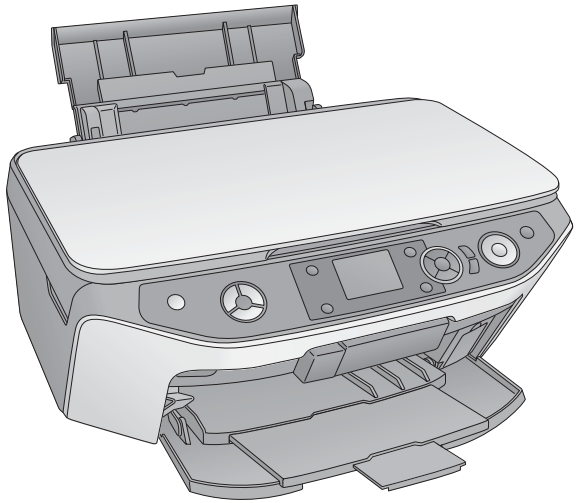
SERVICE MANUAL



Scanner•Printer•Copier

EPSON
Stylus PHOTO RX 560/580/590

SEMF06003

EPSON
EXCEED YOUR VISION

Notice

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	September 1, 2006	First Release

CONTENTS

Chapter 1 Product Description

Chapter 2 Operating Principles

Chapter 3 Troubleshooting

Chapter 4 Disassembly and Assembly

Chapter 5 Adjustment

Chapter 6 Maintenance

Chapter 7 Appendix

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 a high speed on plain paper, excellent 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 colors available with separate respective ink cartridges
  - Borderless printing available using EPSON special media paper.
  - Reduced noise level
  - CD-R Printing
  - ESC/P-R Level-1 commands supported, and printing of RGB data transmitted from the host computer available

- Scanner Functions

  High-quality scanning available with the newly employed 1200-dpi CIS sensor. In addition, the scanner features the following:

  - Maximum optical resolution 1200 x 2400 dpi
  - Scan pixel depth (for each color of RGB): Input 16 bits / Output 1 bit or 8 bits
  - Scanning to Memory Card function available (in stand-alone mode)

- Stand-alone copy functions
  - “3 mm bottom margin” printing function
  - “Borderless copying”
  - Printing on CD/DVD labels and jackets
  - Repeated copying to provide various types of copying
  - “2-up copying” helpful in minimizing paper waste
  - “Wallet Photo Copy” to enable printing on Wallet Photo size (Only EAI)

- Memory card print functions
  - The printer is equipped with a memory card reader function and has a stand-alone memory card printing function.
  - Index Sheet printing supported (Images can be selected simply by marking the desired images on the Index Sheet and scanning the sheet.)
  - In addition to photo selection methods, such as “View and Print”, “Print All Photos” and “Print by Date”, which permit setting the number of copies of the selected photos, photo editing functions, such as “Cropping and enlarging a photo” is also available.
  - The P.I.F. print mode provided (Print Image Framer Ver.2 or 3 supported)

- Scan functions

  The “Scan to Memory Card” function facilitates the conversion of a reflective document to digital form.

- Specialty print functions
  - “Photo Greeting Card” (Only EAI) provided, which is helpful in printing greeting cards or 4 x 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.
  - “Reprint/Restore Photos” provided, which helps to reprint three 4 x 6-inch photos or one 5 x 7-inch photo.
  - “CD/DVD Print (EAI/Euro/Asia)” provided, by which the image of the favorite is printed on CD/DVD.

- Simultaneous use of functions

  Printer functions and scanner functions, which are independent of each other, can be operated simultaneously from a computer. However, note that printing by ESC/P-R commands cannot be operated simultaneously with scanner functions.

- 2.5-inch TFT LCD (240 x 480 dots)

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 1140 dpi (max)
Input buffer size	256K 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	584.2 mm/sec (23 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	CIS
Document sizes	A4, US Letter
Max. effective pixels	10,200 x 14,040 pixels (1200 dpi)
Resolution	Main scan: 1200 dpi Sub scan: 2400 dpi
Scanning resolution	50 to 4800 dpi (selectable in 1-dpi steps), 7200 dpi, 9600 dpi
Pixel depth	16-bit input and 1.8-bit output for each element of each color
Light source	LED

☐ Scanning Area

RW (readable width)	OLM (out-of-range left margin)	RL (readable length)	OTM (out-of-range top margin)
216 mm (8.5”)	1.5 mm ± 1 mm	297 mm (11.7”)	1.5 mm ± 1 mm

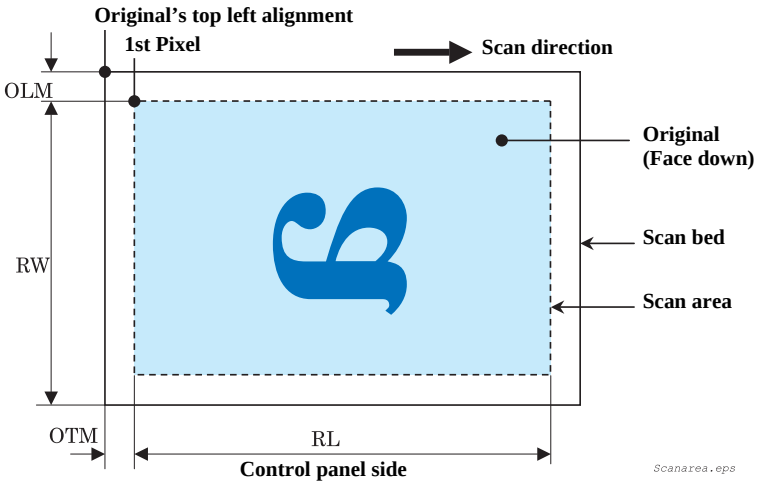


Figure 1-1. Image Scanning Area

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)

CHECK POINT

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	480Mbps (High Speed Device)
Data format	NRZI
Compatible connector	USB Series B
Maximum cable length	Less than 2 m

☐ External Storage Device Connection Ports

- ■ 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

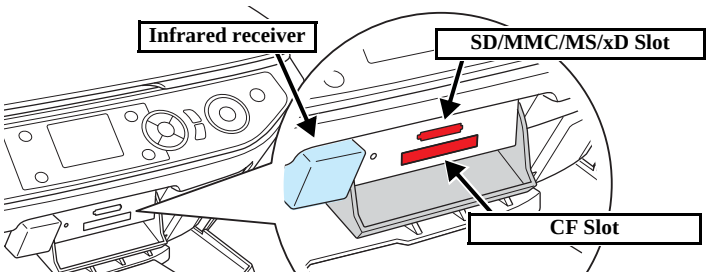
Items	Specifications
Communication method	Bluetooth standard specification Ver. 2.0 + EDR
Output	Bluetooth standard specification Power Class 2
Communication distance	Approx. 10 m (line-of-sight)
Frequency band used	2.4 GHz band (2.4 GHz to 2.4835 GHz)
Supported profiles	Basic Printing Profile (BPP) 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 RX560/580/590 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 kbits/s-115.2 kbits/s, 0.576 Mbits/s, 1.152 Mbits/s, 4.0 Mbits/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	Remarks
1	xD-Picture card	xD-Picture card (Type-M/H)	xD-Picture Card Specification Version 1.20 compliant	Type M/H supported
	Memory Stick	Memory Stick	MemoryStick Standard Version 1.42-00 compliant	Max: 128 MB, including versions with memory select function
		MagicGate Memory Stick		Max: 128 MB, copy protection function is not supported
		Memory Stick PRO	MemoryStick Standard Memory Stick PRO Format Specifications Version 1.02-00 compliant	Copy protection function is not supported
		Memory Stick Duo		Requires Memory Stick Duo adapter
		Memory Stick Pro Duo		Requires Memory Stick Duo adapter
	SD/MMC	SD	SD Memory Card Specifications / PART1. Physical Layer Specification Version 2.0 compliant	
		miniSD		Requires SD adapter
		microSD		Requires SD adapter
		SDHC		Speed class is not supported
		miniSDHC		Requires SD adapter. Speed class is not supported
		microSDHC		Requires SD adapter. Speed class is not supported
		MMC	MultiMediaCard System Specifications Version 4.1 compliant	
2	CF Type II	Compact Flash	CF+ and CompactFlash Specification ReVision 3.0 compliant	Only Memory card that supports True-IDE Mode
		Microdrive		

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.
- For direct printing: Only the image files in a valid slot are determined to be valid and assigned photo numbers. The number of images does not change even if media are inserted into unselected slots.
- For PC connection (Windows): Only one “removable disk” drive is displayed; and only the medium in a valid slot can be accessed from the “removable disk.” Media inserted in unselected slots are not accessible.
- 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.

3: Selecting a slot when power is turned on: If media are inserted into multiple slots when power is turned on, an accessible slot is determined in accordance with the above order of priority.

4: Selecting a slot after power is 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.

Stylus PHOTO RX560/580/590 does not support SmartMedia. (No slot for SmartMedia)

Table 1-6. Maximum Capacity of the Media

Media	Maximum Capacity Specified in the Standard	Operation-confirmed Maximum Capacity
CompactFlash	Unknown	4GB
Memory Stick	128MB	128MB
Memory Stick PRO	32GB	4GB
SD Memory Card	2GB	2GB
SDHC Memory Card	32GB	4GB
MultiMediaCard	4GB (Presumed)	64MB
xD-Picture Card	2GB	1GB

1.3 Consumables and Options

1.3.1 Ink Cartridges

Table 1-7. Ink Cartridges

Items	Specifications
Type	Each-color separate ink cartridge
Colors	Black, Cyan, Magenta, Yellow, Light Cyan, Light Magenta
The term of validity	2 years (Total period of packed state and unpacked state) 6 months after unpacking
Storage temperature	Installed : -20°C ~ 40°C (Within 1 month at 40°C) Packing storage : -30°C ~ 40°C (Within 1 month at 40°C)
Dimensions	12.7 mm (W) x 68.0 mm (D) x 47.0 mm (H)

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

CHECK POINT

- **Ink cartridges whose validity has expired should not be used.**
- **The ink in cartridges freezes if left at 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.**
- **The ink cartridges for Stylus PHOTO RX560/580/590, which are of a newly developed type, are not interchangeable with those for Stylus PHOTO RX640/650.**

1.4 Common Specifications

1.4.1 Electrical Specifications

☐ Primary power input

Table 1-8. Primary Power Input

	100-120 V model	220-240 V model
Rated power supply voltage	AC100 - 120 V	AC220 - 240 V
Input voltage range	AC90 - 132 V	AC198 - 264 V
Rated current	0.6 A	0.3 A
Maximum rated current	1.2 A	0.6 A
Rated frequency	50 - 60 Hz	
Input frequency range	49.5 - 60.5 Hz	
Power consumption	Approx. 16 W (Standalone copying, ISO10561 Letter Patter, Plain Paper - A4 Text)	
	Approx. 5.5 W (Low-power Mode)	
	Approx. 2.5 W (Sleep Mode)	
	Approx. 0.2 W (Power Off Mode)	

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

2: If inactive condition of the printer continues for more than 3 minutes, the status shifts to the standby status to reduce holding current to motor.

3: If inactive condition of the scanner continues for more than 3 minutes, power supply to the scan lamp is stopped.

☐ Dielectric strength
AC 1000 Vrms, 1 minute or AC 1200 Vrms, 1 second

1.4.2 Safety Standards/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 Environment Resistance

Table 1-9. Environment Resistance

	Operating	Not operating
Temperature	10~35 °C *2	-20~40 °C (1 month when at 40 °C)
Humidity	20~80% *1,*2	5~85% *1
Impact	1 G, 1x10^{-3} seconds	2 G, 2x10^{-3} seconds*1
Vibration	0.15G 10~55Hz	0.50G 10~55Hz *1

Note*1: No condensation

*2: Under the following conditions

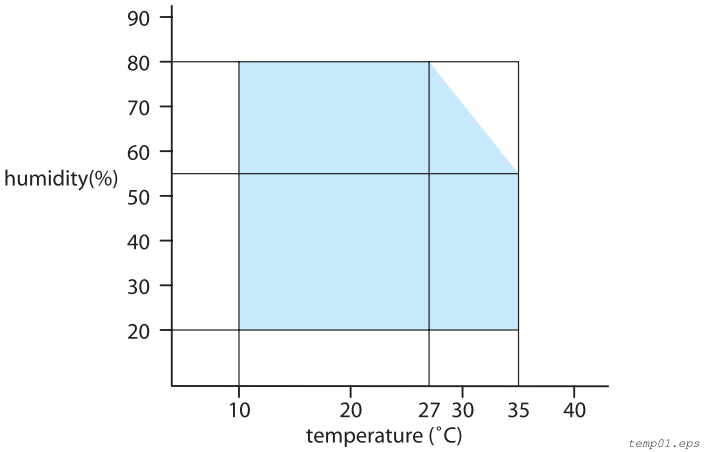


Figure 1-2. Environmental Conditions

1.4.4 Lifetime

Total print volume	16,000 pages (A4/Letter) or 5 years, whichever comes first
Print head lifetime	6 billion shots (per nozzle) or 5 years, whichever comes first

1.4.5 Noise

☐ Noise level : Max T.B.D. dB (During copy, ISO7779)

1.4.6 Weight / Physical Specifications

Weight		8.3 kg (Excluding the ink cartridges and power cable)
External Dimensions (Width x Depth x Height)	when closed	450 mm x 414 mm x 210 mm
	in operation	450 mm x 534 mm x 281 mm

1.4.7 Special Operations

With Stylus PHOTO RX560/580/590, the special operation modes described below are available by pressing the specified buttons.

CAUTION

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

Table 1-10. 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)
Displaying the fatal error code	[Stop] + [Print Setting] + [Display]	Displaying error type on the LCD by pressing the buttons specified at left together when a printer error has occurred

CHAPTER

2

OPERATING PRINCIPLES

2.1 Overview

This Chapter describes the operating principles of the mechanism and electric circuits of Stylus PHOTO RX560/580/590.

