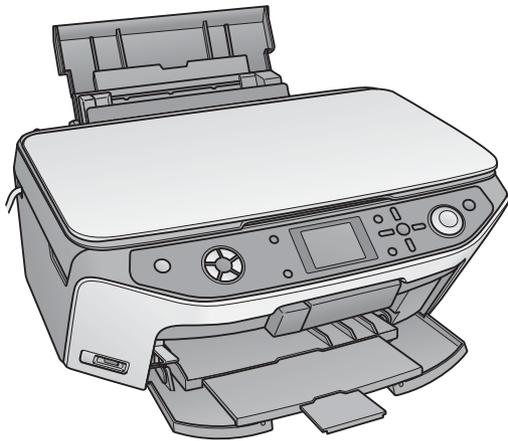


SERVICE MANUAL



Scanner•Printer•Copier

EPSON
Stylus PHOTO RX640/650

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PRECAUTIONS

Precautionary notations throughout the text are categorized relative to 1) Personal injury and 2) damage to equipment.

DANGER Signals a precaution which, if ignored, could result in serious or fatal personal injury. Great caution should be exercised in performing procedures preceded by DANGER Headings.

WARNING Signals a precaution which, if ignored, could result in damage to equipment.

The precautionary measures itemized below should always be observed when performing repair/maintenance procedures.

DANGER

1. ALWAYS DISCONNECT THE PRODUCT FROM THE POWER SOURCE AND PERIPHERAL DEVICES PERFORMING ANY MAINTENANCE OR REPAIR PROCEDURES.
2. NO WORK SHOULD BE PERFORMED ON THE UNIT BY PERSONS UNFAMILIAR WITH BASIC SAFETY MEASURES AS DICTATED FOR ALL ELECTRONICS TECHNICIANS IN THEIR LINE OF WORK.
3. WHEN PERFORMING TESTING AS DICTATED WITHIN THIS MANUAL, DO NOT CONNECT THE UNIT TO A POWER SOURCE UNTIL INSTRUCTED TO DO SO. WHEN THE POWER SUPPLY CABLE MUST BE CONNECTED, USE EXTREME CAUTION IN WORKING ON POWER SUPPLY AND OTHER ELECTRONIC COMPONENTS.
4. WHEN DISASSEMBLING OR ASSEMBLING A PRODUCT, MAKE SURE TO WEAR GLOVES TO AVOID INJURIES FROM METAL PARTS WITH SHARP EDGES.
5. WHEN USING COMPRESSED AIR PRODUCTS; SUCH AS AIR DUSTER, FOR CLEANING DURING REPAIR AND MAINTENANCE, THE USE OF SUCH PRODUCTS CONTAINING FLAMMABLE GAS IS PROHIBITED.

WARNING

1. REPAIRS ON EPSON PRODUCT SHOULD BE PERFORMED ONLY BY AN EPSON CERTIFIED REPAIR TECHNICIAN.
2. MAKE CERTAIN THAT THE SOURCE VOLTAGES IS THE SAME AS THE RATED VOLTAGE, LISTED ON THE SERIAL NUMBER/RATING PLATE. IF THE EPSON PRODUCT HAS A PRIMARY AC RATING DIFFERENT FROM AVAILABLE POWER SOURCE, DO NOT CONNECT IT TO THE POWER SOURCE.
3. ALWAYS VERIFY THAT THE EPSON PRODUCT HAS BEEN DISCONNECTED FROM THE POWER SOURCE BEFORE REMOVING OR REPLACING PRINTED CIRCUIT BOARDS AND/OR INDIVIDUAL CHIPS.
4. IN ORDER TO PROTECT SENSITIVE MICROPROCESSORS AND CIRCUITRY, USE STATIC DISCHARGE EQUIPMENT, SUCH AS ANTI-STATIC WRIST STRAPS, WHEN ACCESSING INTERNAL COMPONENTS.
5. DO NOT REPLACE IMPERFECTLY FUNCTIONING COMPONENTS WITH COMPONENTS WHICH ARE NOT MANUFACTURED BY EPSON. IF SECOND SOURCE IC OR OTHER COMPONENTS WHICH HAVE NOT BEEN APPROVED ARE USED, THEY COULD CAUSE DAMAGE TO THE EPSON PRODUCT, OR COULD VOID THE WARRANTY OFFERED BY EPSON.

About This Manual

This manual describes basic functions, theory of electrical and mechanical operations, maintenance and repair procedures of the printer. The instructions and procedures included herein are intended for the experienced repair technicians, and attention should be given to the precautions on the preceding page.

Manual Configuration

This manual consists of six chapters and Appendix.

CHAPTER 1. PRODUCT DESCRIPTIONS

Provides a general overview and specifications of the product.

CHAPTER 2. OPERATING PRINCIPLES

Describes the theory of electrical and mechanical operations of the product.

CHAPTER 3. TROUBLESHOOTING

Describes the step-by-step procedures for the troubleshooting.

CHAPTER 4. DISASSEMBLY / ASSEMBLY

Describes the step-by-step procedures for disassembling and assembling the product.

CHAPTER 5. ADJUSTMENT

Provides Epson-approved methods for adjustment.

CHAPTER 6. MAINTENANCE

Provides preventive maintenance procedures and the lists of Epson-approved lubricants and adhesives required for servicing the product.

APPENDIX Provides the following additional information for reference:

- Connection with Connectors
- Circuit Boards Component Layout
- Exploded diagram & Parts List

Symbols Used in this Manual

Various symbols are used throughout this manual either to provide additional information on a specific topic or to warn of possible danger present during a procedure or an action. Be aware of all symbols when they are used, and always read NOTE, CAUTION, or WARNING messages.



Indicates an operating or maintenance procedure, practice or condition that is necessary to keep the product's quality.



Indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to, or destruction of, equipment.



May indicate an operating or maintenance procedure, practice or condition that is necessary to accomplish a task efficiently. It may also provide additional information that is related to a specific subject, or comment on the results achieved through a previous action.



Indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, could result in injury or loss of life.

Revision Status

Revision	Date of Issue	Description
A	December 19, 2005	First Release
B	March 8, 2006	Error correction Checkpoint: "Scanner Home Position Adjustment" on page -75:
C	April 17, 2006	Addition of scanner lubrication point "Lubrication of SCANNER" on page -81

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CHAPTER

1

PRODUCT DESCRIPTION

1.1 Overview

Realizing 4-in-1 functionality (computer-connected printer or scanner, stand-alone copy machine, and stand-alone memory card printing), this unit is targeted for both home/personal use and small office and home office (SOHO) use. Its main functions are described below.

□ Printer Functions

As a printer, this unit realizes high-quality printing at high speed on plain paper, higher light-, water-, and gas-resistance and rub fastness using new Dye-based inks, and features the following:

- Maximum print resolution: 5760 (H) x 1440 (V) dpi
- Six color ink cartridges
- Borderless printing available using EPSON special media paper.
- Reduced noise level
- CD-R Printing
- ESC/P-R Level-1 commands compliant and printing from RGB data transmitted by the host available

□ Scanner Functions

This unit adopts a 3,200 dpi CCD sensor to enable high-quality scanning. LiDTPU is installed as standard, enabling film scanning in stand-alone mode or via a TWAIN interface.

Furthermore, Scan to Memory Card function, a function that enables easy conversion of original images into electronic data in standalone mode, is also installed.

Functions similar to those activated via the scanner's scan navigation buttons are also provided within Scan Mode so that the scanned data can be easily transferred to a connected computer via EPSON SMART PANEL.

Additional features include the following.

- Maximum optical resolution 3200 x 6400 dpi
- Scan pixel depth 48 bit (input/output)

□ Stand-alone copy functions

A six-color-Dye-type printer engine is installed to enable photo-quality copying. In addition to a "0.12-inch (3 mm) bottom margin" for standard use, this unit offers a lineup of the following copying options.

- "Border Free copying"
- "Small Margins copying" to provide a minimum margin (0.06-inch or 1.5 mm) around the edges
- Printing on CD/DVD labels and jackets
- Repeat copying to provide a various types of copying from an original
- "2-up and 4-up copying" helpful in minimizing paper waste
- "Poster 16" enabling enlargement copying

- "Mirror copying" installed to support printing on Iron-On Cool Peel Transfer Paper
- "Photo Stickers printing" to enable printing on photo stickers in photo quality

□ Memory card print functions

The printer, equipped with a memory card reader function, has a standalone memory card printing functions. In addition, the following features are also available:

- Index Sheet printing supported, whereby images can be selected simply by marking an Index Sheet. This function makes image selection easier - just by marking the desired images on the Index Sheet and scanning the sheet.
- Together with custom printing functions that set the desired photos by session such as "Select Print," "All Photos" and "Range Print," the editing function like "Zoom Print" is also provided.

□ Scan functions

This unit is equipped with the "Scan to Memory Card" function that facilitates the conversion of a reflective Document to Digital form. Furthermore, functions similar to those activated via the scanner's scan navigation buttons are also provided in this mode to easily perform Scan to PC, Scan to PDF, Scan to E-mail and Scan to Web using EPSON SMART PANEL.

□ Film print functions

This unit is capable of scanning and printing films.

□ Specialty print functions

Multiple special processing features are available in this unit.

- Print Image Framer Ver.2 and Ver.3 compliant P.I.F Printing Mode available
- "Combo Print"/"Photo Greeting Card" provided, which is helpful in printing greeting cards or 4 (6-inch photos with handwritten text superimposed. Expanded from the functions existing in Stylus Photo RX700 are "Watermark printing" - a function to facilitate alignment by printing a faint photo image on the handwritten area - and character decoration.
- "Photo copying" provided, which helps to reprint three 4 x 6-inch photos or one 5 x 7-inch photo.
- "Text input via mobile phone" provided, which uses the incorporated infrared communication function to combine an image in the memory card and the text sent by a mobile phone through infrared communications on the template available in this unit

□ Simultaneous use of functions

Printer functions and scanner functions are independent and therefore can be operated simultaneously from a connected computer.

However, note that printing by ESC/P-R commands cannot be operated with scanner functions simultaneously.

1.2 Basic Specifications

1.2.1 Printer and PC Printing

□ Basic Specifications

Table 1-1. Printer Basic Specifications

Items	Specifications
Print method	On-demand ink jet
Print heads	Black ink: 90 nozzles Color ink: 90 nozzles x 5 colors (cyan, magenta, yellow, light cyan, and light magenta)
Print Direction	Bi-Directional minimum distance printing (with logic seeking)
Print resolution	5760 x 1440 dpi (max)
Input buffer size	256 K Bytes

□ Paper Feed Specifications

Table 1-2. Paper Feed Specifications

Items	Specifications
Paper feed method	Friction feed using an ASF (Auto Sheet Feeder)
Paper path	Top feed, front out
Paper feed rates	TBD mm/sec (TBD inches/sec) (when 25.4-mm paper feeds) 296.64 mm/sec (11.6 inches/sec) (when paper feeds in high-speed continuous mode)
CR interval	Programmable in 0.0176 mm (1/1440 inch) steps
Platen print prevention	Printing using a Borderless layout : Top detection and PW detection implemented for platen print prevention. Printing using a layout with borders : platen print prevention with the paper width of 1st page or 1st job Economy printing mode : no platen print prevention.

1.2.2 Scanner

□ Basic Specifications

Table 1-3. Basic Specifications

Items	Specifications
Product type	Flatbed color image scanner
Scanning method	Fixed document and carriage movement
Sensor	Automotive 6 line color CCD with On-Chip Microlens
Maximum scan area	8.5" x 11.7" (216 mm x 297 mm)
Document sizes	A4, US Letter
Max. effective pixels	27,200 x 37,440 pixels (3200 dpi)
Resolution	Main scan: 3200 dpi Sub scan: 6400 dpi with Micro Step drive 50 to 6400 dpi (selectable in 1-dpi steps) (12800 dpi is achieved by enlarging 6400 dpi by 200 %)
Scanning speed*	3200dpi : Color : Approx. 23 msec Monochrome : Approx. 23 msec 600dpi : Color : Approx. 4.5 msec Monochrome : Approx. 4.5 msec
Light source	White cold cathode fluorescent lamp
LiD-TPU	Scan 35mm film strips with up to six per strip Scan 35mm film slides with up to four per slide Built-in 35mm film strip adapter

*: Gradations (pixel depth): Each pixel has 16-bit input and 1-, 8- or 16-bit output.

1.2.3 Interfaces

The interfaces this unit is equipped with are as follows:

- USB I/F
 - Mounted on the printer (for connection to a PC)
 - For printing of data from a USB storage (printing of data from an external storage device, such as a DSC or CD-R disk or wireless printing by use of the optional Bluetooth adapter)
- Memory card slot (multi-slot)
- IrDA (infrared communication with a mobile phone or the like)



Detailed information on above-mentioned external storage devices, Bluetooth adapter and devices compatible with IrDA (infrared data association) is available on EPSON web site.

1.2.3.1 USB Interface

- Main specifications

Table 1-4. Main specifications

Items	Specifications
Standards	“Universal Serial Bus Specifications Revision 2.0” Printer: “Universal Serial Bus Device Class Definition for Printing Devices Version 1.1” Storage: “Universal Serial Bus Mass Storage Class Bulk-Only Transport Revision 1.0”
Transfer rate	480 Mbps (High Speed Device)
Data format	NRZI
Compatible connector	USB Series B
Maximum cable length	Less than 2 m

- External Storage Device Connection Port
 - Recommended cable length: 2 m

Wireless printing is available by installing the optional Bluetooth adapter in the External Storage Device Connection Port.

Table 1-5. Bluetooth Communication Basic Specifications

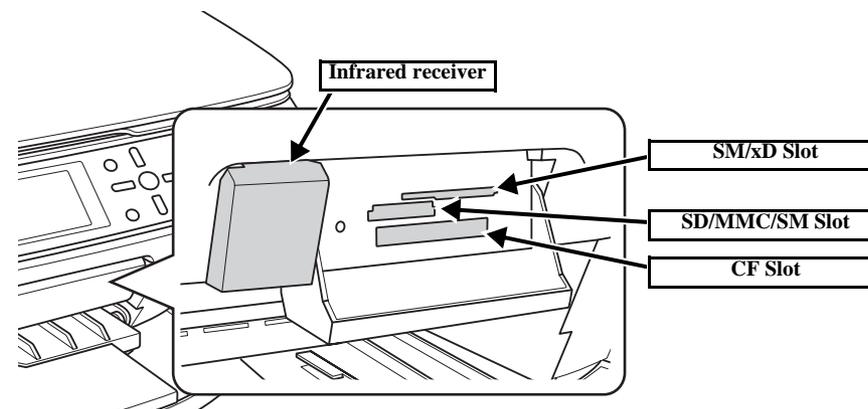
Items	Specifications
Communication method	Bluetooth standard specification Ver. 2.0 + EDR
Output	Bluetooth standard specification Power Class 2
Communication distance	Approx. 10 m (line-of-sight)
Frequency band used	2.4 GHz band (2.4 GHz to 2.4835 GHz)
Supported profiles	Basic Printing Profile (BPP) Basic Imaging Profile (BIP) Object Push Profile (OPP) Hardcopy Cable Replacement Profile (HCRP)

Note : Subject to conditions such as obstructions between communication devices, radio wave condition, magnetic field, static electricity, locations where interferences occur, software or OS used, receiver sensitivity of communication Devices, and antenna performance.

1.2.3.2 Infrared Communication Printing Function

Stylus PHOTO RX640/650 incorporates an infrared communication port on the Main Board.

Items	Specifications
Standards	Compliant with the infrared data communication standards (IrDA Ver.1.3 [Low Power option], etc.)
Communication Speed	9.6 kbit/s-115.2 kbit/s, 0.576 Mbit/s, 1.152 Mbit/s, 4.0 Mbit/s
Communication Distance	0-20 cm (without obstruction), Infrared range is as shown below.
Object Data	JPEG file vNote file (including support for NTT Docomo image transfer format) vCard file vCalendar file vMessage file



1.2.3.3 Memory Card Slots

Priority	Slots	Support Memory Card	Standards	備考
1	CF Type II	Compact Flash	CF+ and CompactFlash Specification Revision 1.4 compliant	Only memory cards
		Microdrive		
2	Smart Media/ xD-Picture card	Smart Media	SmartMedia Standard 2003 compliant	Max : 128MB
		xD-Picture card	xD-Picture Card Specification Version 1.20 compliant * Type M supported	Supporting Type M
3	Memory Stick	Memory Stick	MemoryStick Standard Version 1.3 compliant	Max : 128MB Including the one with memory select function
		MagicGate Memory Stick		Not supporting any copyright protection function
		Memory Stick PRO	MemoryStick Standard Memory Stick PRO Format Specifications Version 1.0 compliant	Not supporting any copyright protection function
		Memory Stick Duo		Requiring the adapter
		Memory Stick Pro Duo		Requiring the adapter
	SD/MMC	SD	SD Memory Card Specifications / PART1. Physical Layer Specification Version 1.0 compliant	
MMC		MultiMediaCard Standard compliant		

Note 1: For both PC connection and Directing printing, only one type of media is accessible at the same time.

Priority is assigned to each slot, so that if multiple media are inserted into multiple slots at the same time, an accessible slot is determined in the order of priority.

2: In order to select the medium inserted into an invalid slot, the medium in the valid slot needs to be removed.

3: For direct printing: Only the image files in a valid slot are determined to be valid and photo numbers are assigned to only them. The number of images does not change even if media are inserted into unselected slots.

4: For PC connection (Windows): Only one "removable disk" drive is displayed; and only the medium in a valid slot can be accessed on the "removable disk." Media inserted in unselected slots are not accessible.

5: For PC connection (Macintosh): Only the medium in a valid slot is mounted onto the desktop. Media inserted in unselected slots can not be mounted onto the desktop.

6: Slot selection at power on: When power is turned on with media inserted in multiple slots, an accessible slot is determined in accordance with the above order of priority.

7: Slot selection with power turned on: When the medium is removed from the valid slot, the slot of the second highest priority becomes valid (if a medium is inserted there). It is not necessary to reinsert the medium before it is accessed. If media are not inserted in any of the slots, the valid slot is changed to the slot of the highest priority (Compact Flash). This is not affected by the order of media insertion in or removal from unselected slots.

1.3 Consumables and Options

1.3.1 Ink Cartridges

Table 1-1. Ink Cartridges

Items	Specifications
Type	Each-color separate ink cartridge
Colors	Black, Cyan, Magenta, Yellow, Light Cyan, Light Magenta
Storage temperature	-20°C to 40°C (Installed) (Within 1 month at 40°C. An acceptable change in temperature is 45°C or less within this range.) -30°C to 40°C (Packing storage) (Within 1 month at 40°C)
Dimensions	12.7 mm (W) x 73.46 mm (D) x 55.25 mm (H)
Weight	39 g

Note : Ink cartridges cannot be refilled. They are provided as consumable items.



- Ink cartridges whose validity has expired should not be used.
- The ink in cartridges freezes if left in a temperature of -16°C or below. To restore frozen ink to a usable condition, it takes approximately 3 hours, for example, if it is moved from an environment at -20°C to an environment at 25°C.

1.4 Common Specifications

1.4.1 Electrical Specifications

- Primary power input

Table 1-2. Primary Power Input

		100-120V model	220-240V model
Rated power supply voltage (V AC)		100-120	220-240
Input voltage range (V AC)		90-132	198-264
Rated current (A)		0.6 A (max. 1.0 A)	0.3A (max. 0.5 A)
Rated frequency (Hz)		50 ~ 60	
Input frequency range (Hz)		47 ~ 63	
Power consumption (W)		Approx. 22 W (Standalone copying, ISO10561 Letter Patter, Plain Paper - A4 Text)	
	Low-power Mode	Approx. 11 W	Approx. 11 W
	Sleep Mode	Approx. 1.5W	Approx. 1.5W
	Power Off Mode	Approx. 0.2 W	Approx. 0.3 W

Note 1: This product conforms to “Energy Star”.

- 2: If inactive condition of the printer continues for more than 5 minutes, the status shifts to the standby status to reduce holding current of the motors.
- 3: If inactive condition of the scanner continues for more than 15 minutes, power supply to the scan lamp is stopped.

- Insulation resistance
Min. 10 MΩ (between AC line and chassis, test voltage of DC 500V)
- Dielectric strength
AC 1000 Vrms, 1 minute or AC 1200 Vrms, 1 second

1.4.2 Safety Standard/EMC

Table 1-3. Safety Standard/EMC

100-120 V version	220-240 V version
Safety standards UL60950 CSA C22.2 No.60950	Safety standards EN 60950
EMI FCC part15 subpart B class B CAN/CSA-CEI/IEC CISPR 22 Class B	EMC EN 55022(CISPR Pub.22) class B EN61000-3-2 EN61000-3-3 EN55024 AS/NZS CISPR22 class B

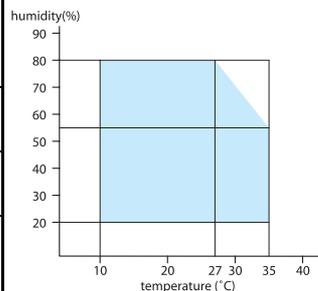
1.4.3 Other Model-unique Specifications

None.

1.4.4 Environment Resistance

Table 1-4. Environment Resistance

Temperature	10 ~ 35°C (operation mode *3) -20 ~ 60°C (non-operation mode *1) 1 month when at 40°C, 120 hour when at 60°C
Humidity	20 ~ 80%, RH (operation mode *2, *3) 5 ~ 85%, RH (non-operation mode *1, *2)
Impact	1 G, 1 x 10-3 seconds (operating) 2 G, 2 x 10-3 seconds (not operating *1)
Vibration	0.15G 10-55Hz(operating) 0.50G 10-55Hz(not operating *1)



*1: When packed for shipping.

*2: No condensation

*3: Under the conditions shown in the chart above

1.4.5 Lifetime

Table 1-5. Lifetime

Total print volume	16,000 pages (A4/Letter), or 5 years (the shortest one among these)
Print head lifetime	6 billion shots (per nozzle), or 5 years (the shortest one among these)
Scanner head	MCBF 36,000 cycles

1.4.6 Noise

□ Noise level : Max 42 dB (During copy, ISO7779)

1.4.7 Weight / Physical Specifications

Table 1-6. Weight / Physical Specifications

Weight	9.3 kg
External Dimensions	450 mm x 414 mm x 210 mm (Width x Depth x Height, when closed) 450 mm x 492 mm x 288 mm (Width x Depth x Height, in operation)

1.4.8 Special Operations

With Stylus PHOTO RX640/650, the special operation modes described below are available by turning the power on with the specified buttons held down.



The functions described below, intended for use by service personnel, must not be opened to users.

Table 1-7. Special Operations

	Switches	Function
Operation for Forced Power Off	Power + Stop (Press Power SW first, and press both switches for more than seven seconds)	Turning the power off forcibly (processing equivalent to power down)

CHAPTER

2

OPERATING PRINCIPLES

2.1 Overview

This Chapter describes the operating principles of the mechanism and electric circuits of Stylus PHOTO RX640/650.

2.1.1 Mechanical Components

The printer of Stylus PHOTO RX640/650 consists of the following major mechanisms:

Table 2-1. Mechanical Components 1

Mechanism	Function/Description
CR Assy	Moves on the CR Guide Shaft right and left and performs printing on paper. The Carriage Assy incorporates the Printhead, PW Sensor, and CR Encoder. The power source is the CR Motor.
APG Assy	Controls the platen gap in four stages. Detects the current height of the carriage with the APG Sensor, and moves the carriage up and down, driven by the PF Motor.
PF Assy	Driven by the PF Motor to turn the PF Roller Shaft for feeding paper.
ASF Assy	Driven by the PF Motor to load paper into the Printer Mechanism.
Eject Assy	Driven by the PF Motor to eject the paper (CD-R Tray). As the Stacker is moved up and down (by manual operation), the paper eject frame moves up and down so that its height can be adjusted to the media.
I/S Assy	Located in the right end of the mechanism, performs capping the Printhead, while it is not used, and sucking waste ink. The waste ink is sent to the Waste Ink Tray via the Waste Ink Tube.

The units and circuit boards constituting Stylus PHOTO RX640/650 are as follows:

Table 2-2. Mechanical Components 2

Unit /Circuit Board	Function/Description
Main Board	Located on the Middle Housing, incorporating the USB I/F (for PC), card reader, and infrared communication function.
Power Supply Board	Located on the Lower Housing. The power cable can be plugged in and unplugged.
Panel Board	Consists of two pieces located on the Middle Housing.
USB I/F Board	Front USB I/F Board
Scanner Unit	Incorporates the film scanner functions.

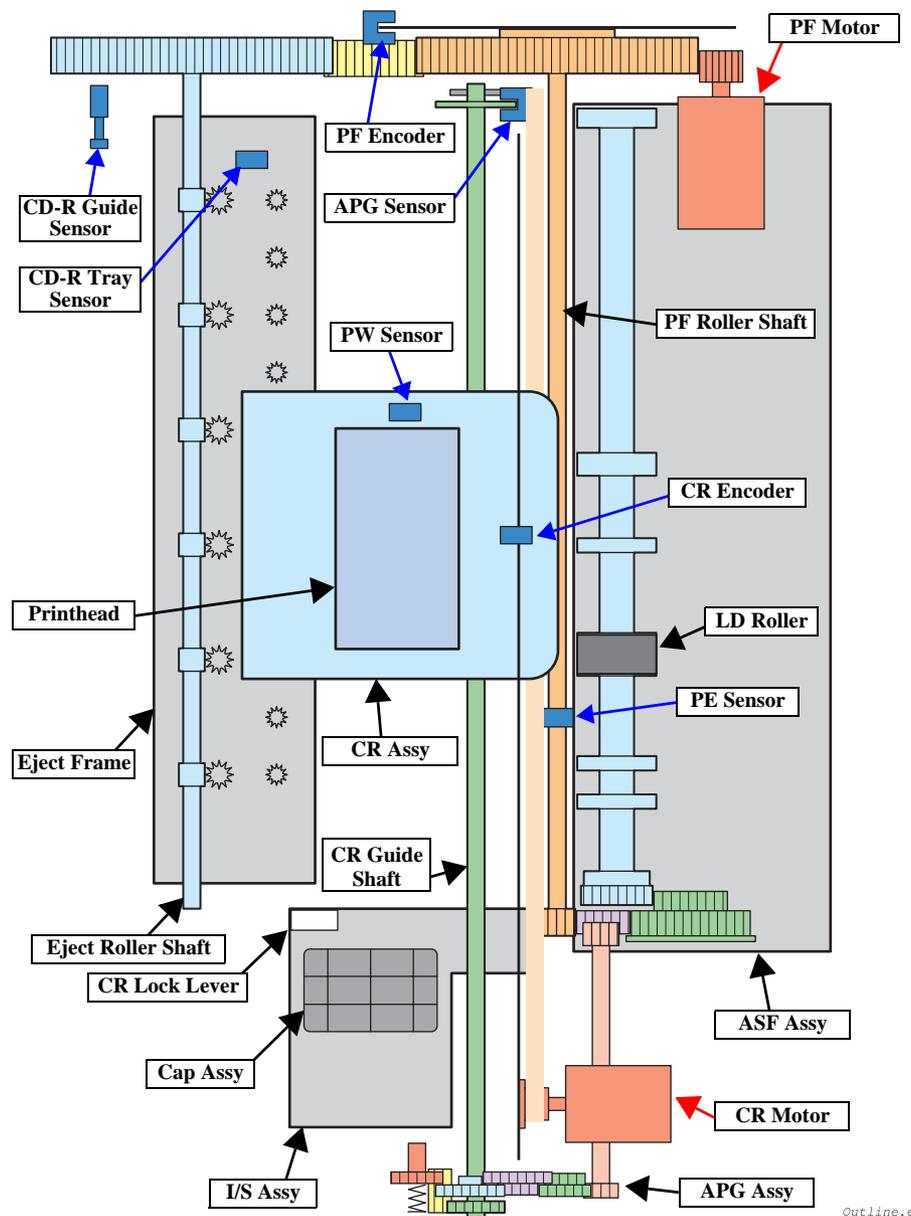


Figure 2-1. Schematic Printer Mechanism

Outline.eps

2.1.2 Motors and Sensors

Table 2-3. Motors and Sensors (Printer Mechanism)

Name	Function
Printhead	F3-MACH head (6 colors x 90 nozzles)
CR Motor	Type : DC motor
	Voltage : 42V DC ± 5% (voltage applied to the driver)
	Characteristics Armature resistance : 24.4Ω ± 10%
	Inductance : 17.5mH ± 25%
Drive system : PWM system, constant-current chopping system	
PF Motor	Type : DC motor
	Voltage : 42V DC ± 5% (voltage applied to the driver)
	Characteristics Armature resistance : 27.5Ω ± 10%
	Inductance : 21.45mH (1kHz)
Drive system : PWM system	
PE detector	Function : Detection of the paper tail end, Paper leading edge positioning control
	Detection method: Transmissive-type photo-interrupter
Ink Cartridge detector	CSIC
PTS detector (CR)	Type : Linear encoder
	Resolution : 1440 pulse/inch
PTS detector (PF)	Type : Linear encoder
	Resolution : 180 pulses/inch
PW detector	Function : Paper left and right edge (before and during printing)
	Paper top edge (before printing)
	Paper bottom edge (during printing)
	CD-R top, bottom, right and left edges (before printing)
	Detection method: Reflective photosensor
APG detector	Function : APG position detection
	Detection method: Transmissive-type photo-interrupter
CD-R Guide detector	Function : CD-R Guide up/down detection
	Detection method: Mechanical contact detector
CD-R Tray detector	Function : CD-R Tray presence detection
	Detection method: Mechanical contact detector

Table 2-4. Motors and Sensors (Scanner Unit)

Name	Function
CR Motor	Type : 2-phase-200-pole PM type stepping motor
	Voltage : 42V DC ± 5%
	Drive system : Bipolar constant-current driving
HP detector	Function : Carriage home position detection
	Detection method: Transmissive-type photo-interrupter

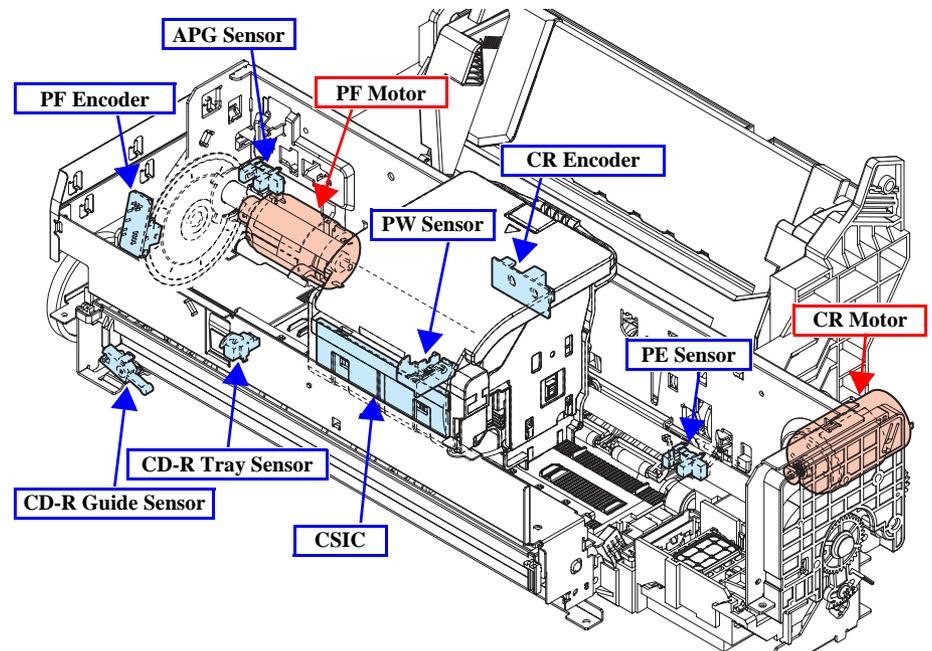


Figure 2-2. Motors and Sensors (Front Side of Mechanism)

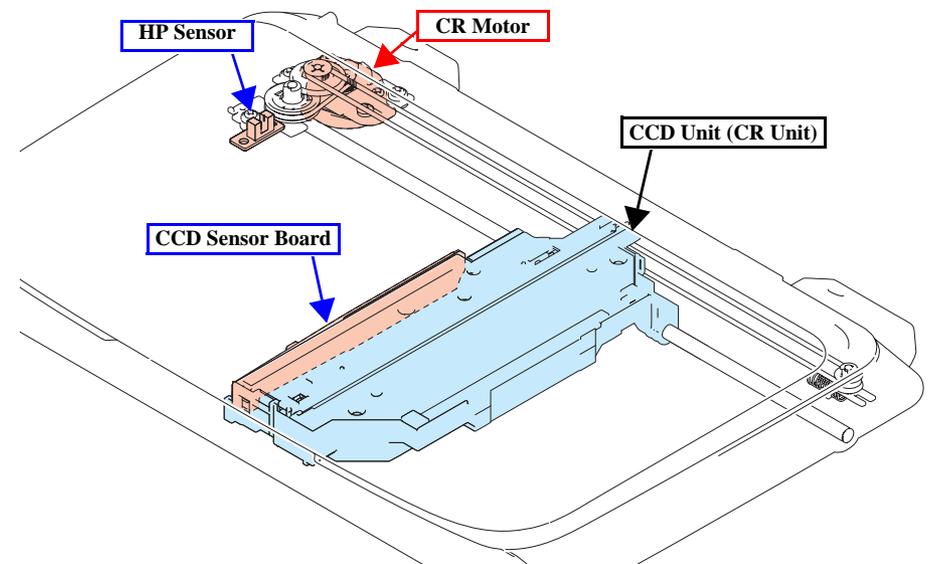


Figure 2-3. Motors and Sensors (Scanner Unit)

2.2 Operating Principles of Electric Circuitry

2.2.1 Overview

The major circuit boards of Stylus PHOTO RX640/650 are as follows:

- Main Board: C608MAIN
- Power Supply Board: C608PSB/C608PSE
- Panel Board: C608PNL and C608PNL-B
- CCD Unit Board (Scanner): C608ISN
- USB I/F Board : I/F Board Assembly

2.2.2 Features

- High-Speed SPC is realized without HUB, thanks to employment of USB 2.0 multi-end point.
- An SOC incorporating the printer controller, scanner controller, PT controller and CPU Super Macro is realized.
- Only one CPU (SH2A by RENESAS) controls the printer, scanner and PT section.
- Equipped with one 64-Mbit Flash ROM (with 16-bit bus width) and one 32-Mbit Flash ROM (with 16-bit bus width). (Flash ROM or MASK ROM is mounted)
- Equipped with one 256-Mbit SDRAM (16-bit bus width) for ASIC local buses, and one 256-Mbit SDRAM (16-bit bus width) for CPU bus.
- Low cost of logic power supply and motor drive is realized by employment of motor drivers with built-in power supply.
- The band width is ensured by setting the operating frequency of the local SDRAM of SOC at 96 MHz.
- High-speed processing is ensured because all the processing from scanning to binarization, Microweave, and image buffer generation is carried out inside the SOC, without via the CPU bus.
- The size of the MW buffer is reduced to 1/3 of the conventional size by employment of UBEC (Ultra Block Encode).
- Equipped with a color LCD (2.5-inch low-temperature poly-silicon TFT liquid crystal) as a standard feature.
- Power consumption is suppressed by executing the following actions at transition to the power save mode.
 - Lowering the supply voltage for main power
 - Cutting off the photo-electric current of the photo sensor
 - Stopping the motor drive circuit

- Stopping the UDL clock inside the ASIC
- Entering the CPU core low consumption mode
- High efficiency power supply circuit
- Stopping excitation of the printer motor
- Stopping the head drive circuit
- Turning off the CCD scanner power supply and stopping the excitation of the scanner motor
- Turning off the preview monitor

2.2.3 Circuit Board Constitution

Table 2-5. Circuit Board Constitution

Circuit Board		Description
Main Board	System section	<input type="checkbox"/> Logic circuits (ASIC incorporated in the CPU core, Flash ROM x 2, and SDRAM x 2) <input type="checkbox"/> Interface circuit (USB 2.0, USB 1.1 Host) <input type="checkbox"/> RTC circuit <input type="checkbox"/> Color LCD interface <input type="checkbox"/> Panel interface <input type="checkbox"/> IrDA circuit
	Power Supply section	<input type="checkbox"/> Regulator circuit <input type="checkbox"/> Power switch circuit <input type="checkbox"/> Overvoltage protection circuit
	Printer section	<input type="checkbox"/> Motor control and drive circuits (PF, CR) <input type="checkbox"/> Head control and drive circuit <input type="checkbox"/> Sensor circuits (PE, PF, PW, APG, CDR 1 and 2)
	Card ASIC section	<input type="checkbox"/> Logic circuit (ASIC) <input type="checkbox"/> Card power supply control circuit
	Scanner section	<input type="checkbox"/> Scanner interface circuit <input type="checkbox"/> Motor control and drive circuit (Scanner) <input type="checkbox"/> Scanner HP detection interface circuit <input type="checkbox"/> TPU interface circuit
Panel Board		<input type="checkbox"/> Power switch circuit <input type="checkbox"/> Switching circuit <input type="checkbox"/> LED circuit
ISN Board		<input type="checkbox"/> CCD control and A/D conversion circuit <input type="checkbox"/> Optical sensor circuit
LCD Board		<input type="checkbox"/> LCD control circuit <input type="checkbox"/> LCD module <input type="checkbox"/> SDRAM

CHAPTER

3

TROUBLESHOOTING

3.1 Overview

With Stylus PHOTO RX640/650, almost all troubles can be coped with by following the instructions given on “EPSON Status Monitor 3” (when connected to the PC) or on the LCD.

