (IC1/IC2)
The ASIC (IC1/IC2) with a 32/16-bit internal bus are 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 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 (26 V and 21.5 V) 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, spur motor, purge motor, lift motor, cutter lift motor and cutter motor based on the input signals from sensors.

b) Driver IC (IC3101)
This IC generates a carriage motor control signal based on the control signal from the ASIC.

c) Driver IC (IC2801)
This IC generates feed motor and valve motor and cutter lift motor control signals based on the control signal from the ASIC.

d) Driver IC (IC2901)
This IC generates purge motor, cutter motor and spur motor control signals based on the control signal from the ASIC.

e) DIMM (IC601,IC602,IC603,IC604)
The DIMMs comprising a 256-MB SDR-SDRAM are 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.

f) FLASH ROM (IC701)
The 256-MB flash ROMs (IC701) are connected to the 8-bit data bus to store the printer control program.

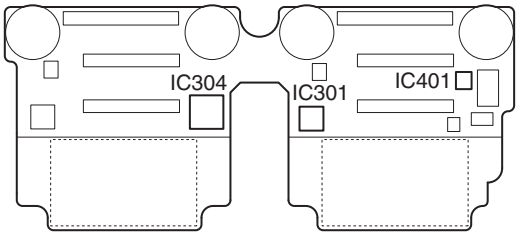
g) EEPROM (IC802)
The 256-KB EEPROM stores various setting values, adjustment values, log data, counter values related to the user/servicing.

h) 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.

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 PCB components



F-2-38

a) Latch ICs (IC301 and IC304)

DI sensor reading control function
This function obtains the DI sensor value in the printhead and head rank for each color and sends it to the main controller PCB based on the control signals from the main controller.

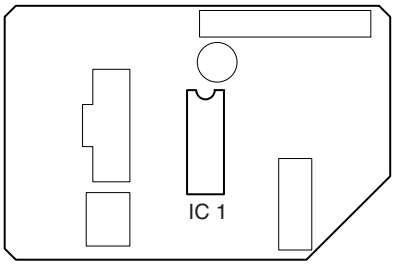
Environmental temperature reading control
This function sends the environmental temperature detected by the thermistor on the board based t the main controller PCB based on the control signals from the main controller PCB.

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) Multi sensor control IC (IC401)
These ICs are used to generate the multi sensor LED control signal and adjust the gain.

2.4.4 Motor Driver

2.4.4.1 Roll feed unit PCB components



F-2-39

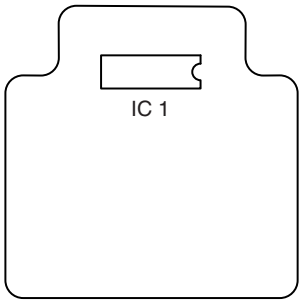
a) Driver IC (IC1)

Roll motor drive function
This function controls the roll motor based on the control signals from the main controller.

Sensor relay function
This function relays the input signals from the roll cam sensor and roll media sensor to the main controller PCB.

2.4.5 Maintenance Cartridge Relay PCB

2.4.5.1 Maintenance cartridge relay PCB components



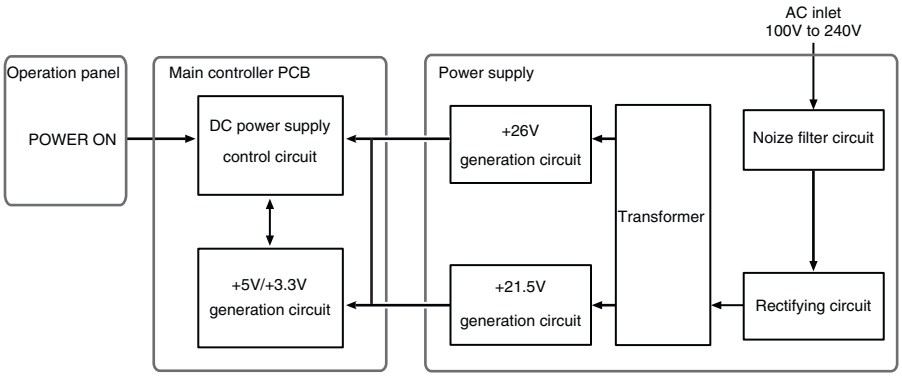
F-2-40

a) EEPROM (IC1)

The 2KB EEPROM stores all information written to the EEPROM on the main controller PCB.

2.4.6 Power Supply

2.4.6.1 Power supply block diagram

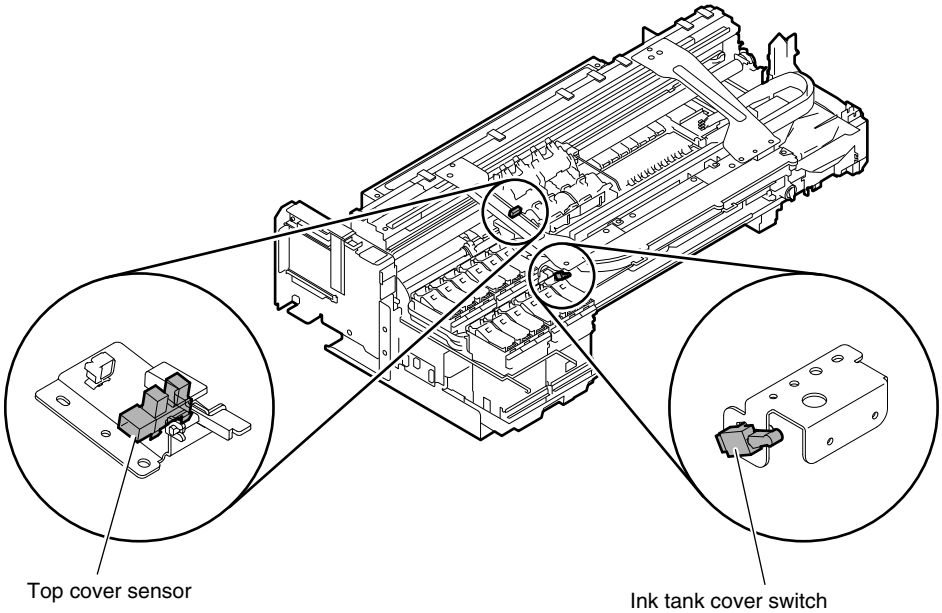


F-2-41

The power supply converts AC voltages ranging from 100 V to 240 V from the AC inlet to DC voltages for driving the ICs, motor, and others.
The voltage generator circuits include the +26 V generation circuit for driving motors, fans, and sensors and a +21.5 V generator circuit for driving sensors, heads, logic circuits, and others.
When the power is turned off, +26 V and +21.5 V are reduced to about 12 V and 9 V respectively (power save mode).
Power ON/OFF operation is controlled by the main controller PCB.

2.5 Detection Functions with Sensors

2.5.1 Covers

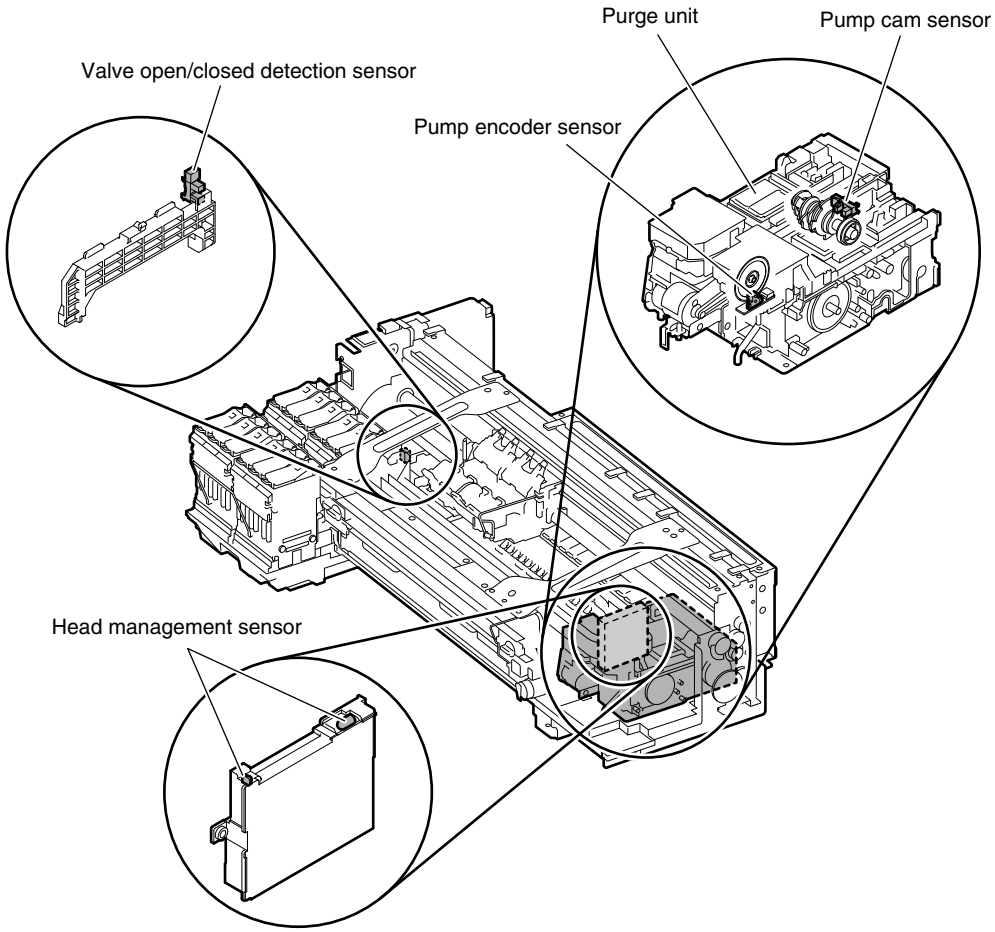


F-2-42

Top cover sensor
The photo-interrupter-type top cover sensors detect opening and closing of the top cover.
When the top cover is closed, the sensor light is shielded by the sensor arm, thus notifying the sensor of closing the cover.

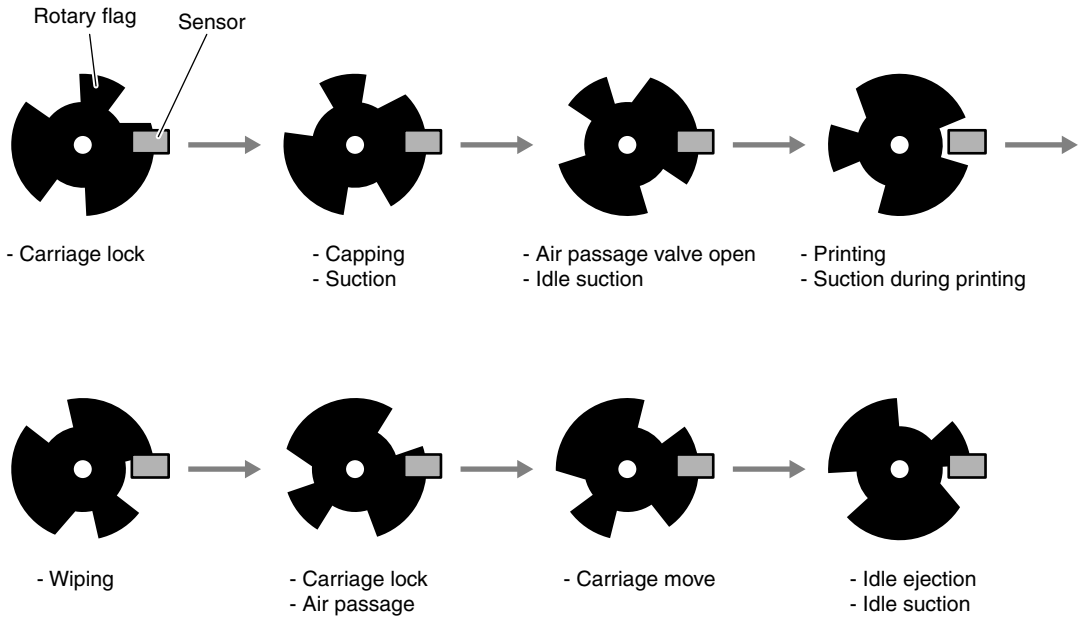
Ink tank cover switch
The micro-switch-type ink tank cover switch detects opening and closing of the ink tank cover.
When the ink tank cover is closed, the protrusion on the ink tank cover presses the switch, thus detecting closing of the ink tank cover.

2.5.2 Ink passage system



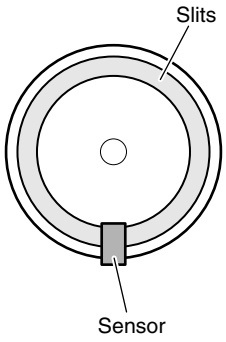
F-2-43

Pump cam sensor
The photo-interrupter-type pump cam sensor detects that the sensor light is shielded or unshielded by the rotary cam. The sensor detects the purge unit capping and wiping states with the combination of the state detected by the pump cam and the state of pump motor rotation control performed by the pump encoder.



F-2-44

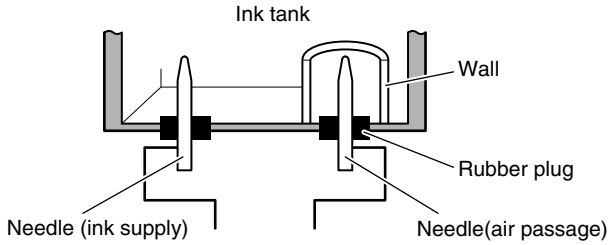
Pump encoder sensor
The pump encoder is a photo-interruptive type sensor. It reads the slits on the pump motor's encoder film to control the amount of pump motor rotation.



F-2-45

Valve open/closed detection sensor
The photo-interrupter-type valve open/closed detection sensor detects the valve cam state.
When the link that operates in conjunction with the valve cam shields light, this sensor detects that the ink supply valve has been opened.

Ink detection sensor
Presence of absence of ink in the ink tank is detected according to whether the two hollow needles are electrically connected.
When the ink level in the ink tank lowers below the wall around the hollow needle at the air passage, this hollow needle is electrically disconnected form the hollow needle located on the ink supply side, thus detecting that the printer has run out of ink.

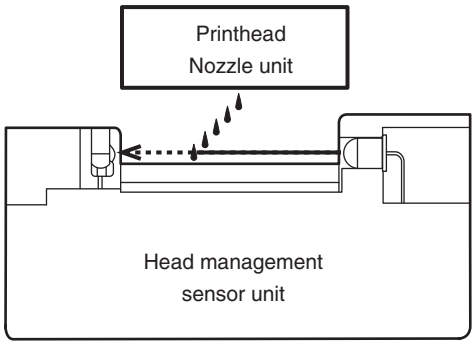


F-2-46

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.

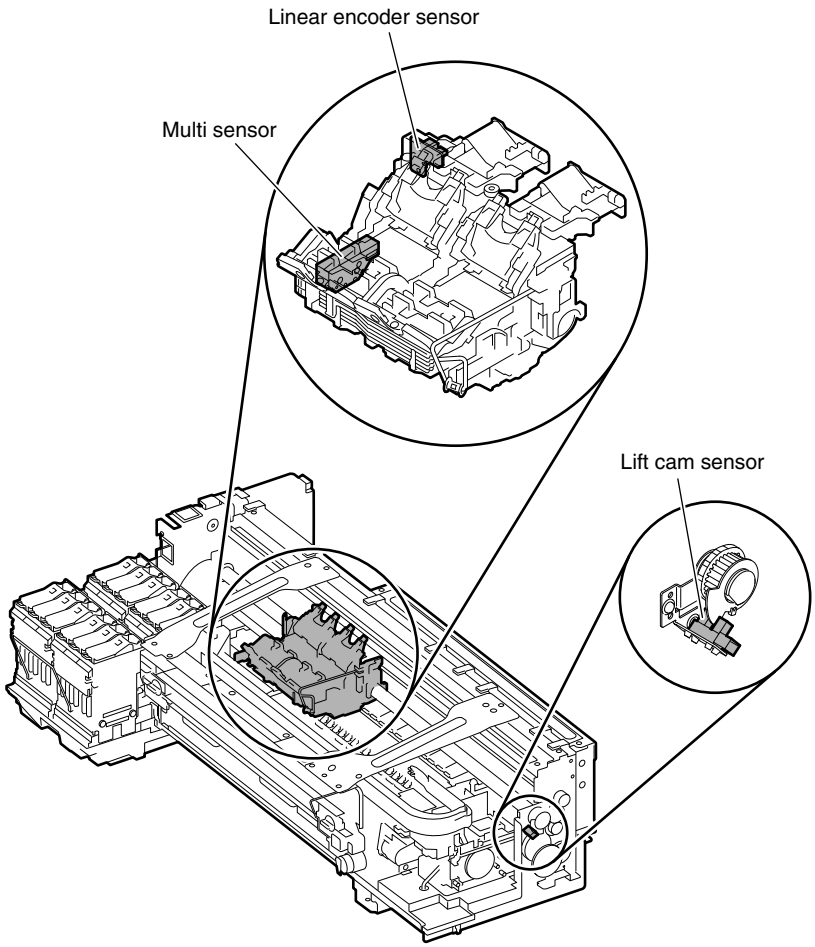
Non-discharging nozzle detection is carried out at the following timings:
- After the execution of Cleaning 1, Cleaning 2, Cleaning 3, Cleaning 6 or Cleaning 10
- After the number of copies that has been set by the user menu choice Nozzle Check Frequency have been printed

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-2-47

2.5.3 Carriage system



F-2-48

Linear encoder sensor
When the carriage moves, the linear encoder sensor located at the rear of the carriage reads the slits on the linear encoder to detect the carriage position.

Lift cam sensor
This is a photo-interrupter-type sensor. The lift motor is driven by a predetermined number of pulses received after blocking of the sensor light by the flag, thus controlling the heights of the head and platen.

Environmental temperature sensor
The environmental temperature sensor installed on the carriage PCB detects the temperature around the carriage.
The resistance of the thermistor that changes with the temperature inside the printer is reported to the main controller via the carriage PCB.
The environmental temperature is used to calibrate the head sensor and to detect abnormal head temperatures.

Head temperature sensor
The diode-type head temperature sensors installed at the top and bottom of the printhead nozzle unit are used to detect the head temperature.
The diode voltage that changes with the nozzle unit temperature is reported to the main controller via the carriage PCB.
The detected head temperature is used to control the head operation and to detect abnormal head temperatures.

Printhead contact detection
The printhead contact status is detected by testing the electrical conductivity.
It is detected according to the voltage changes at the two terminals of the contact faces, power supply terminals, and GND terminal.

Multi sensor

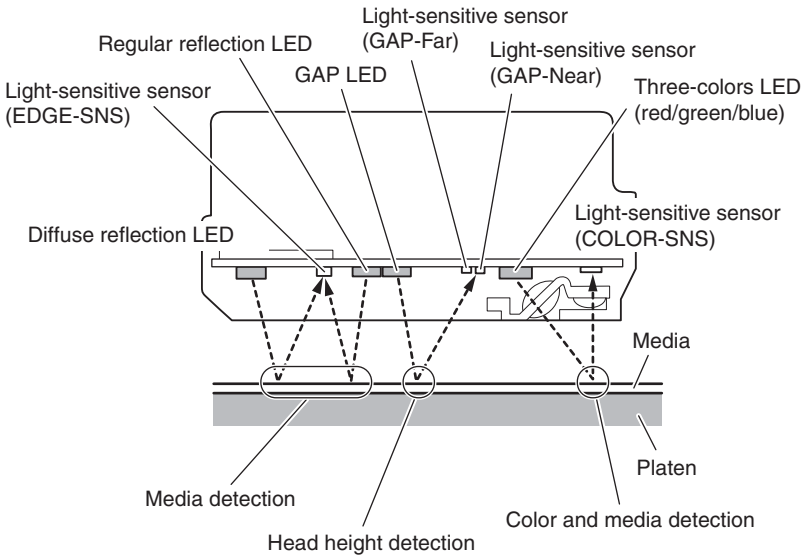
The photo-reflection-type multi sensor is composed of four LEDs and four light-sensitive sensors. It detects the leading edge, skewing, and width of media and is used for adjustment of the registration, head height, and color calibration.

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 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).

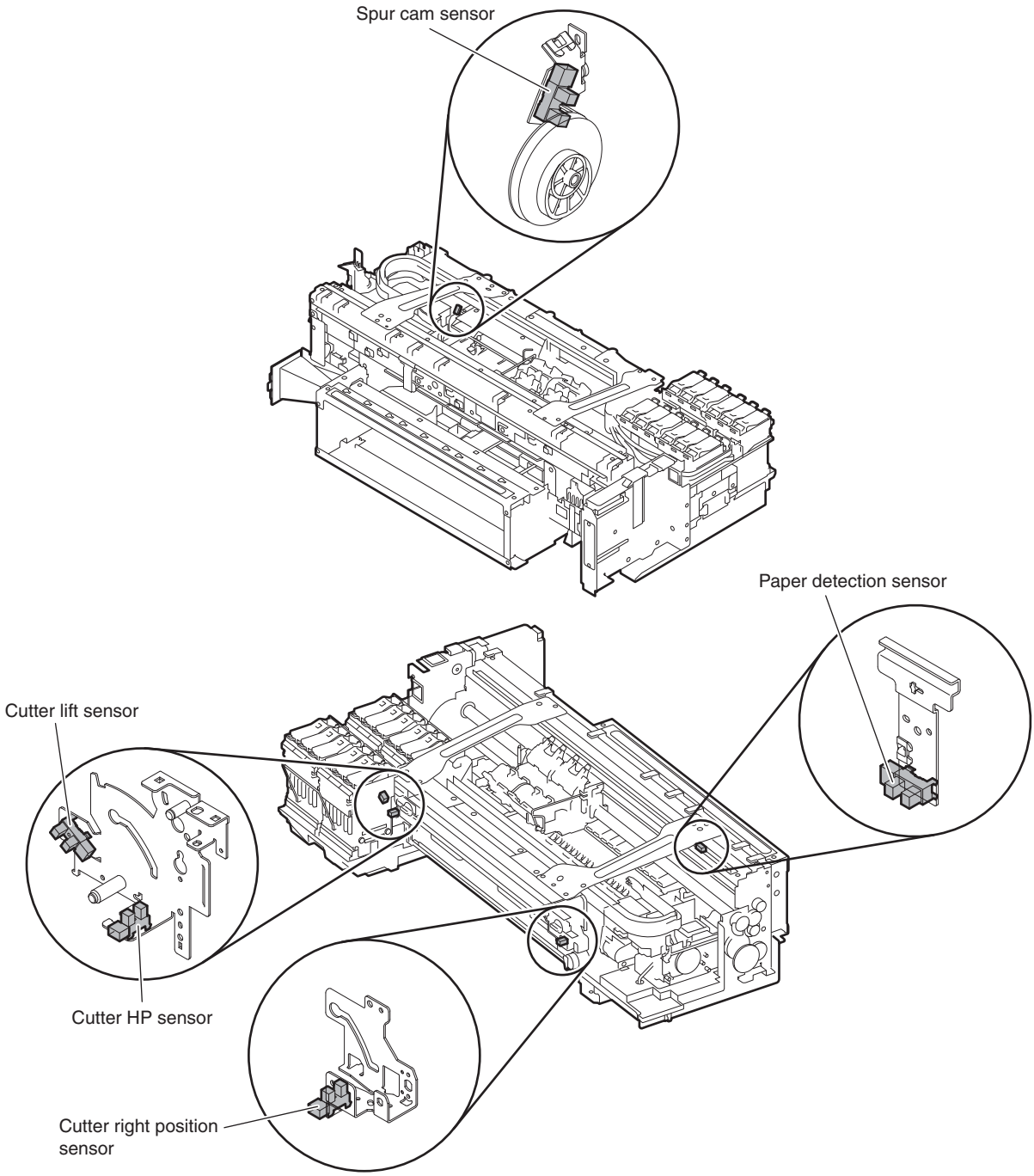
Ink mist adhering to the sensor could deliver incorrect measurement readings when color calibration is executed. If the ink dot count exceeds a tolerance, the service error (E194-4034) would occur. If it does, execute service mode: SERVICE MODE > ADJUST > GAP CALIB. after the multi sensor has been replaced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



F-2-49

- 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-2-50

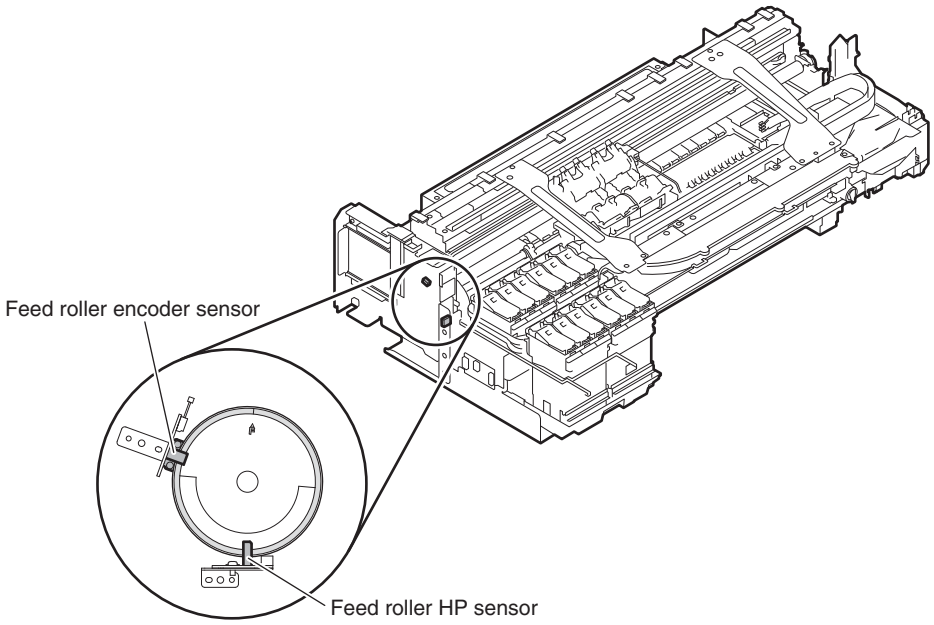
Paper detection sensor
This is a photo-interrupter-type sensor. When paper is supplied from the paper tray, or roll feed unit, the sensor light is blocked by the sensor arm, thus detecting paper.

Spur cam sensor
This is a photo-interrupter-type sensor.
When the sensor light is shielded by the rotation of the spur motor, the printer detects that the spur unit is at the upper-limit position.
When the sensor light is unshielded by the rotation of the spur motor, the printer detects that the spur unit is at the bottom position.
The spur height is controlled by driving the spur motor with a predetermined number of pulses.

Cutter lift sensor
This is a photo-interrupter-type sensor. When the cutter unit ascends, the sensor unit blocks the sensor light, thus detecting that the cutter unit is at the upper-limit position (escaped).

Cutter HP sensor
This is a photo-interrupter-type sensor. This sensor detects that the cutter is at the home position (left end).

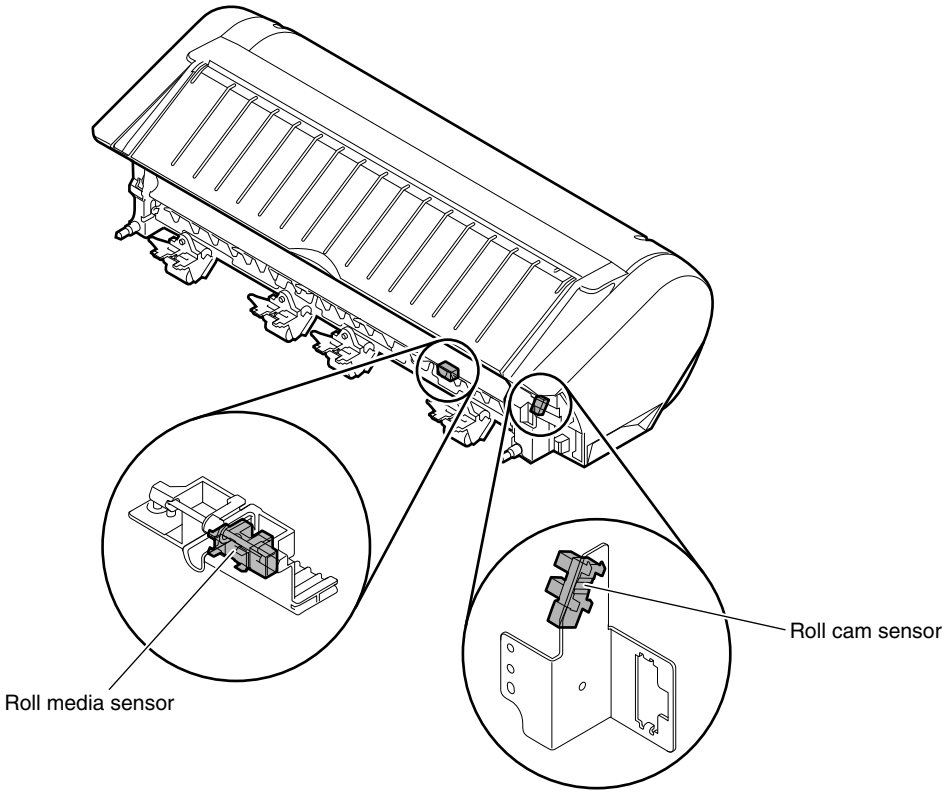
Cutter right position sensor
This is a photo-interrupter-type sensor. This sensor detects that the cutter is at the right end.



F-2-51

Feed roller HP sensor
The feed roller HP sensor detects the change from the white portion (unshielded sensor light) to black portion (shielded sensor light) of the encoder film on the feed roller, thus setting the home position for feed roller eccentricity compensation.

Feed roller encoder sensor
The feed roller encoder sensor detects the slits on the encoder film of the feed roller during feed motor rotation, thus detecting the amount of rotation of the feed roller (media feed amount).

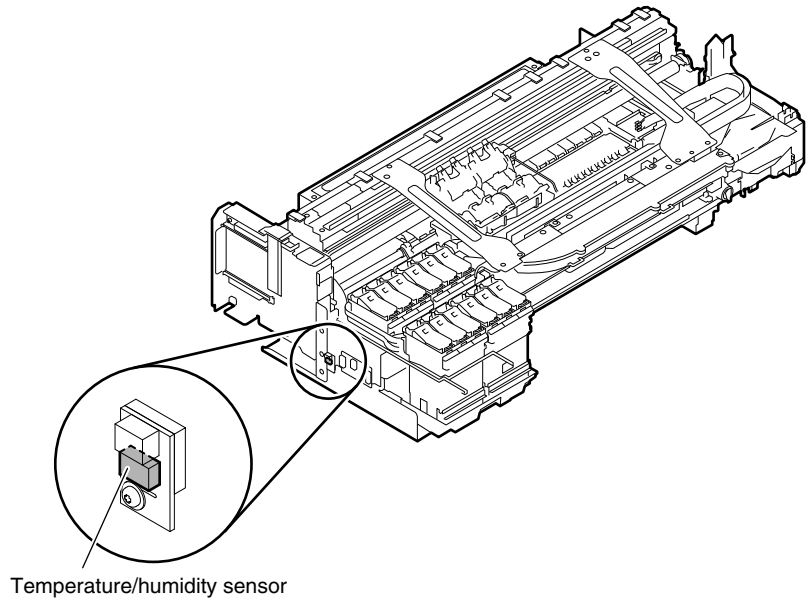


F-2-52

Roll media sensor
This is a photo-interrupter-type sensor. When media is loaded, the sensor arm blocks the sensor light, thus detecting the media.

Roll cam sensor
This is a photo-interrupter-type sensor. When the roll cam blocks the sensor light, lowering of the transport roller (contact with the roller) is detected.

2.5.5 Others



F-2-53

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

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3.1 Transporting the Printer

3.1.1 Transporting the Printer

3.1.1.1 Transporting the Printer

This subsection describes how to transport the printer.
When moving the printer that include the use of stairs, move it slowly so that it does not receive any shocks. Follow the steps shown in "1. Moving the printer that include the use of stairs or storing at customer's warehouse for a short period of time as temporary storage".
When moving it elsewhere, follow the steps shown in "2. Moving the printer by using the elevator, or transporting by plane or ship or others, or transporting when the atmospheric pressure or temperature change".



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.

1. Moving the printer that include the use of stairs or storing at customer's warehouse for a short period of time as temporary storage

Item	Description
[Prep. MovePrinter] on the Main menu	This need not be performed.
Allowed tilting angle	-30 to +30 degrees for all directions

Procedure
(1) Turn off the Power button on the printer and check that the head is capped.
(2) Open the top cover and mount the belt stopper.



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

(3) Close the upper cover.
(4) Remove the roll holder from the roll holder slot.
(5) Remove the interface cable, power cord from the printer.
(6) Hold the carrying handles at the bottom, and then slowly move the printer.



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

2. Moving the printer by using the elevator, or transporting by plane or ship or others, or transporting when the atmospheric pressure or temperature change

Item	Description
[Prep. MovePrinter] on the Main menu	This need be performed.
Allowed tilting angle	-30 to +30 degrees for all directions

Procedure
(1) Turn on the Power button on the printer.
(2) Remove the media.
(3) Remove the roll holder from the roll holder slot.
(4) Enter the Main menu, and then select "Set/Adj. Menu" > "Prep. MovePrinter". Remove all ink tanks following the displayed messages.
Put the removed ink tanks in the plastic bag with the ink port up and close the opening. It takes about 4 minutes to complete the "Prep. MovePrinter" operation.



- "Prep. MovePrinter" cannot be selected when "MT Cartridge Full Soon" is displayed. In this case, replace the maintenance cartridge first.
- 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 parts. After replacing the consumable parts and resetting the counter of service mode, perform the steps again. Refer to "SERVICE MODE" > "Details of Service Mode" > "PARTS CNT." and "MAINTENANCE" > "Consumable Parts" > "Consumable Parts".
- Never disconnect the power cord or open any cover while the "Prep. MovePrinter" operation is in progress since this can cancel the operation. If the "Prep. MovePrinter" operation is canceled while in progress, the printer will remain in the offline mode and will not return to the online mode. The "Ink Filling" operation is performed when the power is turned back on after canceling, so repeat the "Prep. MovePrinter" operation from the beginning.
- The "Prep. MovePrinter" operation will drain about 38 g of ink per color from the printer to the maintenance cartridge.

(5) When the "Prep. MovePrinter" operation is completed, turn off the Power button.
(6) Open the top cover to check that the head is capped, and then secure the carriage with the belt stopper.
(7) Close the top cover.
(8) Disconnect the interface cable and power cord from the printer.
(9) Attach the cushioning materials and tape.
(10) If the printer is mounted on a stand, remove the printer from the stand.
(11) Pack the printer in the packing box, and then put the roll media, ink tank, and optional devices in another packing box for moving.
Use the original packing materials for the printer and other optional devices. If they are not available, pack them with a sufficient amount of cushioning materials.

3. Transportation procedure when the printer is not operating properly

⚠
To prevent the waste ink from leaking, remove the maintenance cartridge after draining the ink. Package the removed maintenance cartridge so that the waste ink does not leak.

(1) Make sure that the printer is turned off.
(2) Disconnect the interface cable and power cord from the printer.
(3) Remove the roll holder from the roll holder slot.
(4) Drain ink from the printer. (Refer to "DISASSEMBLY/REASSEMBLY" > "Points to Note on Disassembly and Reassembly" > "Draining the Ink")
(5) Manually cap the printhead. (Refer to "4. Manual capping")

⚠
Manual capping is an emergency measure used when the printer does not operate properly, so it can damage the printhead.

(6) Remove the maintenance cartridge, and then package it so that waste ink does not leak.

⚠
Check that waste ink is no longer leaking after removing the maintenance cartridge. If it is leaking, install the maintenance cartridge and wait until waste ink no longer leaks.

(7) Attach all external covers.
(8) Open the top cover, and then secure the carriage with the belt stopper.
(9) Close the top cover.
(10) Attach the cushioning materials and tape.
(11) If the printer is mounted on a stand, remove the printer from the stand.
(12) Pack the printer in the packing box, and then put the roll media, ink tank, and optional devices in another packing box for moving.
Use the original packing materials for the printer and other optional devices. If they are not available, pack them with a sufficient amount of cushioning materials.

4. Manual capping
When transporting the printer, cap the Printhead to protect the nozzles from drying out and to keep them clean. Follow the procedures described below:
(1) While referring to "DISASSEMBLY/REASSEMBLY" > "Points to Note on Disassembly and Reassembly" > "Opening the Cap/Releasing the Carriage Lock Pin manually", open all of the caps.
(2) Move the carriage to the home position.
(3) While referring to "DISASSEMBLY/REASSEMBLY" > "Points to Note on Disassembly and Reassembly" > "Opening the Cap/Releasing the Carriage Lock Pin manually", perform the capping.

⚠
Manual capping is an emergency measure when the printer does not operate. Manual capping can damage the printhead.

3.1.2 Reinstalling the Printer

3.1.2.1 Reinstalling the Printer

1. When installing the printer after moving it on the same floor having no step
If you have moved the printer to the installation site on the same floor having no step without draining ink, check the operation test pattern.

2. When installing the printer after moving it on the same floor having a step(s)
If you have moved the printer to the installation site on the same floor having a step(s) with ink drained, install it again in the same manner as that for initial installation after reception of the delivered printer.

(1) Unpack the printer.
(2) Remove the cushioning materials and tape from the printer.
(3) Install the maintenance cartridge.
(4) Remove the belt stopper.
(5) Connect the power cord.
(6) Turn on the Power button and install ink tanks according to the displayed messages.
Ink filling will starts.
Load paper and check for normal operation.

Chapter 4 DISASSEMBLY/REASSEMBLY

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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

4.2 Disassembly/Reassembly

4.2.1 Disassembly/Reassembly

For the procedure for disassembly/reassembly of the components excluding the major components, refer to the parts catalog.
Illustrations in the parts catalog are assigned illustration numbers according to the order in which parts are disassembled.

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-4-2

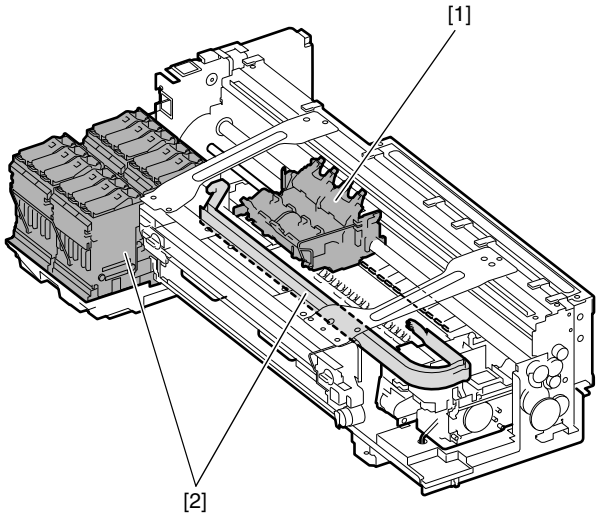
4.3.2 Moving the carriage manually

⚠
Move the carriage as required during disassembly/reassembly to prevent the carriage form contacting the parts to be removed.
The carriage does not move when capped. When uncapping moving the carriage, refer to the procedures in DISASSEMBLY/REASSEMBLY>Points to Note on Disassembly and Reassembly>Opening the Cap/Moving the Wiper Unit.

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 Note on Disassembly and Reassembly > Draining the Ink.

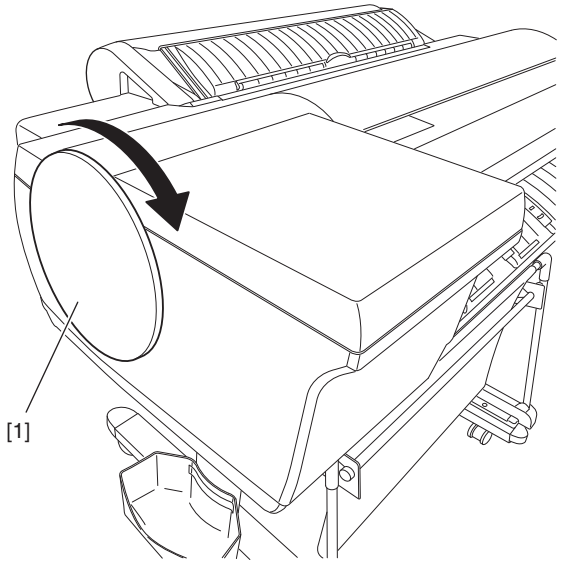
[1] Carriage unit
Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > Carriage Unit.
[2] Ink tank unit
Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > Ink Tank Unit.



F-4-3

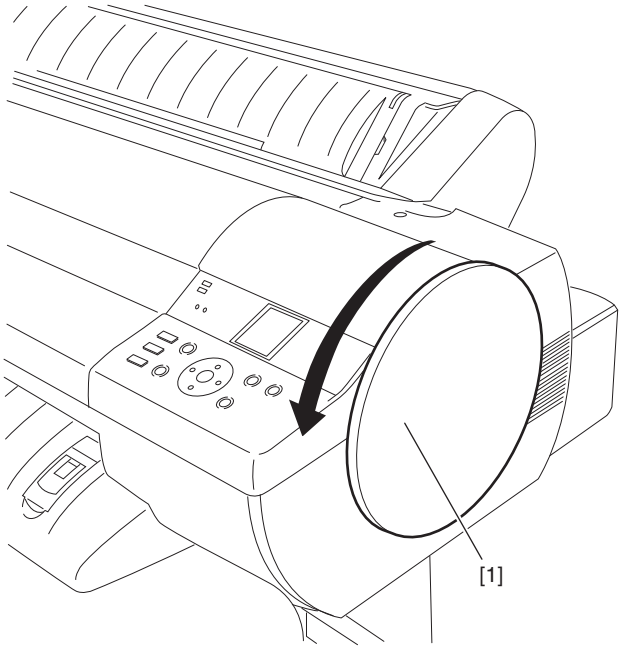
4.3.4 External Covers

a) Left/right circle cover
Removing the left/right circle cover
1) When removing the left circle cover [1], turn it in the direction of the arrow.



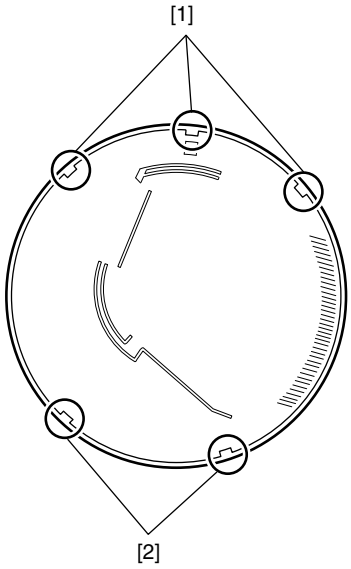
F-4-4

2) When removing the right circle cover [1], turn it in the direction of the arrow.



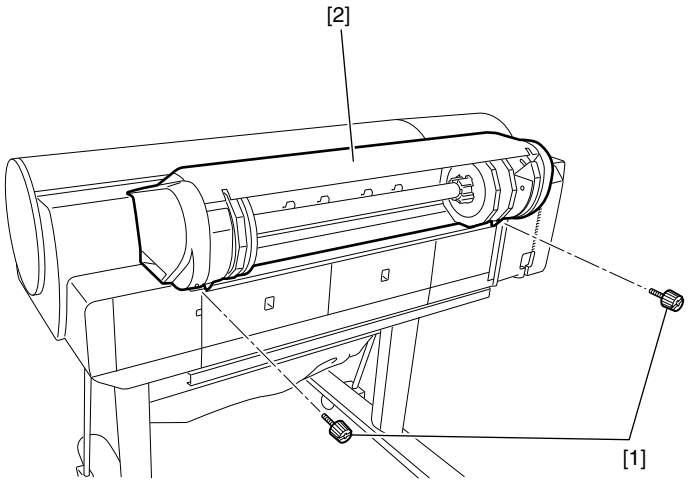
F-4-5

Attaching the left/right circle cover
1) When attaching the left circle cover, fit it in place with the three hooks [1] up and turn it toward the rear side of the printer. When attaching the right circle cover, fit it in place with the two hooks [2] up and turn it toward the rear side of the printer.



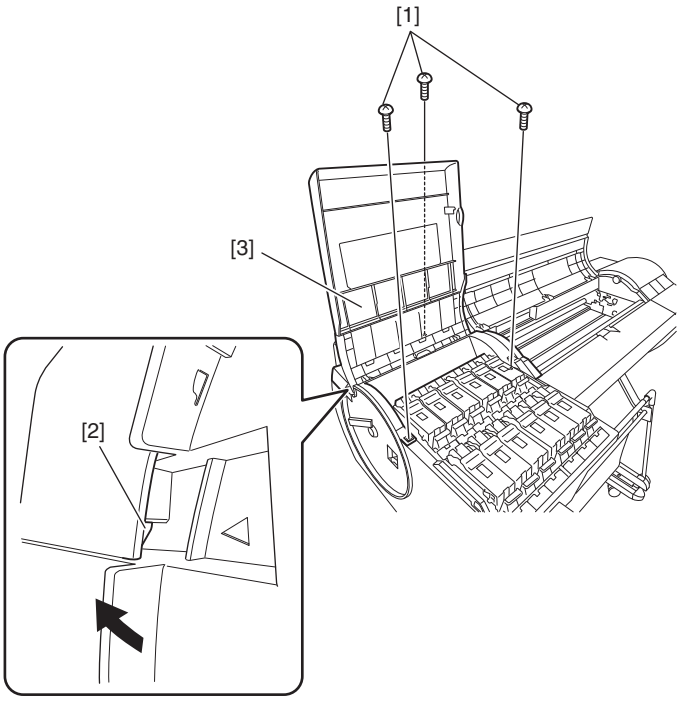
F-4-6

b) Roll Feed Unit
Removing the roll feed unit
1) Remove two coin screws [1] to remove roll feed unit [2].



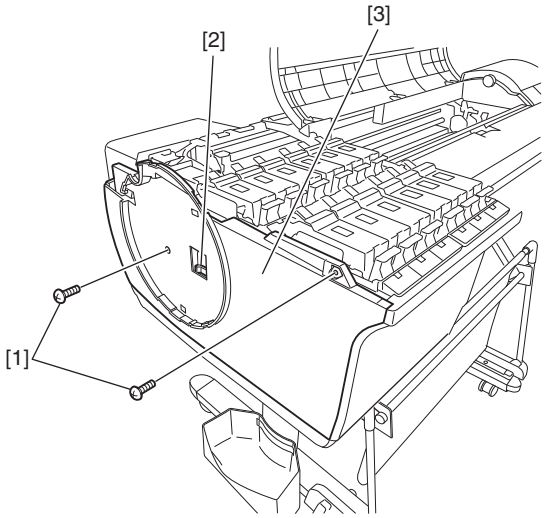
F-4-7

c) Tank cover
Removing the tank cover
1) When removing the tank cover [3], open the top cover, and then remove the roll feed unit and left circle cover.
2) Open the tank cover [3], remove three screws [1], and then remove the tank cover [1] while opening the hook [2] outward.



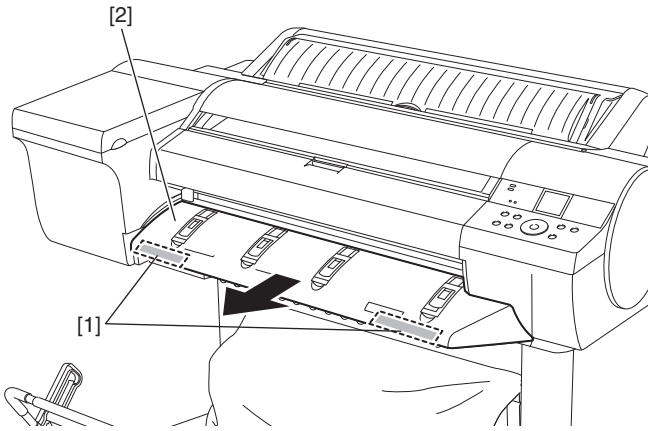
F-4-8

d) Left cover
Removing the left cover
1) When removing the left cover [3], remove the left circle cover and tank cover and roll feed unit.
2) Remove the two screws [1] and the hook [2], and then remove the left cover [3].



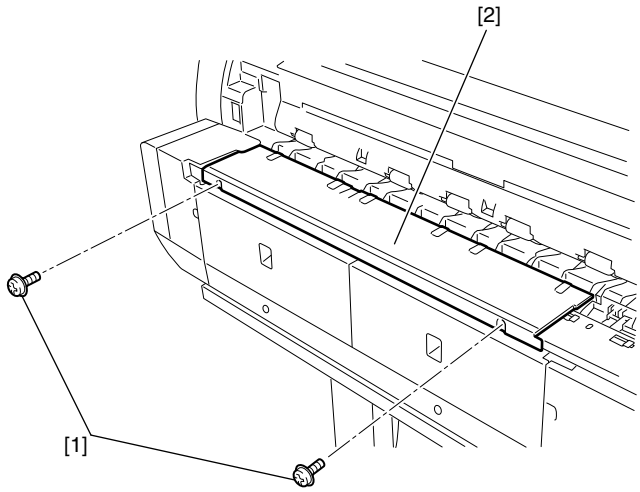
F-4-9

e) Output guide
Removing the output guide
1) To remove the output guide [2], pull it by holding the handles [1].



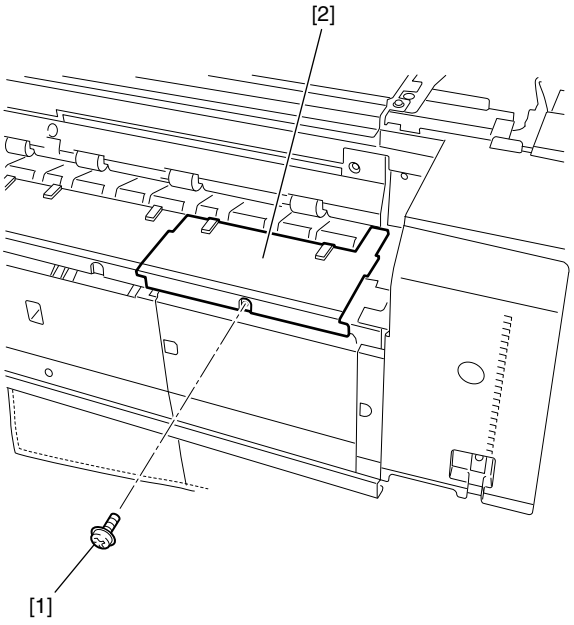
F-4-10

f) Lower rear cover
Removing the lower rear cover
1) When removing the lower rear cover [2], remove the two screws [1] and then remove it.



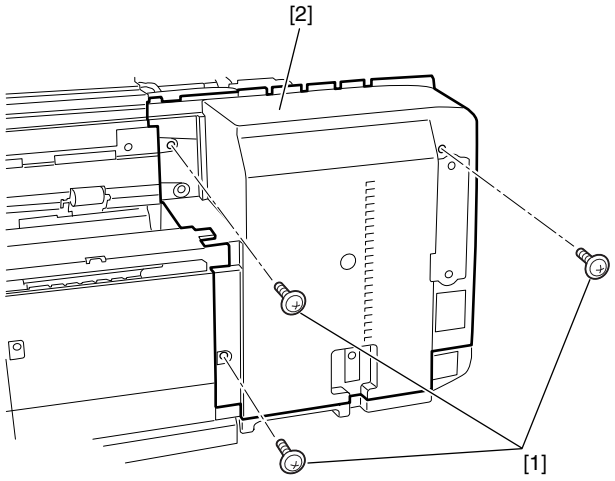
F-4-11

g) Lower rear left cover
Removing the lower rear left cover
1) When removing the lower rear left cover [2], remove the lower rear left cover.
2) Remove the screw [1] to remove the lower rear left cover [2].



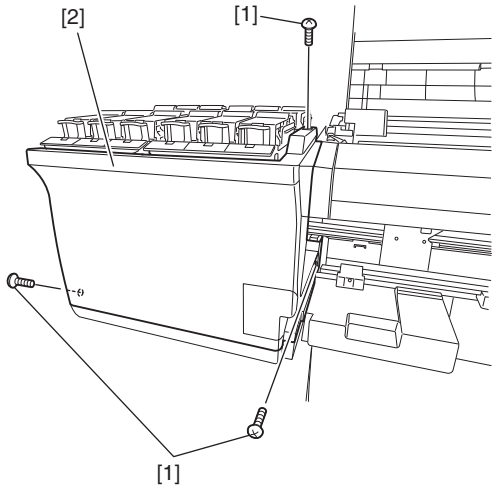
F-4-12

h) Left rear cover
Removing the left rear cover
1) When removing the left rear cover [2], open the top cover, and then remove the roll feed unit, left circle cover, tank cover, left cover, lower rear cover and lower rear left cover.
2) Remove the three screws [1], and then remove the left rear cover [2].



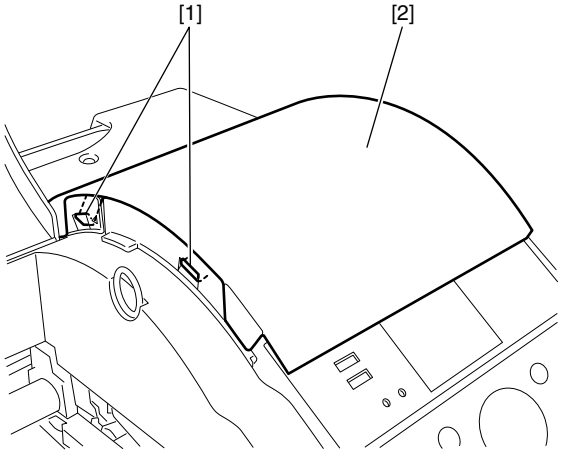
F-4-13

i) Left front cover
Removing the left front cover
1) When removing the left front cover [2], remove the roll feed unit, left circle cover, tank cover, left cover and output guide.
2) Rmove the three screws [1], and then remove the left front cover [2].



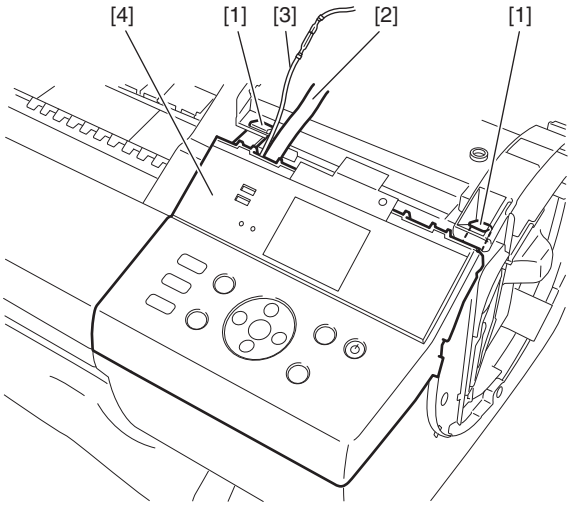
F-4-14

j) Right upper cover
Removing the right upper cover
1) When removing the right upper cover [2], open the top cover, and then remove the right circle cover.
2) Release the two hooks [1], and then remove the right upper cover [2].



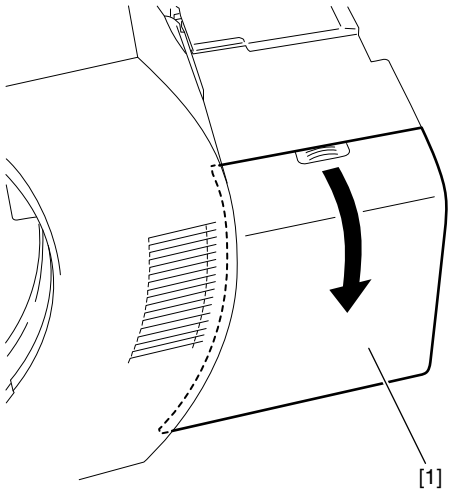
F-4-15

k) Operation panel
Removing the operation panel
1) When removing the operation panel [4], open the top cover, and then remove the right circle cover and right upper cover.
2) Remove the two hooks [1] and flexible cable [2] and earth cable [3], and then remove the operation panel [4].