2.1.1 Mechanical Components

The printer of Stylus PHOTO RX560/580/590 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 drive 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 RX560/580/590 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 (x2), 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.
Scanner Unit	CIS consisting of 1200 dpi CCD for reflection (light source: LED)

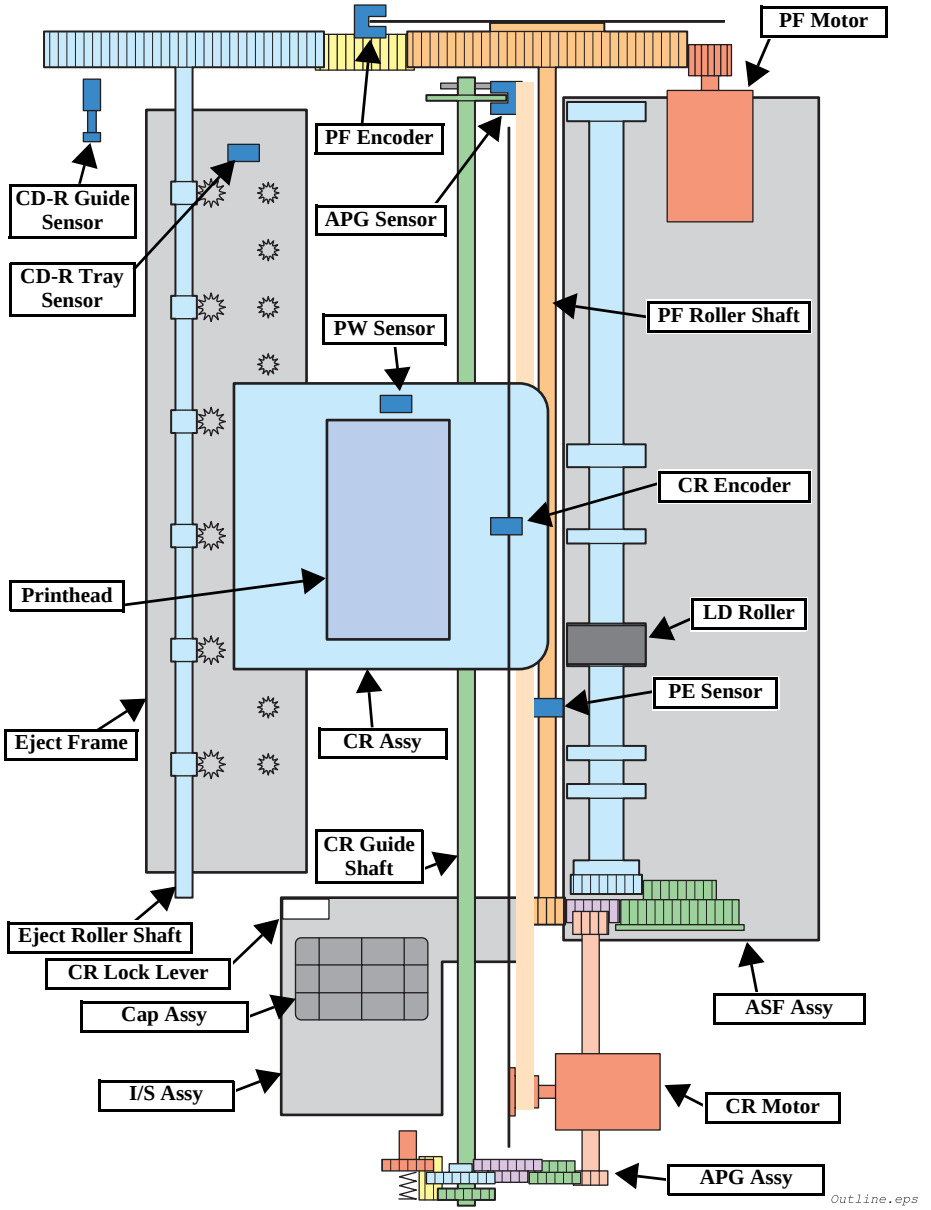


Figure 2-1. Schematic Printer Mechanism

2.1.2 Motors and Sensors

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

No.	Name	Function
1	Printhead	F3-MACH head (6 colors x 90 nozzles)
2	CR Motor	Type: DC motor Voltage: 42V DC ± 5% (voltage applied to the driver) Characteristics: Armature resistance : 22.7 Ω ± 10% Inductance : 17.5 mH ± 25% Drive system: PWM system, constant-current chopping system
3	PF Motor	Type: DC motor Voltage: 42V DC ± 5% (voltage applied to the driver) Characteristics: Armature resistance : 21.2 Ω ± 10% Inductance : 17.2 mH (1kHz) Drive system: PWM system
4	PE detector	Function: Detection of the paper tail end, Paper leading edge positioning control Detection method: Transmissive-type photo-interrupter
5	Ink Cartridge detector	CSIC board
6	PTS detector (CR)	Type: Linear encoder Resolution: 180 pulse/inch
7	PTS detector (PF)	Type: Linear encoder Resolution: 180 pulse/inch
8	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
9	APG detector	Function: APG position detection Detection method: Transmissive-type photo-interrupter
10	CD-R Guide detector	Function: CD-R Guide up/down detection Detection method: Mechanical contact detector
11	CD-R Tray detector	Function: CD-R Tray presence detection Detection method: Mechanical contact detector

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

No.	Name	Function
1	CR Motor	Type: DC motor Voltage: 42V DC ± 5% (voltage applied to the driver) Drive system: VrefPWM input constant-current chopping system
2	Encoder sensor	Type: Linear encoder Resolution 180 pulse/inch

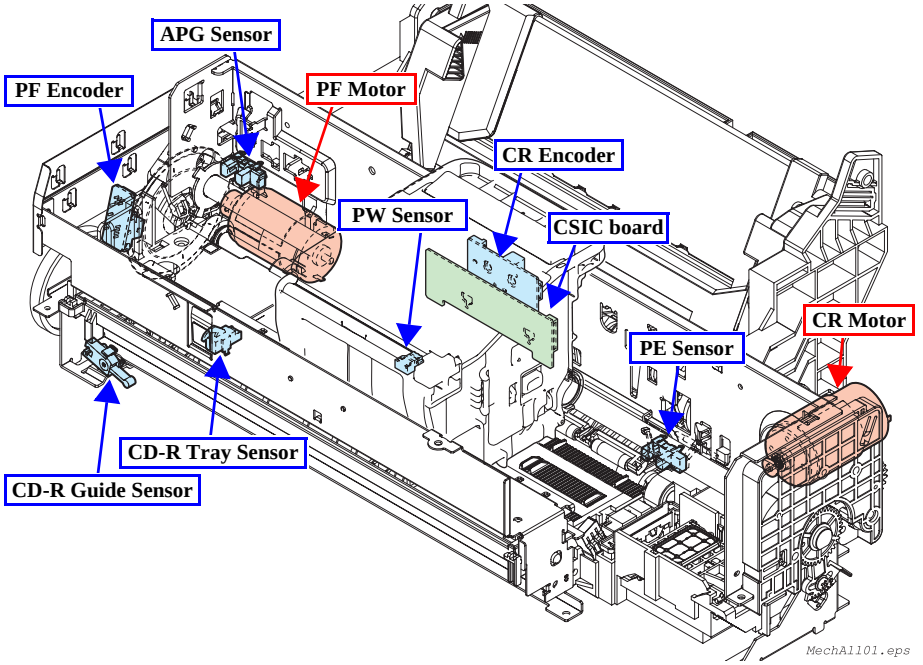


Figure 2-2. Motors and Sensors (Front Side of Mechanism)

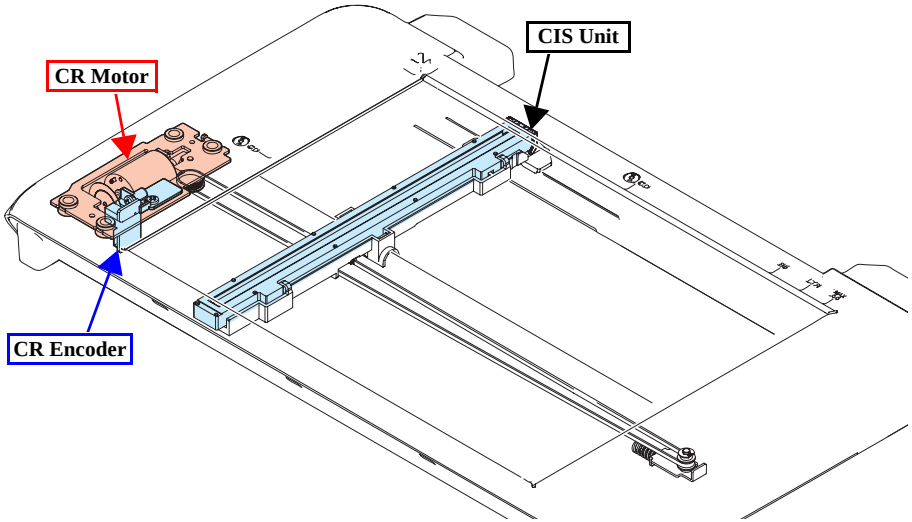


Figure 2-3. Motors and Sensors (Scanner Unit)

2.2 Operating Principles of Electric Circuitry

2.2.1 Overview

The major circuit boards of Stylus PHOTO RX560/580/590 are as follows:

- Main Board: C663MAIN
- Power Supply Board: C653PSB
- Panel Board: C663PNL + C663PNL-B

2.2.2 Features

- ☐ Control by one V850E2 core CPU.
- ☐ Throughput improved by newly employed SOC, E01A73B*
- ☐ Reduced cost of power supply for the core of SOC and of motor drive by a newly employed motor driver with a built-in power supply
- ☐ Realized circuit compatible with multi-common system
- ☐ Reduced cost by employment of newly developed E09A7218A as the HEAD DAC IC
- ☐ Improved processing speed of memory card interface by newly developed memory card control ASIC (USX2007-NW-**)
- ☐ Equipped with a color LCD (2.5-inch alpha TFT LCD) as a standard feature
- ☐ Power consumption reduced by executing the following actions at transition to the power save mode

  System control: Stopping part of clock inside the ASIC
  Motor drivers entering sleep mode
  Head DAC IC entering standby mode
  Turning off power to the LCD

  Printer control: Releasing the printer motor short brake
  Cutting off the photo-electric current of the photo sensor

  Scanner control: Stopping scanner motor chopping
  Cutting off CIS & CIS LED current

  Others: SDRAM entering self-refresh mode (automatic entering by ASIC setting)

2.2.3 Circuit Board Constitution

Table 2-5. Circuit Board Constitution

Circuit Board		Description
Main Board	System section	☐ Oscillation circuit (48MHz ± 100 ppm) ☐ SSCG setting circuit ☐ ASIC incorporating CPU core (E01A73B*) • Package: 352-pin PBGA • Power voltage: Internal 1.0 V ± 0.1V External 3.3V ± 0.3V • CPU core: V850E2 • Operation frequency: Inside of CPU core: F288MHz (SSCG) SD-RAM controller: F96MHz (SSCG) PT/ scanner section: F48MHz (SSCG) Hardware JPEG decompression, AFP: F96MHz (SSCG) Printer section: F48MHz (No SSCG) Printer drive timer base clock: F48MHz (No SSCG) • Built-in command RAM: 40 kByte (iLB-RAM) • Built-in data RAM: 16 kByte (dLB-RAM) ☐ Memory (FLASH ROM (64 Mbits), local SDRAM (256 Mbits), CPU SDRAM (128 Mbits) ☐ RTC (RTC/ power supply monitoring / FLASH ROM) circuit ☐ USB interface (HOST = High-Speed, DEVICE = High-Speed) ☐ Panel interface ☐ Color LCD interface ☐ SERIAL FLASH ROM for banding reduction system ☐ IrDA circuit
	Power Supply section	☐ Power supply control circuit (PSC/ESAVE) ☐ DC-DC converter circuit ☐ Overvoltage protection circuit ☐ Power-saving controller
	Printer section	☐ Head drive circuit ☐ CSIC interface ☐ CR Motor control/driving circuit ☐ PF Motor control/driving circuit ☐ Sensor circuit
	Card I/F section	☐ Memory card control ASIC (USX2007-NW-**) ☐ Memory card connector (CF connector, 4 in 1 connector) ☐ Power supply control circuit for CF
	Scanner section	☐ Scanner motor control/driving circuit ☐ Scanner interface circuit ☐ Sensor circuits
Panel Board		☐ LED lighting circuit ☐ Switch reading circuit
Power Supply section		☐ 42 V generation circuit (flyback converter)
LCD Board		☐ Module made by SEID (2.5-inch alpha TFT)

2.3 Banding Reduction System (BRS)/ Paper Feed Profile Correction (PFP)

☐ Overview

To ensure high-speed printing and high print quality, this printer is provided with the Banding Reduction System (BRS) and Paper Feed Profile Correction (PFP) function, which are outlined below:

Table 2-6. Outline of Banding Reduction System and Paper Feed Profile Correction Function

	Outline	Supported Printing Mode				Remarks
		Paper Type		Paper Size	Printing Resolution (dpi)	
		EAI	Other than EAI			
BRS	Conventional models perform overlapping printing (two-pass or four-pass printing) to reduce banding for ensuring high print quality. However, the printer provided with the Banding Reduction System corrects the dot generation rate (amount of settled ink) for each raster, and performs one-pass printing. This function ensures both high print quality (reduction of banding) and high-speed printing.	Ultra Premium Photo Paper Glossy Premium Photo Paper Glossy Photo Paper Glossy Premium Photo Paper Semi-Gloss	Ultra Glossy Photo Paper Premium Glossy Photo Paper Glossy Photo Paper Premium Semigloss Photo Paper	4x6	720x720	–
PFP	The conventional paper feed adjustment method is such that the correction value calculated from the data based on a specific part of the sheet is reflected to almost all over the sheet. Therefore, the conventional method cannot cope with the fluctuating error in the paper feed rate during paper feeding. However, the Paper Feed Profile Correction function measures the error in the paper feed rate at each of minutely distributed measuring points on the sheet and provides a correction value for each point. Thus with this function, the printer realizes high print quality and high-speed printing on a supported paper type and in a supported printing resolution.	Ultra Premium Photo Paper Glossy Premium Photo Paper Glossy Photo Paper Glossy Premium Photo Paper Semi-Gloss	Ultra Glossy Photo Paper Premium Glossy Photo Paper Glossy Photo Paper Premium Semigloss Photo Paper	4x6	720x720	Borderless printing with BRS
					720x360	Borderless printing without BRS

☐ How to prepare correction data

For each of BRS and PFP, print the relevant pattern for correction data preparation and read the printed pattern through the scanner. Then calculate the correction data and store the data in the serial flash ROM on the Main Board. The correction data are applied to printing in the supported printing mode.

CHECK POINT

Refer to Chapter 5 “ADJUSTMENT” for details of correction data preparation for BRS and PFP.

CHAPTER

3

TROUBLESHOOTING

3.1 Overview

With Stylus PHOTO RX560/580/590, 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 RX560/580/590 describes detailed steps to be taken for recovery from typical errors.

3.1.1 Specified Tools

Stylus PHOTO RX560/580/590 does not require any specified tools for troubleshooting.