Once an error occurs, the “EPSON Status Monitor 3” will appear as a pop-up window on the screen of the host PC. It will show details of how to cope with the trouble. In almost all cases, the user can recover the unit from the error, provided that the user follows the instructions indicated on the pop-up window.

In addition, the User's Manual for EPSON Stylus PHOTO RX640/650 describes detailed steps to be taken for recovery from typical errors.

3.1.1 Specified Tools

Stylus PHOTO RX640/650 does not require any specified tools for troubleshooting.

3.1.2 Preliminary Checks

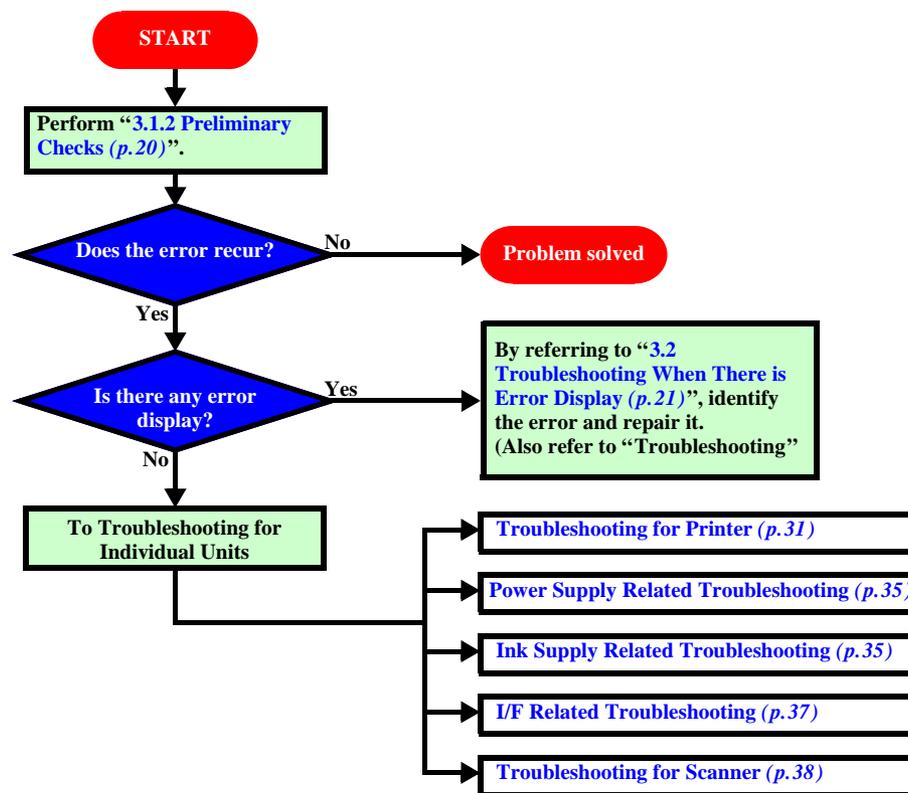
Before starting troubleshooting, be sure to verify that the following conditions are all met:

- The power supply voltage must be within the specification limits. (Measure the voltage at the wall outlet.)
- The POWER CORD must be free from damage, short circuit or breakage, or miswiring in the POWER CORD.
- The Unit must be grounded properly.
- The Unit should not be located in a place where it can be exposed to too high or low temperature, too high or low humidity, or abrupt temperature change.
- The Unit should not be located near waterworks, near humidifiers, near heaters or near flames, in a dusty atmosphere or in a place where the Unit can be exposed to blast from an air conditioner.
- The Unit should not be located in a place where volatile or inflammable gases are produced.
- The Unit should not be located in a place where it can be exposed to direct rays of the sun.
- The Unit must be placed on a strong and steady level table (without an inclination larger than 5 degrees).
- There must be no vibration generating source placed in contact with this Unit.

- The paper used must conform to the specification.
- There must be no error in handling of the Unit.
- Check the inside of the Unit, and remove foreign matters, if any, such as paper clips, staples, bits of paper, paper dust or toner.
- Clean the inside of the Unit and the rubber rolls.

3.1.3 Procedure for Troubleshooting

Perform troubleshooting according to the flowchart shown at below.



Flowchart 3-1. Procedure for Troubleshooting

3.2 Troubleshooting When There is Error Display

3.2.1 Error List

Table 3-1. Error List

Error Name	Occurrence Condition	Displayed Message	Recovery Procedure
Message related to Ink (1)	The ink exchange was executed with the ink cartridge fixation cover open.	The ink cartridge cover is not closed. Open the scanner unit and close the ink cartridge cover. Press OK to continue. Guide Display “OK: Continue”	Close the ink cartridge fixation cover and press the OK Button.
Message related to Ink (2)	The ink cartridges have not been inserted or defective ink cartridges have been inserted.	Ink cartridges cannot be recognized. Make sure the ink cartridges are correctly installed. Press OK to continue. Guide Display “OK: Continue”	Install the normal ink cartridges correctly and press the OK button.
Message related to Ink (3)	The ink cartridge had not been inserted at an initial filling or the ink cartridge error occurred.	Ink cartridges cannot be recognized. Make sure the ink cartridges are correctly installed. Press OK to continue. Guide Display “OK: Continue”	Install the normal ink cartridges correctly and press the OK button.
Message related to Ink (4)	Ink end.	[Color icons] Ink out. Press the OK button to replace the cartridges. Guide Display “OK: Continue”	Install the normal ink cartridges filled with ink correctly and press the OK button.
Scanner FATAL Error	An error that cannot be recovered on the scanner side occurred.	A scanner error has occurred. Please see your manual. Guide Display “<Power Button>: Turn off”	Turn off the power.
Paper Jam Error	A paper jam has occurred.	Paper or CD/DVD jam or feed error. Press the Start button. If the error does not clear, reinsert the paper or CD/DVD and press the Start Button. Guide Display “<Start Button>: Start”	Remove the paper.
Paper Empty Error	There is no paper in the sheet feeder.	Paper out. Load paper and press the Start button. Guide Display “<Start Button>: Start”	Press the “Start” button to load paper correctly.
Paper detect error	A sheet was loaded in a wrong orientation and caused a jam.	Paper jam. Load paper and press the Start button. If the error does not clear, repeat the procedure. Guide Display “<Start Button>: Start”	Follow the displayed message until the sheet loaded in a wrong orientation is ejected.

Table 3-1. Error List (continued)

Error Name	Occurrence Condition	Displayed Message	Recovery Procedure
Multi-page Feed Error	Multi-page feed error has occurred.	Multi-page feed error. Remove and reload the paper, then press the Start button. Guide Display "<Start Button>: Start"	Re-set paper and press the "Start" button to feed paper correctly.
FATAL Error	An irrecoverable error has occurred.	A printer error occurred. Please see your manual. Guide Display ""Power Button": Turn off"	Turn off the power (Refer to "3.2.3 FATAL Error" (p.28))
Maintenance Error	The printer requires maintenance due to waste liquid overflow or elastomer tube replacement time, etc.	Service required. Parts inside your printer are at the end of their service life. See your manual for details. Guide Display ""Power Button": Turn off"	Turn off the power (Refer to "3.2.3 FATAL Error" (p.28))
CD/DVD guide open (When startup) CD/DVD guide open	The front tray is in the CD/DVD print position.	The front tray is in the CD/DVD position. Pull up the tray lever to set the front tray to the paper position.	Pull up the lever to change the print position to the lower position.

3.2.2 Warning List

Table 3-2. Warning List

Causes	Details	Displayed Message (TBD)	Recovery Procedure
In adjustment of borderless expansion value	This message is always displayed during adjustment of the Borderless Expansion Value.	You can change the amount of image enlargement. If you reduce it too much, you may see a white border around your photo. Guide Display "<OK>: Finish"	Press the OK button.
Position of CD/DVD guide (Re-set)	Printer did not recognize the CD/DVD tray correctly when it was about to start printing.	The front tray is in the wrong position. Push down the tray lever to set the front tray to the CD/DVD position.	Pull down the lever to change the print position to the lower position.
Set the CD/DVD guide (Set correctly)	CD/DVD tray was not in its position when the printer was about to start printing.	The CD/DVD tray is set incorrectly. Set the CD/DVD tray correctly, then press the Start button. Guide Display "<Start Button>: Start"	Set the CD/DVD tray correctly, and press the Start button.
Message related to ink (5)	A non-genuine ink cartridge has been installed.	The installed ink cartridges listed below differ from the genuine Epson ink cartridges for this printer. [Y] [BK] [LC] [LM] [M] [C] The use of other products may affect your print quality and could result in printer damage. Do you want to continue using the currently installed ink cartridges? [Yes] [No] Guide Display "<- ->:Make a Selection <OK>: OK"	Press the OK button
BT File size error		The document is too large to print with Bluetooth.	Press the OK button or wait for a certain time (approx. 5 seconds).
BT Designation error		The document is too complex to print with Bluetooth.	Press the OK button or wait for a certain time (approx. 5 seconds).
BT structure error		Error in the data. The document cannot be printed.	Press the OK button or wait for a certain time (approx. 5 seconds).
A part of the reference object is broken (BT-MIME).	While XHTML-Print data could be decoded, a part or all of the reference object had a MIME encode error and could not be obtained. The following two problems are considered depending on the type of the un-obtained reference object. For an image, an area where that image is to be printed becomes blank. For a CSS (style sheet) file, the background color, basic character size or the like cannot be specified as intended at the send side.	Error in the data. The document may not be printed correctly.	Press the OK button or wait for a certain time (approx. 5 seconds).

Table 3-2. Warning List (continued)

Causes	Details	Displayed Message (TBD)	Recovery Procedure
A part of the reference object cannot be buffered (BT-MIME).	While XHTML-Print data could be decoded, a part or all of reference object decoding was abandoned due to memory shortage or excess of the max. number of objects to be handled.	Error in the data. The document may not be printed correctly.	Press the OK button or wait for a certain time (approx. 5 seconds).
BT communications error	An error has occurred in communication with the BT adapter.	Bluetooth print adapter cannot be recognized. Please remove and reinstall the adapter. Guide Display "<OK>: Cancel"	Remove the BT adapter. Press the OK button to delete the message.
External device installment	An unsupported device has been installed.	Cannot recognize the USB device. Guide Display "<OK>: Finish"	Press the OK button
Menu change or printing operation with a DSC connected	Entering a menu screen for use of memory cards or starting to print was attempted with a DSC connected.	Camera is connected. Disconnect the camera and try again. Guide Display "<OK>: Cancel"	Press the OK button
Reprint/Restore Photos	Cannot recognize the Photos	No photos could be recognized. Make sure the photos are positioned correctly. For details, see your manual. Guide Display "<OK>: Finish"	Press the OK button
Film print	Cannot recognize the Film	A slide or negative could not be recognized. Make sure the film holder is properly positioned and the film is inserted in the holder. For details, see your manual. Guide Display "<OK>: Finish"	Press the OK button
Combo print error 1 (Euro) Photo Greeting card error 1 (EAI)	No recognition mark could be found on the template sheet.	There was an error reading the template. Check that the template is correctly located on the glass and try again. Guide Display "<OK>: Finish"	Press the OK button
Combo print error 2 (Euro)	No mark is given in the Paper Type or Text Style selection area, or more than one mark is given.	Selection of the text style is not correct. Please select only one text style and try again. Guide Display "<OK>: Finish"	Press the OK button
Photo Greeting card error 3 (EAI)	No mark is given for compose layout, or more than one mark is given.	The layout has not been selected or the ovals are not marked correctly. Only one layout may be selected. Please correct and try again. Guide Display "<OK>: Finish"	Press the OK button
Photo Greeting card error 4 (EAI)	No mark is given for compose paper type, or more than one mark is given.	The paper type has not been selected or the ovals are not marked correctly. Only one paper type may be selected. Please correct and try again. Guide Display "<OK>: Finish"	Press the OK button

Table 3-2. Warning List (continued)

Causes	Details	Displayed Message (TBD)	Recovery Procedure
Combo print error 5 (Euro) Photo Greeting card error 5 (EAI)	After template printing, a different memory card was inserted or an image was added or deleted.	The contents of the memory card have changed. Print a new template and try again. Guide Display "<OK>: Finish"	Press the OK button
Index sheet scan error (no index sheet)	No index sheet has been set.	There is no index sheet or it is not positioned correctly. Please check it and try again. Guide Display "<OK>: Finish"	Press the OK button
Index sheet scan error (incorrect image selection marking)	The image selection marking on the index sheet is not correct.	Photos are not selected on the index sheet, or the ovals are not marked correctly. Please correct and try again. Guide Display "<OK>: Finish"	Press the OK button
Index sheet scan error (incorrect paper selection marking)	The paper type selection marking on the index sheet is not correct.	The paper type has not been selected or the ovals are not marked correctly. Only one paper type may be selected. Please correct and try again. Guide Display "<OK>: Finish"	Press the OK button
Index sheet scan error (discrepancy between index sheet and card)	After index sheet printing, a different memory card was inserted or an image was added or deleted.	The contents of the memory card have changed. Print a new index sheet and try again. Guide Display "<OK>: Finish"	Press the OK button
Scan to memory error (fail to format)	Error has occurred in formatting the card.	A problem occurred while formatting. Formatting canceled. Guide Display "<OK>: Finish"	Press the OK button
Scan to memory error (card removed)	The medium has been removed during card formatting.	The memory card or disk was removed. Formatting canceled. Guide Display "<OK>: Finish"	Press the OK button
Scan to memory error (no card)	Scan to memory was performed with no memory card inserted.	No memory card or Disk inserted. Save canceled. Guide Display "<OK>: Finish"	Press the OK button
Scan to memory error (insufficient card capacity)	The memory card capacity is insufficient.	There is not enough free space on the memory card or disk. Save canceled. Guide Display "<OK>: Finish"	Press the OK button
Scan to memory error (card write-protect)	As the memory card was write-protected, save failed.	The memory card or disk is write-protected. Operation canceled. Guide Display "<OK>: Finish"	Press the OK button
Scan to memory error (folder not created)	A folder could not be created in the memory card.	Cannot create a folder on the memory card or disk. Operation canceled. Guide Display "<OK>: Finish"	Press the OK button

Table 3-2. Warning List (continued)

Causes	Details	Displayed Message (TBD)	Recovery Procedure
Scan to memory error (card removed)	Can not saving data, because memory card has been removed.	The memory card or disk was removed. Operation canceled. Guide Display "<OK>: Finish"	Press the OK button
Card insertion	Recognition of the memory card failed.	Cannot recognize the memory card or disk. Guide Display "<OK>: Finish"	Press the OK button or wait for a certain time (approx. 3 seconds).
Life of waste ink pads is near end.	The waste ink counter is indicating that the life of the waste ink pads has been nearly expired. This is displayed only at power on.	Service required. Parts inside your printer are near the end of their service life. See your manual for details. Guide Display "<OK>: Back"	Initialize the EEPROM or replace the waste pads and related parts. Or press "OK: Back"
A non-supported medium is inserted	Unformatted or non-supported medium is inserted.	Cannot recognize the memory card or disk. Do you want to format it? Guide Display "<OK>: Proceed, <Back>: Cancel"	OK: Format Back: Not format
No memory card is inserted.	Memory card Mode has been selected with no memory card inserted.	No memory card or disk inserted.	Press the OK button or wait for a certain time (approx. 3 seconds).
Memory card print	No image is contained in the memory card.	A memory card was inserted. No photos found. Guide Display "<OK>: Finish"	Press the OK button
Backup error (no card)	Backup source does not exist.	No memory card in slot. Backup canceled. Guide Display "<OK>: Finish"	Press the OK button
Backup error (no external connection)	Backup was about to be started without an external device connected.	External device is not connected or media is not inserted. Backup canceled. Guide Display "<OK>: Finish"	Press the OK button
Message of backup cancel	This message is displayed when backup has been canceled.	Backup canceled. Guide Display "<OK>: Finish"	Press the OK button
Backup error (connected to PC)	Backup was about to be started with the Unit connected to a PC.	Backup cannot be performed when connected to a PC. Guide Display "<OK>: Finish"	Press the OK button
Backup error (insufficient external media capacity)	Insufficient capacity of destination media for backup.	Insufficient space on the backup device. Backup cannot be performed. Guide Display "<OK>: Finish"	Press the OK button
File clearness (Cancel)	This message is displayed when file clearness is canceled	Operation canceled. Guide Display "<OK>: Finish"	Press the OK button
File clearness (Error has occurred.)	An error has occurred in file clearness.	An error occurred while clearing files. Operation canceled. Guide Display "<OK>: Finish"	Press the OK button
File clearness (Memory card has removed)	Memory card has been removed during file clearness.	The memory card or disk was removed. Operation canceled. Guide Display "<OK>: Finish"	Press the OK button

Table 3-2. Warning List (continued)

Causes	Details	Displayed Message (TBD)	Recovery Procedure
File clearness (Write-protected)	Because the memory card is write-protected, it is not possible to delete it.	The memory card or Disk is write-protected. Operation canceled. Guide Display "<OK>: Finish"	Press the OK button
File clearness (No memory card)	Because the memory card has not been inserted, it is not possible to delete the file.	No memory card in slot. Operation canceled. Guide Display "<OK>: Finish"	Press the OK button
Head cleaning	Failure for insufficient amount of remaining ink	Cannot perform print head cleaning due to low ink level. Guide Display "<OK>: Finish"	Press the OK button
Film mode: Scan to memory card	An error due to impossible sorting has occurred.	An error occurred while saving. Save canceled. Guide Display "<OK>: Finish"	Press the OK button
Select photos in CD label print.	More than one copy has been selected.	Only 1 copy can be selected.	Wait for a certain time (approx. 3 seconds).
Paper type change for CD printing.	You are asked if you really desire to clear the settings.	If you change the settings, you must select your photos and number of prints again. Guide Display "<OK>: OK, <Back>: Cancel"	Press the OK button or "Back" button.
Select the number of copies	Plural pieces selection error	Only 1 copy can be selected. Guide Display "<OK>: Cancel"	Press the OK button
Zoom	Warning against changing the paper size.	If the paper size is changed, the crop area may change. Do you want to continue? [Yes] [No] Guide Display "<- ->:Make a selection, <OK>: OK"	Press the OK button
P.I.F.	No P.I.F. in memory card.	Insert a memory card that contains P.I.F. data.	Wait for a certain time (approx. 3 seconds).
Memory card print	No image is contained in the memory card or no memory card has been inserted.	Insert a memory card that contains photos.	Wait for a certain time (approx. 3 seconds).

3.2.3 FATAL Error



- The EEPROM (Address: 3CH) stores the error code of the latest fatal error. The latest fatal error can be identified using the adjustment program.
- In case any fatal error (such as memory check) other than those in the Printer Mechanism occurs, all the LEDs (x5) flash without any indication on the LCD. Pressing the Change View button during flashing will display the error code, so that you can identify the error from the error code.

Table 3-3. Fatal Errors

Category	Error Code	Error	Cause	Remedy
DC error (CR motor)	01H	CR PID speed over error	An error occurred in the CR motor operating sequence	<ul style="list-style-type: none"> <input type="checkbox"/> Checking the operation of the Carriage Assy; Move the Carriage Assy by hand, and check to see if it moves smoothly. <input type="checkbox"/> Making the following adjustments <ul style="list-style-type: none"> ◆ Bi-D ◆ Paper feed length with PF Assy ◆ Paper feed length with Eject Assy ◆ PW adjustment <input type="checkbox"/> Checking the following parts and replacing the defective one <ul style="list-style-type: none"> ◆ Checking the head FFC (CN6/7) for disconnection or breakage ◆ Checking the lead wires of the CR Motor (CN3) for disconnection or breakage ◆ Checking the CR Encoder FFC (CN6) for disconnection or breakage ◆ Checking the printer frame for adhesion of dirt or insufficient lubrication (p.79) ◆ Checking the CR Guide Shaft for adhesion of dirt or insufficient lubrication ◆ Checking the Linear Scale for adhesion of dirt or damage (p.52) ◆ Checking the CR Encoder for adhesion of dirt or damage (p.67) ◆ Checking the PW Sensor for adhesion of dirt or damage (p.67) ◆ Checking the CR Belt for damage or improper tension (p.65) ◆ Checking the CR Motor and replacing it if necessary (p.65) ◆ Main Board (p.46) ◆ Power Supply Board (p.54)
	02H	CR load positioning lock error		
	08H	CR PID reverse rotation detection error		
	0AH	CR load positioning accumulation moving distance error		
	0BH	CR load positioning speed over error		
	0CH	CR PID lock error		
	0DH	CR PID aveTi max error		

Table 3-3. Fatal Errors (continued)

Category	Error Code	Error	Cause	Remedy
DC error (PF motor)	FBH	PF acceleration lock error	An error occurred in the PF motor operating sequence	<ul style="list-style-type: none"> <input type="checkbox"/> Checking the PF mechanism by visual inspection: Check the PF mechanism for paper jam or adhesion of foreign matters by visual inspection. <input type="checkbox"/> Checking the operation of the PF mechanism: Operate the PF mechanism by hand, and check to see if it operates smoothly. <input type="checkbox"/> Making the following adjustments: <ul style="list-style-type: none"> ◆Bi-D ◆Paper feed length with PF Assy ◆Paper feed length with Eject Assy ◆PW adjustment <input type="checkbox"/> Checking the following parts and replace the defective one: <ul style="list-style-type: none"> ◆Checking the PF Encoder FFC (CN8) for disconnection or breakage ◆Checking the lead wires of the PF Motor (CN4) for disconnection or breakage ◆Checking the PF scale for adhesion of dirt or damage (p.61) ◆Checking the PF encoder for adhesion of dirt or damage (p.61) ◆Checking the Upper Paper Guides for improper installation (p.69) ◆Checking the PF Motor and replacing it if necessary (p.61) ◆Main Board (p.46) ◆Power Supply Board (p.54)
	FEH	PF speed over error		
	FAH	Measurement value error in PF Duty limiting control		
	EFH	Position error in PF BS control		
	F0H	DTY_max error in PF BS control		
	F2H	PF PID drive time-out judgment error		
	F3H	PF BS drive time-out judgment error		
APG motor	70H	APG error (normal drive error)	An error occurred in the APG operating sequence	<ul style="list-style-type: none"> <input type="checkbox"/> Checking the installation of the APG Sensor: position of the sensor and connection of the connector (CN9) <input type="checkbox"/> Checking the drive of the APG Assy <ul style="list-style-type: none"> ◆Installation of the composite gear of the ASF Assy ~APG Assy ◆Standalone operation of the APG Assy ◆Reinstallation of the APG Assy (phase) <input type="checkbox"/> Checking the following parts and replace the defective one: <ul style="list-style-type: none"> ◆APG Assy (p.64) ◆ASF Assy (p.63) ◆APG Sensor ◆PG Left Cam (p.67) ◆Main Board (p.46) ◆Power Supply Board (p.54)
	71H	APG home seek error		
	72H	Error in APG drive by factory command		
Motor drive time error	D1H	CR (PID) drive time-out	The motor kept operating for more than the specified time.	<ul style="list-style-type: none"> <input type="checkbox"/> Checking the mechanism and operation Check the mechanism and operation of the motor in question. <input type="checkbox"/> Checking the connection of the connectors and routing of the lead wires <input type="checkbox"/> Checking the motor in question and the following parts and replacing the defective part <ul style="list-style-type: none"> ◆Main Board (p.46) ◆Power Supply Board (p.54)
	D2H	CR (load positioning) drive time-out		
	D3H	PF (PID) drive time-out		
	D4H	PF (BS) drive time-out		
Factory command error	30H	Error by EEPROM verify command		<ul style="list-style-type: none"> <input type="checkbox"/> Checking the following parts and replace the defective one: <ul style="list-style-type: none"> ◆Main Board (p.46) ◆Power Supply Board (p.54)

Table 3-3. Fatal Errors (continued)

Category	Error Code	Error	Cause	Remedy
Head system error	40H	Transistor ambient temperature abnormal	The thermistor on the printhead detected abnormal temperature.	<input type="checkbox"/> Checking the following parts and replace the defective one: ◆ Printhead (p.51) ◆ Main Board (p.46) ◆ Power Supply Board (p.54) ◆ Replace the Head FFC
	41H	Error in X-Hot detection before printing		
	42H	Error in X-Hot detection after flushing		
	43H	Head ambient temperature abnormal		
Sequence error	50H	Home seek error	An error occurred in the carriage operating sequence.	See Remedy for DC error (CR motor)
	51H	CR unlocking error		
	52H	CR locking error		
	53H	Paper detect error before initial charge completion		
Sensor error	60H	PW detection error (Hi check error)	PW detector trouble	<input type="checkbox"/> Checking the PW Sensor (p.67) ◆ Checking the PW Sensor for adhesion of dirt and dust ◆ Checking the connection of the FFC <input type="checkbox"/> Making the following adjustments: ◆ PW adjustment <input type="checkbox"/> Checking the following parts and replace the defective one: ◆ Head FFC ◆ Carriage Assy ◆ Main Board (p.46) ◆ Power Supply Board (p.54)
	61H	PW detection error (Low check error)		
	62H	Tray detection (CDR detector 2) error	Sensor trouble	<input type="checkbox"/> Checking the operation of the actuator and the connection of the connector. <input type="checkbox"/> Checking the following parts and replace the defective one: ◆ Sensor ◆ Main Board (p.46) ◆ Power Supply Board (p.54)
	63H	Paper detection error		
Maintenance error	A0H	Waste ink overflow	Life expiration of maintenance parts	<input type="checkbox"/> Replace all the maintenance parts, and clear the maintenance counter. ◆ Refer to "6.1.1 Maintenance Error" (p.78)

3.3 Troubleshooting When There is No Error Display

3.3.1 Troubleshooting for Printer

This section describes repair/service of the Printer Mechanism. Listed below are various problems which may occur, observations of such problems, check point and remedies.

- Faulty paper loading

Table 3-1. Diagnostics when feeder is abnormal

Condition	Cause	Check Point	Remedy
Paper is not loaded.	LD Roller and Retard Roller dirty or worn	Check to see if no Micro Pearl or oily substance is adhering to the paper loading roller.	Clean the rollers using a cleaning sheet. 1. Set a cleaning sheet upside down in the ASF Assy. 2. Start paper feed with the panel button. 3. Repeat steps above several times.
			To remove oils from rollers, staple a cloth dampened with alcohol to a postcard and follow the steps below. 1. Set the postcard in the tray with the alcohol dampened cloth side facing the LD Roller (or Retard Roller). 2. Start paper feed while firmly holding the upper edge of the card. 3. Repeat the paper feed operation several times to clean the surface of the LD Roller (or Retard Roller). If these steps do not correct the problem, replace both the LD Roller and Retard Roller.
	Pick Up Roller and Idle Roller dirty or worn	Check to see if no Micro Pearl or oily substance is adhering to the rollers.	Wipe the rollers with a cloth dampened with alcohol.
	Operation of paper loading mechanism is abnormal	Check to see if there is no abnormality in the paper loading mechanism.	<input type="checkbox"/> Adjust the phase of the paper loading mechanism. <input type="checkbox"/> Remove the dust and dirt, if any.
PE Sensor/PE Lever not operating properly	PE Sensor/PE Lever not operating properly	Check to see if the PE Sensor connector has not been disconnected from the sensor or Main Board.	Connect the PE Sensor connectors to the sensor and Main Board CN10 properly.
		Check to see if the Torsion Spring has been set on the PE Lever properly.	Install the Torsion Spring on the PE Lever properly.
		Check for damaged PE Sensor.	Replace the PE Sensor.
Several sheets of paper are fed at the same time	Retard Roller operation is abnormal	Check to see if the tension spring on the Retard Roller is disengaged.	Install the tension spring properly.
		Check to see if the Retard Roller is out of position.	Install the Retard Roller properly.

- Faulty paper ejection

Table 3-2. Diagnostics when paper ejection is abnormal

Condition	Cause	Check Point	Remedy
Paper is jammed on the way of paper ejection.	Faulty PF-related operation	Turn the PF Roller, and check to see if the paper is transferred to the Paper Eject Rollers properly.	Engage the PF-related gears properly.
	PF degradation compensation counter	Check the PF degradation compensation counter and the number of printed sheets using the adjustment program.	Initialize the PF degradation compensation counter and write the maximum value.
	Faulty operation of Paper Eject Roller	Check to see if Paper Eject Roller rotates correctly.	Properly engage the gears driving the Paper Eject Roller.

- Faulty carriage operation

Table 3-3. Diagnostics when carriage action is abnormal

Condition	Cause	Check Point	Remedy
Abnormal carriage operation during printing	Carriage does not move smoothly.	Check to see if there is an obstacle in carriage route.	Remove the obstacle.
		Operate the carriage by hand and check to see if carriage moves smoothly.	Clean the CR guide shaft and lubricate.
		Check tension of timing belt.	Replace the Compression Spring of the Driven Pulley Holder.
		Move the carriage to the right end and left end fully and check to see if the length of the Head FFC is proper and the carriage moves smoothly.	Remove the Head FFC once and reinstall it properly.

- Printer stops during initialization

Table 3-4. Diagnostics when printer stops during format

Condition	Cause	Check Point	Remedy
Printer error is indicated.	Paper Eject Frame not installed properly	Check to see if the hook securing the Paper Eject Frame has been engaged.	Install the Paper Eject Frame properly.
	CR Motor not operating properly	Check for disconnected CR Motor connector.	Check the connector (CN3) of the CR Motor.
		Check to see if CR Motor coil resistance is as specified.	Replace the CR Motor.
	PF Motor not operating properly	Check for disconnected PF Motor connector.	Check the connector (CN4) of the PF Motor.
		Check to see if PF Motor coil resistance is as specified.	Replace the PF Motor.
	Linear Scale not operating properly	Check to see if the Linear Scale is traveling through the CR Encoder.	Enable the Linear Scale to pass through the CR Encoder.
		Check for dirt on Linear Scale.	Completely clean the Linear Scale.
		Check for damaged Linear Scale.	Replace the Linear Scale.
	CR Encoder not operating properly	Check to see if Encoder FFC is connected to CR Encoder Board.	Connect the Encoder FFC to the CR Encoder Board.
		Check for paper bits and dust adhering to CR Encoder.	Remove paper bits and dust adhering to the CR Encoder.
		Check for damaged Encoder FFC.	Replace the Encoder FFC (Carriage Assy).
		Check for damaged CR Encoder.	Replace the Carriage Assy.
	Rotary Scale not operating properly	Check to see if the Rotary Scale is not traveling through the PF Encoder.	Enable the Rotary Scale to pass through the PF Encoder.
		Check for dirt on Rotary Scale.	Completely clean the Rotary Scale.
		Check for damaged Rotary Scale.	Replace the Rotary Scale.
	PF Encoder not operating properly	Check to see if Encoder FFC is connected to PF Encoder Board.	Connect the Encoder FFC to the PF Encoder Board.
		Check for paper bits and dust adhering to PF Encoder.	Remove paper bits and dust adhering to the PF Encoder.
		Check for damaged PF Encoder.	Replace the PF Encoder.
	Head FFC not operating properly	Check for disconnected Head FFC.	Firmly connect the Head FFC to the Main Board CN6 ~7 and to the Printhead.
		Check for damaged Head FFC.	Replace the Head FFC.
Head Hot Error generated	Check to see if ink is emitted from all nozzles.	If condition does not improve after cleaning, replace the Printhead.	

□ Faulty print

Table 3-5. Diagnostics when printing is abnormal

Condition	Cause	Check Point	Remedy
Improper printing occurs only with specific dots	Printhead surface is dirty (Dot missing)	Alternate cleaning and test printing several times.	Clean the Printhead surface with a cotton swab.
	Capping absorbent material is in contact with Printhead surface	Check for deformed or damaged capping absorbent material.	Replace the Ink System Assy.
	Head FFC not operating properly	Check for damaged Head FFC.	Replace the Head FFC.
	Printhead not operating properly	Alternate cleaning and nozzle check several times.	If condition does not improve after cleaning, replace the Printhead.
Dot missing sometimes occurs	Printhead surface is dirty (Dot missing)	Alternate cleaning and nozzle check several times.	Clean the Printhead surface with a cotton swab.
	Ink Cartridge not operating properly	Install a new ink cartridge and perform nozzle check.	Replace the ink cartridge.
	Faulty connection inside the Head FFC	Use a tester to check the FFC.	Replace the Head FFC.
	Printhead not operating properly	Repeat cleaning several times, and then perform nozzle check.	If condition does not improve after cleaning, replace the Printhead.
Print is not as intended	Head FFC is not connected	Check to see if FFC is firmly connected to each board and Carriage Assy.	Connect the FFC firmly.
	Printhead not operating properly	Check connection of Head FFC to Printhead.	If there is no problem with the Head FFC to Printhead connection, replace the Printhead.
Vertical lines are not in alignment	Bi-D adjustment is not made	Check to see if Bi-D adjustment has been done properly.	Perform Bi-D adjustment.
White lines appear in output data	Dirt is adhering to CR Guide Shaft	Check for dirt adhering to surface of CR Guide Shaft.	Clean the surface of the CR Guide Shaft with a soft dry cloth.
	PF Roller not operating properly	Check for dirt on PF Roller.	Carefully clean the surface of the PF Roller with a soft brush.
		Check for damaged PF Roller.	Replace the PF Roller.
	Ink Cartridge not operating properly	Install a new ink cartridge and test printing.	Replace the ink cartridge.
	Carriage Slide not moving properly	Check to see if sufficient grease is remaining on carriage slide parts at back of main frame.	Clean the main frame carriage slide parts and lubricate with a specified quantify of G-71. (See “ Lubrication at Installation of Carriage Assy” (p. 80))
	Platen Gap not set properly	Check to see if platen gap adjustment has been done properly.	Adjust platen gap. (See “5.1.2 PG Adjustment” (p. 73))
	Gear is damaged	Check for abnormality in gears between PF mechanism and ASF mechanism.	Replace the damaged parts.
	Dot jet direction is angled due to dirt on Printhead surface	Alternate cleaning and test printing several times.	Clean with a cotton swab.
		Check for dust and dirt on Cleaner Blade.	Clean or replace the Cleaner Blade.
	Printhead not operating properly	Repeat cleaning several times, and then perform test print.	Replace the Printhead.
CR Guide Shaft not operating properly	Check to see if CR Guide Shaft is firmly installed in specified position.	Reassemble the CR Guide Shaft.	
	Check for damage to surface of CR Guide Shaft.	Replace the CR Guide Shaft.	

3.3.2 Power Supply Related Troubleshooting

If the printer does not operate at all (LED does not light up) even with the power turned ON, refer to the following table and perform troubleshooting.

Table 3-6. Power Supply Related Troubleshooting

Cause	Check Point	Remedy
Defective power cord	Connect the normal power cord.	Replace the power cord.
Abnormal AC power voltage	Check the AC power voltage.	Supply the normal power.
Faulty connection of the connector	Check the connection between the Power Supply Board ~ Main Board (CN20).	Correct the connection.
Fuse blown	Check the fuse (F1) on the Power Supply Board.	Replace the Power Supply Board with a new one.
Abnormal output voltage of Power Supply Board	Check the output voltage of the Power Supply Board.	When the output voltage is normal: Replace the Main Board with a new one. When the output voltage is abnormal: Replace the Power Supply Board with a new one.

3.3.3 Ink Supply Related Troubleshooting

- Printer stops during initialization or printing.

Table 3-7. Troubleshooting for Printer Stop During Initialization or Printing

Condition	Cause	Check Point	Remedy
Ink End error is displayed.	Ink is out.	Check to see if ink is remaining in all the ink cartridges.	Replace the ink cartridge.
No Ink Cartridge error is displayed.	Not all the ink cartridges have been installed.	Check to see if all the ink cartridges have been installed in the I/C holders.	Install all the ink cartridges.
		Check to see if no ink cartridge is in a raised position.	Install the ink cartridge properly.
		The front or back hook of an ink cartridge is broken.	Replace the ink cartridge.
Ink Cartridge Trouble error is displayed.	Ink cartridge is damaged.	Check to see if the CSIC Board is not dislocated.	Replace the ink cartridge.
		Check to see if no chip on the CSIC Board is chipping.	Replace the ink cartridge.

- Printing is not carried out correctly.

Table 3-8. Diagnostics when printing is erratic

Condition	Cause	Check Point	Remedy
Carriage moves correctly but printing is not normal.	Ink Cartridge not operating properly	Install a new ink cartridge and test printing.	Replace the ink cartridge.
	FFC not connected properly	Check the FFC connection between each CSIC Board ~ Main Board.	Connect the FFC firmly.
	Cleaner Blade not operating properly	Check for debris adhering to Cleaner Blade.	Clean or replace the Cleaner Blade.
	FFC internal disconnection	Check each FFC with a circuit tester.	Replace the FFC.
	Faulty Printhead	Alternate cleaning and test printing several times.	When the condition is not improved even after cleaning, replace the Printhead with a new one.
	Ink leakage or clogging with ink	Check to see if there is ink leakage from the Printhead.	Install the ink cartridges properly. If this does not improve the condition, replace ink cartridges and the Printhead.