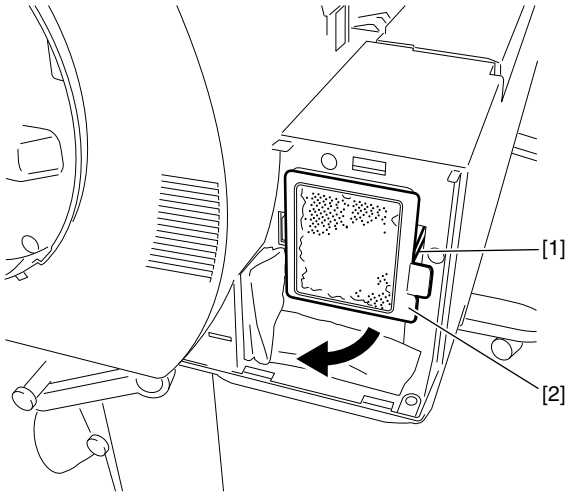
F-4-16

l) Exhaust Filter
Removing the exhaust filter
1) When removing the filter cover [1], push it in the direction of the arrow while pressing on the handhold.



F-4-17

2) Remove the exhaust filter [2] while pushing the hook [1].

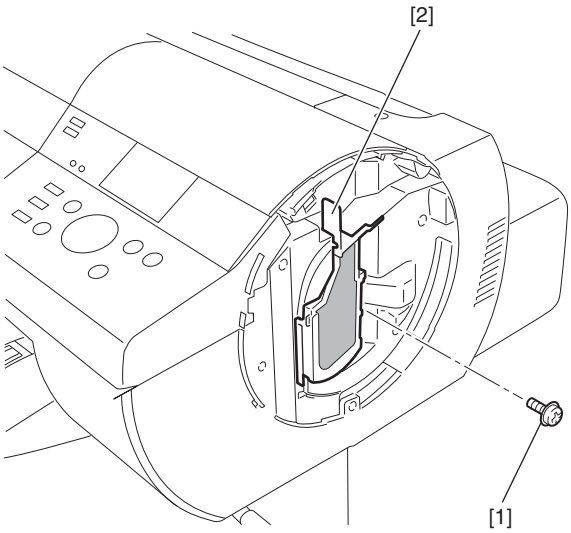


F-4-18

m) Mist filter

Removing the mist filter

1) When removing the mist filter [2], open the top cover, and then remove the right circle cover.
2) Removing the screw [1], and then remove the mist filter [2].

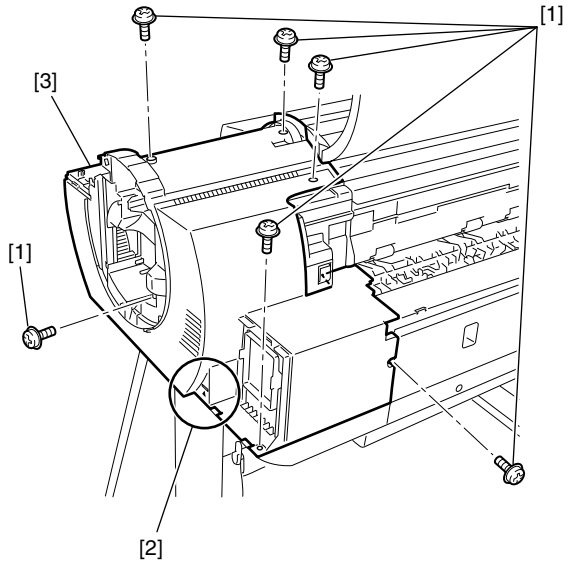


F-4-19

n) Right cover

Removing the right cover

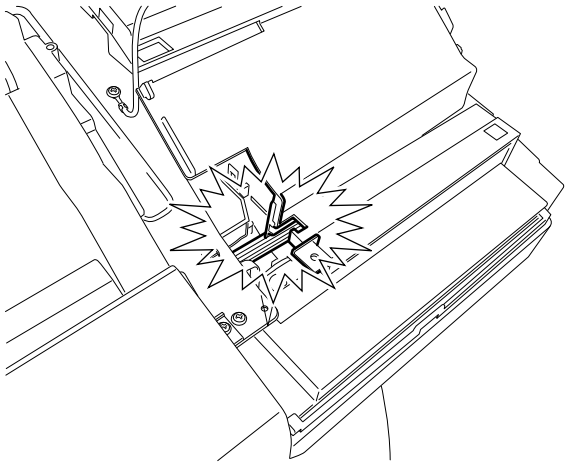
1) When removing the right cover [3], open the top cover, and then remove the roll feed unit, right circle cover, right upper cover, operation panel, mist filter, exhaust filter and lower rear cover.
2) Remove the six screws [1] and hook [2], and then remove the right cover [3].



F-4-20

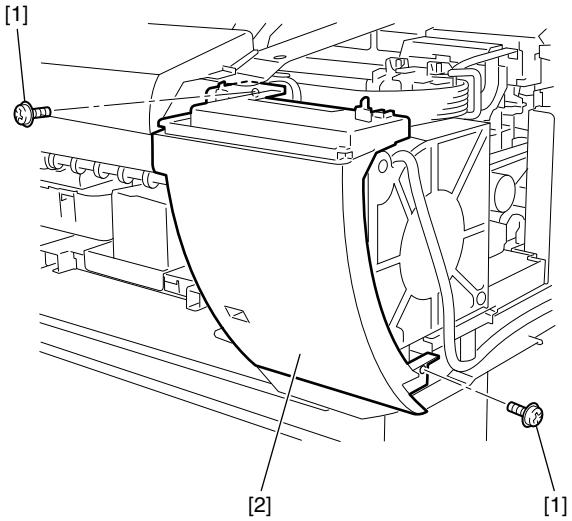
Note on attaching the right cover

Be careful in attaching the right cover not to press the ink tubes with the edges of the cover.



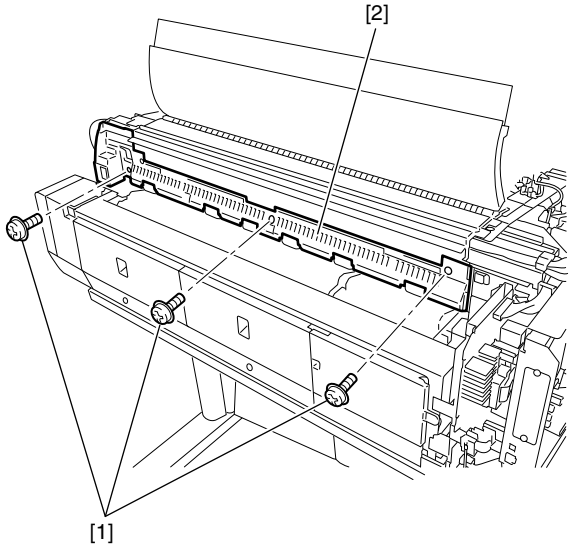
F-4-21

o) Right front cover
Removing the right front cover
1) When removing the right front cover [2], open the top cover, and then remove the roll feed unit, output guide, right circle cover, operation panel, exhaust filter, right cover and lower rear cover.
2) Remove the two screws [1], and then remove the right front cover [2].



F-4-22

p) Rear cover
Removing the rear cover
1) When removing the rear cover [2], open the top cover, and then remove the roll feed unit, left circle cover, tank cover, left circle cover, right upper cover, operation panel, exhaust filter, right cover, lower rear cover, left cover and left rear cover.
2) Remove the three screws [1], and then remove the rear cover [2].

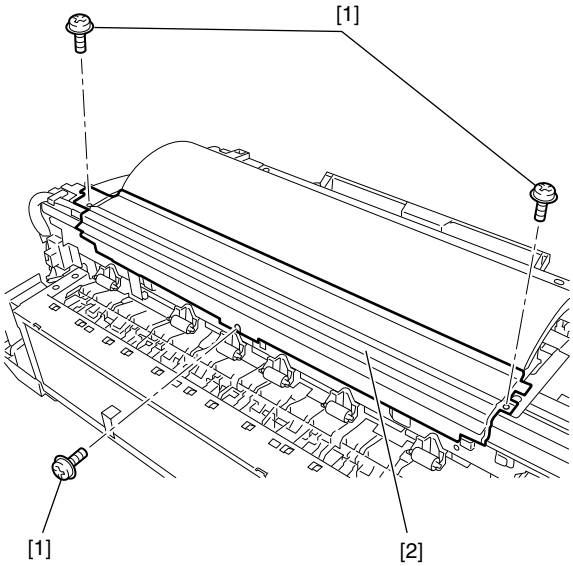


F-4-23

q) Upper rear cover

Removing the upper rear cover

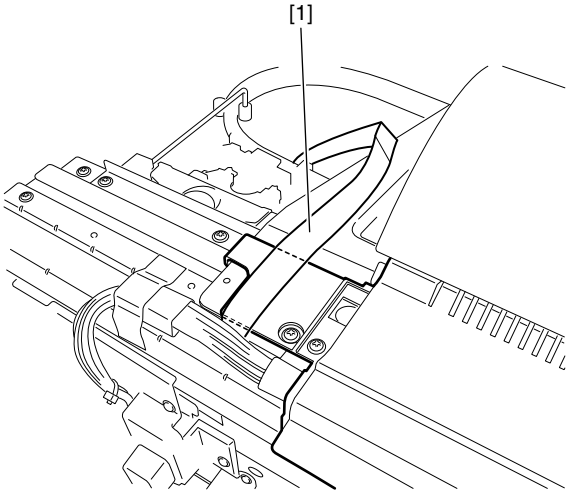
1) When removing the upper rear cover [2], open the top cover, and then remove the roll feed unit, left circle cover, tank cover, left cover, right circle cover, right upper cover, operation panel, exhaust filter, right cover and lower rear cover.
2) Remove the three screws [1], and then remove the upper rear cover [2].



F-4-24

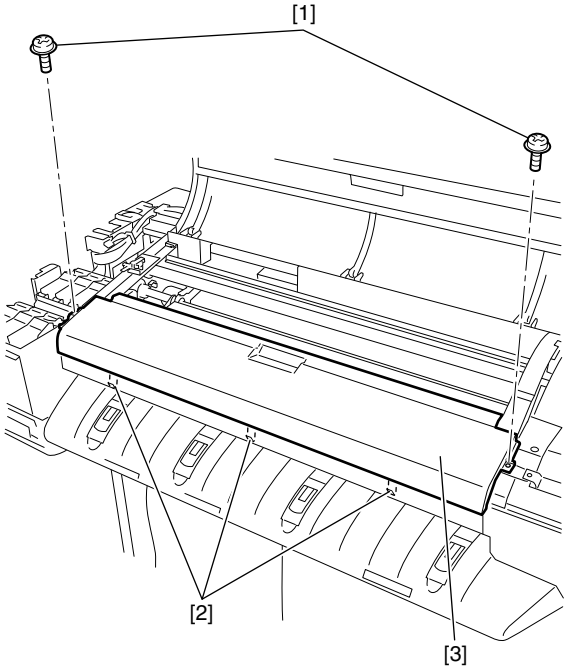
Note on attaching upper rear cover

In attaching the upper rear cover, allow flexible cable [1] in the control area to pass over the cover.



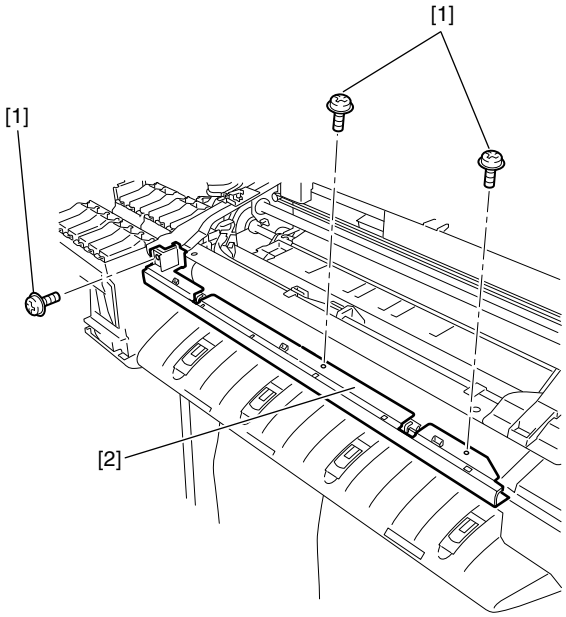
F-4-25

r) Upper front cover
Removing the upper front cover
1) When removing the upper front cover [3], open the top cover, and then remove left circle cover, tank cover, left cover, right circle cover, right upper cover, operation panel, right cover and exhaust filter.
2) Remove the two screws [1], and then remove the upper front cover [3] while releasing the three hooks [2].



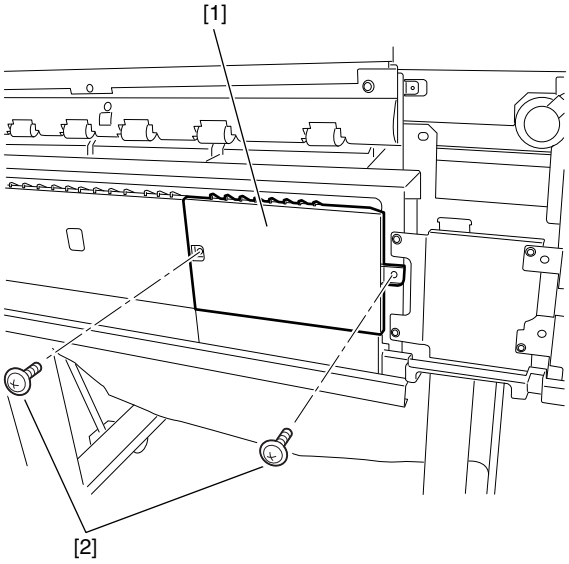
F-4-26

s) Lower front cover
Removing the lower front cover
1) When removing the lower front cover [2], open the top cover, and then remove the roll feed unit, left circle cover, tank cover, right circle cover, right upper cover, operation panel, upper front cover, right cover and exhaust filter.
2) Remove the three screws [1] and release the harness to remove the lower front cover [2].



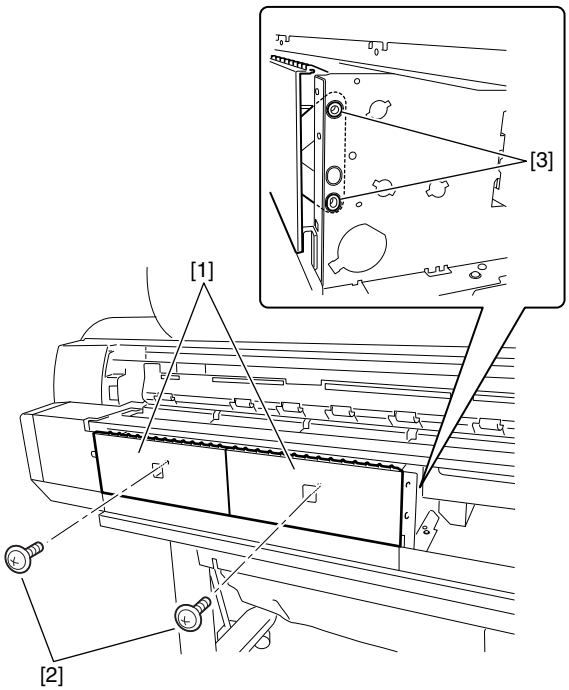
F-4-27

t) Left back cover
Removing the left back cover
1) When removing the left back cover [1], open the top cover, and then remove the roll feed unit, left circle cover, tank cover, left cover, lower rear cover, lower rear left cover and left rear cover.
2) Remove the two screws [2], and then remove the left back cover [1].



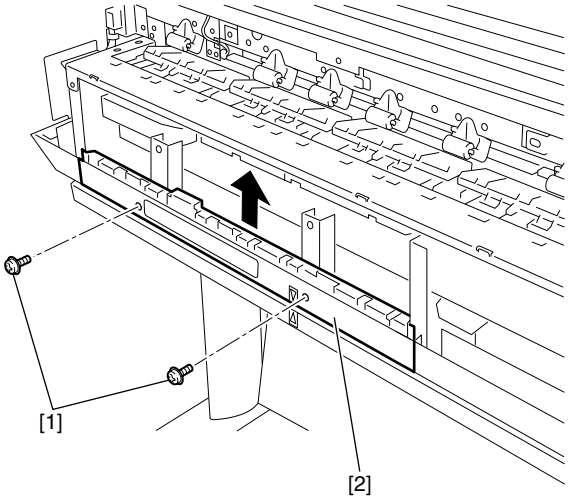
F-4-28

u) Back cover
Removing the back cover
1) When removing the back cover [1], open the top cover, and then remove the roll feed unit, left circle cover, tank cover, left cover, lower rear cover, lower rear left cover, left rear cover and left back cover.
2) Remove the two screws [2] and two hooks [3], and then remove the back cover [1].



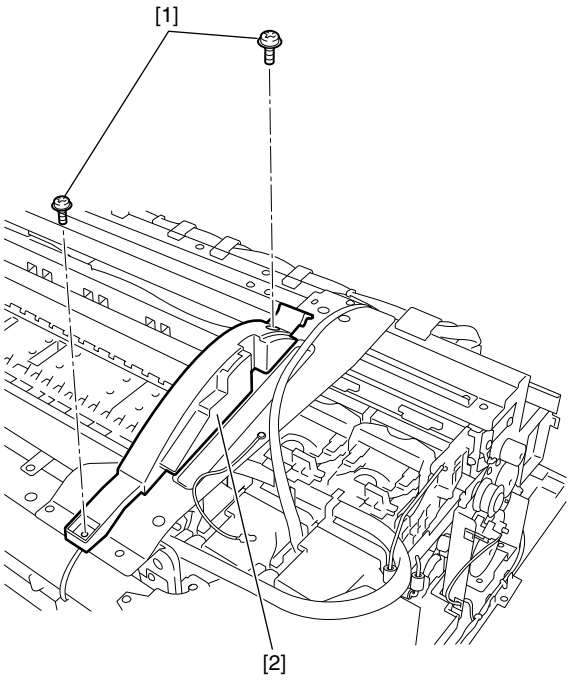
F-4-29

v) Lower back cover
Removing the lower back cover
1) When removing the lower back cover [2], open the top cover, and then remove the roll feed unit, left circle cover, tank cover, left cover, lower rear cover, lower rear left cover, left rear cover, right circle cover, right upper cover, operation panel, exhaust filter and right cover.
2) Remove the two screws [1], and then remove the lower back cover [2].



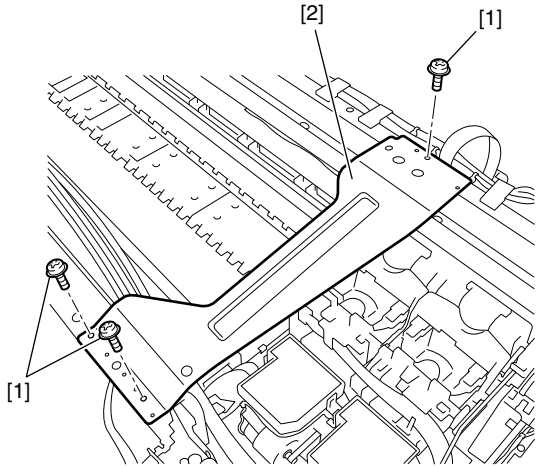
F-4-30

w) Cover guide
Removing the cover guide
1) When removing the cover guide [2], open the top cover, and then remove the roll feed unit, left circle cover, tank cover, left cover, right circle cover, right upper cover, operation panel, exhaust filter, lower rear cover, lower rear left cover, left lower cover, rear cover, upper rear cover and upper front cover.
2) Remove the two screws [1], and then remove the cover guide [2].



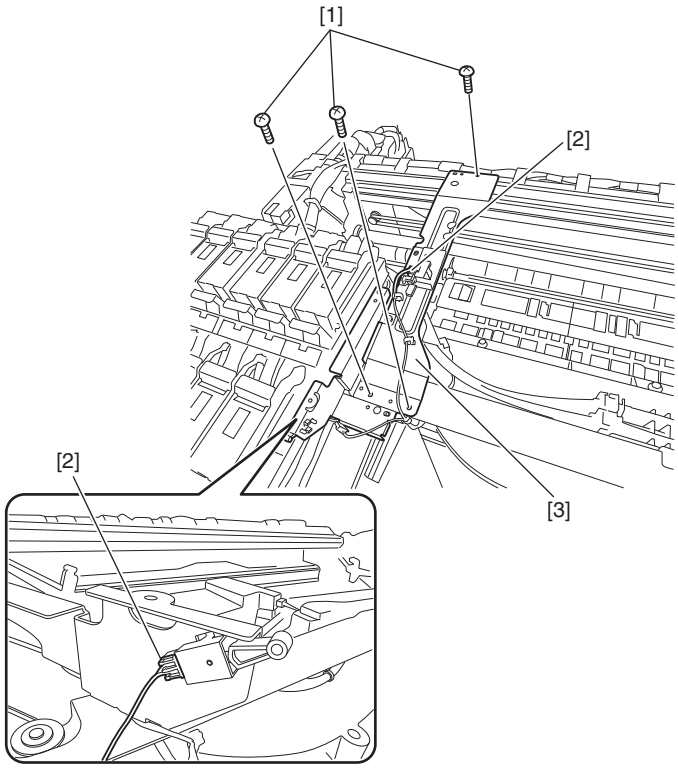
F-4-31

x) Cover support plate (right)
Removing cover support plate (right)
1) When removing the cover support plate (right)[2], open the top cover, and then remove the roll feed unit, left circle cover, tank cover, left cover, right circle cover, right upper cover, operation panel, exhaust filter, right cover, lower rear cover, left rear cover, rear cover, upper rear cover, upper front cover and cover guide.
2) Remove the three screws [1], and then remove the cover support plate (right)[2].



F-4-32

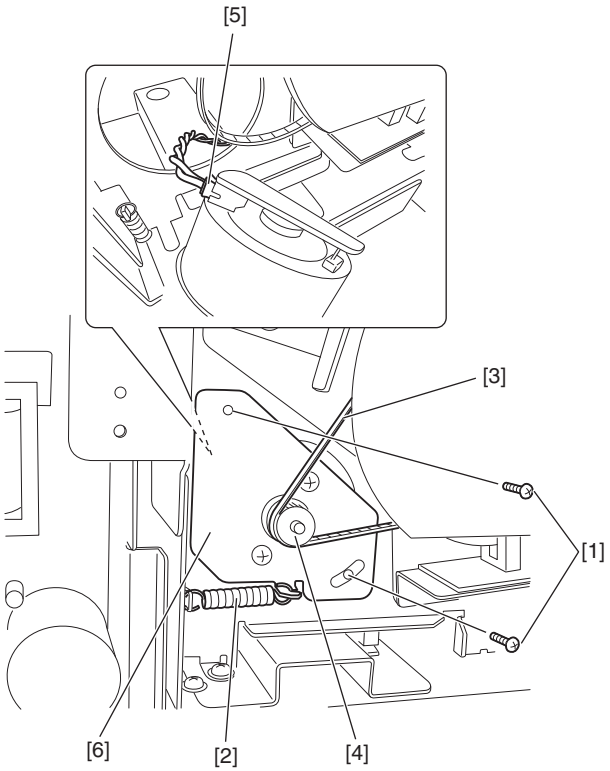
y) Cover support plate (left)
Rmoving the cover support plate (left)
1) When removing the cover support plate (left)[3], open the top cover, and then remove the roll feed unit, left circle cover, tank cover, left front cover, left cover, right circle cover, right upper cover, operation panel, exhaust filter, right cover, lower rear cover, rear cover, upper rear cover, upper front cover and lower front cover.
2) Remove the three screws [1] and two connectors [2], and then remove the cover support plate (left)[3].



F-4-33

4.3.5 Drive Unit

a) Feed motor
Removing the feed motor
1) When removing the feed motor [1], remove the main controller support plate.
Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > PCBs
2) Remove the two screws [1], spring [2], belt [3] and the pulley [4], and then disconnect the connector [5] to remove the feed motor [6].

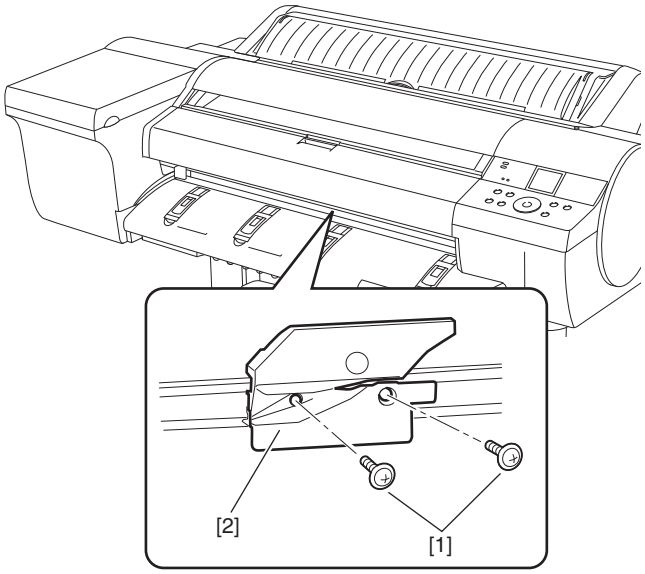


F-4-34

Note on mounting the feed motor
When mounting the feed motor [1], engage the timing belt [3] to the pulley [4] and attach the spring [2], and then tighten the two screws [1].

4.3.6 Cutter

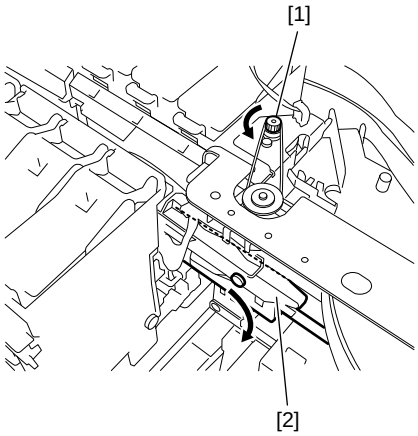
a) Removing the Cutter
1) Perform service mode: [SERVICE MODE] > [REPLACE] > [CUTTER] and then choose [YES] to move the cutter to the replacement place.
2) Remove two screws [1] to remove the cutter [2].



F-4-35

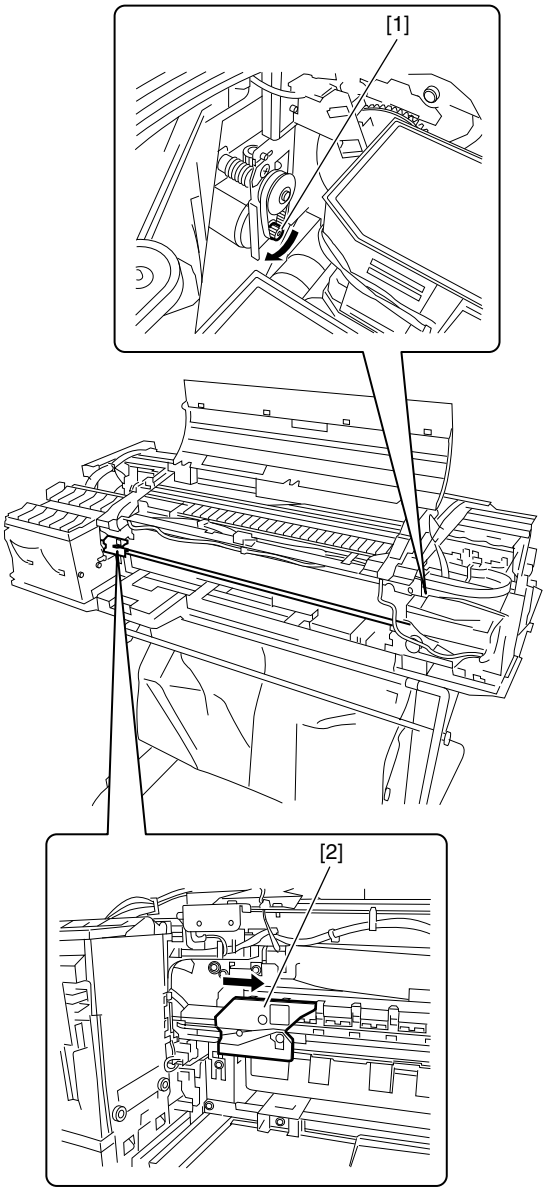
MEMO:
After replacing the cutter, choose [CLR COUNTER CT-1] > [YES] that displayed on the LCD to initialize the parts counter information. Then, the cutter moves to home position automatically.

b) Removing the cutter unit
1) When removing the cutter unit, open the top cover, and then remove the roll feed unit, output guide, left and right circle covers, tank cover, left front cover, right upper cover, operation panel, exhaust filter, lower rear cover, right cover, right front cover, upper front cover, lower front cover and cover support plate (left). Refer to DISASSEMBLY/REASSEMBLY > Points to note on Disassembly and Reassembly > External Covers.
2) Turn the motor pulley [1] in the direction of the arrow to lower the cutter unit [2].



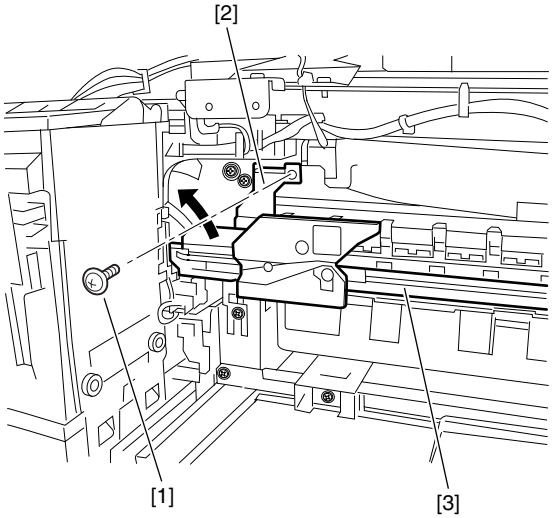
F-4-36

3) Turning the motor pulley [1] in the arrow direction, move the cutter [2] about 2cm to the right of the left most end.



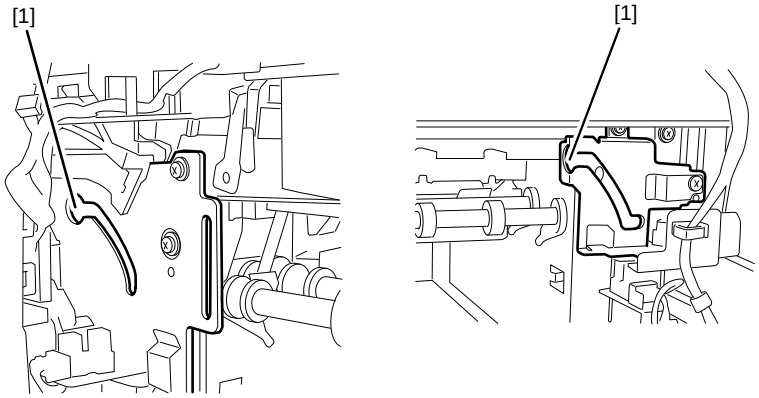
F-4-37

4) Remove the screw [1] and clamp [2] and slide cutter unit [3] to left obliquely upward out of position.



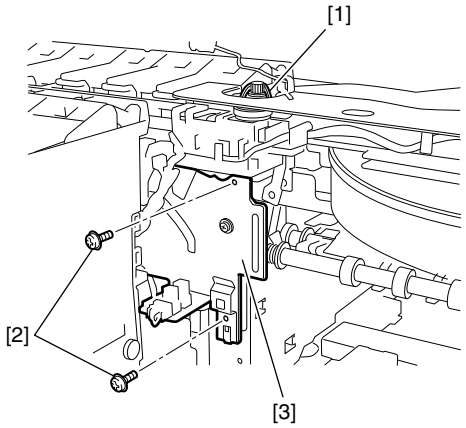
F-4-38

c) Points to note on Disassembly an Reassembly of Cutter unit
1) When disassembling or reassembling the cutter unit, align the cutter unit roller with the grooves [1] in the cutter lifter unit and cutter drive unit.



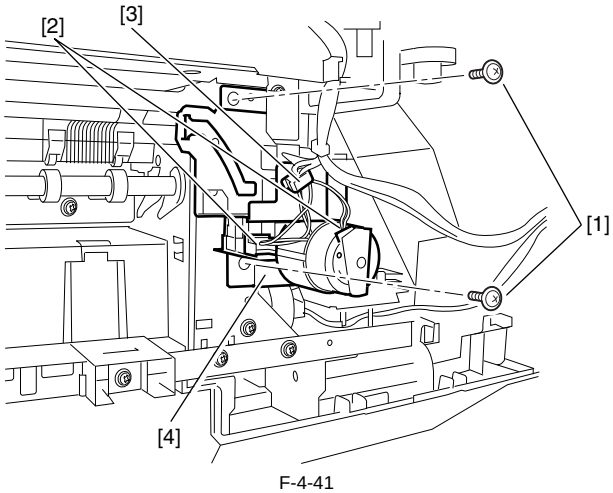
F-4-39

d) Removing the cutter lifter unit
1) Remove the cutter unit.
2) Remove the belt [1], two screws [2] and harness, and then remove the cutter lifter unit [3].



F-4-40

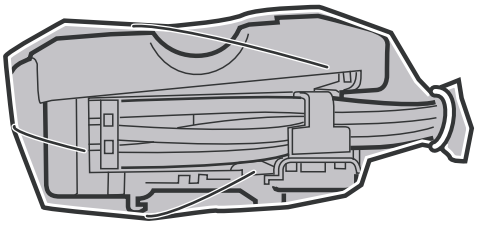
e) Removing the cutter drive unit
1) Remove the cutter unit.
2) Remove the two screws [1] and two connectors [2] and free the harness from harness guide [3] to remove the cutter drive unit [4].



F-4-41

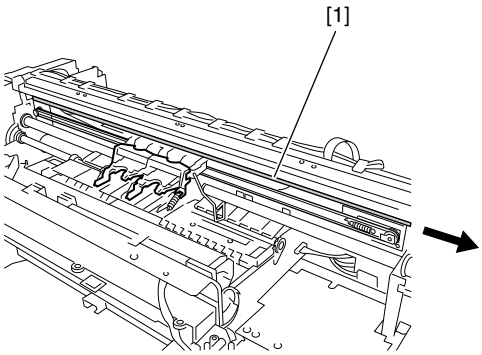
4.3.7 Carriage Unit

a) Removing the carriage unit
1) Drain the ink.
Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > Draining the Ink.
2) Turn off the power, and then move the carriage over the platen.
Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > Opening the Cap/Moving the Wiper Unit.
3) Remove the printhead.
4) Remove the joint of the ink tube unit. Wrap the removed joint with a plastic bag or other covering so that ink does not splashes, then close the plastic bag.



F-4-42

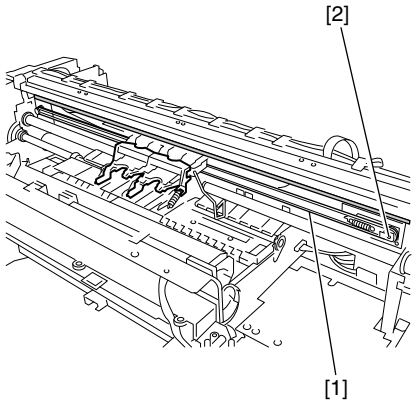
5) Remove the linear scale [1] from the right clamp plate's spring, and then remove it rightward.



F-4-43

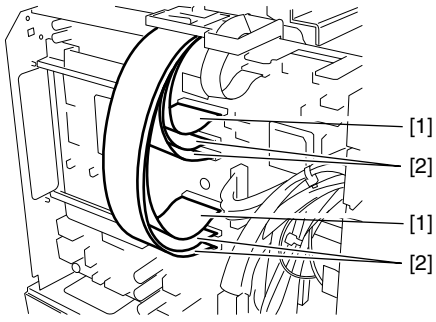
⚠
When removing the linear scale, take care not to damage or stain it. The stained or damaged liner plate can cause malfunction.

6) While sliding the pulley [2] to the left, remove the carriage belt [1]. Tie the removed belt lightly on the unit.



F-4-44

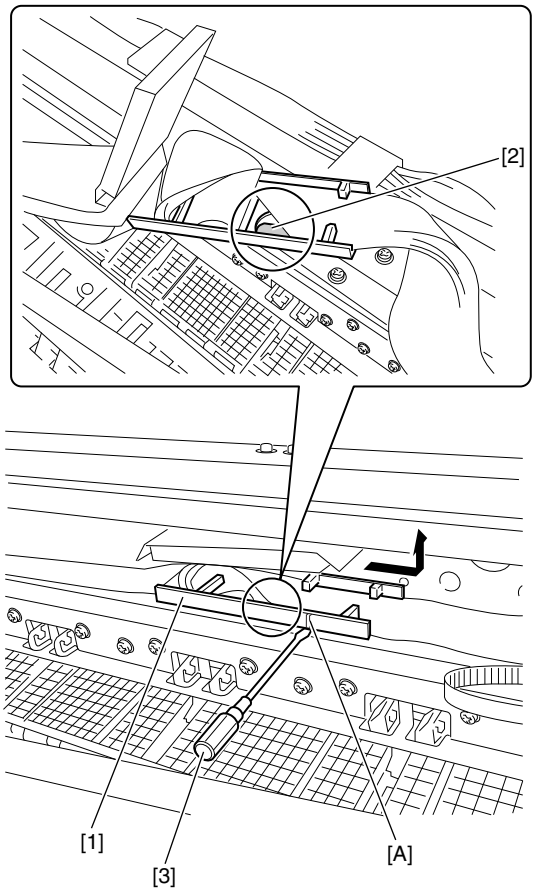
7) Disconnect the two connectors [1] and four connectors [2] of the flexible cables on the main controller PCB.



F-4-45

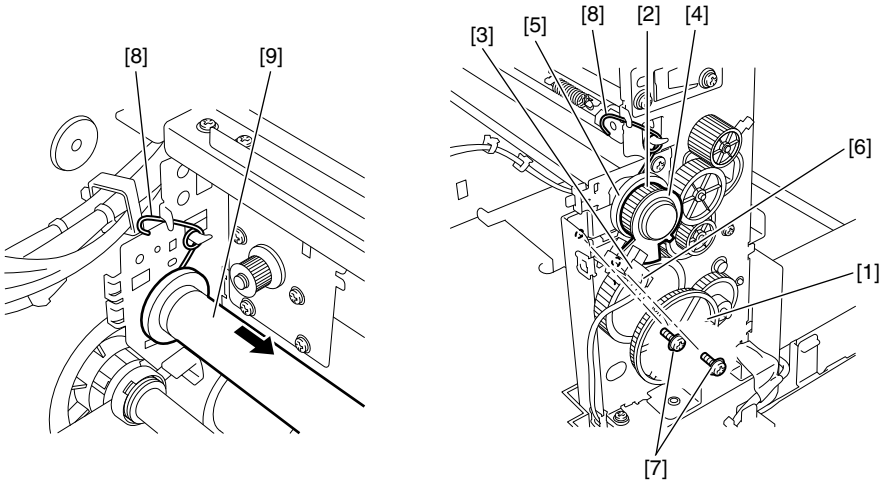
The flexible cable connectors [2] are provided with a locking mechanism. When disconnecting or reconnecting the flexible cable, be sure to release the lock. Otherwise, the flexible cable can damage, resulting in malfunction.

8) Insert the flat-head screwdriver [3] into the part shown to release the hook [2] and then remove the flexible cable retainer [1]. (If the flexible cable retainer [1] is marked with index [A], insert the flat-head screw driver to meet the index.)



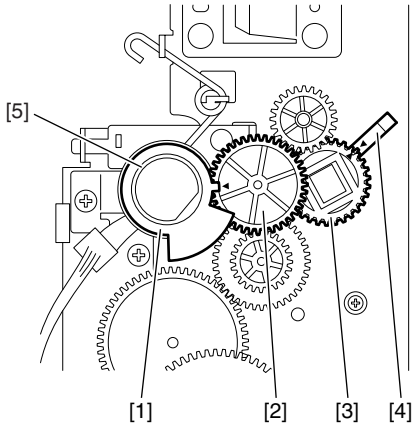
F-4-46

9) Turn the gear [1] so that the sensor flag of the lift gear [2] leaves the interrupt position of the lift cam sensor [3], then remove the ring [4], the lift gear [2] and the lift cam [5]. Disconnect the connector [6], remove the two screws [7], and then remove the lift cam sensor [3]. Remove the two torsion springs [8], pull out the carriage shaft [9] from the right side of the printer, and then remove the carriage.



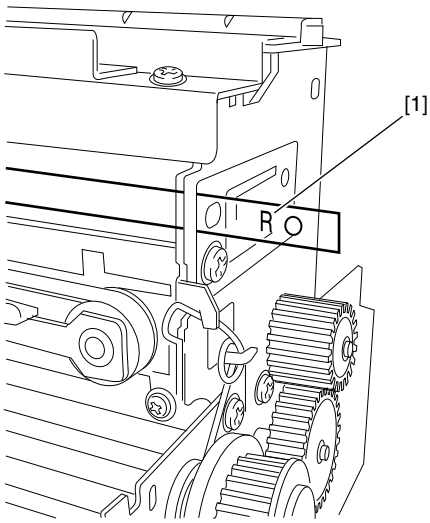
F-4-47

b) Points to Note on disassembly and Reassembly of Carriage Unit
When replacing the carriage unit, see "4.4.1 Applying the Grease" and follow the direction.
1) Align the mark on the gear [3] with the mark on the bushing [4]. Align the mark on the lift gear [1] with the mark on the gear [2] to remove the ring [5].



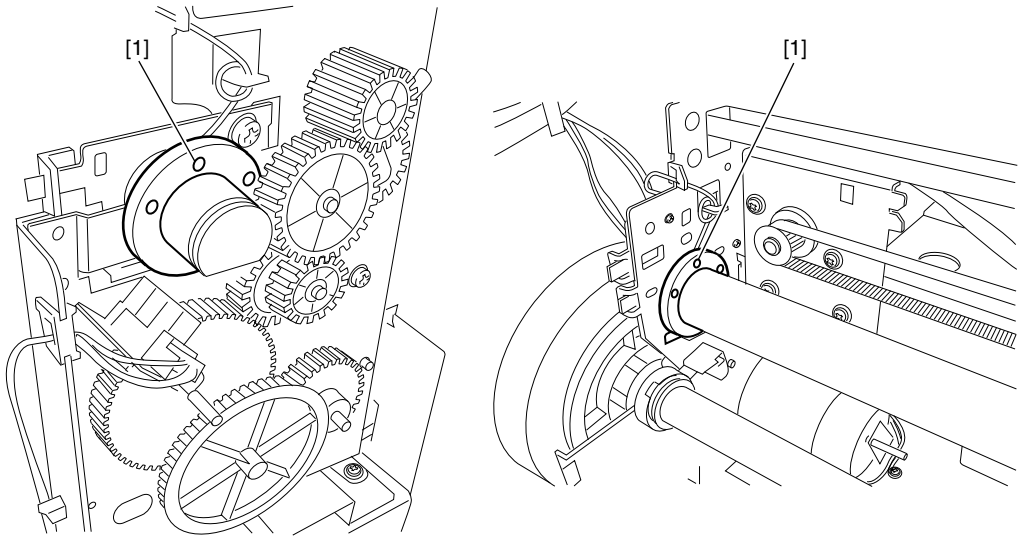
F-4-48

2) Install the linear scale with its R-mark [1] located on the right side of the unit.



F-4-49

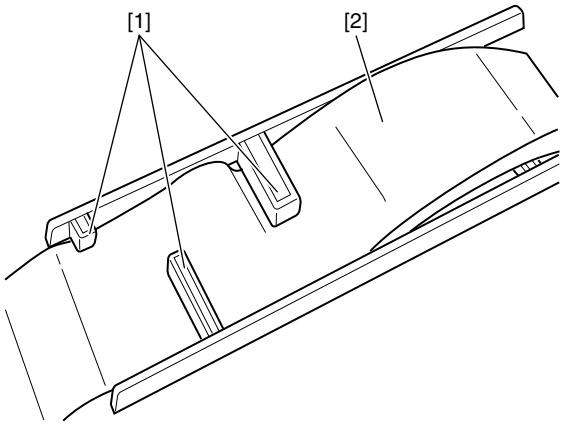
3) Install the left right lift cam [1] so its circular dent comes in the direction as shown (right side of the unit).



F-4-50

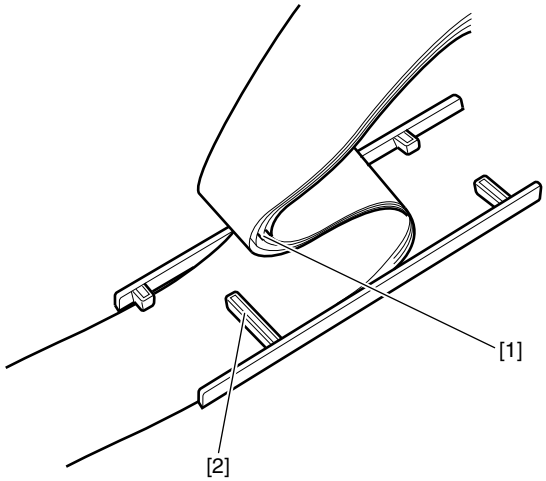
c) Note on attaching the flexible cable

1) Insert the flexible cable [2] through the three claws [1] in the flexible cable retainer.



F-4-51

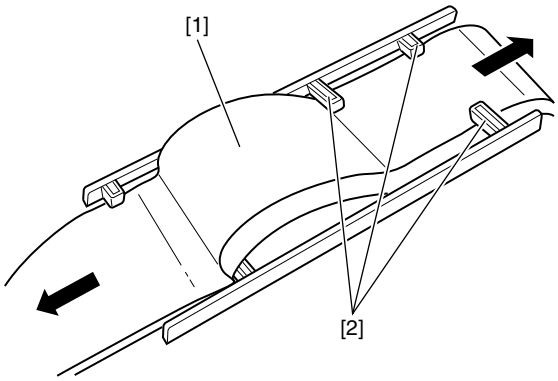
2) Lightly fold the flexible cable in its marked area [1] and pass it through claws [2].



F-4-52

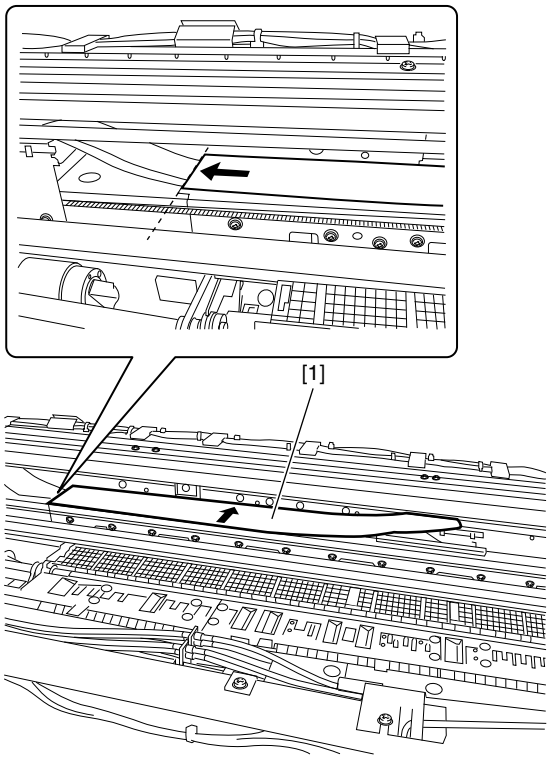
3) Insert folded flexible cable [1] through the three claws [2].

4) Pull the flexible cable [1] lightly from both sides to remove slacks in it.



F-4-53

5) Having installed the flexible cable retainer, align and flatten the flexible cables.
6) Attach the flexible guide sheet [1] over the flexible cable while matching its left end with the edge of the lower plate and bumping its rear side against the side plate in addition.



F-4-54

d) Action following the replacement of the carriage unit/multi sensor
Since the multi sensor has individual electrical specificity, the following are recalibrated at the factory, namely, the optical axis of the sensor, the sensor gain for measuring the printhead height and sensor calibration. Accordingly, carry out the following adjustments in the service mode whenever replacing the carriage unit or multi sensor.

* The multi sensor reference plate(QL2-8032: PLATE, REFLECTION, MULTI-SENSOR) must be replaced at the same time whenever the carriage or the multi sensor is being replaced.

1) Carry out the following service mode without media loading.
 - Service mode : SERVICE MODE > ADJUST > GAP CALIB.
2) Load the following media.
 Media type : Photo glossy paper
 Media size : Media having a width equal too larger than that of A2-size paper
3) Carry out the following service mode.
 - Service mode : SERVICE MODE > ADJUST > PRINT PATTERN > OPTICAL AXIS

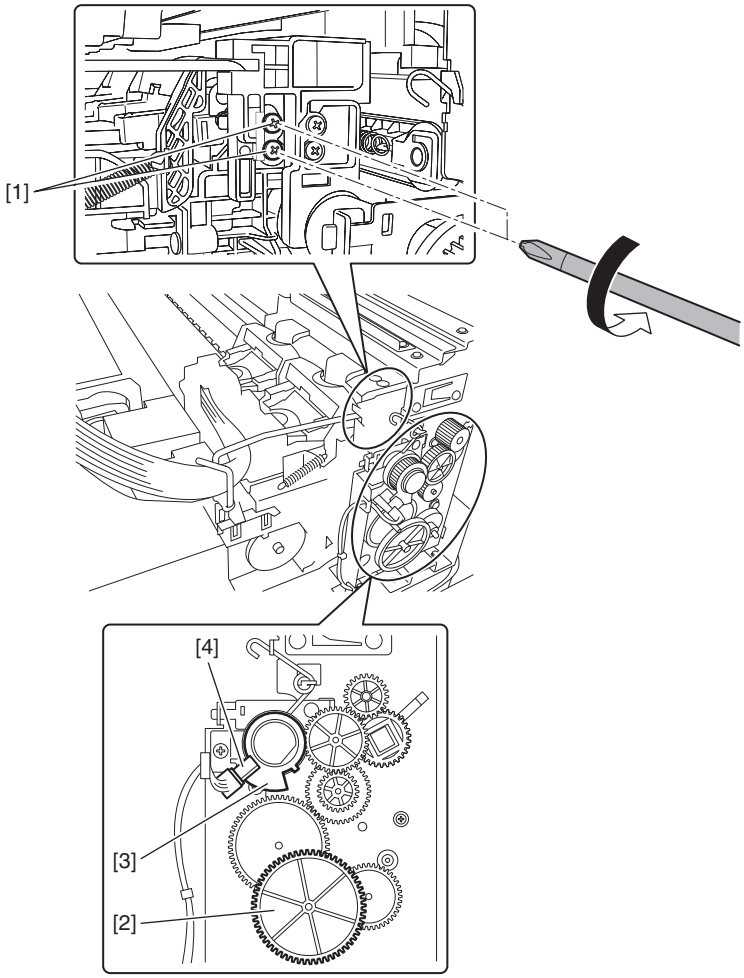
- After the carriage unit or carriage motor or carriage belt or linear encoder sensor have been removed or replaced, execute the following service mode.
Service mode: SERVICE MODE > ADJUST > CR MOTOR COG

e) Adjusting the wire roller

To prevent the wire roller mounted on the carriage from contacting the duct and others during carriage operation, perform the following adjustment whenever you have removed or replaced the carriage unit. This adjustment is not required when you have replaced only the multi sensor.

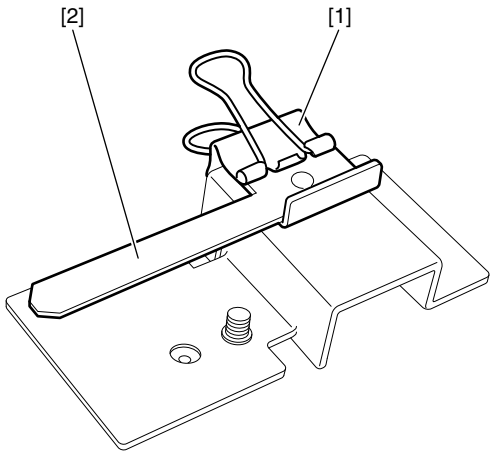
- Make adjustments with the carriage lock released.
- Make adjustments with the tube disconnected from the tube guide.

1) Remove the ink tube from the wire guide.
2) Loosen the two screws [1].
3) Turn the gear [2] until the lift cam flag [3] reaches the position shown below.
 - Bottom position where the sensor [4] light is blocked by the flag (lowest position to which the carriage unit descends)



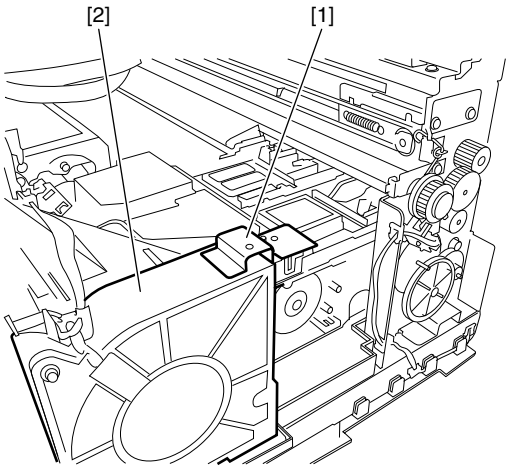
F-4-55

4) Remove the clip [1] and roller retainer [2] from the carriage wire tool.



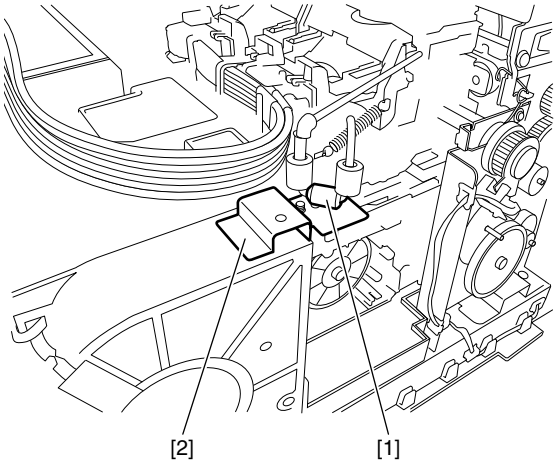
F-4-56

5) Install the carriage wire tool [1] in position with its leaf spring being attached to the top of mist fan [2].



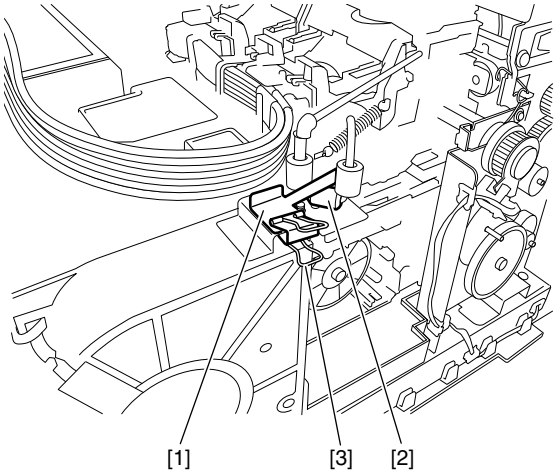
F-4-57

6) Moving the carriage, adjust the height of the wire guide to bring its roller [1] into contact with the top of carriage wire tool [2].



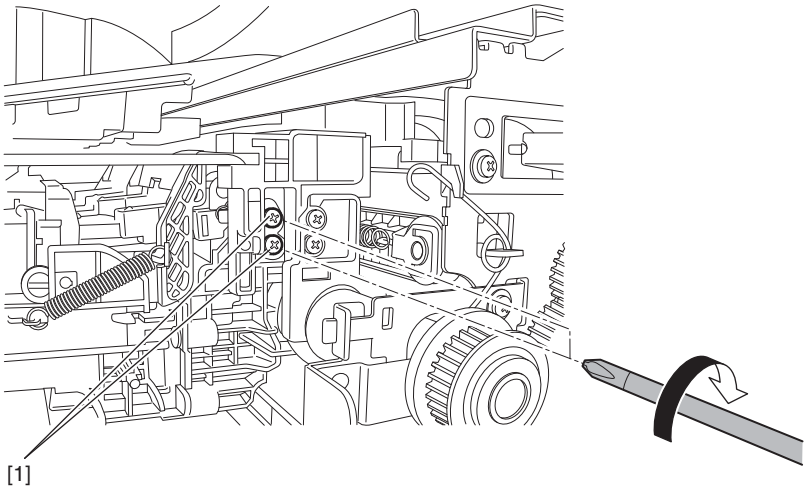
F-4-58

7) Secure the roller retainer [1] with the clip [3] in contact with the top of roller [2].