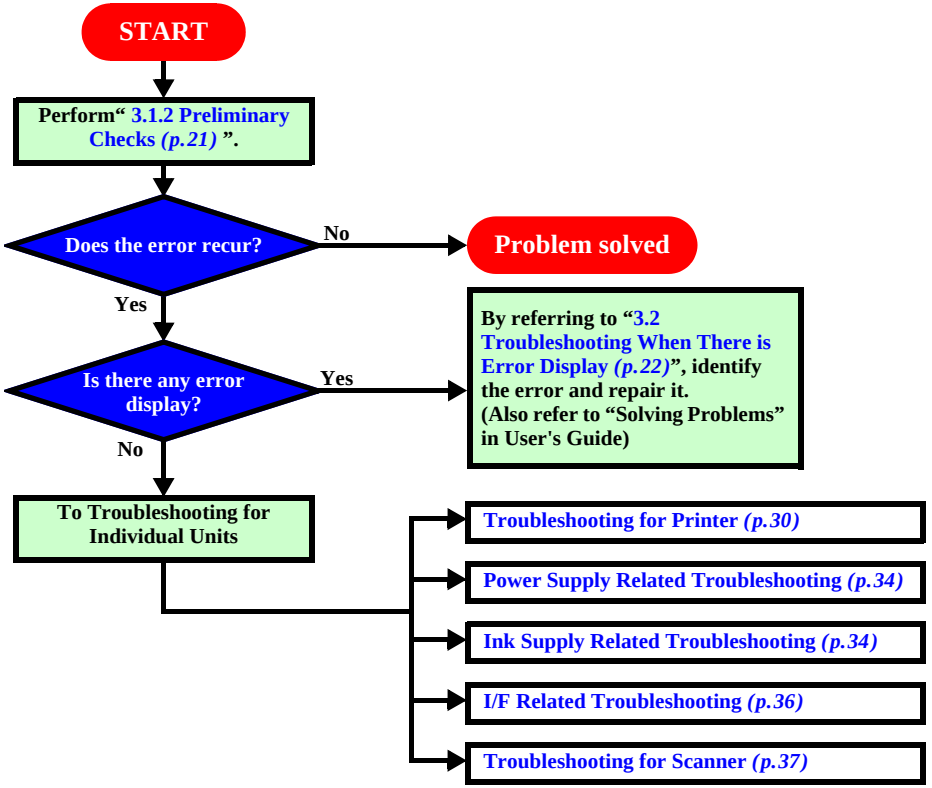
3.1.2 Preliminary Checks

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 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	Displayed Message	Occurrence Condition	Recovery Procedure
Maintenance Error	Waste ink pad in the printer is saturated. Contact your dealer to replace it.	The printer requires maintenance due to waste liquid overflow or elastomer tube replacement time, etc.	Replace the waste ink pads. See "6.1.1 Maintenance Error" *(p.88)*
Printer FATAL Error	A printer error has occurred. Please see your manual.	An irrecoverable error has occurred.	Turn off the power See "3.2.3 FATAL Error" *(p.27)*
Scanner Error	A scanner error has occurred. Please see your manual.	The error that was not able to be recovered with the scanner occurred.	Turn off the power See "6.1.1 Maintenance Error" *(p.88)*
Message related to Ink (1)	Cannot recognize ink cartridges. Make sure the ink cartridges are installed correctly.	The ink cartridges have not been inserted or defective ink cartridges have been inserted.	Install the normal ink cartridges correctly and press the OK button.
Message related to Ink (2)	Ink cartridge cover is open. Open the scanner unit and close the ink cartridge cover.	Ink cartridges were replaced with new ones with the ink cartridge fixation cover open.	Close the ink cartridge fixation cover and press the OK button
Paper Detect Error	Paper jam. Load paper and press Start. If the error does not clear, repeat the procedure.	A sheet was loaded in a wrong orientation and caused a jam.	Follow the displayed message until the sheet loaded in a wrong orientation is ejected.
Paper Jam Error	Paper or CD/DVD jam or feed error. Press Start. If the error does not clear, remove the media by hand.	The paper jam has occurred.	Turn power off, and remove the paper.
Message related to Ink (3)	Cannot recognize ink cartridges.	The ink cartridge had not been inserted at an initial filling or the ink cartridge error occurred	Install the normal ink cartridges filled with ink correctly and press the OK button.
Message related to Ink (4)	Press the OK button to replace ink cartridges.	Ink end	Install the normal ink cartridges filled with ink correctly and press the OK button.
Paper Empty Error	Paper out. Load paper and press the Start button.	There is no paper in the sheet feeder.	Press the start button to feed paper correctly.
Multi-page Feed Error	Multi-page feed error. Remove and reload the paper, then press the Start button.	Multi-page feed error has occurred.	Re-set paper and press the start button to feed paper correctly.

CHECK POINT

The messages displayed on the LCD that are listed in the "Error List" above and "Warning List *(p.23)*" on the next page and subsequent pages are given only for information. In other words, they are not exactly the same as the messages actually displayed.

3.2.2 Warning List

Table 3-2. Warning List

Warning Name	Displayed Message	Occurrence Condition	Recovery Procedure
Waste fluid is near end	Waste ink pad in the printer is saturated. Contact your dealer to replace it.	The waste ink pads have already absorbed waste ink nearly to its full capacity.	Replace the waste ink pads. See "6.1.1 Maintenance Error" *(p.88)*
Set the CD-R/DVD tray (Set correctly)	The CD/DVD tray is set incorrectly. Set the CD/DVD tray correctly, then press the Start button.	At start of printing, the printer has not recognized the CD-R/DVD tray correctly.	Set the CD-R/DVD tray correctly, and press the Start button.
CD/DVD guide warning (Open error)	The front tray is in the CD/DVD position. Raise the tray lever to set the front tray to the paper position.	When printing data is not for printing on CD/DVD, the tray is in the CD/DVD printing position. Or the tray is in the CD/DVD printing position when the printer is started.	Raise the lever to change the printing position to the lower position.
CD/DVD guide warning (Close error)	The front tray is in the wrong position. Push down the tray lever to set the front tray to the CD/DVD position.	When printing data is for printing on a CD/DVD, the CD-R/DVD tray is not recognized correctly. .	Lower the lever to change the print position to the upper position.
BT File size error	The document is too large to print with Bluetooth.	Data size is too big.	Change or check the transmitted data.
BT Designation error	The document is too complex to print with Bluetooth.	Data quantity exceeded the range where it can be processed.	Change or check the transmitted data.
BT structure error	Data error. The document cannot be printed.	There is an error in the contents of data.	Change or check the transmitted data.
A part of the reference object is broken (BT-MIME)	Data error. The document may not be printed correctly.	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 the same as specified by the send side.	Change or check the transmitted data.
BT communications error	Bluetooth print adapter not recognized. Please remove and reinstall the adapter.	An error has occurred in communication with the BT adapter.	Remove the BT adapter. Press the OK button to clear the message.
External device installment	Cannot recognize the device.	An unsupported device has been installed.	Remove the device.
Card insertion	Cannot recognize the memory card or disk.	Memory card recognition failed.	Remove the memory card
Memory card print	A memory card was inserted. No photos found.	No image is contained in the memory card.	Remove the memory card, and check the image file.
Memory card is not inserted	No memory card or disk inserted.	Memory card Mode has been selected with no memory card inserted.	Insert the memory card.
Screen translation and print executions connecting DSC	A camera is connected. Disconnect the camera and try again.	Entering a menu screen for use of memory cards or starting to print was attempted with a DSC connected.	Disconnect the camera
Index sheet scan error (no index sheet)	There is no index sheet or it is not positioned correctly. Check it and try again.	An index sheet was not set.	Set the index sheet and press the OK button.

Table 3-2. Warning List (continued)

Warning Name	Displayed Message	Occurrence Condition	Recovery Procedure
Index sheet scan error (incorrect image selection marking)	Photos are not selected or the ovals are marked incorrectly. Please correct and try again.	The image selection marking on the index sheet is not correct.	Correct image selection. And press the OK button.
Index sheet scan error (incorrect paper selection marking)	The paper type is not selected or ovals are marked incorrectly. Please correct and try again.	The paper selection marking on the index sheet is not correct.	Correct paper selection. And press the OK button.
Index sheet scan error (Discrepancy between index sheet and card)	The contents of the memory card have changed. Print a new index sheet and try again.	After index sheet printing, a different memory card was inserted or images were added or deleted.	Restore the same memory card condition as was when the index sheet was printed or print a new index sheet.
Combo print error 1 (Euro) Photo Greeting card error 1 (EAI)	Error reading the template. Make sure the template is placed correctly on the glass and try again.	No recognition mark could be found on the template sheet.	Set sheet and press the OK button
Combo print error 2 (Euro)	Selection of the text style is not correct. Select only one text style and try again.	No mark is given for Paper Type or Text Style selection area, or more than one mark is given.	Select a text style on the template and press the OK button.
Combo print error 3 (Euro) Photo Greeting card error 3 (EAI)	Error reading the template. Make sure the glass is clean and no pen marks are outside the writing area.	Combo Area cannot be recognized.	Print the sheet again and make entry again.
Combo print error 4 (Euro) Photo Greeting card error 4 (EAI)	The layout is not selected or ovals are not marked correctly. Only one layout may be selected.	No mark is given for compose layout, or more than one mark is given.	Put a mark for compose layout or in the case where there are two or more marks, print the sheet again and put a mark only for one layout.
Combo print error 5 (Euro) Photo Greeting card error 5 (EAI)	The contents of the memory card have changed. Print a new template and try again.	After template printing, a different memory card was inserted or images were added or deleted.	Restore the same memory card condition as was when the template was printed or print a new template.
Combo print error 6 (Euro) Photo Greeting card error 6 (EAI)	The paper type is not selected or ovals are marked incorrectly. Please correct and try again.	The paper selection marking on the template is not correct.	Select a paper on the template and press the OK button.
Select photos in CD label print.	The selectable number of photos was exceeded.	More than the specified number of photos have been selected.	Select not more than the specified number of photos.
Select the number of copy.	Only 1 copy can be selected.	More than one copy has been selected.	Select only one copy.
Photo recognize Error	No photos could be recognized. Make sure the photos are positioned correctly. For details, see your manual.	The photo could not be recognized.	Set the photo and try again
Scan to memory error (no card)	No memory card or disk inserted. Save canceled.	Execution of scanning to a memory card function was attempted with no memory card inserted.	Insert a memory card.

Table 3-2. Warning List (continued)

Warning Name	Displayed Message	Occurrence Condition	Recovery Procedure
Scan to memory error (insufficient card capacity)	The capacity of the memory card or disk is insufficient. Operation canceled.	The memory card capacity is insufficient.	Insert a memory card that has a sufficient capacity.
Scan to memory error (card write-protect)	The memory card or disk is write-protected. Operation canceled.	As the memory card is write-protected, it is not possible to save data.	Insert a memory card with Write-Protect canceled.
Scan to memory error (folder not created)	Cannot create a folder on the memory card or disk. Operation canceled.	A folder could not be created on the memory card.	Check the data on the memory card.
Scan to memory error (card removed)	The memory card or disk was removed. Operation canceled.	Data saving was not executed, since the memory card had been removed.	Insert a memory card.
Scan to memory error (save error)	An error occurred while saving. Save canceled.	Data saving was not achieved for some reason.	Check the source data or media.
Format check (scan)	Cannot recognize the memory card or disk. Do you want to format it?	The memory card cannot be recognized.	Execute or cancel formatting.
Format Warning (Format error) (scan)	An error occurred during formatting. Formatting will be discontinued.	An error has occurred in formatting the card. Or you pulled out the media while formatting it.	Press the OK button and check the media.
Format Warning (card write-protect) (scan)	The memory card or disk is write-protected. Operation canceled.	As the memory card was write-protected, formatting failed.	Insert a memory card with Write-Protect canceled and try again.
Format Warning (card removed) (scan)	The memory card or disk was removed. Format canceled.	The media is removed when formatting is to be started.	Insert media and try again
No Image File	Insert a memory card that contains photos.	No image is contained in the memory card or no memory card has been inserted.	Insert a memory card containing image files.
Head Cleaning	Replace ink cartridge before cleaning print head.	Head cleaning was attempted in the Ink Low state.	Cancel the head cleaning, or replace the ink cartridges.
Backup error (no external connection)	External device is not connected or media is not inserted. Backup canceled.	The external device was not connected when backup was started.	Connect the external device.
Backup error (insufficient external media capacity)	Insufficient space on the backup device. Cannot back up files.	The capacity of the media on which the backup data is to be saved is insufficient.	Insert media that has sufficient free space.
Backup error (no card)	No memory card in slot. Backup canceled.	No backup source exists.	Insert the memory card
Backup error (connecting to PC)	Disconnect from PC before backing up files.	Backup was attempted with the PC left connected.	Disconnect the PC
Backup error (File name and Folder levels Error)	Backup canceled. File name is too long or there are too many folder levels	The file name is too long, or the file is positioned in too deep a level in the holder hierarchy.	Check the file name and folder level.

Table 3-2. Warning List (continued)

Warning Name	Displayed Message	Occurrence Condition	Recovery Procedure
File clearness (error has occurred)	An error occurred while deleting files. Operation canceled.	An error occurred during file deletion.	–
File clearness (memory card has removed)	The memory card or disk was removed. Operation canceled.	The memory card was removed during file deletion.	–
File clearness (write-protected)	The memory card or disk is write-protected. Operation canceled.	Because the memory card is write-protected, it is not possible to delete the file.	Cancel Write-Protect.
File clearness (no memory card)	No memory card in slot. Operation canceled.	Because the memory card was not inserted, it was not possible to delete the file.	Insert the memory card.
In adjustment of borderless expansion value	You can change the amount of image expansion, but a white border may appear around your photo.	This message is always displayed during adjustment of the Borderless Expansion Value.	Accept it.
Zoom	If you change the paper size, the crop area may change. Do you want to continue?	Warning for changing the paper size.	Continue or cancel
Position of CD/DVD guide (Re-set)	The CD/DVD guide is in the CD/DVD position. Close the CD/DVD guide.	The CD-R Guide is in the extended position.	Return the CD-R Guide into the withdrawn position.
CD/DVD guide close error	The CD/DVD guide is closed. Open the CD/DVD guide, then press the Start button.	CD/DVD tray is not set correctly.	Set CD/DVD tray correctly.

3.2.3 FATAL Error

CHECK POINT

The EEPROM stores the error code of the latest fatal error. The latest fatal error can be identified using the adjustment program.

CAUTION

■ **As the printer motor drivers and the scanner motor driver are built in one drive IC, the fatal error cord is stored as PF motor error even if the scanner motor or scanner home sensor has defective but the PF motor does not have any defective.**

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	☐ Checking the operation of the Carriage Assy; Move the Carriage Assy by hand, and check to see if it moves smoothly. ☐ Making the following adjustments ♦Bi-D ♦Paper feed length with PF Assy ♦Paper feed length with Eject Assy ♦PW adjustment ☐ Checking the following parts and replacing the defective one ♦Checking the head FFC (CN10/11/12) for disconnection or breakage ♦Checking the lead wires of the CR Motor (CN14) for disconnection or breakage ♦Checking the CR Encoder FFC (CN1) for disconnection or breakage ♦Checking the printer frame for adhesion of dirt or insufficient lubrication *(p.90)* ♦Checking the CR Guide Shaft for adhesion of dirt or insufficient lubrication *(p.59)* ♦Checking the Linear Scale for adhesion of dirt or damage *(p.54)* ♦Checking the CR Encoder for adhesion of dirt or damage *(p.68)* ♦Checking the PW Sensor for adhesion of dirt or damage *(p.68)* ♦Checking the CR Belt for damage or improper tension *(p.66)* ♦Checking the CR Motor and replacing it if necessary *(p.66)* ♦Main Board *(p.45)* ♦Power Supply Board *(p.56)*
	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	☐ Checking the PF mechanism by visual inspection: Check the PF mechanism for paper jam or adhesion of foreign matters by visual inspection. ☐ Checking the operation of the PF mechanism: Operate the PF mechanism by hand, and check to see if it operates smoothly. ☐ Making the following adjustments: ♦Bi-D ♦Paper feed length with PF Assy ♦Paper feed length with Eject Assy ♦PW adjustment ☐ Checking the following parts and replace the defective one: ♦Checking the PF Encoder FFC (CN8) for disconnection or breakage ♦Checking the lead wires of the PF Motor (CN13) for disconnection or breakage ♦Checking the PF scale for adhesion of dirt or damage *(p.62)* ♦Checking the PF encoder for adhesion of dirt or damage *(p.62)* ♦Checking the Upper Paper Guides for improper installation *(p.70)* ♦Checking the PF Motor and replacing it if necessary *(p.62)* ♦Main Board *(p.45)* ♦Power Supply Board *(p.56)*
	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		
	F3H	PF BS drive time-out judgment error		
APG motor	70H	APG error (normal drive error)	An error occurred in the APG operating sequence	☐ Checking the installation of the APG Sensor: position of the sensor and connection of the connector (CN7) ☐ Checking the drive of the APG Assy ♦Installation of the composite gear of the ASF Assy ~APG Assy ♦Standalone operation of the APG Assy ♦Reinstallation of the APG Assy (phase) ☐ Checking the following parts and replace the defective one: ♦APG Assy *(p.65)* ♦ASF Assy *(p.64)* ♦APG Sensor ♦PG Left Cam *(p.68)* ♦Main Board *(p.45)* ♦Power Supply Board *(p.56)*
	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.	☐ Checking the mechanism and operation: Check the mechanism and operation of the motor in question. ☐ Checking the connection of the connectors and routing of the lead wires ☐ Checking the motor in question and the following parts and replacing the defective part: ♦Main Board *(p.45)* ♦Power Supply Board *(p.56)*
	D2H	CR (load positioning) drive time-out		
	D3H	PF (PID) drive time-out		
	D4H	PF (BS) drive time-out		