- Waste ink is not discharged properly

Table 3-9. Troubleshooting for Faulty Ink Supply or Faulty Waste Ink Discharge

Condition	Cause	Check Point	Remedy
Ink is not flowing from Printhead to Cap or from Cap to Ink Tube	Pump tube collapsed	Visually check tube.	Replace the Ink System Assy
	Cap is dirty or damaged.	Check for foreign object adhering to Cap or damaged Cap.	Remove foreign object from the Cap with cotton swab. If Cap is damaged, replace the Ink System Assy.
	Tube is disconnected from Cap bottom	Visually check for disconnection of tube from Cap bottom.	Connect the tube properly.
	Cap does not slide up properly	Check for installation of compression spring on tube assembly.	Replace the Ink System Assy with a new one.
	Tube between the Waste Ink Tray Assy ~I/S Assy collapsed	Check the tube connection on the bottom of the Waste Ink Tray Assy and the tube route under the tray.	Connect the tube of the Waste Ink Tray Assy properly, and route the tube properly.

3.3.4 I/F Related Troubleshooting

This section describes the troubleshooting for the USB I/F and Memory Card Slot.

- USB I/F error

Table 3-10. USB I/F Error

Cause	Check Point	Remedy
Host PC does not support Windows 98 essentially.	On Windows, open "My computer" →"Property" →"Device manager". "Universal serial bus controller" is effective?	Remove the USB driver, and install it again.
Printer driver is not installed correctly.	On Windows, open "My computer" →"Property" →"Device manager". Printer driver is not installed in "Other devices"?	Delete the driver and install it again according to operation manual.
Defective USB cable	Operation is normal if USB cable is replaced?	Replace the USB cable.
Poor contact	Check to see if there is no adhesion of foreign matters in the USB interface connector.	Remove the foreign matters, and clean the contact.
Defective main board	Check to see if main board is not damaged.	Replace the main board.

- Troubleshooting for Memory Card Slot

Table 3-11. Troubleshooting for Memory Card

Cause	Check Point	Remedy
Driver has not been installed correctly.	Check to see if a memory card is recognized in the single Assy mode.	Temporarily remove the driver, and then install it again.
Data has been destroyed.	Data on card may be destroyed owing to static electricity.	Check to see if card data is read by a PC. If not, format the card.
A memory card other than those specified is used.	Check the card to see if it is one of the specified cards.	Use a memory card specified.
Memory Card is faulty.	Check to see if another Memory Card can be recognized.	Use a new Memory Card.
Poor contact.	Check to see if foreign matters are not adhering to Memory Card or slot.	Remove the foreign matters, and clean the contact.
Firmware has abnormality.	—	Upload firmware.
Electric noise, etc. has been generated.	Check to see if FFC is connected correctly and Ferrite Core is positioned in place inside the printer.	After the confirmation, if they have no abnormality, replace the main board.
Defective main board	Check to see if main board is not damaged.	Replace the main board.

3.3.5 Troubleshooting for Scanner

This section describes repair/service for the Scanner mechanism. In troubleshooting, first identify the trouble at the Assy level based on the observation.

According to the observation as described in Table 3-13, perform the necessary checking by referring to the appropriate table.

- Scanner Errors at User Level

Table 3-12. Scanner Errors at User Level

Error	Cause	Remedy
Scanner error	<ul style="list-style-type: none"> Lamp has burnt out. Power is turned on without unlocking the scanner. The scanner carriage is interfering with any other part. 	<ul style="list-style-type: none"> Unlock the CR. Replace the scanner carriage Assy. Remove the obstacle.
Command error	Undefined command is detected.	When correct command is received, error status is cancelled. Turn the power off once and then turn it on again.
Scanner open	Scanner cover is open.	Close the cover.

- Observation of Trouble and Reference for Remedy

Table 3-13. Observation of Trouble and Reference for Remedy

Observation	Description of Trouble	Reference for Remedy
Even with power turned on, the machine does not operate.	The machine does not operate for initialization.	Table 3-14
“Fatal error” occurred. Indication error occurs and it is not cleared even after power is turned off once and then turned on again.	CR unit does not operate.	Table 3-15
	CR unit operates but error is indicated.	Table 3-16
	The fluorescent lamp does not turn on.	Table 3-17
Picture is not read clearly.	Picture is not read clearly.	Table 3-19
“Communication error”. Indication error occurs and when communication with the host is tried again, “Communication error” recurs.	USB interface error	Table 3-10

- Scanner does not operate for initialization

Table 3-14. Scanner does not operate for initialization

Cause	Check Point	Yes/No	Remedy
Connector is disconnected.	1. Check each connector for disconnection. Is there any connector disconnected?	Yes	Connect the disconnected connector.
		No	Replace the main board.

- Carriage unit does not operate

Table 3-15. Carriage unit does not operate

Cause	Check Point	Yes/No	Remedy
Connector on the Main Board is disconnected	<input type="checkbox"/> Is any of the connectors (CN5, 12 and 14) on the Main Board disconnected?	Yes	Connect the connector.
Faulty carriage moving mechanism	Grease is applied properly?	No	Apply grease at designated point (Refer to “6.1.3 Lubrication” (p.79))
	<input type="checkbox"/> Does CR motor operate when power is turned ON with upper case of Scanner removed? <input type="checkbox"/> Does CR unit move with CR motor removed?	No	Check the carriage moving mechanism, replace the relevant parts or remove and reinstall them.
Defective CR HP Board	Replace the CR HP sensor board	No	Replace the CR HP sensor board.
Faulty CR motor	Disconnect connector CN5 on CR HP sensor board and measure with a tester the continuity between pins 2 and 4 and between 1 and 3 on motor side.	No	Replace the CR motor.
Defective main board	–	–	Replace the main board.

- Carriage operates but error indicated

Table 3-16. Carriage operates but error indicated

Cause	Check Point	Yes/No	Remedy
Upper case of scanner is removed.	Upper case of scanner is removed.?	Yes	Install the upper case.
Defective main board	–	–	Replace the main board
Defective CR HP sensor	–	–	Replace the CR HP sensor board.

- Fluorescent lamp does not turn on

- CCD Unit

Table 3-17. Fluorescent lamp does not turn on

Cause	Check Point	Yes/No	Remedy
Connector on the Main Board is disconnected	Connector CN12 on main board is disconnected?	Yes	Connect the connector CN12 on the main board.
Defective lamp or Inverter Board	Does the lamp light up when the CCD Unit is replaced?	Yes	Replace the CCD Unit.
Defective main board	–	–	Replace the main board

- TPU Unit

Table 3-18. Fluorescent lamp does not turn on

Cause	Check Point	Yes/No	Remedy
Connector is disconnected	Is the connector (CN13) on the Main Board or either of the connectors (CN1 and 2) on the Inverter Board disconnected?	Yes	Connect the connector
Defective or life-expired lamp	Does the lamp light up when it is replaced?	Yes	Replace the TPU Case Assy.
Defective Inverter Board	Is problem solved when the Inverter Board is replaced?	Yes	Replace the Inverter Board.
Defective main board	–	–	Replace the main board

- Picture can not be read clearly

Table 3-19. Picture can not be read clearly

Cause	Check Point	Yes/No	Remedy
Soiled document table	Is the document table (glass) free from dirt and wiping mark?	No	Clean the document table.
Defective CCD Unit	–	–	Replace the CCD Unit.
Defective main board	–	–	Replace the main board

3.3.6 Troubleshooting for Motors and Sensors

- Motor

Table 3-20. Motor Resistance and Check Points

Motor Name	Location	Check Point	Resistance
CR motor	CN3 (White)	Pin 1 & 2	24.4Ω ± 10%
PF motor	CN4 (Black)	Pin 1 & 2	27.5Ω ± 10%
CR motor (Scanner Unit)	CN5 (White)	Pin 1 & 3 Pin 3 & 4	

- Sensor

Table 3-21. Sensor Check

Sensor Name	Location	Signal Level	Sensor Status
PE sensor	CN10 Pin 2 & 3	2.4 V or over	Paper absent
		Less than 0.4 V	Paper present
APG sensor	CN9 Pin 2 & 3	2.4 V or over	PG position
		Less than 0.4 V	Out of PG position
CD-R Guide sensor	CN11 Pin 1 & 2	Open: 2.4 V or over	CD-R Tray present
		Close: Less than 0.4 V	CD-R Tray absent
CD-R Tray sensor	Pin 3 & 4	Open: 2.4 V or over	CD-R Guide down
		Close: Less than 0.4 V	CD-R Guide up

Note : Refer to “2.1.2 Motors and Sensors” (p.17) for the locations of the motors and sensors.

CHAPTER

4

DISASSEMBLY AND ASSEMBLY

4.1 Overview

This section describes procedures for disassembling the main components of the product.

Unless otherwise specified, disassembled units or components can be reassembled by reversing the disassembly procedure.

4.1.1 Precautions

See the precautions given under the heading “WARNING” and “CAUTION” in the following column when disassembling or assembling the product.

Things, if not strictly observed, that could result in injury or loss of life are described under the heading “Warning”.

Precautions for any disassembly or assembly procedures are described under the heading “CAUTION”.

Chips for disassembling procedures are described under the heading “CHECK POINT”.

If the assembling procedure is different from the reversed procedure of the disassembling, the procedure is described under the heading “REASSEMBLY”.

Any adjustments required after disassembling the units are described under the heading “ADJUSTMENT REQUIRED”.

When you have to remove any units or parts that are not described in this chapter, refer to the exploded diagrams in the appendix.

Read precautions described in the next section before starting.



- **Remove the batteries and unplug the AC adapter before disassembling the Stylus PHOTO RX640/650.**
- **Always wear gloves for disassembly and reassembly to avoid injury from sharp metal edges.**
- **To protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.**



- **When using compressed air products; such as air duster, for cleaning during repair and maintenance, the use of such products containing flammable gas is prohibited.**
- **Use only recommended tools for disassembling, assembling or adjusting the Stylus PHOTO RX640/650.**
- **Observe the specified torque when tightening screws.**
- **Make the specified adjustments when you disassemble the Stylus PHOTO RX640/650. (See Chapter 5 for details.)**
- **Use the special package for transportation.**
- **Prior to disassembly and reassembly, remove the accessories, such as memory cards.**
- **When removing or installing exterior parts, take great care that no coated surface is scratched and no coating is peeled off.**

4.1.2 Tools

Use only specified tools to avoid damaging the Stylus PHOTO RX640/650.

Table 4-1. Tools

Name	Availability	Tool Code
Phillips precision screwdriver	EPSON	1080530
Phillips precision screwdriver	EPSON	1080532
Tweezers	EPSON	1080561

Note : “○” : available on the market
 “EPSON” : available from EPSON

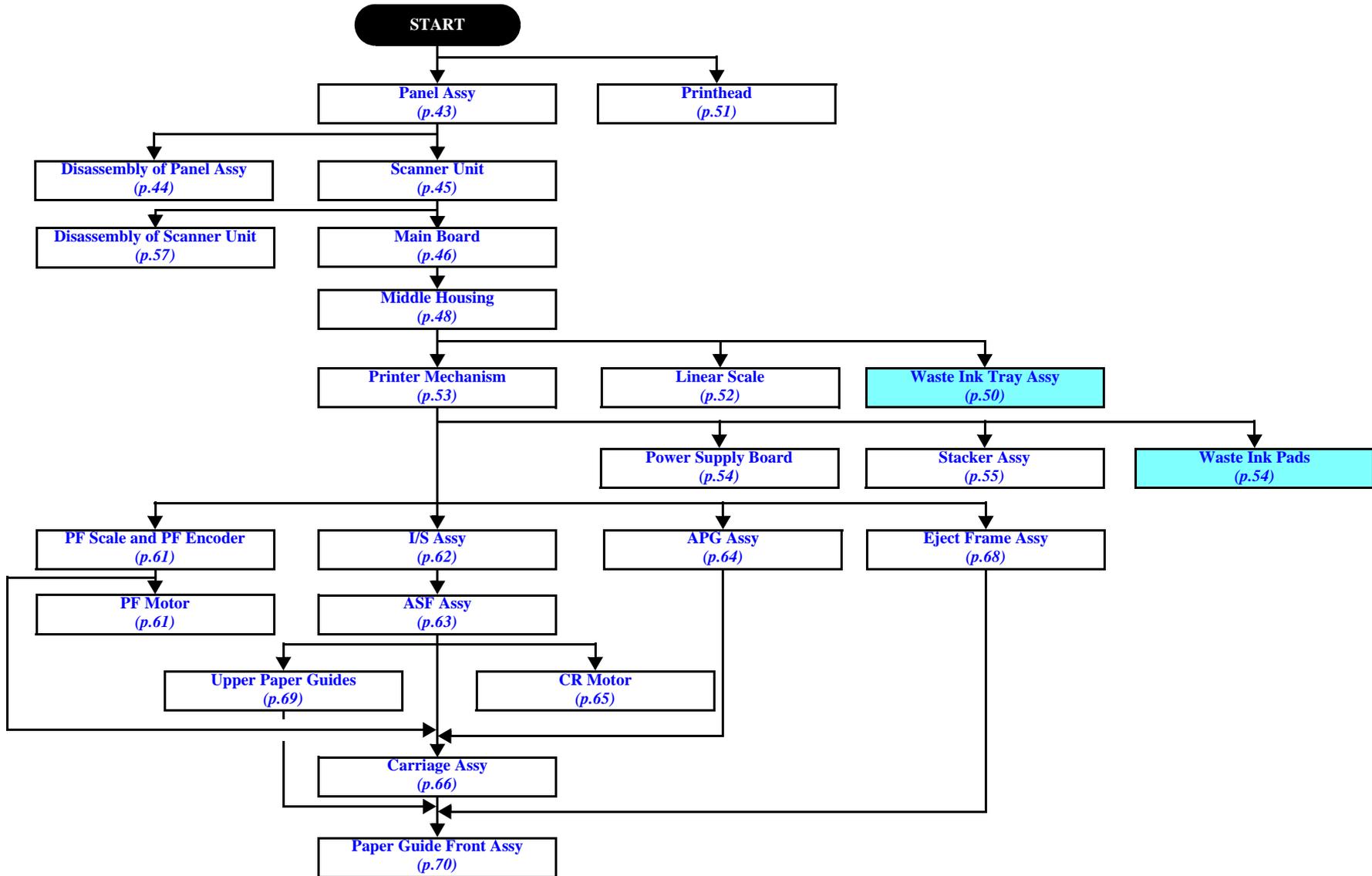
4.1.3 Preparation before Disassembly

Make the following preparations before disassembling the Stylus PHOTO RX640/650:

- When the Main Board is to be replaced, make a copy of the EEPROM data.
- When the Carriage Assy is to be moved out of its home position, locate it at a position other than the home position before starting disassembly by turning the power ON and turning it OFF timely.
- As soon as the repaired product has been returned to the user, there may be a case a maintenance call occurs because of the expiration of the life of a service part. Avoid such a case, if possible, as follows: Check the maintenance counter for regularly replaced parts before disassembly. If the life of any part is found almost expired, communicate with the user to that effect. If the user's consent is obtained, replace also the relevant service parts with new ones.

4.1.4 Disassembly and Reassembly Procedure

The flowchart below shows step-by-step disassembly procedure for Stylus PHOTO RX640/650. When disassembling each component, refer to the page number indicated for the relevant component.



Flowchart 4-1. Disassembly Procedure

4.2 Removal of Exterior Parts

4.2.1 Panel Assy

1. Open the Scanner Unit, and remove the screws (x3) securing the Middle Cover Assy. (Fig. 4-1)
2. Release the hooks (x3 at points marked with Δ) on the Printer Mechanism, the hooks (x5) in the front and the hook at the right side, and remove the Middle Cover Assy.
3. Release the hooks at the right and left ends from the direction of the back of the panel, raise the decorative panel, release all the hooks carefully and remove the decorative panel. (Fig. 4-2)
4. Remove the screws (x2) securing the Panel Assy. (Fig. 4-3)
5. Lift the Panel Assy, and disconnect the FFCs (x2).



- Install the decorative panel, taking care not to confuse the front and back of the Light Conduction Tubes. (Fig. 4-4)
- When installing the Middle Cover, take care not to catch the Head FFC. If possible, move the carriage to the left beforehand. (Fig. 4-4)

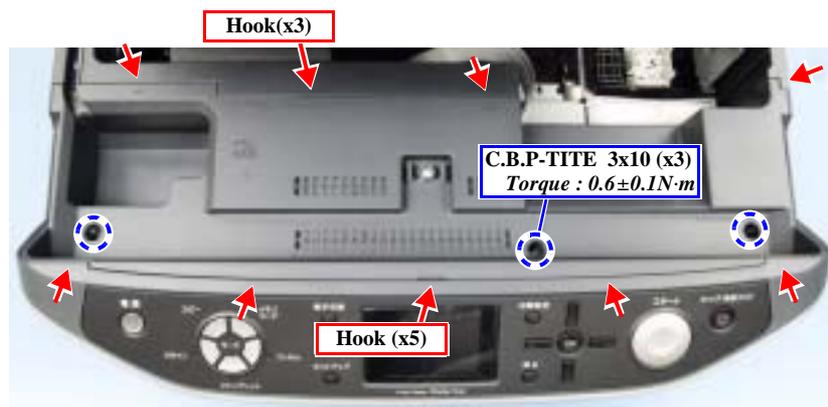


Figure 4-1. Removing the Middle Cover Assy



Figure 4-2. Removing the Decorative Panel

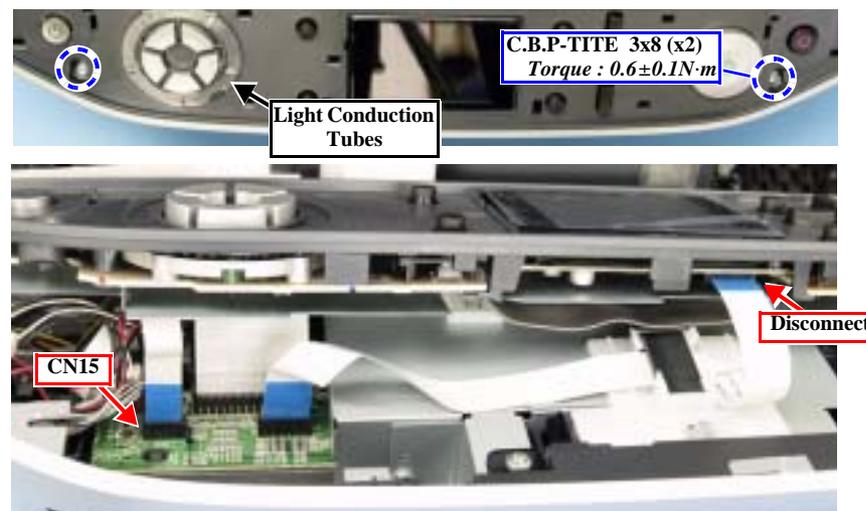


Figure 4-3. Removing the Panel Unit

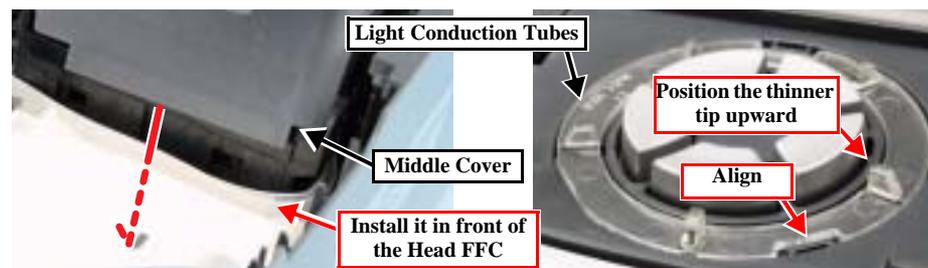


Figure 4-4. Notes on Installing the Panel Assy

4.2.2 Disassembly of Panel Assy



Do not use any cleaning liquid to clean the LCD. Otherwise, the surface membrane can come off.
For cleaning, blow off the dust with a blower.

1. Remove the Panel Assy. (p. 43)
2. Remove the screws (x6) securing the Shield Plate, Panel Board and Ground Plate, and remove the Shield Plate upward. (Fig. 4-5)
3. Release the hooks, and remove the Panel Board. (Fig. 4-6)
4. Remove the screws (x4), and remove the LCD Module. (Fig. 4-7)



- When installing the LCD Module, make sure that the inside of the LCD Cover is free from dust and dirt.
- Tighten the screws for the LCD Module in the order specified. (Fig. 4-7)
- After installing the LCD Module, route the harness as shown and make sure that it is free from floating. (Fig. 4-7)
- Install the Shield Plate under the board-to-board cable.
- When installing the Shield Plate, tighten the screws in the order specified. (Fig. 4-5)
- After installing the Shield Plate, press each of the buttons and check that a click is felt.

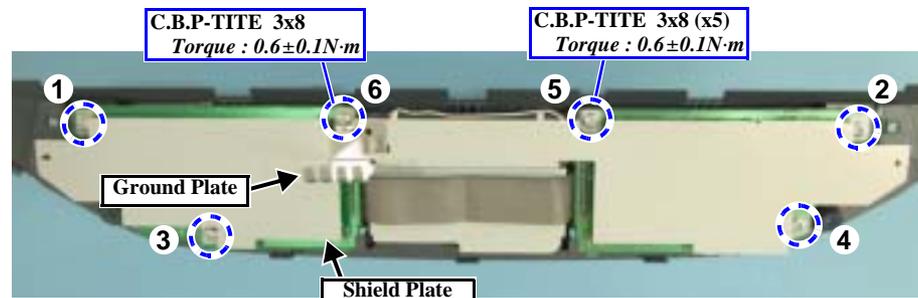


Figure 4-5. Removing the Screws (Shield Plate)

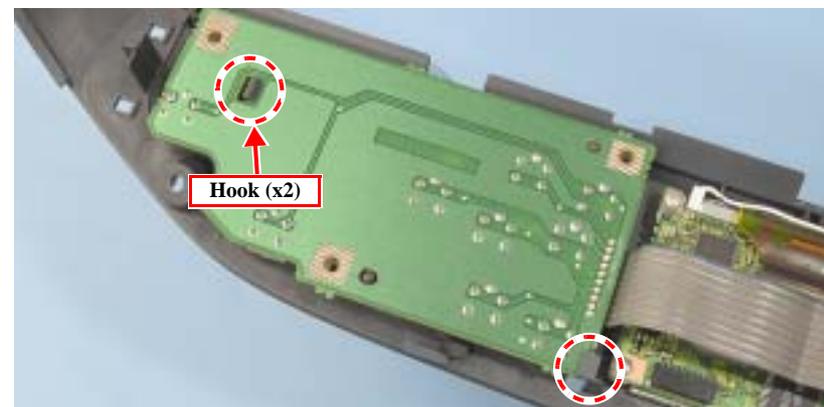


Figure 4-6. Removing the Panel Board

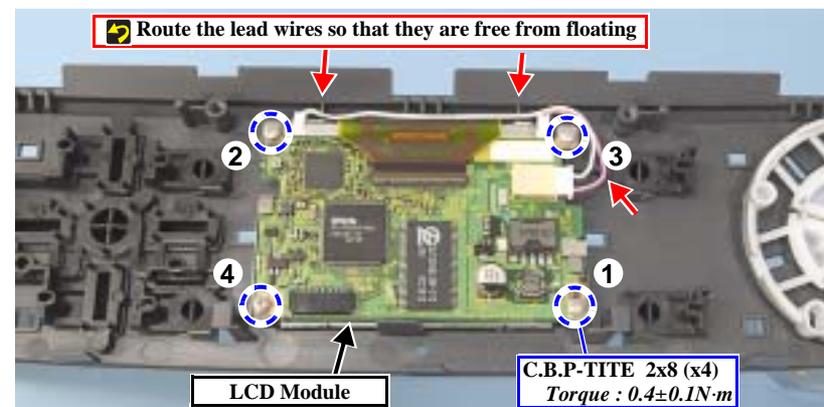


Figure 4-7. Removing the LCD Module

4.2.3 Scanner Unit

1. Remove the Panel Assy. (p. 43)
2. Remove the Paper Support.
3. Lift the joint area of the USB Cover and remove the USB Cover by pulling it toward you. Then remove the light-shield foam. (Fig. 4-8)
4. Disconnect the following FFCs and cables from the Main Board. (Fig. 4-9)

CN No.	Color	Connected to	Remarks
CN5	White	CR Motor Unit	4-pin (With ferrite core)
CN12	(FFC)	CCD Unit	28-pin (With ferrite core)
CN13	Red	TPU Unit	2-pin
CN14	Yellow	HP Sensor	3-pin

5. Remove the screw securing the grand wire of the scanner.
6. Close the Scanner Unit, and remove the screws (x2) in the rear. (Fig. 4-10)
7. Remove the Scanner Unit, kept in the open position, from the printer body.



- Put the FFC into the housing as shown. (Fig. 4-11)
- Put the clamp portion of the black harness (red: CN 13) of the TPU Unit into the printer body. (Fig. 4-11)
- Route the harness as shown and set the ferrite cores in place, and then stick the acetate tape. (Fig. 4-9)

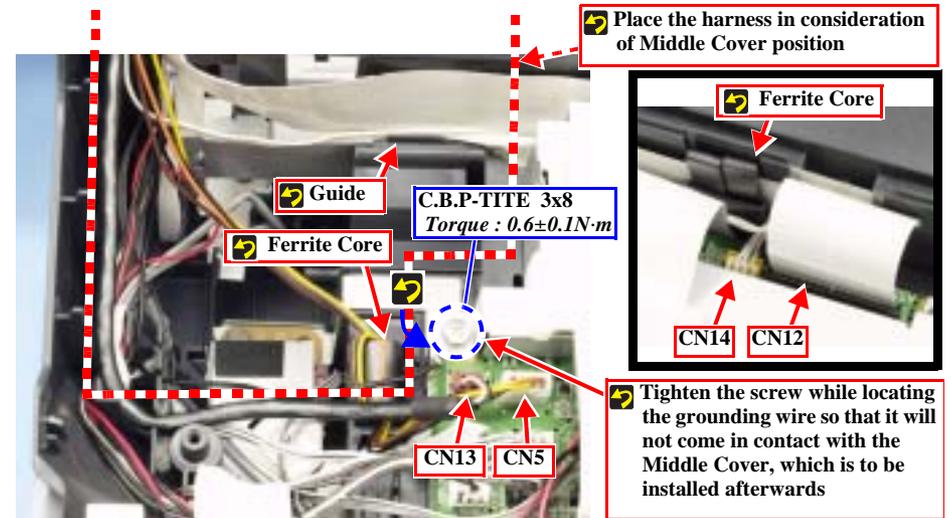


Figure 4-9. Disconnecting the cables (Scanner Unit)



Figure 4-10. Removing the Scanner Unit

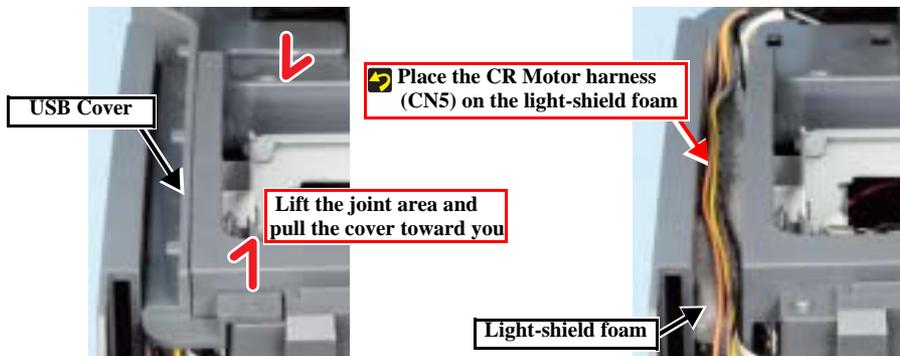


Figure 4-8. Removing the USB Cover

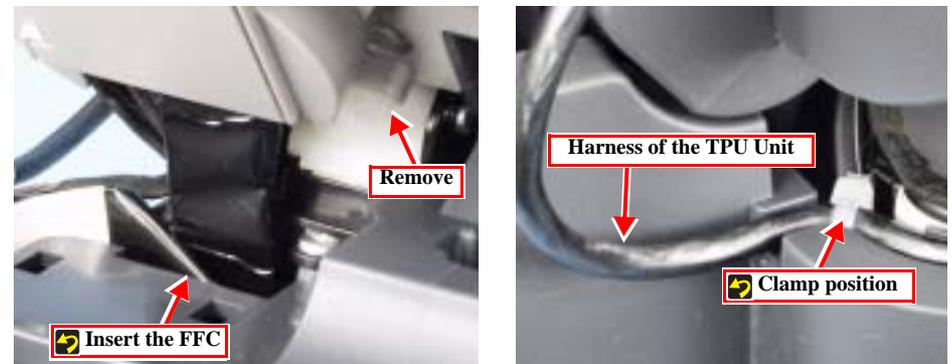


Figure 4-11. Joint Area with the Printer

4.2.4 Main Board



When the Main Board is to be replaced, back up the data in EEPROM before starting disassembly, if possible. After assembly, make the following adjustment.

- 5.1.1 Adjustment by Use of Adjustment Program (TBD) (p. 72)

1. Remove the Panel Assy. (p. 43)
2. Remove the Ferrite Core Holder for the Head FFC. (Fig. 4-13)
3. Disconnect all the FFCs and connectors from the Main Board.
4. Remove the ferrite core for the Control Panel FFC from the holder, and remove the holder from the Shield Plate M/B. (Fig. 4-13)
5. Remove the screws (1+1), and remove the USB Host Assy.
6. Remove the screws (4+1), and remove the Main Board Assy. (Fig. 4-14)
7. Remove the screws (x2), and remove the Shield Plate and Shield Plate M/B Support. (Fig. 4-15)
8. Remove the screws (x3), and remove the Main Board. (Fig. 4-15)

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Figure 4-12. Main Board Layout

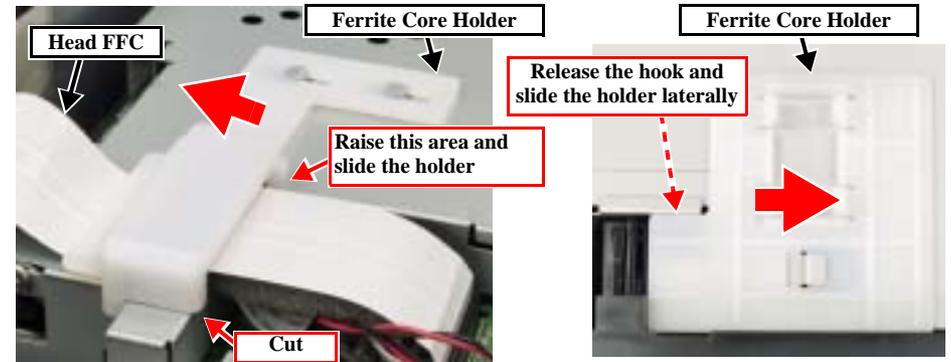


Figure 4-13. Removing the Ferrite Core Holder

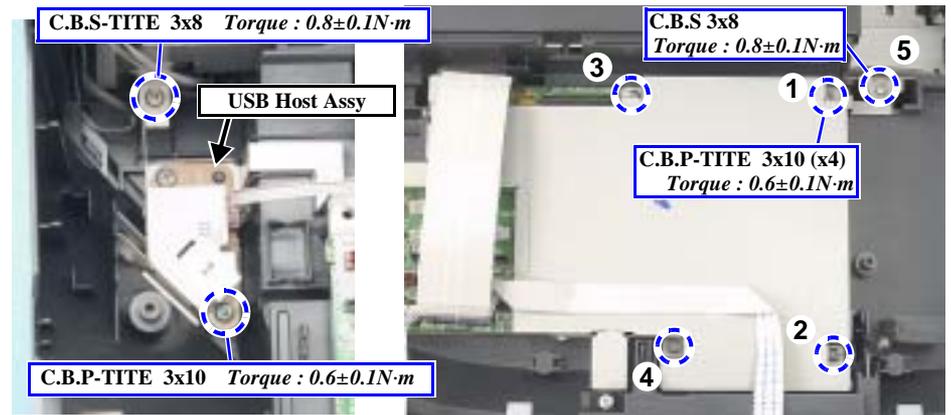


Figure 4-14. Removing the Main Board Assy

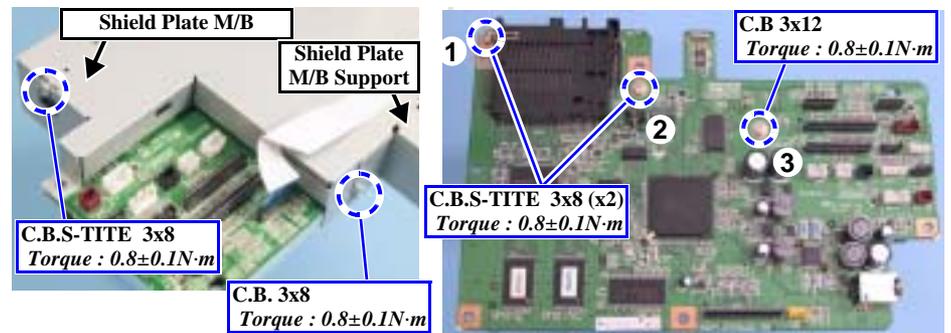


Figure 4-15. Removing the Main Board



- Tighten the screws in the order specified to secure the Main Board and Main Board Assy. (Fig. 4-15, Fig. 4-14)
- Route the harness along the guide in the left area of the housing, set the ferrite cores in the locations shown, and stick acetate tape on the ferrite cores. (Fig. 4-17)

CN No.	Color	Connected to	Remarks
CN2	Red	USB I/F Board	4-pin (With ferrite core)
CN3	White	CR Motor	2-pin (With ferrite core)
CN4	Black	PF Motor	2-pin (With ferrite core)
CN6	(FFC)	Printhead	28-pin (With ferrite core)
CN7	(FFC)	Printhead	25-pin (With ferrite core)
CN8	(FFC)	PF Encoder	5-pin (With ferrite core)
CN9	Black	APG Sensor	3-pin (With ferrite core)
CN10	White	PE Sensor	3-pin (With ferrite core)
CN11	White	CD-R Sensor (Guide & Tray)	4-pin
CN15	(FFC)	LCD	8-pin
CN16	(FFC)	Panel Board	11-pin (With ferrite core)
CN20	White	Power Supply Board	3-pin

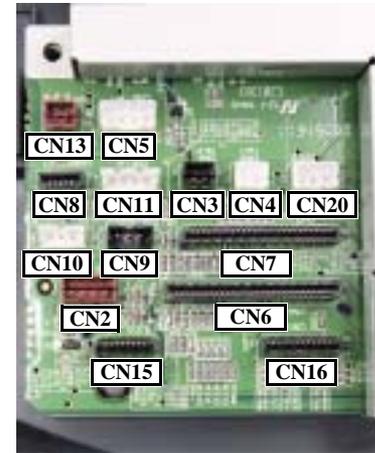


Figure 4-16. Connection of the Connectors on the Main Board



The methods for unlocking the carriage (moving the carriage from its home position) are as follows:

- While the printer is operating, turn power OFF by unplugging the AC cable so that the carriage is shifted from its home position.
- Turn by hand the EJ roller gear at the left side of the printer. (Take care not to get injured with any nearby sheet metal part.)

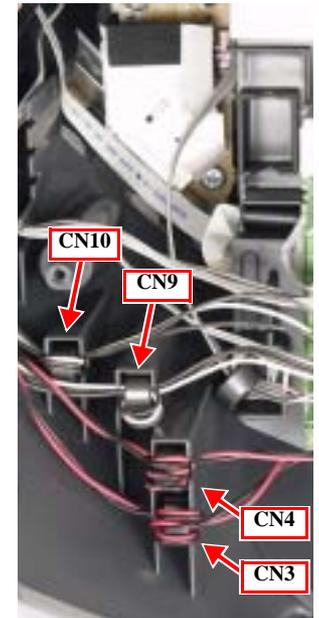
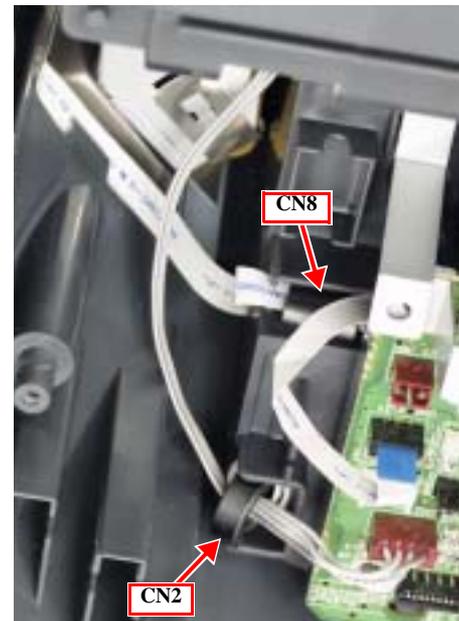
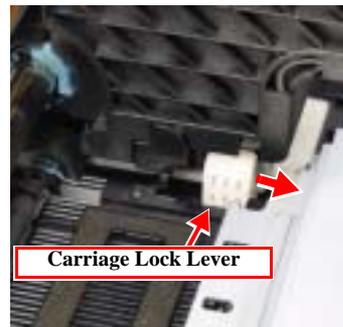
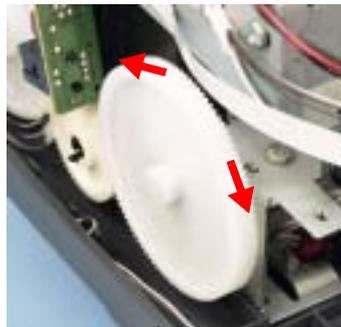


Figure 4-17. Routing the Harness and Setting the Ferrite Cores

4.2.5 Middle Housing

CAUTION

! After removing the Waste Ink Assy, take due care not to stain any surrounding objects with waste ink.