F-4-59

8) Retighten the two screws [1] loosened in Step 2) to secure the wire guide.



F-4-60

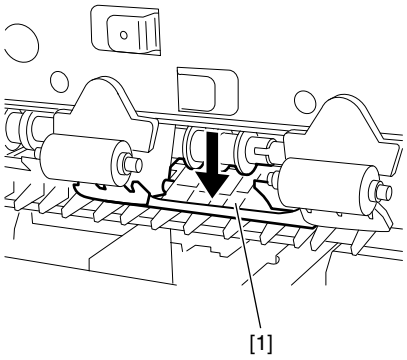
9) Pass the ink tubes through the wire guides.

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.

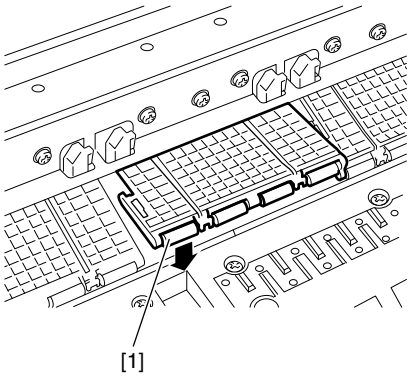
4.3.8 Feeder Unit

a) Removing the pinch roller
1) Remove the rear cover.
2) When removing the pinch roller, press down the pinch roller unit [1] in the direction of the arrow.



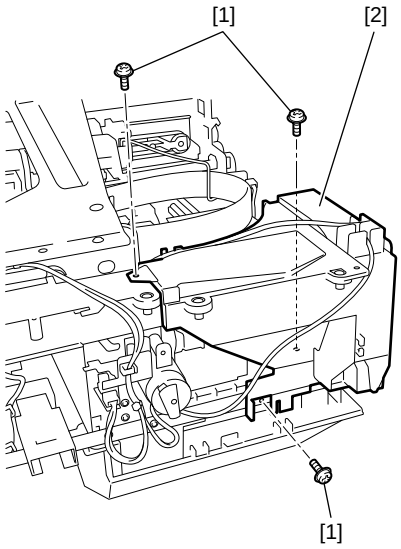
F-4-61

3) Remove the pinch roller [1].



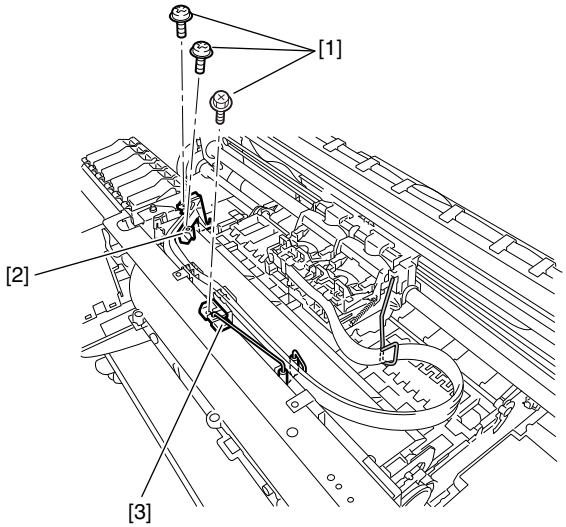
F-4-62

b) Removing the spur unit
1) When removing the spur unit, first open the top cover, and then remove the roll feed unit, left and right circle covers, tank cover, right upper cover, operation panel, lower rear cover, right cover, right front cover, upper front cover, lower front cover, cover guide, upper rear cover, and left and right cover mounting plates. Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > External Covers.
2) Remove the three screws [1], and then remove the mist fan [2].



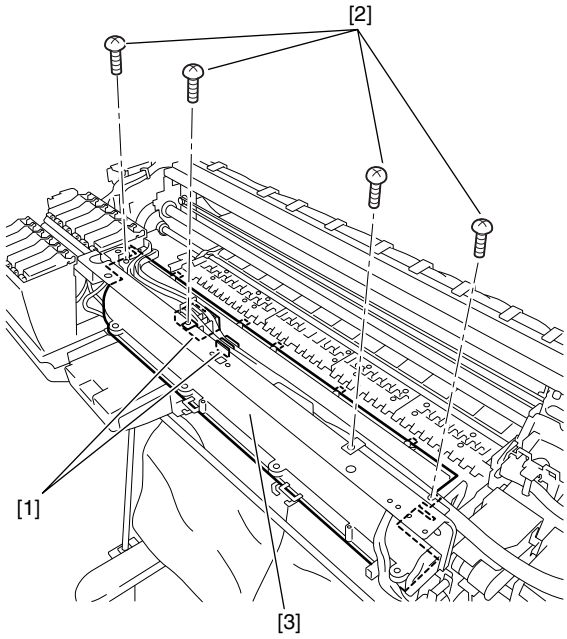
F-4-63

3) Remove the three screws [1], and then remove the tube guide [2] and the wire guide [3].



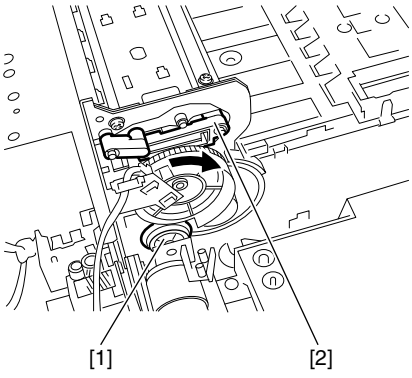
F-4-64

4) Remove the front duct [3] by removing the four screws [2] and freeing ink tube from the guide [1].



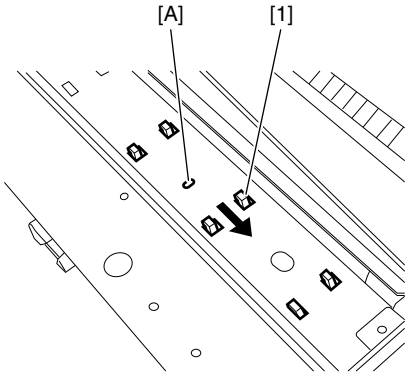
F-4-65

5) Turn the pulley [1] in the direction of the arrow so that the spur unit [2] is at the top position.



F-4-66

6) While pressing down the protrusion [A], slide the spur unit [1] in the direction of the arrow to remove it.

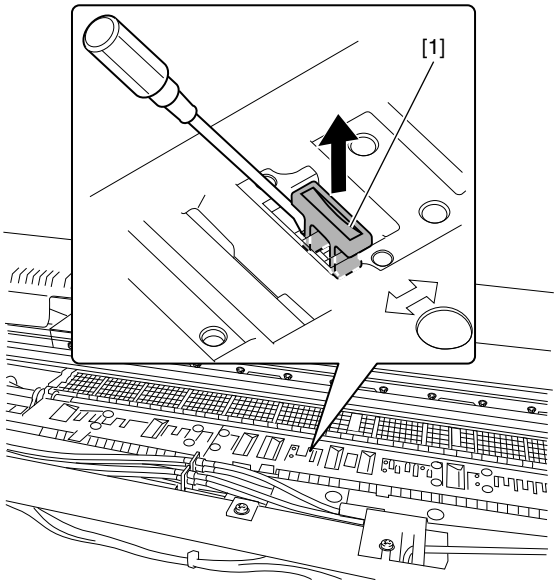


F-4-67

c) Handling the Feed Roller

The feed roller is an important mechanical component of the printer. Follow the precaution below when handling it.
- Do not touch the feed roller surface(coated surface).
- Do not scratch or dent the feed roller.

d) Removing the platen shutter
1) Remove the hook by using the flat-head screwdriver to remove the platen shutter [1].



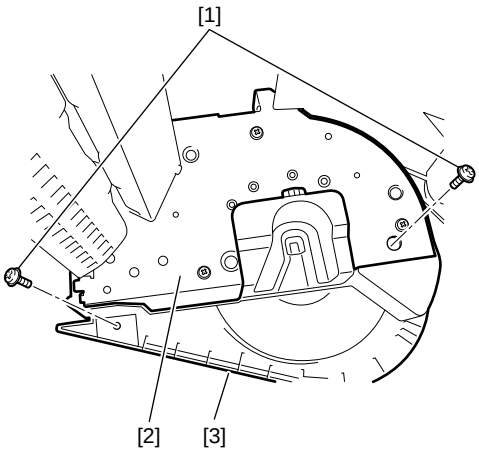
F-4-68

The platen is an important mechanical component of the printer. Take care not to damage or remove the platen.

4.3.9 Roll Feed Unit

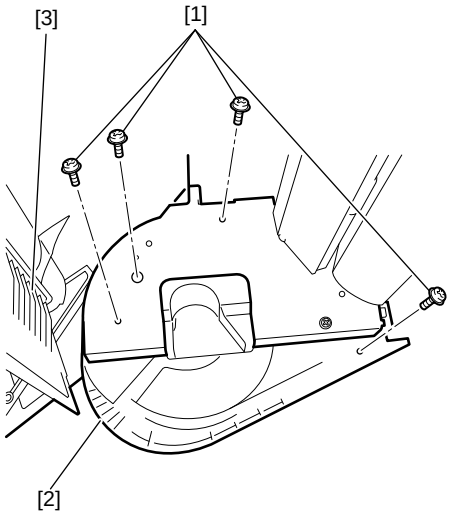
a) Removing the roll motor

1) When removing the roll motor, remove the roll feed unit [2] from the main body, and then remove the right cover [3] by removing the two screws [1].



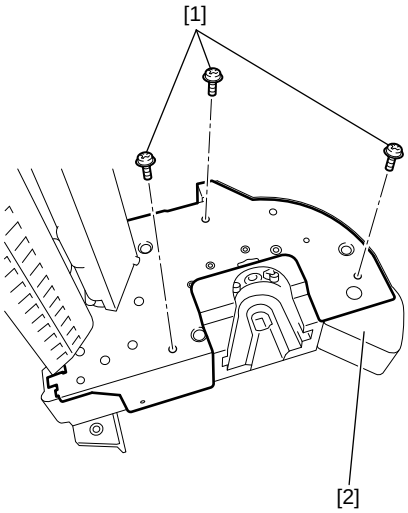
F-4-69

2) Remove the four screws [1], and then remove the left cover [2] and paper tray [3].



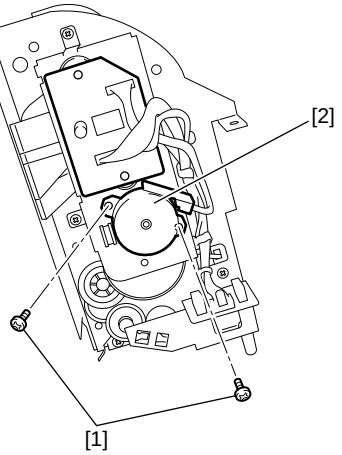
F-4-70

3) Remove the three screws [1], and then remove the right inner cover [2].



F-4-71

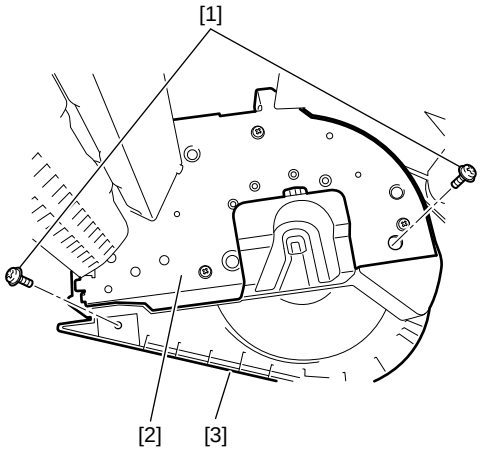
4) Remove the two screws [1], and then remove the roll motor [2].



F-4-72

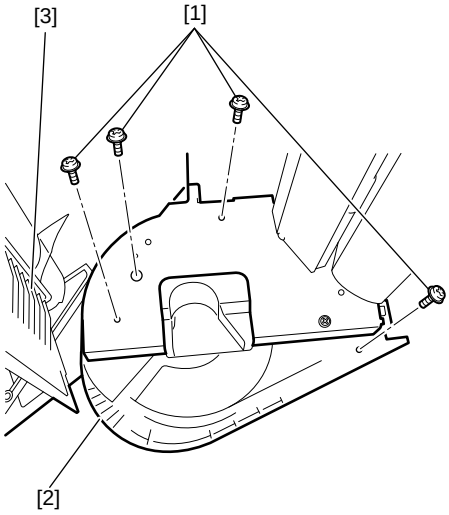
b) Removing the roll feed unit

1) When removing the roll motor, remove the roll feed unit [2] from the main body, and then remove the right cover [3] by removing the two screws [1].



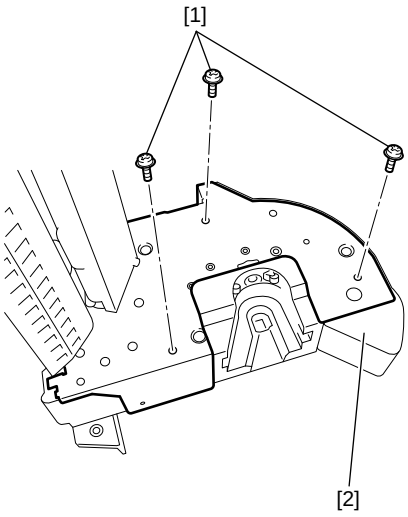
F-4-73

2) Remove the four screws [1], and then remove the left cover [2] and paper tray [3].



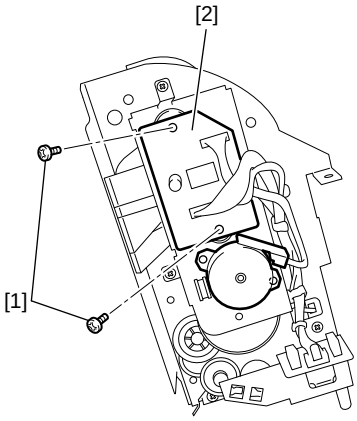
F-4-74

3) Remove the three screws [1], and then remove the right inner cover [2].



F-4-75

4) Remove the two screws [1], and then remove the roll feed unit PCB [2].

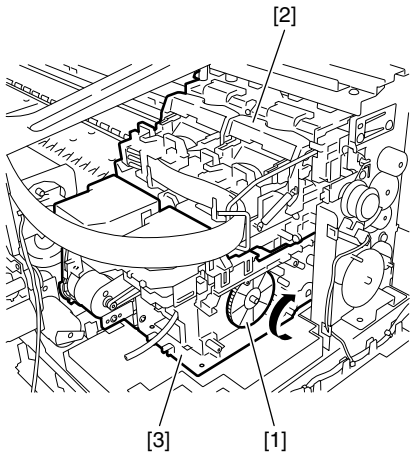


F-4-76

4.3.10 Purge Unit

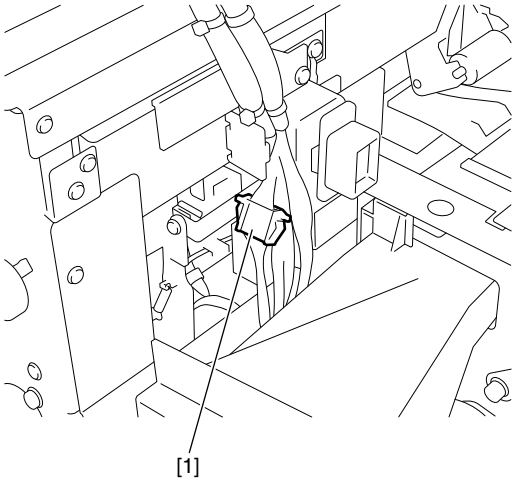
a) Removing the purge unit

1) Turn the gear [1] of the purge unit [3] in the direction of the arrow to unlock and uncap the carriage. Next, move the carriage [2] onto the platen.



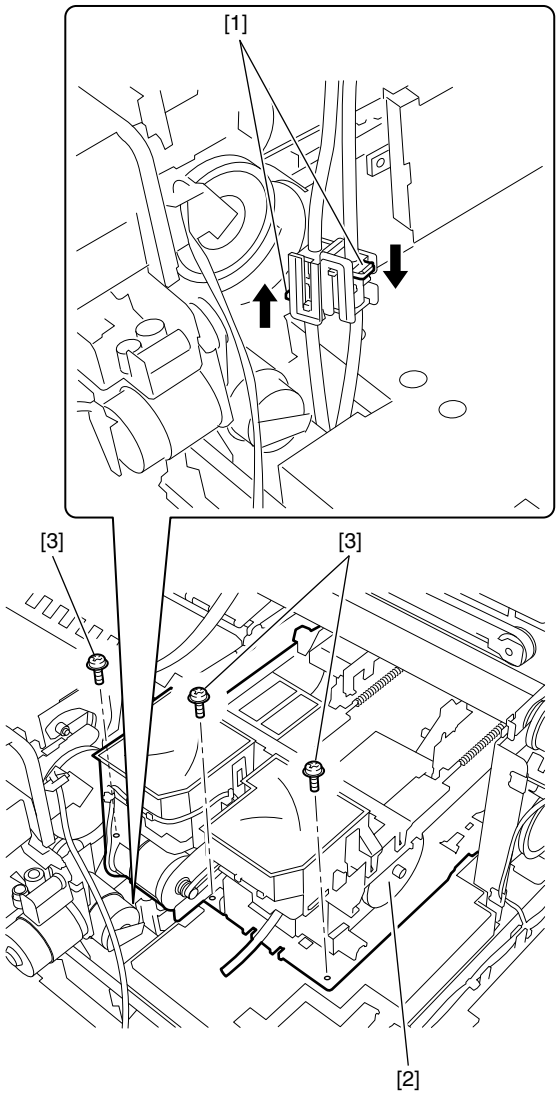
F-4-77

2) Remove the connector [1] from the rear of the unit to free the harness from the harness guide.



F-4-78

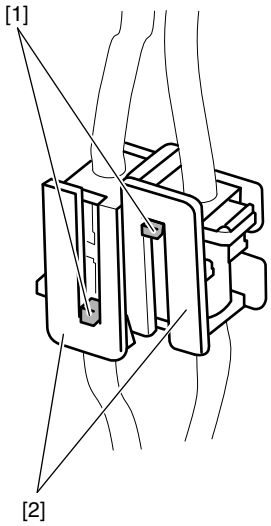
3) Remove the three screws [3] and press two claws [1] in the joint of the waste ink tube in the arrow direction to remove the purge unit [2].



F-4-79

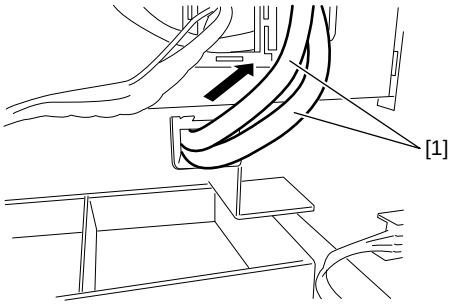
b) Precaution for mounting the purge unit

1) When attaching the waste ink tube, make sure that the waste ink tube has been firmly attached with the two projections [1] of the joint engaging to the each hook [2].
If the waste ink tube has not been attached firmly, it causes the ink leakage.



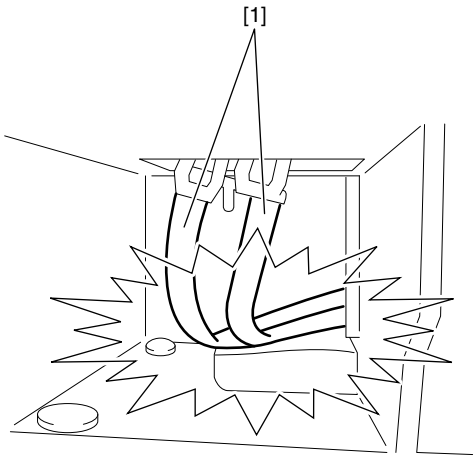
F-4-80

2) When mounting the purge unit, pull out the waste ink tube [1] from the back of the printer to the position where the marking is visible. It the waste ink tube is not pulled out to the marking position, it may bend and cause ink leakage.



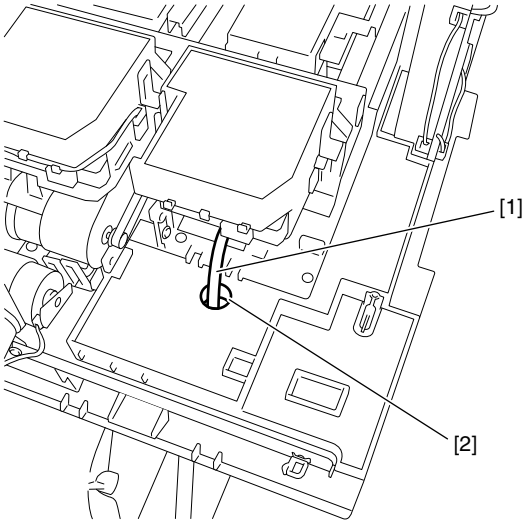
F-4-81

3) Check the waste ink tube [1] from the front of the unit to make sure that it is not broken or twisted.



F-4-82

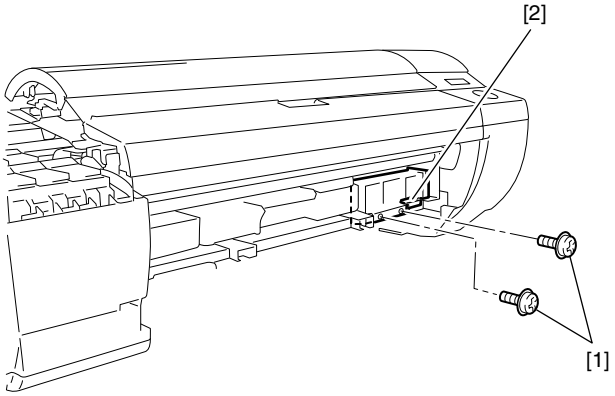
4) Check that waste ink tube [1] is inserted in the hole [2] in the absorber.



F-4-83

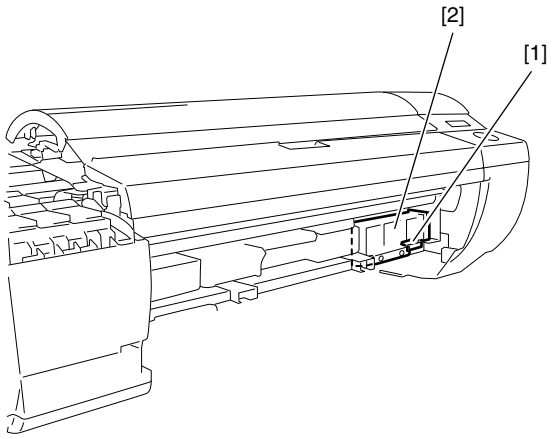
4.3.11 Waste Ink Collection Unit

a) Removing the waste ink box
1) When removing the waste ink box, first remove the output guide.
2) Remove the two screws [1] and connector cover [2].



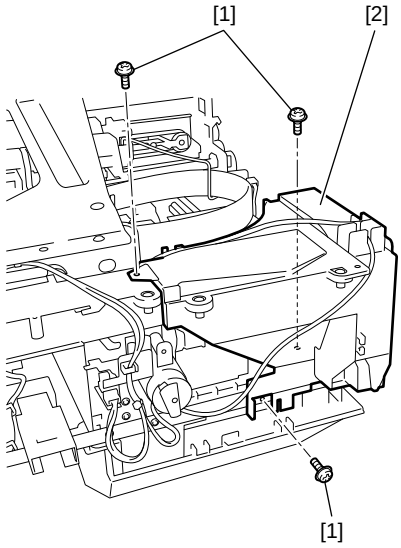
F-4-84

3) Disconnect the connector [1], and then remove the waste ink box [2].



F-4-85

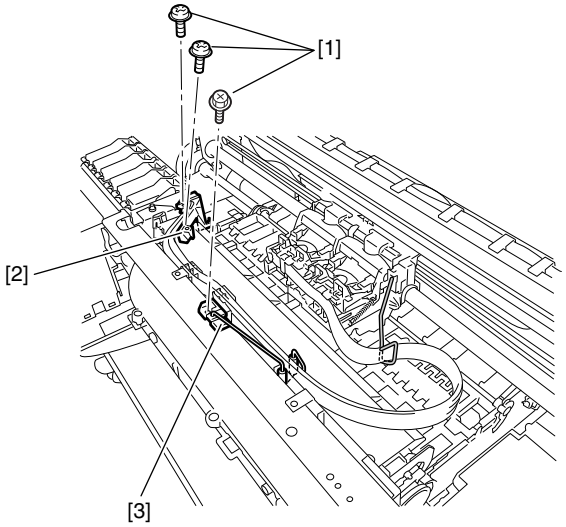
b) Removing the mist fan
1) When removing the mist fan, first open the top cover, and then remove the output guide, right circle cover, right upper cover, operation panel, mist filter, filter cover, filter, right cover, and right front cover.
Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > External Cover.
2) Remove the three screws [1] and disconnect the connector, and then remove the mist fan [2].



F-4-86

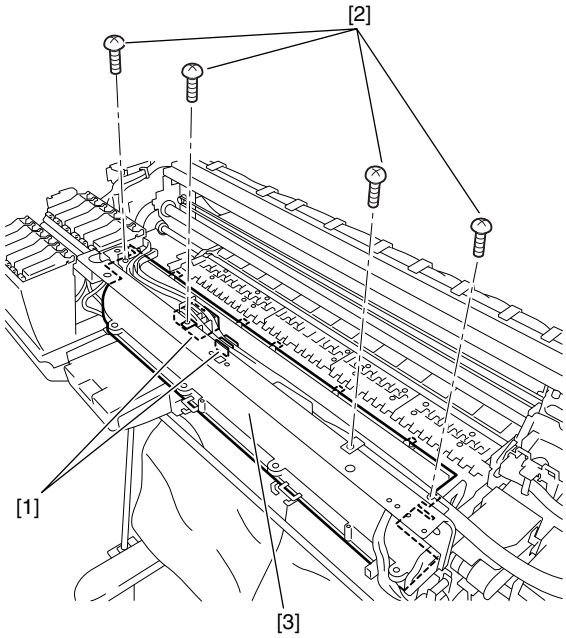
c) Removing the platen duct

1) When removing the platen duct, first open the top cover, and then remove the output guide, maintenance cartridge, waste ink box, left and right circle cover, tank cover, right upper cover, operation panel, mist filter, filter cover, filter, right cover, right front cover, and mist fan.
Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly andReassembly > External Cover.
2) Remove the three screws [1], and then remove the tube guide [2] and wire guide [3].



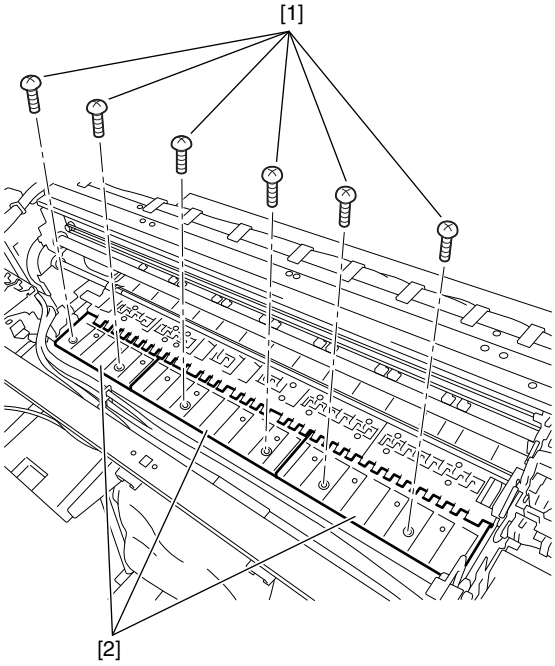
F-4-87

3) Remove the front duct [3] by removing the four screws [2] and freeing ink tube from guide [1].



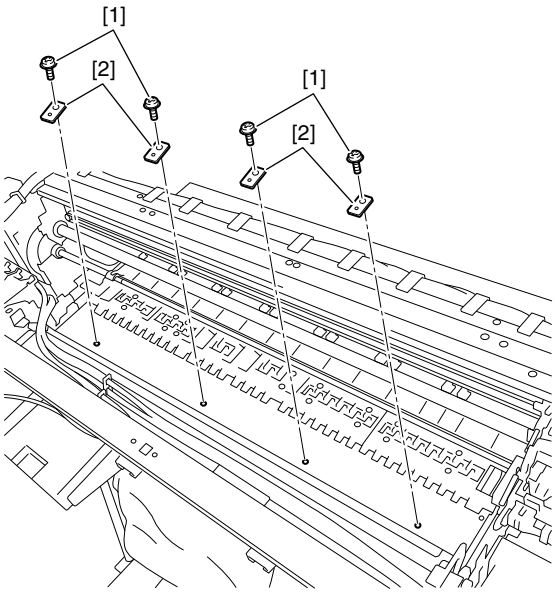
F-4-88

4) Remove the six screws [1] and, while lifting the spur unit, remove three platens (front)[2].



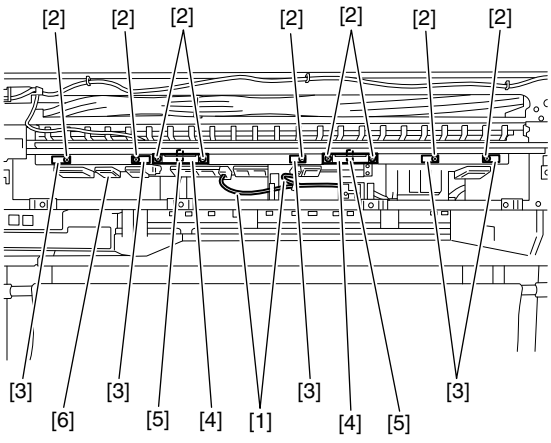
F-4-89

5) Remove the four screws [1] and four bushings [2].



F-4-90

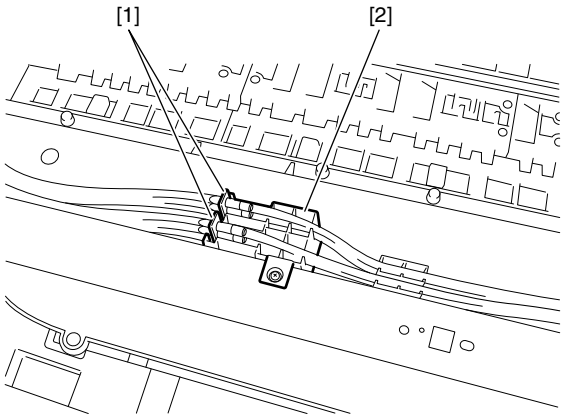
6) Disconnect the two waste ink tubes [3] and remove the nine screws [2] and five bushings [3] and two bushing covers [4] and two springs [5], and then remove the platen duct [6].



F-4-91

d) Note on attaching ink tubes to the front duct

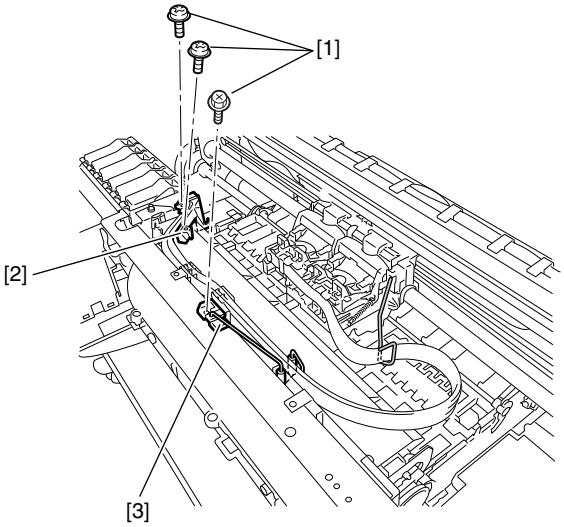
In attaching ink tubes to the front guides, insert joint [1] into guide [2] first and then attach them to the guides, making sure that the tubes are not broken or twisted. The marks appearing on the tubes were used for factory assembly purposes and are not used for servicing.



F-4-92

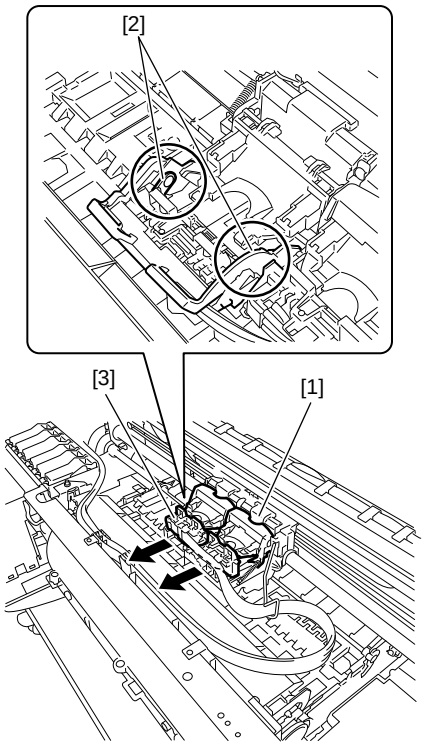
4.3.12 Ink Tank Unit

a) Removing the ink tank unit
1) Drain the ink. Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > Draining the ink.
2) Remove the output guide, left and right circle covers, tank cover, left and right covers, left and right front covers, right upper cover, operation panel, mist filter, filter cover, filter, lower rear cover, upper front cover, lower front cover and cover support plate (left).
Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > External Cover.
3) Move the carriage unit to the center. Refer to "Removing the Purge Unit".
4) Remove the three screws [1], and then remove the tube guide [2] and wire guide [3].



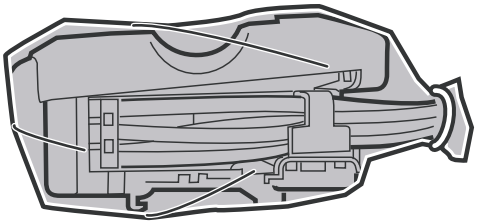
F-4-93

5) Remove the four link levers [2] from the carriage unit [1], and then remove the joint base [3].



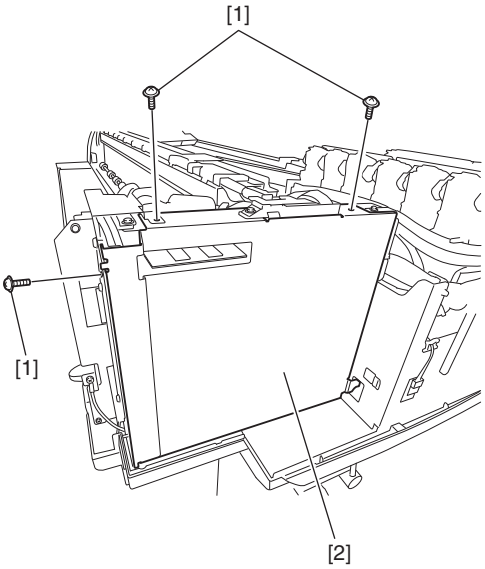
F-4-94

Put the removed joint base in a plastic bag so that ink does not splash.



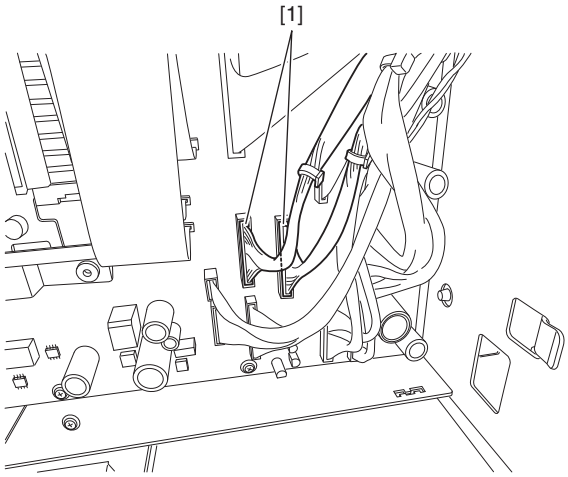
F-4-95

6) Remove the cutter unit and cutter lifter unit.
Refer to DISASSEMBLY/REASSEMBLY > Point to Note on Disassembly and Reassembly > Cutter
7) Remove the three screws [1], and then remove the shield plate [2] of the main controller PCB.



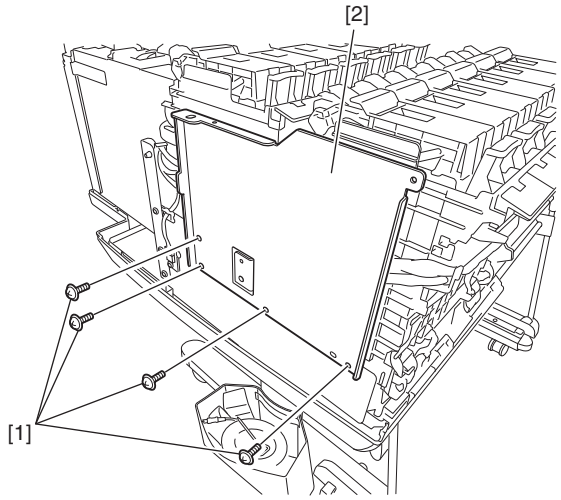
F-4-96

8) Disconnect the two connectors [1] on the main controller PCB.



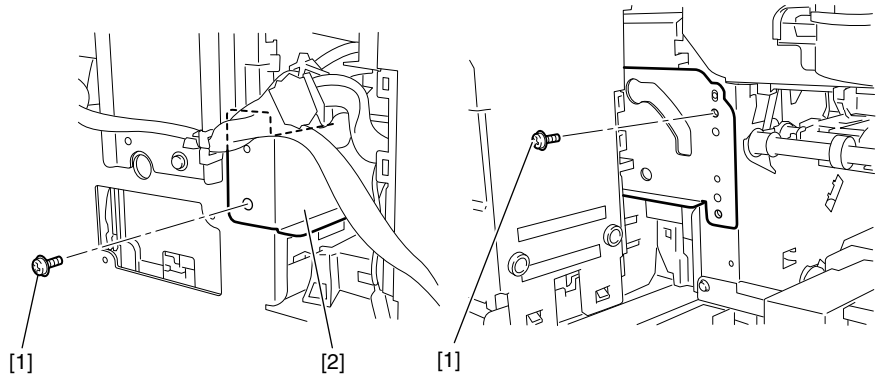
F-4-97

9) Remove the four screws [1], and then remove the support plate [2].



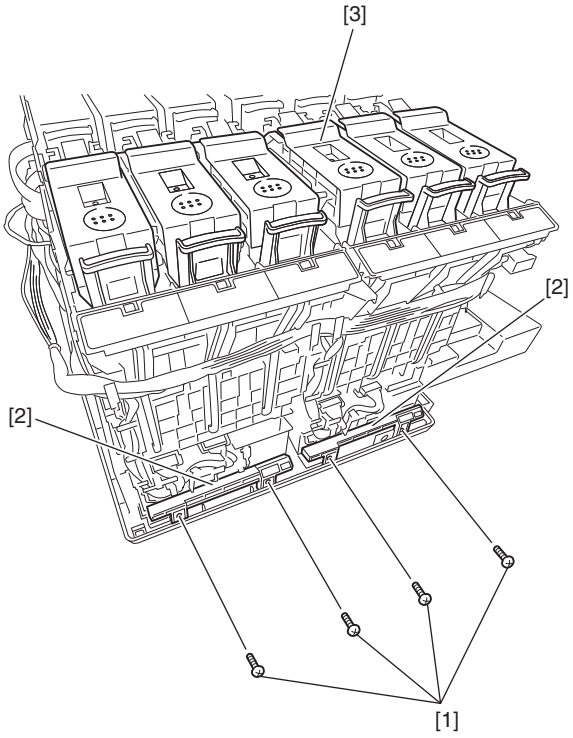
F-4-98

10) Remove the two screws [1], and then remove the support plate [2].



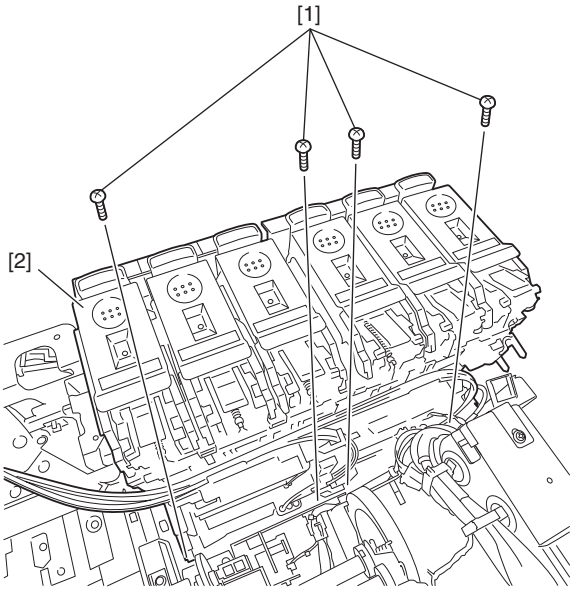
F-4-99

11) Remove the four screws [1] to remove the two fixing guide [2], and then remove the ink tank unit F [3].



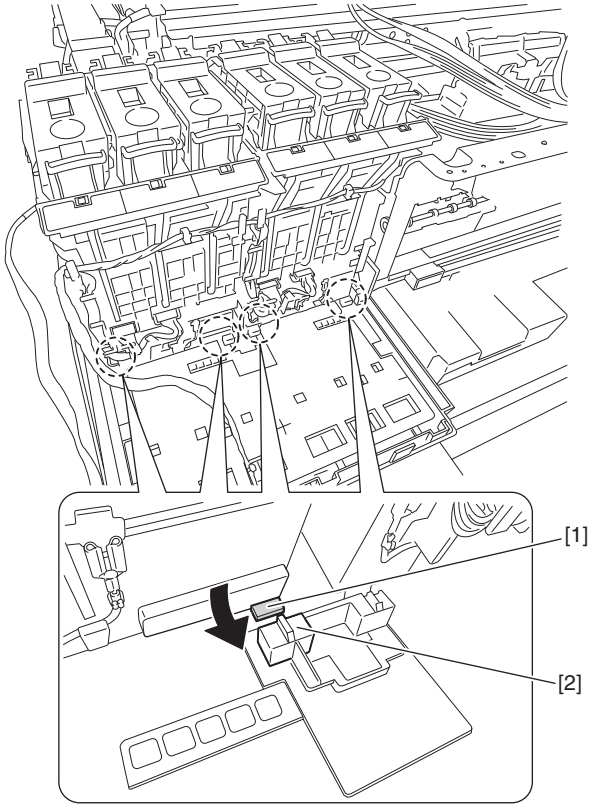
F-4-100

12) Remove the four screws [1] to remove the ink tank unit R [2].



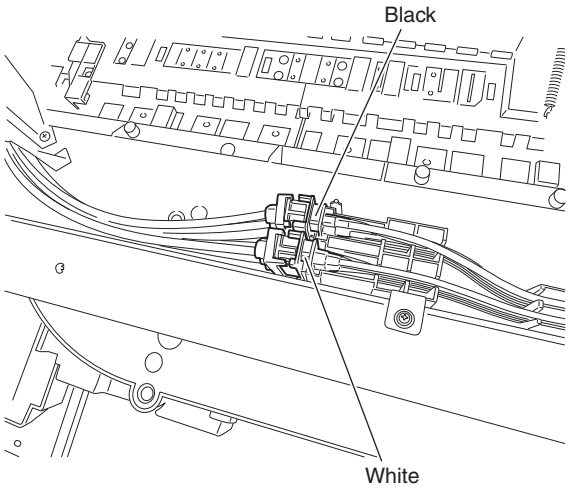
F-4-101

- When attaching the ink tank unit R, check that the four hooks [1] fit in the notches [2].



F-4-102

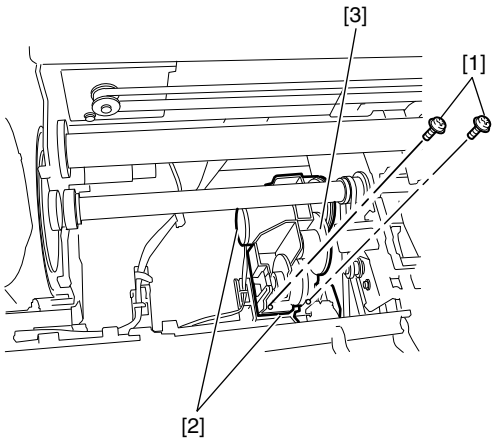
- Attach the ink tube joints to the joint base such that the white joint is located at the front and the black joint is located at the back.



F-4-103

b) Removing the valve motor unit

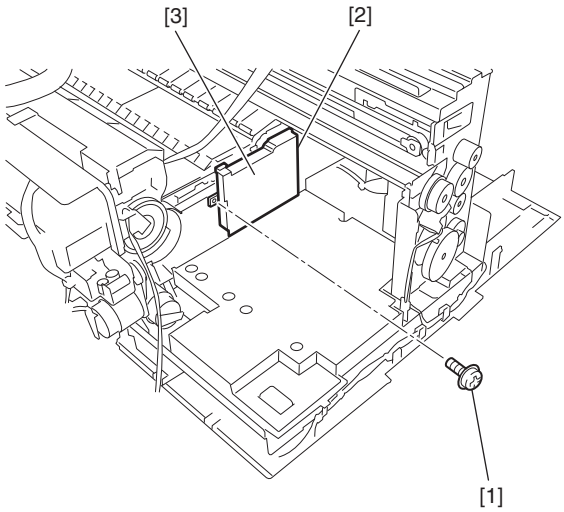
1) When removing the valve motor unit, remove the ink tank cover.
2) Remove the two screws [1], disconnect the two connectors [2], and then remove the valve motor unit [3].



F-4-104

4.3.13 Head Management Sensor

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



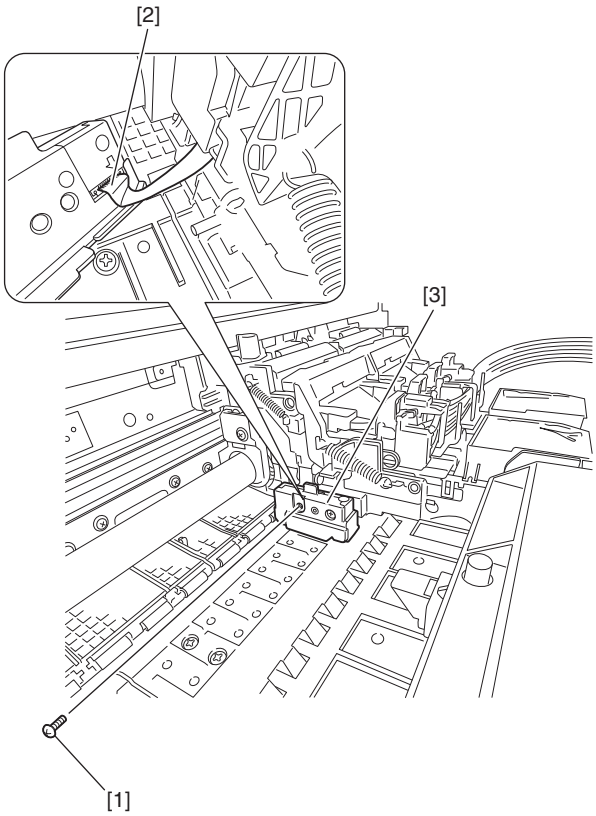
F-4-105

b) 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.

4.3.14 Multi Sensor

a) Removing the multi sensor
1) Remove the screw [1], disconnect the flexible cable [2], and then remove the multi sensor [3].



F-4-106

b) Action following the replacement of the multi sensor
Since the multi sensor has individual electrical specificity, the following are recalibrated at the factory, namely, the optical axis of the sensor, the sensor gain for measuring the printhead height and sensor calibration. Accordingly, carry out the following adjustments in the service mode whenever replacing the carriage unit or multi sensor.

* The multi sensor reference unit (QL2-8032: PLATE, REFLECTION, MULTI-SENSOR) must be replaced at the same time whenever the carriage or the multi sensor is being replaced.
* When replacing the carriage unit, refer to Adjustment and Setup > Procedure after Removing or Replacing the Carriage Unit.

1) Carry out the following service mode without media loading.
 - Service mode : SERVICE MODE > ADJUST > GAP CALIB.
2) Load the following media.
 Media type : Photo glossy paper
 Media size : Media having a width equal too larger than that of A2-size paper
3) Carry out the following service mode.
 - Service mode : SERVICE MODE > ADJUST > PRINT PATTERN > OPTICAL AXIS

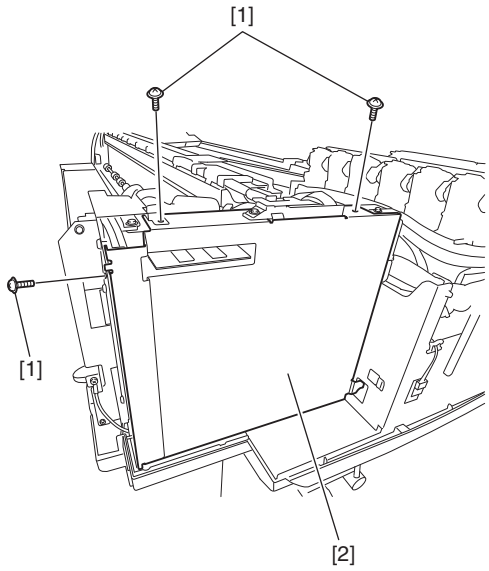
4.3.15 PCBs

Do not replace the main controller PCB and maintenance cartridge relay PCB(ROM board) at the same time.
These PCBs store important data such as settings and carriage drive time. Before replacement of either PCB, the data stored in it is moved to the other PCB through internal communication so that it can be taken over to the new PCB automatically. This is the reason why the two PCBs should not be replaced at the same time.
If you want to replace both PCBs at the same time, first carry out the procedure "Procedure for replacing the maintenance cartridge relay PCB(ROM board)" and then carry out the procedure "Procedure for replacing the main controller PCB".
After replacing with the main controller PCB or maintenance cartridge relay PCB which are supplied as 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".

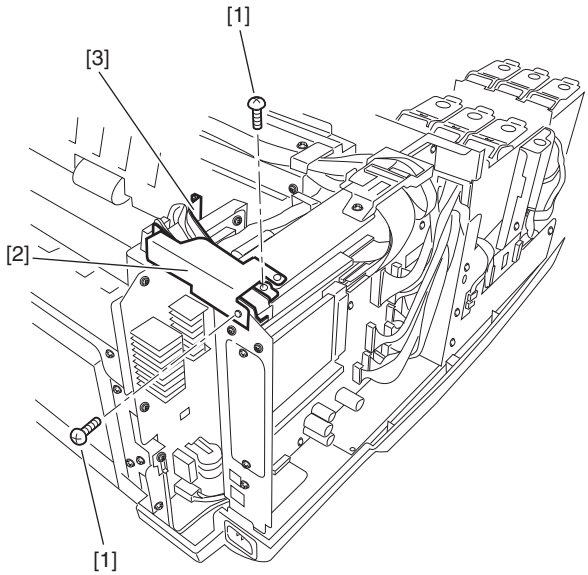
---

a) Removing the main controller PCB
1) To remove the main controller PCB, open the top cover and remove the roll feed unit, left circle cover, tank cover, left cover, lower rear cover, lower rear left cover and left rear cover.
Refer to DISASSEMBLY/REASSEMBLY > Points to note on Disassembly and Reassembly > External Covers.
2) Remove the three screws [1] and remove the shield plate [2]. Then disconnect all connectors on the main controller PCB.



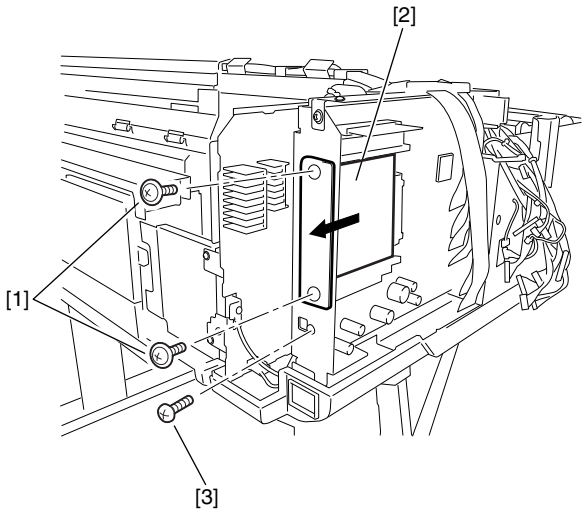
F-4-107

3) Remove the two screws [1], and then remove the shield plate [2] and the guide [3].



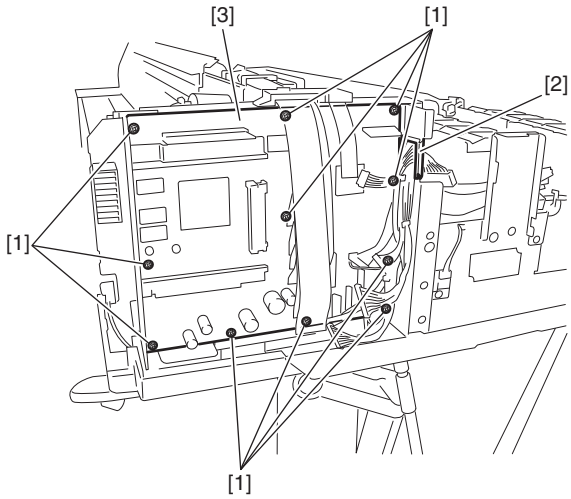
F-4-108

4) If the HDD expansion PCB has been attached, remove the two screws [1] to remove the HDD expansion PCB [2], and then remove the screw [3].



F-4-109

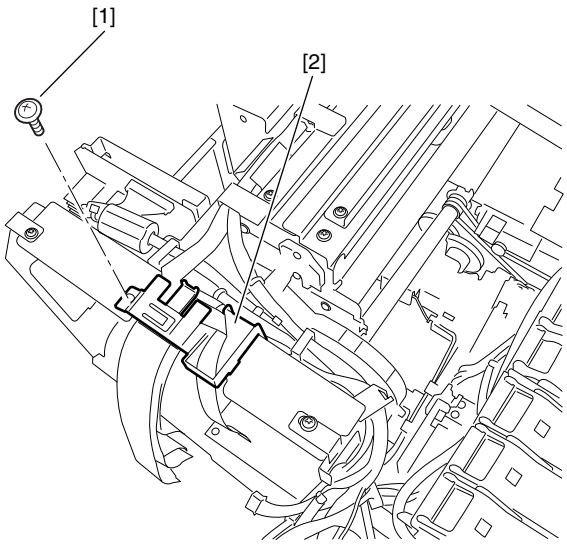
5) Remove the eleven screws [1] and free the harness from harness guide [2] to remove the main controller PCB [3].



F-4-110

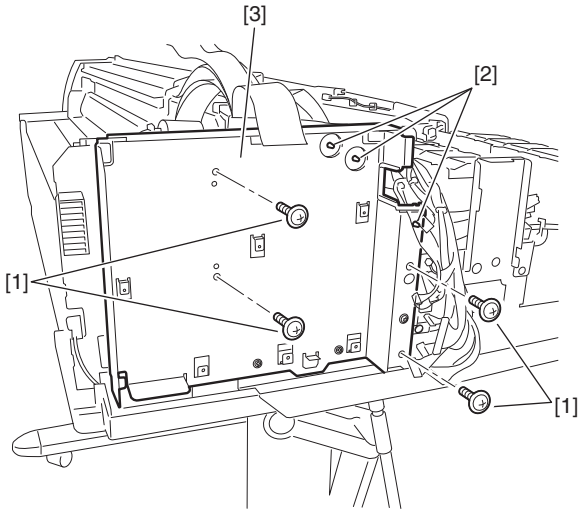
b) Removing the main controller mounting plate

1) Remove the main controller PCB.
2) Free the harness from the harness guide.
3) Remove the screw [1] and remove the flexible guide [2].