Table 3-3. Fatal Errors (continued)

Category	Error Code	Error	Cause	Remedy
Factory command error	30H	Error by EEPROM verify command		☐ Checking the following parts and replace the defective one: ♦Main Board *(p.45)* ♦Power Supply Board *(p.56)*
Head system error	40H	Transistor ambient temperature abnormal	The thermistor on the printhead detected abnormal temperature.	☐ Checking the following parts and replace the defective one: ♦Printhead *(p.52)* ♦Main Board *(p.45)* ♦Power Supply Board *(p.56)* ♦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	☐ Checking the PW Sensor *(p.68)* ♦Checking the PW Sensor for adhesion of dirt and dust ♦Checking the connection of the FFC ☐ Making the following adjustments: ♦PW adjustment ☐ Checking the following parts and replace the defective one: ♦Head FFC ♦Carriage Assy *(p.67)* ♦Main Board *(p.45)* ♦Power Supply Board *(p.56)*
	61H	PW detection error (Low check error)		
	62H	Tray detection (CDR detector 2) error	Sensor trouble	☐ Checking the operation of the actuator and the connection of the connector. ☐ Checking the following parts and replace the defective one: ♦Sensor ♦Main Board *(p.45)* ♦Power Supply Board *(p.56)*
	63H	Paper detection error		
Maintenance error	A0H	Waste ink overflow	Life expiration of maintenance parts	☐ Replace all the maintenance parts, and clear the maintenance counter. ♦ **Refer to "6.1.1 Maintenance Error" *(p.88)***

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 3-4. 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.	☐ Adjust the phase of the paper loading mechanism. ☐ Remove the dust and dirt, if any.
	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 CN6 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 3-5. 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 3-6. 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 3-7. 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 (CN14) 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 (CN13) 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 Encoder FFC.	Replace the Encoder FFC.
		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 CN10 ~12 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 3-8. 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 circuit 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.*(p.90)*
	Platen Gap not set properly	Check to see if platen gap adjustment has been done properly.	Adjust platen gap. *(p.75)*
	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 3-9. 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 (CN3).	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 3-10. 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 3-11. 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 3-12. 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 3-13. 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 installed in “Other devices” by mistake?	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 3-14. 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 3-16, perform the necessary checking by referring to the appropriate table.

☐ Scanner Errors at User Level

Table 3-15. Scanner Errors at User Level

Error	Cause	Remedy
Scanner error	• Defective CIS unit • Defective scanner motor • The scanner carriage is interfering with any other part.	• 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 3-16. 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 3-17
"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 3-18
	CR unit operates but error is indicated.	Table 3-19
	The LED does not light up.	Table 3-20
Picture is not read clearly.	Picture is not read clearly.	Table 3-21
"Communication error". Indication error occurs and when communication with the host is tried again, "Communication error" recurs.	USB interface error	Table 3-13

☐ Scanner does not operate for initialization

Table 3-17. Scanner does not operate for initialization

Cause	Check Point	Yes/No	Remedy
Connector is disconnected.	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 3-18. Carriage unit does not operate

Cause	Check Point	Yes/No	Remedy
Connector on the Main Board is disconnected	☐ Is any of the connectors (CN17, 19 and 20) on the Main Board disconnected?	Yes	Connect the connector.
Faulty carriage moving mechanism	☐ Grease is applied properly?	No	Apply grease at designated point
	1. Does CR motor operate when power is turned ON with upper case of Scanner removed? 2. 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 sensor board.	☐ Replace the CR HP sensor board.	No	Replace the CR HP sensor board.
Faulty CR motor	☐ Disconnect the connector (CN17) of the CR Motor from the Main Board, and check continuity between pin 1 and pin 2 on the motor side, using a circuit tester.	No	Replace the CR motor.
Defective main board	---	---	Replace the main board.

☐ Carriage operates but error indicated

Table 3-19. 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 board	---	---	Replace the CR HP sensor board.

☐ LED does not light up

Table 3-20. LED does not light up

Cause	Check Point	Yes/No	Remedy
Connector on the Main Board is disconnected	Connector CN19 on main board is disconnected?	Yes	Connect the connector CN19 on the main board.
Defective CIS Unit	Does the lamp light up when the CIS Unit is replaced?	Yes	Replace the CIS Unit.
Defective main board	---	---	Replace the main board

☐ Picture cannot be read clearly

Table 3-21. Picture cannot 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 CIS Unit	---	---	Replace the CIS Unit.
Defective main board	---	---	Replace the main board

3.3.6 Troubleshooting for Motors and Sensors

☐ Motor

Table 3-22. Motor Resistance and Check Points

Motor Name	Location	Check Point	Resistance
CR motor	CN14 (White)	Pin 1 & 2	22.7 Ω ± 10%
PF motor	CN13 (Black)	Pin 1 & 2	21.2 Ω ± 10%
CR motor (Scanner Unit)	CN17 (White)	Pin 1 & 2	

☐ Sensor

Table 3-23. Sensor Check

Sensor Name	Location	Signal Level	Sensor Status
PE sensor (3.3V DC ±5%)	CN6 Pin 1&3	2.4V or over	Paper absent
		Less than 0.4V	Paper present
APG sensor (3.3V DC ±5%)	CN7 Pin 1&3	2.4V or over	PG position
		Less than 0.4V	Out of PG position
CD-R Guide sensor (3.3V DC ±5%)	CN11 Pin 1&2 Pin 3&4	Open: 2.4V or over	CD-R Tray present
		Close: Less than 0.4V	CD-R Tray absent
CD-R Tray sensor (3.3V DC ±5%)		Open: 2.4V or over	CD-R Guide down
		Close: Less than 0.4V	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 RX560/580/590.**
- **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 RX560/580/590.**
- **Observe the specified torque when tightening screws.**
- **Make the specified adjustments when you disassemble the Stylus PHOTO RX560/580/590.**
- **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 RX560/580/590.

Table 4-1. Tools

Name	Availability	Tool Code
Phillips precision screwdriver	○	1080530
Phillips precision screwdriver	○	1080532
Tweezers	○	1080561
Upper case removing tool	EPSON	1108202

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

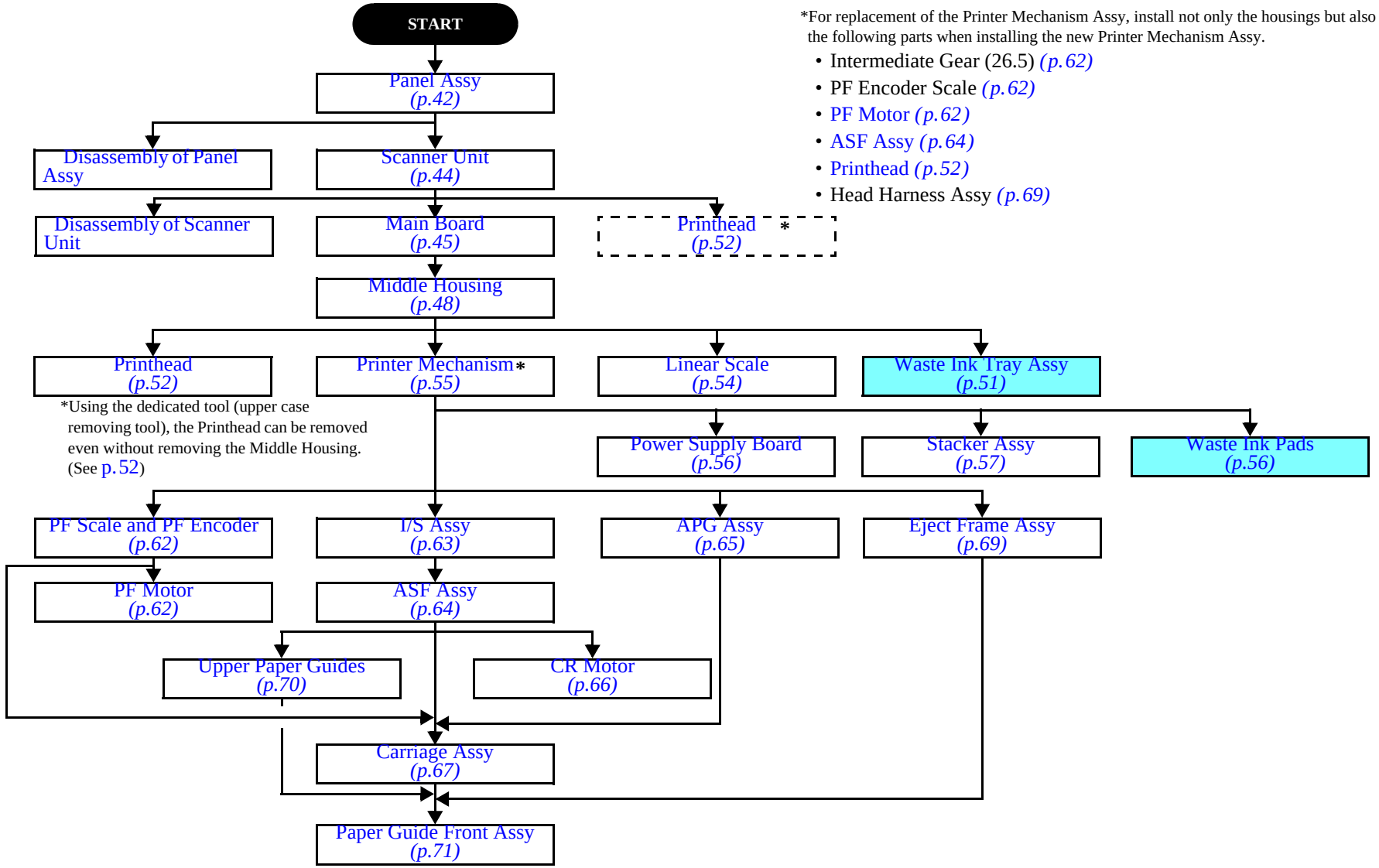
4.1.3 Preparation before Disassembly

Make the following preparations before disassembling the Stylus PHOTO RX560/580/590:

- ☐ 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 RX560/580/590. When disassembling each component, refer to the page indicated for the relevant component.



Flowchart 4-1. Disassembly Procedure

4.2 Removal of Exterior Parts

4.2.1 Panel Assy

CAUTION

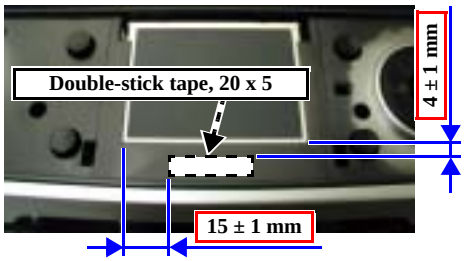
After removing the decorative panel, take care that the LCD surface is kept free from scratches or dust and dirt.

1. Open the Scanner Unit, and remove the screws (x3) securing the Middle Cover Assy. *(Fig. 4-1)*
2. Release the hooks (marked with Δ : x4) on the side of the Printer Mechanism to let the Middle Cover rise, insert a bamboo spatulas whose tip is soft into the cut portion at the front center to release the hook, 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 to let the decorative panel rise, release all the hooks carefully and remove the decorative panel.
4. Remove the screws (x2) securing the Panel Assy. *(Fig. 4-2)*
5. Lift the Panel Assy, and disconnect the FFCs x2 (CN23 and CN22) from the Main Board. *(Fig. 4-3)*

REASSEMBLY

When installing the decorative panel, observe the following instructions:

- **Make certain that the back of the panel window and the LCD face are free from dust and dirt.**
- **Stick a new strip of double-stick tape in the position shown below and after installing the decorative panel, make sure that it is stuck securely and free from floating.**



Before sticking the double-stick tape, clean with alcohol the surfaces of the printer body and the panel where the tape is to be stuck.
After installing the panel, press on it so that the tape is stuck securely and the panel does not float.

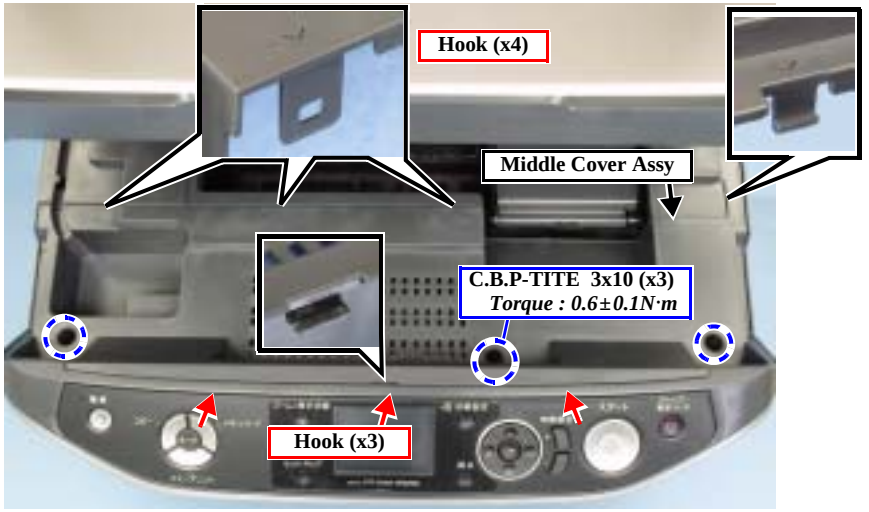


Figure 4-1. Removing the Middle Cover Assy

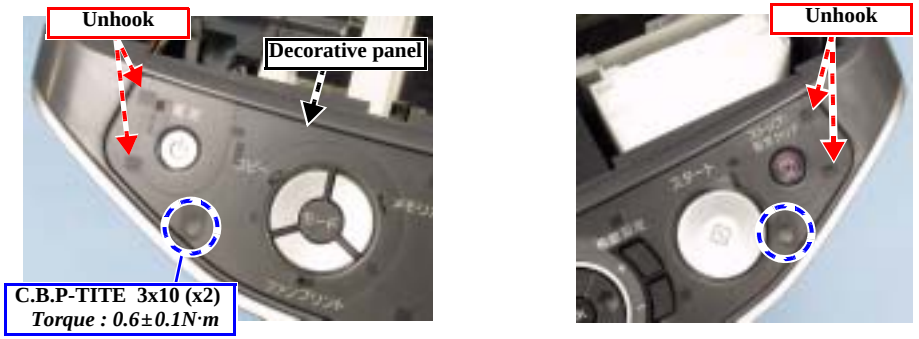


Figure 4-2. Removing the Decorative Panel and Panel Assy

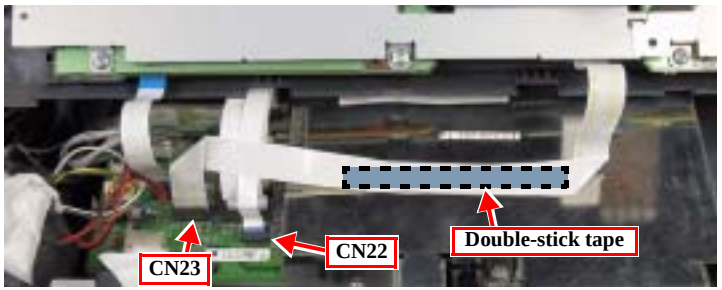


Figure 4-3. Removing the Panel Assy 2

4.2.2 Disassembly of Panel Assy

CAUTION

Take great care that the LCD surface is kept free from scratches or dust and dirt.
In installation, make sure that the inside of the LCD Cover is free from dust and dirt.