1. Remove the Panel Assy. (p. 43)
2. Remove the Scanner Unit. (p. 45)
3. Remove the Main Board. (p. 46)
4. Remove the Stacker Cover from the right and left supports. (Fig. 4-18)
5. Remove the screws (x2) securing the Waste Ink Assy.
(Do not remove the tube) (Fig. 4-19)
6. Remove the screw and remove the Hinge Assy (left and right). (Fig. 4-19)
7. Remove the screws (3 in the front and 2 in the rear) securing the Middle Housing Assy. (Fig. 4-20)
8. Remove the Middle Housing Assy, taking care not to damage any cables or the Waste Ink Assy.

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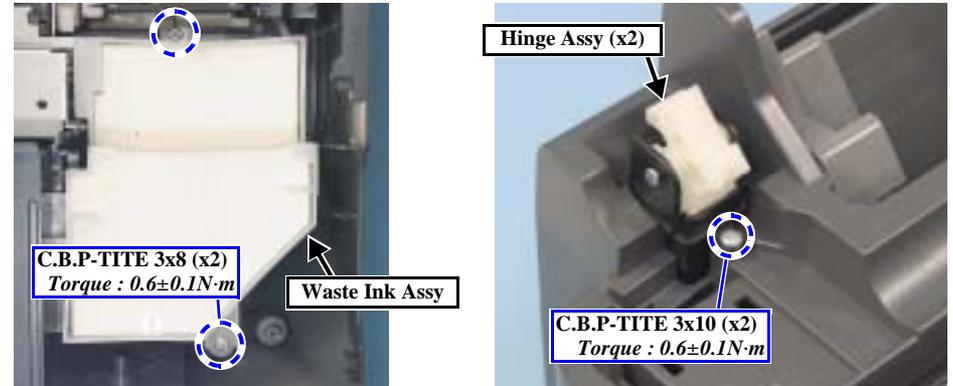


Figure 4-19. Removing the Waste Ink Assy and the Hinge Assy



Figure 4-20. Removing the Middle Housing Assy

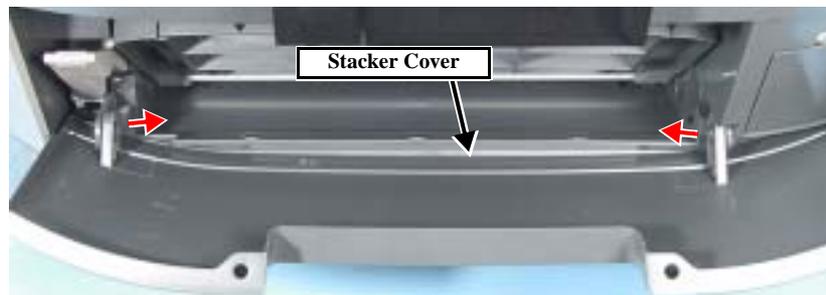
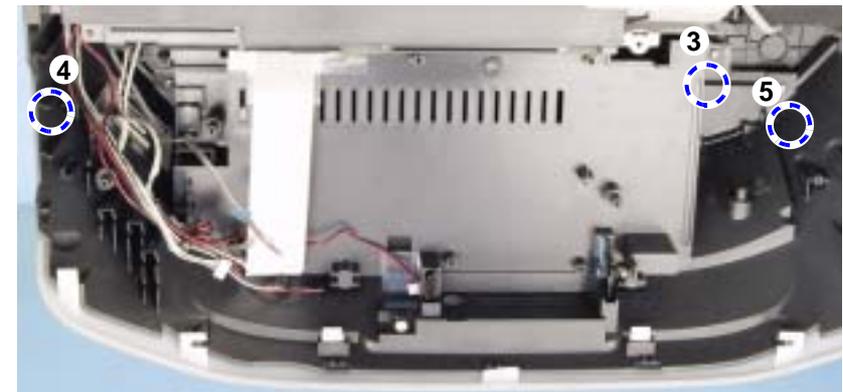


Figure 4-18. Removing the Stacker Cover





- Check the following before installing the Middle Housing:
 - Stacker operates properly. (p.55)
 - The harness is routed properly. (Fig. 4-21), (Fig. 4-22)
- When installing the Middle Housing, check the following:
 - Printhead FFCs (x2) are lead out properly. (Fig. 4-23)
 - Ground Plate is located in front of printer frame. (Fig. 4-23)
 - The left and right bottom areas of the Front Housing are engaged with the projections of Bottom Housing. (Fig. 4-24)
 - The screws are tightened in the order specified. (Fig. 4-20)

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After setting the ferrite cores in place, stick the acetate tape.

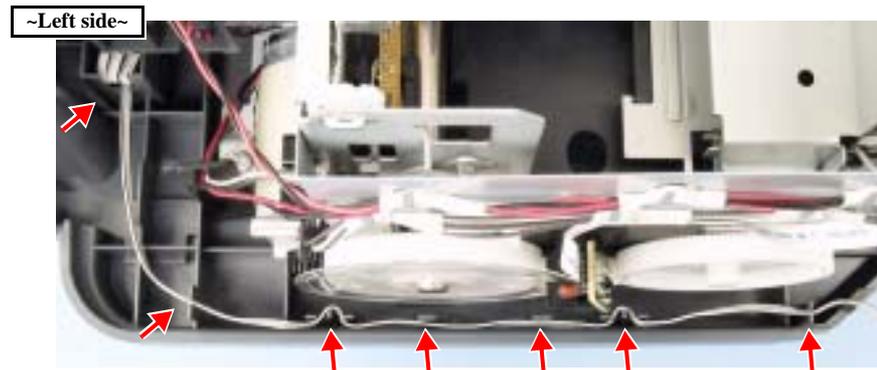
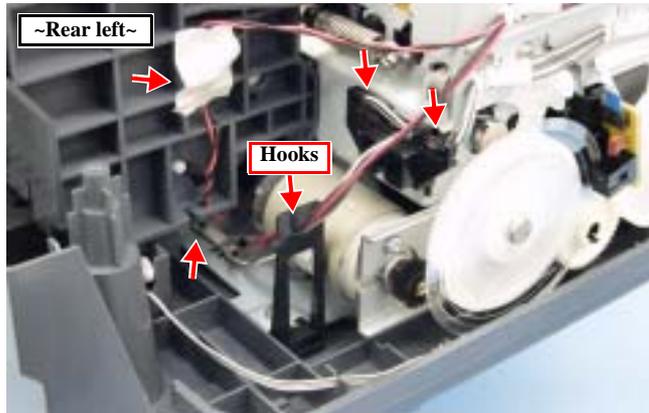


Figure 4-21. Routing the Harness 1

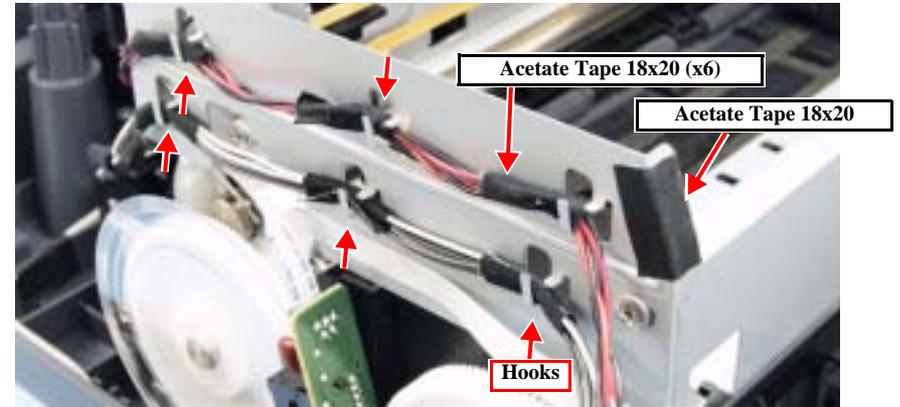


Figure 4-22. Routing the Harness 2

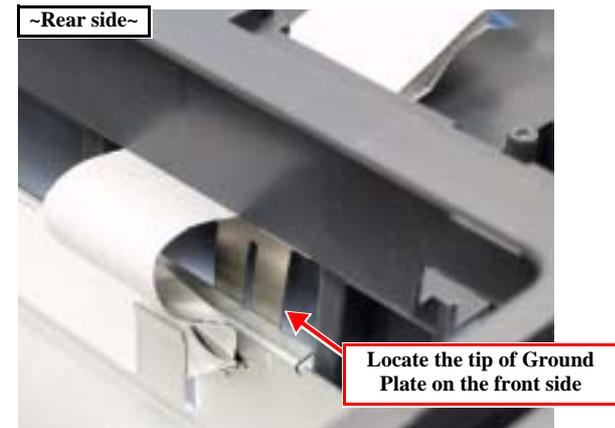
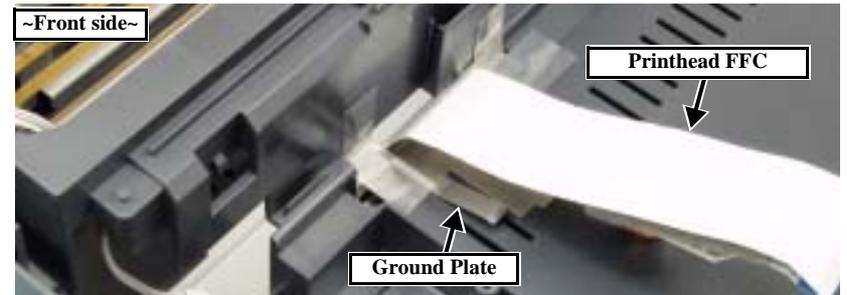


Figure 4-23. Routing the Printhead FFC



■ After installing the Middle Housing, check the following conditions:

- Waste Ink Tube is routed properly. (Fig. 4-24)

4.2.6 Waste Ink Tray Assy



When removing the Waste Ink Tray Assy, take due care not to stain any surrounding objects with waste ink.

1. Remove the Panel Assy (p.43)
2. Remove the Scanner Unit. (p. 45)
3. Remove the Middle Housing (p.48)
4. Remove the Waste Ink Tube from the Waste Ink Tray Assy. (Fig. 4-25)



■ When connecting the Waste Ink Tube, wipe the ink, if any, off the joint area of the tube. With ink left adhering to the joint area, the tube cannot be connected firmly and thus may easily come off.

■ Route the Waste Ink Tube along the hooks of the Housing Lower Assy, and take care that the tube is not flattened with the Waste Ink Tray. (Fig. 4-24)



On the occasion of replacing a part with a new one, replace all the specified parts with new ones and clear the counter value after assembly.

■ [5.1.1 Adjustment by Use of Adjustment Program \(TBD\) \(p.72\)](#)

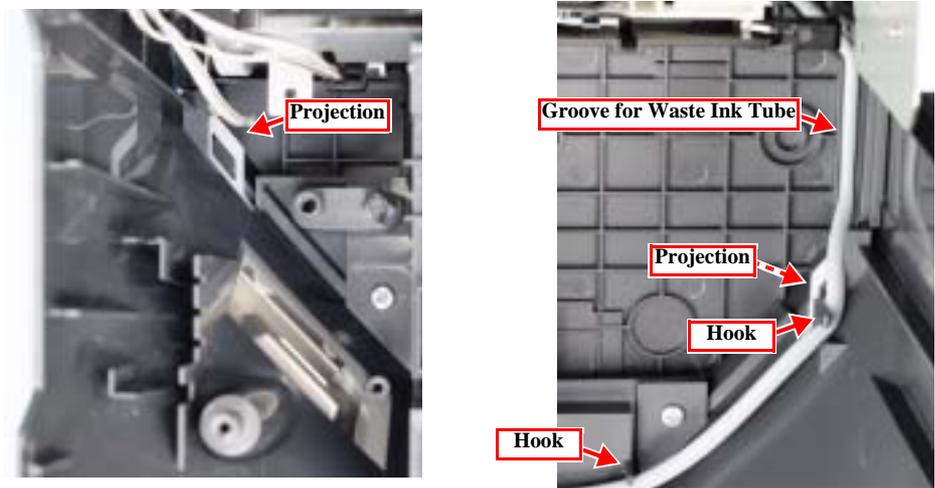


Figure 4-24. Checking the installation of the Middle Housing



Figure 4-25. Removing the Waste Ink Tray Assy

4.2.7 Printhead

CAUTION



- Take due care not to stain any surrounding objects with ink. In addition, be careful not to clog the nozzles by, say, touching the nozzle side with your bare hand.
- When removing the Head FFC Cover, do not use any pointed tool; otherwise, the FFC may be damaged.

CHECK POINT



Stylus PHOTO RX640/650 does not have any mechanism that permits the operator to unlock the carriage. Therefore, turn the power ON and unplug the power cable from the wall outlet timely after seeing the movement of the carriage to locate it at a position other than the home position.

- Move the Carriage Assy to the position where the cartridges are to be replaced.
- Open the cartridge cover, and remove all the ink cartridges.
- Insert a slotted screwdriver under the hook of the Head FFC Cover, and move it upward and remove the Head FFC Cover. (Fig. 4-26)
- Using a screwdriver with a short shank, remove the screws (x3) securing the Printhead. (Fig. 4-27)
- Lift the Printhead, and disconnect the FFCs (x2).

REASSEMBLY



- See [Page 67](#) for how to remove the cartridge cover.
- When installing the Printhead, tighten the screws in the specified order. (Fig. 4-27)
- When installing the Head FFC Cover, make sure that the upper guides (right and left) are engaged with the bottom hooks (left and right) properly.

ADJUSTMENT REQUIRED



For replacing the Printhead, note down the head ID before installing the Printhead. After reassembly, refer to the following section and perform the necessary adjustments:

- [5.1.1 Adjustment by Use of Adjustment Program \(TBD\) \(p. 72\)](#)

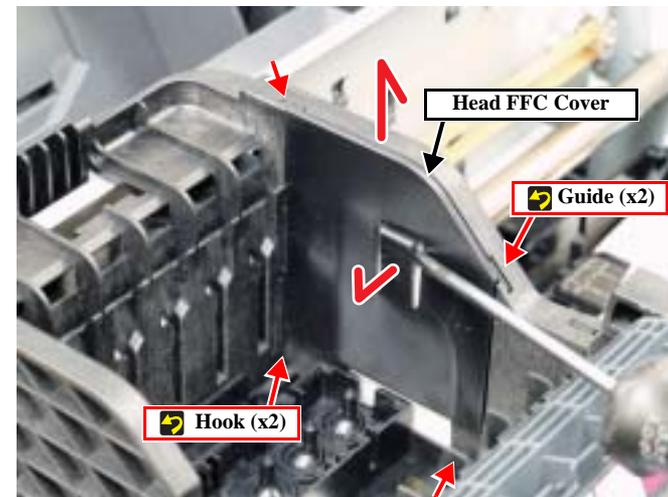


Figure 4-26. Removing the FFC Cover

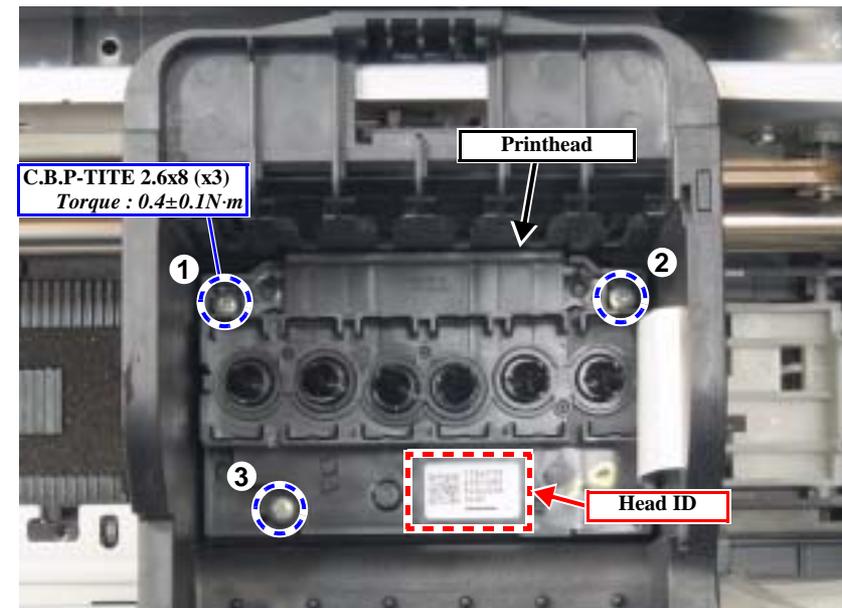
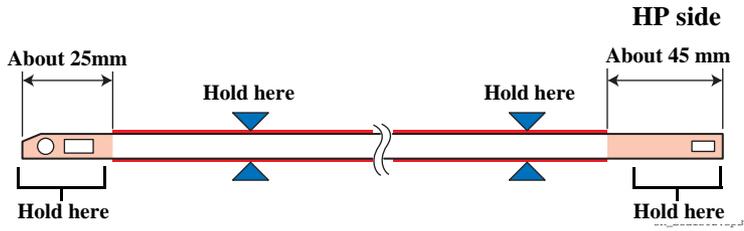


Figure 4-27. Removing the Printhead

4.2.8 Linear Scale



When you hold the Linear Scale, hold its ends or two points of the top and bottom surfaces with your hands; do not touch the reading surface. Take care that the reading surface is not soiled or scratched.



Stylus PHOTO RX640/650 does not have any mechanism that permits the operator to unlock the carriage. Therefore, turn the power ON and turn it OFF timely after seeing the movement of the carriage to locate it at a position other than the home position.

1. Remove the Scanner Unit (p.45)
2. Remove the spring from the left frame of the printer. (Fig. 4-28)
3. Release the Linear Scale from the hook at the right frame of the printer.
4. Pull out the Linear Scale from the CR Encoder of the Carriage Assy.
5. Turn the Linear Scale upward by 90 degrees and release it from the left hook.



Install the Linear Scale with the cut portion toward upper left.

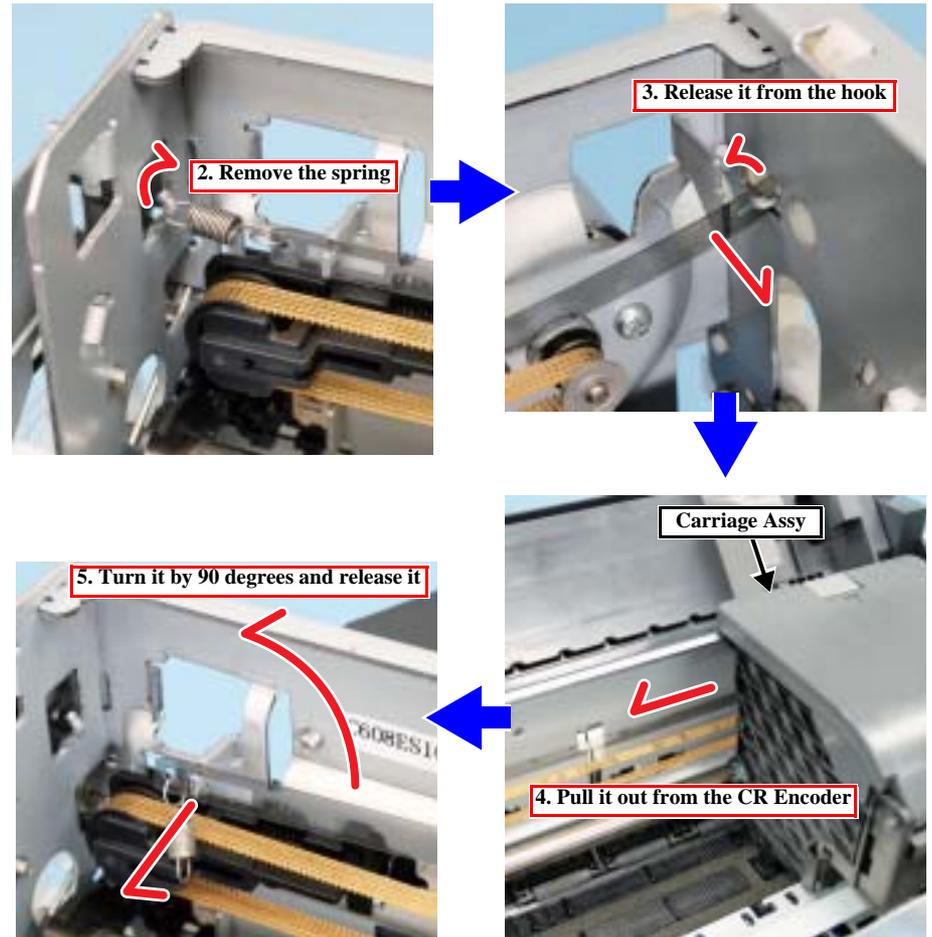
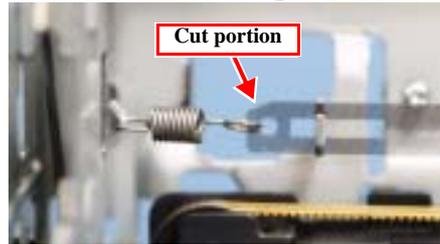
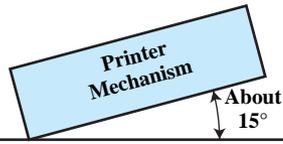
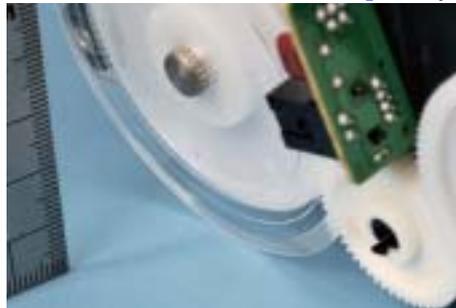


Figure 4-28. Removing the Linear Scale

4.2.9 Printer Mechanism



- Do not remove or install the Printer Mechanism Assy with the CD-R Guide in the lower position; otherwise, CD-R Guide Sensor may be damaged. (Fig. 4-30)
Before starting work, be sure to raise the CD-R Guide.
- The PF Scale comes in contact with the floor if the Printer Mechanism Assy is turned counterclockwise by about 15 degrees. In such a case, the PF Scale may be damaged. Take great care not to damage the PF Scale when handling the removed Printer Mechanism Assy. (Alternatively, *remove the PF Scale and PF Encoder. (p.61)*)



! Do not incline it by 15 degrees or more and do not drag it in an inclined position.

- Since the back of the CR Frame is lubricated, take care not to stain your hand with grease when holding the Printer Mechanism Assy. (Do not touch any other parts with a greasy hand.)



- Lubrication is necessary. Refer to the following section and lubricate the specified points:
[Lubrication of Printer Mechanism Assy \(p.81\)](#)
- Tighten the screws in the specified order. (Fig. 4-29)



- Once the Printer Mechanism Assy replaced with a new one, refer to the following section and perform the necessary adjustments.
- [5.1.1 Adjustment by Use of Adjustment Program \(TBD\) \(p.72\)](#)



Figure 4-29. Removing the screws (Printer Mechanism Assy)

1. Remove the Panel Assy (p.43)
2. Remove the Scanner Unit (p.45)
3. Remove the Middle Housing (p.48)
4. At the rear of the printer, peel off the tape, and remove the ferrite core for the CR Motor from the Housing Lower Assy.
5. Remove the screws (x6) securing the Printer Mechanism Assy. (Fig. 4-29)
6. Push the CD-R Guide Lever to raise the CD-R Guide.
7. Remove the Printer Mechanism Assy from the Housing Lower Assy carefully.

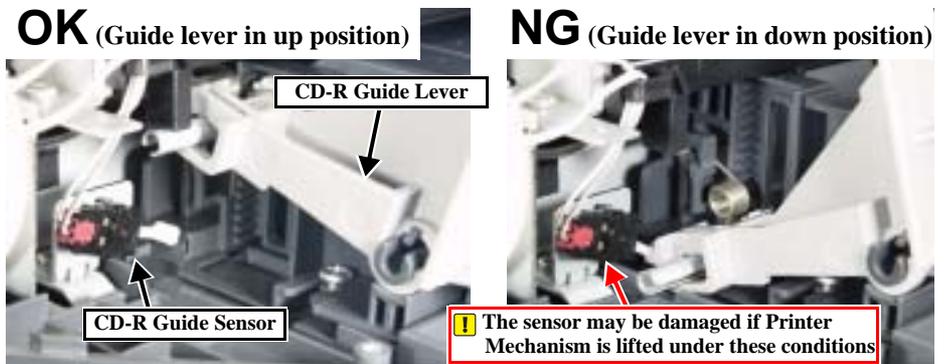


Figure 4-30. CD-R Guide Lever and CD-R Guide Sensor

4.3 Disassembly of Housing Lower Assy

4.3.1 Waste Ink Pads



- When removing the Waste Ink Pads, take due care not to stain any surrounding objects with waste ink.
- Place the Waste Ink Pads (x2) by pushing them along the cut portions until they are all the way seated and make sure that they are free from floating.

1. Remove the Printer Mechanism (p.53)
2. Remove Waste Ink Pads (x2) from the Housing Lower. (Fig. 4-31)



- On the occasion of replacing a part with a new one, replace all the specified parts with new ones and clear the counter value after assembly.
- 5.1.1 Adjustment by Use of Adjustment Program (TBD) (p.72)

4.3.2 Power Supply Board

1. Remove the Printer Mechanism (p.53)
2. Remove the screw securing the P/S Assy, and remove it from the Housing Lower. (Fig. 4-32)
3. Remove the screw, and remove the P/S Cover. (Fig. 4-33)
4. Disconnect the connector, and remove the Power Supply Board.



- Before installing the P/S Cover, route the connector harness so that it is lead out through the position shown in the figure.
- Install the P/S Assy in the Housing Lower by installing the AC connector side first and set the ferrite core.



- When the Power Supply Board has been replaced with a new one, refer to the following section and perform the necessary adjustments.
- 5.1.1 Adjustment by Use of Adjustment Program (TBD) (p.72)

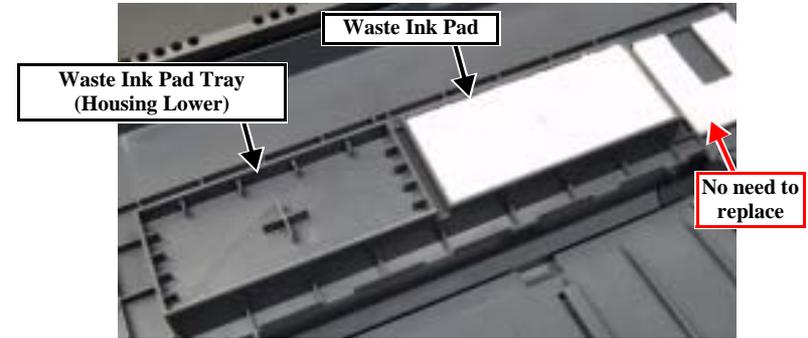


Figure 4-31. Removing the Waste Ink Pads

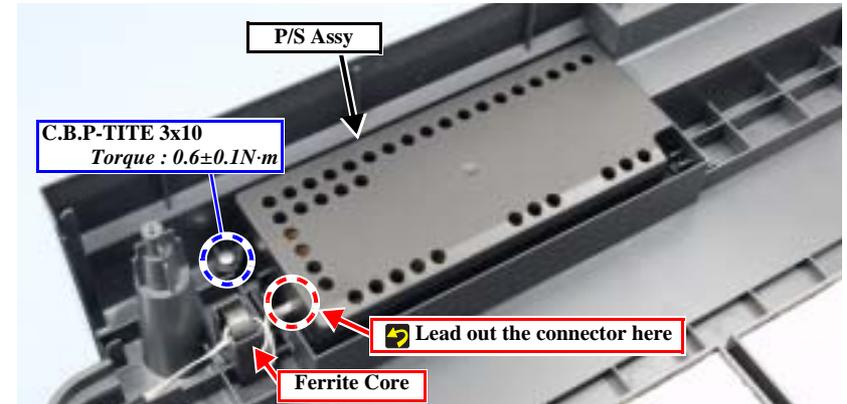


Figure 4-32. Removing the P/S Assy

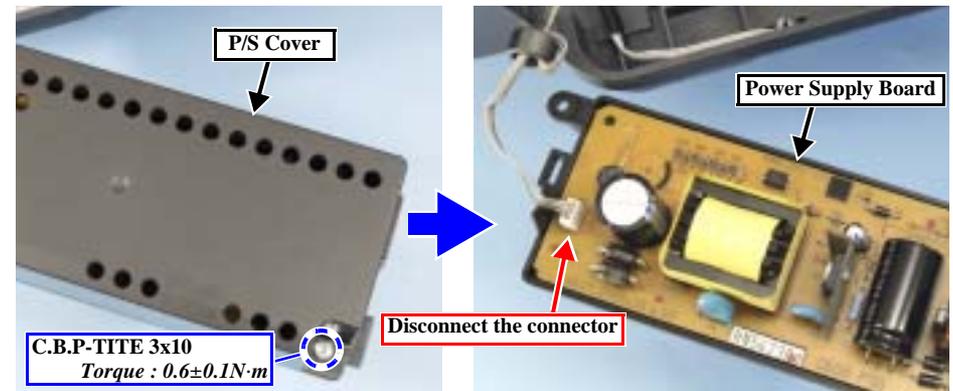


Figure 4-33. Removing the Power Supply Board

4.3.3 Stacker Assy

1. Remove the Printer Mechanism (p.53)
2. Push the CD-R Guide Lever to raise the CD-R Guide.
3. Release the hook, and remove the CD-R Guide Lever. (Fig. 4-34)
4. Lower the CD-R Guide, slide the shaft side of the CD-R Guide Lever Spring, release its hook side end, and remove the spring. (Fig. 4-35)
5. Remove the screws (x4) securing the Stacker Assy. (Fig. 4-36)
6. Holding the right and left Stacker Guide areas, remove the Stacker Assy from the Housing Lower.
7. Release the hook, and remove the gear from the CD-R Shaft. (Both right and left)
8. Remove the CD-R Shaft from the Stacker.

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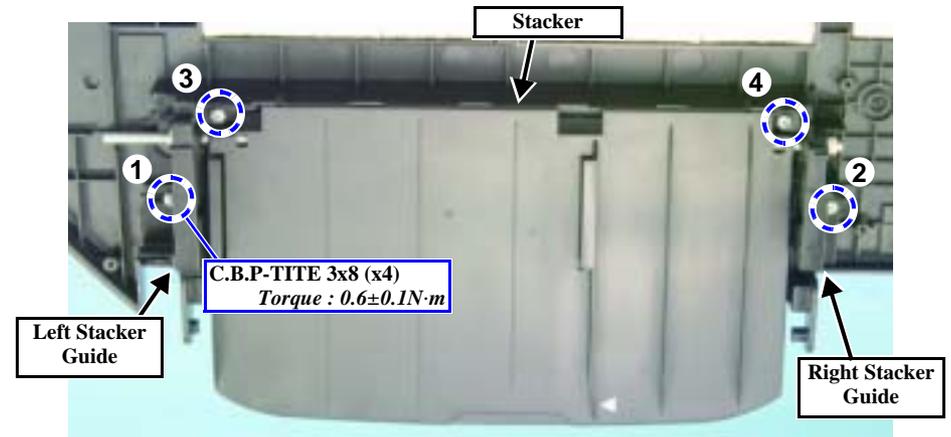


Figure 4-36. Removing the Stacker Assy

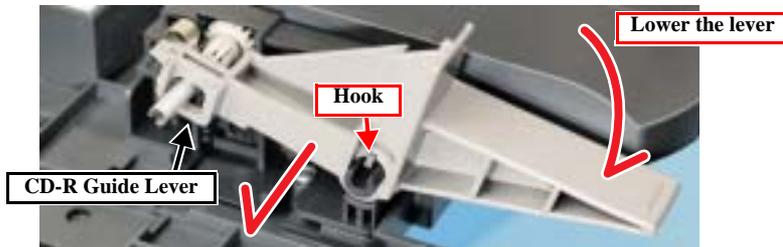


Figure 4-34. Removing the CD-R Guide Lever

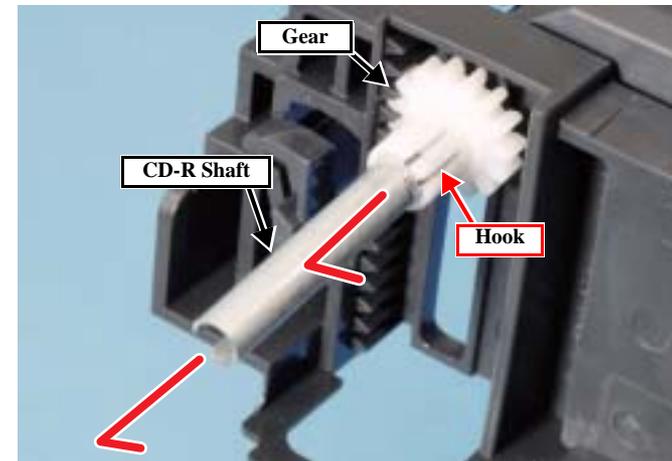


Figure 4-37. Removing the Gear and the CD-R Shaft

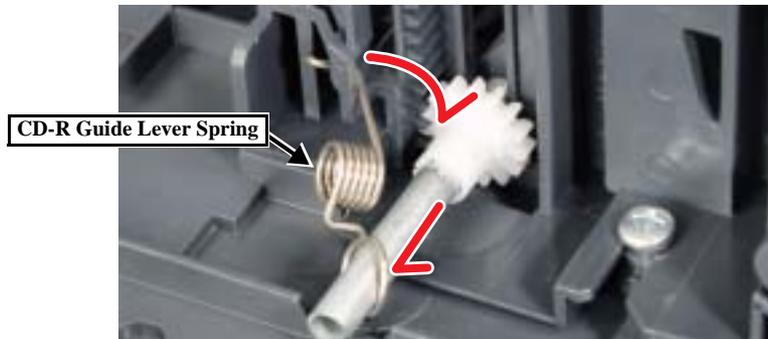


Figure 4-35. Removing the CD-R Guide Lever Spring



- When installing the CD-R Shaft, orient it so that the side where the distance from the shaft end to the hole for the hook of the gear is larger is positioned left (on the spring side), and pass it through the Stacker. (Fig. 4-38)
- Before tightening the screws, confirm the following conditions:
 - ◆ Right and Left Stacker Guides have been installed properly. (Check the 2 locating holes and 1 projection)
 - ◆ Stacker has been installed properly. (Check the following positions with the Stacker in the down position.) (Fig. 4-39)
 - Projections (x2) in the rear (under the Stacker Guides)
 - Protrusions at right and left sides (inserted in guide groove)
- Tighten the screws in the specified order. (Fig. 4-36)
- See Fig. 4-40 for installation of the CD-R Guide Lever Spring.



If the Stacker is not horizontal in the right and left direction, remove the right gear, and install the gear again with the Stacker in the highest position.



Figure 4-38. Installing the CD-R Shaft

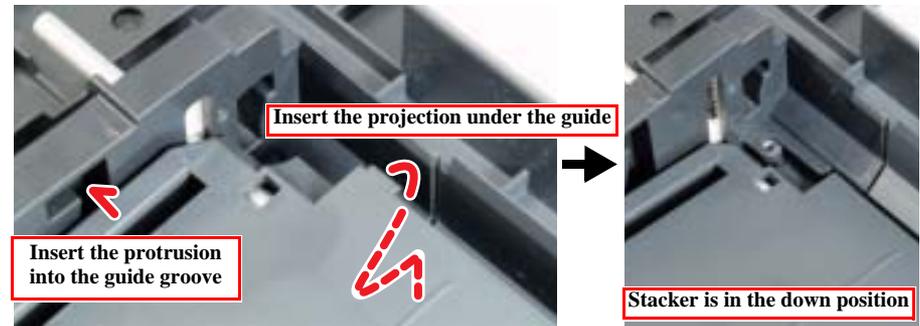
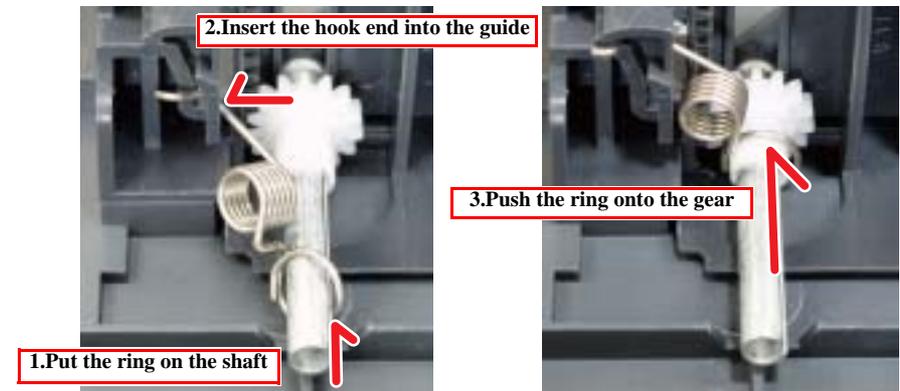


Figure 4-39. Installing the Stacker



After installing the spring, move Stacker up and down and check the installation of the spring.