F-4-111

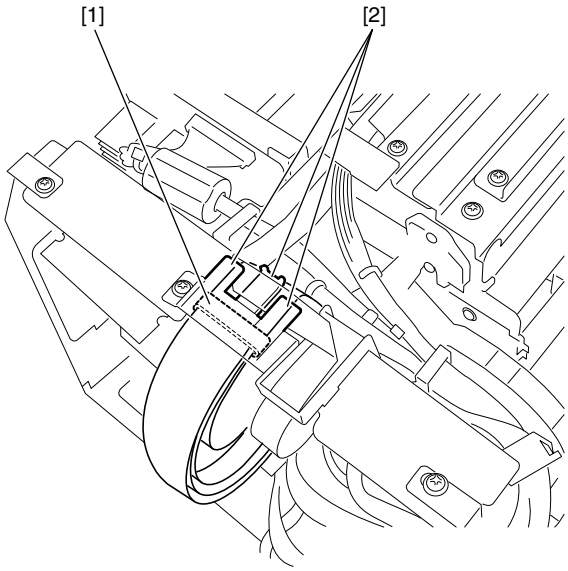
4) Remove the four screws [1] and three hooks [2] from the harness guide and remove the main controller mounting plate [3].



F-4-112

c) Note on installing the cable holder

In installing the cable holder, secure ferrite core [1] to the flexible cable on the carriage with the cable holder before hooking the flexible cable from the operation panel at the three claws [2].

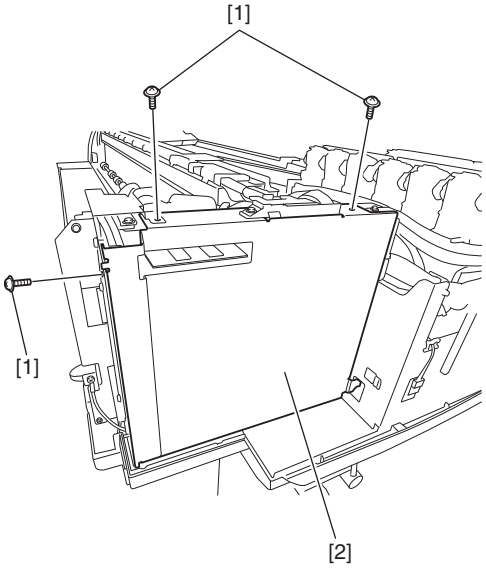


F-4-113

d) Removing the power supply PCB

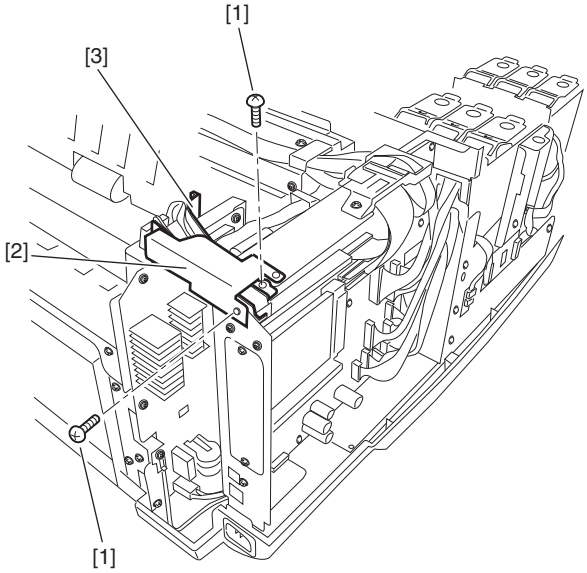
1) To remove the power supply PCB, open the top cover and remove the roll feed unit, left circle cover, tank cover, left cover, lower rear cover, lower rear left cover and left rear cover.
Refer to DISASSEMBLY/REASSEMBLY > Points to note on Disassembly and Reassembly > External Covers.

2) Remove the three screws [1] and remove the shield plate [2].



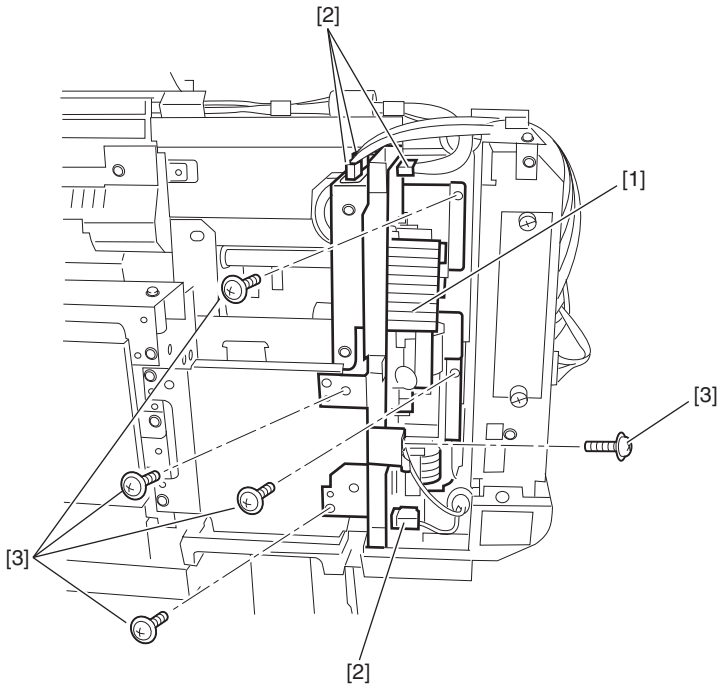
F-4-114

3) Remove the two screws [1], and then remove the shield plate [2] and the guide [3].



F-4-115

4) Disconnect the four connectors [2] from the power supply PCB [1] and hard disk drive (when the hard disk drive has been attached).
5) Remove the five screws [3], and then remove the power supply PCB [1] together with the mounting plate.



F-4-116

e) 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.

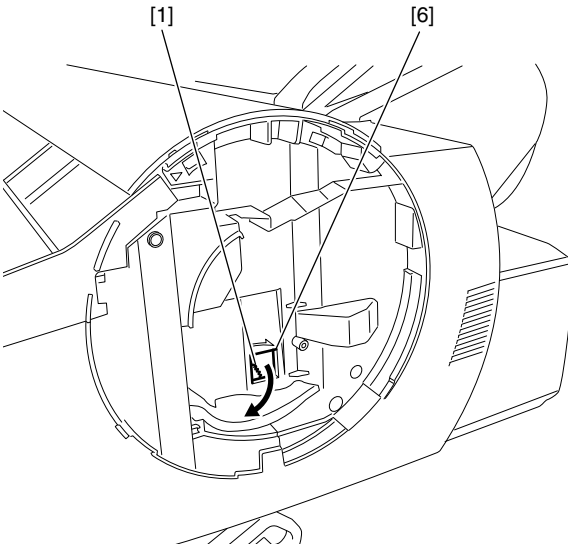
f) Replacing the main controller PCB
1) Turn off the power and disconnect the power plug.
2) Replace the main controller PCB.
3) Reconnect the power plug and turn on the power while pressing the [Load] and [Navigate] keys. (Start the printer in PCB replacement mode.)
4) Release the key, but not before 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.

4.3.16 Opening the Cap/Moving the Wiper Unit

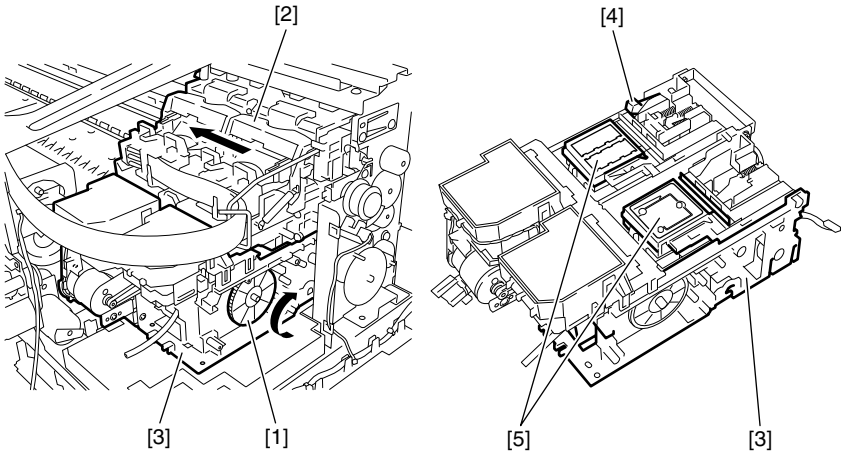
This section explains how to open the cap and ink supply valve.
To move the carriage with the power off, you need to release the carriage lock pin and cap.

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 manually.
1) Remove the right circle cover and mist filter.
Refer to DISASSEMBLY/REASSEMBLY > points to Note on Disassembly and Reassembly > External Cover.
2) Turn the gear [1] of the purge unit [3] in the direction of the arrow from the hole [6] of the right cover. The cap [5] and lock pin [4] move down, allowing you to move the carriage [2].



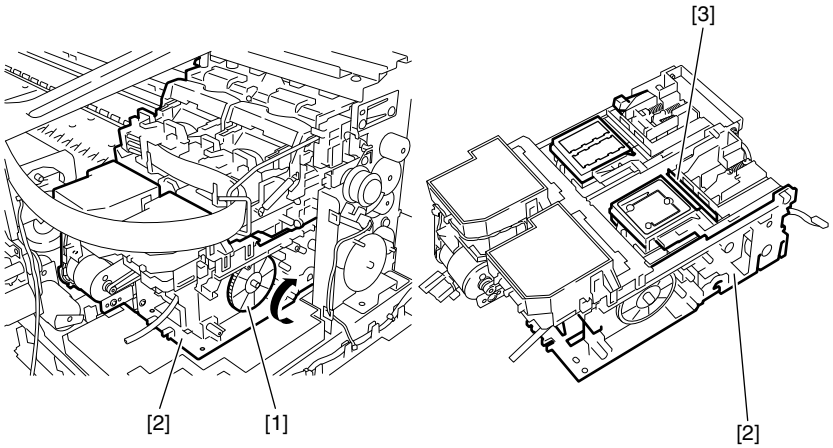
F-4-117



F-4-118

c) Moving the Wiper Unit

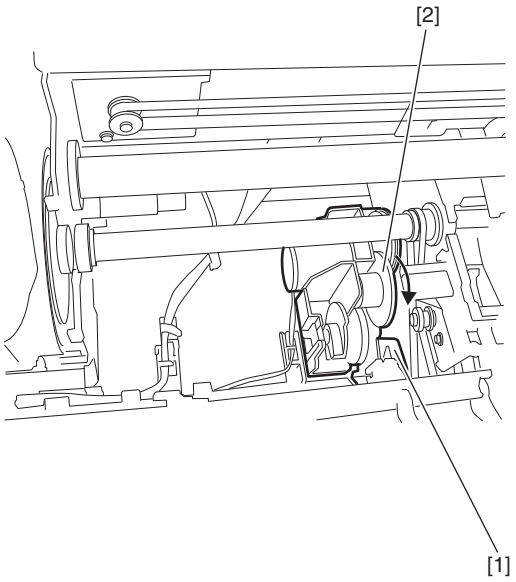
1) Open the top cover, and then remove the roll feed unit, output guide, right circle cover, right upper cover, operation panel, mist filter, exhaust filter, right cover, right front cover, cover guide, cover plate(right).
Refer to DISASSEMBLY/REASSEMBLY > points to Note on Disassembly and Reassembly > External Cover.
2) To move the wiper unit [3], turn the gear [1] of the purge unit [2] in the direction of the arrow.



F-4-119

4.3.17 Opening/Closing the Ink Supply Valve

1) Open the top cover, and then remove the left circle cover and tank cover.
2) To open the ink supply valve, turn the cam [2] in the direction of the arrow and press the link [1].



F-4-120

- If the tube is full of ink, releasing the printhead lock lever with the ink supply valve open can cause the ink to flow back to the ink supply unit, resulting in leakage of ink from the ink supply needle.
- If the ink supply valve is held open due to a problem such as a valve motor error(03130031-2F3A), remove the valve motor unit(refer to DISASSEMBLY/RE-ASSEMBLY > Points to Note on Disassembly and Reassembly > Ink Tank Unit) and close the ink supply valve.

4.3.18 Draining the Ink

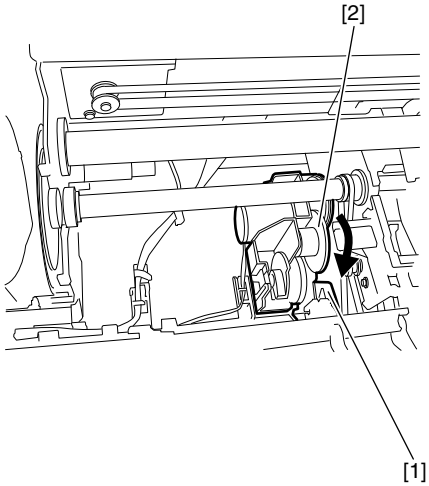
There are two methods of removing the ink, a manual method and an automatic method.
There the ink is drained, the ink inside the ink passage totaling about 72g(about 6g x 12) is drained as waste ink.

⚠
To prevent ink leakage, be sure to drain the ink inside the ink passage before transporting the printer again.

1. Automatic ink drainage
To perform "automatic ink drainage", select "Main Menu" > "Maintenance" > "Move Printer".

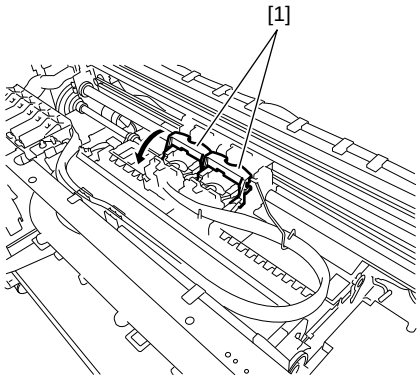
⚠
Perform automatic ink drainage again if a power outage or other cause shuts off the power during the operation for automatic ink drainage.

2. Manual Ink Drainage
Perform manual ink drainage when the printer cannot be powered due to a printer's electrcal part failure, firmware error, or power supply problem.
Manual Ink Drainage Procedure
1) Open the top cover, and then remove the left and right circle covers, tank cover, right upper cover, operation panel, mist filter, filter cover, filter, and right cover.
Refer to DISASSEMBLY/REASSEMBLY > Pointe toNote on Disassembly andReassembly > External Cover.
2) Move the carriage onto the platen.
Refer to DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > Opening the Cap/Move the Wiper Unit.
3) Turn the cam [2] in the direction of the arrow, and then press the link [1] to open the ink supply valve.



F-4-121

4) Release both printhead fixer levers [1] to flow the ink from inside the ink tube to the sub-buffer of the ink tank unit.



F-4-122

⚠
The sub-buffer can contain 22g of ink. About 6g of ink flows into the sub-buffer each time manual ink drainage is performed.

5) Make sure that the ink has been drained completely, turn the cam to close the ink supply valve.

MEMO:
When supplying the ink to the printer after the manual ink drainage, return the printer to the normal condition, and then turn ON the power supply without the printhead installed. And according to the message, execute the installation of the printhead.

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".

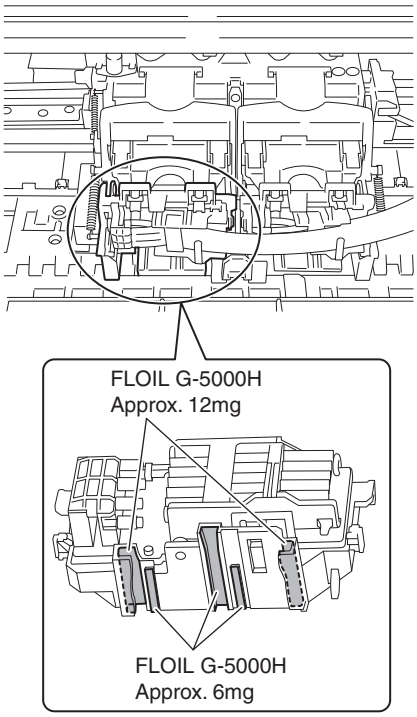


Do not apply the grease to locations in which not designated grease may cause poor print quality. Take particular care that grease do not get onto the wiper, cap, carriage shaft and the linear scale.

No.	Location	Grease	Quantity	Remarks
1	Joint base	FLOIL G-5000H	Approx. 6/12mg	
2	Shaft cleaner/oil pad	EU-1	Soaks enough.	
3	Eject roller bearing	FLOIL G-5000H	Approx. 12mg	
4	Eject roller center bearing	FLOIL G-5000H	Approx. 12mg	
5	Spur cam	FLOIL G-5000H	Approx. 20mg	
6	Pinch roller unit release shaft	FLOIL G-5000H	Approx. 12mg	

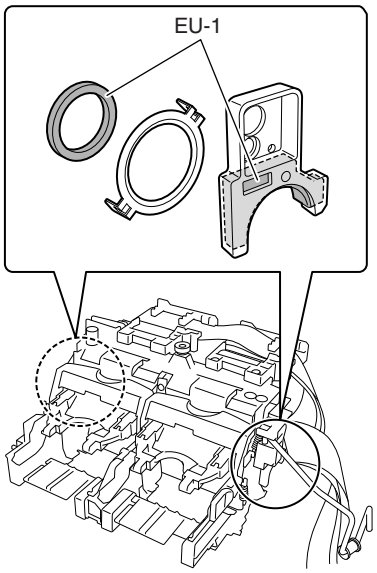
a) Carriage unit

1) Joint base



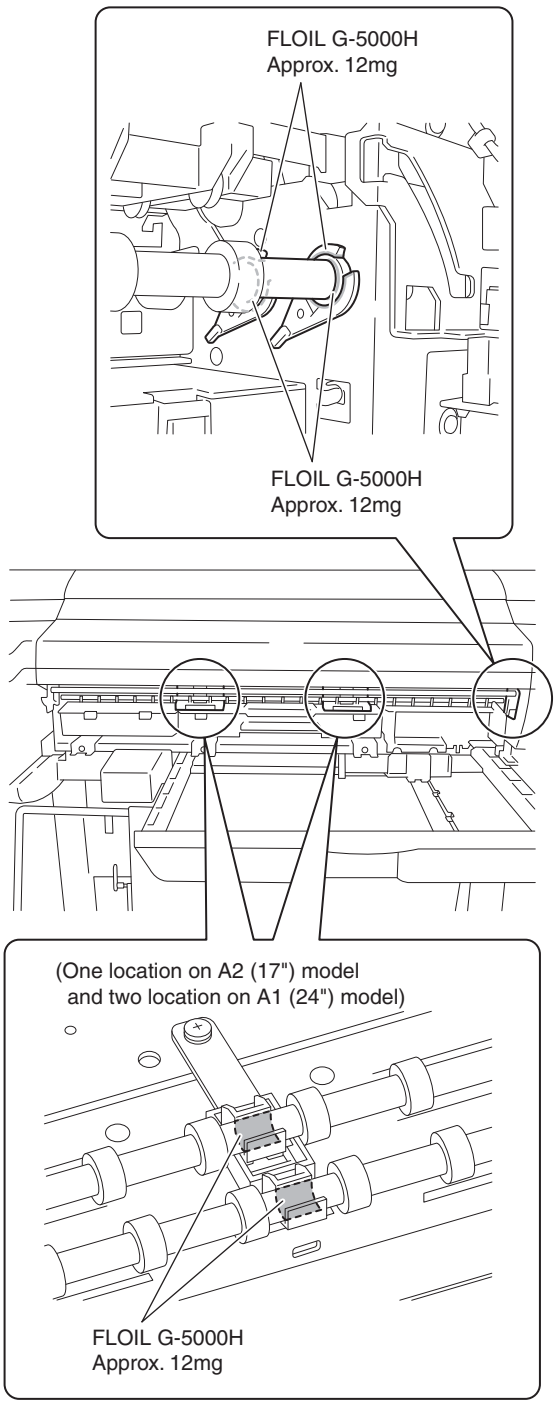
F-4-123

2) Shaft cleaner/oil pad



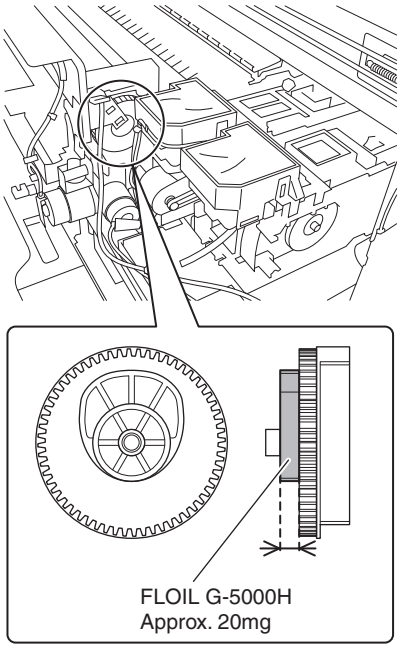
F-4-124

b) Eject roller unit
3) Eject roller bearing
4) Eject roller center bearing



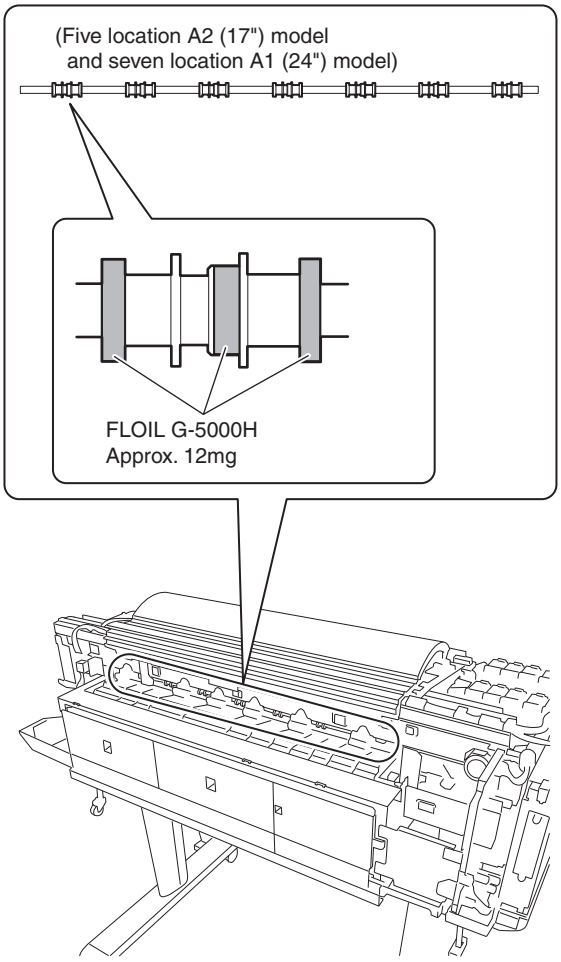
F-4-125

c) Spur unit
5) Spur cam



F-4-126

d) Pinch roller unit
6) Pinch roller unit release shaft



F-4-127

4.5 Adjustment and Setup Items

4.5.1 Adjustment Item List

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

T-4-1

Adjustment item	Adjustment timing
Multi sensor recalibration	Multi sensor replacement/removal
	Carriage unit replacement/removal
Adjusting wire roller	Wire guide replacement/removal
	Carriage unit replacement/removal
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) Multi Sensor Recalibration
Since the multi sensor has individual electrical specificity, the following are recalibrated at the factory, namely, the optical axis of the sensor, the sensor gain for measuring the printhead height and sensor calibration. Accordingly, carry out the following adjustments in the service mode whenever replacing the carriage unit or multi sensor.

1) Carry out the following service mode without media loading.
   - Service mode : SERVICE MODE > ADJUST > GAP CALIB.
2) Load the following media.
   Media type : Photo glossy paper
   Media size : Media having a width equal too larger than that of A2-size paper
3) Carry out the following service mode.
   - Service mode : SERVICE MODE > ADJUST > PRINT PATTERN > OPTICAL AXIS



- The multi sensor reference unit (QL2-8032: PLATE, REFLECTION, MULTI-SENSOR) must be replaced at the same time whenever the carriage or the multi sensor is being replaced.
- After performing the [SERVICE MODE] > [ADJUST] > [GAP CALIB.] of the service mode, check that the media is detected normally when loading the media.

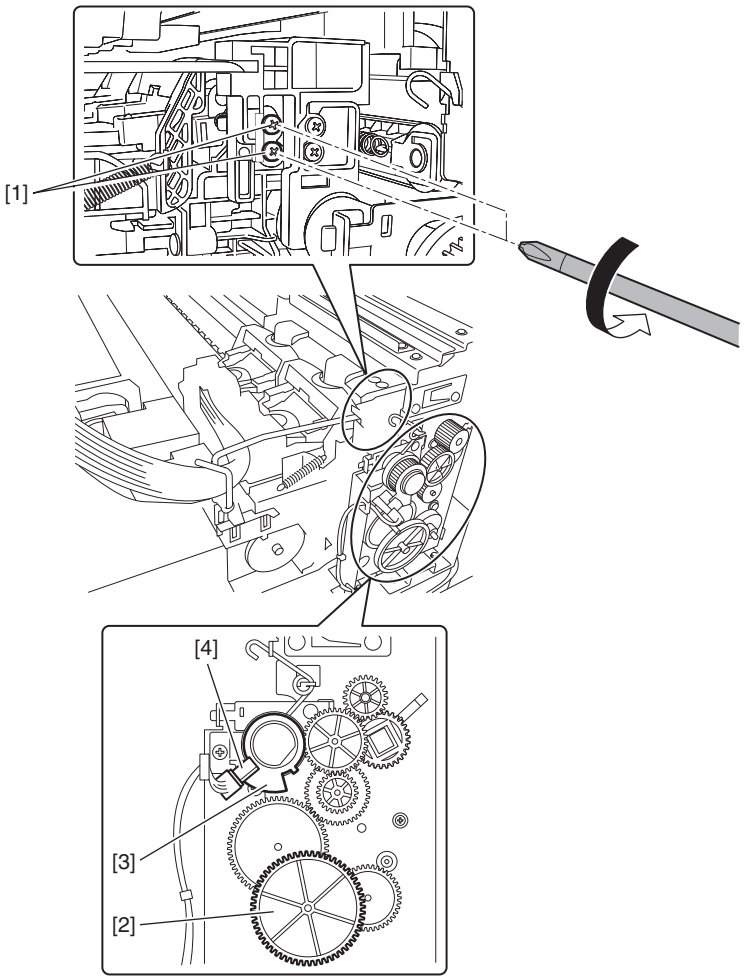
b) Carriage Motor Adjustment
- After the carriage and carriage motor and carriage belt and linear encoder sensor has been removed or replaced, execute the following service mode.
Service mode: SERVICE MODE > ADJUST > CR MOTOR COG

c) Adjusting the wire roller

To prevent the wire roller mounted on the carriage from contacting the duct and others during carriage operation, perform the following adjustment whenever you have removed or replaced the carriage unit. This adjustment is not required when you have replaced only the multi sensor.

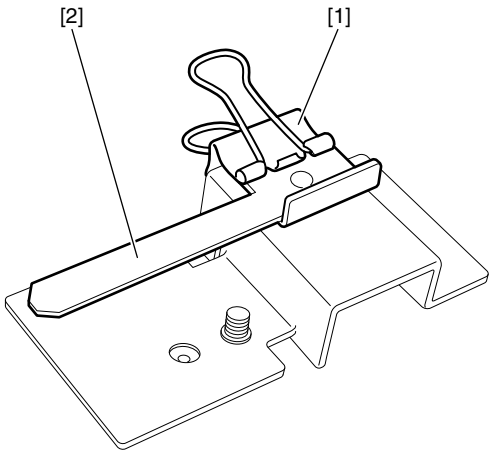
- Make adjustments with the carriage lock released.
- Make adjustments with the tube disconnected from the tube guide.

1) Remove the ink tube from the wire guide.
2) Loosen the two screws [1].
3) Turn the gear [2] until the lift cam flag [3] reaches the position shown below.
   - Bottom position where the sensor [4] light is blocked by the flag (lowest position to which the carriage unit descends).



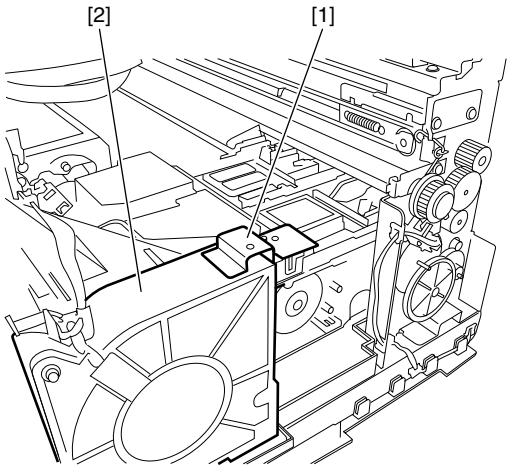
F-4-128

4) Remove the clip [1] and roller retainer [2] from the carriage wire tool.



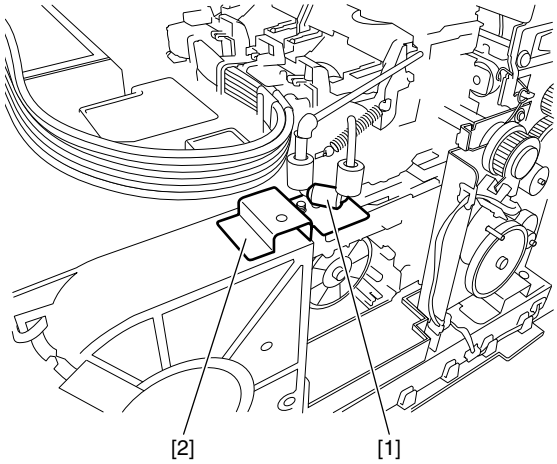
F-4-129

5) Install the carriage wire tool [1] in position with its leaf spring being attached to the top of mist fan [2].



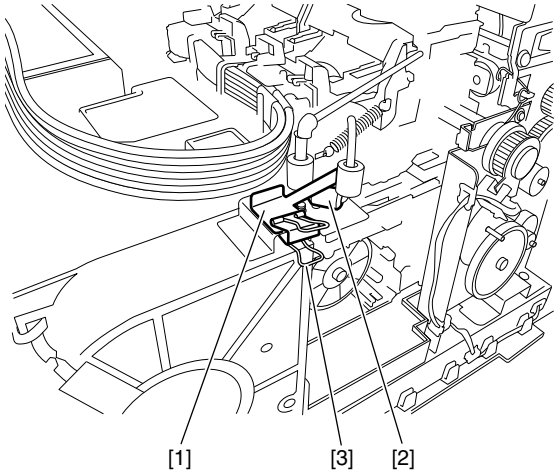
F-4-130

6) Moving the carriage, adjust the height of the wire guide to bring its roller [1] into contact with the top of carriage wire tool [2].



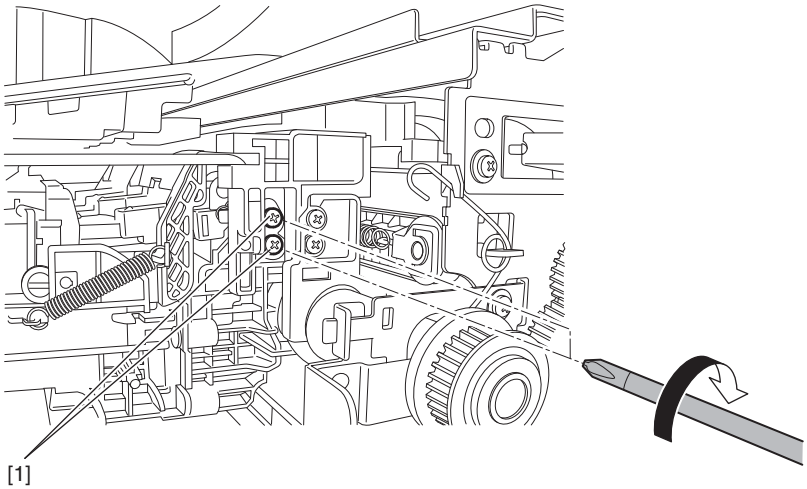
F-4-131

7) Secure the roller retainer [1] with the clip [3] in contact with the top of roller [2].



F-4-132

8) Retighten the two screws [1] loosened in Step 2) to secure the wire guide.



F-4-133

9) Pass the ink tubes through the wire guides.

4.5.3 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

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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/ A1	PARTS xx	States (Error Code)
Service	SUCTION FAN UNIT	QM3-0701	1	15000	Wia-1	OK/W1/E146-4001
	DUCT UNIT, PLATEN	QM3-0800	1	15000	Wib-1	OK/W1/E146-4001
	CARRIAGE UNIT	QM4-8091	1	15000	CR-1	OK/W1/W2
	LEVER, R, INK TUBE	QD1-0404	1	15000		
	LEVER, L, INK TUBE	QD1-0405	1	15000		
	LINK, LEVER, TUBE	QC2-0661	4	15000		
	SPRING, TENSION	QC2-1396	2	15000		
	PAD, OIL	QC2-0664	2	15000		
	HOLDER, WIRE(MECH)	QC2-0663	1	15000		
	TUBE GUIDE UNIT	QM3-0704	1	15000		
	CLEANING UNIT, R, RAIL, CARRIAGE	QM3-0543	1	15000	CR-1/CR-3	
	CLEANING UNIT, L, RAIL, CARRIAGE	QM3-0542	1	15000		
	FLEXIBLE CABLE ASS'Y	QM3-6678	1	15000	CR-2	
	ENCODER SENSOR UNIT	QM2-3421	1	15000	CR-3	
	SCALE, LINEAR	QC3-1882	1	15000		
	CAM, LIFTER	QC3-2664	2	15000	CR-4	
	MULTI SENSOR UNIT	QM4-8018	1	15000	CR-5	
					MS-1	OK/W1/W2
	INK SUPPLY UNIT	QM4-8090	1	15000	SP-1	OK/W1/E144-4047
	INK SUPPLY UNIT (R)	QM4-8020	1	15000		
	PURGE KIT	QM3-8145	1	15000	PG-1	OK/W1/E141-4046
	HEAD MANAGEMENT SENSOR	QM3-0529	1	15000	HMa-1	OK/W1/E194-404A
	MOTOR, 26.4V, DC	QK1-0447	1	15000	PL-1	OK/W1/W2
	CAM, ROWEL	QC2-1027	1	15000	PS-1	OK/W1/W2
	MIST FAN UNIT	QM3-0807	1	15000	Mi-1	OK/W1/E146-4001
	MIST FILTER UNIT	QM3-0212	1	15000		
	CUTTER UNIT	QM3-8149	1	30000	CT-1	OK/W1/W2
User	See "Product Overview> Features> Consumables"					

- Maintenance Kit

Kit name	Parts number	Life	Counter name
MAINTENANCE KIT	QY6-1524	15000	Wia/Wib/CR/SP



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

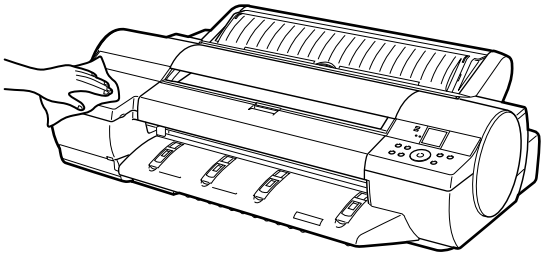
5.3 Periodic Maintenance

5.3.1 Periodic Maintenance

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

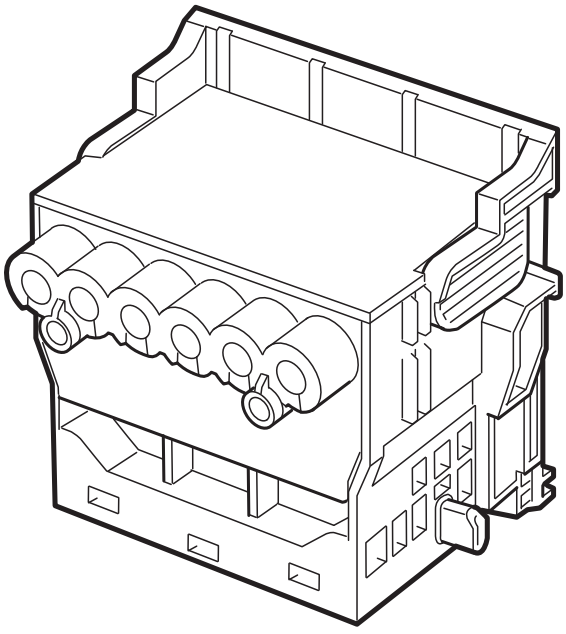
a) Printer cleaning
To keep up with print quality and prevent troubles, clean the printer about once each month.

1) Wipe the external surfaces of the printer with a cloth moistened with water and then wrung tight and then dry them finally with a dry cloth.



F-5-1

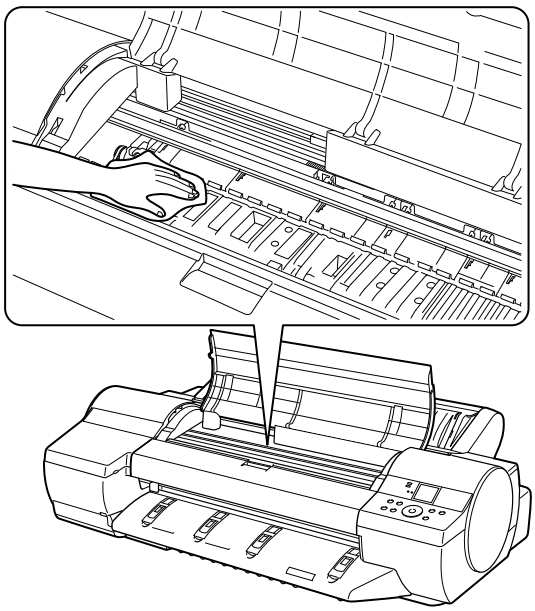
2) On the tab selection screen of the control panel, press ◄ or ► buttons to select the [Settings/Adj. tab]
3) Press [OK] button.
The [Set./Adj. Menu] is displayed.
4) Press ▲ or ▼ buttons to select the [Maintenance] and then press [OK] button.
5) Press ▲ or ▼ buttons to select the [Clean Platen], and then press [OK] button.
A message on the display screen requests you to open the top cover.
6) Open the top cover.
7) If the paper dust has accumulated in the suction holes[1] on the platen or in the borderless printing ink grooves[2], use the cleaning brush[3], provided with the printer, to wipe it away.



F-5-2

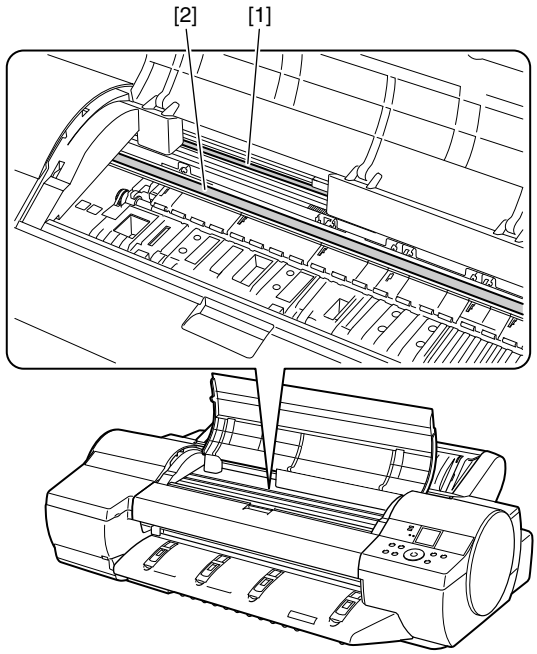
MEMO:
Rinse the cleaner brush with water when it gets dirty.

8) Wipe off dirt inside the top cover with a cloth moistened with water and then wrung tight. Wipe off ink smears from the entire surface of the platen, the pinch roller unit, borderless printing ink grooves, blue switch and all else that is accessible.



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

9) Close the top cover.

Chapter 6 TROUBLESHOOTING

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6.1 Troubleshooting

6.1.1 Outline

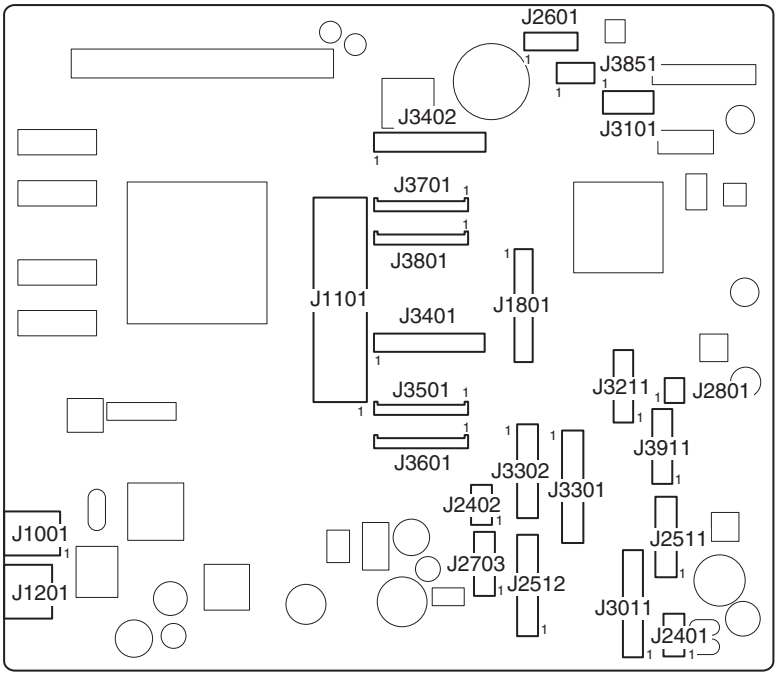
6.1.1.1 Outline of Troubleshooting

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.
7) When connecting with the printer by using the LAN cable at the service working, be sure to enter the service mode to recognize the printer correctly.

6.2 Location of Connectors and Pin Arrangement

6.2.1 Main controller PCB



F-6-1

T-6-1

J1001 (USB)			
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	GND	-	USB GND
5	GND	-	GND (Connector shell)
6	GND	-	GND (Connector shell)

T-6-2

J1101 (Connect to HDD expansion PCB)			
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)
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	Grant signal
18	GND	-	GND
19	REQ#	IN	Request signal
20	AD31	IN/OUT	Address and data signal 31
21	AD30	IN/OUT	Address and data signal 30

J1101 (Connect to HDD expansion PCB)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
22	AD29	IN/OUT	Address and data signal 29
23	AD28	IN/OUT	Address and data signal 28
24	GND	-	GND
25	AD27	IN/OUT	Address and data signal 27
26	AD26	IN/OUT	Address and data signal 26
27	AD25	IN/OUT	Address and data signal 25
28	AD24	IN/OUT	Address and data signal 24
29	CBE3#	IN/OUT	Bus command and byte enable signal 3
30	IDSEL	OUT	Initialization device select signal
31	GND	-	GND
32	GND	-	GND
33	AD23	IN/OUT	Address and data signal 23
34	AD22	IN/OUT	Address and data signal 22
35	AD21	IN/OUT	Address and data signal 21
36	AD20	IN/OUT	Address and data signal 20
37	GND	-	GND
38	AD19	IN/OUT	Address and data signal 19
39	AD18	IN/OUT	Address and data signal 18
40	AD17	IN/OUT	Address and data signal 17
41	AD16	IN/OUT	Address and data signal 16
42	CBE2#	OUT	Bus command and byte enable signal 2
43	GND	-	GND
44	FRAME#	IN/OUT	Cycle frame signal
45	IRDY#	IN/OUT	Initiator redy signal
46	TRDY#	IN/OUT	Target redy signal
47	DEVSEL#	IN/OUT	Device select signal
48	GND	-	GND
49	STOP#	IN/OUT	Stop signal
50	LOCK#	IN/OUT	Lock signal
51	PERR#	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 1
55	GND	-	GND
56	GND	-	GND
57	AD15	IN/OUT	Address and data signal 15
58	AD14	IN/OUT	Address and data signal 14
59	AD13	IN/OUT	Address and data signal 13
60	AD12	IN/OUT	Address and data signal 12
61	GND	-	GND
62	AD11	IN/OUT	Address and data signal 11
63	AD10	IN/OUT	Address and data signal 10
64	AD9	IN/OUT	Address and data signal 09
65	AD8	IN/OUT	Address and data signal 08
66	CBE0#	IN/OUT	Bus command and byte enable signal 0
67	GND	-	GND
68	AD7	IN/OUT	Address and data signal 07
69	AD6	IN/OUT	Address and data signal 06
70	AD5	IN/OUT	Address and data signal 05
71	AD4	IN/OUT	Address and data signal 04
72	GND	-	GND
73	AD3	IN/OUT	Address and data signal 03
74	AD2	IN/OUT	Address and data signal 02
75	AD1	IN/OUT	Address and data signal 01
76	AD0	IN/OUT	Address and data signal 00
77	GND	-	GND
78	HDD_LED	OUT	HDD LED signal
79	+5V	OUT	Power supply (+5V)
80	+5V	OUT	Power supply (+5V)

J1101 (Connect to HDD expansion PCB)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
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 (Network)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	TX+	OUT	Ethernet data TX line (+)
2	TX-	OUT	Ethernet data TX line (-)
3	RX+	IN	Ethernet data RX line (+)
4	-	-	Not used
5	-	-	Not used
6	RX-	IN	Ethernet data RX line (-)
7	-	-	Not used
8	-	-	Not used
9	GREEN_LED_C	OUT	Link LED (green:100Mb/s) cathode terminal
10	GREEN_LED_A	OUT	Link LED (green:100Mb/s) anode terminal
11	YELLOW_LED_C	OUT	Link LED (yellow:10Mb/s) cathode terminal
12	YELLOW_LED_A	OUT	Link LED (yellow:10Mb/s) anode terminal

T-6-4

J1801 (Connect to Power supply)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	HD_VHFBH	OUT	VH feedback voltage +
2	HD_VHFBG	OUT	VH feedback voltage -
3	VH	IN	Power supply (+24V)
4	VH_GND	-	GND
5	VH	IN	Power supply (+24V)
6	VH_GND	-	GND
7	VM	IN	Power supply (+32V)
8	VM_GND	-	GND
9	VM	IN	Power supply (+32V)
10	VM_GND	-	GND
11	VH_ENB	OUT	VH power supply ON/OFF signal
12	PW_CONT	OUT	Normal/power saving switch signal

T-6-5

J2511 (Spur motor, Spur cam sensor, Mist fan, Cutter motor, Cutter right detection sensor)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	SNS_3V_1	OUT	Power supply (+3.3V)
2	GND	-	GND
3	CUTTER_R_SNS_R	IN	Cutter right detection sensor signal
4	CUTTER_OUTA	OUT	Cutter motor driver signal A
5	CUTTER_OUTB	OUT	Cutter motor driver signal B
6	SNS_3V_1	OUT	Power supply (+3.3V)
7	GND	-	GND
8	HAKUSHA_CAM_SNS_R	IN	Spur cam sensor output signal
9	HAKUSHA_MOTOR_AM	OUT	Spur motor drive signal AM
10	HAKUSHA_MOTOR_AP	OUT	Spur motor drive signal AP
11	FAN_VM	OUT	Power supply (+26V)
12	MIST_FAN_LOCK	IN	Mist fan lock signal
13	MIST_FAN_PWM	OUT	Mist fan duty control signal
14	GND	-	GND

T-6-6

J2512 (Suction fan, Maintenance cartridge relay PCB, Paper detection sensor, Lift cam sensor)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	+26V_FAN	OUT	Power supply (+26V)
2	PLATEN_FAN_LOCK	IN	Suction fan lock signal
3	PLATEN_FAN_PWM	OUT	Suction fan duty control signal
4	GND	-	GND
5	MENT_SDA	IN/OUT	Maintenance cartridge rom control signal (data)
6	MENT_SCL	IN/OUT	Maintenance cartridge rom control signal (clock)
7	GND	-	GND
8	+3.3V_TANK	OUT	Power supply (+3.3V)
9	-	-	
10	-	-	
11	-	-	
12	+3.3V_SNS	OUT	Power supply (+3.3V)
13	GND	-	GND
14	PE_SNS	IN	Paper ditection sensor output signal
15	+3.3V_SNS	OUT	Power supply (+3.3V)
16	GND	-	GND
17	LIFT_CAM_SNS	IN	Lift cam sensor output signal

T-6-7

J2601 (Connect to Operation panel)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	POWER_ON	IN	Power switch signal
2	PM_START	OUT	Power supply (+5V)
3	BUZZER	OUT	Buzzer control signal
4	PDODATA	OUT	Panel IC control signal
5	+3.3V	OUT	Power supply (+3.3V)
6	PDI_DATA	IN	Panel IC data signal
7	GND	-	GND
8	/PANEL RESET	OUT	Panel IC reset signal
9	GND	-	GND
10	PDOPCLK	OUT	Panel IC clock signal
11	SNS_5V	OUT	Power supply (+5V)
12	/PDOCS_L	OUT	Panel IC chip select signal

T-6-8

J2703 (Roll feed unit)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	OPT_5V	OUT	Power supply (+5V)
2	GND	-	GND
3	ROLL_CAM_SNS	IN	Roll cam sensor signal
4	ROLL_PAPER_SNS	IN	Roll media sensor signal
5	ROLL_UNIT	IN	Roll unit detection signal
6	VM	OUT	Power supply (+26V)
7	VM	OUT	Power supply (+26V)
8	/ROLL_SLEEP	OUT	Roll motor driver sleep signal
9	ROLL_STB	OUT	Roll motor driver strobe signal
10	ROLL_DAT	OUT	Roll motor driver data signal
11	ROLL_CLK	OUT	Roll motor driver clock signal
12	GND	-	GND
13	GND	-	GND

T-6-9

J2801 (Feed motor)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	LF_OUTB	OUT	Feed motor drive signal B
2	LF_OUTA	OUT	Feed motor drive signal A

T-6-10

J3011 (Purge motor, Pump encoder sensor, Pump cam sensor, Lift motor, Head management sensor)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	LIFTOUTCOM	OUT	Lift motor power supply
2	LIFT_OUTAP	OUT	Lift motor drive signal AP
3	LIFT_OUTAM	OUT	Lift motor drive signal AM
4	LIFT_OUTBP	OUT	Lift motor drive signal BP
5	LIFT_OUTBM	OUT	Lift motor drive signal BM
6	GND	-	GND
7	FUTO_CLMP	OUT	Head management sensor unit clamp signal
8	FUTO_XLEDON	OUT	Head management sensor unit LED ON/OFF signal
9	SNS_5V		Power supply (+5V)
10	FUTO_XCMP0	IN	Head management sensor unit light shading detection signal
11	PUMP_OUTB	OUT	Purge motor drive signal B
12	PUMP_OUTA	OUT	Purge motor drive signal A
13	GND	-	GND
14	PUMP_ENCA	IN	Pump encoder sensor output signal A
15	SNS_5V		Power supply (+5V)
16	PUMP_ENCB	IN	Pump encoder sensor output signal B
17	PUMP_CAM_3V	OUT	Power supply (+3.3V)
18	GND	-	GND
19	PUMP_CAM_SNS	IN	Pump cam sensor output signal

T-6-11

J3101 (Carriage motor)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	CR_HWP	IN	Carriage motor hole device W-phase + signal
2	CR_HWM	IN	Carriage motor hole device W-phase - signal
3	CR_W	OUT	Carriage motor W-phase drive signal
4	CR_HVM	IN	Carriage motor hole device V-phase - signal
5	CR_U	OUT	Carriage motor U-phase drive signal
6	GND	-	GND
7	CR_V	OUT	Carriage motor V-phase drive signal
8	SNS_5V		Power supply (+5V)
9	N.C.	-	N.C
10	CR_HVP	IN	Carriage motor hole device V-phase + signal
11	CR_HUM	IN	Carriage motor hole device U-phase - signal
12	CR_HUP	IN	Carriage motor hole device U-phase + signal

T-6-12

J3211 (Valve motor, Valve open/closed detection sensor, Feed roller HP sensor, Feed roller encoder sensor)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	SNS_3V	OUT	Power supply (+3.3V)
2	GND	-	GND
3	VALVE_DETECT_SENSOR	IN	Valve open/closed detection sensor output signal
4	VALVE_MOTOR_AM	OUT	Valve motor drive signal AM
5	VALVE_MOTOR_AP	OUT	Valve motor drive signal AP
6	SNS_3V	OUT	Power supply (+3.3V)
7	GND	-	GND
8	LF_HP_SNS	IN	Feed roller HP sensor output signal
9	GND	-	GND
10	LF_ENCA	IN	Feed roller encoder sensor output signal A
11	RGV5	OUT	Power supply (+5V)
12	LF_ENCB	IN	Feed roller encoder sensor output signal B

T-6-13

J3301 (Ink tank ROM PCB)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	SNS_CURRENT3	OUT	Sensor current control signal 3
2	GND	-	GND

J3301 (Ink tank ROM PCB)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
3	INKSEL2-R	OUT	Ink select signal 2
4	INKSEL1-R	OUT	Ink select signal 1
5	INKSEL0-R	OUT	Ink select signal 0
6	+3.3V_TANK	OUT	Power supply (+3.3V)
7	TANK_DAT11	IN/OUT	Ink tank data signal 11
8	TANK_DAT10	IN/OUT	Ink tank data signal 10
9	TANK_DAT9	IN/OUT	Ink tank data signal 9
10	TANK_CLK	OUT	Ink tank clock signal
11	SNS_CURRENT2	OUT	Sensor current control signal 2
12	GND	-	GND
13	INKSEL2_R	OUT	Ink select signal 2
14	INKSEL1_R	OUT	Ink select signal 1
15	INKSEL0_R	OUT	Ink select signal 0
16	+3.3V_TANK	OUT	Power supply (+3.3V)
17	TANK_DAT8	IN/OUT	Ink tank data signal 8
18	TANK_DAT7	IN/OUT	Ink tank data signal 7
19	TANK_DAT6	IN/OUT	Ink tank data signal 6
20	TANK_CLK	OUT	Ink tank clock signal

T-6-14

J3302 (Ink tank ROM PCB)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	SNS_CURRENT1	OUT	Sensor current control signal 1
2	GND	-	GND
3	INKSEL2-R	OUT	Ink select signal 2
4	INKSEL1-R	OUT	Ink select signal 1
5	INKSEL0-R	OUT	Ink select signal 0
6	+3.3V_TANK	OUT	Power supply (+3.3V)
7	TANK_DAT5	IN/OUT	Ink tank data signal 5
8	TANK_DAT4	IN/OUT	Ink tank data signal 4
9	TANK_DAT3	IN/OUT	Ink tank data signal 3
10	TANK_CLK	OUT	Ink tank clock signal
11	SNS_CURRENT0	OUT	Sensor current control signal 0
12	GND	-	GND
13	INKSEL2_R	OUT	Ink select signal 2
14	INKSEL1_R	OUT	Ink select signal 1
15	INKSEL0_R	OUT	Ink select signal 0
16	+3.3V_TANK	OUT	Power supply (+3.3V)
17	TANK_DAT2	IN/OUT	Ink tank data signal 2
18	TANK_DAT1	IN/OUT	Ink tank data signal 1
19	TANK_DAT0	IN/OUT	Ink tank data signal 0
20	TANK_CLK	OUT	Ink tank clock signal

T-6-15

J3401 (Connect to Carriage PCB J201)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	GND	-	GND
4	GND	-	GND
5	GND	-	GND
6	GND	-	GND
7	GND	-	GND
8	VH	OUT	Power supply (+21.5V)
9	VH	OUT	Power supply (+21.5V)
10	VH	OUT	Power supply (+21.5V)
11	VH	OUT	Power supply (+21.5V)
12	VH	OUT	Power supply (+21.5V)
13	VH	OUT	Power supply (+21.5V)

J3401 (Connect to Carriage PCB J201)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
14	VH	OUT	Power supply (+21.5V)
15	VH	OUT	Power supply (+21.5V)
16	VH	OUT	Power supply (+21.5V)
17	VH	OUT	Power supply (+21.5V)
18	VH	OUT	Power supply (+21.5V)
19	VH	OUT	Power supply (+21.5V)
20	VH	OUT	Power supply (+21.5V)
21	VH	OUT	Power supply (+21.5V)
22	VH	OUT	Power supply (+21.5V)
23	VH	OUT	Power supply (+21.5V)
24	GND	-	GND
25	GND	-	GND
26	GND	-	GND
27	GND	-	GND
28	GND	-	GND
29	GND	-	GND
30	GND	-	GND