1. *Remove the Panel Assy (p.42)*
2. Remove the screws (x6) securing the Shield Plate, Panel Board and Ground Plate, and remove the Shield Plate upward. *(Fig. 4-4)*
3. Release the hooks, and remove the Panel Board. *(Fig. 4-5)*
4. Remove the screws (x2), and remove the LCD Module. *(Fig. 4-6)*

REASSEMBLY

- **Tighten the screws for the LCD Module in the order specified. *(Fig. 4-6)***
- **Install the Shield Plate under the board-to-board cable.**
- **When installing the Shield Plate, tighten the screws in the order specified. *(Fig. 4-4)***
- **After installing the Shield Plate, press each of the buttons and check that a click is felt.**

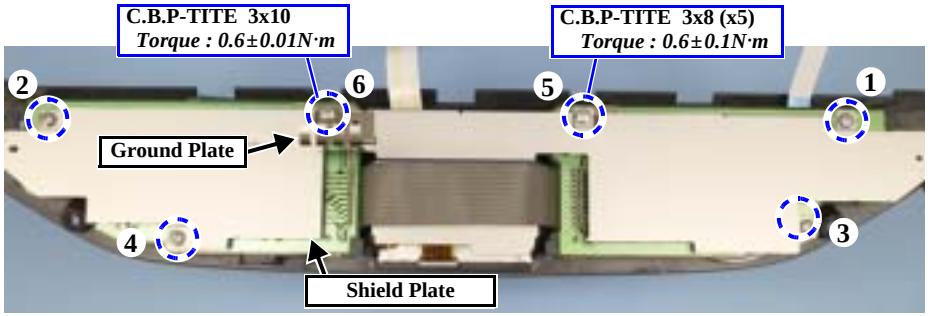


Figure 4-4. Removing the Screws (Shield Plate)

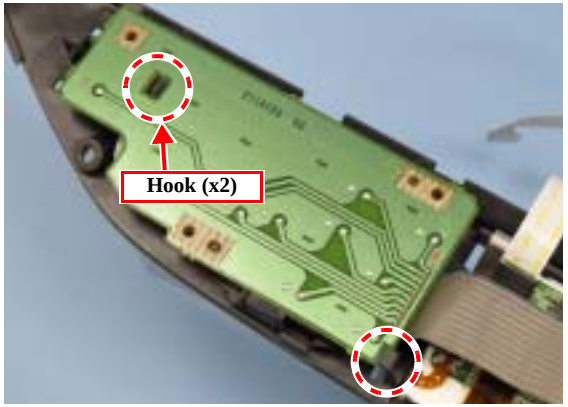


Figure 4-5. Removing the Panel Board

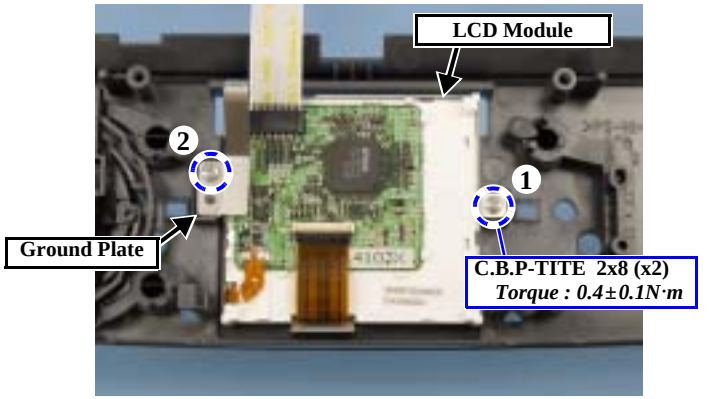


Figure 4-6. Removing the LCD Module

4.2.3 Scanner Unit

1. *Remove the Panel Assy (p.42)*
2. Remove the Paper Support.
3. Open the Scanner Unit, slide the Scanner Cable Cover toward the front and remove it from the Middle Housing. *(Fig. 4-7)*
4. Release the following FFCs and cables from the Middle Board, and disconnect them from the Main Board. *(Fig. 4-8)*

CN No.	Color	Connected to	Remarks
CN17	White	CR Motor	2-pin
CN19	(FFC)	CIS Unit	14-pin (With 2 ferrite cores)
CN20	White	CR Encoder	4-pin (With ferrite core)

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. 4-9)*
7. Remove the Scanner Unit, kept in the open position, from the printer body.

REASSEMBLY

- **The harness for the Scanner CR Motor (CN17) and that for the PF Motor (CN13) are provided with the same 2-pin white connector. Take care not to confuse them when connecting the connectors to the Main Board.**
- **Route the FFCs and cables of the scanner as shown in the figure. *(Fig. 4-10)***
- **When installing the scanner cable, take care that no part of the cable is positioned outside the cover. *(Fig. 4-7)***

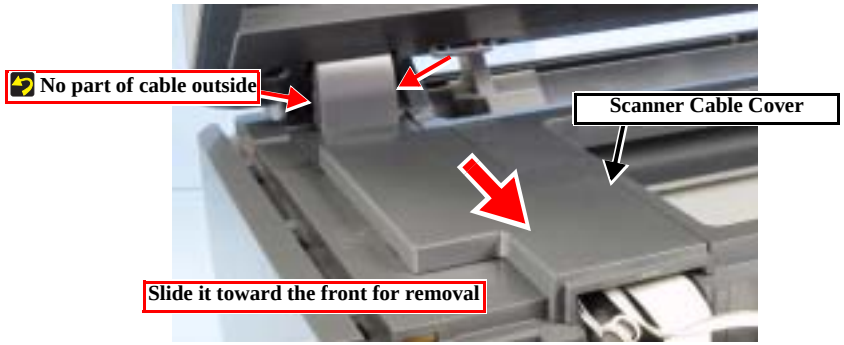


Figure 4-7. Removing the Scanner Cable Cover

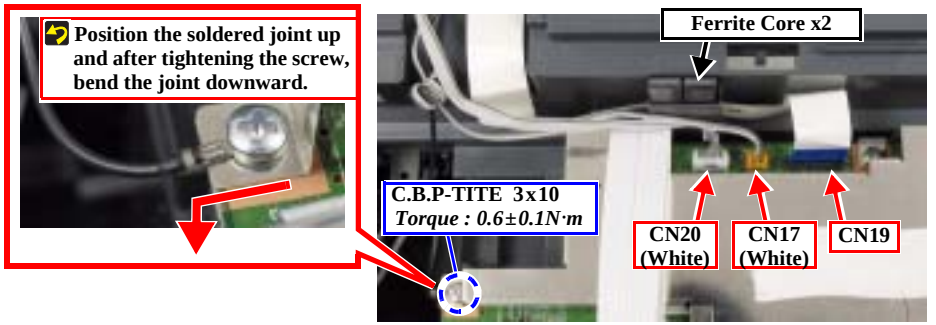


Figure 4-8. Disconnecting the cables (Scanner Unit)

Figure 4-9. Removing the Scanner Unit

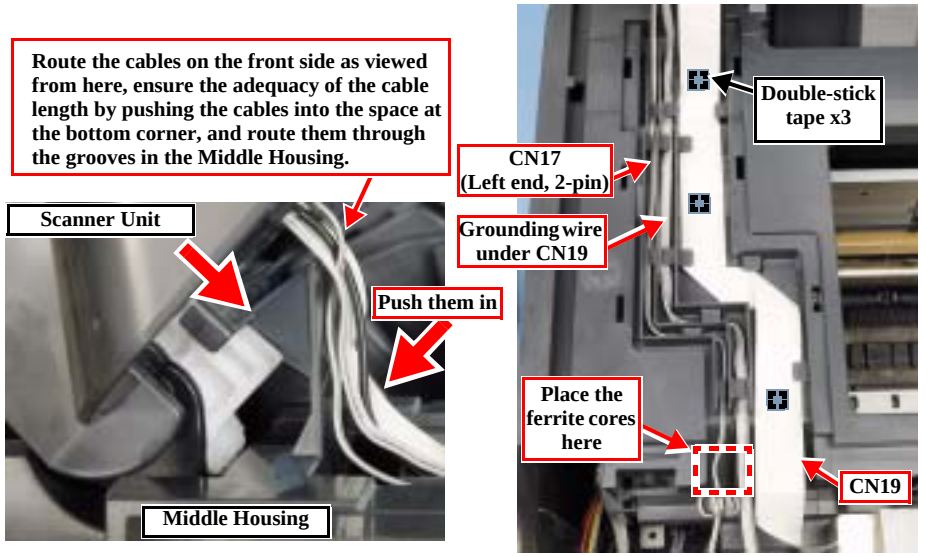


Figure 4-10. Installing the Scanner Unit

4.2.4 Main Board

ADJUSTMENT REQUIRED

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 *(p.74)*

CAUTION

The Shield Plate may be burred. Be sure to wear gloves to avoid injury from burrs.

1. *Remove the Panel Assy (p.42)*
2. Peel off the acetate tape (x4).
3. Disconnect all the FFCs and connectors from the Main Board.
4. Remove the screws (x5), and remove the Main Board Assy by lifting its rear side. *(Fig. 4-11)*
5. Remove the screw, and remove the Shield Plate M/B Support. *(Fig. 4-12)*
6. Remove the screws (x2), and remove the Shield Plate. *(Fig. 4-12)*
7. Remove the screws (x5), and remove the Main Board. *(Fig. 4-13)*

(Continued to next page)

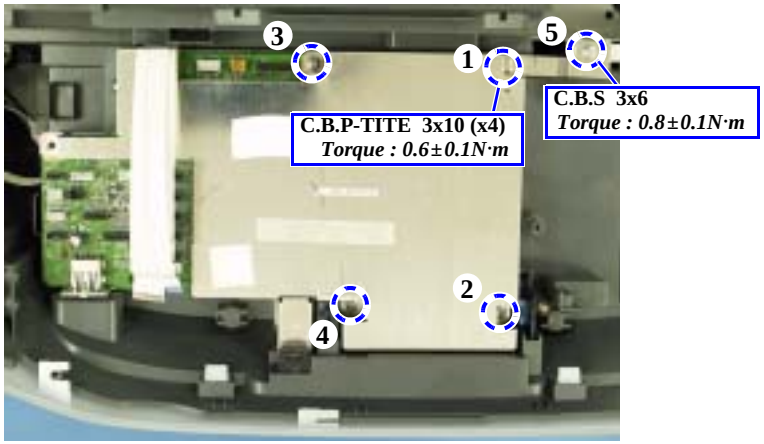


Figure 4-11. Removing the Main Board Assy

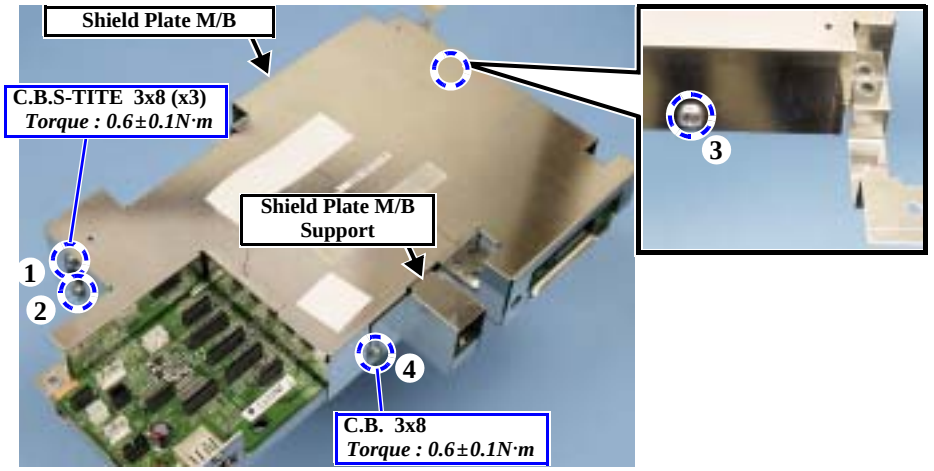


Figure 4-12. Removing the Shield Plate

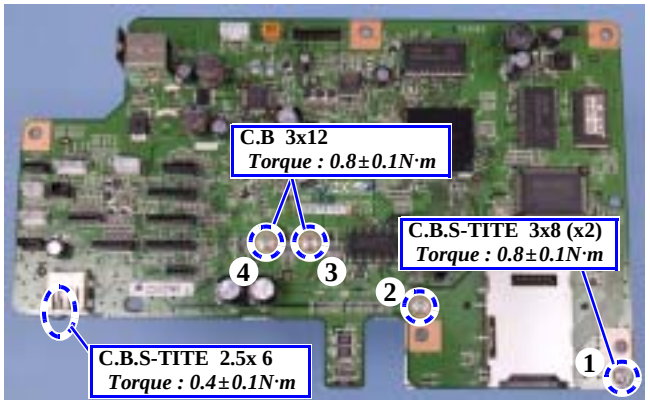


Figure 4-13. Removing the Main Board

INSTALLATION PROCEDURE FOR THE MAIN BOARD ASSY

REASSEMBLY

- **Tighten the screws in the order specified to secure the Main Board and Main Board Assy. (*Fig. 4-13*, *Fig. 4-11*)**
- **The harness for the Scanner CR Motor (CN17) and that for the PF Motor (CN13) are provided with the same 2-pin white connector. Take care not to confuse them when connecting the connectors to the Main Board.**

1. Check the Middle Housing for the following conditions. *(Fig. 4-14)*
   - The Card Slot Cover can be opened and closed properly.
   - The IRDA sheet has been installed properly.
2. Install the Main Board Assy on the Middle Housing. *(See p.45)*
3. Separate the cables and FFCs into three groups, A, B and C. *(Fig. 4-15)*

Group	CN No.	Color	Connected to	Remarks
A	CN14	White	CR Motor	2-pin (With ferrite core)
	CN13	Black	PF Motor	2-pin (With ferrite core)
	CN6	White	PE Sensor	3-pin (With ferrite core)
	CN7	Black	APG Sensor	3-pin (With ferrite core)
B	CN8	(FFC)	PF Encoder	5-pin
	CN4	White	CD-R Sensor (Guide & Tray)	4-pin
	CN3	White	Power Supply Board	3-pin
C	CN10	(FFC)	Printhead	13-pin
	CN11			13-pin
	CN12			9-pin
	CN15	(FFC)	CSIC Board	13-pin
	CN16		PW Sensor	6-pin
S	*CN17*	*White*	*CR Motor (Scanner Unit)*	*2-pin (With ferrite core)*
	CN19	*(FFC)*	*CIS Unit*	*14-pin (With 2 ferrite cores)*
	CN20	*White*	*Scanner Encoder*	*4-pin*
–	*CN22*	*(FFC)*	*Panel Board*	*8-pin*
–	*CN23*	*(FFC)*	*LCD Module*	*11-pin*

CHECK POINT

See the figure at right *(Fig. 4-16)* for the connector layout of the Main Board. For the connector assignment of the Scanner Unit, see "4.2.3 Scanner Unit" *(p.44)*.