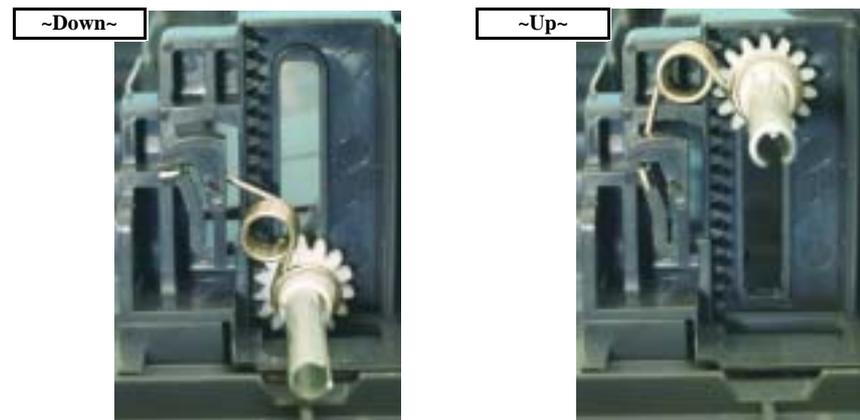


Figure 4-40. Installing the CD-R Guide Lever Spring

4.4 Disassembly of Scanner Unit

4.4.1 Scanner Housing

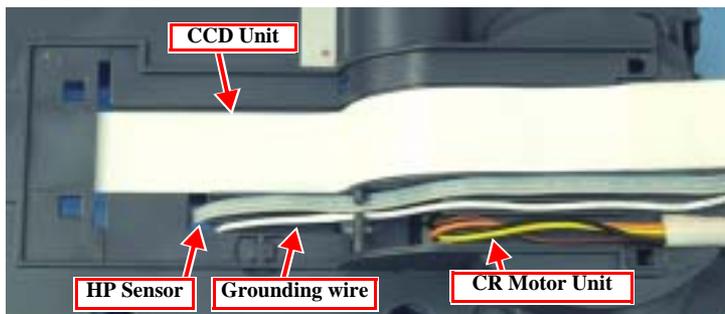


- Once the Scanner Housing is removed, there is a possibility that dust and dirt may enter the inside of the scanner body. Perform disassembly and assembly of the Scanner Unit in an environment that minimizes intrusion of dust and dirt. Disassembly and assembly on a clean bench is ideal.
- Perform disassembly and assembly with care not to damage the document table (glass). In addition, never forget that a very troublesome cleaning is required if dirt sticks to the inside of the document table.

1. Remove the Scanner Unit (p.45)
2. At the rear of the Scanner Unit, insert a slotted screwdriver into the gap shown in the figure, release the hook of the FFC Cover (inside), and remove the FFC Cover by sliding it inward. (Fig. 4-41)
3. Remove the screws (x5) on the bottom of the Scanner Unit. (Fig. 4-42)
4. Remove the Scanner Housing, the hinge area in the rear of the Scanner Unit first.



- When installing the Scanner Housing, the CR Shaft may come off. To avoid such problem, with the Lower Housing placed in the upright position, install the Scanner Housing, its front side with the hooks (x4) first, while taking care not to cause whitening. (Fig. 4-42)
- Before installing the FFC Cover, route the FFC and harness as shown below.



When, in subsequent work, the CR Shaft or Carriage Unit is removed, the scanner home position can be shifted from the correct position. After reinstallation, therefore, adjust the home position.

- Refer to “5.1.3 Scanner Home Position Adjustment” (p.75)

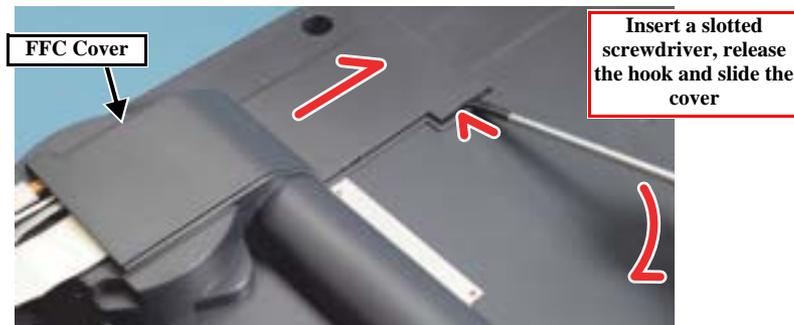


Figure 4-41. Removing the FFC Cover

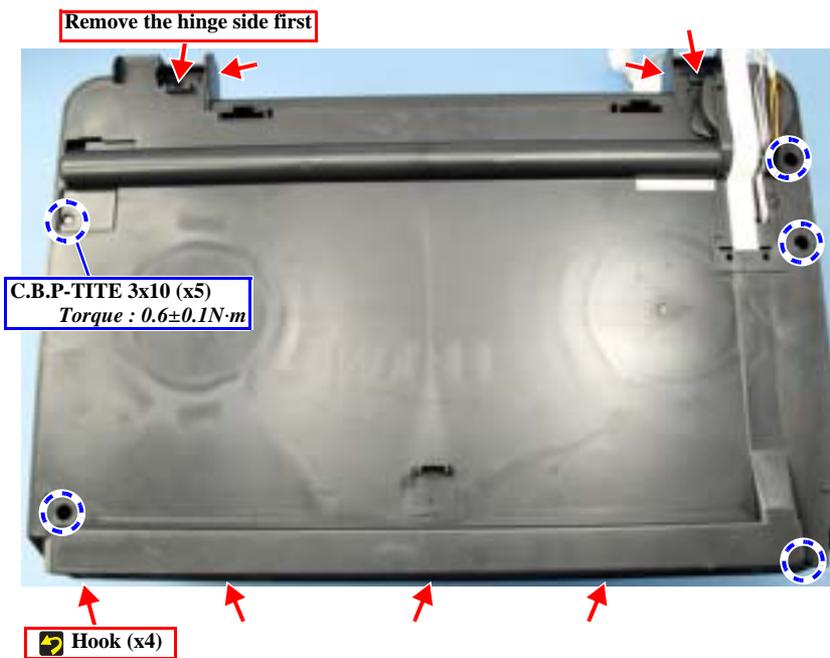


Figure 4-42. Removing the Scanner Housing

4.4.2 CCD Unit (Scanner Unit)

1. Remove the Scanner Housing (p.57)
2. Remove the Timing Belt from the Driven Pulley while relaxing the belt tension for the CR Shaft. (Fig. 4-43)
3. Remove the CCD Unit together with the FFC and the CR Shaft. (Fig. 4-44)



- When replacing the CCD Unit, the FFC is to be replaced together. In installation, stick the FFC on the Lower Housing properly so that it is free from floating. (Fig. 4-44)
- Install the CR Shaft while fitting its grooved end in the guide of the Lower Housing. (Fig. 4-43)
- Install the Timing Belt with the tooth side facing inside and without torsion.

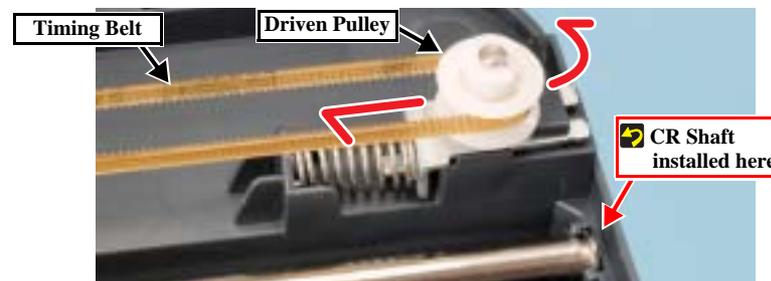


Figure 4-43. Removing the Timing Belt

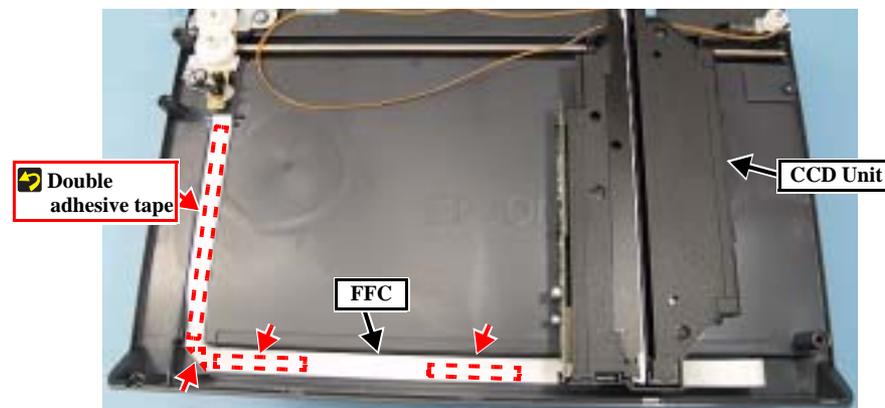


Figure 4-44. Removing the CR Assy

4.4.3 HP Sensor (Scanner Unit)

1. Remove the Scanner Housing (p.57)
2. Remove the screw securing the HP Sensor. (Fig. 4-45)
3. Pull out the harness from the Scanner Unit, and remove the HP Sensor.

4.4.4 CR Motor Unit



Do not remove the screws (x4) marked with X for the CR Motor Unit shown at right. Once they are removed, the belt tension will change. In such a case, the CR Motor Unit must be replaced. (Fig. 4-45)

1. Remove the Scanner Housing (p.57)
2. Remove the Timing Belt from the Driven Pulley while relaxing the belt tension for the CR Shaft. (Fig. 4-43)
3. Remove the screw fastening the grounding wire to the CR Motor Unit. (Fig. 4-45)
4. Remove the screw and washers (x3) securing the CR Motor Unit.

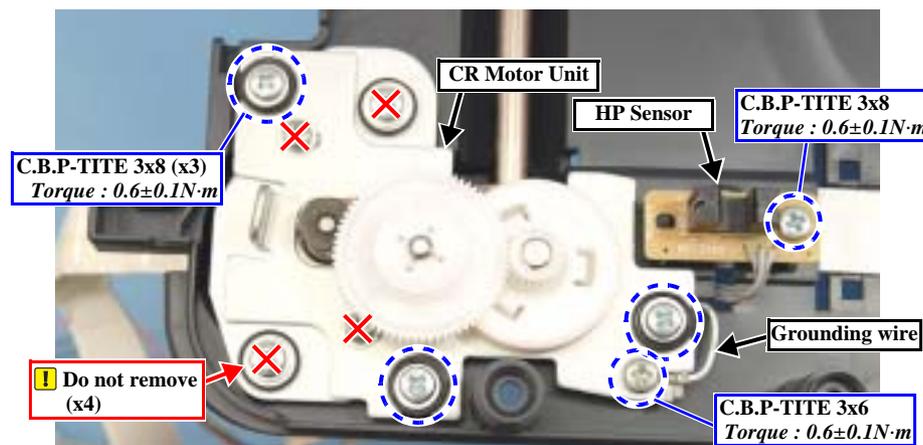


Figure 4-45. CR Motor Unit and HP Sensor

4.4.5 Disassembly of TPU Unit

1. Remove the Scanner Unit (p.45)
2. Remove the TPU Unit while pushing the hook (middle) in the hinge area of the TPU Unit. (Fig. 4-46)
3. Remove the screws (x4) securing the TPU Cover. (Fig. 4-47)
4. Lift the threaded hole side of the Harness Cover slightly, and remove the cover by sliding it toward the front.
5. Remove the Film Holder.
6. Release the right and left hooks (3x2), and remove the TPU Cover.

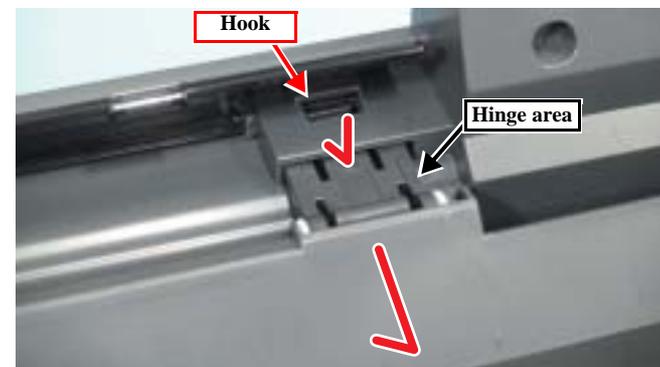


Figure 4-46. Removing the TPU Unit



- When installing the TPU Cover, engage the hooks (x4) in the front first and then engage the right and left hooks (x3).
- When installing the Harness Cover, insert the Harness Clamp area in the position shown below first and then slide the cover from the front side into its position.

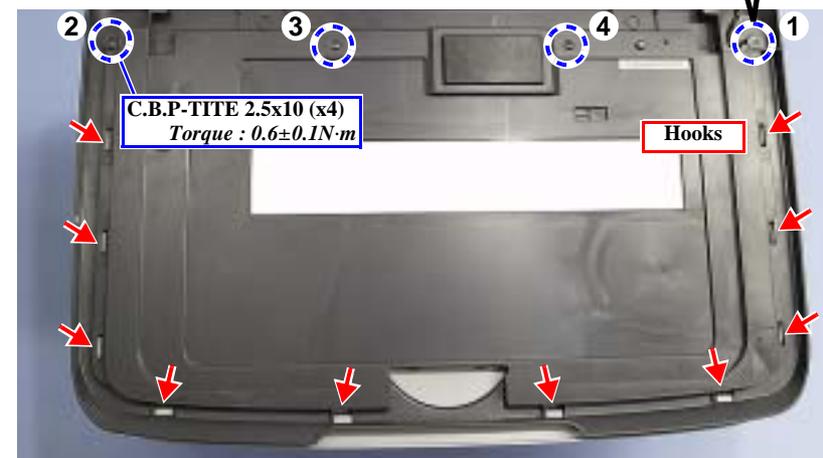
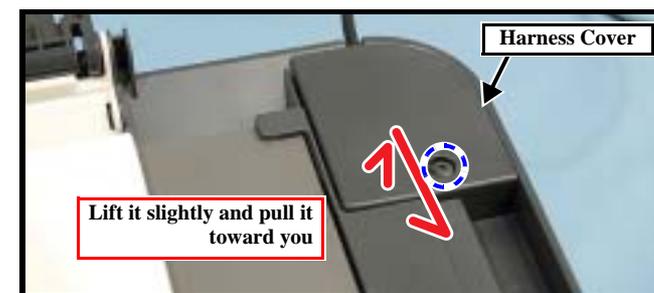


Figure 4-47. Removing the TPU Cover

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<LED Relay Board>

7. Remove the connector from the Inverter Board. (Fig. 4-49)
8. Remove the screw, and disconnect the harness from the TPU Housing.

<Inverter Board>

7. Remove the Inverter Sheet.
8. Remove the screw, and disconnect the connectors (x2).



Never remove the fluorescent tube; otherwise, dust can enter and impair the scanning quality. When the fluorescent tube must be replaced with a new one, replace the TPU Housing and fluorescent tube as a single unit.



Before installing the Top Cover, make sure that the lead wires are routed properly.

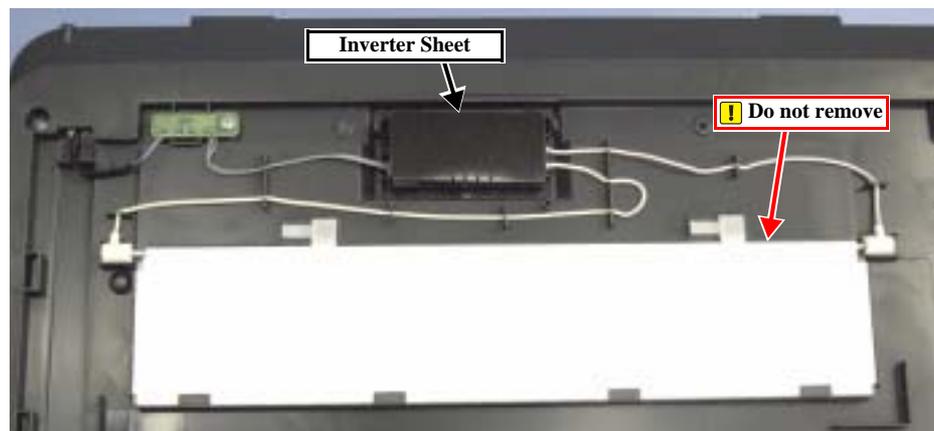


Figure 4-48. Routing the Lead Wires (TPU Housing)

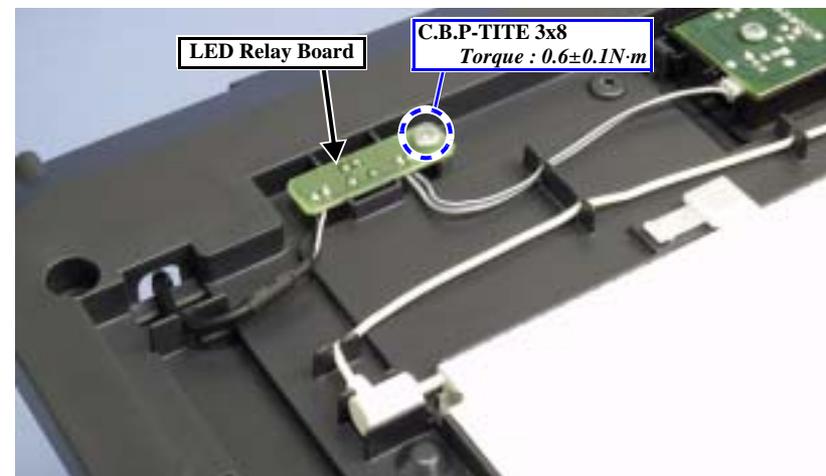


Figure 4-49. Removing the LED Relay Board

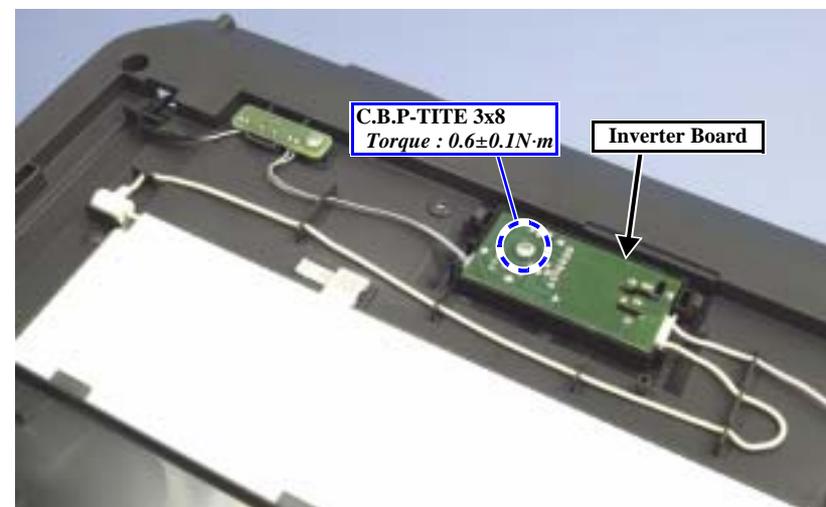


Figure 4-50. Removing the Inverter Board

4.5 Disassembly and Assembly of Major Parts of Printer

4.5.1 PF Motor, PF Encoder and PF Scale

CAUTION  Handle the PF Scale with care not to scratch or stain it. Do not touch it with your bare hand.

1. Remove the Printer Mechanism (p.53)
2. Disconnect the FFC of the PF Encoder, remove the screw, and remove the PF Encoder. (Fig. 4-51)
3. Remove the PF Scale. (Tape is stuck in the center circle area)
4. Release the lead wires of the PF Motor. (Fig. 4-57)
5. Remove the Harness Holder. (Fig. 4-52)
6. Remove the screws (x2) securing the PF Motor, and remove the PF Motor in the lateral direction. (Fig. 4-53)

REASSEMBLY  ■ Install the PF Motor with its labeled area facing outward. (Fig. 4-53)
 ■ When installing the PF Encoder, confirm that the reading area does not come in contact with the PF Scale.

ADJUSTMENT REQUIRED  Once the PF Motor has been reinstalled, refer to the following section and perform the necessary adjustments.
 ■ 5.1.1 Adjustment by Use of Adjustment Program (TBD) (p.72)

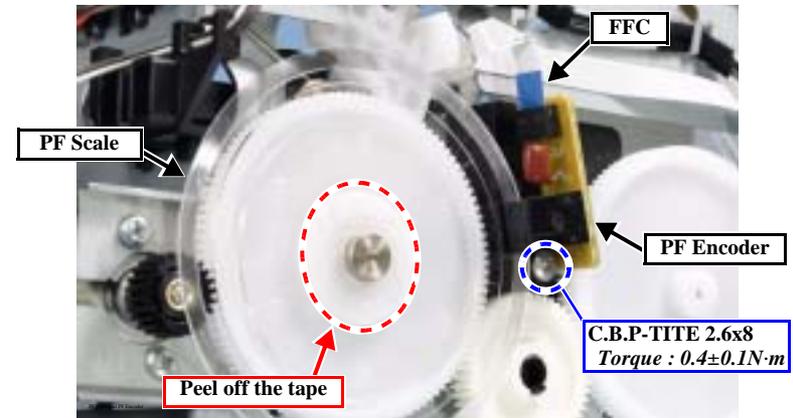


Figure 4-51. Removing the PF Encoder / PF Scale

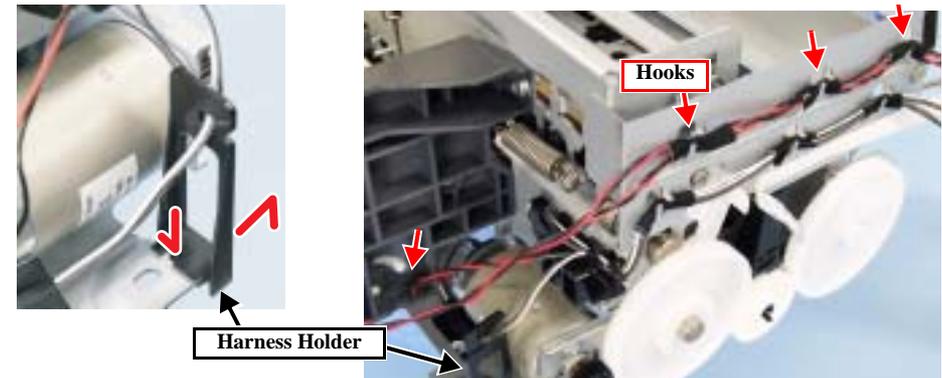


Figure 4-52. Removing the Harness Holder

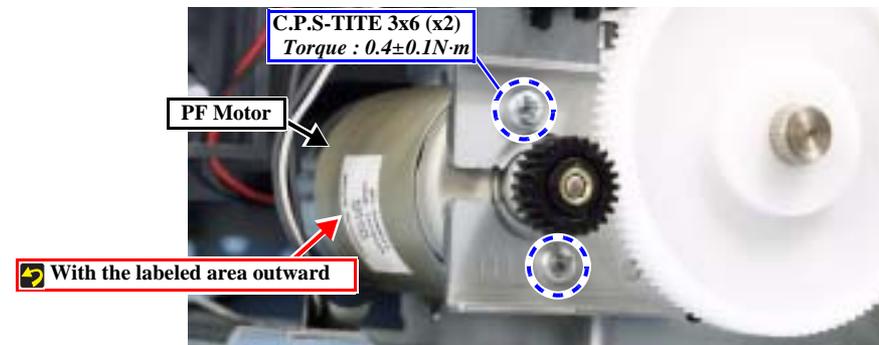


Figure 4-53. Removing the PF Motor

4.5.2 I/S Assy



Take due care not to stain any surrounding objects with ink. In addition, when removing the Waste Ink Tube, take care not to splash ink.

1. Remove the Printer Mechanism (p.53)
2. Remove the tube from the Waste Ink Assy (as required).
3. Remove the screws (x2), and remove the I/S Assy. (Fig. 4-54)



■ Lubrication is necessary. Refer to the following section and lubricate the specified points:
Lubrication at Installation of I/S Assy (p.81)

- After installing the I/S Assy to the printer frame, make sure that its position is adjusted as shown in Fig. 4-55 .
- Tighten the screws in the specified order. (Fig. 4-54)
- Catch the Waste Ink Tube in the groove shown in the figure on the bottom of the I/S Assy. (Fig. 4-56)
- When connecting the Waste Ink Tube, wipe the ink, if any, off the joint area of the tube. With ink left adhering to the joint area, the tube cannot be connected firmly and thus may easily come off.

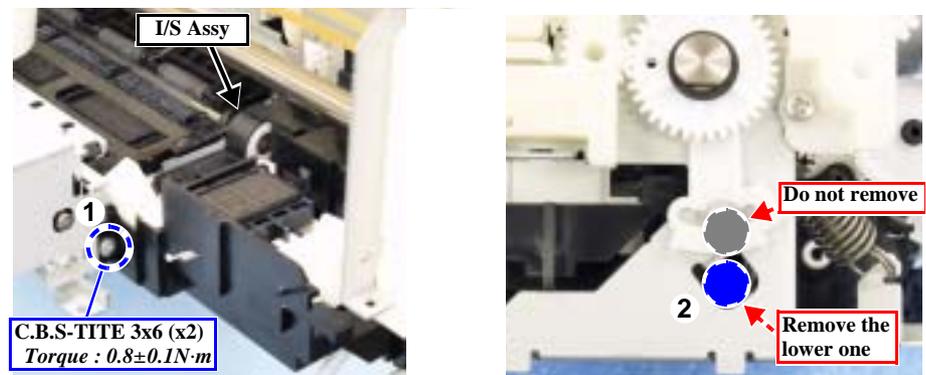


Figure 4-54. Removing the I/S Assy

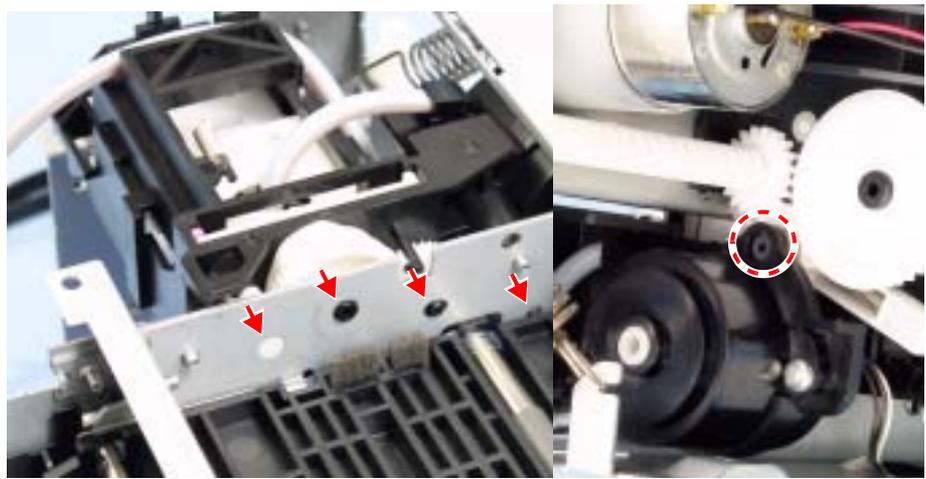


Figure 4-55. Installing the I/S Assy

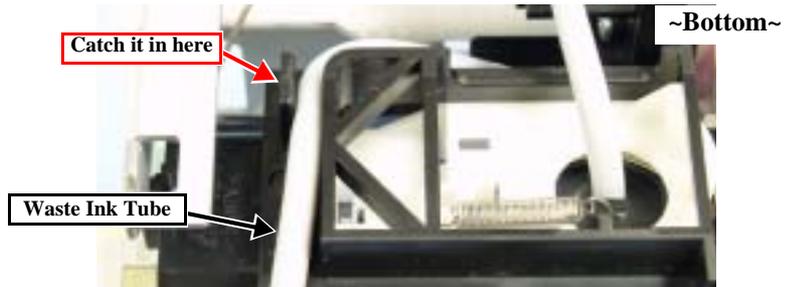


Figure 4-56. Installing the Waste Ink Tube (I/S Assy)

4.5.3 ASF Assy

1. Remove the Printer Mechanism (p.53)
2. Remove the I/S Assy (p.62)
3. At the left side of the ASF Assy, peel off tape, and disconnect the lead wires of the PF Motor from the ASF Assy. (Fig. 4-57)
4. Remove the screw securing the LD Roller Guide. (Fig. 4-58)
5. With care not to damage the Linear Scale, push the right and left protrusions, lift the LD Roller Guide and release the hooks (x5), and remove the LD Roller.
6. Remove the right and left screws (x2) securing the ASF Assy. (Fig. 4-59)
7. On the front side, release the right and left hooks (x2) fastening the ASF Assy and the tip of the Change Lever from the printer frame.
8. Remove the composite gear (10, 15.2), and remove the ASF Assy.



- Lubrication is necessary. Refer to the following section and lubricate the specified points:
Lubrication at Installation of ASF Assy (p.80)
- When installing the ASF Assy, make sure that the composite gear, the chip of Change Lever and the hooks (x2) are engaged properly.
- Tighten the screws in the specified order. (Fig. 4-59)

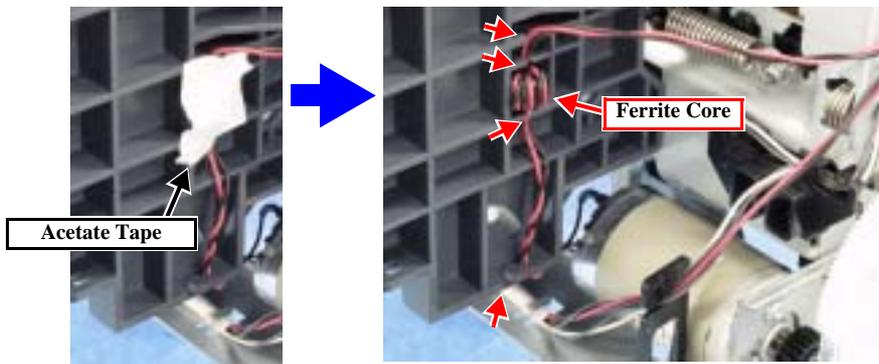


Figure 4-57. Lead Wires on the ASF Assy

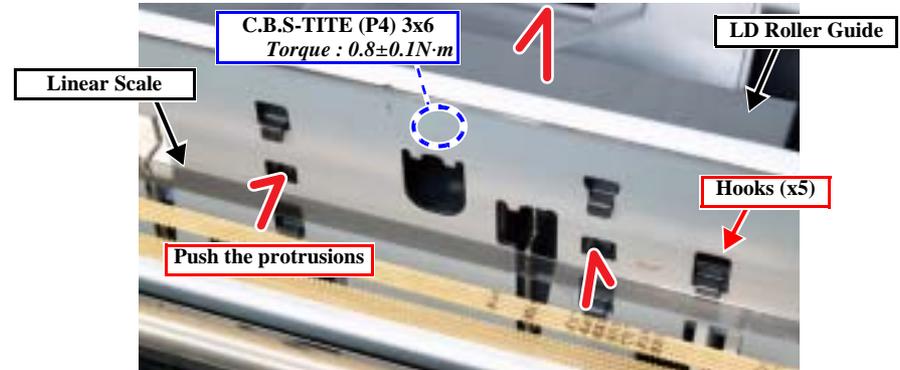


Figure 4-58. LD Roller Guide

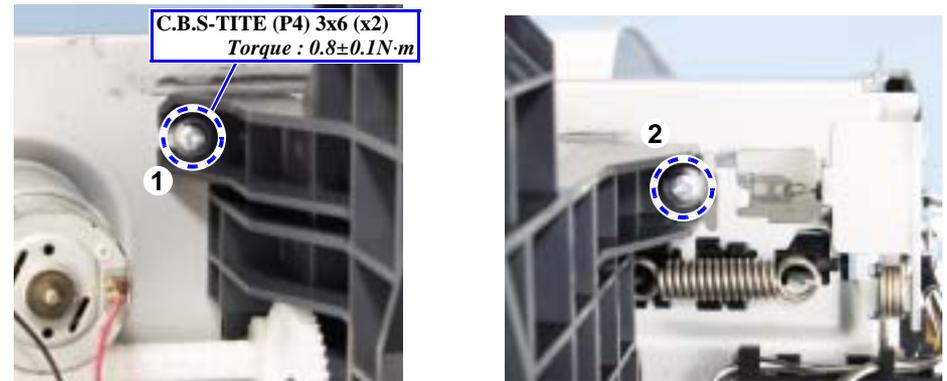


Figure 4-59. Removing the screw (ASF Assy)

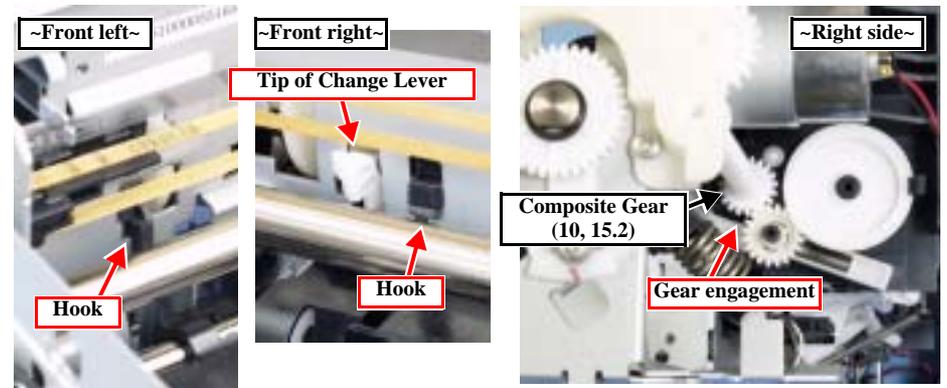


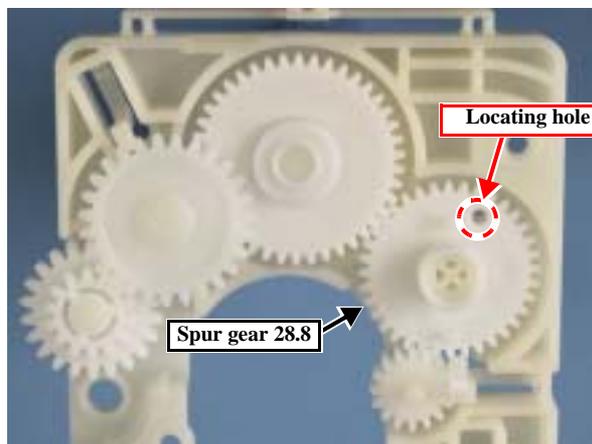
Figure 4-60. Removing the ASF Assy

4.5.4 APG Assy

1. Remove the Printer Mechanism (p.53)
2. At the right side of the printer, remove the screws (x2) securing the APG Assy. (Fig. 4-61)
3. Release the hook at the top, and remove the APG Assy while taking care not to lose gears or springs.
4. Remove the composite gear (10, 15.2).



The gears of the APG Assy are arranged as shown below:



Install the APG Assy by the following procedure: (Fig. 4-62)

1. Install the composite gear (10, 15.5).
2. Pass a pin (ø2mm) or the like through the locating hole in the Right PG Cam on the CR Guide Shaft and that in the printer frame.
3. Pass a pin or the like through the locating hole in the spur gear 28.8 and that in the APG Assy. With the pins left inserted in the holes, install the APG Assy on the printer frame.
4. Make sure that all the hooks are engaged properly and the protrusions fit in the printer frame, and tighten the screws in the order shown in Fig. 4-60 .