T-6-16

J3402 (Connect to Carriage PCB J101)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	GND	-	GND
4	GND	-	GND
5	GND	-	GND
6	GND	-	GND
7	VH	OUT	Power supply (+21.5V)
8	VH	OUT	Power supply (+21.5V)
9	VH	OUT	Power supply (+21.5V)
10	VH	OUT	Power supply (+21.5V)
11	VH	OUT	Power supply (+21.5V)
12	VH	OUT	Power supply (+21.5V)
13	VH	OUT	Power supply (+21.5V)
14	VH	OUT	Power supply (+21.5V)
15	VH	OUT	Power supply (+21.5V)
16	VH	OUT	Power supply (+21.5V)
17	VH	OUT	Power supply (+21.5V)
18	VH	OUT	Power supply (+21.5V)
19	VH	OUT	Power supply (+21.5V)
20	VH	OUT	Power supply (+21.5V)
21	VH	OUT	Power supply (+21.5V)
22	HD1_VHFBH	IN	VH feed back voltage +
23	HD1_VHFBG	IN	VH feed back voltage -
24	GND	-	GND
25	GND	-	GND
26	GND	-	GND
27	GND	-	GND
28	GND	-	GND
29	GND	-	GND
30	GND	-	GND

T-6-17

J3851 (Temperature/humidity detection sensor)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	TH2_OUT	IN	Thermistor output signal
2	GND	-	GND
3	RHV_OUT	IN	Temperature/humidity detection sensor output signal
4	SNS_5V		Power supply (+5V)

T-6-18

J3501 (Connect to Carriage PCB J202)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	H0-VH-ON	OUT	Head R VH power supply ON signal
3	H-DASH LICC2 B	OUT	Analogue switch A/D trigger signal
4	GND	-	GND
5	H0-D-DATA-7-OD	OUT	Odd head R data signal 7(D)
6	GND	-	GND
7	H0-E-HE-8	OUT	Head R heat enable signal 8(E)
8	GND	-	GND
9	H0-E-DATA-8-OD	OUT	Odd head R data signal 8(E)
10	GND	-	GND
11	H0-F-DATA-10-OD	OUT	Odd head R data signal 10(F)
12	GND	-	GND
13	H0-E-DATA-9-OD	OUT	Odd head R data signal 9(E)
14	GND	-	GND
15	H0-F-HE-10	OUT	Head R heat enable signal 10(F)
16	GND	-	GND
17	H0-F-DATA-11-OD	OUT	Odd head R data signal 11(F)
18	GND	-	GND
19	H0-F-HE-11	OUT	Head R heat enable signal 11(F)
20	GND	-	GND
21	H0-F-DATA-11-EV	OUT	Even head R data signal 11(F)
22	GND	-	GND
23	H0-F-DATA-10-EV	OUT	Even head R data signal 10(F)
24	GND	-	GND
25	H0-E-HE-9	OUT	Head R heat enable signal 9(E)
26	GND	-	GND
27	H0-E-DATA-9-EV	OUT	Even head R data signal 9(E)
28	GND	-	GND
29	GND	-	GND
30	GND	-	GND
31	GND	-	GND
32	GND	-	GND
33	GND	-	GND
34	GND	-	GND
35	H0-A-DATA-0-OD	OUT	Odd head R data signal 0(A)
36	GND	-	GND
37	H0-A-DATA-1-OD	OUT	Odd head R data signal 1(A)
38	GND	-	GND
39	H0-B-HE-2	OUT	Head R heat enable signal 2(B)
40	GND	-	GND
41	H0-B-DATA-2-OD	OUT	Odd head R data signal 2(B)
42	GND	-	GND
43	H0-B-DATA-3-OD	OUT	Odd head R data signal 3(B)
44	GND	-	GND
45	H0-C-HE-4	OUT	Head R heat enable signal 4(C)
46	GND	-	GND
47	H0-C-DATA-4-OD	OUT	Odd head R data signal 4(C)
48	SNS_5V	OUT	Power supply (+5V)
49	GND	-	GND
50	GND	-	GND

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J3601 (Connect to Carriage PCB J203)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	H0-E-DATA-8-EV	OUT	Even head R data signal 8(E)
2	GND	-	GND
3	H0-D-HE-7	OUT	Head R heat enable signal 7(D)
4	GND	-	GND

J3601 (Connect to Carriage PCB J203)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
5	H0-D-DATA-7-EV	OUT	Even head R data signal 7(D)
6	GND	-	GND
7	H0-D-DATA-6-EB	OUT	Even head R data signal 6(D)
8	GND	-	GND
9	H0-D-DATA-6-OD	OUT	Odd head R data signal 6(D)
10	GND	-	GND
11	H0-D-HE-6	OUT	Head R heat enable signal 6(D)
12	GND	-	GND
13	H0-C-HE-5	OUT	Head R heat enable signal 5(C)
14	GND	-	GND
15	H0-C-DATA-5-OD	OUT	Odd head R data signal 5(C)
16	GND	-	GND
17	H0-DSOUT2	IN	Head R temperature output 2
18	GND	-	GND
19	H0-DSOUT1	IN	Head R temperature output 1
20	GND	-	GND
21	GND	-	GND
22	LICSEL0	OUT	Head R analogue switch clock signal
23	LICSEL2	OUT	Head R analogue switch latch signal
24	LICSEL1	OUT	Head R analogue switch data signal
25	GND	-	GND
26	GND	-	GND
27	H0_CLK	OUT	Head R data clock signal
28	GND	-	GND
29	H0-LT	OUT	Head R data latch signal
30	HEAD_3V	OUT	Power supply (+3V)
31	HEAD_3V	OUT	Power supply (+3V)
32	GND	-	GND
33	H0-C-DATA-5-EV	OUT	Even head R data signal 5(C)
34	GND	-	GND
35	H0-B-HE-3	OUT	Head R heat enable signal 3(B)
36	GND	-	GND
37	H0-C-DATA-4-EV	OUT	Even head R data signal 4(C)
38	GND	-	GND
39	H0-B-DATA-3-EV	OUT	Even head R data signal 3(B)
40	GND	-	GND
41	H0-B-DATA-2-EV	OUT	Even head R data signal 2(B)
42	GND	-	GND
43	H0-A-DATA-1-EV	OUT	Even head R data signal 1(A)
44	GND	-	GND
45	H0-A-HE-1	OUT	Head R heat enable signal 1(A)
46	GND	-	GND
47	H0-A-DATA-0-EV	OUT	Even head R data signal 0(A)
48	GND	-	GND
49	H0-A-HE-0_B	OUT	Head R heat enable signal 0(A)
50	GND	-	GND

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J3701 (Connect to Carriage PCB J102)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	H1-D-DATA-7-OD	OUT	Odd head L data signal 7(D)
2	H1-VH-ON	OUT	Head L VH power supply ON signal
3	H1-E-HE-8	OUT	Head L heat enable signal 8(E)
4	GND	-	GND
5	H1-E-DATA-8-OD	OUT	Odd head L data signal 8(E)
6	GND	-	GND
7	H1-F-DATA-10-OD	OUT	Odd head L data signal 10(F)
8	GND	-	GND
9	H1-E-DATA-9-OD	OUT	Odd head L data signal 9(E)
10	GND	-	GND

J3701 (Connect to Carriage PCB J102)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
11	H1-F-HE-10	OUT	Head L heat enable signal 10(F)
12	GND	-	GND
13	H1-F-DATA-11-OD	OUT	Odd head L data signal 11(F)
14	GND	-	GND
15	H1-F-HE-11	OUT	Head L heat enable signal 11(F)
16	GND	-	GND
17	H1-F-DATA-11-EV	OUT	Even head L data signal 11(F)
18	GND	-	GND
19	H1-F-DATA-10-EV	OUT	Even head L data signal 10(F)
20	GND	-	GND
21	H1-E-HE-9	OUT	Head L heat enable signal 9(E)
22	GND	-	GND
23	H1-E-DATA-9-EV	OUT	Even head L data signal 9(E)
24	H1-DLD LICC2	OUT	Head L analogue switch latch signal
25	H1-DATA LICC2	OUT	Head L analogue switch data signal
26	H1-DASLK LICC2	OUT	Head L analogue switch clock signal
27	GND	-	GND
28	H1-DSOUT2	IN	Head L temperature output 2
29	H1-DSOUT1	IN	Head L temperature output 1
30	GND	-	GND
31	PWLED4_ON	OUT	Multi sensor LED 4 drive signal
32	PWLED3_ON	OUT	Multi sensor LED 3 drive signal
33	PWLED2_ON	OUT	Multi sensor LED 2 drive signal
34	PWLED1_ON	OUT	Multi sensor LED 1 drive signal
35	GND	-	GND
36	MLT_SNS_1IN	IN	Multi sensor signal 1
37	MLT_SNS_2IN	IN	Multi sensor signal 2
38	GND	-	GND
39	H1-B-DATA-2-OD	OUT	Odd head L data signal 2(B)
40	GND	-	GND
41	H1-B-DATA-3-OD	OUT	Odd head L data signal 3(B)
42	GND	-	GND
43	H1-C-HE-4	OUT	Head L heat enable signal 4(C)
44	GND	-	GND
45	H1-C-DATA-4-OD	OUT	Odd head L data signal 4(C)
46	SNS_5V	OUT	Power supply (+5V)
47	ENCODER_B	IN	Carriage encoder output signalB
48	SNS_5V	OUT	Power supply (+5V)
49	ENCODER_A	IN	Carriage encoder output signalA
50	GND	-	GND

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J3801 (Connect to Carriage PCB J103)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	H1-E-DATA-8-EV	OUT	Even head L data signal 8(E)
2	GND	-	GND
3	H1-D-HE-7	OUT	Head L heat enable signal 7(D)
4	GND	-	GND
5	IO-ASIC_SDA	IN/OUT	Head ROM control signal (data)
6	GND	-	GND
7	H1-D-DATA-7-EV	OUT	Even head L data signal 7(D)
8	GND	-	GND
9	H1-D-DATA-6-EV	OUT	Even head L data signal 6(D)
10	GND	-	GND
11	H1-D-DATA-6-OD	OUT	Odd head L data signal 6(D)
12	GND	-	GND
13	IO-ASIC_SCL	IN/OUT	Head ROM control signal (clock)
14	GND	-	GND
15	H1-D-HE-6	OUT	Head L heat enable signal 6(D)
16	GND	-	GND

J3801 (Connect to Carriage PCB J103)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
17	H1-C-HE-5	OUT	Head L heat enable signal 5(C)
18	GND	-	GND
19	H1-C-DATA-5-OD	OUT	Odd head L data signal 5(C)
20	GND	-	GND
21	H1_CLK	OUT	Head L clock signal
22	GND	-	GND
23	HEAD_3V	OUT	Power supply (+3V)
24	GND	-	GND
25	H1_LT	OUT	Head L latch signal
26	H-DASH_LICC2_B	OUT	Analogue switch A/D triggar signal
27	H1-C-DATA-5-EV	OUT	Even head L data signal 5(C)
28	GND	-	GND
29	H1-B-HE-3	OUT	Head L heat enable signal 3(B)
30	GND	-	GND
31	H1-C-DATA-4-EV	OUT	Even head L data signal 4(C)
32	GND	-	GND
33	H1-B-DATA-3-EV	OUT	Even head L data signal 3(B)
34	GND	-	GND
35	H1-B-DATA-2-EV	OUT	Even head L data signal 2(B)
36	GND	-	GND
37	H1-A-DATA-1-EV	OUT	Even head L data signal 1(A)
38	GND	-	GND
39	H1-A-HE-1	OUT	Head L heat enable signal 1(A)
40	GND	-	GND
41	H1-A-DATA-0-EV	OUT	Even head L data signal 0(A)
42	GND	-	GND
43	H1-A-HE-0	OUT	Head L heat enable signal 0(A)
44	GND	-	GND
45	H1-A-DATA-0-OD	OUT	Odd head L data signa 0(A)
46	GND	-	GND
47	H1-A-DATA-1-OD	OUT	Odd head L data signal 1(A)
48	GND	-	GND
49	H1-B-HE-2	OUT	Head L heat enable signal 2(B)
50	GND	-	GND

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J3911 (Cutter lift motor / Top cover sensor / Ink tank cover switch / Cutter HP sensor / Cutter lift sensor)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	TANK_COVER_SW	IN	Ink tank cover switch output signal
2	GND	-	GND
3	SNS_3V	OUT	Power supply (+3.3V)
4	GND	-	GND
5	TOP_COVER_SNS	IN	Top cover sensor output signal
6	SNS_3V	OUT	Power supply (+3.3V)
7	GND	-	GND
8	CUTTER_L_SNS	IN	Cutter HP sensor signal
9	SNS_5V		Power supply (+5V)
10	GND	-	GND
11	CUTTER_POS1_SNS	IN	Cutter lift sensor output signal
12	CUTTER_LIFT_MOTOR_AM	OUT	Cutter lift motor drive signal AM
13	CUTTER_LIFT_MOTOR_AP	OUT	Cutter lift motor drive signal AP

T-6-23

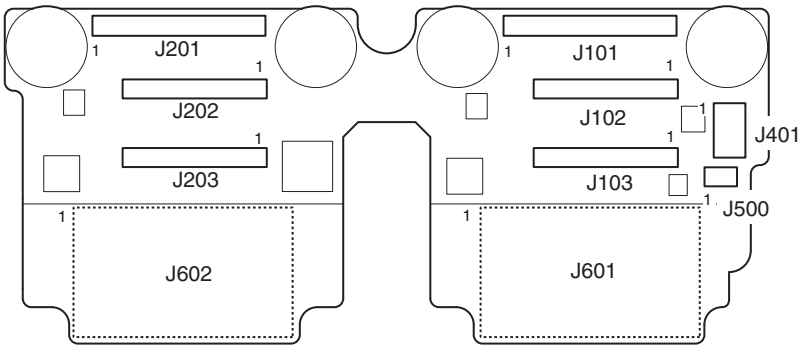
J2401 (Spectrophotometer controller PCB)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	COL_INT	IN	Spectrophotometer initial signal
2	COL_BOOTSELECT	OUT	Spectrophotometer boot select signal
3	COL_DETECT	IN	Spectrophotometer detection signal
4	GND	-	GND
5	GND	-	GND
6	+32V_VM_COL	OUT	Power supply (+32V)

J2401 (Spectrophotometer controller PCB)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
7	+32V_VM_COL	OUT	Power supply (+32V)
8	+32V_VM_COL	OUT	Power supply (+32V)

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J2402 (Spectrophotometer controller PCB)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	/CTS	IN	DATA reception line
2	RXD	IN	DATA reception line
3	TXD	OUT	DATA transmission line
4	/RTS	OUT	DATA transmission line
5	GND	-	GND
6	GND	-	GND

6.2.2 Carriage PCB



F-6-2

T-6-25

J500			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	ENCODER_B	IN	Linear encoder detection signal B
2	GND	-	GND
3	ENCODER_A	IN	Linear encoder detection signal A
4	H1_5V	OUT	Power supply (+5V)

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J401			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	SNS-REF	OUT	Reference voltage signal (+3V)
3	+5.0V_H1_SNS	OUT	Power supply (+5V)
4	GND	-	GND
5	EDGE-SNS	IN	Media detection signal
6	COLOR-SNS	IN	Color detection signal
7	GAP-SNS2	IN	GAP detection signal 2
8	GAP-SNS1	IN	GAP detection signal 1
9	IO_ASIC_SCA	OUT	Multi sensor LED control signal (data)
10	IO_ASIC_SCL	OUT	Multi sensor LED control signal (clock)
11	GND	-	GND
12	+3.3V_CR	OUT	Power supply (+3.3V)

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J201 (Connect to Main controller PCB J3401)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	GND	-	GND
4	GND	-	GND
5	GND	-	GND
6	GND	-	GND
7	GND	-	GND
8	VH	IN	Power supply (+21.5V)
9	VH	IN	Power supply (+21.5V)
10	VH	IN	Power supply (+21.5V)
11	VH	IN	Power supply (+21.5V)
12	VH	IN	Power supply (+21.5V)
13	VH	IN	Power supply (+21.5V)
14	VH	IN	Power supply (+21.5V)
15	VH	IN	Power supply (+21.5V)
16	VH	IN	Power supply (+21.5V)
17	VH	IN	Power supply (+21.5V)
18	VH	IN	Power supply (+21.5V)
19	VH	IN	Power supply (+21.5V)
20	VH	IN	Power supply (+21.5V)

J201 (Connect to Main controller PCB J3401)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
21	VH	IN	Power supply (+21.5V)
22	VH	IN	Power supply (+21.5V)
23	VH	IN	Power supply (+21.5V)
24	GND	-	GND
25	GND	-	GND
26	GND	-	GND
27	GND	-	GND
28	GND	-	GND
29	GND	-	GND
30	GND	-	GND

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J202 (Connect to Main controller PCB J3501)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	SNS_5V	IN	Power supply (+5V)
4	H0-C-DATA-4-OD	IN	Odd head R data signal 4(C)
5	GND	-	GND
6	H0-C-HE-4	IN	Head R heat enable signal 4(C)
7	GND	-	GND
8	H0-B-DATA-3-OD	IN	Odd head R data signal 3(B)
9	GND	-	GND
10	H0-B-DATA-2-OD	IN	Odd head R data signal 2(B)
11	GND	-	GND
12	H0-B-HE-2	IN	Head R heat enable signal 2(B)
13	GND	-	GND
14	H0-A-DATA-1-OD	IN	Odd head R data signal 1(A)
15	GND	-	GND
16	H0-A-DATA-0-OD	IN	Odd head R data signal 0(A)
17	GND	-	GND
18	GND	-	GND
19	GND	-	GND
20	GND	-	GND
21	GND	-	GND
22	GND	-	GND
23	GND	-	GND
24	H0-E-DATA-9-EV	IN	Even head R data signal 9(E)
25	GND	-	GND
26	H0-E-HE-9	IN	Head R heat enable signal 9(E)
27	GND	-	GND
28	H0-F-DATA-10-EV	IN	Even head R data signal 10(F)
29	GND	-	GND
30	H0-F-DATA-11-EV	IN	Even head R data signal 11(F)
31	GND	-	GND
32	H0-F-HE-11	IN	Head R heat enable signal 11(F)
33	GND	-	GND
34	H0-F-DATA-11-OD	IN	Odd head R data signal 11(F)
35	GND	-	GND
36	H0-F-HE-10	IN	Head R heat enable signal 10(F)
37	GND	-	GND
38	H0-E-DATA-9-OD	IN	Odd head R data signal 9(E)
39	GND	-	GND
40	H0-F-DATA-10-OD	IN	Odd head R data signal 10(F)
41	GND	-	GND
42	H0-E-DATA-8-OD	IN	Odd head R data signal 8(E)
43	GND	-	GND
44	H0-E-HE-8	IN	Head R heat enable signal 8(E)
45	GND	-	GND
46	H0-D-DATA-7-OD	IN	Odd head R data signal 7(D)

J202 (Connect to Main controller PCB J3501)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
47	GND	-	GND
48	H-DASH LICC2 B	IN	Analogue switch A/D trigger signal
49	H0-VH-ON	IN	Head R VH power supply ON signal
50	GND	-	GND

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J203 (Connect to Main controller PCB J3601)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	H0-A-HE-0	IN	Head R heat enable signal 8(E)
3	GND	-	GND
4	H0-A-DATA-0-EV	IN	Even head R data signal 0(A)
5	GND	-	GND
6	H0-A-HE-1	IN	Head R heat enable signal 8(E)
7	GND	-	GND
8	H0-A-DATA-1-EV	IN	Even head R data signal 1(A)
9	GND	-	GND
10	H0-B-DATA-2-EV	IN	Even head R data signal 2(B)
11	GND	-	GND
12	H0-B-DATA-3-EV	IN	Even head R data signal 3(B)
13	GND	-	GND
14	H0-C-DATA-4-EV	IN	Even head R data signal 4(C)
15	GND	-	GND
16	H0-B-HE-3	IN	Head R heat enable signal 8(E)
17	GND	-	GND
18	H0-C-DATA-5-EV	IN	Even head R data signal 5(C)
19	HEAD_3V	IN	Power supply (+3V)
20	HEAD_3V	IN	Power supply (+3V)
21	GND	-	GND
22	H0-LT	IN	Head R data latch signal
23	GND	-	GND
24	H0_CLK	IN	Head R data clock signal
25	GND	-	GND
26	GND	-	GND
27	LICSEL1	IN	Head R analogue switch latch signal
28	LICSEL2	IN	Head R analogue switch clock signal
29	LICSEL0	IN	Head R analogue switch data signal
30	GND	-	GND
31	GND	-	GND
32	H0-DSOUT1	OUT	Head R temperature output 1
33	GND	-	GND
34	H0-DSOUT2	OUT	Head R temperature output 2
35	GND	-	GND
36	H0-C-DATA-5-OD	IN	Odd head R data signal 5(C)
37	GND	-	GND
38	H0-C-HE-5	IN	Head R heat enable signal 5(C)
39	GND	-	GND
40	H0-D-HE-6	IN	Head R heat enable signal 6(D)
41	GND	-	GND
42	H0-D-DATA-6-OD	IN	Odd head R data signal 6(D)
43	GND	-	GND
44	H0-D-DATA-6-EB	IN	Even head R data signal 6(D)
45	GND	-	GND
46	H0-D-DATA-7-EV	IN	Even head R data signal 7(D)
47	GND	-	GND
48	H0-D-HE-7	IN	Head R heat enable signal 7(D)
49	GND	-	GND
50	H0-E-DATA-8	IN	Even head R data signal 8(E)

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J601 (Head R)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	VH	OUT	Power supply (+21.5V)
2	VH	OUT	Power supply (+21.5V)
3	VH	OUT	Power supply (+21.5V)
4	VHT	OUT	Head R Transistor drive Power supply
5	H0-F-DATA-10-EV	OUT	Even head R data signal 10(F)
6	EEPROM_SDA	IN/OUT	EEPROMcontrol signal (data)
7	EEPROM_SCL	OUT	EEPROMcontrol signal (clock)
8	HEAD_3V	OUT	Power supply (+3V)
9	H0-C-DIA1	IN	Head R DI sensor signal 1(C)
10	H0-A-HE-1	OUT	Head R heat enable signal 8(E)
11	VH	OUT	Power supply (+21.5V)
12	VH	OUT	Power supply (+21.5V)
13	VH	OUT	Power supply (+21.5V)
14	VH	OUT	Power supply (+21.5V)
15	VH	OUT	Power supply (+21.5V)
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	GND	-	GND
21	HEAD_3V	OUT	Power supply (+3V)
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	VH	OUT	Power supply (+21.5V)
26	VH	OUT	Power supply (+21.5V)
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(F)
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-5-0D	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-F-DATA-8-EV	OUT	Even head R data signal 8(F)
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 8(E)
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

J601 (Head R)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
59	H0-D-DATA-6-OD	OUT	Odd head R data signal 6(D)
60	H0-C-HE-5	OUT	Head R heat enable signal 5(C)
61	H0-B-HE-3	OUT	Head R heat enable signal 8(E)
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 data clock signal
73	H0-LT	OUT	Head R data 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

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J101 (Connect to Main controller PCB J3402)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	GND	-	GND
4	GND	-	GND
5	GND	-	GND
6	GND	-	GND
7	GND	-	GND
8	HD1_VHFBG	OUT	VH feed back voltage -
9	HD1_VHFBH	OUT	VH feed back voltage +
10	VH	IN	Power supply (+21.5V)
11	VH	IN	Power supply (+21.5V)
12	VH	IN	Power supply (+21.5V)
13	VH	IN	Power supply (+21.5V)
14	VH	IN	Power supply (+21.5V)
15	VH	IN	Power supply (+21.5V)
16	VH	IN	Power supply (+21.5V)
17	VH	IN	Power supply (+21.5V)
18	VH	IN	Power supply (+21.5V)
19	VH	IN	Power supply (+21.5V)
20	VH	IN	Power supply (+21.5V)
21	VH	IN	Power supply (+21.5V)
22	VH	IN	Power supply (+21.5V)
23	VH	IN	Power supply (+21.5V)
24	VH	IN	Power supply (+21.5V)
25	GND	-	GND
26	GND	-	GND
27	GND	-	GND
28	GND	-	GND
29	GND	-	GND
30	GND	-	GND

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J102 (Connect to Main controller PCB J3701)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND

J102 (Connect to Main controller PCB J3701)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
2	ENCODER_A	OUT	Linear encoder output signal A
3	SNS_5V	IN	Power supply (+5V)
4	ENCODER_B	OUT	Linear encoder output signal B
5	SNS_5V	IN	Power supply (+5V)
6	H1-C-DATA-4-OD	IN	Odd head L data signal 4(C)
7	GND	-	GND
8	H1-C-HE-4	IN	Head L heat enable signal 8(E)
9	GND	-	GND
10	H1-B-DATA-3-OD	IN	Odd head L data signal 3(B)
11	GND	-	GND
12	H1-B-DATA-2-OD	IN	Odd head L data signal 2(B)
13	GND	-	GND
14	MLT_SNS_2IN	OUT	Multi sensor signal 2
15	MLT_SNS_1IN	OUT	Multi sensor signal 1
16	GND	-	GND
17	PWLED1_ON	IN	Multi sensor LED 1 drive signal
18	PWLED2_ON	IN	Multi sensor LED 2 drive signal
19	PWLED3_ON	IN	Multi sensor LED 3 drive signal
20	PWLED4_ON	IN	Multi sensor LED 4 drive signal
21	GND	-	GND
22	H1-DSOUT1	OUT	Head L temperature output 1
23	H1-DSOUT2	OUT	Head L temperature output 2
24	GND	-	GND
25	H1-DASLK LICC2	IN	Head L analogue switch clock signal
26	H1-DATA LICC2	IN	Head L analogue switch data signal
27	H1-DLD LICC2	IN	Head L analogue switch latch signal
28	H1-E-DATA-9-EV	IN	Even head L data signal 9(E)
29	GND	-	GND
30	H1-E-HE-9	IN	Head L heat enable signal 9(E)
31	GND	-	GND
32	H1-F-DATA-10-EV	IN	Even head L data signal 10(F)
33	GND	-	GND
34	H1-F-DATA-11-EV	IN	Even head L data signal 11(F)
35	GND	-	GND
36	H1-F-HE-11	IN	Head L heat enable signal 11(F)
37	GND	-	GND
38	H1-F-DATA-11-OD	IN	Odd head L data signal 11(F)
39	GND	-	GND
40	H1-F-HE-10	IN	Head L heat enable signal 10(F)
41	GND	-	GND
42	H1-E-DATA-9-OD	IN	Odd head L data signal 9(E)
43	GND	-	GND
44	H1-F-DATA-10-OD	IN	Odd head L data signal 10(F)
45	GND	-	GND
46	H1-E-DATA-8-OD	IN	Odd head L data signal 8(E)
47	GND	-	GND
48	H1-E-HE-8	IN	Head L heat enable signal 8(E)
49	H1-VH-ON	IN	Head L VH power supply ON signal
50	H1-D-DATA-7-OD	IN	Odd head L data signal 7(D)

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J103 (Connect to Main controller PCB J3801)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	H1-B-HE-2	IN	Head L heat enable signal 2(B)
3	GND	-	GND
4	H1-A-DATA-1-OD	IN	Odd head L data signal 1(A)
5	GND	-	GND
6	H1-A-DATA-0-OD	IN	Odd head L data signal 0(A)
7	GND	-	GND

J103 (Connect to Main controller PCB J3801)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
8	H1-A-HE-0	IN	Head L heat enable signal 0(A)
9	GND	-	GND
10	H1-A-DATA-0-EV	IN	Even head L data signal 0(A)
11	GND	-	GND
12	H1-A-HE-1	IN	Head L heat enable signal 1(A)
13	GND	-	GND
14	H1-A-DATA-1-EV	IN	Even head L data signal 1(A)
15	GND	-	GND
16	H1-B-DATA-2-EV	IN	Even head L data signal 2(B)
17	GND	-	GND
18	H1-B-DATA-3-EV	IN	Even head L data signal 3(B)
19	GND	-	GND
20	H1-C-DATA-4-EV	IN	Even head L data signal 4(C)
21	GND	-	GND
22	H1-B-HE-3	IN	Head L heat enable signal 3(B)
23	GND	-	GND
24	H1-C-DATA-5-EV	IN	Even head L data signal 5(C)
25	H-DASH_LICC2_B	IN	Analogue switch A/D triggar signal
26	H1_LT	IN	Head L latch signal
27	GND	-	GND
28	HEAD_3V	IN	Power supply (+3V)
29	GND	-	GND
30	H1_CLK	IN	Head L clock signal
31	GND	-	GND
32	H1-C-DATA-5-OD	IN	Odd head L data signal 5(C)
33	GND	-	GND
34	H1-C-HE-5	IN	Head L heat enable signal 5(C)
35	GND	-	GND
36	H1-D-HE-6	IN	Head L heat enable signal 6(D)
37	GND	-	GND
38	IO-ASIC_SCL	IN/OUT	Head ROM control signal (clock)
39	GND	-	GND
40	H1-D-DATA-6-OD	IN	Odd head L data signal 6(D)
41	GND	-	GND
42	H1-D-DATA-6-EV	IN	Even head L data signal 6(D)
43	GND	-	GND
44	H1-D-DATA-7-EV	IN	Even head L data signal 7(D)
45	GND	-	GND
46	IO-ASIC_SDA	IN/OUT	Head ROM control signal (data)
47	GND	-	GND
48	H1-D-HE-7	IN	Head L heat enable signal 7(D)
49	GND	-	GND
50	H1-E-DATA-8-EV	IN	Even head L data signal 8(E)

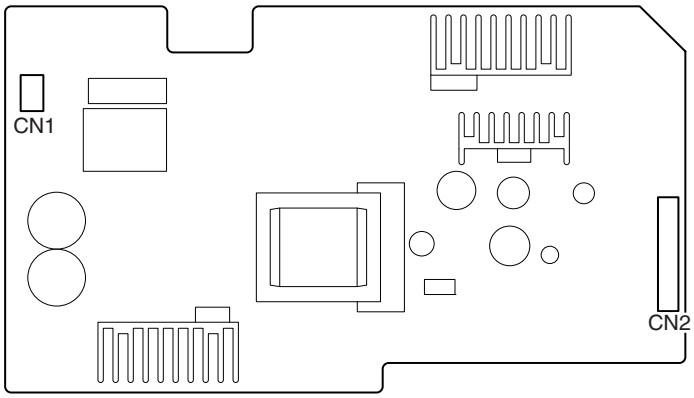
T-6-34

J602 (Head L)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	VH	OUT	Power supply (+21.5V)
2	VH	OUT	Power supply (+21.5V)
3	VH	OUT	Power supply (+21.5V)
4	VHT2	OUT	Head L transistor drive power supply
5	H1-F-DATA-10-EV	OUT	Even head L data signal 10(F)
6	EEPROM_SDA	IN/OUT	EEPROM control signal (data)
7	EEPROM_SCL	OUT	EEPROM control signal (clock)
8	HEAD_3V	OUT	Power supply (+3V)
9	H1-C-DIA1	IN	Heal L DI sensor signal 1(C)
10	H1-A-HE-1	OUT	Head L heat enable signal 1(A)
11	VH	OUT	Power supply (+21.5V)
12	VH	OUT	Power supply (+21.5V)
13	VH	OUT	Power supply (+21.5V)

J602 (Head L)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
14	VH	OUT	Power supply (+21.5V)
15	VH	OUT	Power supply (+21.5V)
16	H1-E-DATA-9-OD	OUT	Odd head L data signal 9(E)
17	H1-F-HE-11	OUT	Head L heat enable signal 11(F)
18	H1-E-DIA1	IN	Heal L DI sensor signal 1(E)
19	H1-D-DIA1	IN	Heal L DI sensor signal 1(D)
20	HEAD_3V	OUT	Power supply (+3V)
21	HEAD_3V	OUT	Power supply (+3V)
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	VH	OUT	Power supply (+21.5V)
26	VH	OUT	Power supply (+21.5V)
27	H1-D-DIA2	IN	Heal L DI sensor signal 2(D)
28	H1-E-HE-8	OUT	Head L heat enable signal 8(E)
29	H1-E-DIA2	IN	Heal L DI sensor signal 2(E)
30	H1-F-DIA2	IN	Heal 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-5-0D	OUT	Odd head L 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	Heal L DI sensor signal 2(A)
38	H1-B-DIA2	IN	Heal L DI sensor signal 2(B)
39	H1-C-HE-4	OUT	Head L heat enable signal 8(E)
40	H1-D-DATA-7-OD	OUT	Odd head L data signal 7(D)
41	H1-E-DATA-8-OD	OUT	Odd head L 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-F-DATA-8-EV	OUT	Even head L data signal 8(F)
45	H1-D-DATA-6-EV	OUT	Even head L data signal 6(D)
46	H1-C-DIA2	IN	Heal 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	Heal 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 L data signal 2(B)
51	H1-B-DATA-3-OD	OUT	Odd head L data signal 3(B)
52	H1-C-DATA-4-OD	OUT	Odd head L data signal 4(C)
53	GND	-	GND
54	GND	-	GND
55	GND	-	GND
56	H1-F-DATA-11-OD	OUT	Odd head L 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	Heal L DI sensor signal 1(A)
63	H1-A-DATA-1-OD	OUT	Odd head L 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 L data signal 10(F)
69	H1-F-DIA1	IN	Heal 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

J602 (Head L)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
73	H1-LT	OUT	Head L latch signal
74	H1-B-DATA-2-EV	OUT	Even head L data signal 2(B)
75	H1-A-DATA-0-OD	OUT	Odd head L data signal 0(A)
76	GND	-	GND
77	GND	-	GND
78	GND	-	GND

6.2.3 Power supply



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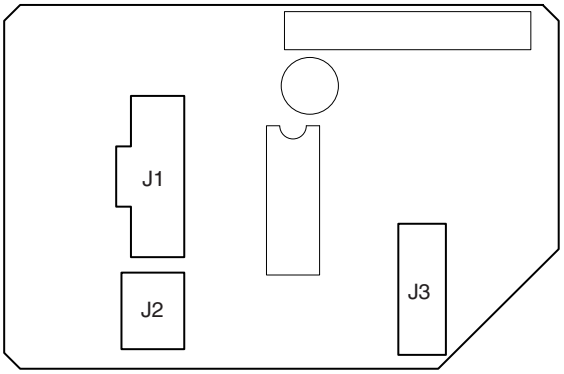
T-6-35

CN1			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	AC(H)	-	Power supply (AC 120V or AC 230V)
2	AC(H)	-	Power supply (AC 120V or AC 230V)

T-6-36

CN2 (Connect to Main Controller)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	HD_VHFBH	IN	VH feedback voltage +
2	HD_VHFBG	IN	VH feedback voltage -
3	VH	OUT	Power supply (+24V)
4	VH_GND	-	GND
5	VH	OUT	Power supply (+24V)
6	VH_GND	-	GND
7	VM	OUT	Power supply (+32V)
8	VM_GND	-	GND
9	VM	OUT	Power supply (+32V)
10	VM_GND	-	GND
11	VH_ENB	IN	VH power supply ON/OFF signal
12	PW_CONT	IN	Normal/power saving switch signal

6.2.4 Roll feed unit PCB



F-6-4

T-6-37

J1 (Connect to Main controller PCB)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	ROLL_CLK	IN	Roll motor driver clock signal
4	ROLL_DAT	IN	Roll motor driver data signal
5	ROLL_STB	IN	Roll motor driver strobe signal
6	/ROLL_SLEEP	IN	Roll motor driver sleep signal
7	VM	IN	Power supply (+26V)
8	VM	IN	Power supply (+26V)
9	ROLL_UNIT	OUT	Roll unit detection signal
10	ROLL_PAPER_SNS	OUT	Roll media sensor signal
11	ROLL_CAM_SNS	OUT	Roll cam sensor signal
12	GND	-	GND
13	OPT_5V	IN	Power supply (+5V)

T-6-38

J2 (Roll media sensor)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	+5V	OUT	Power supply (+5V)
2	GND	-	GND
3	ROLL_PAPER_SNS	IN	Roll media sensor signal

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J3 (Roll cam sensor, roll motor)			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	+5V	OUT	Power supply (+5V)
2	GND	-	GND
3	ROLL_CAM_SNS	IN	Roll cam sensor signal
4	GND	-	GND
5	ROLL_OUTAP	OUT	Roll motor drive signal AP
6	ROLL_OUTAM	OUT	Roll motor power supply AM
7	ROLL_OUTBP	OUT	Roll motor drive signal BP
8	ROLL_OUTBM	OUT	Roll motor power supply BM

6.3 Version Up

6.3.1 Firmware Update Tool

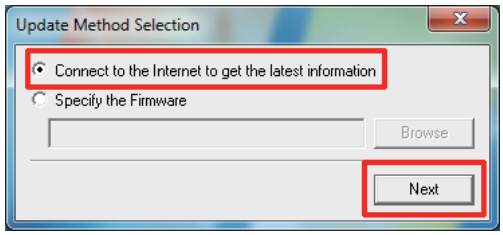
Use of the following tools allows you to update the firmware of the main controller incorporated in the printer from the computer.

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

1. imagePROGRAF Firmware Update Tool
This tool has the following function.
- Updating the firmware of printer

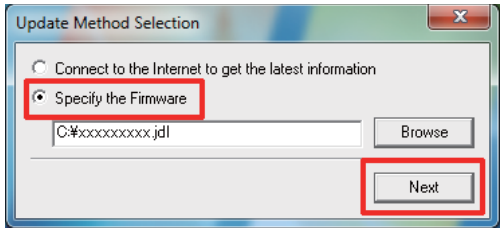
Connection method with the computer:
USB, Network

a) Operation
1) Make sure that the printer is the online mode.
2) Exit all other running programs.
3) Start the imagePROGRAF Firmware Update Tool.
4) According to the internet connection state of the computer, specify in the [Update Method Selection] dialogue box as shown in the followings.
4)-1 In case the computer is connected to the internet, select the [Connect to the internet to get the latest information], and then click [Next].



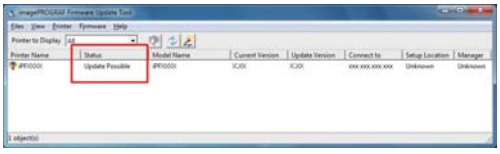
F-6-5

4)-2 In case the computer is not connected to the internet, select the [Specify the Firmware] and specify the firmware data that downloaded manually, and then click the [Next].



F-6-6

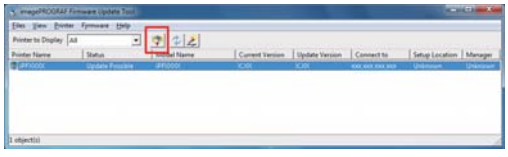
5) The [Update Possible] is displayed in the [Status] field of the printers that a newer firmware is available.



F-6-7

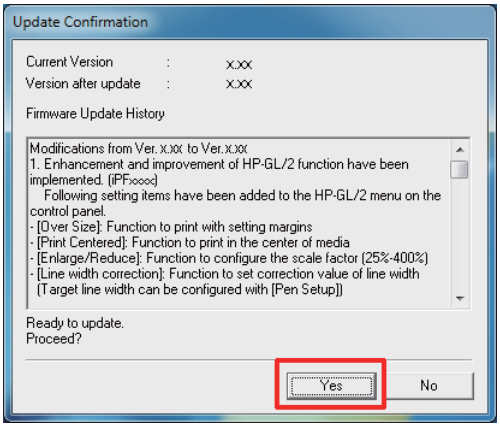
MEMO:
The overwriting the same firmware version or the firmware downgrade can not execute.

6) Click the printer to update the firmware of to select it, and then click the [Start Update] icon.



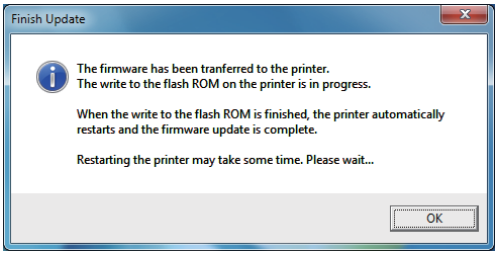
F-6-8

7) Click [Yes] in the [Update Confirmation] dialogue box.



F-6-9

8) The firmware data is transferred to the printer.
9) After the firmware data transference has completed, the [Finish Update] dialogue box is displayed. Click the [OK].
- When the firmware has been overwritten, the printer restarts.

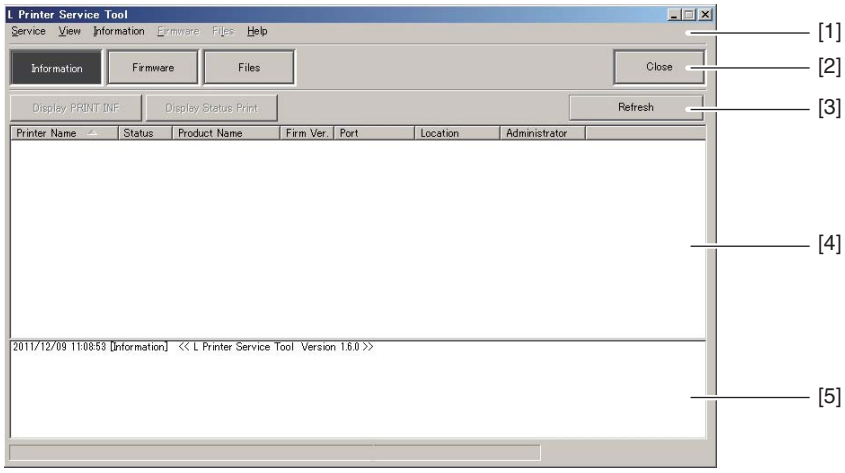


F-6-10

2. L Printer Service Tool
This tool has the following function.
- Updating the firmware of printer
- Color check of multi sensor
- Displaying the printer information

Connection method with the computer:
USB, Network

a) Screen description

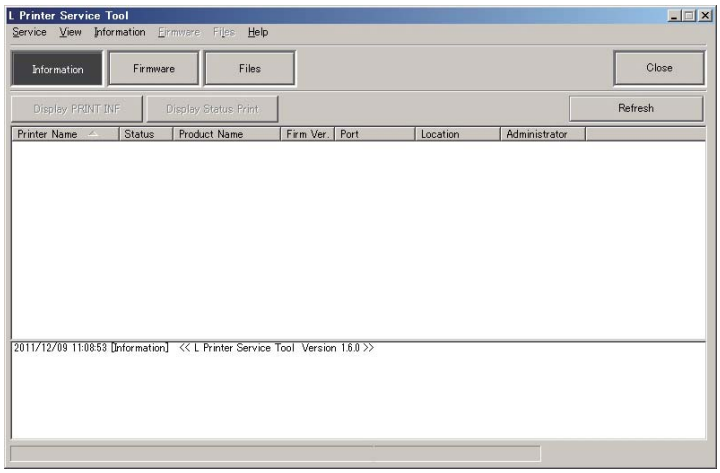


F-6-11

[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 chosen by main menu or main menu button.
[4] Printer information area
The information of the printer connected with computer is shown according to the chose 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.

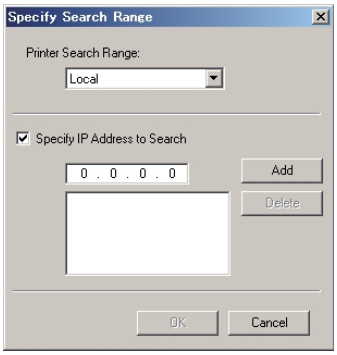
(1) Choose the [Information] of the main menu button or the "[Service]-[Information]" of the main menu.



F-6-12

(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.



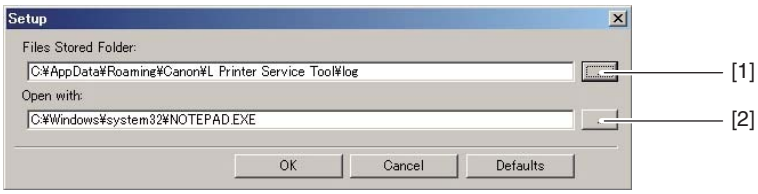
F-6-13

(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.

(3)-3 Choose the [Color Check] of the sub menu button or the "[Information]-[Color Check]" of the main menu when executing the color check.
- This mode judges the OK or NG by checking the color check data that measured by the multi sensor.
- Before executing the color check, need the following media to set to the printer.
  Roll media of more than 10 inch width, or cut sheet of more than A4-size.
  Paper type: Glossy Photo Paper 170gsm
- When executing the color check, the paper type that selected by the dialogue box must match with the paper type that set to the printer so that the check can execute correctly.

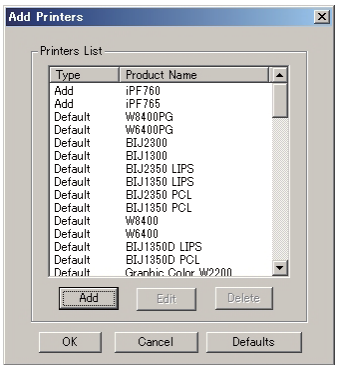
MEMO:
- The application software used to show the data and the folder used to store the files can change by the "[Service]-[Setup]" of the main menu.



F-6-14

[1] This menu can change the folder used to store the file.
[2] This menu can change the application software (NotePad or WordPad) used to show the data.

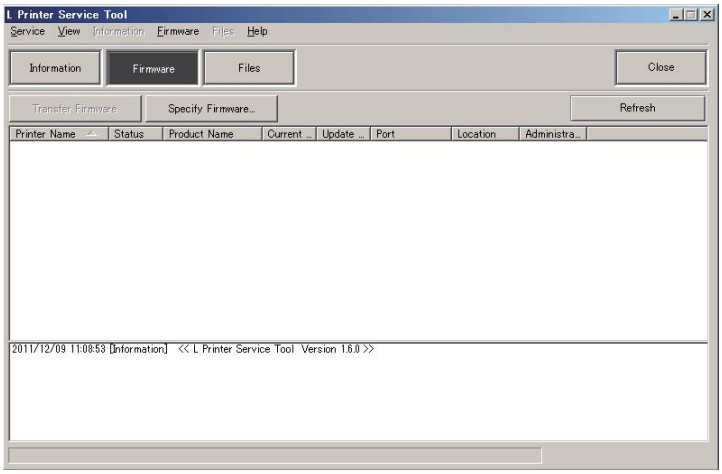
- The printer name can add by the "[Service]-[Add Printer]" of the main menu.



F-6-15

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

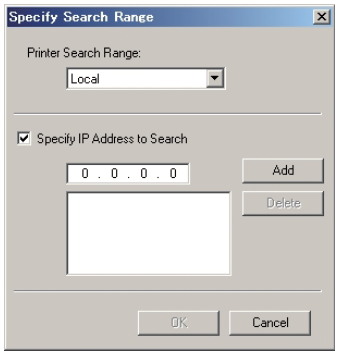
(1) Choose the [Firmware] of the main menu button or the "[Service]-[Firmware]" of the main menu.



F-6-16

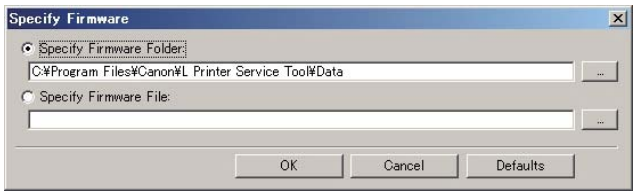
(2) Choose the printer to update from the list of the printer shown to the printer information area.

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-6-17

(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 (.jdl file) by the [Specify Firmware File] of the dialogue box.



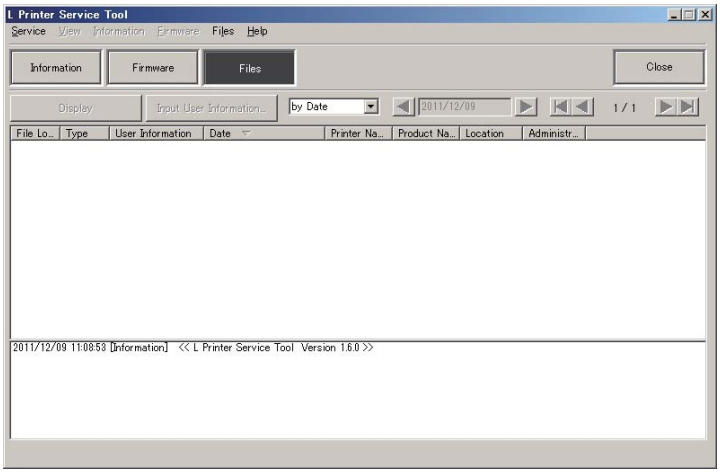
F-6-18

(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. And when transferring an incorrect file, as it may destroy the printer firmware, please take extra care.

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-6-19

(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-6-40

General-purpose tools	Remarks
Long Phillips screwdriver	Inserting and removing screws
Phillips screwdriver	Inserting and removing screws
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

T-6-41

Special-purpose tools	Remarks
Carriage Wire Tool (AY3-4493)	Adjusting carriage wire height
Grease FLOIL G-5000H (FY9-6022)	Applying to specified locations
EU-1 (FY9-6028)	Soaks to specified locations
Syringe (CK-0541)	Draining ink manually
Lint free paper (CK-0336)	Wiping off ink
Rubber gloves (QC1-5547)	Preventing ink stains
Penlight (CK-0327)	Assisting the manual cappings

Chapter 7 SERVICE MODE

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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 parameters: ◄ 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 0 0 0 0			
I/O DISPLAY	I/O DISPLAY 1				
	I/O DISPLAY 2				

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		
	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	YSE/NO		
		RESET	YES/NO		
	CR MOTOR COG	YES/NO			
	SPUR CLEANING	YES/NO			
	MARGIN ADJ	TOP MARGIN ADJ	-5.0 to 5.0		
		BTM MARGIN ADJ	-5.0 to 5.0		
		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		
	WHITE CALIB (*1)	YES		
		NO		
	NOZZLE CHECK	YES/NO		
	NOZZLE INF	PC		

		BK		
	MEMORY CHK	DDR	YES/NO	
		EEP	YES/NO	
	HEAD CNT CHK	YES/NO		
REPLACE	CUTTER	YES/NO		
	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 Wib-1 EXC.		
		CLR CR-1 EXC.		
		CLR CR-2 EXC.		
		CLR CR-3 EXC.		
		CLR CR-4 EXC.		
		CLR CR-5 EXC.		
		CLR SP-1 EXC.		
		CLR PG-1 EXC.		
		CLR HMa-1 EXC.		
		CLR PL-1 EXC.		
		CLR PS-1 EXC.		
		CLR Mi-1 EXC.		
		CLR MS-1 EXC.		
		CLR CT-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.		
		Wib-1 EXC.		
		CR-1 EXC.		
		CR-2 EXC.		
		CR-3 EXC.		
		CR-4 EXC.		
		CR-5 EXC.		
		SP-1 EXC.		
		PG-1 EXC.		
		HMa-1 EXC.		
		PL-1 EXC.		
		PS-1 EXC.		
		Mi-1 EXC.		
		MS-1 EXC.		
		CT-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 24-36		
		P-SQ 24-36		
		P-SQ 17-24		
		P-SQ 17-24		
		P-SQ -17		
		P-SQ -17		
		P-CNT 24-36		
		P-CNT 17-24		
		P-CNT -17		
	MEDIASIZE2 ROLL	D-SQ 24-36		
		D-SQ 24-36		
		D-SQ 17-24		
		D-SQ 17-24		
		D-SQ -17		
		D-SQ -17		
		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 24-36		
		P-SQ 24-36		
		P-SQ 17-24		
		P-SQ 17-24		
		P-SQ -17		
		P-SQ -17		
		P-CNT 24-36		
		P-CNT 17-24		
		P-CNT -17		
	MEDIASIZE2 CUT	D-SQ 24-36		
		D-SQ 24-36		
		D-SQ 17-24		
		D-SQ 17-24		
		D-SQ -17		
		D-SQ -17		
		D-CNT 24-36		
		D-CNT 17-24		
		D-CNT -17		
	HEAD DOT CNT. 1	PC		

		BK		
		TTL		
	HEAD DOT CNT. 2	PC		

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

		COUNTER CT-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. (*1)	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-1	: Press the [OK] button to clear		

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

		PARTS CT-1	: Press the [OK] button to clear		
	SPECTRO CNT (*1)	CARRIAGE CNT			
		UP/DOWN CNT			
		FAN ON CNT			
	USER SETTEING	YES/NO			
	CA-KEY	YES/NO			
	ERDS-DAT	YES/NO			
	JOB LOG	YES/NO			

*1: Displays only for iPF6460/6450.

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 * iPF6460/6450/6410/6400 are represented by 24".	-
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)
PGY	Number of days passed since the PGY ink tank was installed	Day(s)
R	Number of days passed since the R ink tank was installed	Day(s)
G	Number of days passed since the G ink tank was installed	Day(s)
B	Number of days passed since the B 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.

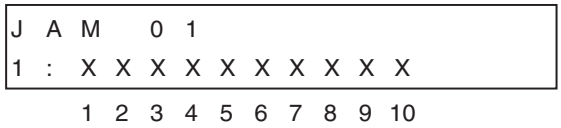
Indicates the date and time of jam and error code. "0000" is displayed if there is no log.



F-7-1

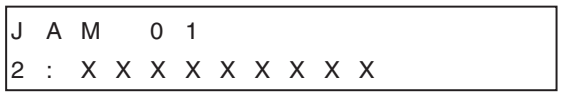
Press the ▼ key to display detail information.
Press the ◄ key or ► key to navigate among detail information display 1 to 4.

Detail information display 1



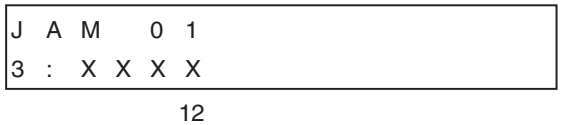
F-7-2

Detail information display 2



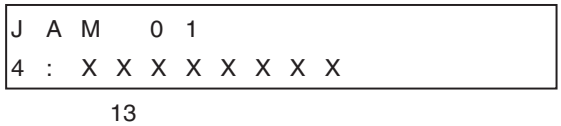
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Detail information display 3



F-7-4

Detail information display 4



F-7-5

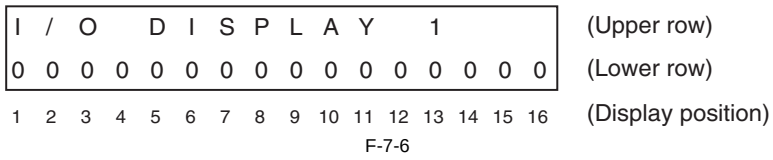
Display	Description	LCD display contents
1	Jam type	1:Carriage error, 2:Jam, 3:Feed failure (delay), 4:Cut failure, *:Unknown
2	Media	1:Roll media, 2:Cut sheet (manual feed from top), 3:Cut sheet (manual feed from front), 4:Cassette, *:Unknown
3	Jam timing	1:Feed, 2:Print, 3:Eject, *:Unknown
4	Media width detection	1:ON, 2:OFF, *:Unknown
5	Head height	0:SL (1.0mm), 1:L (1.4mm), 2:M1 (1.8mm), 3:M2 (2.0mm), 4:M3 (2.2mm), 5:H (3.2mm), *:Unknown
6	(Not Used)	-
7	(Not Used)	-
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	Spur position	1:Top, 2:Down, *:Unknown
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, MBK, Y, M, PM, R, G, B, PGY, GY and BK.
0: Never
1: Executed at least once

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

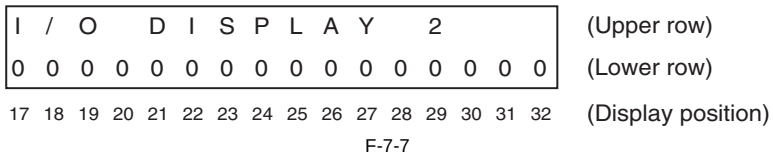
Sensor and switch status is shown in the display.
ON: 1
OFF or not used: 0

Screen 1



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Screen 2



F-7-7

Screen 1 and Screen 2 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	0:Sensor ON, 1:Sensor OFF
3	(Not Used)	-
4	(Not Used)	-
5	Spur Cam Sensor	0:Sensor ON, 1:Sensor OFF
6	Lift Cam Sensor	0:Sensor ON, 1:Sensor OFF
7	Feed Roller HP Sensor	0:Sensor ON, 1:Sensor OFF
8	Top Cover Sensor	0:Cover open, 1:Cover close
9	(Not Used)	-
10	Ink Tank Cover Switch	0:Cover open, 1:Cover close
11	(Not Used)	-
12	Paper Detection Sensor	0:Sensor ON, 1:Sensor OFF
13	(Not Used)	-
14	(Not Used)	-
15	(Not Used)	-
16	(Not Used)	-
17	Roll Media Sensor	0:Sensor ON, 1:Sensor OFF
18	Roll Cam Sensor	0:Sensor ON, 1:Sensor OFF
19	Cutter Lift Sensor	0:Sensor ON, 1:Sensor OFF
20	Cutter Right Position Sensor	0:Sensor ON, 1:Sensor OFF
21	Cutter HP Sensor	0:Sensor ON, 1:Sensor OFF
22	(Not Used)	-
23	(Not Used)	-
24	(Not Used)	-
25	(Not Used)	-
26	Roll unit detection	0:Roll unit not detected, 1:Roll unit detected
27	(Not Used)	-
28	(Not Used)	-
29	(Not Used)	-
30	(Not Used)	-
31	(Not Used)	-
32	(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

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 3 (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 4 and 5 (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 5 (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 registration remains partially misregistered after user-mode head adjustment.
EXECUTE: Execute automatic head adjustment.
RESET: Reset the registration 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 carriage shaft.
If the error still occurs, replace the carriage motor.