(Continued to next page)

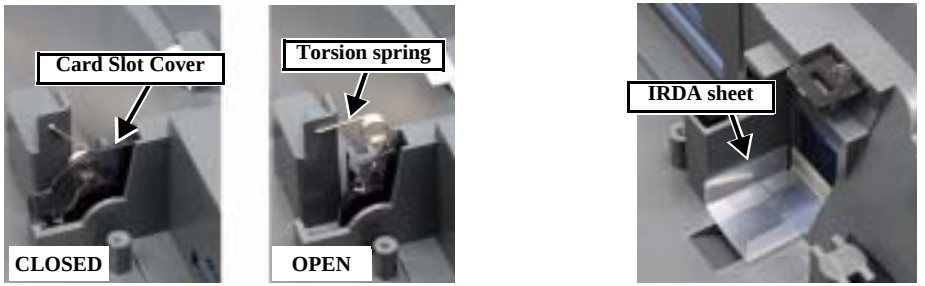


Figure 4-14. Checking the Middle Housing

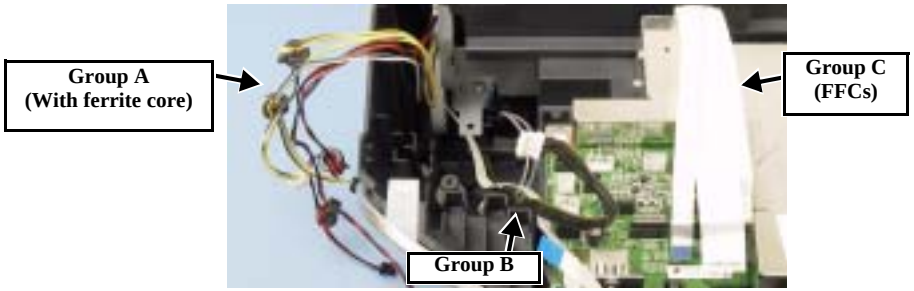


Figure 4-15. Separating the cables and FFCs

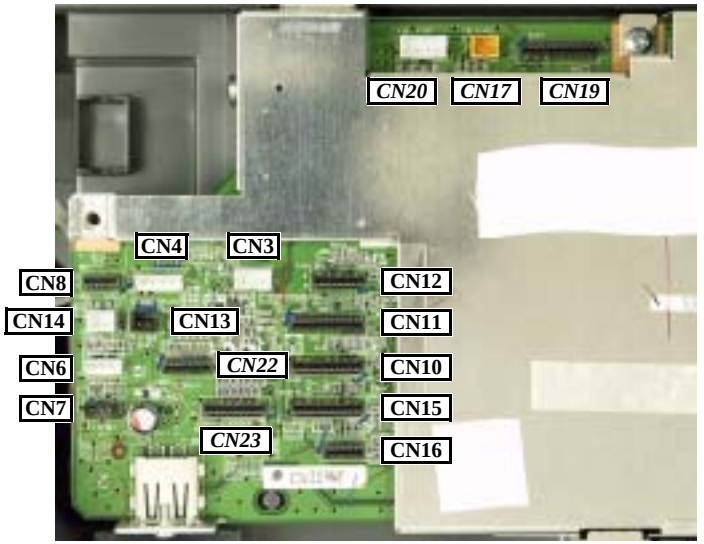


Figure 4-16. Connectors on the Main Board

4. Place the ferrite cores of group A as shown, and connect the connectors to the Main Board. *(Fig. 4-17)*
5. Fasten the ferrite cores with tape. *(Fig. 4-18)*
6. Route the harnesses of group B in the order of the power supply harness (CN3) → PF Encoder (CN8) → CD-R Sensor (CN4), and connect them to the circuit board. *(Fig. 4-18)*
7. Connect the FFCs of group C to the connectors. *(Fig. 4-19)*
8. Stick acetate tape on the USB terminal (in the front). *(Fig. 4-19)*

REASSEMBLY

- **The harness for the Scanner CR Motor (CN17) and that for the PF Motor (CN13) are provided with the same 2-pin white connector. Take care not to confuse them when connecting the connectors to the Main Board.**
- **Stick the acetate tape on the USB terminal (in the front) to cover both the USB connector and Middle Housing.**

Routing the harness of group A

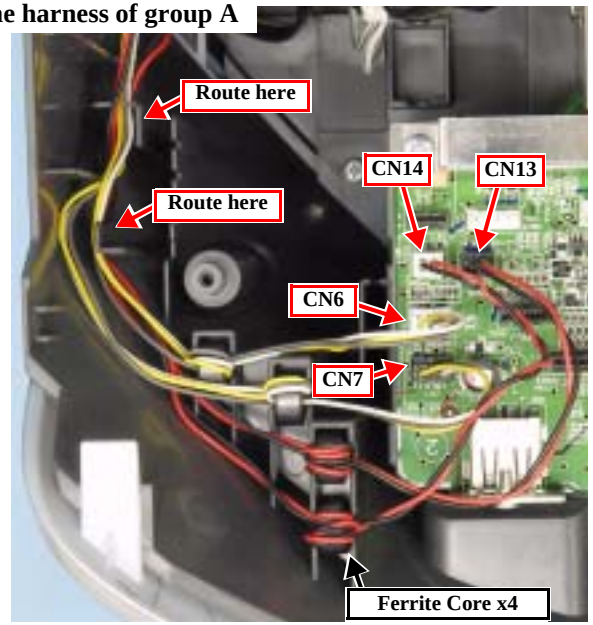


Figure 4-17. Routing the Harness and Setting the Ferrite Cores

Routing the harness of group B

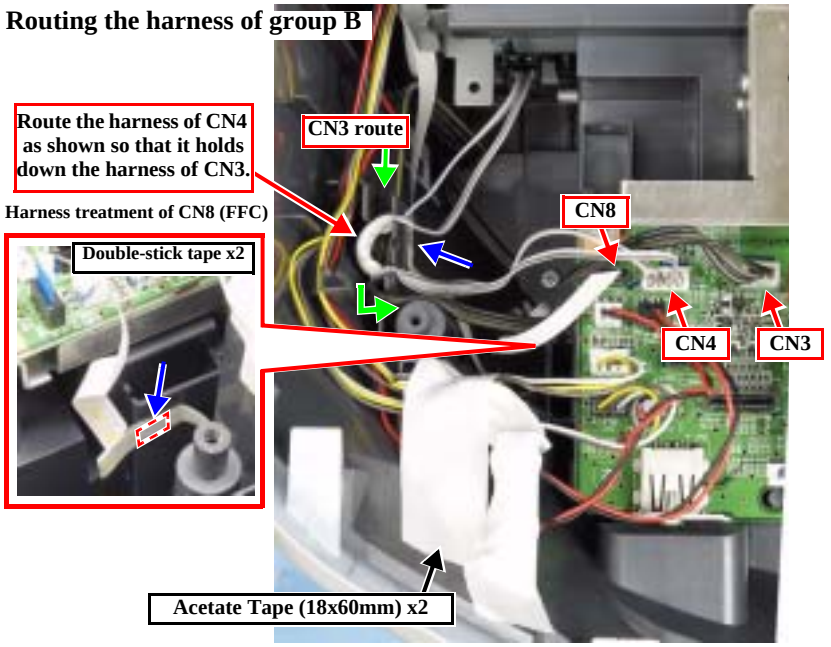


Figure 4-18. Routing the Harness of Group B

Routing the harness of group C

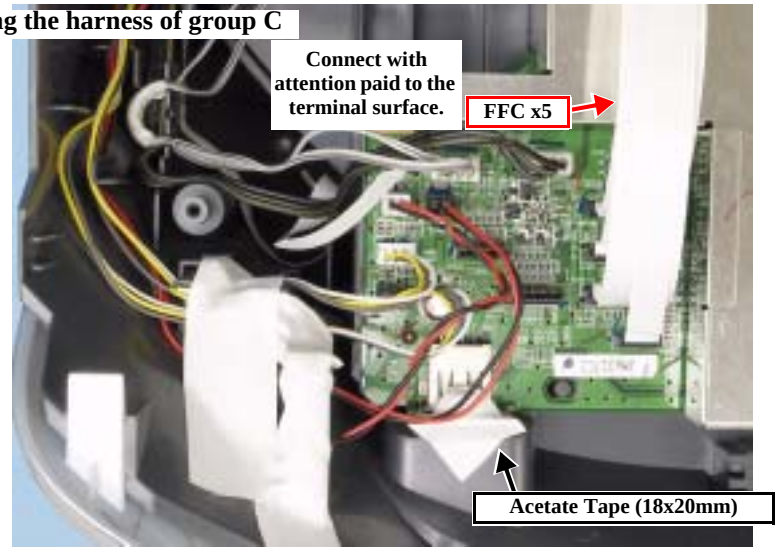


Figure 4-19. Connection of Group C (FFCs)

4.2.5 Middle Housing

CAUTION

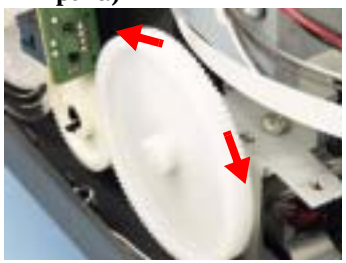
After removing the Waste Ink Assy, take due care not to stain any surrounding objects with waste ink.

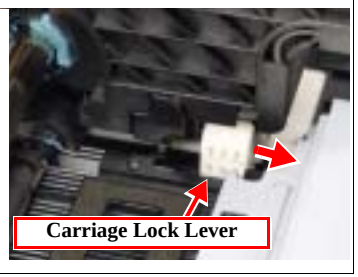
1. *Remove the Panel Assy (p.42)*
2. *Remove the Scanner Unit (p.44)*
3. *Remove the Main Board (p.45)*
4. Release the Lock Lever of the Carriage Assy, and move it. (Figure below)
5. Remove the screw, and remove the EMI Frame. *(Fig. 4-20)*
6. Remove the screws (x2) securing the Waste Ink Assy. (Do not remove the tube)
7. Remove the screw and remove the Hinge Assy (left and right).
8. Remove the screws (3 in the front and 2 in the rear) securing the Middle Housing Assy.
9. Remove the Middle Housing Assy with care not to get any cables caught and with attention paid to the Waste Ink Assy.

CHECK POINT

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.)**





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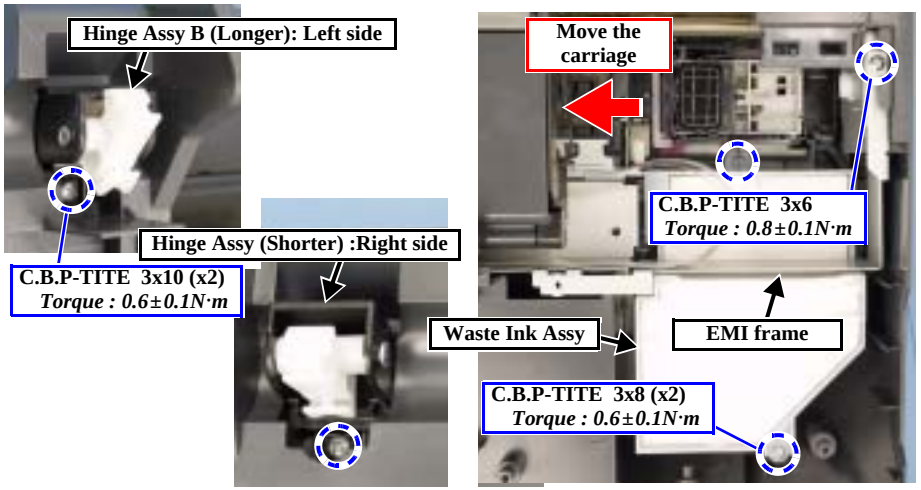

Figure 4-20. Removing the Waste Ink Assy and the Hinge Assy

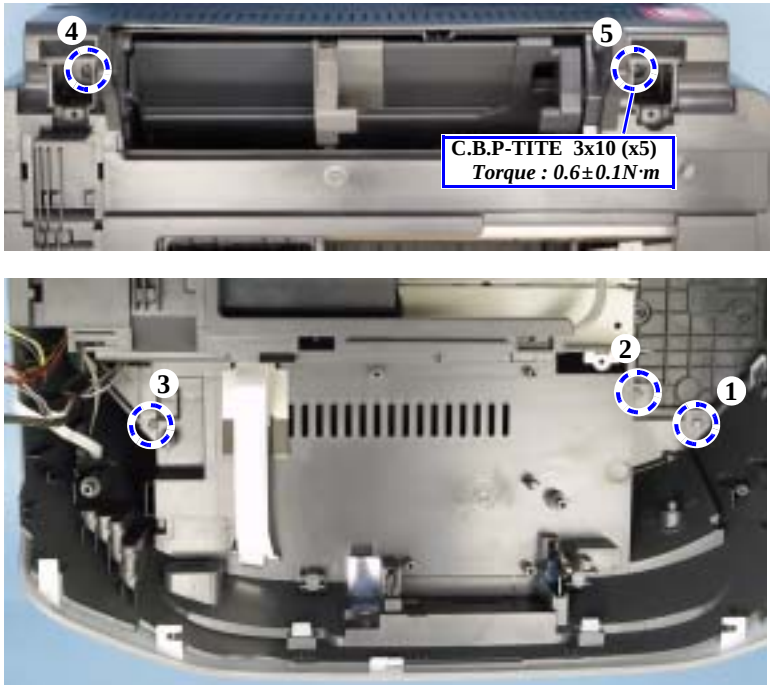

Figure 4-21. Removing the Middle Housing Assy

INSTALLATION PROCEDURE FOR THE MIDDLE HOUSING ASSY

1. Check the following before installing the Middle Housing Assy:
   - Stacker operates properly. *(See p.57)*
   - The harness is routed properly. *(Fig. 4-22)*, *(Fig. 4-23)*
2. Slide the Front Frame Ground Plate rearward and remove it from the Middle Housing Assy.
3. Lead out all the connectors and FFCs through the space shown in the figure and install the Middle Housing on the printer. *(Fig. 4-24)*