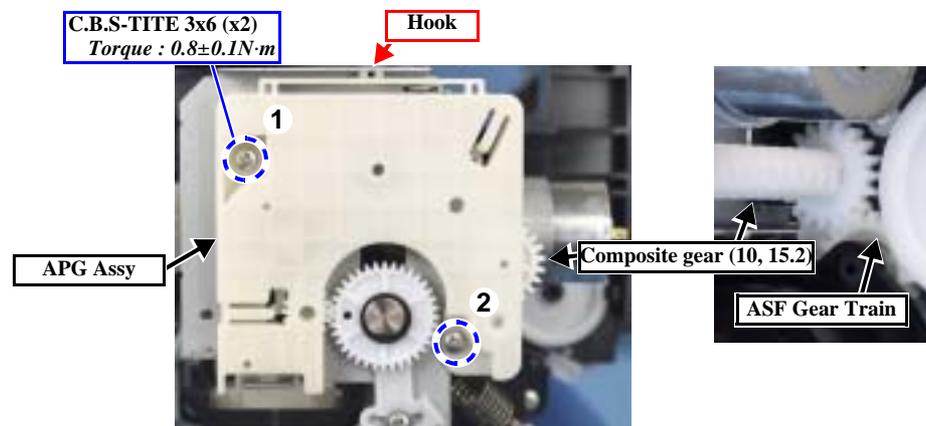


Figure 4-61. Removing the APG Assy

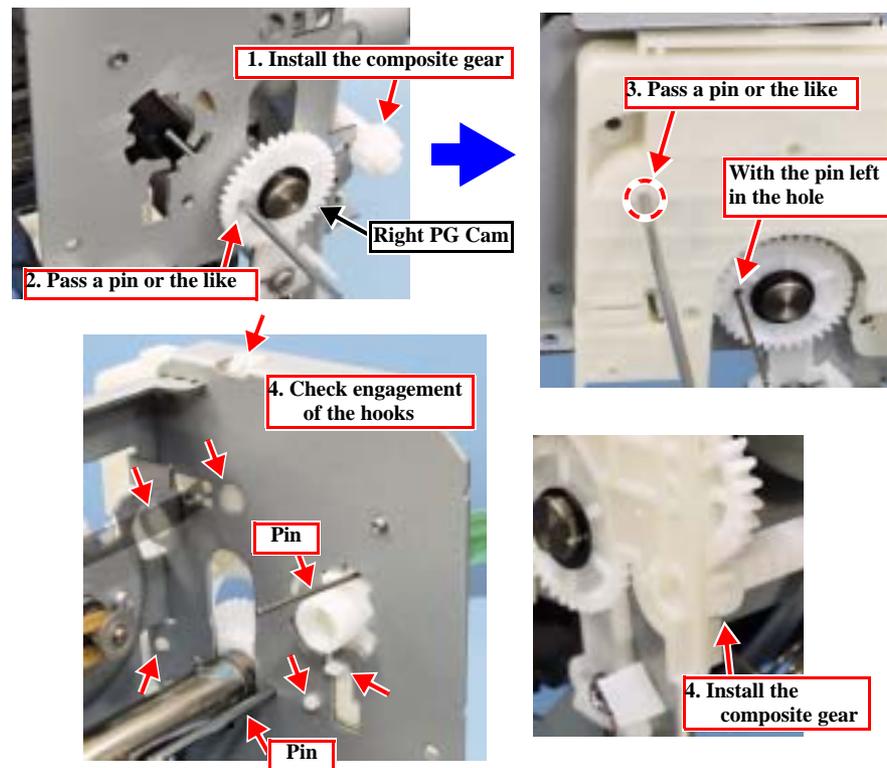


Figure 4-62. Installing the APG Assy

4.5.5 CR Motor

1. Remove the Printer Mechanism (p.53)
2. Remove the I/S Assy (p.62)
3. Remove the ASF Assy (p.63)
4. At the rear of the printer, remove the tension spring of the Driven Pulley Assy. (Fig. 4-63)
5. Remove the screws (x2), and remove the CR Motor. (Fig. 4-64)



- Lubrication is necessary. Refer to the following section and lubricate the specified points:
[Lubrication of Driven Pulley \(p.80\)](#)
- Install the CR Motor with its printed area facing upward.



- Tighten the screws in the specified order. (Fig. 4-64)
- Install the Timing Belt with the tooth side facing inside and without torsion.



- Once the CR Motor has been reinstalled, refer to the following section and perform the necessary adjustments.
- [5.1.1 Adjustment by Use of Adjustment Program \(TBD\) \(p.72\)](#)

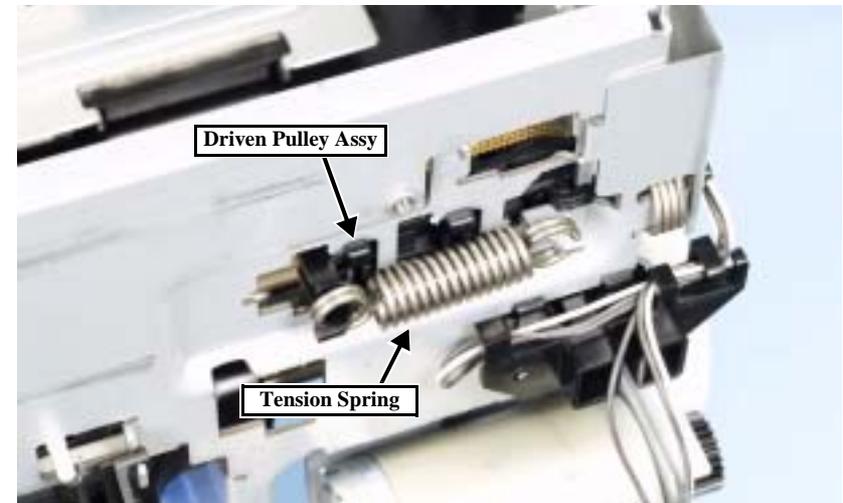


Figure 4-63. Removing the Tension Spring

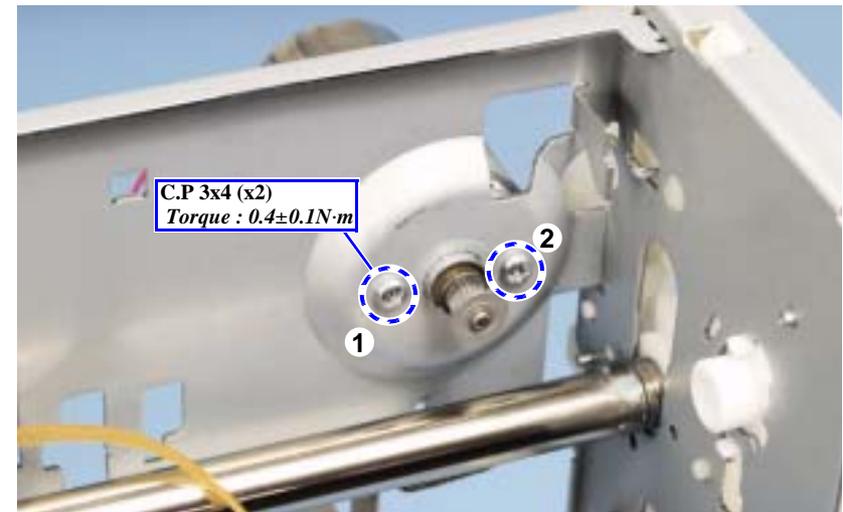


Figure 4-64. Removing the CR Motor

4.5.6 Carriage Assy

1. Remove the Printer Mechanism (p.53)
2. Remove the Linear Scale (p.52)
3. Remove the PF Scale and PF Encoder (p.61)
4. Remove the APG Assy (p.64)
5. Remove the I/S Assy (p.62)
6. Remove the ASF Assy (p.63)
7. Remove the Driven Pulley Assy (p.65)
8. Release the Head FFC from the front frame. (Fig. 4-70)
9. Remove the screw, and remove the Cable Holder Frame. (Fig. 4-65)
10. At the left side of the printer, remove the spring, and mark the indicated graduation position of the Parallelism Bush. Then loosen the screw, and turn the Parallelism Bush toward the front. (Fig. 4-66)
11. At the right side of the printer, remove the spring, remove the washer, and the Right PG Cam. (Fig. 4-67)
12. Remove the Carriage Assy together with the CR Guide Shaft from the left side of the printer frame.

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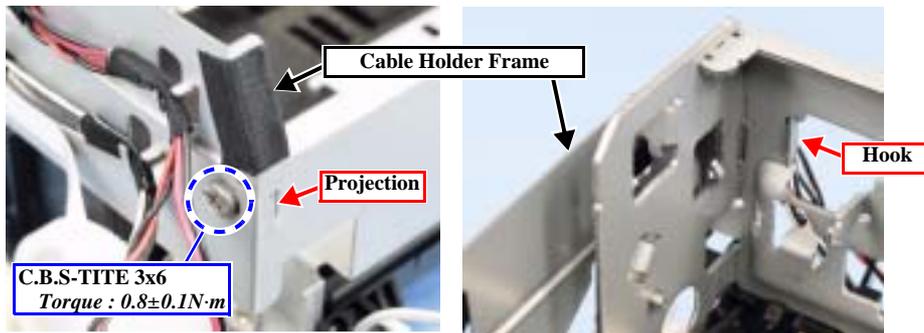


Figure 4-65. Removing the Cable Holder Frame

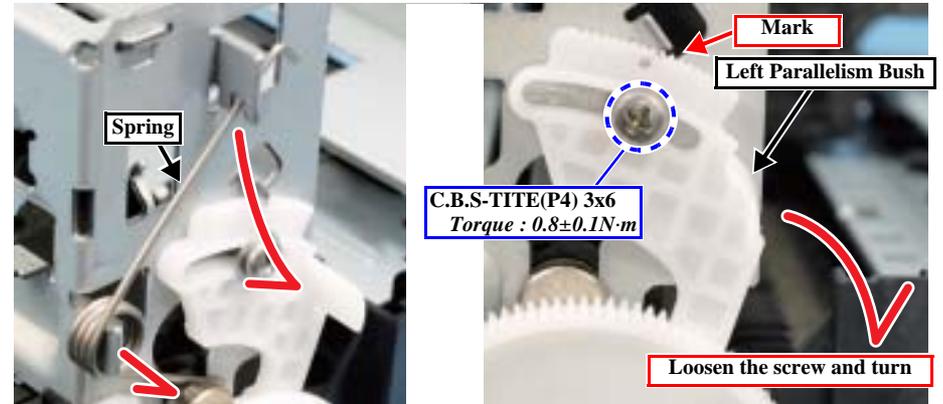


Figure 4-66. Removing the Carriage Assy (at left side)

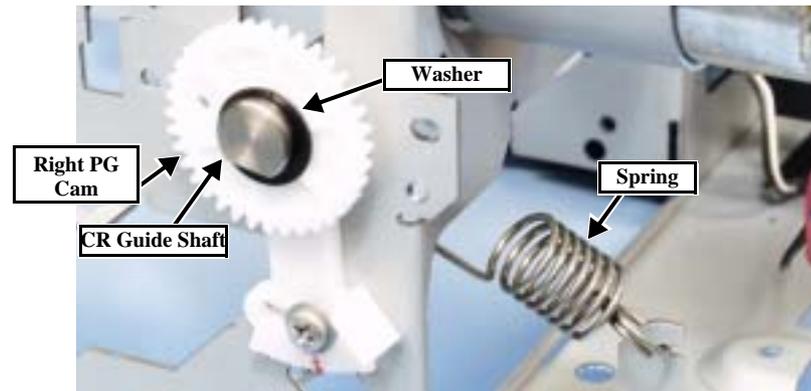


Figure 4-67. Removing the Carriage Assy (at right side)

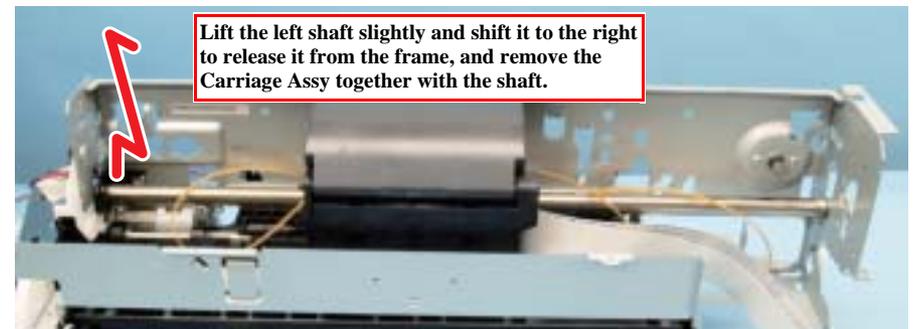
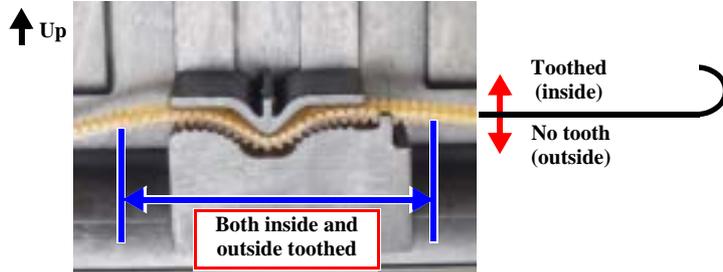


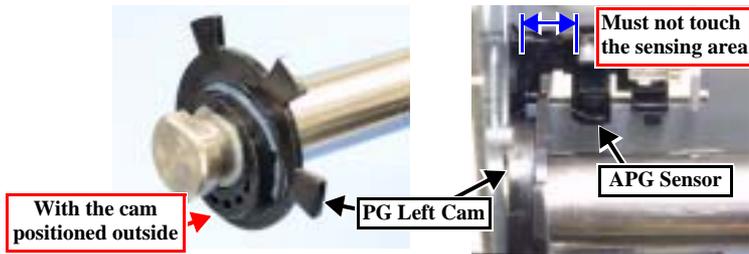
Figure 4-68. Removing the Carriage Assy



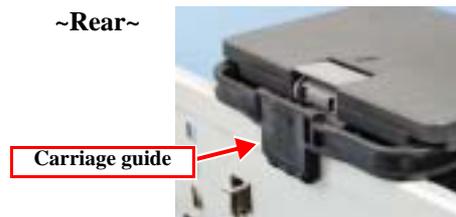
- Lubrication is necessary. Refer to the following section and lubricate the specified points:
[Lubrication at Installation of Carriage Assy \(p.80\)](#)
- Install the Timing Belt on the carriage with care not to confuse the toothed areas of the inside and outside of the belt.



- Install the PG Left Cam by mating the D cut surfaces and with the cam positioned outside so that it does not come in contact with sensing area of the APG Sensor.



- Install the Carriage Assy so that the guide is engaged with the frame.



- When installing the Cable Holder Frame, ensure that it is positioned correctly in the front and back direction. (Fig. 4-65)



- When installing the Carriage Assy, refer to the following sections and perform the necessary adjustments:
- [5.1.2 PG Adjustment \(p.73\)](#)
 - [5.1.1 Adjustment by Use of Adjustment Program \(TBD\) \(p.72\)](#)

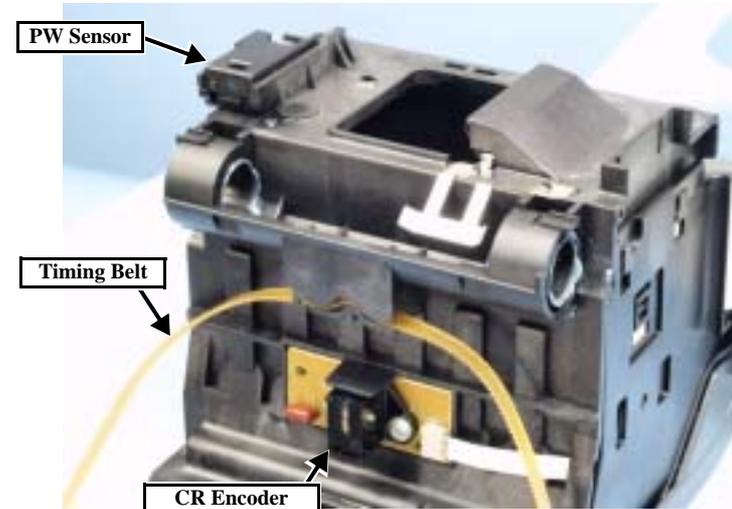
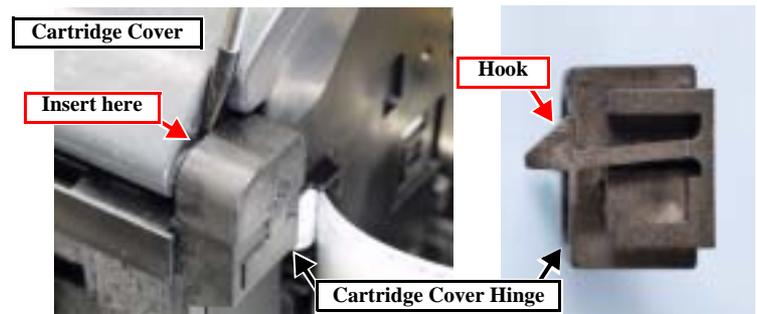


Figure 4-69. Carriage Assy (rear)



To remove the Cartridge Cover, it is necessary to remove the Cartridge Cover Hinge. However, there is no special means of releasing the hook. Therefore, insert a slotted screwdriver as shown below and break the hook. (In installation, replace it with a new one)



4.5.7 Eject Frame Assy

1. Remove the Printer Mechanism (p.53)
2. Remove the Ferrite Core Holder (with hooks x2) from the Front Frame, and remove the Head FFC. (Fig. 4-70)
3. Release the harness of the CD-R sensor from the hook of the Eject Frame. (Fig. 4-71)
4. Remove the screw securing the Cable Holder Frame.
5. Remove the right and left screws (x2) securing the Front Frame, and remove the Front Frame from the printer body.
6. Remove the Eject Frame Assy from the printer body. (Fig. 4-72)

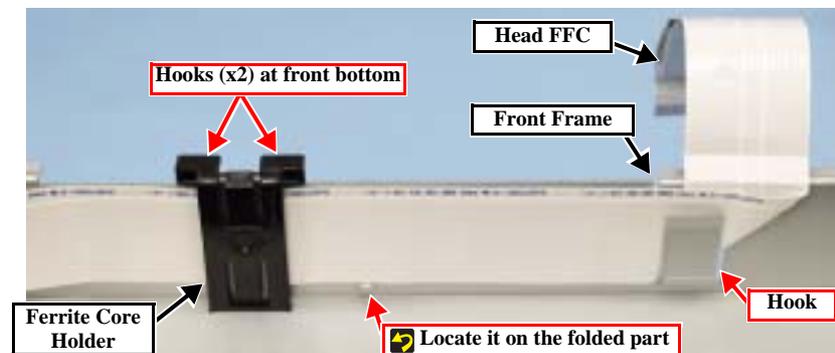
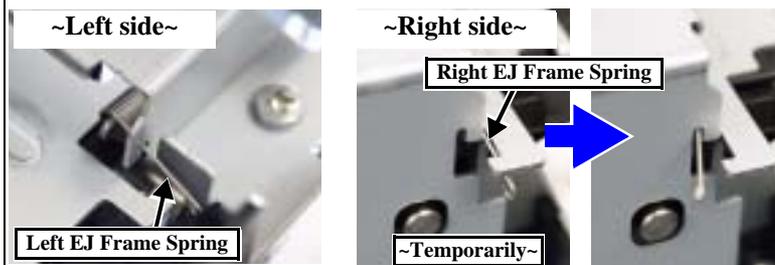


Figure 4-70. Removing the Head FFC



- Before installing the Eject Frame, install the Left EJ Frame Spring (longer), and the Right EJ Frame Spring (shorter) temporarily, in the respective positions shown below on the Eject Frame. After installing the Front Frame, move the Right EJ Frame Spring to the spring support.



- Fit the shaft holders (left and right) on the underside of the Eject Frame onto the Paper Eject Roller Shaft. (Fig. 4-72)
- After installing the Front Frame, confirm the engagement of the projections (x2), and then tighten the screws in the specified order. (Fig. 4-71)
- After installing the Cable Holder Frame, confirm the engagement of the projection, and then tighten the screw. (Fig. 4-71)
- After installing the Head FFC as shown, move the carriage several times and confirm that the FFC is free from undue tension or excessive allowance. (Fig. 4-70)

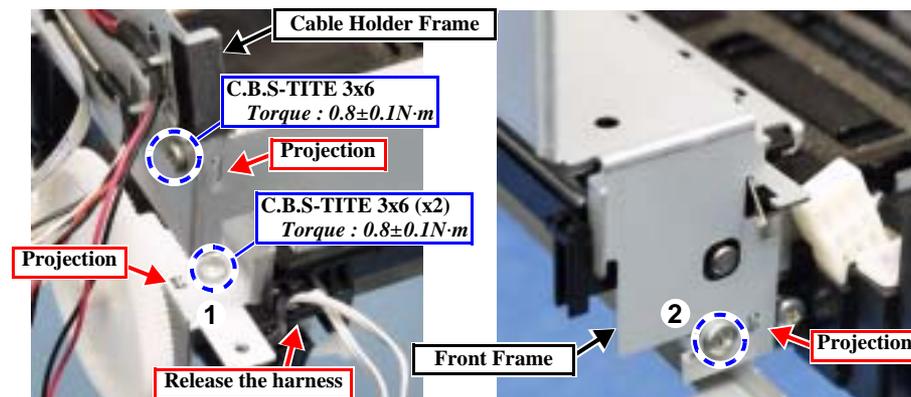


Figure 4-71. Removing the Front Frame

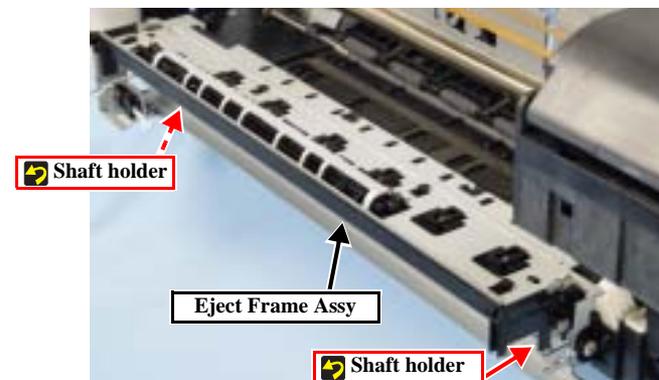


Figure 4-72. Removing the Eject Frame Assy

4.5.8 Upper Paper Guides

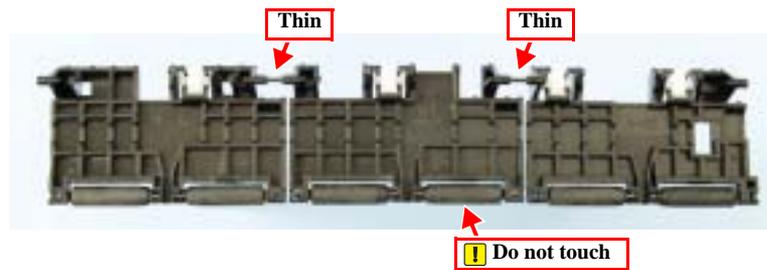


- When removing the Upper Paper Guides, bring down the actuator of the PE Sensor toward the front to avoid damaging it.
- Do not touch any of the rollers; otherwise, the print quality may drop.

1. Remove the Printer Mechanism (p.53)
2. Remove the I/S Assy (p.62)
3. Remove the ASF Assy (p.63)
4. Remove torsion springs (x3) at the rear of the printer. (Fig. 4-74)
5. Release the hooks (x3), release the Upper Paper Guides from the shaft holders of the printer frame, lower the actuator of the PE Sensor, and remove the Upper Paper Guides. (Fig. 4-75)



The Upper Paper Guides are connected as a single unit with thin fragile bridges as shown with arrows below. However, these parts are not to be placed on the shaft holders of the printer frame. Therefore, it is not necessary to replace the Upper Paper Guides even if the bridges are broken.



Install the springs properly, while paying attention to the tip position of each spring. (Fig. 4-74)

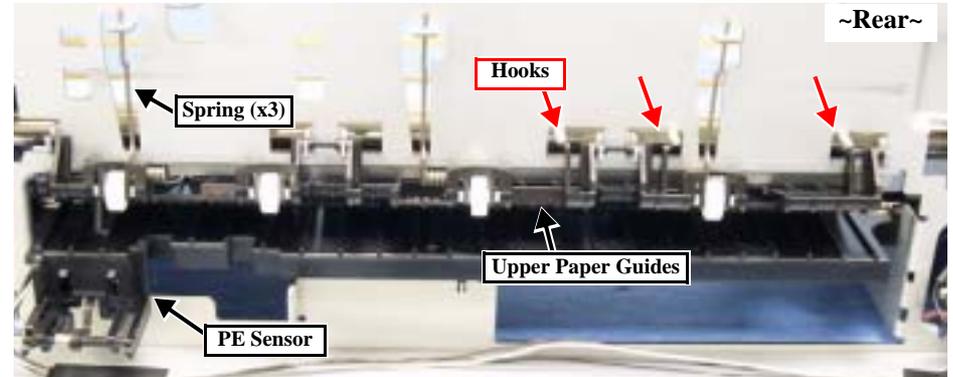


Figure 4-73. Upper Paper Guides Layout (rear of the printer)

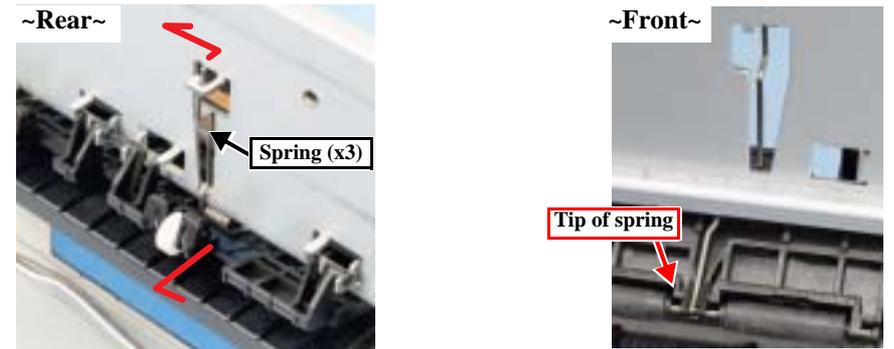


Figure 4-74. Removing the Springs

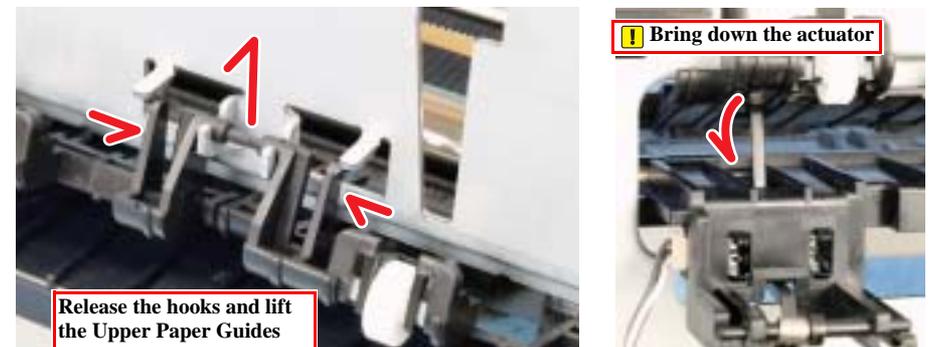


Figure 4-75. Removing the Upper Paper Guides

4.5.9 Paper Guide Front Assy



Do not touch any of the rubber rollers of the Paper Eject Roller Assy or coated surface of the PF Roller Assy; otherwise, the print quality may drop.

1. Remove the Printer Mechanism (p.53)
2. Remove the PF Scale and PF Encoder (p.61)
3. Remove the Linear Scale (p.52)
4. Remove the APG Assy (p.64)
5. Remove the I/S Assy (p.62)
6. Remove the ASF Assy (p.63)
7. Remove the Driven Pulley Assy (p.65)
8. Remove the Eject Frame Assy (p.68)
9. Remove the Carriage Assy (p.66)
10. Remove the Upper Paper Guides (p.69)
11. Remove the Right Parallelism Bush from the Left Frame. (Fig. 4-76)
12. In the left area of the printer, remove the screw securing the Paper Guide Front Assy.
13. Disconnect the connector of the PE Sensor at the rear of the printer.
14. Pull out the PF EJ Ground Spring frontward. (Fig. 4-77)
15. Lift the left side of the Paper Guide Front Assy slightly, undo the engagement with the printer frame, pull the Paper Guide Front Assy frontward, and then undo the engagement at the right side and remove it. (Fig. 4-78)



- Lubrication is necessary. Refer to the following section and lubricate the specified points:
Lubrication of Paper Guide Front Assy (p.79)
- Lead out the harness of the CD-R Sensor as shown below.

~Printer front bottom left~
Lead out from here
- See Fig.4-77 and install the Ground Spring.

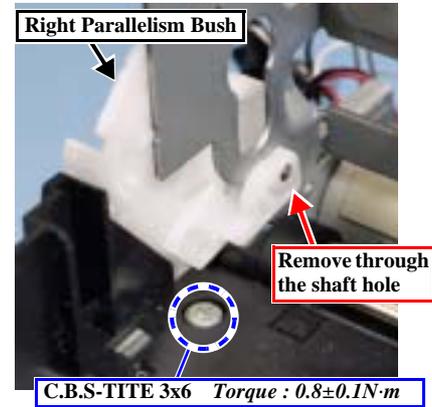


Figure 4-76. Removing the Paper Guide Front Assy 1

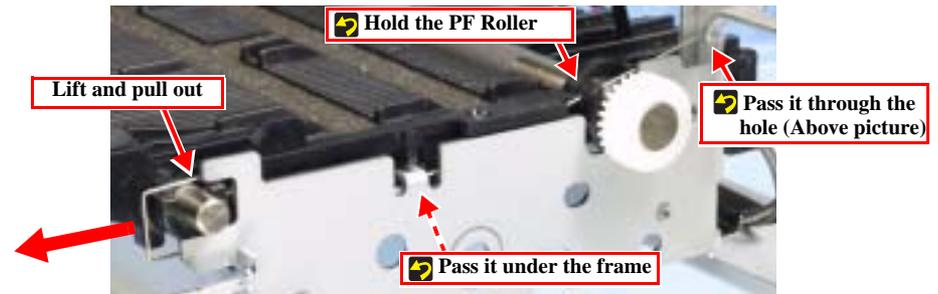
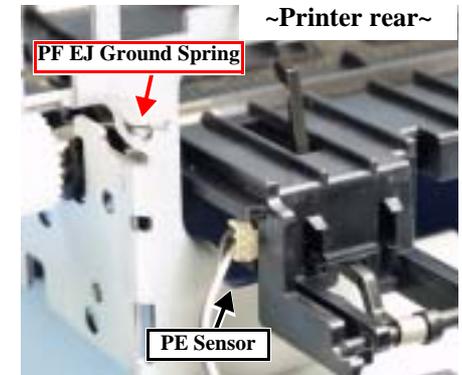


Figure 4-77. Removing the PF EJ Ground Spring

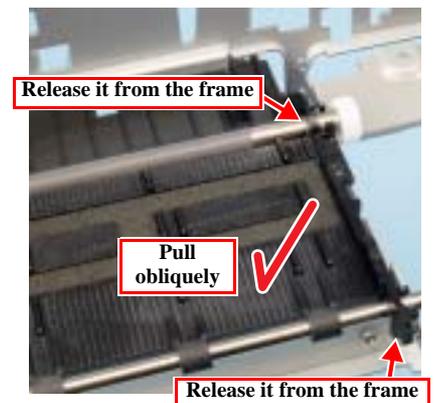
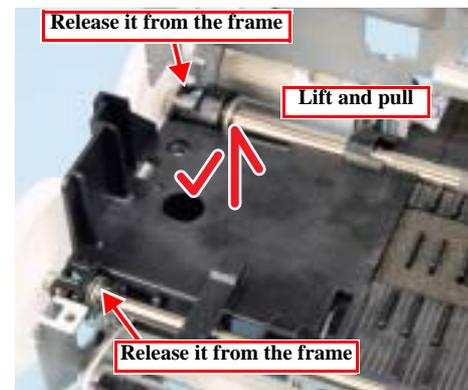


Figure 4-78. Removing the Paper Guide Front Assy 2

CHAPTER

5

ADJUSTMENT

5.1 Overview

The adjustments of Stylus PHOTO RX640/650 are roughly classified to the following types.

Table 5-1. Adjustment Types

Type	When to Adjust	Description	Refer to
Printer mechanical adjustments (Stylus PHOTO RX640/650 requires only PG adjustment)	Once the carriage has been removed or replaced	During assembly of the printer, adjust platen gap using adjustment tools.	p.73
Adjustments by use of printer adjustment program	Once relevant components have been reassembled or replaced	After the assembly of the printer, make the adjustments required depending on the removed (replaced) components.	p.72
Scanner home position adjustment	Once the CR Shaft or Carriage has been removed	After the assembly of the Scanner Unit, adjust the home position using the dedicated program and tools.	p.75
Firmware update	As required	Refer to the attached file for the method and procedure.	—



- **If the disassembly process includes the removal of any components/parts specified, make the adjustments specified.**
- **If it is impossible to back up the EEPROM data when replacing the Main Board, replace all the maintenance parts with new ones and clear the counter.**
In addition, make **5.1.3 Scanner Home Position Adjustment (p. 75)**.
- **Make the mechanical adjustments before making adjustments that use the adjustment program.**

5.1.1 Adjustment by Use of Adjustment Program (TBD)

- **Description:**
For the adjustment by use of the adjustment program, the details are described in the window and help of the program. Therefore, this manual does not describe the details of the adjustment by use of the adjustment program.
- **OS:** Windows 98/Me/2000/XP
- **Preparations for use of the program:**
Copy the supplied folder containing the adjustment program onto the HDD of a PC.



Connect the printer to the PC with the USB cable before running the adjustment program.

5.1.2 PG Adjustment

Described below is the platen gap (PG) adjustment.

- Purpose:
 - Adjust the distance between the head surface and the Paper Guide Front Assy (platen) properly and adjust the parallelism on the 0th column side and on the 80th columns side to ensure reliable print quality.
 - Once the Carriage Assy and/or Adjustment Bushes have been removed or whenever necessary for any other reason, make this adjustment to correct the deviation of the platen gap.

Table 5-2. PG Positions

Position	PG Size (mm)	Application for Printing (selected from PG flag list for normal/head rubbing)	Sequence Application
PG- <APG Home>	1.2	EPSON special thick paper PGPP, Postcards, Matte, etc.	Cleaning CR measurement, VH detection CR home position seek
PGtype <Mechanical default>	1.7	Plain paper EPSON special thin paper, SF, etc. Rubbing with PG1.2 is avoided	
PG+	2.35	Envelopes Rubbing with PG1.2 and 1.7 is avoided	
PG++	4.2	CD-R printing	At ink replacement

- Things to be used
 - Thickness gauge: 1.1 mm (x2)
1.3 mm (x2)
 - Phillips screwdriver



- The thickness gauge to be used must be free from dust and dirt and from deformation. Be sure to clean it before use.
- Take care that the Print Head is not soiled or scratched.
- To ensure high accuracy of adjustment, install dummy ink cartridges in the carriage, and move the carriage right and left by pulling the belt without holding the carriage.



- Make this adjustment after installing the mechanism unit in the Housing Lower. (Install the Linear Scale after adjustment.) Refer to “4.2.9 Printer Mechanism” (p.53)
- With Stylus PHOTO RX640/650, four stages of PG setting are available by means of the APG Mechanism. However, make this adjustment with the mechanism in the minimum PG position (PG-: 1.2 mm). (Refer to “4.5.4 APG Assy” (p.64) and below.)