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10) SPUR CLEANING
If white dots appear about 1mm apart in the paper feed direction, clean the spur.

Set a cleaning sheet and clean the spur following the instructions displayed on the screen.

- Do not fold the cleaning sheet.
- Do not use a cleaning sheet with rugged edges or a significantly folded cleaning sheet.
- If the cleaning sheet is warped, flatten it before use.

11) 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: -5.0 to 5.0mm (in 0.1mm increments)
BTM MARGIN ADJ	Set the fine adjustment value of trailing edge margin. Range: -5.0 to 5.0mm (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

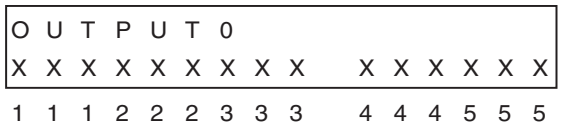
6) CR SCAN SIZE
Sets the scan width to be performed with CR AUTO SCAN.
1:A4, 2:A3, 3:A2, 4:17inch, 5:24inch
Default: 5

7) CR SCAN SPEED
Sets the speed of the scan to be performed with CR AUTO SCAN.
1:12.5, 2:20.0, 3:25.0, 4:33.3, 5:40.0 (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.

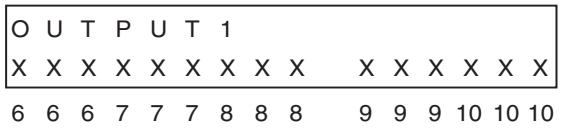
8) OPT SENS OUTPUT
Displays the values (analog value) multi sensor detected from the media.
You can confirm the amount of margin the media has with the values read with the multi sensor and the status of the multi sensor by comparing the values with the threshold.

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



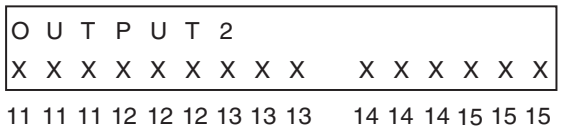
F-7-9

OUTPUT 1



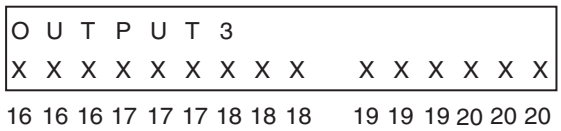
F-7-10

OUTPUT 2



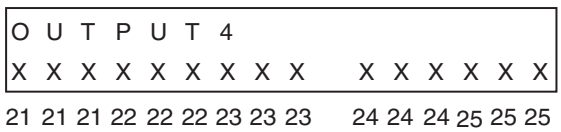
F-7-11

OUTPUT 3



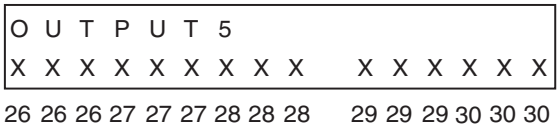
F-7-12

OUTPUT 4



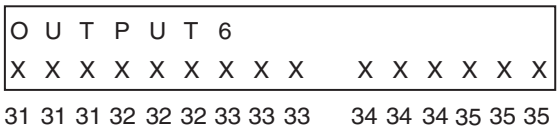
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OUTPUT 5



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OUTPUT 6



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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) WHITE CALIB
The white calibration is performed for the spectrophotometer sensor, and the difference dE from the initial value is displayed. This is used for checking status of the spectrophotometer sensor.

10) NOZZLE CHECK
Checks for non-discharging nozzle with head management sensor.

11) 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



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12) MEMORY CHK

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

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

e) REPLACE
1) CUTTER
This mode is for replacing the cutter.

2) 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	Times
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(suction fan) replacement count clearing	Times	
CLR Wib-1 EXC.	Cumulative count of unit Wib-1(platen duct) 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(fexible cable unit) replacement count clearing	Times	
CLR CR-3 EXC.	Cumulative count of unit CR-3(linear encoder sensor/linear scale/shaft cleaner) replacement count clearing	Times	
CLR CR-4 EXC.	Cumulative count of unit CR-4(carriage height changing cam) replacement count clearing	Times	
CLR CR-5 EXC.	Cumulative count of unit CR-5(multi sensor) replacement count clearing	Times	
CLR SP-1 EXC.	Cumulative count of unit SP-1(ink tube unit) 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 PL-1 EXC.	Cumulative count of unit PL-1(feed motor) replacement count clearing	Times	
CLR PS-1 EXC.	Cumulative count of unit PS-1(spur) replacement count clearing	Times	
CLR Mi-1 EXC.	Cumulative count of unit Mi-1(mist fan/mist filter) 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 CT-1 EXC.	Cumulative count of unit CT-1(cutter) replacement count clearing	Times	
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(suction fan) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS Wia-1])	Times
Wib-1 EXC.	Wib-1(platen duct) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS Wib-1])	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(fexible cable unit) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS CR-2])	Times
CR-3 EXC.	CR-3(linear encoder sensor/linear scale/shaft cleaner) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS CR-3])	Times
CR-4 EXC.	CR-4(carriage height changing cam) 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
SP-1 EXC.	SP-1(ink tube unit) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS SP-1])	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
PL-1 EXC.	PL-1(feed motor) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS PL-1])	Times
PS-1 EXC.	PS-1(spur) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS PS-1])	Times
Mi-1 EXC.	Mi-1(mist fan/mist filter) 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
CT-1 EXC.	CT-1(cutter) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS CT-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 24-36	Cumulative print area of paper equal to or larger than 24 inches but less than 36 inches (physical size)	Sq.m/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)	Sq.m/Sq.f
P-SQ -17	Cumulative print area of paper less than 17 inches (physical size)	Sq.m/Sq.f
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 24-36	Cumulative print area of paper equal to or larger than 24 inches but less than 36 inches (data size)	Sq.m/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)	Sq.m/Sq.f
D-SQ -17	Cumulative print area of paper less than 17 inches (data size)	Sq.m/Sq.f
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 24-36	Cumulative print area of paper equal to or larger than 24 inches but less than 36 inches (physical size)	Sq.m/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)	Sq.m/Sq.f
P-SQ -17	Cumulative print area of paper less than 17 inches (physical size)	Sq.m/Sq.f
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 24-36	Cumulative print area of paper equal to or larger than 24 inches but less than 36 inches (data size)	Sq.m/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)	Sq.m/Sq.f
D-SQ -17	Cumulative print area of paper less than 17 inches (data size)	Sq.m/Sq.f
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



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



F-7-18

Life of the consumable part



F-7-19

Use rate until part replacement



F-7-20

Counter of the consumable part (accumulate)



F-7-21

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.
SPECTRO CNT	CARRIAGE CNT	Initialize the counter related to the spectrophotometer carriage unit.
	UP/DOWN CNT	Initialize the counter related to the spectrophotometer up-down drive unit.
	FAN ON CNT	Initialize the counter related to the media dry fan.
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.

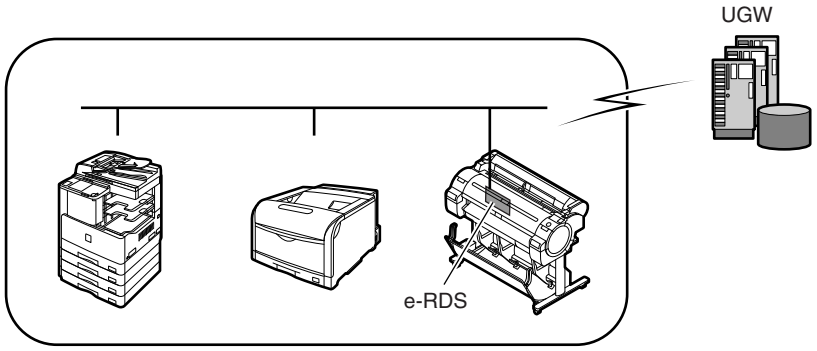
7.1.4 e-Maintenance/imageWARE Remote

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)



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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

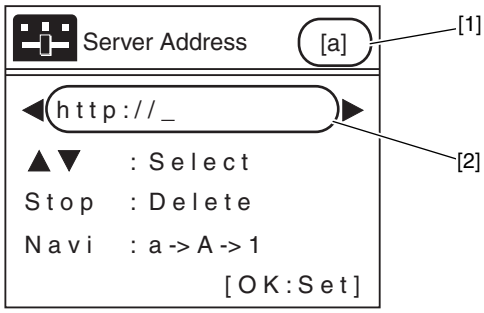
3) Network settings
Make the network settings based on the information obtained in "2) Advance preparations."
Network settings are made in user mode. Therefore, it is assumed that the user has already set it. However, there are a few cautions as described below, and if necessary, there may be cases in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

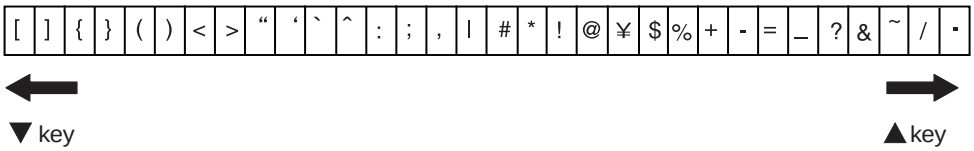


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[1] Display to show enter mode
a: Small alphabet letter
A: Capital alphabet letter
1: Numerical character
[2] URL entry field (128 one-byte characters)

- 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

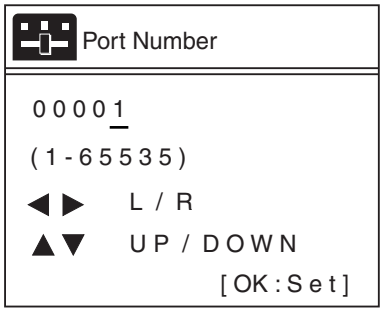
- [Symbol] appears in the following order.



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- 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.)

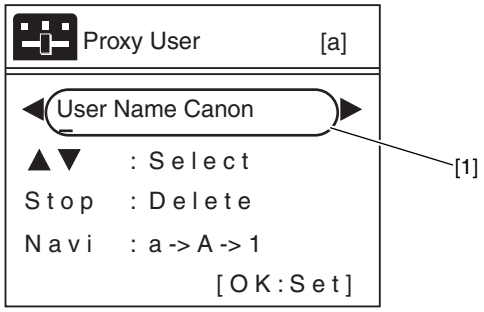
(2) How to enter port number



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- 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

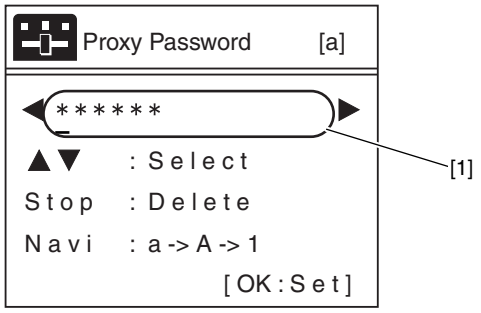


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[1] Entry filed (24 one-byte characters)

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

(4) How to enter password



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[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			

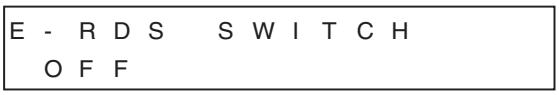
* Press ► key to move to the next menu of the same layer, and press ▼ key to move to the menu of one layer deeper.
* The menus shown in '*1' are the e-RDS-related menus.

3.4 e-RDS Related Setting Details

1) e-RDS's Operation Mode [E-RDS SWITCH]

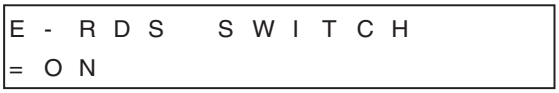
In service mode, referring to the "Service Mode Menu Tree", go to [E-RDS SWITCH] menu using ► key and ▼ key.

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



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



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- 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-7-30

- 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-7-31

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-7-32

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



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- 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.



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



F-7-35

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



F-7-36

- 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-7-37

- 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-7-38

- 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-7-39

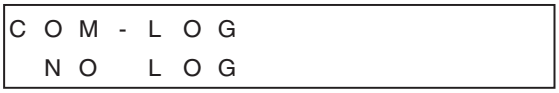
(2) Press ▼ key, and communication error information is displayed. On the upper line of the LCD, a log number (01-30) and an error code are shown; on the bottom line, an occurrence date and time of the error is shown.



F-7-40

- 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.

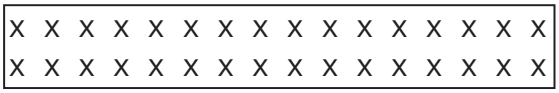


F-7-41

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

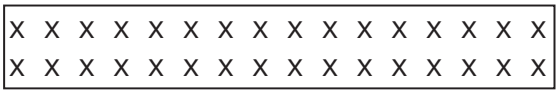
(3) Press ▼ key to display the Detailed Communication Error Information (maximum 128 characters).

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



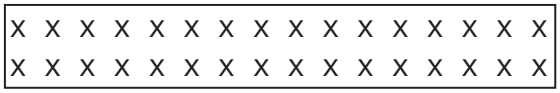
F-7-42

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



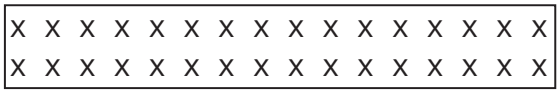
F-7-43

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



F-7-44

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



F-7-45

- 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-7-46

- 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-7-47

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



F-7-48

- 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-7-49

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



F-7-50

- 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-7-51

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

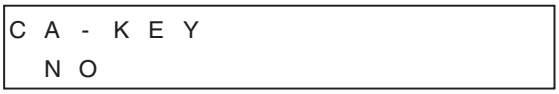
7) Deleting the CA Certificate [CA-KEY]

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-7-52

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



F-7-53

- 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 Code	Error Message	Cause	Remedy
1	0500 0003	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	8600 0002 8600 0003 8600 0101 8600 0201 8600 0305 8600 0401 8600 0403 8600 0414 8600 0415	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	8xxx 2001	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	8xxx 200A	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	8xxx 2002	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	8xxx 2014	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	8xxx 201E	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	8xxx 2028	Server certificate error	Device's route certificate is unavailable.	Reinstall the latest device system software (firmware). (Upgrade)
9	8xxx 2046	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	8xxx 2058	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	8xxx 2063	SOAP Fault	SOAP communication error has occurred.	Check that the value of UGW-PORT is 443.
12	8xxx 0101	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	8xxx 2004	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	xxxx xxxx	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	8xxx 0201 8xxx 0202 8xxx 0203 8xxx 0204 8xxx 0206	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	8xxx 2047	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	8xxx 2048	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	84xx 0003	E-RDS switch is set OFF	E-RDS is disabled.	Set E-RDS SWITCH = ON, and run COM-TEST in service mode.
19	0xxx 0003	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	8xxx 2003	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	8xxx 2052	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	8xxx 2015	Proxy address resolution error	A proxy server address resolution error.	Check that the proxy server name is correct.
23	8xxx 2029	Server certificate verify error	The server certificate verification (URL check) error.	Check that the value of UGW-ADR is https://a01---.
24	8xxx 200B	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	24
	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	PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	Number of days passed since the ink tank was installed	Unit: Days
WARNING	01-20	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	01-20	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(1.0mm) 1: L(1.4mm) 2: M1(1.8mm) 3: M2(2.0mm) 4: M3(2.2mm) 5: H(3.2mm) *: 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(1.0mm) 1: L(1.4mm) 2: M1(1.8mm) 3: M2(2.0mm) 4: M3(2.2mm) 5: H(3.2mm) -: 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	01-05	JAM log (5 records)	Number: Lowest is the most recent Date: mm/dd Time: mm/ss Jam code
	01	Jam type	1: CR error 2: Jam 3: Feed failure (delay) 4: Cut failure *: Unknown
	02	Media format	1: Roll media 2: Cut sheet (manual feed from top) 3: Cut sheet (manual feed from front) 4: Cassette *: Unknown
	03	Jam timing	1: Feed 2: Print 3: Eject *: Unknown
	04	Width detection OFF mode	1: ON 2: OFF *: Unknown
	05	Head height	0: SL (1.0mm) 1: L (1.4mm) 2: M1 (1.8mm) 3: M2 (2.0mm) 4: M3 (2.2mm) 5: H (3.2mm) *: Unknown
	06	(Not Used)	
	07	(Not Used)	
	08	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
	09	Borderless/Bordered	1: Bordered printing 2: Borderless printing *: Unknown
	10	Spur position	1: Top 2: Down *: Unknown
	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	Y, PC, C, PGY, GY, BK, PM, M, MBK, R, G, B	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 Wia1 EXC.	Cumulative count of unit Wia-1(suction fan) replacement count clearing	
		PARTS Wib1 EXC.	Cumulative count of unit Wib-1(platen duct) replacement count clearing	
		PARTS CR1 EXC.	Cumulative count of unit CR-1(carriage unit bushing) replacement count clearing	
		PARTS CR2 EXC.	Cumulative count of unit CR-2(fexible cable unit) replacement count clearing	
		PARTS CR3 EXC.	Cumulative count of unit CR-3(linear encoder sensor/linear scale/shaft cleaner) replacement count clearing	
		PARTS CR4 EXC.	Cumulative count of unit CR-4(carriage height changing cam) replacement count clearing	
		PARTS CR5 EXC.	Cumulative count of unit CR-5(multi sensor) replacement count clearing	
		PARTS SP1 EXC.	Cumulative count of unit SP-1(ink tube unit) replacement count clearing	
		PARTS PG1 EXC.	Cumulative count of unit PG-1(purge unit) replacement count clearing	
		PARTS HMa1 EXC.	Cumulative count of unit HMa-1(head management sensor) replacement count clearing	
		PARTS PL1 EXC.	Cumulative count of unit PL-1(feed motor) replacement count clearing	
		PARTS PS1 EXC.	Cumulative count of unit PS-1(spur) replacement count clearing	
		PARTS Mi1 EXC.	Cumulative count of unit Mi-1(mist fan/mist filter) replacement count clearing	
		PARTS MS1 EXC.	Cumulative count of unit MS-1(multi sensor) replacement count clearing	
		PARTS CT1 EXC.	Cumulative count of unit CT-1(cutter) 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 Wia1 EXC.	Wia-1(suction fan) replacement count	
		PARTS Wib1 EXC.	Wib-1(platen duct) replacement count	
		PARTS CR1 EXC.	CR-1(carriage unit bushing) replacement count	
		PARTS CR2 EXC.	CR-2(fexible cable unit) replacement count	
		PARTS CR3 EXC.	CR-3(linear encoder sensor/linear scale/shaft cleaner) replacement count	
		PARTS CR4 EXC.	CR-4(carriage height changing cam) replacement count	
		PARTS CR5 EXC.	CR-5(multi sensor) replacement count	
		PARTS SP1 EXC.	SP-1(ink tube unit) replacement count	
		PARTS PG1 EXC.	PG-1(purge unit) replacement count	
		PARTS HMa1 EXC.	HMa-1(head management sensor) replacement count	
		PARTS PL1 EXC.	PL-1(feed motor) replacement count	
		PARTS PS1 EXC.	PS-1(spur) replacement count	
		PARTS Mi1 EXC.	Mi-1(mist fan/mist filter) replacement count	
		PARTS MS1 EXC.	MS-1(multi sensor) replacement count	
		PARTS CT1 EXC.	CT-1(cutter) replacement count	

Print item			Print content	Printed value
COUNTER	DETAIL-CNT	MOVE PRINTER	Count of secondary transportation	Unit: times
		MEDIACONFIG-CNT	Count of media registered by media editor	
		N-INKCHK PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	Count of turning off the ink remaining level detection for each color	
	INK-USE1	INK PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	Cumulative consumption amount of generic ink	Unit: ml
		TTL	Total amount of the cumulative consumption of generic ink	
		LINK PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	Cumulative consumption amount of generic large ink	
		TTL	Total amount of the cumulative consumption of generic large ink	
		SINK PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	Cumulative consumption amount of generic small ink	
		TTL	Total amount of the cumulative consumption of generic small ink	
		NINK PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	Cumulative consumption amount of refilled ink	
		TTL	Total amount of the cumulative consumption of refilled ink	
	INK-USE2	INK PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	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 PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	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 PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	Cumulative count of generic ink tank replacement	Unit: times
		TTL	Total amount of the cumulative count of generic ink tank replacement	
		NINK PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	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	24-36	Cumulative print area of roll media equal to or larger than 24 inches but less than 36 inches (physical size)	Unit: square/meter, square/feet, sheets (equivalent of A4)
		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	24-36	Cumulative print area of roll media equal to or larger than 24 inches but less than 36 inches (data size)	Unit: square/meter, square/feet, sheets (equivalent of A4)
		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	24-36	Cumulative print area of cut sheet equal to or larger than 24 inches but less than 36 inches (physical size)	Unit: square/meter, square/feet, sheets (equivalent of A4)
		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	24-36	Cumulative print area of cut sheet equal to or larger than 24 inches but less than 36 inches (data size)	Unit: square/meter, square/feet, sheets (equivalent of A4)
		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	PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	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	PC, C, MBK, Y, M, PM, R, G, B, PGY, GY, BK	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]	01	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)
	02	Removal date & time (last 3 times)	YY/MM/DD Display order: Last -> 2nd to last -> 3rd to last
	03	Main unit serial No. (last 3 times)	Display order: Last -> 2nd to last -> 3rd to last
	04	CLN_A (auto) count	Unit: Times
	05	CLN_A (manual) count	
	06	Cleaning B (auto/left cap) count	
	07	Cleaning B (auto/right cap) count	
	08	CLN_B (manual) count	
	09	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]	01	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)
	02	Removal date & time (last 3 times)	YY/MM/DD Display order: Last -> 2nd to last -> 3rd to last
	03	Main unit serial No. (last 3 times)	Display order: Last -> 2nd to last -> 3rd to last
	04	CLN_A (auto) count	Unit: Times
	05	CLN_A (manual) count	
	06	Cleaning B (auto/left cap) count	
	07	Cleaning B (auto/right cap) count	
	08	CLN_B (manual) count	
	09	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
COLOR CALIBRATION HISTORY		01 to 20	Color calibration history (up to 20 events)	Number: Lowest is the most recent DATE: yyyy/mm/dd ACTION: Calibration action TEMP/HUMID: Temperature and humidity BACKING: Backing color SENSOR S/N: Sensor serial number LAMP ON: Lamp on time
SPECTRO PHOTOM ETER	UNIT	S/N	Automatic spectrophotometer unit serial number	
		Firm	Automatic spectrophotometer unit firmware version	
	SENSOR	S/N	Spectrophotometer sensor serial number	
		Firm	Spectrophotometer sensor firmware version	
	COUNTER	CARRIAGE CNT	Spectrophotometer carriage unit count	
		UP/DOWN CNT	Spectrophotometer up-down unit drive count	
		FAN ON	Media dry fan drive time	
		LAMP ON	Lamp on time	
MULTI SENSOR		UNIT	Multi sensor version	
		DATA	Multi sensor data	

Print item		Print content	Printed value
CRREG	HRZ A	Adjustment value of the horizontal registration A and B and C ink droplet landing position	
	HRZ B		
	HRZ C		
	VRT LATEST CALC POINTS	As to the listed value, the number of effective value from the first	
	VRT a	Adjustment value when performing the vertical registration a and b amd c average adjustment value calculation	
	VRT b		
	VRT c		
JOB LOG	1 to 5	Job history (up to 5 events)	Number: Lowest is the most recent - Head height - Temperature and humidity - Media type - Date - Registration condition - GAP information - Job name
ADJUST LOG	1 to 5, D, E	Adjustment history (up to 5 events) D: Advanced registration history E: Expansion registration history	Number: Lowest is the most recent - Adjustment type - Head height - Temperature and humidity - Media type - Date - GAP information
DUTY	A	Cumulative print area of the less than 0.1ml duty	Unit: square/meter, square/feet, sheets (equivalent of A4/LTR)
	B	Cumulative print area of the 0.1ml or more and less than 0.15ml duty	
	C	Cumulative print area of the 0.15ml or more and less than 0.25ml duty	
	D	Cumulative print area of the 0.25ml or more and less than 0.30ml duty	
	E	Cumulative print area of the 0.30ml or more duty	

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
```

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```
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
```

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```
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
```

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```
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
```

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```
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-7-58

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

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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.

The codes of warning and error and service call error are common in all models.
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
xx8Bxxxx-xxxx	Stacker-related
xx90xxxx-xxxx	Version up-related

8.2 Warning/Error/Service Call Error

8.2.1 Code Table

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
-	Sheet printing is selected, but a roll is loaded.		Paper mismatch (cut sheet) Print data having a cut sheet print specification has been received with media take-up unit use being selected.	Printing on cut sheet is not functional with a media take-up unit in use.
-	Media Type not compatible with cassette. Check Media Type. Stop: Stop Printing	Media Check Please Cancel Cas Cannot Feed Please Check	Paper mismatch (cut sheet) Cassette pickup has been specified for paper that does not support cassette pickup.	Check the cassette pick-up setting/ paper type.
-	Regular printing is selected, but a roll is loaded. Press OK, remove the roll, and load sheets.		Paper mismatch (cut sheet) Print data having a manual feed print specification has been received at the completion of roll paper pickup.	Check the cassette pick-up setting/ paper type.
-	Papr Type Mismatch	PaprTyp Mismatch	Paper mismatch (type) (1) Mismatch following the selection of any of the following menu choices: - [Warning Indication] has been selected for [Paper Mismatch Detection]. - [ON] has been selected for [Paper Error Skip]. (2) On forced printing following a mismatch resulting from the selection of the following menu option: - [Pause] has been selected for [Paper Mismatch Detection].	This is a warning and allows continued printing.
-		Paper Mismatch	Paper mismatch (both type and size) (1) Mismatch following the selection of any of the following menu choices: - [Warning Indication] has been selected for [Paper Mismatch Detection]. - [ON] has been selected for [Paper Error Skip]. (2) On forced printing following a mismatch resulting from the selection of the following menu option: - [Pause] has been selected for [Paper Mismatch Detection].	This is a warning and allows continued printing.
-	Papr Size Mismatch	PaprSiz Mismatch	Paper mismatch (size) (1) Mismatch following the selection of any of the following menu choices: - [Warning Indication] has been selected for [Paper Mismatch Detection]. - [ON] has been selected for [Paper Error Skip]. (2) On forced printing following a mismatch resulting from the selection of the following menu option: - [Pause] has been selected for [Paper Mismatch Detection].	This is a warning and allows continued printing.
-	Cannot print as specified. Lift the release lever and replace paper with XXX (vertical) or larger		Paper mismatch (size) When performing internal printing, paper loaded is smaller than the size specified for each print purpose. [XXX]: appropriate paper size	Replace the paper with appropriate one.
-	Sheet printing is selected. Press Load/Eject and load sheets.		Paper mismatch (cut sheet) No cassette paper has been loaded when data having a cut sheet specification is received. (Paper type /size not determined)	Load cut sheet.
-	Sheet printing is selected.		Paper mismatch (cut sheet) No cassette paper has been loaded when data having a cut sheet specification is received. (Paper type /size not determined)	Load cut sheet.
-	Paper Pos Wrong	Paper Pos Wrong	Invalid paper loading position Paper is invalidly positioned on the platen.	
-	Turn on the media take-up unit.		Printing has started with the media take-up unit setting of [Use] and with the media take-up unit switched off.	Switch on the media take-up unit. *A measure for a third-party media take-up unit that is not connected to the main unit.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
-	Media take-up unit ready. Online: Print Stop: Stop Printing		Media take-up unit use has been set to [Do not use] at the start of printing when the media take-up unit is active.	1. Press the [Online] button to set the media take-up unit use setting to force [Use] and print. 2. Press the [Stop] key to cancel printing.
-	End of paper feed. Cannot feed paper more.	Feed Limit..	Forced feed limit Paper being manually fed in the return direction (back-feeding) has reached the pinch roller position.	The message clears automatically 2 seconds later. Check the Paper detection sensor/ Media sensor sensor (I/O mode).
-	Close Ink Tank Cover		Ink tank cover open while printing On a model having a subtank, the ink tank cover opened while printing. (Printing is allowed to continue.)	The message clears when the ink tank cover is closed. Check the sensor (I/O mode).
-	The roll feed unit is loose. Push it all the way in.		The roll unit has been pulled out during standby or printing on the lower roll paper or cut sheet A3 or less.	Close the roll unit.
-	Prepare for parts replacement. Call for service.	W Level 1 Consumables Low	Durable parts replacement due soon Any of the parts counters has reached warning level 1.	Check the parts counter and prepare the target unit or Refresh Service Kit. Initialize the parts counter for the target unit after the replacement.
-	Parts replacement time has passed. Call for service.	W Level 2 Repl Consumables	Durable parts replacement due soon Any of the parts counters has reached warning level 2.	
1000 to 100C	Ink Level: Check Not much ink is left. Prepare to replace the ink.	Ink Lvl: Chk XX	Ink tank near-empty (continued use allowed) The remaining volume of ink is diminishing (below the pin check level). (XX: Target color display) Last 2 digits of error code: 00:Bk, 01:Y, 02:M, 03:C, 04:PM, 05:PC, 06:MBk1, 07:MBk2, 08:GY, 09:PGY, 0A:R, 0B:B, 0C:G	1. Replace the tank (continued usage allowed). 2. If the problem persists after the tank has been replaced, the remaining ink detection system is at fault. (Replace the supply unit or check catching wire or connection status of harness.)
100F	End of paper feed. Cannot feed paper any more.	End of paper feed.	The limit of forced paper feeding. The media reached to a pinchroller at feeding backfeed media manually. (not an error or a failure)	The message is cleared automatically after displaying for 2sec. Confirmation of Paper detection sensor/ Media sensor sensor (I/O mode)
1010	Problem with Printhead L/R Chk printing results Check printed document.	CheckPrintout:LR Check Printout	Head non-ejection warning (Check printout/ possible to continue printing) See 280C for detection criteria.	1. Check image quality. (Unless there are problems with the image quality, there is no need to replace the printhead.) 2. Replace the printhead.
1012	Problem with Printhead R Chk printing results	CheckPrintout:R	Printhead R non-ejection warning (double-head model) (Check printout/ possible to continue printing) See 280C for detection criteria.	
1013	Problem with Printhead L Chk printing results	CheckPrintout:L	Printhead L non-ejection warning (double-head model) (Check printout/ possible to continue printing) See 280C for detection criteria.	
1015	This type of paper is not compatible with HP-GL/2.	GL2: Unsup. papr GL2: Incompatible paper type Press Online Starts printing	HP-GL2 error: out of the scope of paper support [Warning Indication] or [Pause] have been selected for [Paper Mismatch Detection]. The paper that is being fed does not support HP-GL/2 printing; that is, a paper type that does not have a required print mode has been set.	When [Warning Indication] is selected Replace with appropriate paper. When [Pause] is selected 1. Press the [Online] button to force printing. Caution) Due to use of image process table (LUT) defined for HP-GL/2 compatible paper different from the specified paper, you might have a problem in quality of image. 2. Press the [Stop] button to cancel printing.
1021	Papr Type Mismatch	MediaType Mismatch	Paper mismatch (type) With [Warning Indication] is selected for [Paper Mismatch Detection], the type of loaded paper mismatches the specified type. Or, with [Pause] is selected for [Paper Mismatch Detection], the [Online] button was pressed to execute forced printing.	Continued printing is allowed. Check driver setting. Replace with appropriate paper.
1022	Papr Type Mismatch	MediaType Mismatch	Paper mismatch (type) With [Warning Indication] is selected for [Paper Mismatch Detection], the type of loaded paper mismatches the specified type. Or, with [Pause] is selected for [Paper Mismatch Detection], the [Online] button was pressed to execute forced printing.	Continued printing is allowed. Check driver setting. Replace with appropriate paper.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
1030	GARO W1221	GARO W1221	(Image mode)Unknown command A character that is located within bounds of a group character or end parameter character but that is not defined as a command has been detected during Image mode command decoding.	1. Identify the model. 2. If the error has occurred with RIP, try with the printer driver. 3. Try in an alternative environment (I/F, PC).
1031	GARO W1222	GARO W1222	(Image mode) Invalid parameter count (no parameters) A numeric field has not been identified as being numeric during Image mode command decoding.	
1032	GARO W1223	GARO W1223	(Image mode) Required item missing A character out of bounds has been detected where a group or end parameter character ought to exist, during Image mode command decoding.	
1034	GARO W1225	GARO W1225	(Image mode)Other warning A character other than <ESC> has been detected right after the image mode analysis module entered Image mode or when the decoding of a single command ended.	
1035	GARO W1231	GARO W1231	(Setup mode)Unknown command A command character string other than RESET, SET, OPCMT0 and OPCMT2 has been detected in a PJL command.	
1036	GARO W1232	GARO W1232	(Setup mode)Invalid parameter count Too many or too few parameters have been detected during Setup mode command decoding.	
1037	GARO W1233	GARO W1233	(Setup mode) Required item missing The exit parameter is missing in the EnterGAROMode command and the UniversalExitLanguage command used in Setup mode.	
1038	GARO W1234	GARO W1234	(Setup mode)Data out of bounds A character string that is not defined as an environmental variable has been detected. An unknown environmental variable has been detected. A character string that is not defined as an environmental variable value has been detected. The value of an unknown environmental variable has been detected.	
1039	GARO W1235	GARO W1235	(Setup mode) Other warning A character string other than the @PJL prefix has been detected while the analysis module was idle.	
103A	GARO W1226	GARO W1226	(Image mode) Image processing table error No image processing table is being transmitted, a required image processing table is unavailable, or an image processing table contains a value out of bounds.	1. Retransmit. 2. Check with a different interface choice. 3. Try by printing other data. 4. With RIP, print from the print driver. Supplement: If this error occurs, the print result would appear blank.
1040	GL2: W0501 The memory is full.	GL2: W0501	HP/GL2 error; Insufficient memory capacity The size of drawing data exceeds the processing capacity.	1. Reduce the size of rendering data. 2. Replace with HP RTL data for manipulation with On The Fly*. *: On The Fly: The method to transmit data in sequence from paper. The software that generates HP-GL/2 data has this option to specify. Select this option to save the memory usage of the printer.
1041	GL2: W0502 The parameter is out of range.	GL2: W0502	HP/GL2 error; invalid parameter Data having an invalid number of types of parameters that follow the command has been detected.	Verify the data and fix it.
1043	GL2: W0504 This command is not supported.	GL2: W0504	HP/GL2 error; Invalid command A command that is not defined in HP-GL/2 or HP RTL is included.	Verify the data and fix it.
1047	GL2: W0903 The memory is full.	GL2: W0904	HP/GL2 error; replot buffer overflow Data storage buffers have run short.	1. Reduce the size of rendering data. 2. Replace with HP RTL data for manipulation with On The Fly*. *: On The Fly: The method to transmit data in sequence from paper. The software that generates HP-GL/2 data has this option to specify. Select this option to save the memory usage of the printer.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
1048	GL2: W0904 The memory is full.	GL2: W0903	HP/GL2 error; polygon buffer overflow The size of drawing data exceeds the processing capacity.	1. Reduce the size of rendering data. 2. Replace with HP RTL data for manipulation with On The Fly*. *: On The Fly: The method to transmit data in sequence from paper. The software that generates HP-GL/2 data has this option to specify. Select this option to save the memory usage of the printer.
1049	Before borderless printing, move the blue platen switch.		When print data with borderless printing specification has been received, platen shutter was closed.	Open the platen shutter.
1050	Blue platen switch is dirty. Please clean the switch.		Cleaning of platen shutter is necessary. When reading the platen shutter in multisensor, borderless printing data has been received in unstable output condition.	Clean the platen shutter.
1051	Paper Too Small		Paper mismatch (size) Size clip warning With [Warning Indication] selected for [Paper Mismatch Detection] in the menu settings, the size of paper loaded is smaller than that of specified from driver.	Continued printing allowed. Check driver settings. Replace with appropriate paper.
1052	Borderless printng not possible. Check supported paper.		Borderless printing not available (unsupported size) With [Warning Indication] selected for [Paper Mismatch Detection] in the menu settings, borderless printing data is received, but roll paper not supporting borderless printing has been loaded.	Replace with appropriate paper.
1053	Paper position not suitable for borderless printing.		Borderless printing not available (physical) With [Warning Indication] selected for [Paper Mismatch Detection] in the menu settings, borderless printing data is received, but roll paper loaded is more than 1mm off the predefined position for the pre-ejection opening at the counter-HP side.	Reload/ replace the roll paper.
1053	Borderless printng not possible. Check pap. pos. or spacer			Reload/ replace the roll paper. Check the borderless spacer.
1054	PaprWidth Mismatch		Paper mismatch (size) With [Warning Indication] selected for [Paper Mismatch Detection] in the menu settings, the width of roll paper loaded and that of specified by data do not match.	Continued printing allowed. Check driver settings. Replace with appropriate paper.
1056 to 1062	Move the blue platen switch No.XX to the right.		The multisensor detected that the platen shutter used for pre-ejection was closed. Detection timing: -At paper loading -At start of first printing (after upper cover is opened and closed, or recovery from sleep mode, or the power is turned on with paper loaded) The following list shows the last 2 digits of error codes and the corresponding messages. 56:No.2, 57:No.3, 58:No.459:No.5, 5A:No.6, 5B:No.75C:No.8, 5D:No.9, 5E:No.105F:No.11, 60:No.12, 61:No.13, 62:No.14	Move the platen shutter relevant to the message to the right, to open it.
1100	Prepare for maint cart replacement.	MTCart Full Soon	Maintenance cartridge near-full (continued usage allowed) Near-full has been detected from the dot count and the usage period (drying time). <Maintenance cartridge detection timings> The presence of a maintenance cartridge is detected at the following timings: 1. Before printing/during printing (twice per second)/at the end of printing/ between pages 2. Before a recovery operation/during a recovery operation (twice per second)/ before opening of the ink supply valve 3. When the cartridge is removed and inserted following the occurrence of an error or warning.	Prepare a maintenance cartridge.
1101	Replace part soon.	Mist Full Soon	Mist count near-full Waste ink near-full has been detected from the dot count.	Check the parts counter and replace the target unit or Refresh Service Kit. Initialize the parts counter for the target unit after the replacement.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
1400 to 140C	No ink left. Press OK and replace ink tank. Ink tank is empty. Replace the ink tank.		Ink tank empty (continued use allowed) The ink tank has run out of ink, but a certain volume of ink is reserved in the subtank. (The reserved volume of ink is put to use after the remaining ink falls below the pin check level.) Displayed only on models having a subtank. (XX: Display applicable colors) Last 2 digits: 00:Bk, 01:Y, 02:M, 03:C, 04:PM, 05:PC, 06:MBk1, 07:MBk2, 08:GY, 09:PGY, 0A:R, 0B:B, 0C:G	1. Replace the tank. 2. Failure of remaining ink detection system. (Replace the supply unit /check the bundled wires.)
1410 to 141C	No ink tank loaded. Check ink tank.		Ink tank not installed (continued use allowed) The ink tank is not installed but a sufficient volume of ink is left in the subtank. Displayed only on models having a subtank. This occurs in cases such as when the ink tank cover is opened during printing, and the ink tank is removed. (XX: Displays applicable colors) Last 2 digits: 10:Bk, 11:Y, 12:M, 13:C, 14:PM, 15:PC, 16:MBk1, 17:MBk2, 18:GY, 19:PGY, 1A:R, 1B:B, 1C:G	1. Mount the tank. 2. Failure of remaining ink detection system. (Replace the supply unit /check the bundled wires.)
200A	Paper size not detected. Press Load/Eject and reload the paper. Paper size not detected. Reload paper. Paper size not detected. Press OK and reload the paper.	Paper Please Reload Size Undetected	Paper size detection failure Cannot detect the paper width (poorly positioned paper).	
200B	Paper size not detected. Reload paper.	Paper Please Reload Size Undetected	Paper size detection failure Paper is invalidly positioned on the platen.	
200C	Paper size not detected. Press Load/Eject and reload the paper. Paper size not detected. Reload paper.	Paper Please Reload Size Undetected	Paper size detection failure Cannot detect the leading edge of the paper. The leading edge of paper has been located by coarse detection but not by a second round of fine detection (up to 300 mm) (semi-transparent paper). (This is the message when the release lever operation is not necessary.)	
	Paper size not detected. Lift the release lever and reload the paper.	Papr Size Undetected Press Online Key and Reload	Paper size detection failure Cannot detect the leading edge of the paper. The leading edge of paper has been located by coarse detection but not by a second round of fine detection (up to 300 mm) (semi-transparent paper).	
200D	Paper size not detected. Press Load/Eject and reload the paper. Leading edge detection error. Lift the release lever and align leading edge with orange line. Paper size not detected. Lift the release lever and reload the paper. Paper size not detected. Reload paper.	Paper Please Reload Size Undetected	Paper size detection failure Cannot detect the trailing edge of the paper. -Cannot detect the trailing edge of the cut sheet loaded after they have been fed 50 mm. -Cannot locate the trailing edge of the paper that has been found by coarse detection.	1. Check to see if roll paper are not loaded in the cut sheet mode. 2. Load cut sheet.
200E	This paper cannot be used. Check supported paper sizes. This paper cannot be used. Check supported paper sizes. Load/Eject: Change Paper	Paper Size Please Check Paper Too Small Paper Size Please Check Paper Too Small Press Online Key	Paper is too small The width and length of paper detected are shorter than the supported size (1.5% margin).	1. Check paper conditions (soiling, tear-offs, residual paper chips, residual trimming cuts, folds)/size. 2. Has the paper been fed successfully (without slippage under a load or any influence)? 3. Has the LF adjustment value set correctly? 4. Hasn't the loaded paper shrunk to below its margin in the particular environment?

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
200F	This paper cannot be used. Check supported paper sizes.	Paper Size Please Check Paper Too Large	Paper mismatch (size) Paper is too large -The width and length of paper detected are longer than the supported size (1.5% margin). -Cannot detect the leading edge of paper even when the paper has been fed by 1300 mm for roll paper and by the size mentioned above for cut sheet. -Cannot detect the width of paper even when the paper is fed by the size mentioned above.	1. Check paper conditions (soiling, tear-offs, residual paper chips, residual trimming cuts, folds)/size. 2. Has the paper been fed successfully (without slippage under a load or any influence)? 3. Has the LF adjustment value set correctly? 4. Hasn't the loaded paper shrunk to below its margin in the particular environment?
	This paper cannot be used. Check supported paper sizes. Load/Eject: Change Paper	Paper Too Large Please Check Press Online Key and Reload		
2010	Paper loaded askew. Press Load/Eject and reload the paper.	Paper Askew Please Reload Paper Skew	Skew (skewed right) Paper is determined skewed as its edge is read by the multisensor.	Reload the paper.
	Paper loaded askew. Reload the paper.	Paper Loaded Crooked Press Online Key and Reload		
	Paper loaded askew. Lift the release lever.	Paper loaded askew. Remove paper		
	Paper loaded askew. Lift the release lever and reload the paper.			
	Paper loaded askew. Press OK and reload the paper.			
	Paper loaded askew Lift the release lever.			
2015	Cannot cut paper. Press Load/Eject and reload the paper.	<When small LCD 1> Cutting Error Please Cut Papr <When small LCD 2> Press (upper arrow) Key to Release Paper	Cutting failure/jam detected due to a cutting failure An idle cutter unit or a cutter blade that is too blunt to cut sheet has been detected by the paper leading edge detection sequence.	
	Cannot cut paper. Reload the paper.			
	Cannot cut paper. Lift the release lever and reload the paper.			
	Paper cutting failed. Lift the release lever.			
2016	No sheets. Press Load/Eject and reload the paper.	Sheets Please Load Sheet Not Loaded	Paper loosened out of position while printing The trailing edge of paper has been detected at least 20 mm shorter than the length of cut forms detected.	Reload the paper.
	No sheets. Lift the release lever and reload the sheets.			
	The paper is too small. Check paper size.			
	Sheet removed. Lift the release lever.			
	Paper jam. Press Load/Eject and reload the paper.	Paper Jam Press (upper arrow) Key	Jam while picking up, ejecting or printing on paper (A sequence of removing jams with the pinch roller released is required) Virtually all recovery errors that could occur in connection with paper pickup are handled.	1. Open and close the release lever to reload the paper. 2. Remove the paper once and then refeed it.
	Paper jam. Manually rewind roll all the way.	Paper Jam Press (upper arrow) Key Paper Eject Err Remove Paper		
	Paper jam. Manually rewind roll all the way and press OK.			
	Cannot feed paper Lift the release lever and reload paper.			
	Cannot feed paper. Reload the paper.			
	Cannot feed paper. Press Load/Eject and reload the paper.			

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2017	Paper size not detected. Lift the release lever and reload the paper.	Paper Please Reload Size Undetected Press (upper arrow) Key	Paper (right) side detection error 1. Multisensor error on light quantity adjustment 2. The read reference paper edge is 5 mm or more apart from its theoretical position. 3. Cannot locate the edge of reference paper.	
	Paper size is undetected. Reload paper.	Papr Size Undetected Press Online Key and Reload		
	Paper size not detected. Press Load/Eject and reload the paper.			
	Paper size not detected. Lift the release lever.			
	Could not detect paper size. Push release lever back, then pull out the cut sheet.			
	Could not detect paper size. Press OK, then Insert roll paper straight into feed slot..			
2018	Paper size not detected. Lift the release lever and reload the paper.	Papr Size Undetected Press Online Key and Reload	Paper (left) side detection error The non-reference edge of paper has been located by coarse detection but not by a second round of fine detection.	
	Paper size not detected. Reload paper.			
	Paper size not detected. Press Load/Eject and reload the paper.	Paper Please Reload Size Undetected Press (upper arrow) Key		
	Paper size not detected. Lift release lever.			
	Could not detect paper size. Push release lever back, then pull out the cut sheet.			
	Could not detect paper size. Press OK, then insert roll paper straight into feed slot.			
2019	Cannot cut paper. Lift the release lever and reload the paper.		Cutting failure/jam detected due to a cutting failure An idle cutter unit or a cutter blade that is too blunt to cut sheet has been detected by the paper leading edge detection sequence. Or, cutter unit home position detection was failed.	
	Cannot cut paper. Reload the paper.			
	Paper cutting failed. Lift the release lever.			
	Paper cutting failed. Remove the paper after cutting at the top of feed slot. Push the release lever back.			
201A	Paper not aligned with right guide. Press OK and then reload the roll paper.		When loading cut sheet, paper (right) side detection was failed.	The error is cleared by releasing the release lever. After that, load paper to the correct position.
	Paper not aligned with right guide. Push the release lever back, then reload the paper.			
201B	Roll paper is not securely in contact with roll holder. Press OK, then re-attach the roll paper.		When loading roll paper, paper (right) side detection was failed.	Paper is ejected automatically, and by pressing the [OK] button the error is cleared. After that, load paper to the correct position.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
201C	Paper jam Push the release lever back.		While printing, paper width was detected to have fluctuated beyond the predefined value. Failure of detecting right edge of the paper (cut paper, in printing).	By releasing the release lever, move to the loading sequence, and load paper to the correct position.
201D	Paper jam Remove the paper after cutting at the top of feed slot. Push the release lever back.		While printing, paper width was detected to have fluctuated beyond the predefined value. Failure of detecting right edge of the paper (cut paper, in printing).	1. Cut the paper near the feed slot, and remove the paper. 2. Release the release lever, and load the paper to the correct position.
201E	Media Type not compatible with cassette. Check Media Type. Stop: Stop Printing	Media Check Please Cancel Cas Cannot Feed Please Check	Paper mismatch (cut sheet) Cassette pickup has been specified for paper that does not support cassette pickup.	Check the cassette pick-up setting/ paper type.
2405	Borderless printng not possible. Lift the release lever and reload the paper. Online: Print	Roll Paper Chk Check Width/Spcr Borderless Prtng Not Possible	Invalid paper loading position (borderless printing) The position at which paper is loaded is unfit for borderless printing. Data with a borderless print specification has been received while the left or right edge of roll paper was off the center of the borderless print idle ejection port at the completion of roll paper pickup.	Reload the roll paper. Check spacers
	Bordless Printing not possible. Lift release lever and reload the paper.			
	Bordless Printing not possible. Lift release lever and reload the paper Online: Not bordrlss Stop: Stop Printing			
	Paper position not suitable for borderless printing			
	Borderless printng not possible. Check roll position. Online: Print Load/Eject: Change Paper			
	Borderless printng not possible. Check roll width and spacers. Online: Print Load/Eject: Change Paper			
2406	Borderless printng not possible. Check paper size setting. Online: Print Load/Eject: Change Paper	Check Supported Paper. No Borderless w/ This Roll Paper	Borderless print data not printable (logic) Borderless print data was received at the start of printing and one or more of the following requirements are met at the same time: -A feeder slot other than one for roll paper has been specified in the data. -A paper type that does not support borderless printing has been set on the data. -Banner printing has been specified on the data at the same time. -A paper size that does not support borderless printing has been specified in a job for which paper had already been fed.	Reset the driver and RIP.
	Borderless printng not possible. Check supported paper.			
2407	Borderless printng not possible. Paper stretched or shrank. Confirm usage cond. of the paper.		It occurs when all of the following conditions are met at start of printing. -Borderless printing data has been received. -Roll paper has been loaded, and its paper width and edge position recognized at loading are within the supported range of borderless printing. -As a result of right/left side edge detection after start of print processing, it was detected as beyond the supported range of borderless printing.	Reset /replace the roll paper. Confirm and explain usage environment.
2408	Borderless printng not possible. Check supported paper.		At the start of borderless printing, roll paper whose size doesn't support borderless printing has been loaded.	Replace with appropriate paper.
	Bordless Printing not possible. Lift release lever and reload the paper.			

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2409	Paper position is not suitable for borderless printing. Check paper position. Print to normal printing. Stop printing.		Invalid paper loading position (suspended job/ borderless printing) All of the following conditions were met. -Borderless printing data has been received. -Roll paper whose paper loading position is not suitable for borderless printing has been loaded. -The right or left edge of roll paper is more than 1mm off the prescribed position of the pre-ejection opening.	Reload/ replace the roll paper. Check roll paper. 1) Select "Normal printing. (No borderless printing)" and enforce printing. Borderless print setting is ignored. Print with default margin. Default margin depends on selected feeding trays and media type. 2) Select "Stop printing" or press "stop button"to stop printing. 3) Select "replace printing" or release releasing lever.
240A	Borderless printing is not possible. Check supported paper. Check paper position. Print to normal printing. Stop printing.		Borderless printing is not possible (suspended job/ unsupported size). All of the following conditions are met. -Borderless printing data has been received. -Roll paper not supporting borderless printing has been loaded.	
2500 to 250C	Ink tank is empty. Press OK and replace ink tank. No ink left. Replace ink tank.	No Ink Left (lower arrow)	Ink tank empty (continued use not allowed) The ink tank has run out of ink. (The reserved volume of ink is put to use after the remaining ink falls below the pin check level.) (In the small LCD, the lower arrow points to the color in question.) The last 2 digits signify applicable colors. 00:Bk, 01:Y, 02:M, 03:C, 04:PM, 05:PC, 06:MBk1, 07:MBk2, 08:GY, 09:PGY, 0A:R, 0B:B, 0C:G	1. Replace the tank. 2. If the problem persists after the tank has been replaced, the remaining ink detection system is at fault (replace the supply unit or check the bundled wires).
2510 to 251C	Ink level is unknown. Check ink level. Press Online to start printing.	Online Key Press To Print Ink Lvl Unknown Press Online	Remaining ink level unknown (continued use allowed) The level of ink remaining in the tank is detected when the tank cover is closed. Consumption has exceeded the original ink capacity (mismatch detected). Refill ink may have been used. (In the small LCD, the lower arrow points to the color in question.) The last 2 digits signify applicable colors. 10:Bk, 11:Y, 12:M, 13:C, 14:PM, 15:PC, 16:MBk1, 17:MBk2, 18:GY, 19:PGY, 1A:R, 1B:B, 1C:G	Replace the ink tank.
2520 to 252C	No ink tank loaded. Press OK and check ink tank. No ink tank loaded. Check ink tank.	Ink Tank Check XX No Ink Tank Check Ink Tank	Ink tank not installed (continued use not allowed) On a model that is furnished with a subtank, this error is indicated if the subtank has run out of ink and the state of an ink tank not being installed is detected. The last 2 digits signify applicable colors. 20:Bk, 21:Y, 22:M, 23:C, 24:PM, 25:PC, 26:MBk1, 27:MBk2, 28:GY, 29:PGY, 2A:R, 2B:B, 2C:G	1. Remove and then reinstall the tank. 2. Replace the tank. 3. Failure of remaining ink detection system. (Replace the supply unit /check the bundled wires.)
2540 to 254C	Ink tank error. Press OK and replace ink tank. Wrong ink tank. Replace ink tank. Wrong ink tank. Press OK and replace ink tank.	Ink Tank Replace BK Ink Tank Error Repl. Ink Tank	Ink tank ID error The type of ink tank is wrong. The last 2 digits signify applicable colors. 40:Bk, 41:Y, 42:M, 43:C, 44:PM, 45:PC, 46:MBk1, 47:MBk2, 48:GY, 49:PGY, 4A:R, 4B:B, 4C:G	1. Replace the tank. 2. Failure of remaining ink detection system. (Replace the supply unit /check the bundled wires.)
2560 to 256C	Ink tank error. Press OK and replace ink tank.	Ink Tank Replace BK Ink Tank Error Repl. Ink Tank	Ink tank EEPROM error There is an error in tank EEPROM. The last 2 digits signify applicable colors. 60:Bk, 61:Y, 62:M, 63:C, 64:PM, 65:PC, 66:MBk1, 67:MBk2, 68:GY, 69:PGY, 6A:R, 6B:B, 6C:G	1. Replace the tank. 2. Failure of remaining ink detection system. (Replace the supply unit /check the bundled wires.)