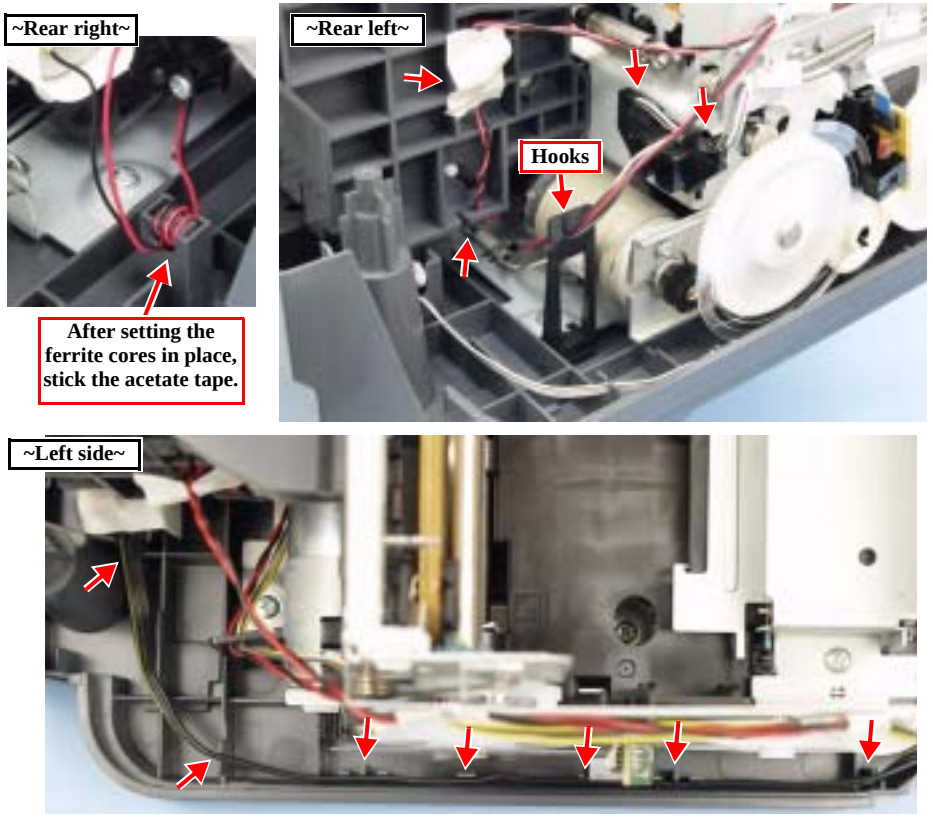

Figure 4-22. Routing the Harness 1

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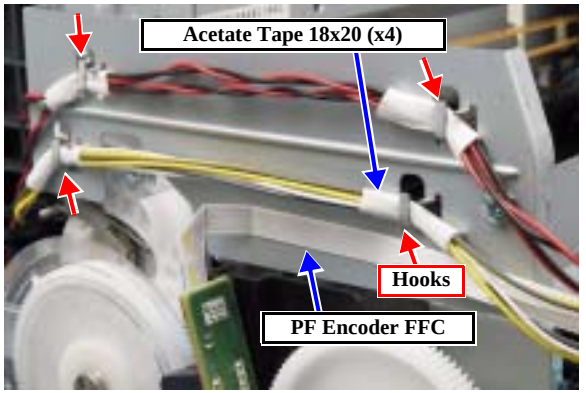

Figure 4-23. Routing the Harness 2

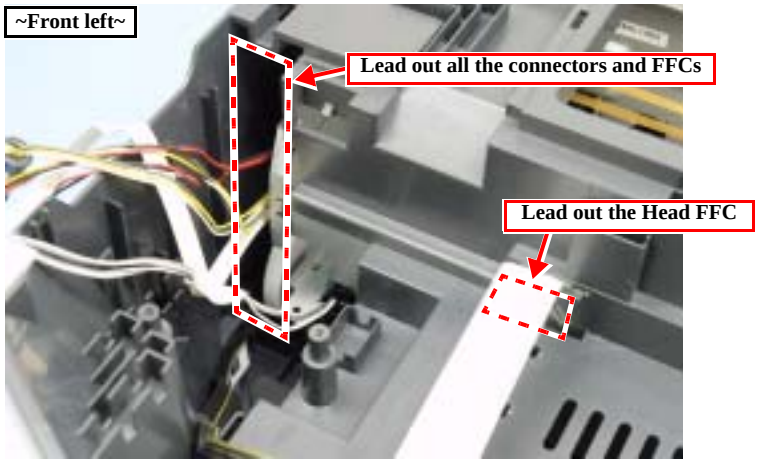

Figure 4-24. Leading out Connectors and FFCs

4. After checking the following conditions, tighten the screws in the order specified. *(See Figure 4-21)*
   - The right and left openings at the front bottom of the Middle Housing are properly engaged with the projections of the Bottom Housing. *(Fig. 4-25)*
   - The power supply harnesses (black and yellow) are fastened properly. *(Fig. 4-25)*
     (Held down with the Middle Housing and free from floating or dislocation)
5. Install the Front Frame Ground Plate on the Middle Housing. *(Fig. 4-26)*
6. *(See p.48 for the subsequent steps.)*

REASSEMBLY

- **Route the Waste Ink Tube with the red line always facing up so that the tube is free from distortion. And with the tube passed through the hook as shown in the figure, install the Waste Ink Tray Assy. *(Fig. 4-27)***
- **In Stylus PHOTO RX560/580/590, there is a difference between the Hinge Assy to be installed on the right side and that to be installed on the left side. Be sure to install the Hinge ASSY B (longer) on the left side. *(Fig. 4-20)***

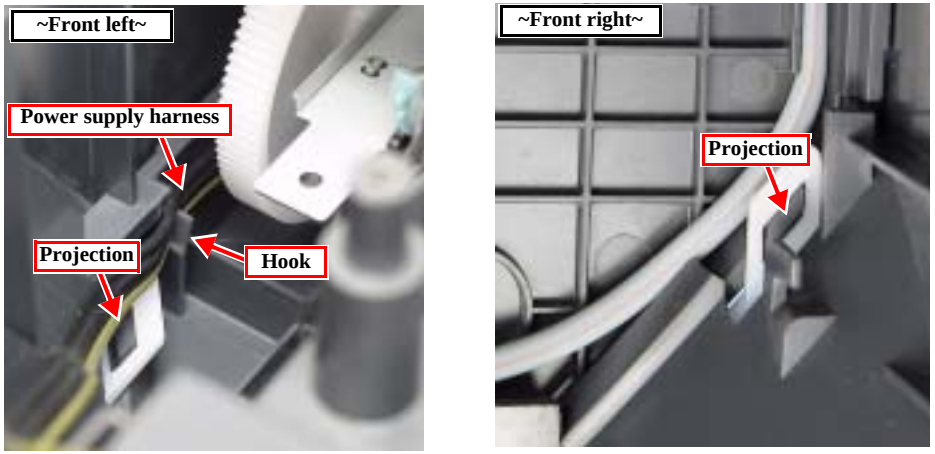

Figure 4-25. Checking the installation of the Middle Housing

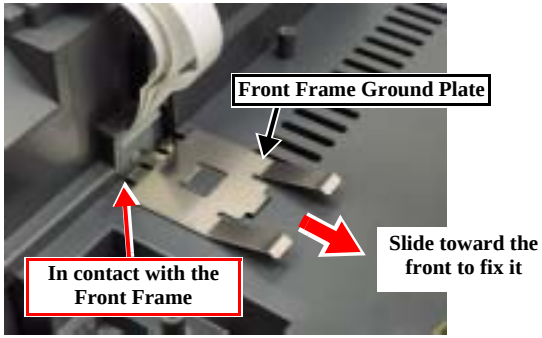

Figure 4-26. Installing the Front Frame Ground Plate

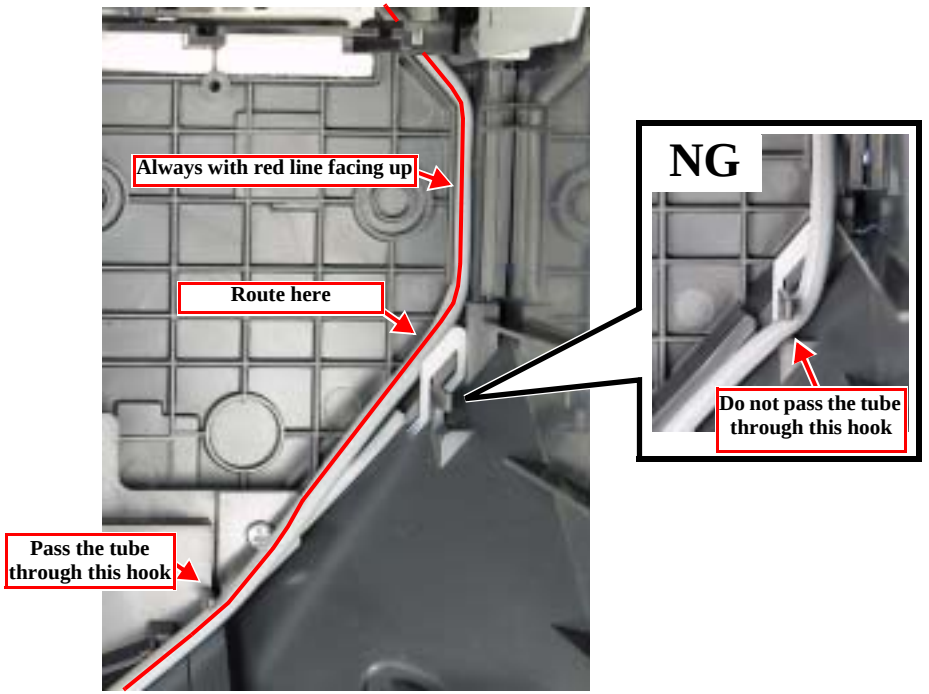

Figure 4-27. Notes on Installation of the Waste Ink Tray Assy

4.2.6 Waste Ink Tray Assy

CAUTION

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.42)*
2. *Remove the Scanner Unit (p.44)*
3. *Remove the Middle Housing (p.48)*
4. Remove the Waste Ink Tube from the Waste Ink Tray Assy. *(Fig. 4-28)*

REASSEMBLY

- **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.**
  In addition, the tube, which is to be routed with the red line always facing up, must be connected with care that the tube is free from distortion.
- **Route the Waste Ink Tube with the red line always facing up so that the tube is free from distortion. And with the tube passed through the hook as shown in the figure, install the Waste Ink Tray Assy. *(Fig. 4-29)***

ADJUSTMENT REQUIRED

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 *(p.74)*

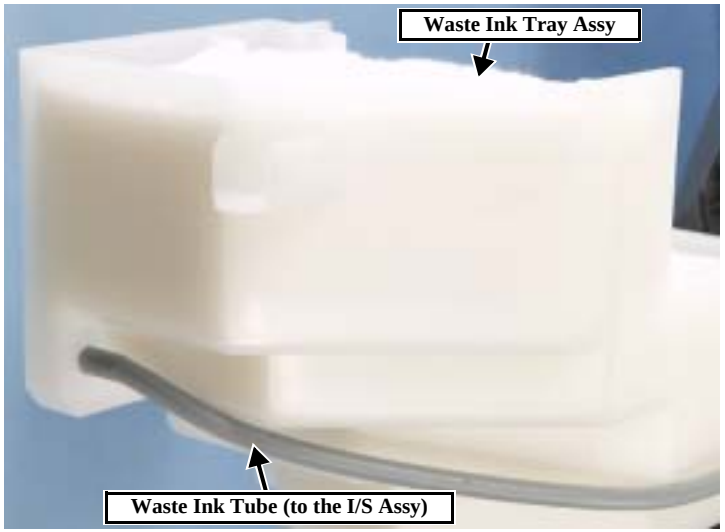

Figure 4-28. Removing the Waste Ink Tray Assy

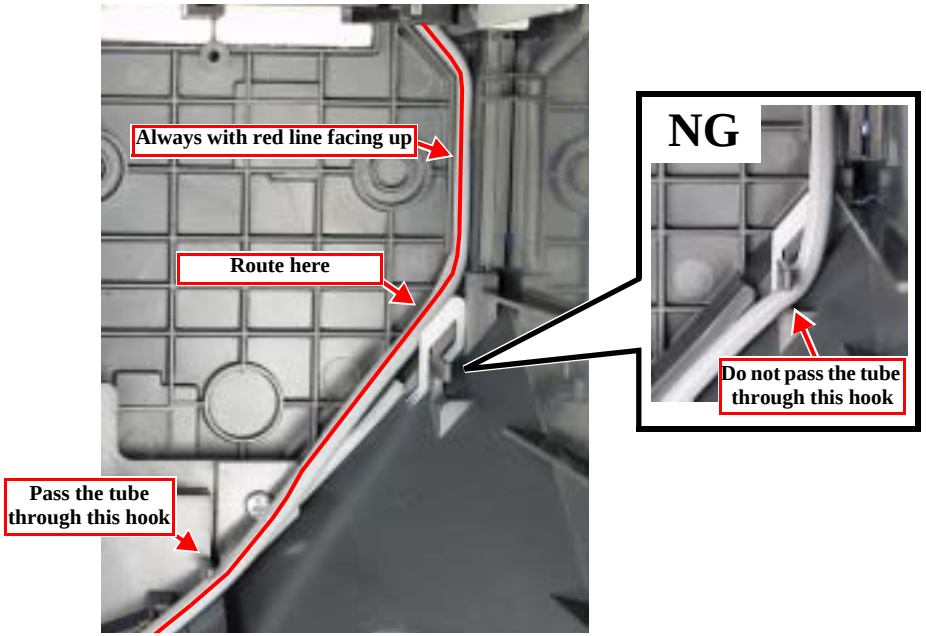

Figure 4-29. Notes on Installation of the Waste Ink Tray Assy

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.**
- **Handle the CSIC board carefully; especially take care not to touch it with your bare hand or not to bend it.**
- **When releasing the hook of the CSIC Connector Holder Assy, take care not to damage the FFC or cables.**

CHECK POINT

Using the upper case removing tool (1108202), the Printhead can be replaced even without removing the Middle Housing. (The description in this section is given on the assumption that the upper case removing tool is not available.)

1. Open the cartridge cover, and remove all the ink cartridges.
2. Release the carriage lock. *(p.48)*
3. *Remove the Panel Assy (p.42)*
4. *Remove the Scanner Unit (p.44)*
5. *Remove the Middle Housing (p.48)*
6. At the right side of the Carriage Assy, release the hook of the Head Cable Cover, and remove the Head Cable Cover by sliding it downward. *(Fig. 4-30)*
7. Insert a slotted screwdriver under the hook of the Head FFC Cover, and move it upward and remove the Head FFC Cover. *(Fig. 4-30)*
8. Disconnect the FFC from the CSIC Connector Holder Assy. *(Fig. 4-31)*
9. At the rear of the printer, release the hooks (x2) of the CSIC Connector Holder Assy while moving the carriage to the right or left end, and remove the CSIC Connector Holder Assy. *(Fig. 4-31)*

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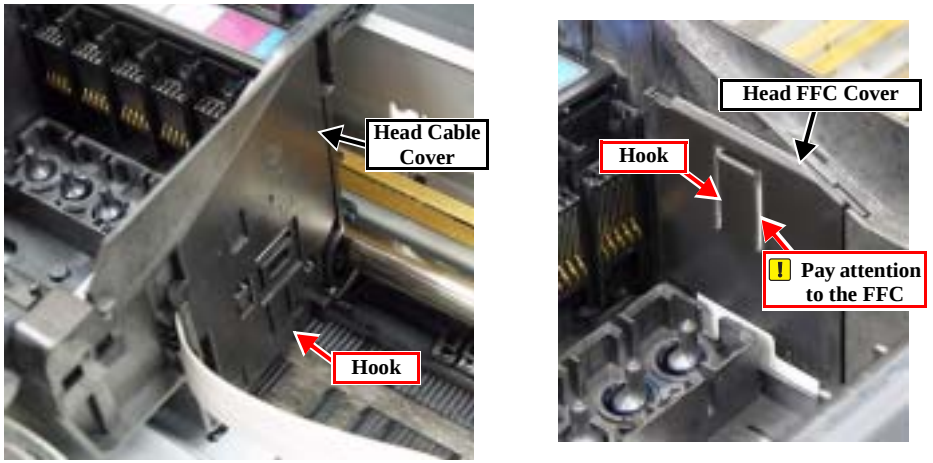