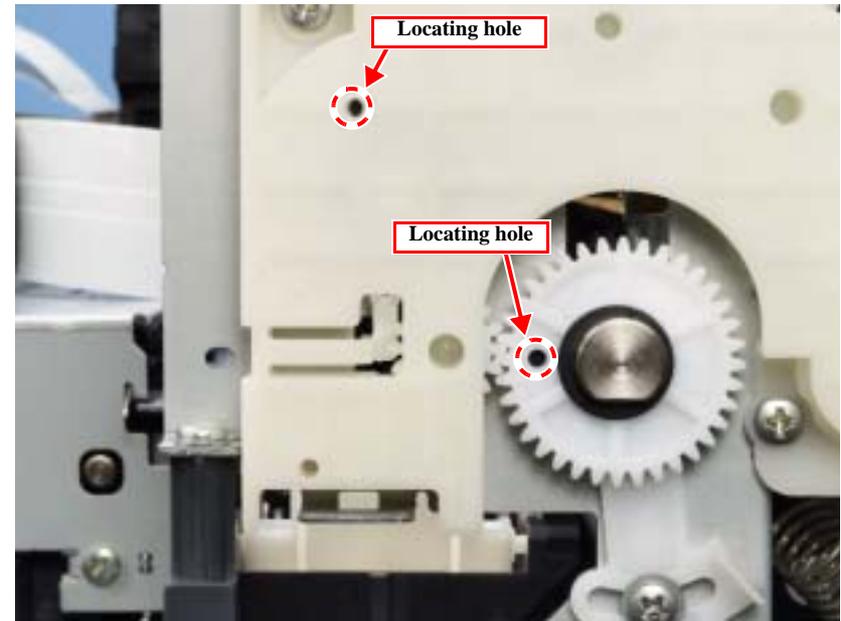


Figure 5-1. PG Position at PG Adjustment

□ Adjustment procedure

- Specified PG value: 1.2 ± 0.1 mm

1. Install the ink cartridges in the carriage.
2. Remove the Cable Holder Frame. (Fig. 4-65)
3. Check that the APG Assy and the carriage are in the PG-position. (Fig. 5-1)
4. Move the carriage to the middle area of the platen, and place 1.1 mm thickness gauges at the left and right ends of the platen. (Fig. 5-2)
5. Pull the Timing Belt to move the carriage to the left end.
6. If the carriage comes in contact with the gauge, adjust the Left Parallelism Bush to raise the carriage to a position where the Printhead does not come in contact with gauge.
7. Pull the Timing Belt to move the carriage to the right end.
8. If the carriage comes in contact with the gauge, adjust the Right Parallelism Bush to raise the carriage to a position where the Printhead does not come in contact with gauge.
9. Move the carriage to the middle area of the platen, and place 1.3 mm thickness gauges at the left and right ends of the platen.
10. Pull the Timing Belt to move the carriage to the left end.
11. If the carriage does not come in contact with the gauge, make the adjustment again.
12. Pull the Timing Belt to move the carriage to the right end.
13. If the carriage does not come in contact with the gauge, make the adjustment again.
14. Mark the indicated graduation position of the right and left Parallelism Bush, and tighten the screws.
(Screw tightening torque: 0.8 ± 0.1 N•m)

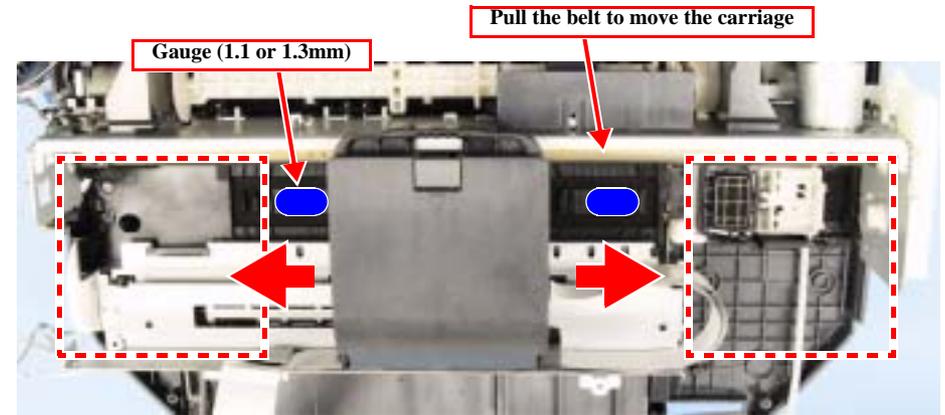


Figure 5-2. PG Adjustment 1

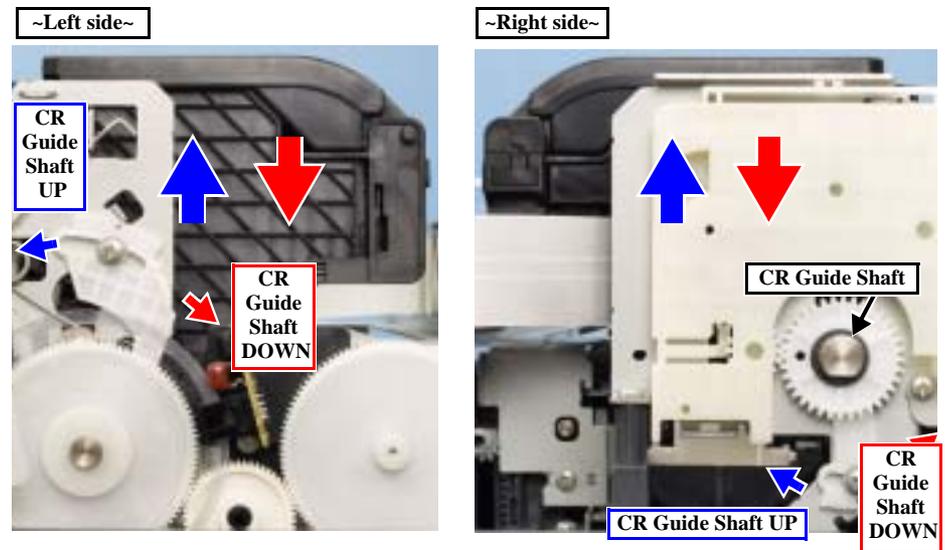


Figure 5-3. PG Adjustment 2

CAUTION

The Printhead must come in contact with the 1.3 mm thickness gauges but must not come in contact with the 1.1 mm thickness gauges.

5.1.3 Scanner Home Position Adjustment

The home position of the Scanner Unit deviates when the CCD Unit, Scanner CR Motor Assy or any other scanner carriage-related component has been replaced or reassembled. Make this adjustment to enhance scanning accuracy.



■ The EEPROM stores the data of scanner home position adjustment. If you can not download the all EEPROM data, you should also perform this adjustment.

Table 5-3. Tools

Tool Name	Availability	Tool Code
PC (OS: Windows XP)	○	—
Scanner origin adjustment program (FT.EXE)	EPSON	
USB cable (Printer ~ PC)	○	—
Origin adjustment tool	EPSON	1401646

Note : “○”: available on the market, “EPSON”: available from EPSON



This adjustment program has not only the home position adjustment function but also other various functions. However, this manual describes only the functions and procedure necessary for home position adjustment.

5.1.4 Preparations for Use of the Adjustment Program

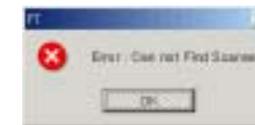
- Execute the supplied file, and install the adjustment program onto the PC.

NOTE: This program is a self-extracting installer. Upon execution, the window (shown at right) appears. Designate the place where the program is to be installed. If you check the check box “Make Start Menu for ...” at this point, this adjustment program will be registered in the start menu.

- Start the adjustment program by one of the following methods:
 - “Start Menu” → “Program for Production” → “CXXXXXXX”
 - Execute “FT.exe” in the folder that has been installed as described above.



The scanner driver must have been installed on the PC (scanner must be recognized). If the PC does not recognize the scanner, the following error window will appear at the start of adjustment.



Designate the place where the program is to be installed.
(Default : C:\Program for Production\CXXXXXXX)

Check this box to register the program in the start menu

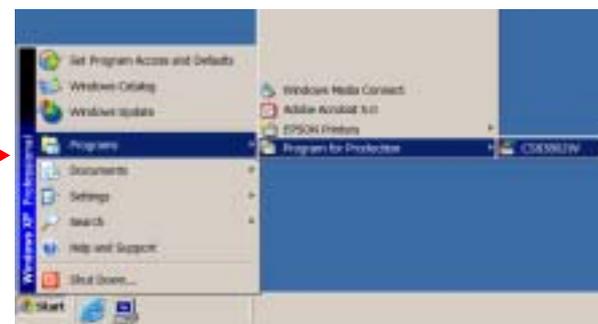
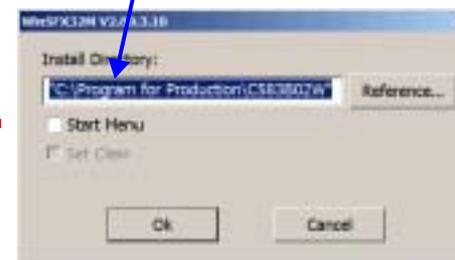


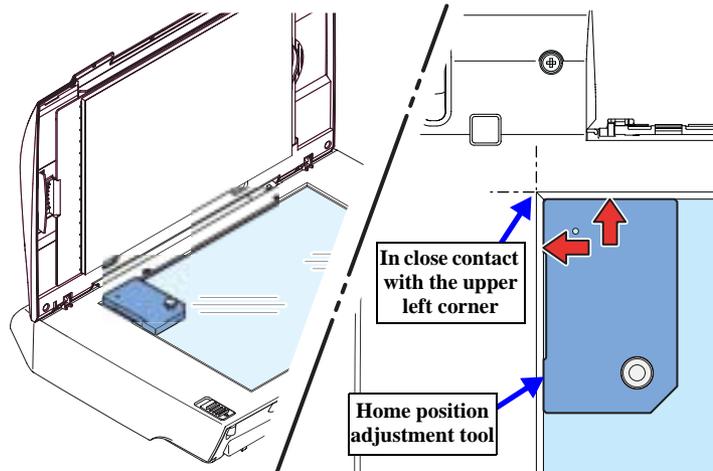
Figure 5-4. Installing the Adjustment Program (Scanner Home Position)

5.1.5 Home Position Adjustment Procedure

1. Connect the Stylus PHOTO RX640/650 to the PC with the USB cable, turn the power on, and set the home position adjustment tool.



- Place the home position adjustment tool in close contact with the upper left corner of the document table. Leave the top cover of the scanner open.



- A new registry is created on the PC every time this adjustment is repeated and if the number of the registries exceeds a certain level, the program will go into an error. In such a case, check the check box for Delete Registry to erase the registries.

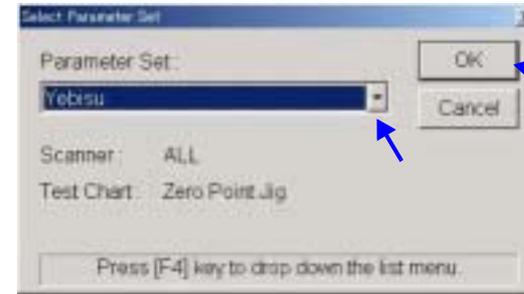


Figure 5-5. Parameter Setting



Figure 5-6. Single Test Dialog Display



Figure 5-7. Execution of Home Position Adjustment

2. Run the adjustment program. Upon start, the "Select Parameter Set" window will open. (See Figure 5-5)
Select "Yebisu" and click [OK].
3. When the window shown in the figure is displayed, click the "SEQ" icon on the toolbar. (See Figure 5-6)
4. When the window shown in the figure is displayed, click the [Execute] button to run the program. (See Figure 5-7)
5. On completion of writing, the check screen appears. Confirm that "TEST OK" is displayed on the top line. If "TEST OK" is not displayed, make the adjustment again.

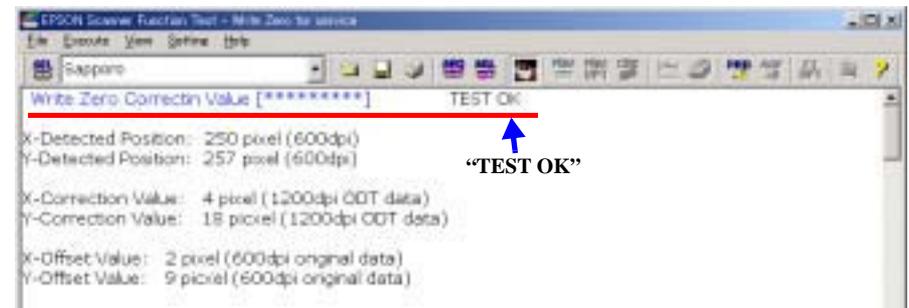


Figure 5-8. OK Screen

CHAPTER

6

MAINTENANCE

6.1 Overview

This section describes maintenance work to maintain the functions and performance of Stylus PHOTO RX640/650.



When using compressed air products; such as air duster, for cleaning during repair and maintenance, the use of such products containing flammable gas is prohibited.

6.1.1 Maintenance Error

Once a maintenance error has occurred, replace all the maintenance parts listed below, and clear the counter.

Table 6-1. Parts to be Replaced at Maintenance Error

Part Name	Location	Refer to for Disassembly/ Assembly
Waste Ink Tray Assy	In front of carriage home position	p.50
Waste Ink Pads (x2)	Under the platen (on the Lower Case Assy)	p.54



- In maintenance work, check the value of the overflow counter. If the value of the counter is close to its upper limit, notify the user and recommend that the waste ink pads are to be replaced. (If the waste ink pads are not replaced at that time, there is a possibility that “Maintenance Error” can occur just after the printer is returned to the customer.)
- After replacement, reset the overflow counter (protection counter) by the adjustment program.

- Waste Ink Absorption Capacity

Waste ink resulting from cleaning or flushing is absorbed by the waste ink pads. Specifications of the waste ink pads are as follows:

Table 6-2. Waste Ink Absorption Capacity

Waste ink pads volume	520 ml	
Absorber retention	80 % or more	
Waste ink absorption capacity	416 g	
Percentage of absorber retention after evaporation	Bk	0.5
	YMC	0.5

Table 6-3. Conditions for Waste Ink Calculation (for information only)

Total amount of print	Bk: 16000 pages (3.5% duty) or YMC: 10000 pages (5% duty)
MPBF	Bk: 300 pages, YMC: 150 pages
Service life	3 years

6.1.2 Cleaning



- For cleaning, do not use such a solvent as thinner.
- Do not use any cleaning liquid to clean the surface of the LCD module; otherwise, the surface membrane can come off.

Table 6-4. Cleaning

Part to be Cleaned	Cleaning Method
Exterior parts	Wipe with a cloth soaked into water once and squeezed strongly.
Rubber rollers	Wipe the rollers with a cloth dampened with alcohol.
LCD surface	Blow off the dust with a blower.
Scanner document table (Glass side)	

6.1.3 Lubrication

The types and amount of grease to be applied have been determined based on the evaluation at factory. Accordingly, definitely use a suitable volume of designated grease to the designated points for repair and maintenance of the product. Designated types of grease and application points are as shown below.



- Never use any grease other than those specified, since such grease can affect adversely the mechanical life and functions of this product or result in damage to this equipment.
- As the suitable volume is also designated based on evaluation result, avoid applying any undesignated volume.
- Do not lubricate any part other than those specified. Take care that no grease adheres to any paper transport parts, such as rollers, or the Printhead; otherwise, the print quality may drop.

□ Specified lubricant, etc.

Table 6-5. Specified Lubricant, etc.

Type	Name	Parts Code	Available
Grease	G-71	1304682	EPSON
Insulating Tape	Acetate Tape	1003963	

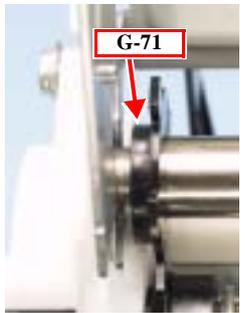
LUBRICATION OF PAPER GUIDE FRONT ASSY

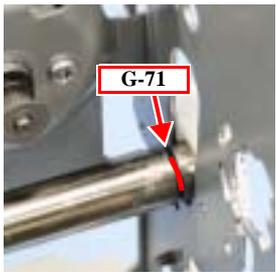
Lubrication Points	PF Roller Shaft and the shaft holders (2 positions: right and left)	Left side of PF Roller Shaft	Right side of PF Roller Shaft
Type	G-71		
Amount of Application	ø 1x3 mm		
Applying tool	Injector		
Precautions	Make sure that the coated surface of the PF Roller Shaft is free from grease.		

Lubrication Points	Paper Eject Roller Shaft and shaft holders (2 positions: right and left)	Left side of Paper Eject Roller Shaft	Right side of Paper Eject Roller Shaft
Type	G-71		
Amount of Application	ø 1x3 mm		
Applying tool	Injector		
Precautions	Make sure that the rubber rollers on the Paper Eject Roller Shaft are free from grease.		

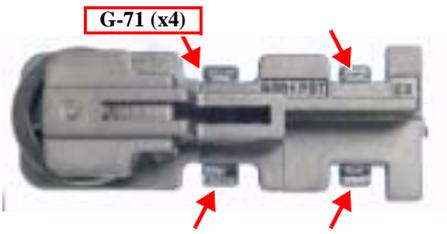
LUBRICATION AT INSTALLATION OF CARRIAGE ASSY

Lubrication Points	Shaft holder hole in the printer frame (for CR Guide Shaft) (2 positions: right and left)	Left side of printer frame	Right side of printer frame
Type	G-71		
Amount of Application	ø 1x Half periphery		
Applying tool	Injector		
Precautions			

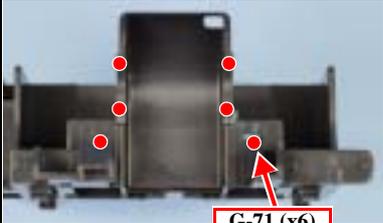
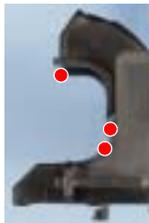
Lubrication Points	Right and Left PG Cams (Cam Contour)	Left side of printer frame	Right side of printer frame
Type	G-71		
Amount of Application	ø 1x One round		
Applying tool	Injector		
Precautions			

Lubrication Points	CR Guide Shaft (Grooves for pressure springs)	Left side of printer frame	Right side of printer frame
Type	G-71		
Amount of Application	ø 1x 2 mm		
Applying tool	Injector		
Precautions			

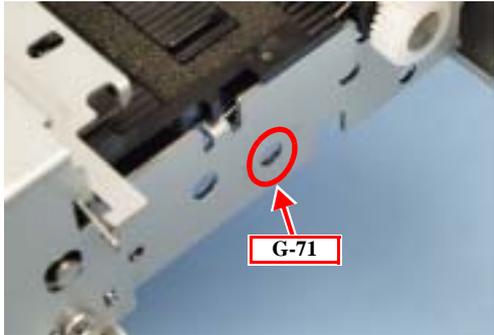
LUBRICATION OF DRIVEN PULLEY

Lubrication Points	Surfaces which come in contact with the printer frame (4 points)	
Type	G-71	
Amount of Application	ø 1x 2 mm	
Applying tool	Injector	
Precautions		

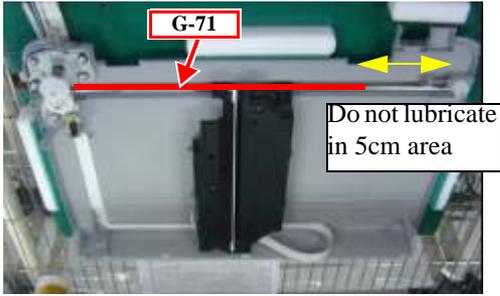
LUBRICATION AT INSTALLATION OF ASF ASSY

Lubrication Points	LD Roller Guide (Surfaces which come in contact with the LD Roller) (6 points)		
Type	G-71		
Amount of Application	ø 1x 2 mm		
Applying tool	Injector		
Precautions			

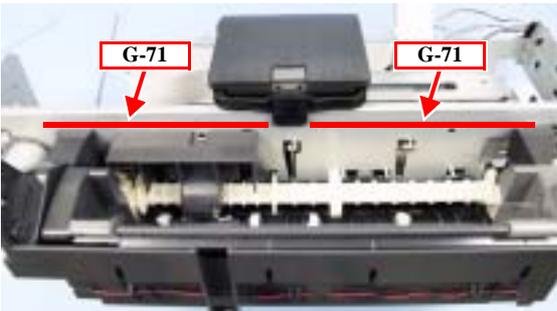
LUBRICATION AT INSTALLATION OF I/S ASSY

Lubrication Points	Printer frame: Surface which comes in contact with the Clutch Gear	
Type	G-71	
Amount of Application	One round	
Applying tool	Injector	
Precautions		

LUBRICATION OF SCANNER

Lubrication Points	Surface of scanner CR shaft Revision C without 5cm area from right end	
Type	G-71	
Amount of Application	Lubricate thinly	
Applying tool	Paint brush	
Precautions		

LUBRICATION OF PRINTER MECHANISM ASSY

Lubrication Points	Surfaces which come in contact with the carriage (rear of printer frame)	
Type	G-71	
Amount of Application	ø 1x15 cm (x2)	
Applying tool	Injector	
Precautions	Move the Carriage Assy to the center and apply grease to the right and left areas.	

CHAPTER

7

APPENDIX

7.1 Connectors

Table 7-1. Connectors on the Main Board

CN No.	Color	Connected to	Remarks
CN1	-	(USB interface connector)	For connection to PC
CN2	Red	USB I/F Board	4-pin
CN3	White	CR Motor	2-pin
CN4	Black	PF Motor	2-pin
CN5	White	CR Motor Unit (Scanner Unit)	4-pin
CN6	(FFC)	Printhead CSIC PW Sensor CR Encoder	28-pin
CN7	(FFC)	Printhead	25-pin
CN8	(FFC)	PF Encoder	5-pin
CN9	Black	APG Sensor	3-pin
CN10	White	PE Sensor	3-pin
CN11	White	CD-R Sensor (Guide & Tray)	4-pin
CN12	(FFC)	CCD Unit (Scanner Unit)	28-pin
CN13	Red	TPU Unit (Scanner Unit)	2-pin
CN14	Yellow	HP Sensor (Scanner Unit)	3-pin
CN15	(FFC)	LCD Module	8-pin
CN16	(FFC)	Panel Board	11-pin
CN17	-	(CF Slot)	
CN18	-	(Memory Card Slot)	
CN20	White	Power Supply Board	3-pin

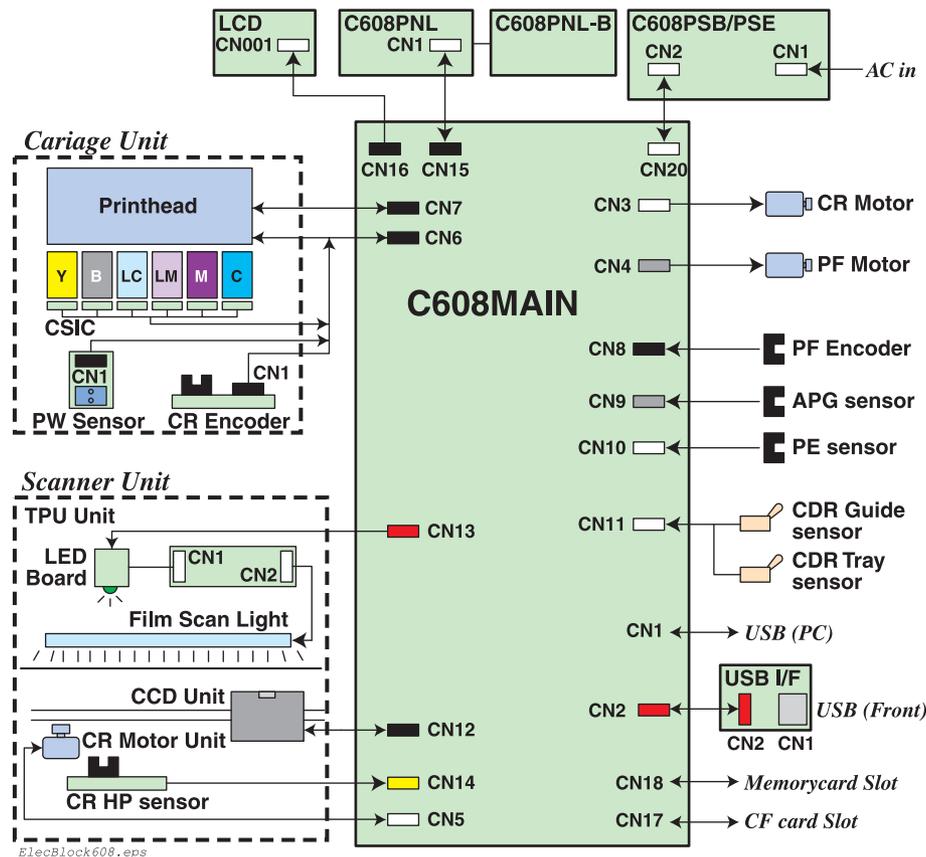


Figure 7-1. Connector Assignments

Printhead FFC

Main Board Side				Head PCB Side			
CN2		CN1		CN2		CN1	
Pin No.	Signal	Signal	Pin No.	Pin No.	Signal	Signal	Pin No.
		LEDON	28			LEDON	
		PW	27			PW	
		GND	26			GND	
1	SI3	COO	25	25	SI3	COO	
2	GND	CSCK	24	24	GND	CSCK	(CSIC)
3	SI2	CVDD	23	23	SI2	CVDD	(PW Sensor)
4	GND	CSDA	22	22	GND	CSDA	
5	SI1	GND	21	21	SI1	GND	
6	GND	CRST	20	20	GND	CRST	
7	SCK	GND	19	19	SCK	GND	
8	GND	N.C	18	18	GND		
9	CH	ENA	17	17	CH	ENA	
10	NCHG	EVDD	16	16	NCHG	EVDD	(Encoder)
11	VDD	ENB	15	15	VDD	ENB	
12	LAT	GND	14	14	LAT	GND	
13	XHOT	N.C	13	13	XHOT		
14	GND	TH	12	12	GND	TH	1
15	VHV	VDD2	11	11	VHV	VDD2	2
16	GND	GND	10	10	GND	GND	3
17	COMC	GND2C	9	9	COMC	GND2C	4
18	GND2C	COMC	8	8	GND2C	COMC	5
19	COMC	GND2C	7	7	COMC	GND2C	6
20	GND2B	COMB	6	6	GND2B	COMB	7
21	COMB	GND2B	5	5	COMB	GND2B	8
22	GND2B	COMB	4	4	GND2B	COMB	9
23	COMA	GND2A	3	3	COMA	GND2A	10
24	GND2A	COMA	2	2	GND2A	COMA	11
25	COMA	GND2A	1	1	COMA	GND2A	12

CR Motor

Pin No.	Signal on Main Board	Signal on Motor Side	Remarks
1	PRN-CR A	A (+)	
2	PRN-CR B	B (-)	

PF Motor

Pin No.	Signal on Main Board	Signal on Motor Side	Remarks
1	PRN-PF B	A (+)	
2	PRN-PF A	B (-)	

PE Sensor

Pin No.	Signal on Main Board	Signal on Mechanism Side	Remarks
1	PRN-PE	SIG	
2	PRN-PE	GND	
3	PRN-PE	VCC	

APG HP Sensor

Pin No.	Signal on Main Board	Signal on Mechanism Side	Remarks
1	APG-HP	SIG	
2	APG-HP	GND	
3	APG-HP	VCC	

CD-R Tray / Mode Sensor

Pin No.	Signal on Main Board	Signal on Mechanism Side	Remarks
1	CDR-MD	SIG	CD-R mode detection
2	CDR-MD	GND	
3	CDR-TRY	SIG	CD-R Tray detection
4	CDR-TRY	GND	

PF Encoder

Pin No.	Signal on Main Board	Signal on Mechanism Side	Remarks
1	PF-ENC	GND	CD-R mode detection
2	PF-ENC	ENCB	
3	PF-ENC	EVDD	CD-R Tray detection
4	PF-ENC	ENCA	CD-R Tray detection
5	PF-ENC	GND	

Power cable connector

Pin No.	Signal	Connected to	Function
1	+42V	-	+42V
2	GND	-	GND
3	PSC	-	Power supply control

Scanner HP sensor connector

Pin No.	Signal	Connected to	Function
1	SNS_IN	SCHP (E01A62CA)	Input to sensor
2	GND	-	GND
3	SNS_LED	+3.3V	Power to LEDs

Scanner motor connector

Pin No.	Signal	Connected to	Function
1	SCN_BX	OUT4B (A6627SJP-T)	Motor BX
2	SCN_AX	OUT3B (A6627SJP-T)	Motor AX
3	SCN_B	OUT4A (A6627SJP-T)	Motor B
4	SCN_A	OUT3A (A6627SJP-T)	Motor A

7.2 Component Layout

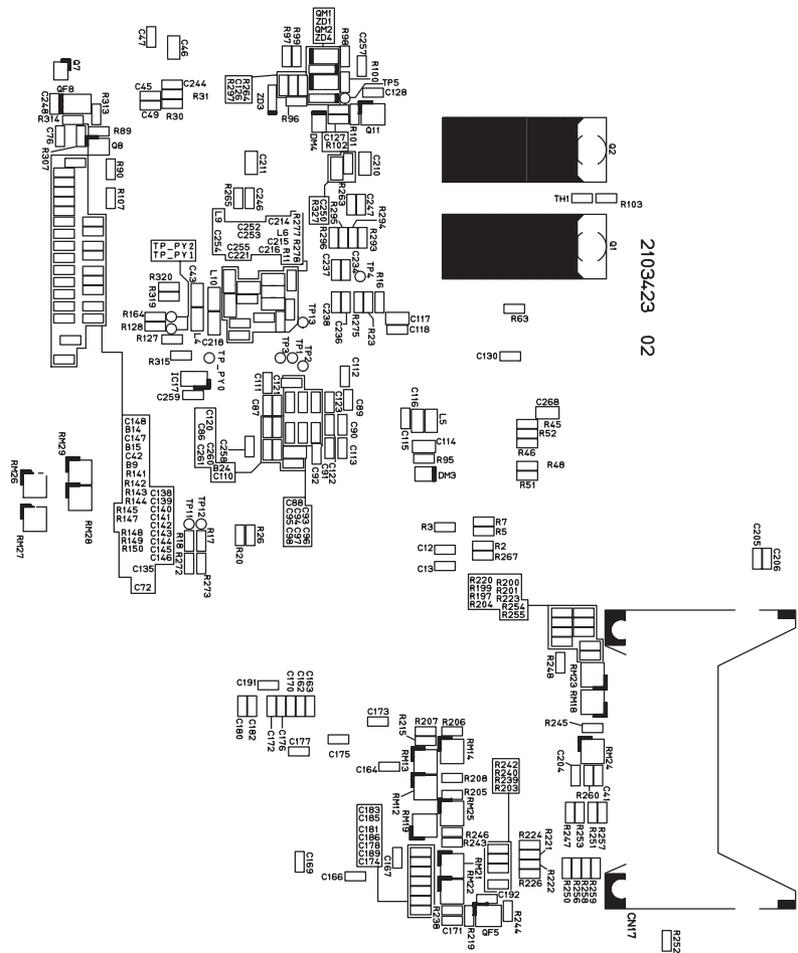


Figure 7-1. C608MAIN Component Layout (Back)

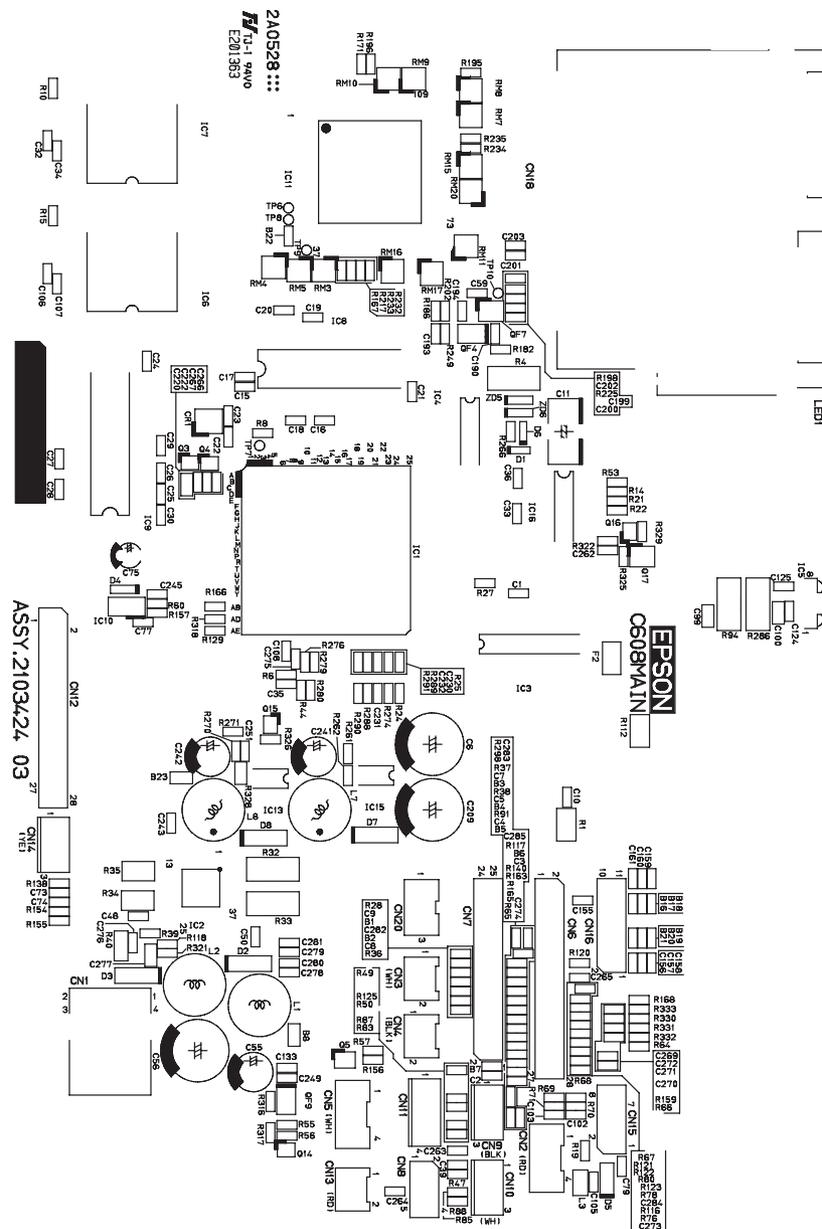


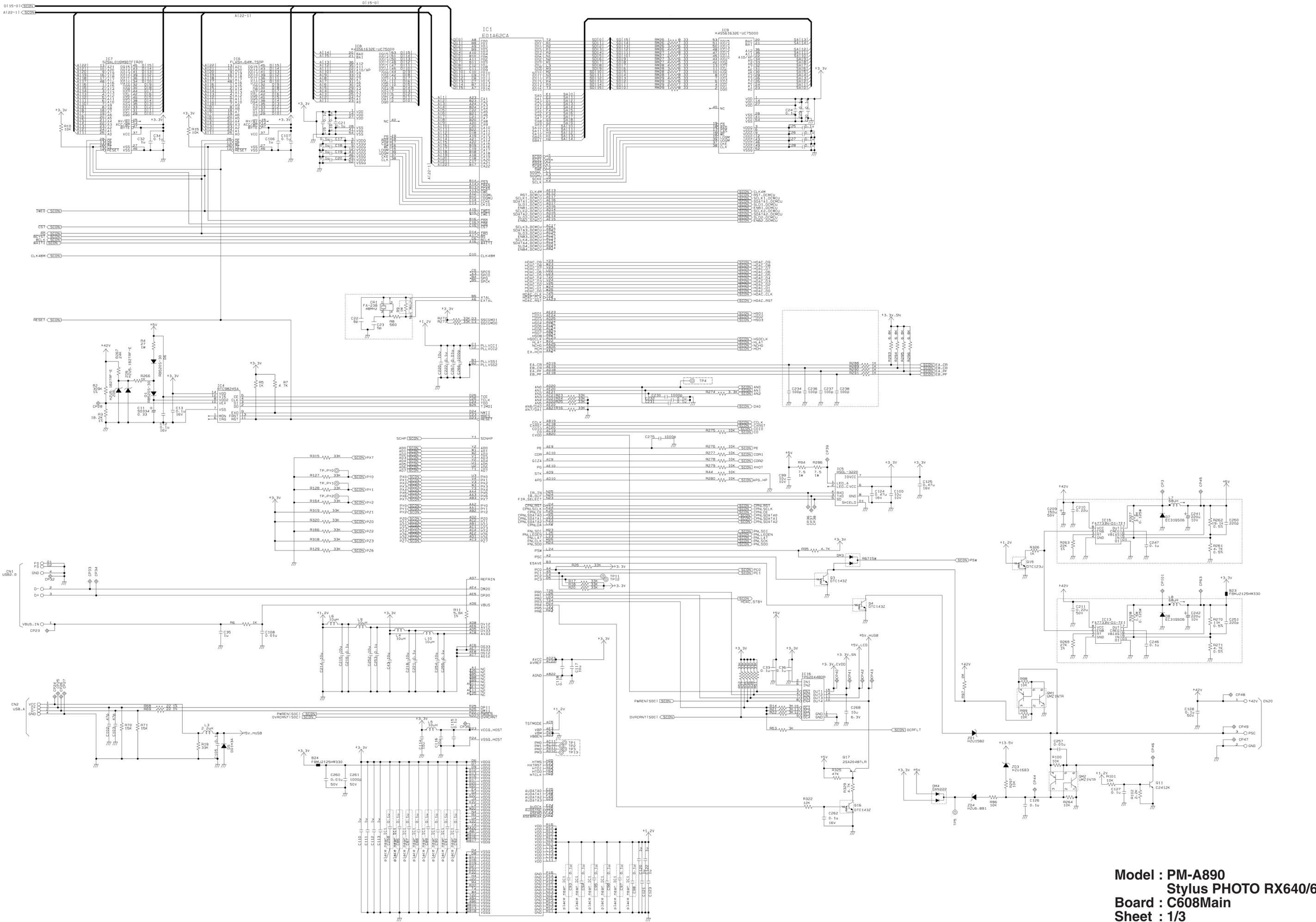
Figure 7-2. C608MAIN Component Layout (Front)

7.3 Electric Circuit Diagrams

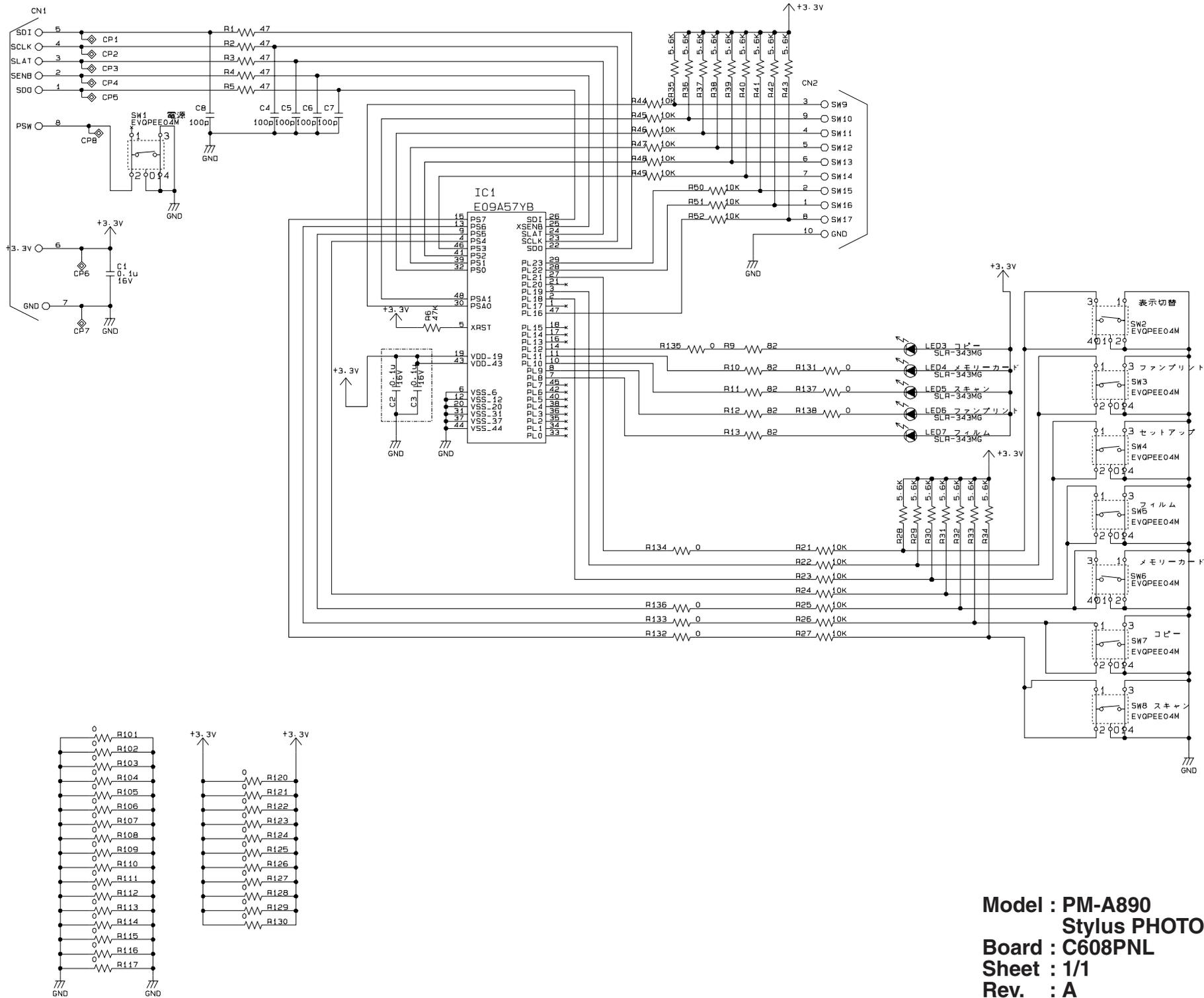
This section shows electric circuit diagrams of Stylus PHOTO RX640/650.