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2570 to 257C	Ink insufficient. Press OK and replace ink tank.		Ink tank short on ink A suction operation was attempted, but there is not enough ink left in the tank for the operation (iPF8000 series, iPF9000 series). Reference) About 5 mL to 40 mL of ink may have been left in the tank when this warning occurs. 70:Bk, 71:Y, 72:M, 73:C, 74:PM, 75:PC, 76:MBk1, 77:MBk2, 78:GY, 79:PGY, 7A:R, 7B:B, 7C:G	1. Replace the tank. 2. Failure of remaining ink detection system. (Replace the supply unit /check the bundled wires.)
2580 to 258C	Ink insufficient. Press OK and replace ink tank. Ink insufficient. Replace ink tank.	Not Enough Ink (lower arrow) Replace ink tank orOnline to prnt	Ink tank short on ink A suction operation was attempted, but there is not enough ink left in the tank for the operation. (In the small LCD, the lower arrow points to the color in question.) Reference) About 5 mL to 40 mL of ink may have been left in the tank when this warning occurs. 80:Bk, 81:Y, 82:M, 83:C, 84:PM, 85:PC, 86:MBk1, 87:MBk2, 88:GY, 89:PGY, 8A:R, 8B:B, 8C:G	1. Replace the ink. 2. Failure of remaining ink detection system. (Replace the supply unit /check the bundled wires.)
2590 to 259C (*1)	Ink insufficient. Press OK and replace ink tank. Ink insufficient. Replace ink tank.	Not Enough Ink (lower arrow) Replace ink tank orOnline to prnt	Ink tank short on ink A print operation was attempted, but there is not enough ink left in the tank for the operation. (In the small LCD, the lower arrow points to the color in question.) Reference) About 5 mL to 40 mL of ink may have been left in the tank when this warning occurs. 90:Bk, 91:Y, 92:M, 93:C, 94:PM, 95:PC, 96:MBk1, 97:MBk2, 98:GY, 99:PGY, 9A:R, 9B:B, 9C:G (*1) 259C: 03810208-259C	1. Replace the ink. 2. Failure of remaining ink detection system. (Replace the supply unit /check the bundled wires.)
259C (*2) to 25A8	Ink insufficient. Press OK and replace ink tank. Ink insufficient. Press OK and replace ink tank.	Ink insufficientPress (lower arrow) key. Replace inktank or start printing online.	Ink insufficient in inktank. The amount of ink left in the inktank is insufficient for printing. (In the small LCD, the lower arrow points to the correspondence color.) Reference) There are the cases that about 5ml to 40ml ink is left in a inktank at warning occurs. 9C:Bk,9D:C,9E:M,9F:Y,A0:PC,A1:PM,A2:MBk1,A3:MBk2, A4:GY,A5:PGY,A6:R,A7:G,A8:B (*2) 259C: 03810104-259C	1. Replace inktank 2. Failure of detecting the ink amount leftintheinktank. (Replace the supply unit /check the bundled wires.)
25B7	Close the ink tank cover. Unable to detect ink level correctly. Unable to detect ink level correctly.		The remaining ink falls below the pin check level while ink tank cover is open.	Close the ink tank cover. Note) It does not recover if the cover is open when replacing the ink tank with a valid one. If removing the ink tank with lower ink remains (LIR) than Supply Pin in this situation, an error is detected. Also when keeping printing in this situation, if empty subtank corresponding to the ink tank with LIR is detected, the error shifts from ink tank with LIR to empty subtank.
260E	Hardware error. 03130031-260E Turn off printer, wait, then turn on again.	Power On Again Gap Detect Err	Gap detection failure Carriage gap calibration has not been carried out, or gap detection is disabled by corrupt calibration data.	1. Check to see if the multisensor reference plate (white patch for batch correction) is not soiled and perform GAP CALIB (if soiled, adjust the part after replacing it). 2. Replace the multisensor and perform GAP CALIB. 3. Replace the carriage unit and perform GAP CALIB.
260F	Gap error. Turn off printer.	Power On Again Gap Error	Gap reference plane error Request to replace an abnormal reference plane sheet (only in Service mode).	Check the multisensor reference plate (for soiling and faulty mounting).
2618	Hardware error. 03130031-2618 Turn off printer, wait, then turn on again.		Vh voltage error	

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2800	No printhead Install printhead.	Printhead Please Check No Printhead Check Printhead	Printhead [X] non-existing [X]: Double-head model : The R-head does not exist. Single-head model: The head does not exit.	1. Check the status of the printhead mounted. 2. Mount the long flexible cable and check the status of the cable being locked.
2801	Printhead error Open top cover and replace the printhead.	Printhead Please Replace Printhead Error Replace Printhd	Printhead [X] DI correction failure [X]: Double-head model: R head DI correction failure Single-head model: Head DI correction failure	Replace the printhead.
2802	Printhead error Open top cover and replace the printhead.	Printhead Please Replace Printhead Error Replace Printhd	An invalid printhead has been mounted in [X]. [X]: Double-head model: Invalid head mounted on the R-side Single-head model: Invalid head mounted	Replace with a valid printhead. (An error has occurred but the printhead itself is not damaged, so communication has been maintained properly.)
2803	Printhead error Open top cover and replace the printhead.	Printhead Please Replace Printhead Error Replace Printhd	Printhead [X] EEPROM error [X]: Double-head model: R head EEPROM error Single-head model: Head EEPROM error	Replace the printhead.
2804	PHeads: wrong pos. Open top cover and check the printhead positions.	Printhead Check Printhead L/R Heads Revrsd Check Printheads	Printheads mounted in L/R opposite positions L printhead is mounted on R side.	Replace with a valid printhead. (An error has occurred but the printhead itself is not damaged, so communication has been maintained properly.) The L/R printheads cannot be interchanged.
2805	Printhead error. Open top cover and replace the printhead.		The specified time has been passed in lower printhead temperature than the specified temperature.	1. Acclimate to room temperature. 2. Replace the printhead. 3. Replace the main controller PCB. 4. Replace the CR board.
2807	PHeads: wrong pos. Open top cover and check the printhead positions.	Printhead Check Printhead L/R Heads Revrsd Check Printheads	Printhead mounted in L/R opposite positions. R printhead is mounted on L side.	Replace with a valid printhead. (An error has occurred but the printhead itself is not damaged, so communication has been maintained properly.) The L/R printheads cannot be interchanged.
2808	No left printhead Install left printhead.	Printhead Left Chk L Printhead No Left Printhd Chk L Printhead	Printhead L non-existing	1. Check the status of the printhead mounted. 2. Mount the long flexible cable and check the status of the cable being locked.
2809	Left printhead error Open top cover and replace the left printhead.	Printhead Left Replace Printhd Left Printhd Err Replace Printhd	Printhead L DI correction failure	Replace the printhead.
280A	Left printhead error Open top cover and replace the left printhead.	Printhead Left Replace Printhd Left Printhd Err Replace Printhd	Invalid printhead L has been mounted.	Replace with a valid printhead. (An error has occurred but the printhead itself is not damaged, so communication has been maintained properly.)
280B	Left printhead error Open top cover and replace the left printhead.	Printhead Left Replace Printhd Left Printhd Err Replace Printhd	Printhead L EEPROM error	Replace the printhead.
280C 280D 280E	PHead needs cleaning. Press Online to clear error. The printhead requires cleaning. The printhead requires cleaning. Online=Print Stop=Stop Printing Execute printhead cleaning. If this message is still displayed, replace the printhead.	Printhead (R) Check Nozzles Online Key Press To Print	Printhead R non-ejection warning (Check printhead) Printing paused/ continued printing allowed The level of error is decided as shown in the table below, based on the number of non-ejecting nozzles per color (per chip) and the number of nozzles unable to back up. Depending on the firmware version, the specifications vary as shown in the table below.	1. Check image quality. (Unless there are problems with the image quality, there is no need to replace the printhead.) 2. Replace the printhead.

1. Initial firmware

	No. of nozzles impossible to back up	
	Less than 30	30 or over

No. of non-ejecting nozzles 1 color (per chip)	more than 0, less than 100	---	Check printout
	more than 100, less than 200	---	Check head
	200 or over	Check head	Check head

2. Running change firmware
The specifications have been changed from the versions shown below.
iPF500/600/5000/700: Ver.1.33, iPF510/610/710/8000/9000: Ver.1.36
iPF8100/9100/8000S/9000S: Ver.1.37, iPF810/820/6000S: Ver.1.03
iPF605/6200: Ver.1.02, iPF5100/6100: Ver.1.38, iPF720:Ver.1.10
You can choose A:(default setting) or B:(if you want to use automatic stop) from Service mode.

A: (default setting)	No. of non-ejecting nozzles 1 color (per chip)	more than 0, less than 320	---	
		320 or over	Head replacement	
B: (If you want to use automatic stop)			No. of nozzles impossible to back up	
			less than 30	30 or over
	No. of non-ejecting nozzles 1 color (per chip)	more than 0, less than 100	---	Check printout
		more than 100, less than 320	---	Check printhead
		320 or over	Replace printhead	Replace printhead

3. iPF650/750 series, iPF6300/6350/8300 and later model
You can choose A:(default setting) or B:(if you want to use automatic stop) from User mode.

A (Default setting)	No. of non-ejecting nozzles 1 color (per chip)	more than 0, less than 320	---	
		320 or over	Head replacement	
B (if you want to use automatic stop)			No. of nozzles impossible to back up	
			less than 30	30 or over
	No. of non-ejecting nozzles 1 color (per chip)	more than 0, less than 100	---	Check printout
		more than 100, less than 320	---	Check printhead
		320 or over	Replace printhead	Replace printhead

	Error code	Applicable printhead
Check printout	1010	LR or single-head model
	1012	R printhead
	1013	L printhead
Check printhead	280C	LR or single-head model
	280D	R printhead
	280E	L printhead
Replace printhead	2827	LR or single-head model
	2828	R printhead
	2829	L printhead

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2811	Printhead error Open top cover and replace the left printhead.	Printhead Replace Printhd Printhd Err Replace Printhd	Incompatible printhead version	Replace with a valid printhead. (An error has occurred but the printhead itself is not damaged, so communication has been maintained properly.)
	Wrong printhead. Open top cover and replace the printhead.			
2812	Right printhead error Open top cover and replace the right printhead.	Printhead Right Replace Printhd Right Printhd Err Replace Printhd	Incompatible printhead R version	Replace with a valid printhead. (An error has occurred but the printhead itself is not damaged, so communication has been maintained properly.)
2813	Left printhead error Open top cover and replace the left printhead.	Printhead Left Replace Printhd Left Printhd Err Replace Printhd	Incompatible printhead L version	Replace with a valid printhead. (An error has occurred but the printhead itself is not damaged, so communication has been maintained properly.)

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2816	Maintenance cartridge problem. Replace the maintenance cartridge. Maintenance cartridge problem. Hold base of maint cart firmly. Keep it level during removal	Maint Cartridge Replace Cart Maint Cart Error Replace Cart	Maintenance cartridge EEPROM error Communication is enabled but the information is corrupted. <Maintenance cartridge detection timings> The presence of a maintenance cartridge is detected at the following timings: 1. Before printing/during printing (twice per second)/at the end of printing/ between pages 2. Before a recovery operation/during a recovery operation (twice per second)/ before opening of the ink supply valve 3. When the cartridge is removed and inserted following the occurrence of an error or warning.	Replace the maintenance cartridge.
2817	Maintenance cartridge problem. Replace the maintenance cartridge. Wrong maintenance cartridge. Hold base of maint cart firmly. Keep it level during removal	Maint Cartridge Replace Cart Maint Cart Error Replace Cart	Maintenance cartridge ID error A maintenance cartridge for another model has been mounted. <Maintenance cartridge detection timings> The presence of a maintenance cartridge is detected at the following timings: 1. Before printing/during printing (twice per second)/at the end of printing/ between pages 2. Before a recovery operation/during a recovery operation (twice per second)/ before opening of the ink supply valve 3. When the cartridge is removed and inserted following the occurrence of an error or warning.	Replace the maintenance cartridge. (The maintenance cartridge was capable of normal communication when the error occurred.)
2818	No maintenance cartridge. Check the maintenance cartridge. Insert new maint cart and push in fully	Maint Cartridge Load Cartridge No Maint Cart Load Cartridge	Maintenance cartridge not found Cannot communicate, or cannot detect a maintenance cartridge. <Maintenance cartridge detection timings> The presence of a maintenance cartridge is detected at the following timings: 1. Before printing/during printing (twice per second)/at the end of printing/ between pages 2. Before a recovery operation/during a recovery operation (twice per second)/ before opening of the ink supply valve 3. When the cartridge is removed and inserted following the occurrence of an error or warning.	Remove and reinstall, or replace the maintenance cartridge.
2819	Maintenance cartridge full. Replace the maintenance cartridge. Maintenance cartridge full. Hold base of maint cart firmly. Keep it level during removal	Maint Cartridge Replace Cart Maint Cart Error Replace Cart	Maintenance cartridge full Maintenance cartridge full is detected from the dot count and the usage period (drying time). <Maintenance cartridge detection timings> The presence of a maintenance cartridge is detected at the following timings: 1. Before printing/during printing (twice per second)/at the end of printing/ between pages 2. Before a recovery operation/during a recovery operation (twice per second)/ before opening of the ink supply valve 3. When the cartridge is removed and inserted following the occurrence of an error or warning.	Replace the maintenance cartridge. Reference) The absorber may appear whitish or weigh light, depending on the usage conditions.
281A	Prepare for maint cart replacement.	MTCart Full Soon	Maintenance cartridge near-full (continued usage allowed) Near-full has been detected from the dot count and the usage period (drying time). <Maintenance cartridge detection timings> The presence of a maintenance cartridge is detected at the following timings: 1. Before printing/during printing (twice per second)/at the end of printing/ between pages 2. Before a recovery operation/during a recovery operation (twice per second)/ before opening of the ink supply valve 3. When the cartridge is removed and inserted following the occurrence of an error or warning.	Prepare a maintenance cartridge.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
281B	No MaintenanceCartridge capacity. Replacethe maintenancecartridge. No MaintenanceCartridge capacity. Hold base of maint cart firmly. Keep it level during removal	Maint Cartridge Replace Cart Maint Cart Error Replace Cart	The maintenance cartridge before cleaning does not have an enough capacity (reusable). Near-full has been detected from the dot count and the usage period (drying time). <Maintenance cartridge detection timings> The presence of a maintenance cartridge is detected at the following timings: 1. Before printing/during printing (twice per second)/at the end of printing/ between pages 2. Before a recovery operation/during a recovery operation (twice per second)/ before opening of the ink supply valve 3. When the cartridge is removed and inserted following the occurrence of an error or warning.	Replace the maintenance cartridge. The maintenance cartridge can be put to reuse after the end of cleaning. Reference) The absorber may appear whitish or weigh light, depending on the usage conditions.
2820	Cannot adjust printhead. Press Online to clear the error and readjust printhead.	Online Key and recalibrate Printhd Adj Err Please Readjust	Head registration unadjustable The adjustment value has gone out of bounds during automatic head adjustment.	Check the nozzle check pattern
2821	Cannot adjust band. Press Online to clear the error and readjust the band. Cannot adjust paper feed. Press OK to clear the error and readjust printhead.	Online Key and recalibrate Band Adj Error Please Readjust	LF unadjustable A detected value has gone out of bounds while performing automatic band adjustment.	1. Adjustment is not possible with transparent/semi-transparent paper. Replace with paper having similar substrate and perform automatic band adjustment or manual adjustment. 2. Make detailed band adjustment (automatic). 3. Check the nozzle check pattern. 4. Initialize the system settings/paper preferences and then add additional paper and perform automatic band adjustment (detailed). If the paper preferences are initialized, all the paper setting would be reset to their factory defaults.
2822	Cannot adjust eccentric. Press Online to clear the error. Cannot adjust eccentric.	OnlineKey: Press To Clear Error Eccent Adj Error	Eccentricity uncorrectable (which does not occur when in User mode) A detected value has gone out of bounds while making adjustment.	1. Check the paper type: Replace with photo glossy paper (UF120). 2. Check the paper for soiling, tear and other defects. Having run LF tuning, update the additional paper.
2823	Hardware error. 03010000-2823 Turn off printer, wait, then turn on again.	Power On Again Invalid Head Chk	Head check error	
2824	Cannot adjust optic axis. Press Online to clear the error. Cannot adjust optic axis.	OnlineKey: Press To Clear Error Optic Axis Adj Error	Optical axis unadjustable (which does not occur when in User mode) An adjustment pattern has not been printed. The optical axis deviates from the correct position by -/+3 mm or more.	Check the paper (paper type check).
2825	This type of media is not compatible with HP-GL/2.		Paper type not compatible with HP-GL/2 has been specified.	Check the paper.
2826	LFNG XXX XXX XXX XXX press OK key (XXXX is a measured value.)		When executing LF unevenness auto diagnostic processing, the multisensor read value has gone outside the predefined scope (Service mode only).	Check the paper. Check the multisensor.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2827 2828 2829	Execute printhead cleaning. If this message is still displayed, replace Printhead. Execute printhead cleaning. If this message is still displayed, replace Printhead. [Stop: Stop Printing Execute printhead cleaning. If this message is still displayed, replace printhead . Printing stopped. [OK]		Printhead non-discharge error (Replace printhead/ continued printing not allowed) At start of printing the number of non-ejecting nozzles is more than 320 per color (1 chip). 2827: Both L and R, or single printhead model 2828: R printhead 2829: L printhead * For the detailed head non-ejection errors, see section 280C. (If Setting of SERVICE MODE > SETTING >HEAD WARNING is off, the error code is 280E.)	1. Execute cleaning. 2. Replace printhead.
282A	CR MOTOR TUNING ERROR :PRESS OK		Carriage motor identification processing (rotation adjustment) failed (for Service mode)	Error is cleared by OK button. 1. Check installation of carriage or carriage belt. 2. Clean the carriage main rail (Do not oil it.) 3. Replace the carriage motor.
282B	CR VIBRATION ERROR :PRESS OK		When processing carriage motor identification (rotation adjustment), carriage vibration has been detected (for Service mode).	Error is cleared by OK button. 1. Check installation of carriage or carriage belt. 2. Clean the carriage main rail (Do not oil it.) 3. Replace the carriage motor.
282D	Left printhead error. Turn off printer, wait, then turn on again.		Printhead error detected (L head only). Displayed when an abnormal temperature rise of printhead has been detected to prompt you to restart.	After restarting, replace the printhead L.
282E	!Printhead error Turn off printer, wait, then turn on again.		Temperature rising detected by particular ink pre-injection before printing was judged abnormal.	1. Replace the printhead. 2. Replace the main controller PCB.
2830	Left printhead error. Open top cover and replace the left printhead.		Printhead error detected (L head only). Displayed when restarting after detection of error 282D to prompt you to replace printhead L.	Replace the printhead L.
2832	Hardware error 03130031-2832 Turn off printer, wait, then turn on again.		VHT leak detection error of right printhead or of a single printhead, in case of VHT exceeds rated value or falls below the rated value.	iPF6300/6400 Series iPF8300/8400/9400 Series Replace right or left printhead.
2833	Hardware error 03130031-2833 Turn off printer, wait, then turn on again.		VHT leak detection error of left printhead, in case of VHT exceeds rated value or falls below the rated value.	
2834	!Unknown printhead. Open top cover and re-install printhead.		Printhead contact failure is detected after the printhead installation.	1. Remove and reinstall the printhead. 2. Replace the printhead. 3. Replace the carriage unit. 4. Replace the main controller PCB.
2835	!Cannot recognize print head R. Open the top cover and re-insert the printhead R.		Printhead contact failure is detected after the printhead installation.	1. Remove and reinstall the printhead. 2. Replace the printhead. 3. Replace the carriage unit. 4. Replace the main controller PCB.
2836	!Cannot recognize print head L. Open the top cover and re-insert the printhead L.		Printhead contact failure is detected after the printhead installation.	1. Remove and reinstall the printhead. 2. Replace the printhead. 3. Replace the carriage unit. 4. Replace the main controller PCB.
2901	Mail box nearly full. Delete unwanted data The mail box is nearly full. Delete unwanted jobs.		The available size of the permanent area of the hard disk space has fallen to less than 1 GB.	Reorganize data.
2902	Mail box full. Now printing without saving data.		The hard disk has run out of free space, disabling copy printing or error recovery.	Reorganize data.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2905	Mail box full. Delete unwanted data on your computer to resume printing. Press Stop to cancel printing. The mail box is full. Delete unwanted data from your computer to continue.		A job save has been executed when the available size of the permanent area of the hard disk space was lost. Cancel the job.	Reorganize data.
2906	Mail box full. Cannot save. Delete unwanted data on your computer to resume printing. Press Stop to cancel printing. Too many jobs for mail box. Delete unwanted data from your computer to continue.		The 101st job has been received when 100 jobs are already saved in the permanent area of the hard disk space.	Reorganize data.
2907	Mail box full. Delete unwanted data Maximum jobs stored. Delete unwanted data.		100 jobs are already saved in the permanent area of the hard disk space (Warning).	Reorganize data.
2908	Hard disk error. Press OK to reformat Hard disk error. Press OK to format HDD and restart the printer (Takes 40 min). This deletes all HDD data. (cannot be canceled) Hard disk error. Will format HDD and restart the printer (Takes 40 min). This deletes all HDD data (cannot be canceled)		HDD format error	1. Format as instructed by the on-panel message. 2. Replace the HDD.
2909	File read error. Turn off printer, wait a while, and turn it on again. Invalid files will be deleted.		HDD file error	Restart the printer. (The file in error is deleted, but the printer will recover normally when it is restarted.)
290A	Hardware error. 03130031-290A Turn off printer, wait, then turn on again.		HDD not connected. HDD was not detected at startup.	Connect the HDD/ Check the harness. Replace the HDD.
2918		Power On Again Cassette Sensor Detection Error	Cassette detection sensor detection failure (cassette presence/absence sensor) No cassette has been detected during cassette pickup.	1. Check to see if the cassette itself is properly loaded. 2. Check and replace the sensor (I/O mode).
291A	Roll sensor cannot detect. Turn on printer again.	Power On Again Roll Sensor Detection Error	Roll sensor detection failure Could not detect the roll unit.	1. Check the roll unit, and remove, install or replace the roll unit. 2. Check I/O mode (roll unit detection).
291B	Hardware error. 03130031-291B Turn off printer, wait, then turn on again.	Power On Again Lift Motion Timeout	Lift shift timeout A lift operation has been executed, but no sensor has been detected or a sensor has remained detected.	1. Switch off the printer, then back on. 2. The carriage cannot travel to the lift drive position. 3. The lift drive cam is not engaged. 4. Faulty lift drive sensor 5. Faulty lift drive motor
291D	Hardware error. 03130031-291D Turn off printer, wait, then turn on again.	Power On Again Hardware Err 1 03130031-291D	Spur cam sensor detection failure	Check the spur cam sensor in I/O mode. -If OK, check the lifter drive system. -If NG, replace the sensor.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2920	Media Take-up error. Check the paper. Press Online to clear error.		Cannot take up paper An error check has been made on paper after the paper had been fed 1850 mm, but the media take-up unit was not driven at all in that interval (up to about 3700 mm [when run immediately after the start of detection]).	1. Check to see if the media take-up unit is switched on with the lock lever down. 2. Check the connection between the main unit and the media take-up unit. 3. Check to see if the wait roller is properly set. 4. Check to see if the media take-up detection sensor is shielded by paper when it is presented. 5. Faulty media take-up detection sensor 6. Faulty Media take-up motor
	Media Take-up error. Check the paper.			
	Media take-up unit ready. Online: Print Stop: Stop Printing		Media take-up unit use has been set to [Do not use] at the start of printing when the media take-up unit is active. The media take-up unit settings are checked only when executing external printing.	Press the [Online] button to set the media take-up unit use setting to force [Use] and print.
2921	Rewinding error. Check for jam at indicated position. Press Online to clear error.		Continued rewinding error The media take-up unit has continued rewinding for 10 seconds, with the media take-up paper detection sensor turned on, at printer power-on and at the start of printing.	1. Check to see if any obstacle is placed at the media take-up paper detection sensor position. 2. Faulty media take-up paper detection sensor 3. Faulty media take-up button 4. Faulty media take-up motor
	Rewinding error. Check for jam at indicated position.			
2930	Cutting Mode not Automatic. Remove stacker and print again or cancel and change settings. Print again Cancel		Stacker is not ready. - The power supply is not supplied to the stacker. - The distance between the stacker and printer is not appropriate. - The stacker is not joined. - Stacker initial error	Continue or stop the print. If the preparation of the stacker isn't performed, the error occurs again.
2931	Cutting Mode not Automatic. Remove stacker and print again or cancel and change settings. Print again Cancel		When the stacker is usable condition, the printing has been started at the setting of cut-off or cutline print or eject or manual mode.	Print again after separating the distance between the stacker and printer enoughly, or cancel print.
2E00		Load Roll Media	Paper mismatch (roll paper) No roll paper have been fed when a job with a roll paper specification is received.	Load roll paper.
2E01	Roll printing is selected. Press Load/Eject and load a roll.	Roll Selected Load Roll	Paper mismatch (roll paper) Roll Paper have not been fed when an internal print job having a roll paper specification started (during internal printing).	Load roll paper.
	Roll printing is selected.			
2E02	Sheet printing is selected. Press Load/Eject and load sheets.	Front paper feed slot is selected. Press Load/Eject and load a sheet.	Paper mismatch (cut sheet) No cassette paper has been loaded when data having a cut sheet specification is received.	Load cut sheet.
	Manual printing is selected.			
	Top paper feed slot is selected. Press OK and load a sheet.			
	Top paper feed slot is selected. Press Load/Eject and load a sheet.			
	Front paper feed slot is selected. Press OK and load a sheet.			
	Front paper feed slot is selected. Press Load/Eject and load a sheet.			

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2E03		Load Papr in Cas Press Online.	Paper mismatch (cut sheet) Not cut sheet have been loaded in cassettes when data having a cassette specification is received.	Feed paper as instructed by the on-screen guidance.
2E04	Manual(Front) (Paper type) (Paper size) Load Paper Stop Printing	Load Front Tray	Paper mismatch (cut sheet) No manually fed paper has been fed when a job having a front paper feed specification is received.	Feed paper manually from the front as instructed by the on-screen guidance.
2E05	Manual(Top) (Paper type) (Paper size) Load Paper Stop Printing	Load Top Tray	Paper mismatch (cut sheet) No manually fed paper has been fed when a job having a top paper feed specification is received.	Feed paper manually from the top as instructed by the on-screen guidance.
	Sheet printing is selected.		Paper mismatch (cut sheet) Not cut sheet have been loaded in cassettes when data having a cassette specification is received.(When paper type/ size is not determined)	Load cut sheet.
2E08	Wrong paper size. Check paper size setting on computer. Online: Print Stop: Stop Printing	PaprSiz Mismatch Prnt:PressOnline Loaded Papr Diff From Spfd Size	Paper mismatch (size) (roll paper) The width of data and that of the actually loaded paper do not match.	Check the paper that is actually loaded on the printer and the paper size setting of the driver.
	Wrong paper size. Check paper size setting in driver. Online: Print Stop: Stop Printing	Driver: Chk Papr Size Setting Loaded Papr Diff From Spfd Size		
	PaprWidth Mismatch			
2E09	Insufficient paper for job Online: Print Stop: Stop Printing Load/Eject: Change Paper	Roll Paper Please Replace Paper Level Low Replace Paper	Short on roll paper All of the following conditions have been met at the start of printing: -[ON] has been selected for [Remaining Roll Paper Detection]. -Among the paper size settings coded in the print data, the paper length exceeds the remaining length of roll paper.	Replace the roll paper.
2E0A	Roll printing is selected, but sheets are loaded. Press Load/Eject and remove the sheets.	Sheets Loaded Press (lower arrow) To Eject Roll Selected Load Roll	Paper mismatch (roll paper) Print data having a roll paper print specification has been received at the completion of manual feed paper pickup.	Check the paper that is actually loaded on the paper and the paper feed setting of the driver.
	Roll printing is selected, but manual paper is loaded.			
	Roll printing is selected, but sheets are loaded. Press OK, remove the sheets, and load a roll.			
	Roll printing is selected, but sheets are loaded. OK:Eject Sheets Stop:Stop Printing			
	Roll printing is selected, but sheets are loaded.			
2E0B	Cassette printing is selected. Press Load/Eject and remove manually loaded sheets.	Sheets Loaded Press (lower arrow) To Eject Cassette Selectd Load Papr in Cas	Paper mismatch (cut sheet) Print data having a cassette print specification has been received at the completion of manual feed paper pickup.	Check the paper that is actually loaded on the paper and the paper feed setting of the driver.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2E0C	Manual printing is selected, but a roll is loaded. Press Load/Eject and remove the roll.	Tray Selected Press OK	Paper mismatch (cut sheet) 1. Print data having a manual feed print specification has been received at the completion of roll paper pickup. 2. Print data having a manual feed print specification has been received when there is roll paper printout. 3. Cut sheet data has been received when the media take-up unit is in use.	Check the paper that is actually loaded on the paper and the paper feed setting of the driver.
	Sheet printing is selected, but a roll is loaded. Stop Printing			
	Sheet printing is selected, but a roll is loaded.			
2E0E	No Roll Feed Unit. Turn printer off and install roll feed unit.	Roll P Unit Please Check Power On Again	Roll paper unit not installed The unit has received print data having a roll paper print specification when it had started without a roll unit being connected to it.	1. Check the roll unit, and remove, install or replace the roll unit. 2. Check I/O mode (roll unit detection).
2E0F	Top cover is open. Turn off printer, wait a while, and turn it on again.	Top Cover Please Close Top Cover Open Close Top Cover	The top cover is abnormally open.	Check the cover. Check the sensor (I/O mode).
2E10	Ink tank cover is open. Turn off printer, wait a while, and turn it on again.	Ink Tank Cover Close Please Tank Cover Open Close Please	Ink tank cover error open (continued use allowed) The ink tank cover opened while performing any operation, such as printing and suctioning.	Close the ink tank cover. Check the sensor (I/O mode).
2E11	Carriage Cover is open.		Carriage cover open error A carriage cover open has been detected.	Close the carriage cover. Check the sensor (I/O mode).
2E12	Rel lever is in wrong position. Turn off printer, wait, then turn on again.		Faulty release lever The state of the release lever up (released) has been detected.	Push down the release lever. Check the sensor.
2E14	Wrong paper size. Check paper size setting on computer. Online: Print Stop: Stop Printing	PaprSiz Mismatch Prnt:PressOnline Loaded Papr Diff From Spfd Size	Paper mismatch (size or width) The paper size specified for the [Print to meet the paper width] setting of the driver on receiving print data and the width of the roll paper actually fed did not match.	Check the paper that is actually loaded on the printer and the paper size setting of the driver.
	Wrong paper size. Check paper size setting in driver. Online: Print Stop: Stop Printing	Driver: Chk Papr Size Setting Loaded Papr Diff From Spfd Size		

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2E15	Wrong paper type. Stop: Stop Printing Load/Eject: Change Paper	Paper mismatch Press (lower arrow) To Replace (Paper Type) (Paper Size)	Paper mismatch (type) (on adjustment) The second and subsequent sheets of paper have been fed as a paper type different from the first sheet when LF adjustment was made with cut sheet.	Equalize the paper types for the first and second sheets with each other in adjustment printing.
	Wrong paper type. Replace paper in cassette.	Loaded Paper Check Type Switch Paper In Cassette		
	Wrong paper type. Lift the release lever and reload the paper. Stop: Stop Printing	Loaded Paper Check Type Press (lower arrow) Key and Reload		
	Wrong paper type. Lift the release lever and reload the paper.			
	Wrong paper type. Lift the release lever and reload the paper.			
	Paper mismatch Make sure media type and paper size match for the adjustment print.			
	Wrong paper type. Check paper type setting in driver. Online: Print Stop: Stop Printing	Driver: Chk Papr Type Setting Chk Paper Type Press Online	Paper mismatch (type) At the start of printing, paper type specified in the job and the type of paper actually loaded do not match, and [Stop] has been selected for [Paper Mismatch Detection].	Check the paper that is actually loaded on the printer and the driver paper type setting.
	Wrong paper type.	PaprTyp Mismatch Prnt:PressOnline		
	This type of media is not compatible with HP-GL/2.			
	Wrong paper feed slot for this paper type. Press Load/Eject and reload the paper.	Paper Feed Slot SpcfdPapr NotFit Press (lower arrow) Key and Reload	Paper mismatch (type) A paper type that cannot be fed from the specified feeder slot has been specified.	Check the feeder slot/cassette pick-up setting.
	Wrong paper feed slot for this paper type.			
2E16	Wrong paper type. Check paper type setting on computer. Online: Print Stop: Stop Printing	Paper Mismatch Prnt:PressOnline Check Paper Press Online	Paper mismatch (type) The data type defined in the data and the type of actually loaded paper do not match. Following the transmission of data in the GARO format, all of the following conditions have been met at the start of printing: -The paper type that has been set in the job and the type of actually fed paper do not match. -[Stop] has been selected for [Paper Mismatch Detection].	Check the paper that is actually loaded on the printer and the driver paper type setting.
	Wrong paper type and size. Check paper type and size setting on computer. Online: Print Stop: Stop Printing			
	Wrong paper type and size. Check paper type and size setting in driver. Online: Print Stop: Stop Printing			
2E17	No cassette detected. Check the cassette.	Cassette Undetected Check Cassette Press Online	Cassette not installed	1. Check to see if the cassette itself is properly loaded. 2. Check and replace sensor (I/O mode).
2E18	Cannot load. Press Load/Eject and reload the paper.	Remove paper Cannot Feed Press (upper arrow) Key	Paper not fed as far as the platen	
2E19	Cannot load. Press Load/Eject and reload the paper.	Remove paper Cannot Feed Press (upper arrow) Key	Feeding error LF out of synchronization for cut sheet	Refeed the paper.
2E1A	Cannot load. Press Load/Eject and reload the paper.	Remove paper Cannot Feed Press (upper arrow) Key	Feeding error LF out of synchronization for cut sheet	Refeed the paper.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2E1B	The roll is empty. Load/Eject: Change Paper	Roll Paper Please Replace Paper Not Loaded Press (upper arrow) Key	No roll paper available (trailing edge of roll paper detected) -Trailing edge of paper has been detected by paper sensor in a roll paper operation. -LF out of synchronization on roll paper. (Detected the spool no longer rotating.)	1. Replace the roll paper. 2. Check paper sensor R (I/O mode). 3. Is the paper fed successfully (under a negative load or any other influence)?
	The roll is empty. Lift the release lever and replace the roll.			
	The roll is empty.			
	The roll is empty. Lift the release lever and replace the roll.			
	Out of roll paper. Push the release lever back, then replace the roll.			
2E1C	Paper jam. Press Load/Eject and reload the paper.	Paper Jam Press (upper arrow) Key	Jam while ejecting paper (A sequence of removing jams with the pinch roller released is required) A jam has been detected while ejecting paper.	1. Open and close the release lever to reload the paper. 2. Remove the paper once
2E1D	Cannot load. Press Load/Eject and reload the paper.	Remove paper Cannot Feed Press (upper arrow) Key	Feeding error LF out of synchronization for cut sheet	Refeed the paper.
2E1F	Cannot print as specified. Press Load/Eject and replace paper with A2/ 16.6"x23.4" (vertical) or larger	Paper Mismatch ReplcPap:Press (lower arrow)	Paper mismatch (size) The second and subsequent sheets of paper have been fed as a paper size different from the first sheet when adjustment was made with cut sheet. The paper size setting in effect at the start of an internal print session has fallen below the minimum size specified for that internal print session. [XXX x YYY]: Required minimum size The second and subsequent sheets of paper have been fed as a paper size different from the first sheet when adjustment was made with cut sheet. [XXX x YYY]: Required minimum size	Check the paper that is actually loaded on the printer and the paper size setting of the driver.
	Cannot print as specified. Press Load/Eject and replace roll with 10 in. wide or larger roll.	Need A3 Vertical or Larger Press (lower arrow) Key and Reload		
	Cannot print as specified. Lift the release lever and replace paper with [XXX] (vertical) or larger.			
	Cannot print as specified. Lift the release lever and replace roll with 10 in. wide or larger roll			
	Cannot print as specified. Replace paper with [XXX] (vertical) or larger.			
	The paper is too small. Replace paper with [XXX] (vertical) or larger.			
	The paper is too small. Replace roll with 10 in. wide or larger roll.			
	Cannot print as specified. Lift the release lever and replace paper with [XXX] (vertical) or larger.			
	Cannot print as specified. Lift the release lever and replace roll with 10 in. wide or larger roll.			
2E20	Wrong paper type. Lift the release lever and reload the paper. Stop: Stop Printing		Paper mismatch (type) (on adjustment) The second and subsequent sheets of paper have been fed as a paper type different from the first sheet when LF adjustment was made from a cassette.	Equalize the paper types for the first and second sheets with each other in adjustment printing.
	Wrong paper. Lift the release lever and replace the paper.			
	Paper mismatch Make sure media type and paper size match for the adjustment print.			

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2E21	Hardware error. 03130000-2E21 Turn off printer, wait, then turn on again.	Power On Again IEEE 1394 Error Restart Printer	IEEE1394 interface error Any error has been detected while initializing IEEE1394 at startup.	1. Restart the printer. 2. Remove and reinsert the IEEE1394 board and then restart the printer. 3. Replace the IEEE1394 board.
2E22	Media Type not compatible with cassette. Check Media Type. Stop: Stop Printing	Media Check Please Cancel Cas Cannot Feed Please Check	Paper mismatch (cut sheet) Cassette pickup has been specified for paper that does not support cassette pickup.	Check the cassette pick-up setting/ paper type.
2E23	Hardware error. 03130031-2E23 Turn off printer, wait, then turn on again.	Power On Again Hardware Err 1 03130031-2E23	Cutter unit failure At startup or completion of paper jam handling, when attempting to get the cutter which is in other position than HP back to HP, the home position sensor timed out without response.	1. Remove paper slip (foreign matter) attached to the cutter home position sensor. 2. Check the cutter driving circuit and the cutter unit. When FU3902 blows out on PF510/ 5100/610, -Replace the main controller PCB When FU2802 blows out on iPF6300 series/ 6400 series -Replace the main controller PCB.
2E24	Roll feed unit err Turn off printer and check roll feed unit	Power On Again Roll Feed Unit Error	Faulty roll paper unit Failed to detect the cam in the roll unit while no paper was loaded.	Check the roll cam sensor (I/O mode).
2E25	Cannot detect papr Remove paper and press Load/Eject.	Can't DetectPapr Remove Paper Press Online	Jam while picking up, ejecting or printing on paper (JAM2)	
	Cannot feed paper. Remove paper and press Load/Eject.	Remove paper Press Online		
	Cannot detect papr Remove paper and press OK.		After loading of roll paper or cut sheet was loaded successfully, Paper detection sensor/ Media sensor sensor detected no paper(JAM2).	
2E27	Cannot load. Press Load/Eject and reload the paper.	Remove paper Cannot Feed Press (upper arrow) Key	Feeding error (nip release required) LF out of synchronization (feed motor won't rotate) has been detected.	
	Cannot feed paper Lift the release lever and reload paper.			
	Cannot feed paper. Reload the paper.			
	Paper jam. Press Load/Eject and reload the paper.	Paper Jam Press (upper arrow) Key	Jam while picking up, ejecting or printing on paper (A sequence of removing jams with the pinch roller released is required)(JAM1) Virtually all recovery errors that could occur in connection with paper pickup are handled.	1. Open and close the release lever to reload the paper. 2. Remove the paper once and then refeed it.
	Paper jam. Lift the release lever.			
	Paper jam. Push the release lever back.			
	Paper jam. Manually rewind roll all the way.			
	Paper jam. Manually rewind roll all the way and press OK.			
2E30	The paper is too small.		Paper mismatch (size) With [Pause] selected for [Paper Mismatch Detection] in the menu setting, paper size for the paper loaded was smaller than the size specified by data.	Continued printing allowed. Check driver setting Replace with appropriate paper.
2E31	Insufficient paper for job		All of the following conditions have been met at the start of external printing: -[ON] has been selected for [Remaining Roll Paper Detection]. -Among the paper size settings coded in the print data, the paper length exceeds the remaining length of roll paper. -Automatic roll feed to another roll paper slot which is not the current feeding path, out of the 2 slots the printer has, is not available.	Replace the roll paper.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2E32	Insufficient paper for job		All of the following conditions have been met at the start of external printing: -[ON] has been selected for [Remaining Roll Paper Detection]. -Among the paper size settings coded in the print data, the paper length exceeds the remaining length of roll paper. -Automatic roll feed to another roll paper slot which is not the current feeding path, out of the 2 slots the printer has, is not available.	Replace the roll paper.
2E33	Roll Paper (Paper type) (Paper size) Load Roll Paper Stop Printing		Paper mismatch (roll paper) No roll paper has been fed when a job with a roll paper specification is received.	Load roll paper. 1. Select "load a roll" and follow instruction on the panel. 2. Select "stop printing," or stop printing by pressing stop button. 3. Release the release lever and load the paper.
	Roll 1(Upper) (Paper type) (Paper size) Press Load/Eject and load a roll.		Paper mismatch (roll paper) No roll paper has been fed when a job with a roll paper specification is received. When paper has not been loaded on either upper or lower slot, and the feeding slot is set to [Automatic] in the job setting, an error of upper roll occurs.	
2E34	Roll 2 (Lower) (Paper type) (Paper size) Press Load/Eject and load a roll.		Paper mismatch (roll paper) No roll paper has been fed when a job with a roll paper specification is received. When no paper has been loaded on either upper or lower slot, and the feeding slot is set to [Automatic] in the job setting, an error of upper roll (2E33) occurs.	Load roll paper.
	Roll 2 (Lower) is selected. Press Load/Eject and load a roll.		Paper mismatch (roll paper) No roll paper has been fed when a job with a roll paper specification is received. When no paper has been loaded on either upper or lower slot, and the feeding slot is set to [Automatic] in the job setting, an error of upper roll (2E33) occurs. * This is a message that appears when paper type/ size specification does not exist due to HPGL format etc.	
2E35	Roll printing is selected.		Paper mismatch (roll paper) No roll paper has been fed when performing internal printing.	Load roll paper.
	Roll printing is selected. Press Load/Eject and load a roll.			
2E36	Roll printing is selected. Press Load/Eject and load a roll.		Paper mismatch (roll paper) (lower) No roll paper was fed when internal printing with the specified roll paper (lower) was started.	Load roll paper.
2E37	Roll printing is selected.		Paper mismatch (roll paper) (Upper) No roll paper has been fed when a job with roll paper specification is received.	Load roll paper. 1. Select "load a roll" and follow instruction on the panel. 2. Select "stop printing," or stop printing by pressing stop button. 3. Release the release lever and load the paper. (This step 3 is only for 800/ 8000/9000 series.)
	Roll 1 (Upper) is selected. Press Load/Eject and load a roll.		Paper mismatch (roll paper) No roll paper was fed when the job specified with upper roll paper was received.	
2E38	Roll 2 (Lower) is selected. Press Load/Eject and load a roll.		Paper mismatch (roll paper)(Lower) No roll paper has been fed when a job with lower roll paper specification is received.	Load roll paper.
2E39	The Roll 2 (Lower) is empty. Lift the release lever and replace the roll.		No roll paper available (trailing edge of roll paper detected) -Detected that cut sheet sized paper has been fed at the roll paper feeding slot. -The trailing edge of paper was detected by the Paper detection sensor/ Media sensor sensor during operation in which roll paper was used. -The spool stopped rotating during paper loading or printing (XX: Upper roll paper/ Lower roll paper)	1. Replace the roll paper -Check paper sensor R (I/O mode). 2. Is the paper fed successfully (under a negative load or any other influence)?
	The roll (XX) is empty. Press OK.			
2E3A	Roll1 jammed. Manually rewind the roll all the way and press OK.		During upper roll paper feeding operation, the paper was fed with the roll feed sensor detecting the paper, but the paper detection sensor/ media sensor sensor could not detect the paper and the operation timed out.	Manually rewind the paper and reload.
	Roll1 (Uppr) jammed. Manually rewind the roll all the way and press OK.			

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2E3B	Roll 2 (Lwr) jammed. Manually rewind the roll all the way and press OK.		During lower roll paper feeding operation, the paper was fed with the roll feed sensor detecting the paper, but the paper detection sensor/ media sensor sensor could not detect the paper and the operation timed out.	Manually rewind the paper and reload.
2E3C	Paper jam. Lift the release lever.		During operations with cut sheet, the state of the paper detection sensor/ media sensor sensor has become invalid.	Reload the paper.
2E3D	Roll 1 (upper) jam Lift the release lever.		During operations with upper roll paper, the paper was fed with the roll paper detection sensor and the roll feeding sensor detecting the paper, but the state of the paper detection sensor/ media sensor sensor became invalid.	Reload the paper.
2E3E	Roll 2 (lower) jam Lift the release lever.		During operations with lower roll paper, the paper was fed with the roll paper detection sensor and the roll feeding sensor detecting the paper, but the state of the paper detection sensor/ media sensor sensor became invalid.	Reload the paper.
2E3F	Paper jam. Lift the release lever.		When either upper or lower roll paper is in operation, the states of the roll paper detection sensor, roll feeding sensor, and paper detection sensor/ media sensor sensor became invalid.	Reload the paper.
2E40	Cannot print as selected. Another roll is in use. [Stop]: Stop printing		Print data having lower roll paper specification has been received while upper roll printout remains.	Remove the printout of upper roll, and print again.
2E41	Cannot print as selected. Another roll is in use. [Stop]: Stop printing		Print data having upper roll paper specification has been received while lower roll printout remains.	Remove the printout of lower roll, and print again.
2E42	MediaType Mismatch		Paper mismatch (type/ restart printing of suspended job) It occurs when all of the following conditions are met: -[Stop] selected for [Paper Mismatch Detection] in menu settings. -[Change Paper] button was pressed for suspended jobs from host. -The paper type that has been set in the job and the type of actually fed paper do not match.	Continued printing allowed. Replace with appropriate paper.
2E45	MediaType Mismatch		Paper mismatch (type/ restart printing of suspended job) It occurs when all of the following conditions are met: -[Stop] selected for [Paper Mismatch Detection] in menu settings. -The paper width that has been set with data and the paper width of actually fed paper do not match.	Continued printing allowed. Check the driver settings. Replace with appropriate paper.
2E47	Cutter Position Error		Cut Failure The cutter is not at home position when restart from jam. Also paper feeding was detected.	Check around the cutter unit.
2F11	CR error Call for Service.	Power On Again CR Error	An operation order has been issued while the carriage suffered a hardware error.	
2F12	LF error Call for Service.	Power On Again LF Error	LF error -An operation order has been received while the LF suffered a hardware error. -The target position could not be reached within a predicted operation time +3 seconds during an LF operation. -The sensor could not be detected during an LF operation involving sensor detection.	1. Replace the feed roller encoder sensor. 2. Replace the feed motor. <Supplement> -If the carriage travels heavily near the stop position, a mechanical load error may be suspected. -If any other symptom is observed, a feeding sensor may be at fault.
2F13	Hardware error. 03130031-2F13 Turn off printer, wait, then turn on again.	Power On Again Hardware Err 1 03130031-2F13	A/D converter external trigger output stop (Hardware error 1)	
2F14	Hardware error. 03130031-2F14 Turn off printer, wait, then turn on again.	Power On Again Hardware Err 2	ASIC register not writable (Hardware error 2) Could not write to the ASIC register on the main controller PCB.	Replace the main controller PCB.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2F16	Hardware error. 03130031-2F16 Turn off printer, wait, then turn on again.	Power On Again Mist Fan Error	Mist fan error The rotation of the mist fan is not detectable.	1. Check the bundled wires in the mist fan drive circuit. 2. Replace the mist fan unit. 3. Replace the main controller PCB.
2F17	Hardware error. 03130031-2F17 Turn off printer, wait, then turn on again.	Power On Again Platen Fan Lock Power On Again Platen Fan Err	Platen fan lock detection error The lock signal has been supplied continuously for 3 seconds or longer, 10 seconds after the platen fan started rotating.	1. Check the bundled wires in the platen suction fan drive circuit. 2. Replace the platen suction fan unit. 3. Replace the main controller PCB.
2F1F	Hardware error. 03130031-2F1F Turn off printer, wait, then turn on again.	Power On Again Purge Motor Sensor Error	Purge sensor error (recovery purge motor HP detection error) The recovery system has been driven but no sensor interrupt occurs. The recovery system has been driven to close the cap, but the cap has not been capped successfully.	
2F20	Hardware error. 03130031-2F20 Turn off printer, wait, then turn on again.	Power On Again Motor Cam Pos Error	Cap motor cam positioning error The recovery system has been driven but no sensor interrupt occurs. The recovery system has been driven to close the cap, but the cap has not been capped successfully.	
2F21	Rel lever is in wrong position. Turn off printer, wait, then turn on again.		Pinch roller open detected with the pinch roller locked.	1. Restart with the pinch roller closed. 2. Check the sensor in I/O DISPLAY in Service mode (Check the pinch roller pressure release detection SW/ the release lever lock sensor.)
2F22	Hardware error. 03130031-2F22 Turn off printer, wait, then turn on again.	Power On Again Pump Motion Timeout	Pump shift timeout The target position could not be reached within a predicted operation time +3 seconds during pump operation or no sensor has been detected during a pump operation involving sensor detection.	<Supplement> -If the carriage travels heavily towards the stop position: A mechanical load error may be suspected. -Otherwise: The sensor in the purge unit may be at fault.
2F23	Hardware error. 03130031-2F23 Turn off printer, wait, then turn on again.	Power On Again Pump Motion Error	Purge motor error A PWM duty of 100% has lasted for 200 msec in a pump operation.	<Supplement> -If the motor could not be run at all or has resulted in an error after moving by a slight distance: A. A mechanical load error may be suspected. B. The motor or drive circuit may be at fault. -If the carriage has run more or less out of control and resulted in an error: A. The encoder sensor may be at fault.
2F24	Cannot cut paper. Lift the release lever and reload the paper.	Cutting Error Please Cut Papr Press (upper arrow) Key to Release Paper	Cutter shift timeout The cutter failed to reach the home position in time during a cutting operation	
2F24	Hardware error. 03130031-2F24 Turn off printer, wait, then turn on again.	Power On Again Cutter Timeout	Cutter shift timeout error No sensor has been detected during a cutter operation involving sensor detection.	
2F25	Hardware error. 03130031-2F25 Turn off printer, wait, then turn on again.	Power On Again CR Position Err Restart Printer	Carriage motor HP not detectable Detected only for the wide format. For the narrow format, the carriage motor HP can be detected when the carriage hits the wall in a full scan following the detection of the HP.	Check the carriage HP sensor in I/O mode. <Supplement> -If the motor could not be run at all: A. A mechanical load error may be suspected. B. The motor or drive circuit may be at fault. -If the carriage has resulted in an error after moving at a constant speed: A. The carriage HP sensor may be at fault. -If the carriage has run more or less out of control and resulted in an error: A. The encoder sensor may be at fault.
2F26	Hardware error. 03130031-2F26 Turn off printer, wait, then turn on again.	Power On Again Carriage Motion Error	Carriage operation disabled -A PWM duty of 100% has lasted for 200 msec in a carriage operation -A collision has been detected in a carriage operation (with the speed predicted from the PWM output value having a deviation of 25 ips or more from the actual speed).	<Supplement> -If the motor could not be run at all or has resulted in an error after moving by a slight distance: A. A mechanical load error may be suspected. B. The motor or drive circuit may be at fault. -If the carriage has run more or less out of control and resulted in an error: A. encoder sensor may be at fault.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2F27	Hardware error. 03130031-2F27 Turn off printer, wait, then turn on again.	Power On Again Carriage Timeout Restart Printer	Carriage shift timeout The target position could not be reached within a predicted operation time +3 seconds during carriage operation.	<Supplement> -If the carriage travels heavily towards the stop position, a mechanical load error may be suspected.
2F28	Hardware error. 03130031-2F28 Turn off printer, wait, then turn on again.	Power On Again Lift Motion Timeout	Lift shift timeout A lift operation has been executed, but no sensor has been detected or a sensor has remained detected.	1. Switch off the printer, then back on. 2. The carriage cannot travel to the lift drive position. 3. The lift drive cam is not engaged. 4. Faulty lift drive sensor 5. Faulty lift drive motor
2F29	Hardware error. 03030000-2F29 Turn off printer, wait, then turn on again.	Power On Again LF Feed Timeout Restart Printer	LF feeding motor timeout (cut sheet) -The target position could not be reached within a predicted operation time +3 seconds during an LF operation. -The sensor could not be detected during an LF operation involving sensor detection.	1. Replace the feed roller encoder sensor. 2. Replace the feed motor. <Supplement> -If the carriage travels heavily near the stop position, a mechanical load error may be suspected. -If any other symptom is observed, a feeding sensor may be at fault.
2F2A	Hardware error. 03130031-2F2A Turn off printer, wait, then turn on again.	Power On Again LF Position Err Restart Printer	Cannot detect the LF home position The LF home position could not be detected on LF homing during initialization.	1. Check the sensor (I/O mode check). 2. Replace the feed roller encoder sensor. 3. Replace the encoder film. 4. Replace the feed motor/belt/ adjust the belt tension. 5. Replace the long flexible cable. <Supplement> -If the motor could not be run at all: A. A mechanical load error may be suspected. B. The motor or drive circuit may be at fault. -If the carriage has resulted in an error after moving at a constant speed: The feed roller HP sensor may be at fault. -If the carriage has run more or less out of control and resulted in an error, the encoder sensor may be at fault. When FU2802 blows out on iPF6300/ 6400 series -Replace the main controller PCB.
2F2B	Hardware error. 03130031-2F2B Turn off printer, wait, then turn on again.	Power On Again LF Motion Error	LF operation failure (LF operation disabled) A pump duty of 100% has lasted for 200 msec during LF operation.	1. Replace the feed roller encoder sensor. 2. Replace the feed motor. <Supplement> -If the motor could not be run at all or has resulted in an error after moving by a slight distance: A. A mechanical load error may be suspected. B. The motor or drive circuit may be at fault. -If the carriage has run more or less out of control and resulted in an error, the encoder sensor may be at fault. When FU2802 blows out on iPF6300/ 6400 Series -Replace the main controller PCB.
2F2C	Hardware error. 03130031-2F2C Turn off printer, wait, then turn on again.	Power On Again Hardware Err 1 03130031-2F2C	Cassette shift timeout -The target position could not be reached within a predicted operation time + 3 seconds during cassette operation. -No sensor has been detected during a pump operation involving sensor detection.	<Supplement> -If the carriage travels heavily near the stop position, a mechanical load error may be suspected. -Otherwise, the cassette unit sensor may be at fault.
2F2D	Cassette not working. Turn off printer, wait, then turn on again.	Power On Again Cassette Motion Error	Cassette operation disabled A PWM duty of 100% has lasted for 200 msec in a cassette operation.	1. Check the cassette motor and the drive circuit. 2. Check the cassette encoder sensor.
2F2E	Hardware error. 03130031-2F2E Turn off printer, wait, then turn on again.	Power On Again Roll Motion Timeout	Roll shift timeout No sensor has been detected during a roll operation involving sensor detection.	

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2F2F	Hardware error. 03800500-2F2F Turn off printer, wait, then turn on again.	Power On Again Eject. Detect Err	Non-ejection detection error As a result of nozzle checking made by the head management sensor unit: 1. All 640 nozzles in a nozzle line are non-discharging. 2. At least 50 nozzles have been found mismatched in a nozzle line of 640 nozzles since the last session of detection.	1. Check whether any foreign matter such as paper slip exists on the head management sensor optical axis. 2. Light interception due to ink accumulation.-> Remove the ink/ Replace the unit. 3. Check the head management sensor's connector connection 4. If Service mode nozzle check pattern printing is no problem, replace the head management sensor unit. Reference 1) As for the detection condition 1. above, in the iPF650/750, iPF6300/6350, and iPF8300 series or later, the error codes are broken up into 2F40,2F41,2F42,2F43,2F44, and 2F47 depending on the non-ejection conditions. Reference 2) Error 2F2F,2F40,2F41,2F42,2F43,2F44, and 2F47 are detected in the following order. 1. Determines signal level (2F47) of head management sensor 2. Determines complete non-ejection of all colors (2F40) 3. Determines multiple mismatches (2F2F) 4. Determines complete non-ejection of a single color (2F41) 5. Determines complete non-ejection of one line (2F42) 6. Determines complete non-ejection of 640 nozzles (2F43) 7. Determines non-ejection of more than 320 nozzles (2F44) Reference 3) The amount of change (between non-ejecting and ejecting nozzle counts) from the last session of nozzle checking is defined as the amount of mismatch.
2F30	Hardware error. 03800500-2F30 Turn off printer, wait, then turn on again.	Power On Again Eject. Detect Err	Non-ejection detecting position error No detectable region has been found during non-ejection position adjustment.	
2F32	Multi-sensor error Turn off printer, wait a while, then turn it on again.	Power On Again Multi-sensor Err	Faulty multisensor Light quantity adjustment of multisensor failed. Or, outside light entered during multisensor light quantity adjustment.	1. Retry the adjustment with the effect of outside light, such as that of the afternoon sun, being removed. 2. Check the position at which the multisensor is installed. 3. Replace the multisensor.
2F33	Use another paper. Press Online to clear the error.	Paper Type Please Change Can't Adj Paper Chg Paper Type	Unadjustable because of transparent paper Paper are unidentifiable on automatic adjustment (transparent/semi-transparent paper).	Change to appropriate paper.
2F34	Cannot calibrate. Press OK and try calibration again. Cannot calibrate. Try calibration again.	Press OK and recalibrate Calibration Err Recalibrate	Color calibration error The adjustment value has gone out of bounds during calibration.	1. Check to see if the loaded paper permit calibration. 2. Check calibrated printed matter for soiling and other defects. 3. Check the nozzle pattern
2F35	Calibration There is a problem with the multi-sensor. Press OK to cancel calibration. Calibration There is a problem with the multi-sensor. Cancel calibration.	Calibration multi-sensor err Press OK to cancel	Faulty multisensor (on calibration) A failure to calibrate has been detected from the parts counter.	1. Check the parts counter in service mode and replace the multisensor unit. 2. Initialize the counter for the replacement unit mounted. (It is recommended to estimate the usage status of other units coming to the end of their service life and replace them as needed.)
2F37	ERROR E173-2F37 Call for service.	ERROR E173-2F37 Call For Service	Linear scale error No signal is available from the carriage encoder when the printhead is driven.	
2F38	Top cover is open. Turn off printer, wait a while, and turn it on again.	Ink Tank Cover Close Please Tank Cover Open Close Please	The top cover is abnormally open.	Check the cover. Check the sensor (I/O mode).