Table 7-1. Circuit Diagrams List

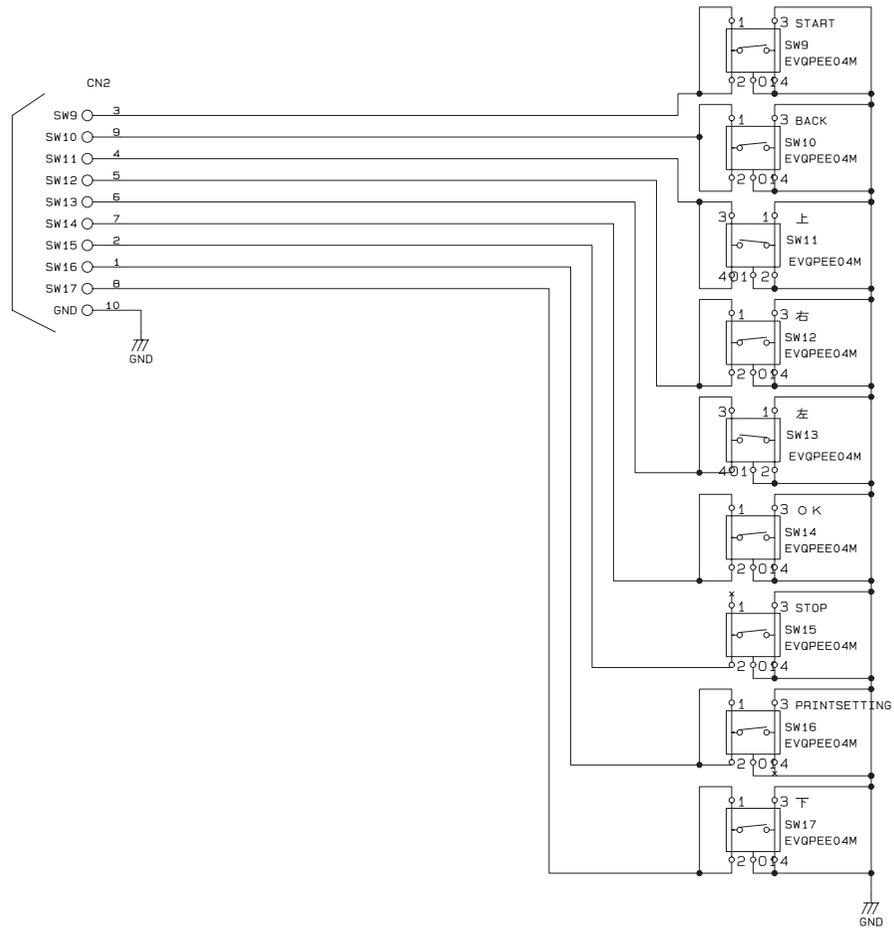
Circuit Board	Circuit Board Name	Number of Pages
Main Board	C608Main	3
Panel Board	C608PNL	1
	C608PNL-B	1
Power Supply Board	C608PSB	1
	C608PSE	1
CCD Unit Board	C608ISN	1



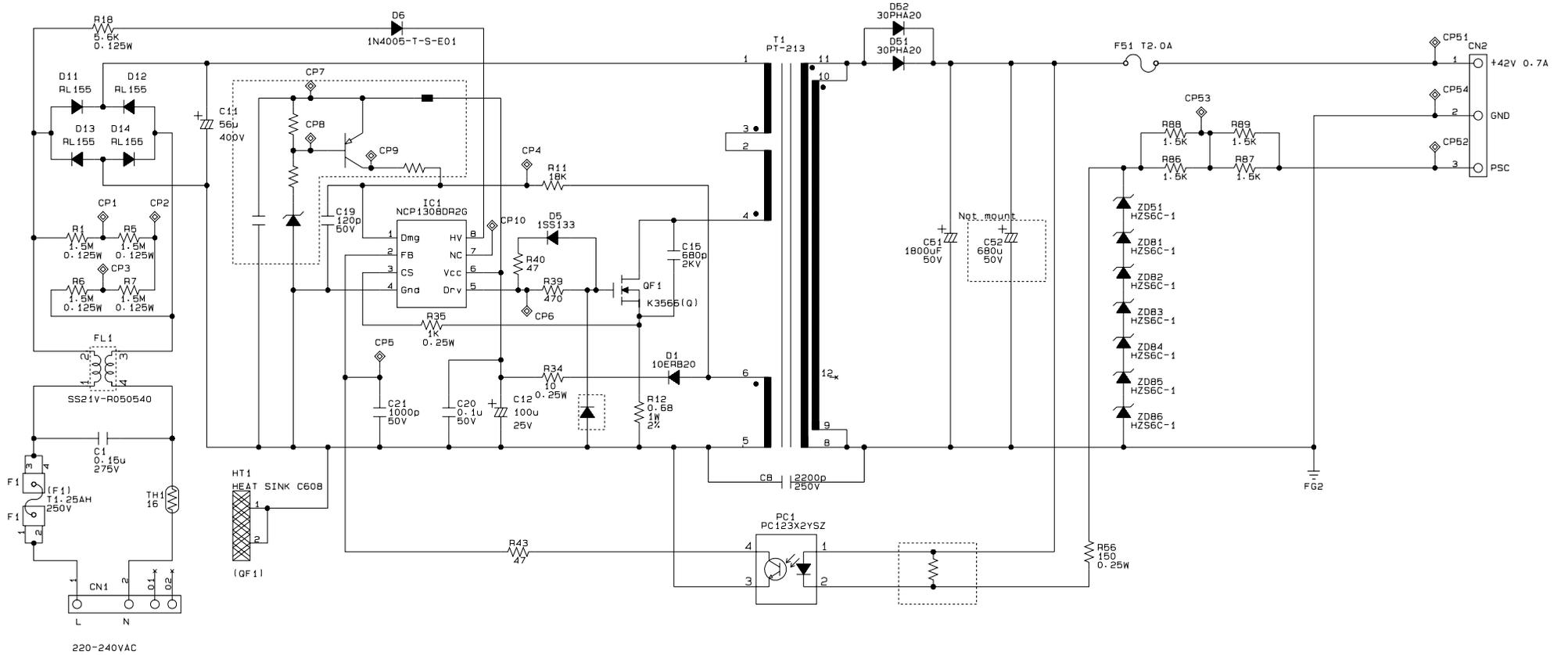
Model : PM-A890
 Stylus PHOTO RX640/650
 Board : C608Main
 Sheet : 1/3
 Rev. : D



Model : PM-A890
Stylus PHOTO RX640/650
Board : C608PNL
Sheet : 1/1
Rev. : A



Model : PM-A890
Stylus PHOTO RX640/650
Board : C608PNL-B
Sheet : 1/1
Rev. : C



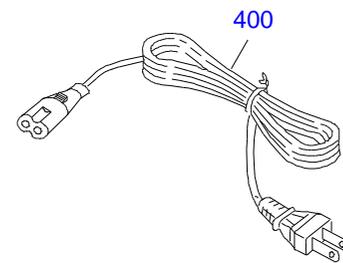
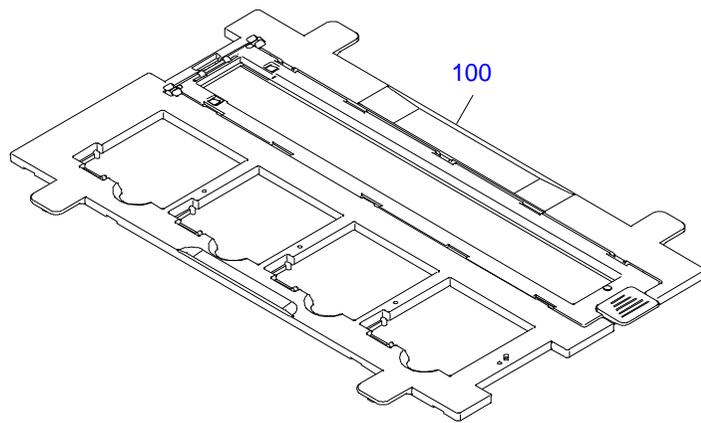
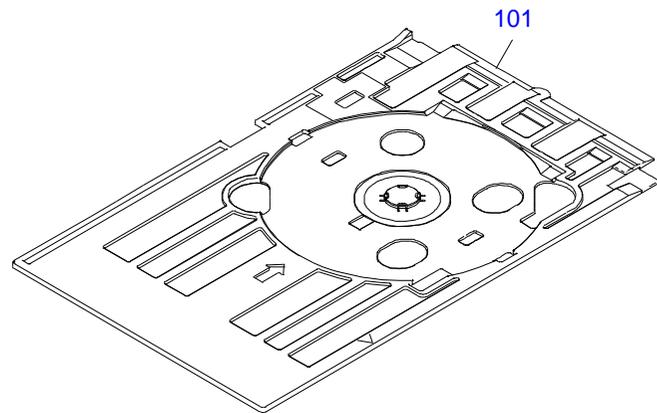
Model : Stylus PHOTO RX640/650
 Board : C608PSE
 Sheet : 1/1
 Rev. : B

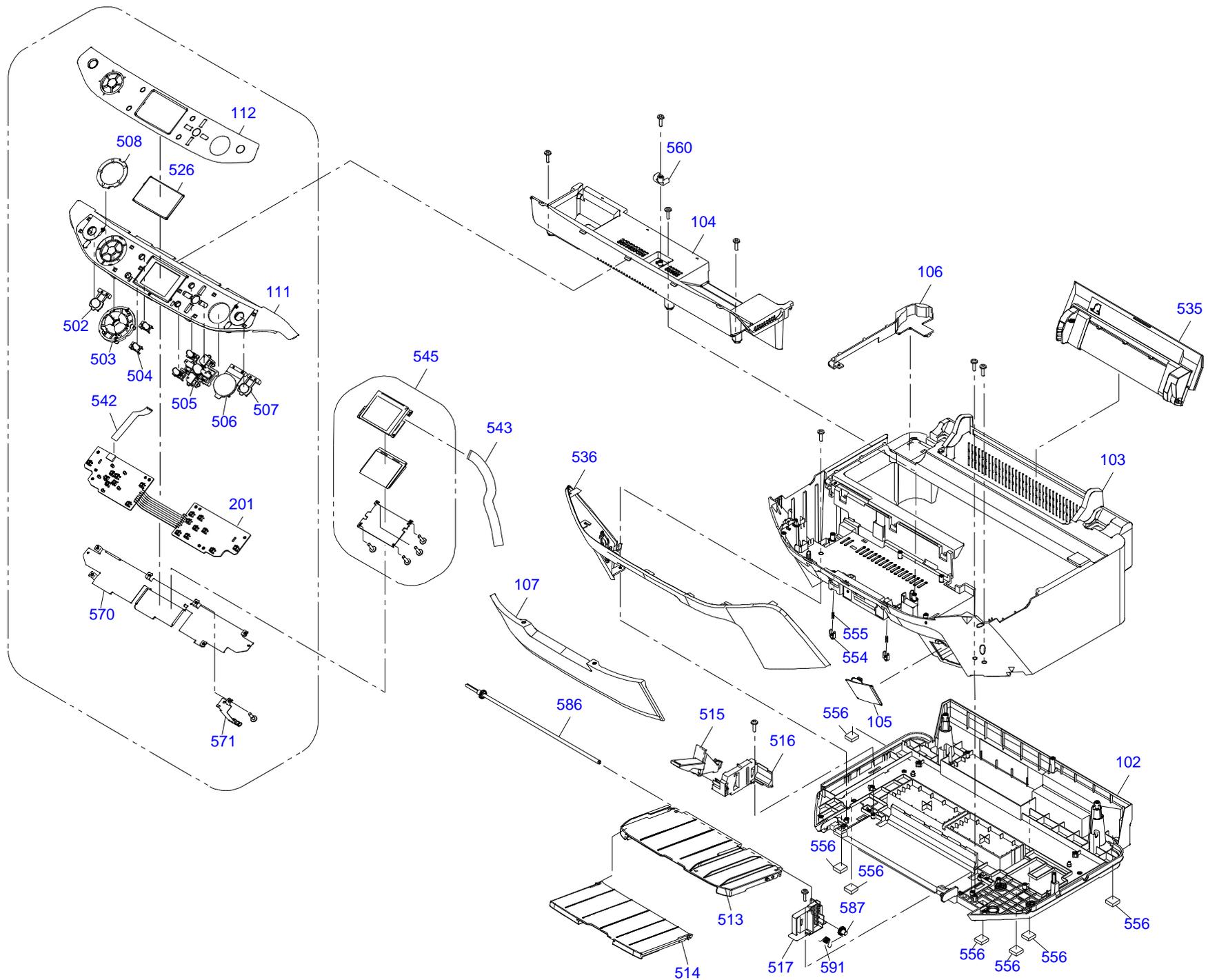
7.4 Exploded Diagrams

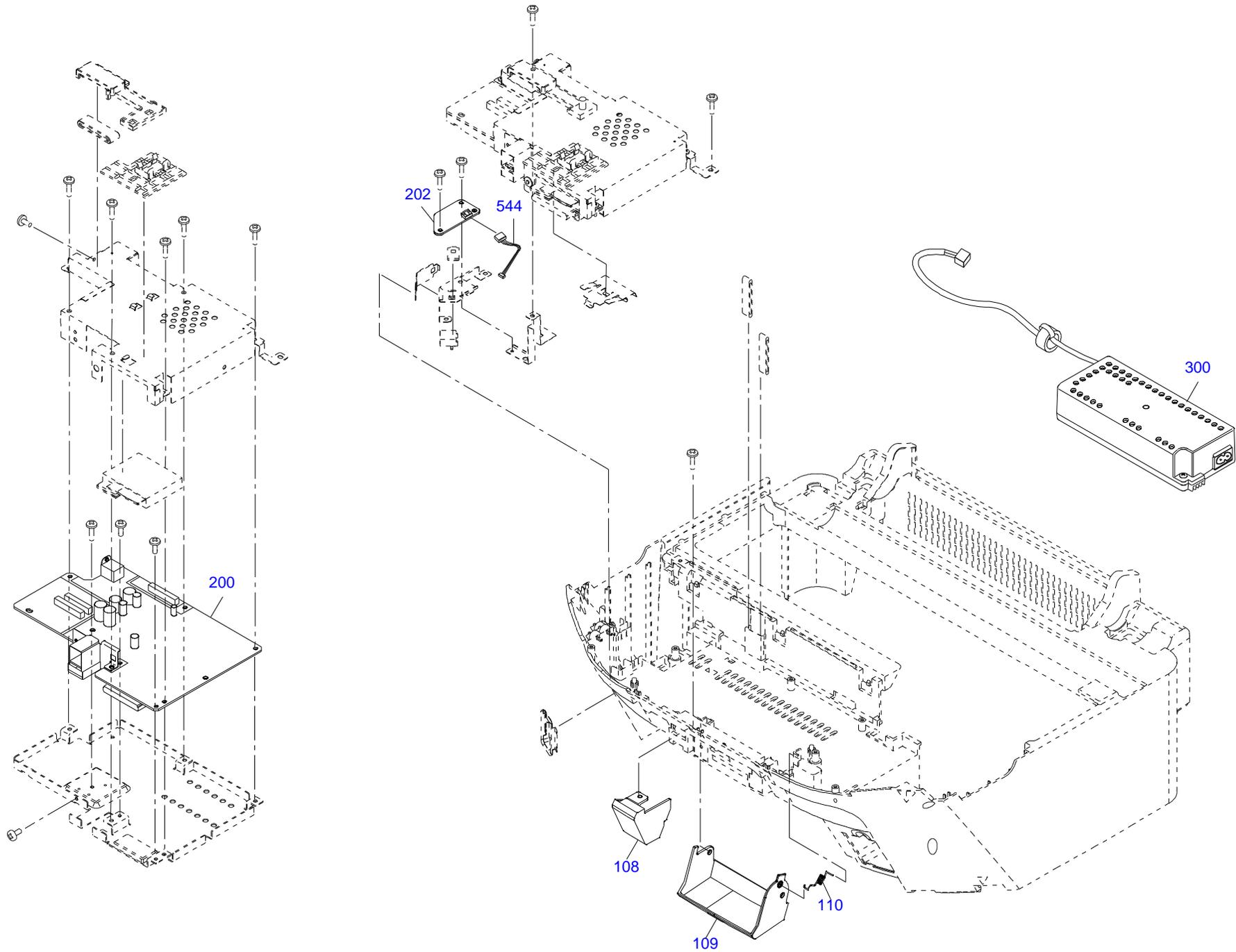
This section shows exploded diagrams of Stylus PHOTO RX640/650. The exploded diagrams consist of the following components:

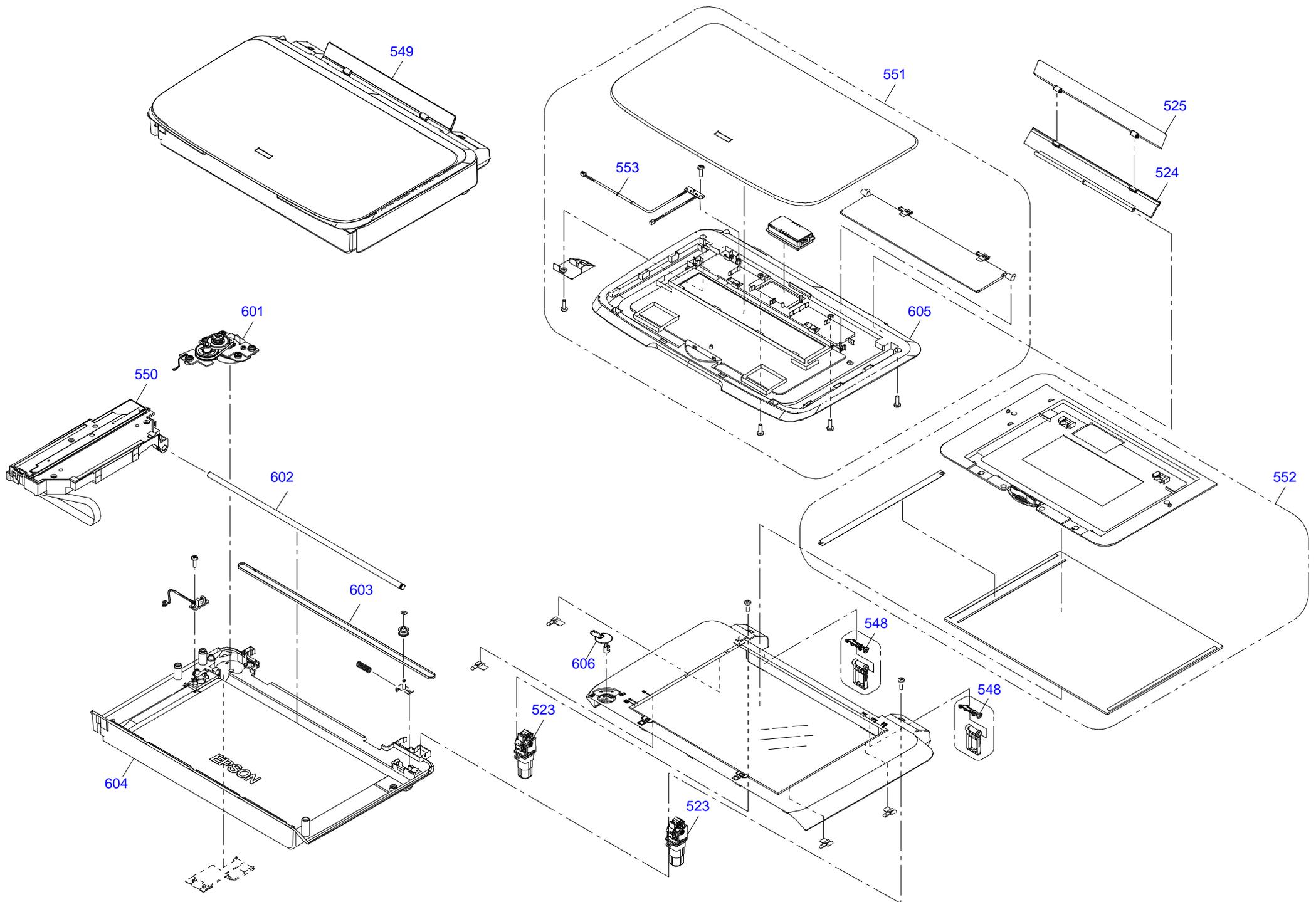
Table 7-1. Exploded Diagrams

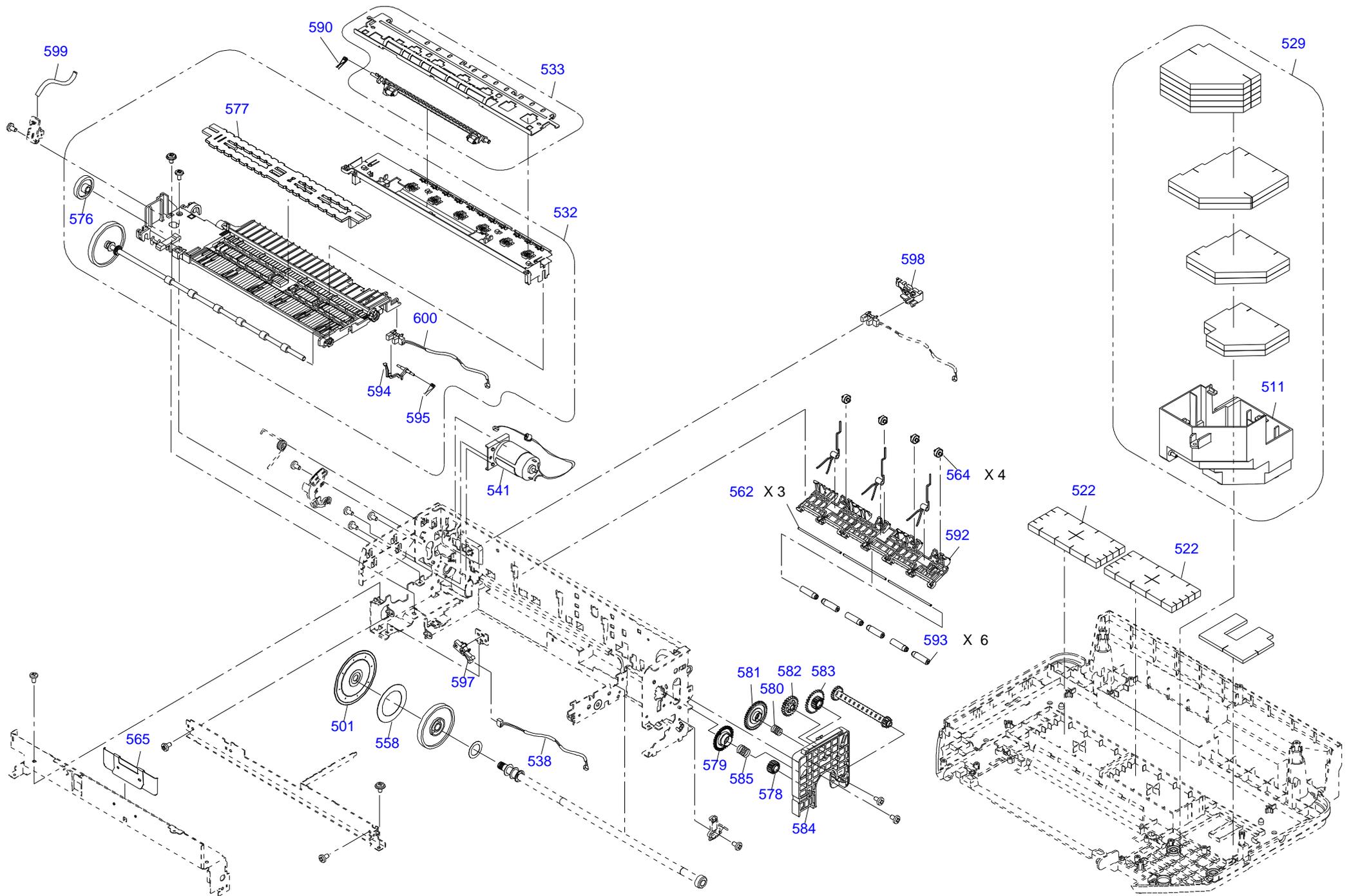
Drawing Number	Component	Page
No.1	Accessory-related Diagram	page 96
No.2	Exterior Part-related Diagram	page 97
No.3	Circuit Board-related Diagram	page 98
No.4	Scanner Unit Diagram	page 99
No.5	Printer Mechanism Unit Diagram 1	page 100
No.6	Printer Mechanism Unit Diagram 2	page 101

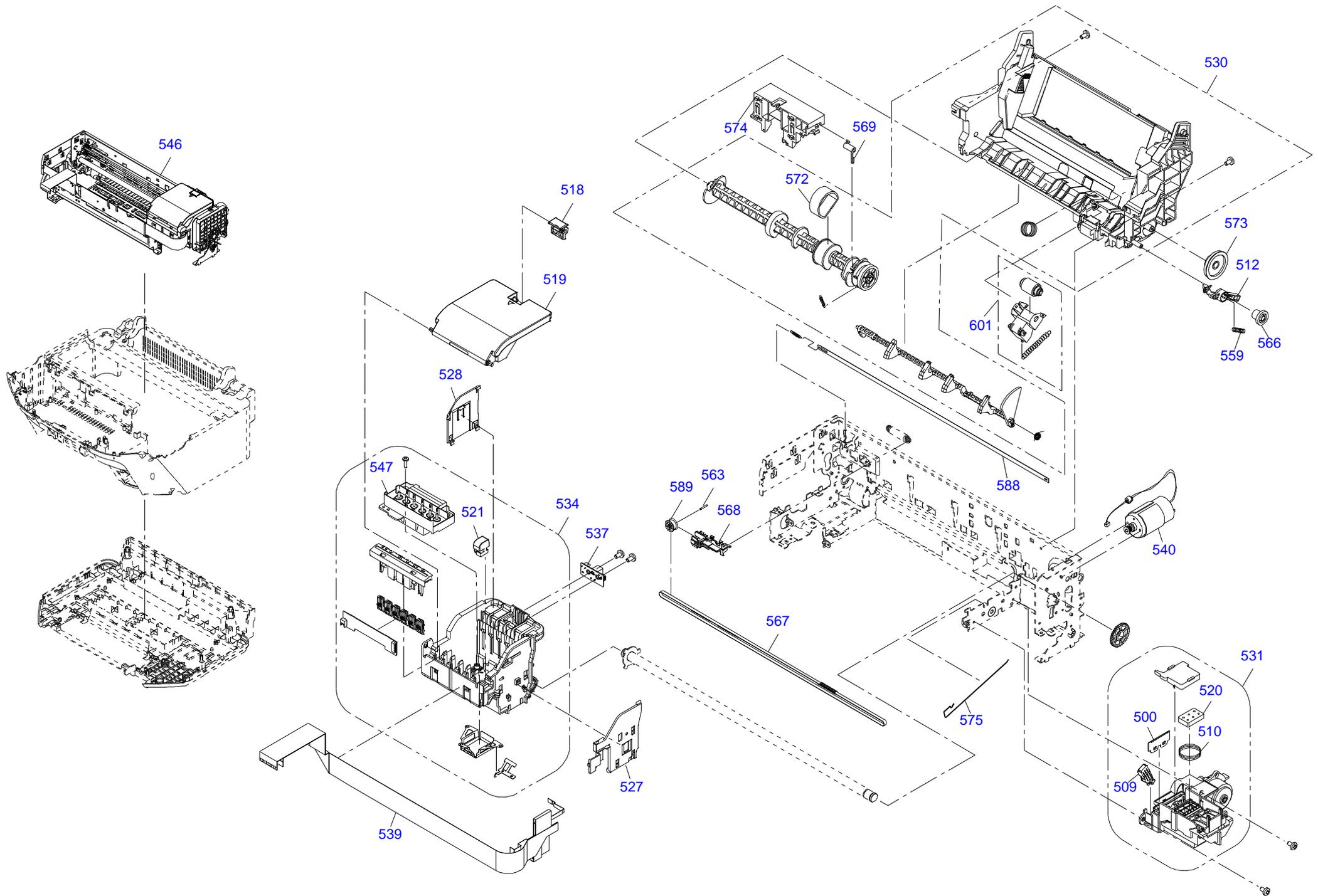












7.5 ASP Reference List

This section shows the ASP list of Stylus PHOTO RX640/650.

Table 7-1. ASP Reference List

Ref. No.	Parts name
100	HOLDER FILM ASSY;ASP
101	TRAY,CDR
102	HOUSING,LOWER
103	HOUSING,MIDDLE
104	COVER,MIDDLE
105	COVER,TUBE
106	COVER,USB
107	COVER,STACKER
108	COVER,IRDA
109	COVER,CARD,SLOT
110	TORSION SPRING,COVER,CARD SLOT
111	HOUSING,PANEL
112	OPERATION,PANEL;EU
200	BOARD ASSY.,MAIN
201	BOARD ASSY.,PANEL
202	BOARD ASSY.,I/F
300	POWER SUPPLY ASSY.;220V;ASP
500	CLEANER,HEAD
501	SCALE,PF
502	BUTTON,POWER
503	BUTTON,MODE
504	BUTTON,SELECT
505	BUTTON,CROSS
506	BUTTON,START
507	BUTTON,STOP
508	OPTICAL TUBE,MODE,SELECT
509	LOCK,CR
510	EXTENSION SPRING,0.8
511	POROUS PAD INK,EJ,CAP,LOWER
512	LEVER,CHANGE
513	STACKER

Table 7-1. ASP Reference List (continued)

Ref. No.	Parts name
514	STACKER,SUPPORT
515	LEVER,GUIDE,CDR
516	GUIDE,STACKER,RIGHT
517	GUIDE,STACKER,LEFT
518	HOOK,COVER,CARTRIDGE
519	COVER,CARTRDGE
520	POROUS PAD,INK,STOPPER
521	HINGE,COVER,CARTRIDGE
522	POROUS PAD,HOUSING,LOWER
523	HINGE,ASSY
524	COVER,ASF
525	COVER,ASF,SUPPORT
526	COVER,LCD,ASSY.
527	COVER,CABLE,HEAD
528	COVER,CABLE,HEAD,INNER
529	TRAY,POROUS PAD ASSY;ASP
530	ASF ASSY;ASP
531	INK SYSTEM ASSY;B;ASP
532	PAPER GUIDE FRONT ASSY;ASP
533	HOLDER EJ ASSY;ASP
534	CARRIAGE ASSY;ASP
535	PAPER SUPPORT ASSY;ASP
536	HOUSING FRONT EBM ASSY;ASP
537	BOARD ASSY.,ENCODER,PF
538	HARNESS,DETECTOR,GUIDE,CDR
539	CABLE,HEAD
540	MOTOR,ASSY.,CR
541	MOTOR,ASSY.,PF
542	HARNESS
543	HARNESS
544	HARNESS
545	LCD MODULE
546	PRINTER MECHANISM ASP;MAQ10-102
547	PRINT HEAD
548	HINGE,GUIDE

Table 7-1. ASP Reference List (continued)

Ref. No.	Parts name
549	SCANNER UNIT,EAI/EURO,ASP
550	CARRIAGE UNIT; ASP
551	TPU UNIT,EAI/EURO;ASP
552	HOUSING MAT ASSY;ASP
553	HARNESS TPU
554	LOCK,STACKER
555	COMPRESSION SPRING,2.94
556	FOOT
557	EXTENTION SPRING,1.09
558	DOUBLE SIDED TAPE,D21
559	COMPRESSION SPRING,2.36
560	LOCK,SCANNER,EDG2
561	OPTICAL TUBE,PC SLOT
562	SHAFT,ROLLER,DRIVEN
563	SHAFT,PULLEY,DRIVEN
564	IDLE ROLLER,10
565	FRAME,HOLDER,FFC
566	SPUR GEAR,16
567	TIMING BELT,CR
568	HOLDER,PULLEY,DRIVEN
569	TORSION SPRING,137.7
570	SHIELD PLATE,PANEL
571	GROUNDING PLATE,PANEL
572	ROLLER,LD
573	COMBINATION GEAR,16.8,32.8
574	GUIDE,ROLLER,LD
575	GROUNDING WIRE,PFEJ
576	SPUR GEAR,26.5
577	POROUS PAD,PAPER GUIDE,FRONT
578	SPUR GEAR,12.8
579	SPUR GEAR,28.8
580	COMPRESSION SPRING,0.97
581	SPUR GEAR,33.6
582	COMBINATION GEAR,12.8,27
583	COMBINATION GEAR,14,22

Table 7-1. ASP Reference List (continued)

Ref. No.	Parts name
584	HOLDER,APG
585	COMPRESSION SPRING,0.94
586	SHAFT,CDR
587	SPUR GEAR,12
588	SCALE,CR
589	PULLEY,DRIVEN
590	TORSION SPRING,FRAME,EJ
591	TORSION SPRING,LEVER,CDR,GUIDE
592	PAPER GUIDE,UPPER
593	ROLLER,DRIVEN
594	LEVER,PE
595	TORSION SPRING,LEVER,PE
596	TORSION SPRING,FRAME,EJ,LEFT
597	DETECTOR,LEAF,B2
598	LEAF SENSOR
599	CABLE,ENCODER,PF
600	HARNESS,DETECTOR,PE
601	HOLDER RETARD ASSY;ASP
601	MOTOR CR;ASP
602	SHAFT,CR
603	TIMING,BELT
604	HOUSING,LOWER
605	HOUSING,TPU
606	LOCK,CR
NO FIG	I/C WITHOUT INDIVIDUAL BOX B,WST,AS,4CD01C
NO FIG	I/C WITHOUT INDIVIDUAL BOX C,WST,AS,4CD01C
NO FIG	I/C WITHOUT INDIVIDUAL BOX M,WST,AS,4CD01C
NO FIG	I/C WITHOUT INDIVIDUAL BOX Y,WST,AS,4CD01C
NO FIG	I/C WITHOUT INDIVIDUAL BOX LC,WST,AS,4CD01C
NO FIG	I/C WITHOUT INDIVIDUAL BOX LM,WST,AS,4CD01C
NO FIG	PAD,CR