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2F3A	Hardware error. 03130031-2F3A Turn off printer, wait, then turn on again.	Power On Again Valve Motor Err	Ink Supply Valve Open/Closed motor timeout error	1. Replace the ink supply unit. 2. Replace the main controller PCB.
2F3B	Hardware error. 03130031-2F3B Turn off printer, wait, then turn on again.	Power On Again Hardware Err 1 03130031-2F3B	CS communication error An irrecoverable communication error has occurred communicating between the CS chip mounted on the ink tank and the main unit.	1. Remove and insert the ink tank, or replace the ink tank. 2. Check bundled wires in the ink tank unit and the main controller PCB. 3. Replace the main controller PCB.
2F3C	Hardware error. 03130031-2F3C Turn off printer, wait, then turn on again.		LF nip sensor error. When executing nip automatic operation, one of the following conditions is met. -The sensor detected nip closed after the nip completed opening operation. -The sensor detected nip open after the nip completed closing operation.	Check the lift cam sensor/ pressure release switch (I/O mode)
2F3D	Hardware error. 03130031-2F3D Turn off printer,wait, then turn on again.		HP pre-ejection pump motor overload error	Replace the HP maintenance jet tray unit.
2F3E	Hardware error. 03130031-2F3E Turn off printer,wait, then turn on again.		HP pre-ejection pump motor shift timeout	Replace the HP maintenance jet tray unit.
2F3F	Hardware error. 03130031-2F3F Turn off printer,wait, then turn on again.		An error other than overload error or shift timeout error has been detected for the HP pre-ejection pump motor.	Replace the HP maintenance jet tray unit.
2F40	Hardware error. 03800500-2F40 Turn off printer,wait, then turn on again.		When the result of non-ejection detection is as follows. When non-ejection has been detected for all nozzles of all colors -The error code assuming a problem in the supply system/ purge system/ main controller PCB (electric).	
2F41	Hardware error. 03800500-2F41 Turn off printer,wait, then turn on again.		When the result of non-ejection detection is as follows: Complete non-ejection of nozzles in 1 to 5 chip(s). (A line EVEN/ A line ODD/ B line EVEN/ B line ODD Total of 2560 nozzles x 1 to 5 chip(s) complete non-ejection) -Error code assuming a problem in the ink supply system/ purge system.	
2F42	Hardware error. 03800500-2F42 Turn off printer,wait, then turn on again.		When the result of non-ejection detection is as follows: Complete non-ejection of one line in 1chip. (In either A line or B line, a complete non-ejection of 1280 nozzles) -Error code assuming broken flexible cable or contact failure (heat enable line).	
2F43	Hardware error. 03800500-2F43 Turn off printer,wait, then turn on again.		When the result of non-ejection detection is as follows: Complete non-ejection (640 nozzles) of EVEN line or ODD line. -Error code assuming broken flexible cable or contact failure (data line).	
2F44	Hardware error. 03800500-2F44 Turn off printer,wait, then turn on again.		When the result of non-ejection detection is as follows: More than half of 640 nozzles in EVEN line or ODD line have non-ejection (more than 320 nozzles). -Error code assuming a head failure such as broken heater board of head.	
2F46	Hardware error. 03130031-2F46 Turn off printer,wait, then turn on again.	Only for iPF750 series	The shutter HP sensor did not respond at startup and at switching of platen shutter at printing.	Check the platen shutter HP sensor (I/O Display). Check/ replace the platen shutter drive unit or sensor

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2F47	Hardware error. 3800500-2F47 Turn off printer,wait, then turn on again.	Only for iPF750 series	The optical axis of the head management sensor unit has been intercepted for some reasons. The amount of LED luminescence and the level of detection signal of diode light receiving sensitivity has gone beyond the predefined range. (determines the level of APCCHK)(It's not a problem of printhead or ink supply system.)	1. Check whether any foreign matter such as paper slip exists on the head management sensor optical axis. 2. Light interception due to ink accumulation.-> Remove the ink/ Replace the unit. 3. Check connection of the head management sensor's connector. 4. Main controller PCB (Check the fuse/ Replace the PCB.) 5. A large amount of ink mist has been attached to optical element. 6. Replace the head management sensor.
2F48	Hardware error. 03130031-2F48 Turn off printer, wait, then turn on again.		VHT (heater drive drive power supply for printhead) error VHT has gone below or above the rating.	iPF6300 series 1. Replace the printhead. 2. Replace the main controller PCB. iPF8300 series 1. Replace the printhead. 2. Replace the CR relay board. 3. Check/ replace the long flexible cable. 4. Replace the main controller PCB.
2F49 2F50 2F51	Hardware error. 03130031-xxxx Turn off printer, wait, then turn on again.		Printhead short-circuited detected. Prior to VH power on, it has been detected that the printhead had been damaged due to paper jam etc, and ink went inside the terminal area causing near short-circuit. 2F49: L side printhead 2F50: R side printhead 2F51: LR both printhead	iPF6300 series 1. Replace the printhead 2. Replace the main controller PCB. iPF8300 series 1. Replace the printhead 2. Replace the CR relay board 3. Check/ replace the long flexible cable. 4. Replace the main controller PCB.
2F4A	Hardware error. 03130031-2F4A Turn off printer, wait, then turn on again.	iPF6300/830 or newer	main controller PCB error.	Replace the main controller PCB.
2F4D	Hardware error. 03130031-2F4D Turn off printer, wait, then turn on again.	Left printhead only. Possible to occur on iPFX400 or newer models.	VHT leak detection error of left printhead, in case of VHT exceeds rated value or falls below the rated value.	For iPF6400 series, 1. Replace the printhead. 2. Replace the main controller PCB. For iPF8400/9400 series, 1. Replace the printhead. 2. Replace the CR relay board. 3. Check and replace the long flexible cable printed circuit. 4. Replace the main controller PCB.
2F4E	Hardware error. 03130031-2F4E Turn off printer, wait, then turn on again.	Right printhead or a single printhead Possible to occur on iPFX400 or newer models.	VHT leak detection error of right printhead, in case of VHT exceeds rated value or falls below the rated value.	
2F4F	Hardware error. 03130031-2F4F Turn off printer, wait, then turn on again.	Possible to occur on iPFX400 or newer models.	VHT leak detection error of right and left printhead or a single printhead, in case of VHT exceeds rated value or falls below the rated value.	
2F52	Hardware error. 03130031-2F52 Turn off printer, wait, then turn on again.		Detected that a carriage unit of a legacy model has been mounted (iPF8300/6300/ 6350 only).	Replace with an appropriate carriage unit. 1. Replace with an appropriate carriage unit. 2. Replace the printhead. 3. Replace the main controller PCB.
2F53	Hardware error. 03130031-2F53. Turn off printer,wait, then turn on again.		Supply valve motor error of the left ink tank. Drove supply valve motor. The movement was not detected.	iPF8400/9400 Series 1. Replace the left ink tank unit. 2. Replace the main controller PCB.
2F54	Hardware error. 03130031-2F54. Turn off printer,wait, then turn on again.		Supply valve motor error of the right ink tank. Drove supply valve motor. The movement was not detected.	iPF8400/9400 Series 1. Replace the right ink tank unit. 2. Replace the main controller PCB.
2F60	!Spectrophotometer Unit not connected. Turn off power and attach Spectrophotometer Unit.		Spectrophotometer unit won't return signals.	1. Install spectrophotometer unit. 2. Replace signal line. 3. Replace connection. 4. Replace spectrophotometer unit PCB.
2F61	Hardware error 038A0002-2F61 Turn off printer, wait a while, then turn it on again.		UART communication error. (Data transfer volume in consistency, checksum error etc.)	1. Replace signal line. 2. Replace connection. 3. Replace spectrophotometer unit PCB
2F62	Hardware error 038A0002-2F62 Turn off printer, wait a while, then turn it on again.		When transmitting specified pulses to spectrophotometer carriage motor, the spectrophotometer carriage unit won't respond to spectrophotometer carriage HP sensor.	1. Replace spectrophotometer unit PCB. 2. Replace lines around spectrophotometer carriage unit. 3. Replace spectrophotometer carriage motor.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2F63	Hardware error 038A0002-2F63 Turn off printer, wait a while, then turn it on again.		The spectrophotometer up-down unit upper detection sensor won't respond when a predefined pulse is sent to the spectrophotometer up-down unit motor.	1. Replace spectrophotometer up-down unit motor. 2. Replace spectrophotometer up-down unit upper detection sensor. 3. Re-install delivery guide. 4. Replace the spectrophotometer unit PCB.
2F65	Hardware error 038A0002-2F65 Turn off printer, wait a while, then turn it on again.		When a predefined pulse is sent to the spectrophotometer up-down unit motor, the spectrophotometer up-down unit lower detection sensor in spectrophotometer unit won't respond.	1. Replace spectrophotometer up-down unit motor. 2. Replace spectrophotometer up-down unit lower detection sensor. 3. Re-install delivery guide. 4. Replace the spectrophotometer unit PCB.
2F66	Hardware error 038A0002-2F66 Turn off printer, wait a while, then turn it on again.		Media dry fan won't return signals.	1. Replace fan 2. Replace signal lines 3. Replace the spectrophotometer unit PCB.
2F67	Hardware error 038A0002-2F67 Turn off printer, wait a while, then turn it on again.		Embedded FlashROM read/ write error	Replace the spectrophotometer unit PCB.
2F68	Hardware error 038A0002-2F68 Turn off printer, wait a while, then turn it on again.		Spectrophotometer EEPROM read/write error	Replace the spectrophotometer unit PCB.
2F69	Hardware error 038A0002-2F69 Turn off printer, wait a while, then turn it on again.		Write/read error at RAM check	Replace the spectrophotometer unit PCB.
2F6A	Hardware error 038A0002-2F6A Turn off printer, wait a while, then turn it on again.		Firmware update failed.	1. Update firmware again 2. Replace the spectrophotometer unit PCB.
2F6B	Hardware error 038A0002-2F6B Turn off printer, wait a while, then turn it on again.		Initialization after power on of CPU at spectrophotometer unit side failed.	Replace the spectrophotometer unit PCB.
2F6C	Hardware error. 03130031-2F6C. Turn off printer, wait, then turn on again.		Failed self-testing.	Replace the spectrophotometer unit PCB.
2F70	Hardware error. 03130031-2F70. Turn off printer, wait, then turn on again.		Indication at ink priming error in both subtanks.	For iPF6400 Series, 1. Replace both of the inktank units. 2. Replace the main controller PCB.
2F71	Hardware error. 03130031-2F71. Turn off printer, wait, then turn on again.	Call for Service. HW1 error 03130031-2F71	Indication at ink priming error in the left subtank.	For iPF6400 Series, 1. Replace the left inktank unit. 2. Replace the main controller PCB.
2F72	Hardware error. 03130031-2F72. Turn off printer, wait, then turn on again.	Call for Service. HW1 error 03130031-2F72	Indication at ink priming error in the right subtank.	For iPF6400 Series, 1. Replace the right subtank 2. Replace the main controller PCB.
2F80	!Spectrophotometer sensor is not mounted. Please check if the sensor is mounted properly and press OK.		Spectrophotometer sensor won't return signals.	1. Install Spectrophotometer sensor. 2. Check cables. 3. Replace spectrophotometer sensor. 4. Replace the spectrophotometer unit PCB.
2F81	! Spectrophotometer Unit Calibration white tile error. Clean the tile then mount it and press OK.		After white calibration, the spectrophotometer sensor returned a value other than predetermined value.	1. Clean white tile. 2. Mount white tile. 3. Replace spectrophotometer sensor.
2F82	! Delivery guide of SP unit is not mounted. Check if the guide is mounted properly and press OK.		While the spectrophotometer up-down unit upper detection sensor and spectrophotometer top cover open/closed detection sensor are detecting, the interlock switch remains OFF.	1. Mount delivery guide. 2. Replace the spectrophotometer unit PCB. 3. Replace spectrophotometer up-down unit upper detection sensor.
2F83	!Backing plate error in the spectrophotometer unit. Clean the backing plate. Install the backing plate to the unit. Then press [OK].		No signal retuned from backing plate. The signal from the backing plate is beyond threshold.	1. Clean the backing plate. 2. Replace the spectrophotometer unit PCB. 3. Replace the spectrophotometer sensor.
2F85	! SP unit up and down cover is open. Close it and press OK		Spectrophotometer top cover open/closed detection sensor won't respond.	1. Close spectrophotometer top cover. 2. Replace spectrophotometer top cover open/closed detection sensor. 3. Replace the spectrophotometer unit PCB.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
2F86	! SP unit cover is open. Close it and then press OK.		Spectrophotometer cover open/closed detection sensorwon't respond.	1. Close spectrophotometer cover. 2. Replace cover sensor. 3. Replace the spectrophotometer unit PCB.
2F87	! Colorimetric readout error. Please press OK and execute color measuring again.		When executing color measuring, the spectrophotometer sensor returned a value other than predetermined value was returned.	1. Operate paper feed adjustment. 2. Change the patch size to large. 3. Printer support (In case of printing failure). 4. Replace spectrophotometer sensor
2F88	! Colorimetric readout error. Please press OK and execute color measuring again.		When reading the positioning bar, a value other than predetermined value was returned.	1. Operate paper feed adjustment. 2. Printer support (In case of printing failure). 3. Replace spectrophotometer sensor.
2F89	! Colorimetric readout error. Please press OK and execute color measuring again		1) No shifting amount detected from the positioning bar reading value. 2) Position shifting exceeded the threshold value. 3) Skew exceeded the threshold value.	1. Operate paper feed adjustment. 2. Printer support (In case of printing failure). 3. Replace spectrophotometer sensor
2F90			Detected 3V of abnormal power out from the printhead. (Latch up current flows at head logic and temporarily the print head falls into abnormal state ; it is possible to recover by power on and off.)	
2FA0	!It is recommended to clean the white calibration board to prevent it from possible dirt.		Inform the calibration timing of the spectrophotometer sensor.	Calibrate the spectrophotometer sensor.
4001	ERROR E146-4001 Call for service.	ERROR E146-4001 Call For Service	Borderless/flow pre-ejection/mist recovery count full	Check the parts counter and replace the target unit or Refresh Service Kit. Initialize the parts counter for the target unit after the replacement.
401A	ERROR E602-401A Call for service.		HDD failure Failed to read and write to and from the HDD.	1. Restart in service mode. 2. Remove and install HDD 3. Replace HDD. Switch on service mode after the replacement.
401B	ERROR E602-401B Call for service.		Poor HDD connection The HDD and the HDD controller are not indefinable.	1. Restart in service mode. 2. Remove and install HDD 3. Replace HDD. Switch on service4. Replace HDD controller or the main controller PCB. Restart after the replacement.
401C	ERROR E198-401C Call for service.	ERROR E198-401C Call For Service	Faulty RTC Any error other than the two errors mentioned below has been detected while initializing the RTC at startup.	1. Restart the printer in service mode. 2. Replace the main controller PCB.
401D	ERROR E198-401D Call for service.	ERROR E198-401D Call For Service	RTC low battery error A battery error has been detected while initializing the RTC at startup.	1. Restart the printer in service mode. 2. Check the RTC battery. 3. Replace the main controller PCB.
401E	ERROR E198-401E Call for service.	ERROR E198-401E Call For Service	RTC clock stop The RTC has been detected idle while initializing the RTC at startup.	1. Restart the printer in service mode. 2. Replace the main controller PCB.
4027	Hardware error. 03130031-4027 Turn off printer, wait, then turn on again.	Power On Again Lift Motion Timeout	Lift shift timeout error A lift operation has been executed, but no sensor has been detected or a sensor has remained detected.	1. Switch off the printer, then back on. 2. The carriage cannot travel to the lift drive position. 3. The lift drive cam is not engaged. 4. Faulty lift drive sensor 5. Faulty lift drive motor 6. Replace the main controller PCB.
4034	ERROR E196-4034 Call for service.	ERROR E196-4034 Call For Service	Multisensor unit version error A different version of multisensor is installed. This would not occur in an ordinary user environment.	Replace the multisensor unit.
4037	ERROR E173-4037 Call for service.	ERROR E173-4037 Call For Service	Linear scale error No signal is available from the carriage encoder when the printhead is driven.	
403E	ERROR E161-403E Call for service.	ERROR E161-403E Call For Service	Head abnormal temperature rise (printhead 1 (R), or A model) Either of the two Di sensors maintained for each printhead chip (color-specific) has been detected at 120 degrees C or higher or -10 degrees C or lower.	
403F	ERROR E161-403F Call for service.	ERROR E161-403F Call For Service	Head abnormal temperature rise (printhead 2 (L)) Either of the two Di sensors maintained for each printhead chip (color-specific) has been detected at 120 degrees C or higher or -10 degrees C or lower.	

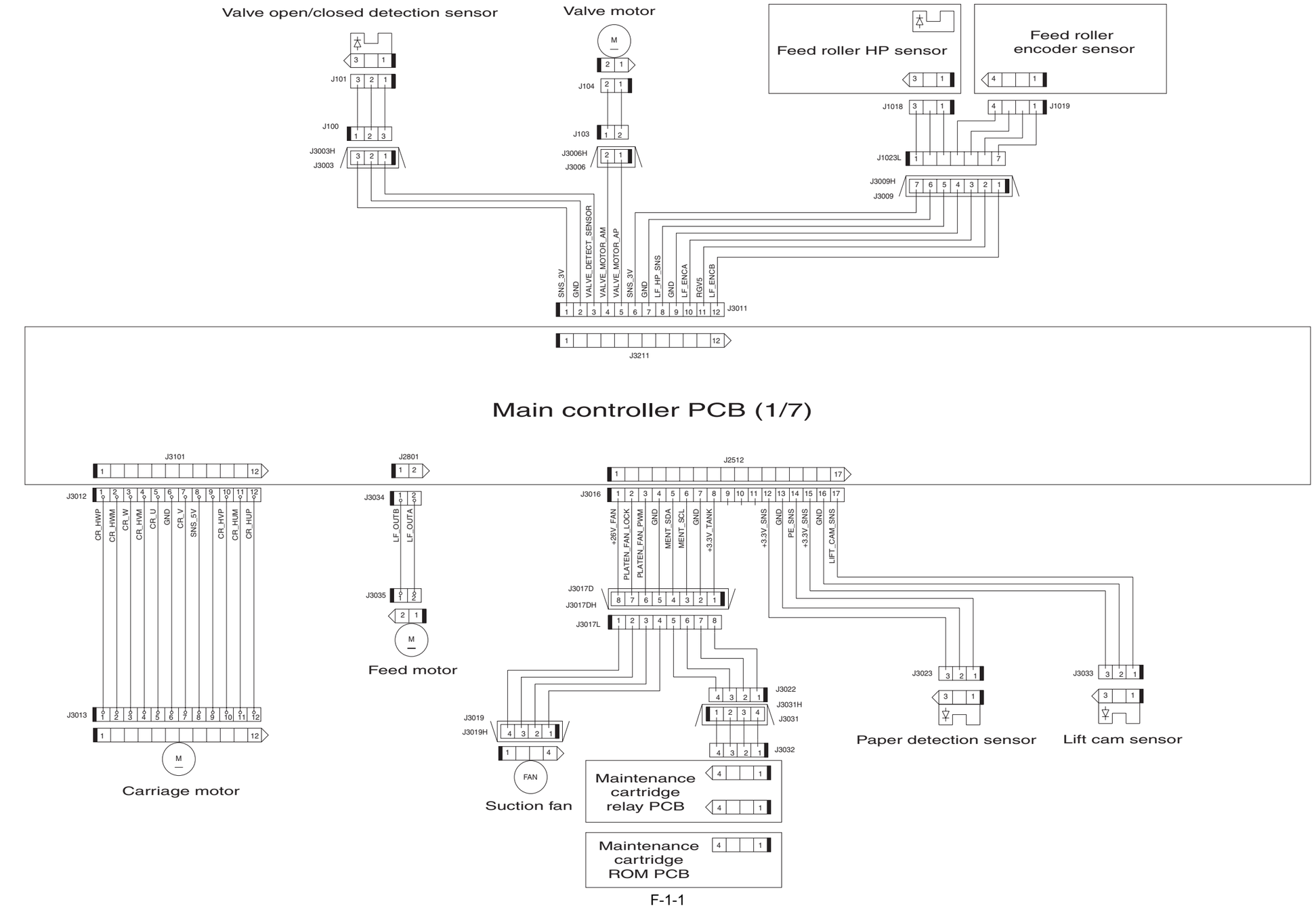
Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
4040	ERROR E196-4040 Call for service.	ERROR E196-4040 Call For Service	Checksum error The checksum of a file transmitted on execution of the firmware update is unmatched.	1. Start in download mode to upgrade the firmware. 2. Restart the printer in service mode to clear the error. 3. Replace the main controller PCB.
4041	ERROR E196-4041 Call for service.	ERROR E196-4041 Call For Service	Flash erase error Failed to erase flash ROM on execution of the firmware update.	1. Start in download mode to upgrade the firmware. 2. Restart the printer in service mode to clear the error. 3. Replace the main controller PCB.
4042	ERROR E196-4042 Call for service.	ERROR E196-4042 Call For Service	Flash write error Failed to write flash ROM on execution of the firmware update.	1. Start in download mode to upgrade the firmware. 2. Restart the printer in service mode to clear the error. 3. Replace the main controller PCB.
4042	Unknown file. Check file format. Turn off printer, wait a while, then turn it on again.		MIT data transfer failure Failed to write MIT data on its transmission.	1. Execute "Initialize Paper Type" from the system settings. (Note: All paper information will be reset to its factory defaults and additional Paper deleted.) 2. Upgrade the firmware in download mode. 3. Replace the main controller PCB.
4043	ERROR E196-4043 Call for service.	ERROR E196-4043 Call For Service	Firmware update failure error Failed to allocate a work area on RAM on firmware update.	1. Start in download mode to upgrade the firmware. 2. Restart the printer in service mode to clear the error. 3. Replace the main controller PCB.
4044	ERROR E196-4044 Call for service.	ERROR E196-4044 Call For Service	EEPROM size error Size information about the firmware data transmitted on firmware update and the size of actually transmitted data do not match.	1. Start in download mode to upgrade the firmware. 2. Restart the printer in service mode to clear the error. 3. Check the firmware transfer environment (IF changes, PC). 4. Replace the main controller PCB.
4045	ERROR E196-4045 Call for service.	ERROR E196-4045 Call For Service	Engine EEPROM write error An EEPROM read/write failure has been detected in the engine portion of the firmware.	1. Start in download mode to upgrade the firmware. 2. Restart the printer in service mode to clear the error. 3. Replace the main controller PCB.
4046	ERROR E141-4046 Call for service.	ERROR E141-4046 Call For Service	Recovery part revolutions reaching 50,000 cycles or more Recovery part operations have reached a predetermined count.	Check the parts counter and replace required parts. (Replacement of the parts coming to the end of their useful lives is recommended.) Initialize the counter for the replacement unit mounted. The iPF5000/500/600 have a counter problem fixed. Identify the firmware version and start in download mode to upgrade the firmware to Ver.1.13 or later from any earlier release.
4047	ERROR E144-4047 Call for service.	ERROR E144-4047 Call For Service	Carriage count error Supply part operations have reached a predetermined count.	Check the parts counter and replace the target unit or Refresh Service Kit. Initialize the parts counter for the target unit after the replacement.
4048	ERROR E144-4048 Call for service.	ERROR E144-4048 Call For Service	Non-discharging nozzles on initial filling An unallowable number of non-discharging nozzles have been detected at the completion of initial filling.	
4049	Unknown file. Check file format. Turn off printer, wait a while, then turn it on again.	Cannot update firmware Power On Again	Wrong transfer ROM data model Files for a different model have been transferred on firmware update.	1. Restart the printer in service mode to clear the error (this error won't occur when FUT is used). 2. Start in download mode to upgrade the firmware. 3. Replace the main controller PCB.
404A	ERROR E194-404A Call for service.	ERROR E194-404A Call For Service	Non-ejection count error A non-ejection part operation counter has reached a specified limit.	Check the parts counter and replace the target unit or Refresh Service Kit. Initialize the parts counter for the target unit after the replacement.
404B	ERROR E199-404B Call for service.	ERROR E199-404B Call For Service	Temperature/humidity sensor error When temperature 0 and humidity 0% are detected, the detection mechanism is considered failed and an error message is displayed.	1. Restart the printer in service mode to clear the error. 2. Identify the firmware version and update the firmware to the last release if it is earlier than Ver.1.31 (firmware defect). 3. Remove and reinsert the temperature/humidity sensor PCB connector 4. Replace the temperature/humidity sensor PCB.

Code (last 4 digits)	Panel display (Large LCD)	Panel display (Small LCD)	Explanation/Detection sequence	Remedial Action
404C	ERROR E196-404C Call for service.	ERROR E196-404C Call For Service	Serial number information mismatch A mismatch has been detected between the serial number information stored in the EEPROM on the main controller PCB and that stored in the EEPROM on the MTC relay PCB at startup.	1. Check to see if the correct PCB is mounted, since a PCB of the wrong model may have been mistakenly mounted during servicing. 2. Invoke service mode to implement PCB replacement.
404D	ERROR E196-404D Call for service.	ERROR E196-404D Call For Service	Machine ID information mismatch A mismatch has been detected between the model ID information stored in the EEPROM on the main controller PCB and that stored in the EEPROM on the MTC relay PCB at startup.	1. Check to see if the correct PCB is mounted, since a PCB of the wrong model may have been mistakenly mounted during servicing. 2. Invoke service mode to implement PCB replacement.
404E	ERROR E196-404E Call for service.	ERROR E196-404E Call for service.	An EEPROM read/ write error has been detected in the controller portion of the firmware.	1. Start in download mode to upgrade the firmware. 2. Start in service mode to clear the error. 3. Replace the main controller PCB.
404F	ERROR E144-404F Call for service.		Pump revolutions full The number of HP pre-ejection pump revolution has reached the defined value.	Clear the counter in service mode after having replaced the HP pre-ejection tray unit.
4050	Error E161-4050 Call for service. For iPF6000, 03800500-4050.	Error! E161-4050 Call for service.	Non-ejection detection error The timing of "ink priming sequence" is fallowing. -At installation of a new model printer -At reinstallation after the second transportation. -At replacement of the printhead	
405A	Error E602-405A Call for service.		Incorrect capacity HDD model is connected.	Replace HDD
405B	Error E602-405B Call for service.		Mismatched HDD model is connected.	Replace HDD
4061	!The paper loaded askew. Remove the paper.		Postion ditection of askew loaded paper.	

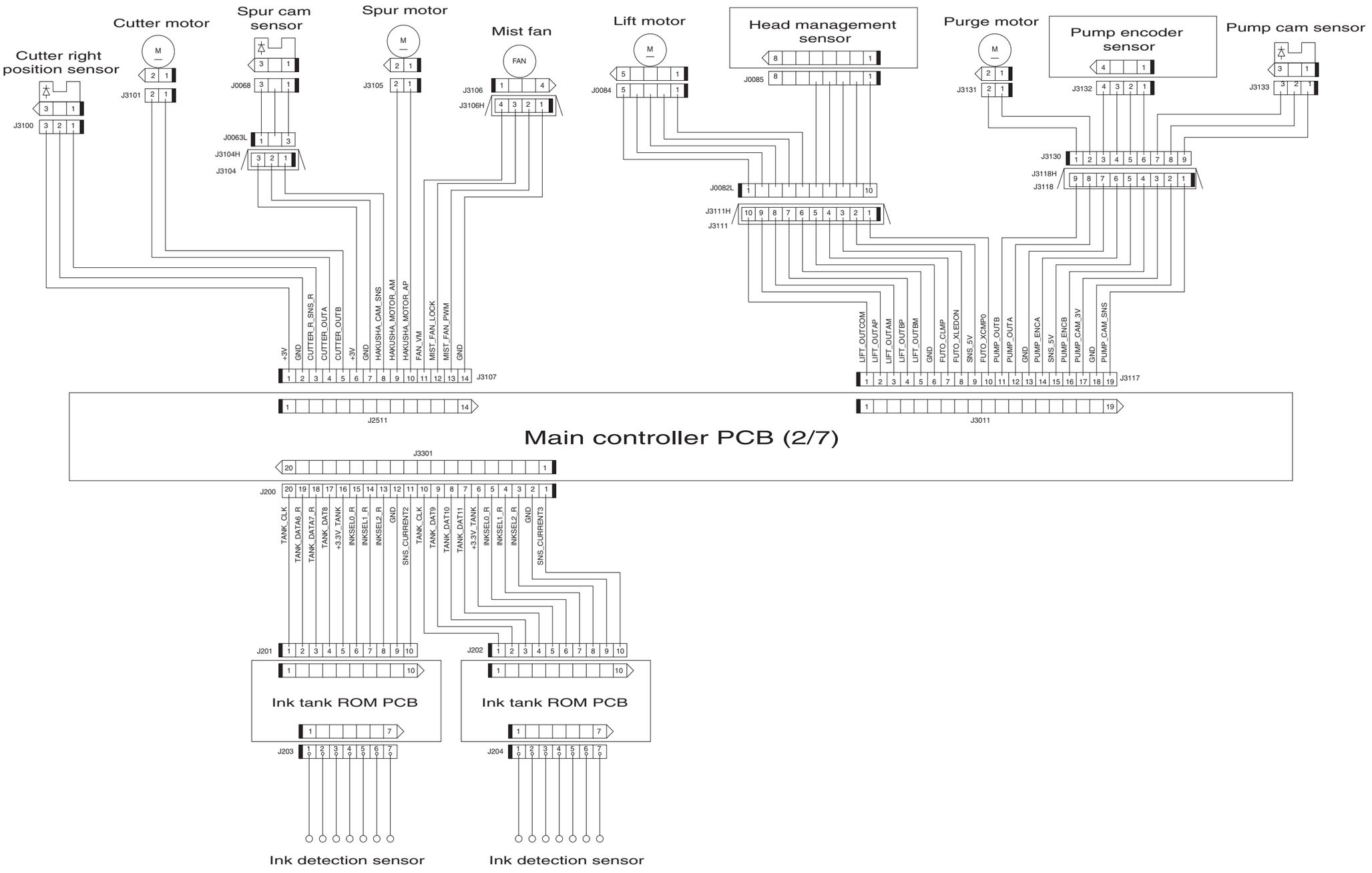
Appendix

1 General Circuit Diagram

General Circuit Diagram (1/7)

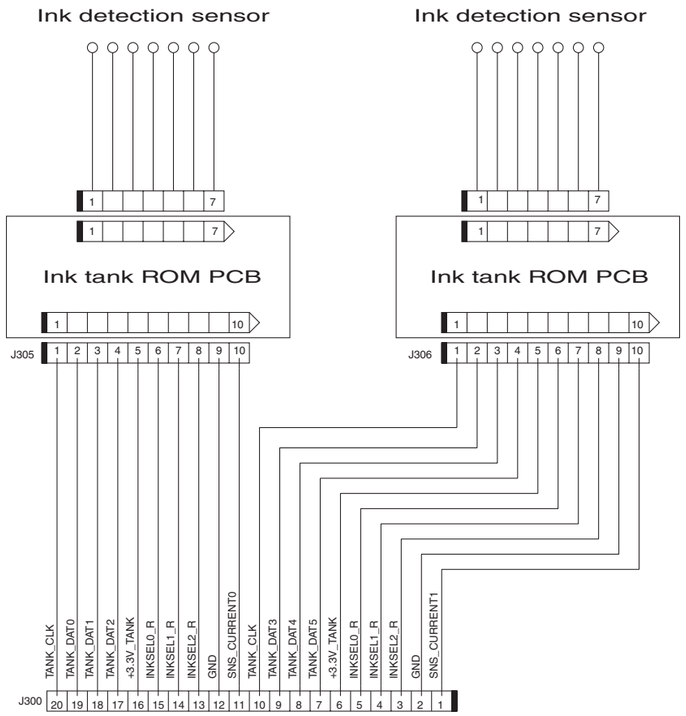


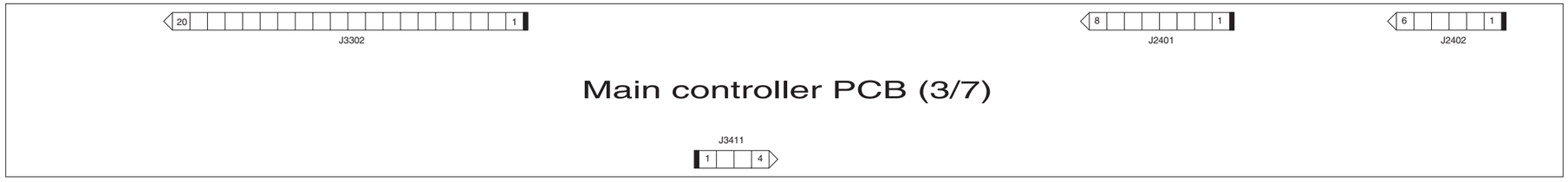
F-1-1

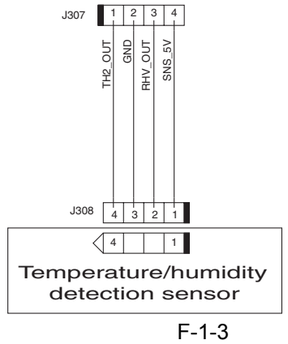

Cutter right position sensor
J3100
Cutter motor
J3101
Spur cam sensor
J0068
J0063L
J3104H
J3104
Spur motor
J3105
Mist fan
J3106
J3106H
Lift motor
J0084
Head management sensor
J0085
J0082L
J3111H
J3111
Purge motor
J3131
Pump encoder sensor
J3132
Pump cam sensor
J3133
J3130
J3118H
J3118
+3V
GND
CUTTER_R_SNS_R
CUTTER_OUTA
CUTTER_OUTB
+3V
GND
HAKUSHA_CAM_SNS
HAKUSHA_MOTOR_AM
HAKUSHA_MOTOR_AP
FAN_VM
MIST_FAN_LOCK
MIST_FAN_PWM
GND
J3107
LIFT_OUTCOM
LIFT_OUTAP
LIFT_OUTAM
LIFT_OUTBP
LIFT_OUTBM
GND
FUTO_CLMP
FUTO_XLEDON
SNS_5V
FUTO_XCMP0
PUMP_OUTB
PUMP_OUTA
GND
PUMP_ENCA
SNS_5V
PUMP_ENCB
PUMP_CAM_3V
GND
PUMP_CAM_SNS
J3117
J2511
J3011
Main controller PCB (2/7)
J3301
J200
TANK_CLK
TANK_DATA6_R
TANK_DATA7_R
TANK_DAT8
+3.3V_TANK
INKSEL0_R
INKSEL1_R
INKSEL2_R
GND
SNS_CURRENT2
TANK_CLK
TANK_DAT9
TANK_DAT10
TANK_DAT11
+3.3V_TANK
INKSEL0_R
INKSEL1_R
INKSEL2_R
GND
SNS_CURRENT3
J201
J202
Ink tank ROM PCB
Ink tank ROM PCB
J203
J204
Ink detection sensor
Ink detection sensor

F-1-2

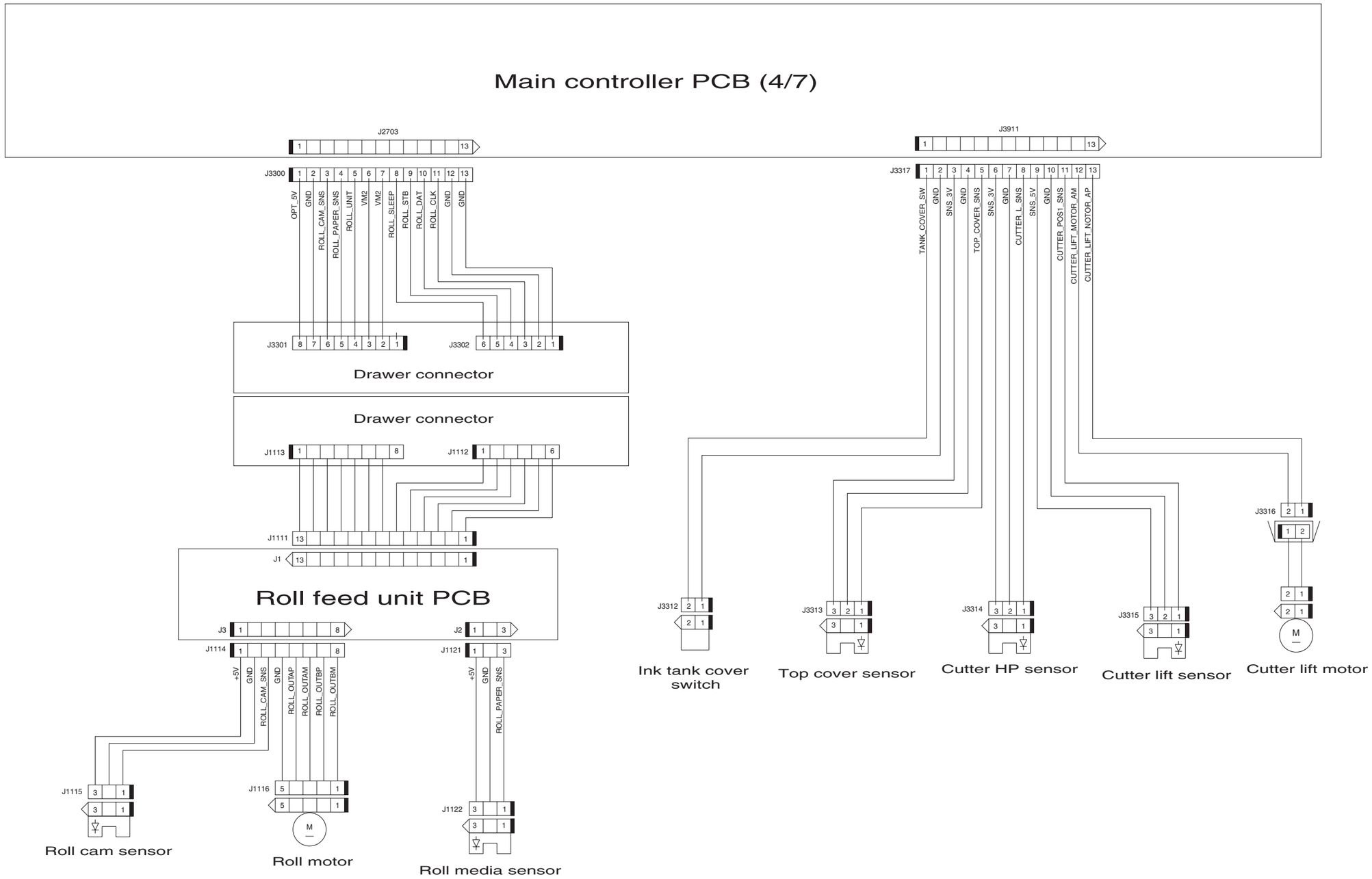
General Circuit Diagram (3/7)



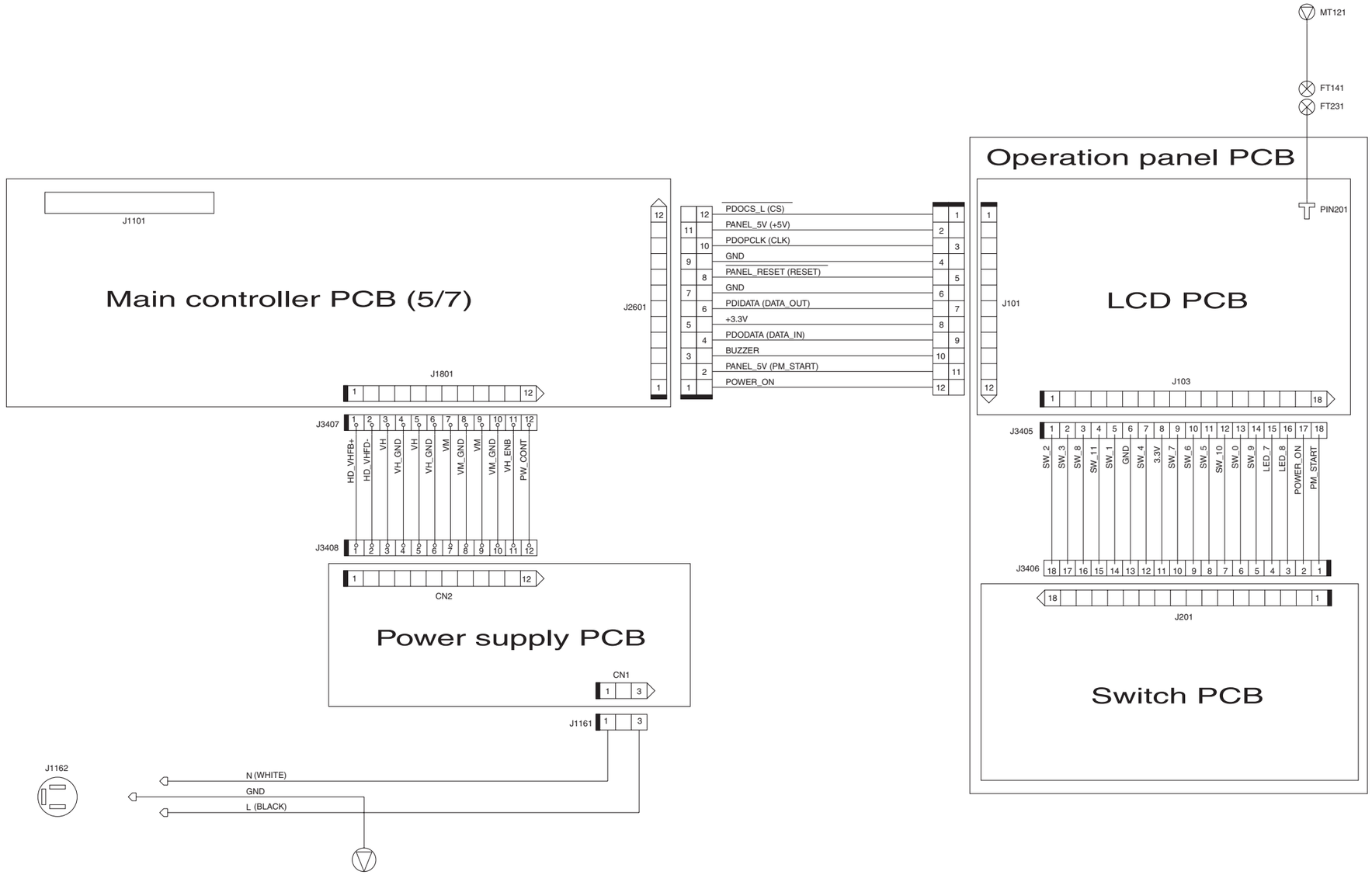




F-1-3

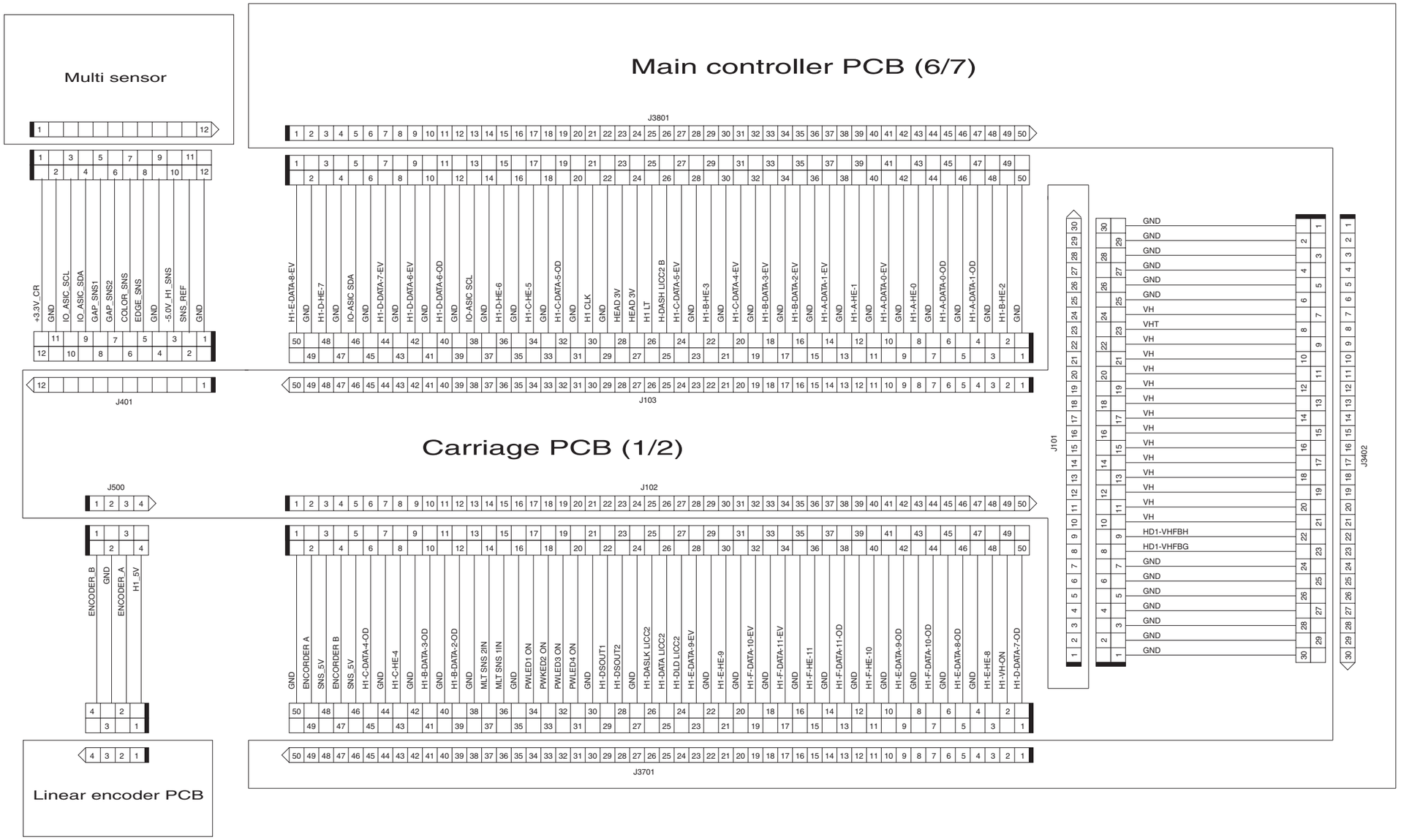

Main controller PCB (4/7)
J2703
J3911
J3300
OPT_5V
GND
ROLL_CAM_SNS
ROLL_PAPER_SNS
ROLL_UNIT
VM2
VM2
ROLL_SLEEP
ROLL_STB
ROLL_DAT
ROLL_CLK
GND
GND
J3301
J3302
Drawer connector
Drawer connector
J1113
J1112
J1111
J1
Roll feed unit PCB
J3
J2
J1114
J1121
+5V
GND
ROLL_CAM_SNS
GND
ROLL_OUTAP
ROLL_OUTAM
ROLL_OUTBP
ROLL_OUTBM
+5V
GND
ROLL_PAPER_SNS
J1115
J1116
J1122
M
Roll cam sensor
Roll motor
Roll media sensor
J3317
TANK_COVER_SW
GND
SNS_3V
GND
TOP_COVER_SNS
SNS_3V
GND
CUTTER_L_SNS
SNS_5V
GND
CUTTER_POS1_SNS
CUTTER_LIFT_MOTOR_AM
CUTTER_LIFT_NOTOR_AP
J3316
J3312
J3313
J3314
J3315
M
Ink tank cover switch
Top cover sensor
Cutter HP sensor
Cutter lift sensor
Cutter lift motor

F-1-4

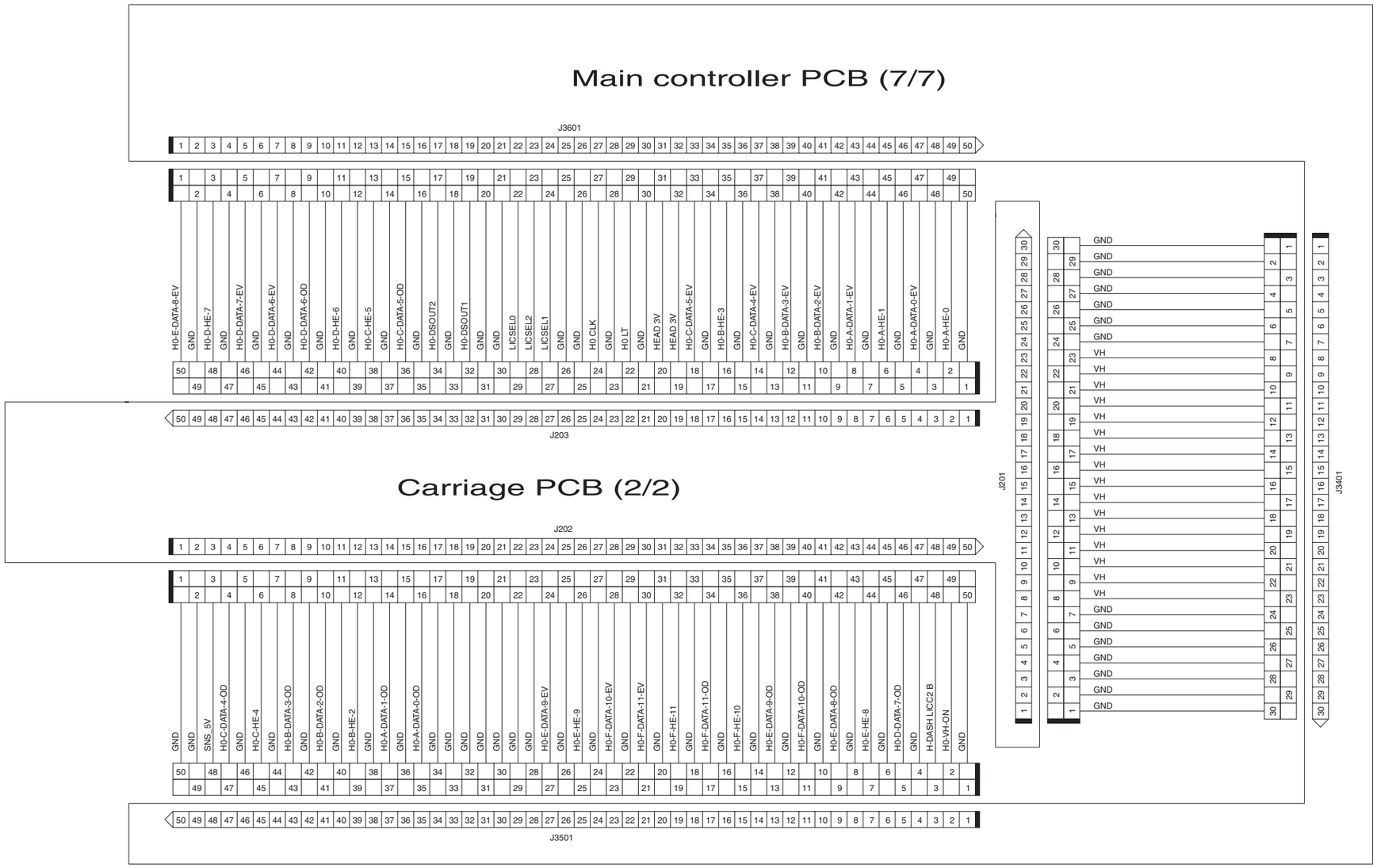

MT121
FT141
FT231
Operation panel PCB
PIN201
J1101
Main controller PCB (5/7)
J2601
PDOCS_L (CS)
PANEL_5V (+5V)
PDOPCLK (CLK)
GND
PANEL_RESET (RESET)
GND
PDIDATA (DATA_OUT)
+3.3V
PDODATA (DATA_IN)
BUZZER
PANEL_5V (PM_START)
POWER_ON
J101
LCD PCB
J1801
J103
J3407
HD_VHFB+
HD_VHFD-
VH
VH_GND
VH
VH_GND
VM
VM_GND
VM
VM_GND
VH_ENB
PW_CONT
J3408
J3405
SW_2
SW_3
SW_8
SW_11
SW_1
GND
SW_4
3.3V
SW_7
SW_6
SW_5
SW_10
SW_0
SW_9
LED_7
LED_8
POWER_ON
PM_START
J3406
J201
Switch PCB
CN2
Power supply PCB
CN1
J1161
J1162
N (WHITE)
GND
L (BLACK)

F-1-5

General Circuit Diagram (6/7)



F-1-6


Main controller PCB (7/7)
J3601
H0-E-DATA-8-EV
GND
H0-D-HE-7
GND
H0-D-DATA-7-EV
GND
H0-D-DATA-6-EV
GND
H0-D-DATA-6-OD
GND
H0-D-HE-6
GND
H0-C-HE-5
GND
H0-C-DATA-5-OD
GND
H0-DSOUT2
GND
H0-DSOUT1
GND
GND
LICSEL0
LICSEL2
LICSEL1
GND
GND
H0 CLK
GND
H0 LT
GND
HEAD 3V
HEAD 3V
H0-C-DATA-5-EV
GND
H0-B-HE-3
GND
H0-C-DATA-4-EV
GND
H0-B-DATA-3-EV
GND
H0-B-DATA-2-EV
GND
H0-A-DATA-1-EV
GND
H0-A-HE-1
GND
H0-A-DATA-0-EV
GND
H0-A-HE-0
GND
J203
J201
J3401
GND
GND
GND
GND
GND
GND
GND
VH
VH
VH
VH
VH
VH
VH
VH
VH
VH
VH
VH
VH
VH
VH
VH
VH
GND
GND
GND
GND
GND
GND
GND
Carriage PCB (2/2)
J202
GND
GND
SNS_5V
H0-C-DATA-4-OD
GND
H0-C-HE-4
GND
H0-B-DATA-3-OD
GND
H0-B-DATA-2-OD
GND
H0-B-HE-2
GND
H0-A-DATA-1-OD
GND
H0-A-DATA-0-OD
GND
GND
GND
GND
GND
GND
H0-E-DATA-9-EV
GND
H0-E-HE-9
GND
H0-F-DATA-10-EV
GND
H0-F-DATA-11-EV
GND
H0-F-HE-11
GND
H0-F-DATA-11-OD
GND
H0-F-HE-10
GND
H0-E-DATA-9-OD
GND
H0-F-DATA-10-OD
GND
H0-E-DATA-8-OD
GND
H0-E-HE-8
GND
H0-D-DATA-7-OD
GND
H-DASH LICC2 B
H0-VH-ON
GND
J3501

F-1-7

Feb 27 2017

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