Figure 4-30. Removing the FFC Cover

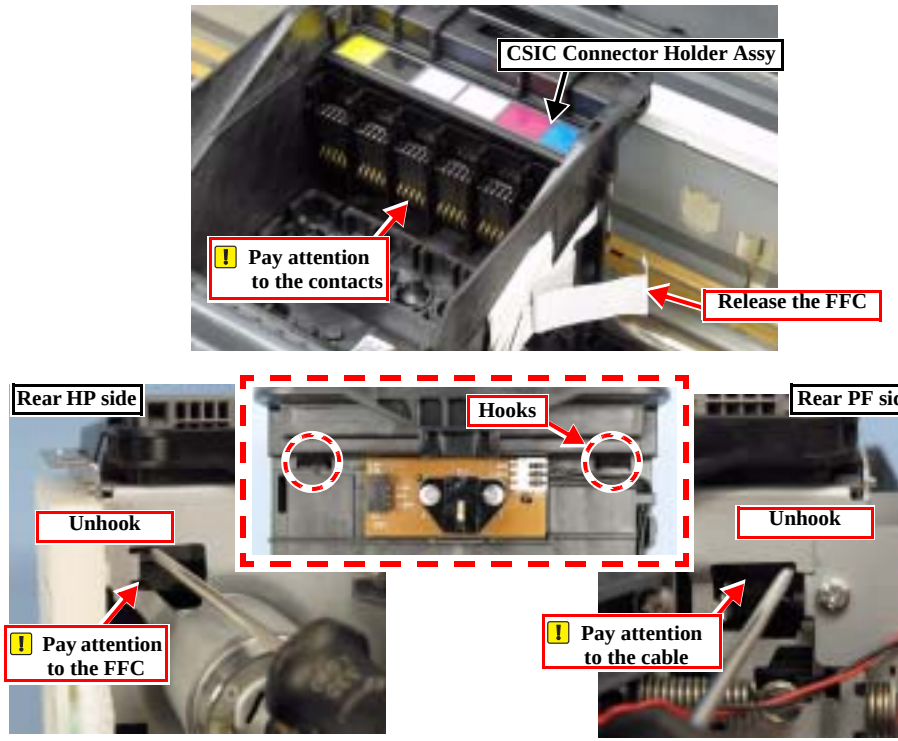
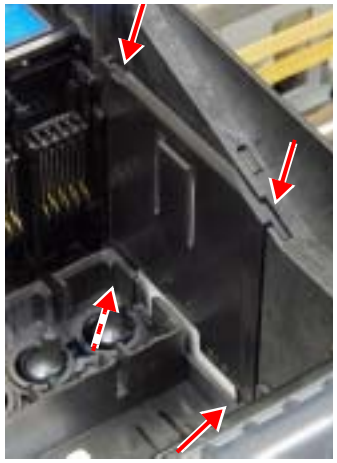


Figure 4-31. Removing the CSIC Connector Holder Assy

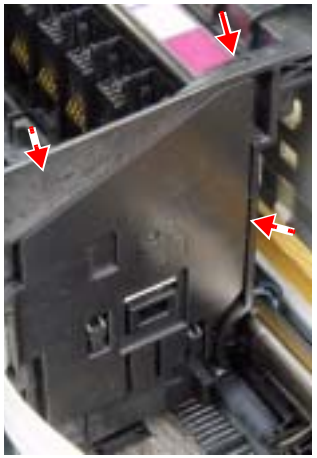
10. Remove the screws (x3) securing the Printhead. *(Fig. 4-32)*
11. Lift the Printhead, and disconnect the FFCs (x2). *(Fig. 4-33)*

REASSEMBLY

- **See Page 68 for how to remove the cartridge cover.**
- **Connect the FFC with attention paid to the terminal surface.**
- **When installing the Printhead, tighten the screws in the specified order. *(Fig. 4-32)***
- **Install the Head FFC Cover and Head Cable Cover as shown below.**



Head FFC Cover
The bottom projections (x2) and the top sliding parts (x2) must be in alignment.



Head Cable Cover
Engage the projection in the rear with the carriage first and then fit the cover onto the top projections (x2).

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 *(p.74)*

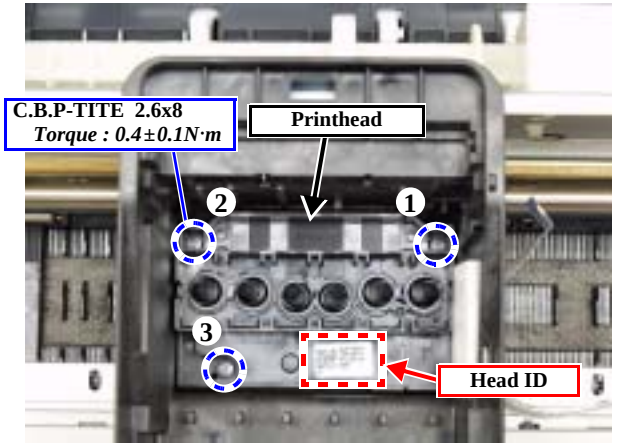


Figure 4-32. Removing the Printhead

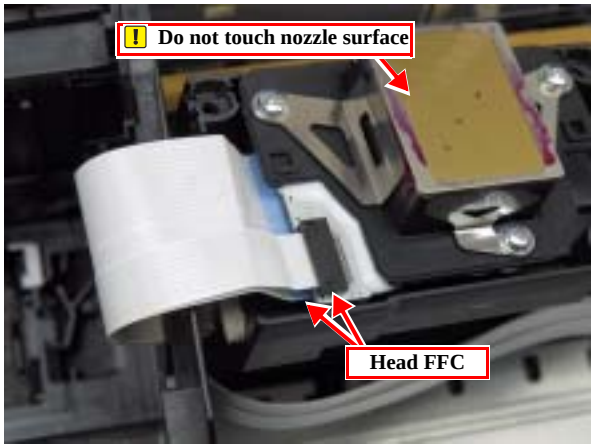
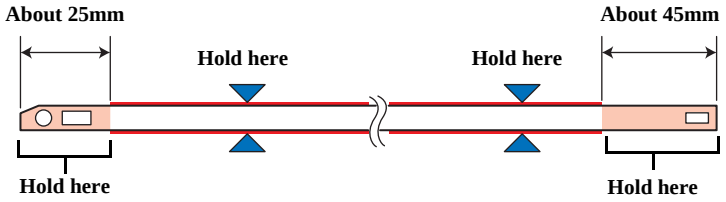


Figure 4-33. Releasing the Head FFCs

4.2.8 Linear Scale

CAUTION

- **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. Especially when passing the Linear Scale through the CR Encoder during reassembly work, take great care that grease of the CR Guide Shafts does not adhere to the reading surface.**



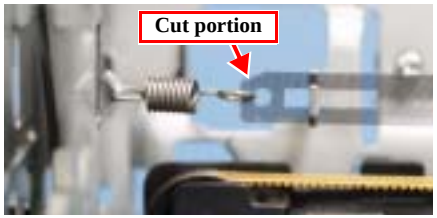
CHECK POINT

Stylus PHOTO RX560/580/590 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.44)*
2. Remove the spring from the left frame of the printer. *(Fig. 4-34)*
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.

REASSEMBLY

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



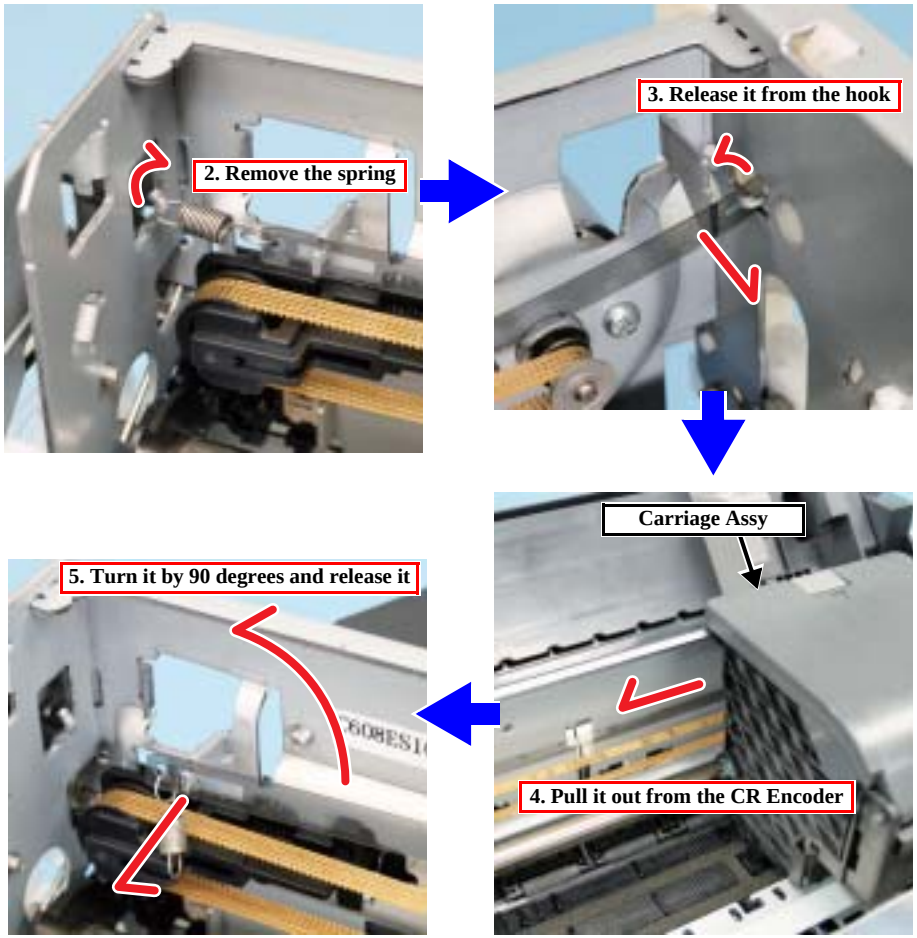
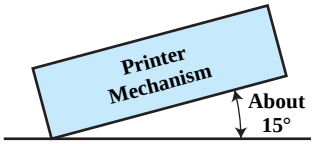


Figure 4-34. Removing the Linear Scale

4.2.9 Printer Mechanism

CAUTION

- **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. 4-36)***
  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.62)*)**



! 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 parts with a greasy hand.)

1. *Remove the Panel Assy (p.42)*
2. *Remove the Scanner Unit (p.44)*
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. 4-35)*
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.

REASSEMBLY

- **Lubrication is necessary. Refer to the following section and lubricate the specified points:**
  LUBRICATION OF PRINTER MECHANISM ASSY *(p.91)*
- **Tighten the screws in the specified order.** *(Fig. 4-35)*

ADJUSTMENT REQUIRED

Once the Printer Mechanism Assy 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 *(p.74)*

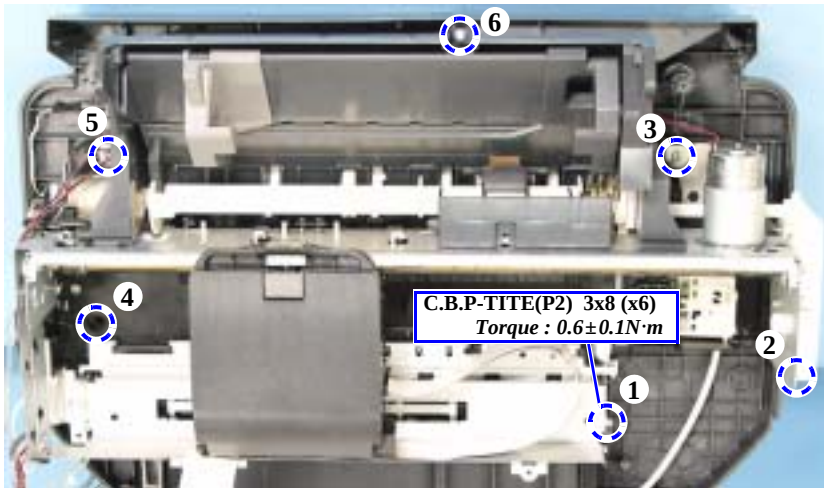
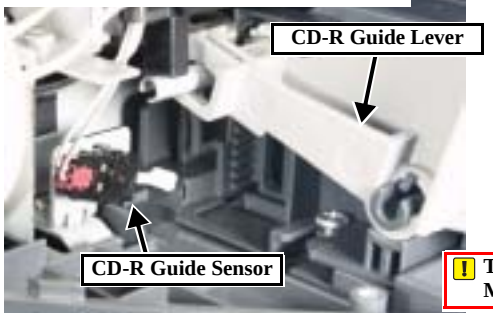


Figure 4-35. Removing the screws (Printer Mechanism Assy)

OK (Guide lever in up position)



NG (Guide lever in down position)

! The sensor may be damaged if Printer Mechanism is lifted under these conditions

Figure 4-36. CD-R Guide Lever and CD-R Guide Sensor

4.3 Disassembly of Housing Lower Assy

4.3.1 Waste Ink Pads

CAUTION

- **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.55)*
2. Remove Waste Ink Pads (x2) from the Housing Lower. *(Fig. 4-37)*

ADJUSTMENT REQUIRED

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 *(p.74)*

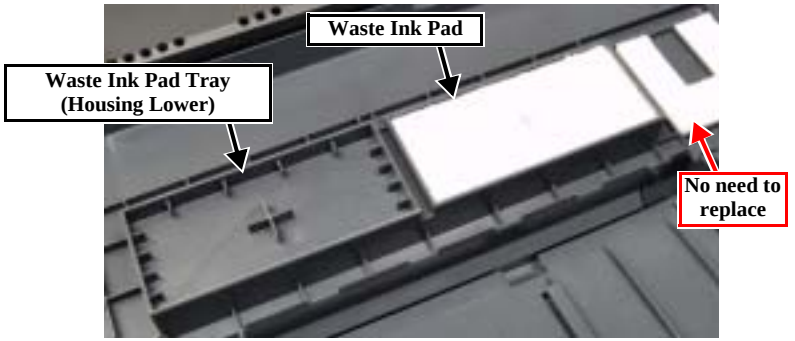


Figure 4-37. Removing the Waste Ink Pads

4.3.2 Power Supply Board

1. *Remove the Printer Mechanism (p.55)*
1. Remove the screw securing the P/S Assy, and remove it from the Housing Lower. *(Fig. 4-38)*
2. Remove the screw, and remove the P/S Cover. *(Fig. 4-39)*
3. Disconnect the connector, and remove the Power Supply Board.

REASSEMBLY

- **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.**

ADJUSTMENT REQUIRED

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 *(p.74)*

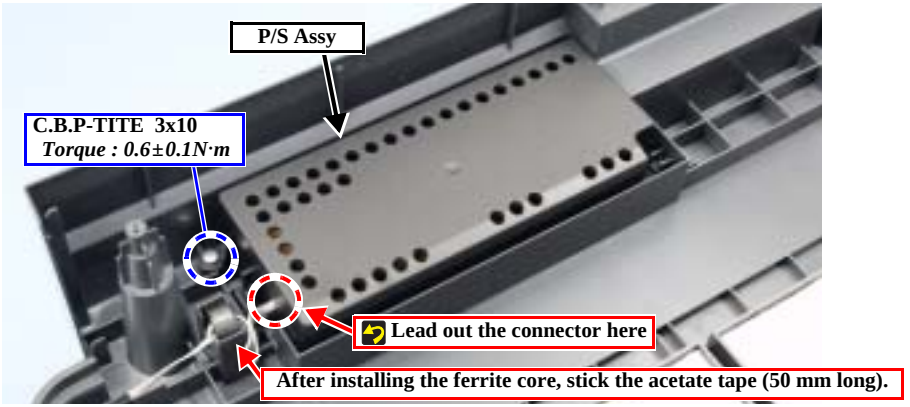


Figure 4-38. Removing the P/S Assy

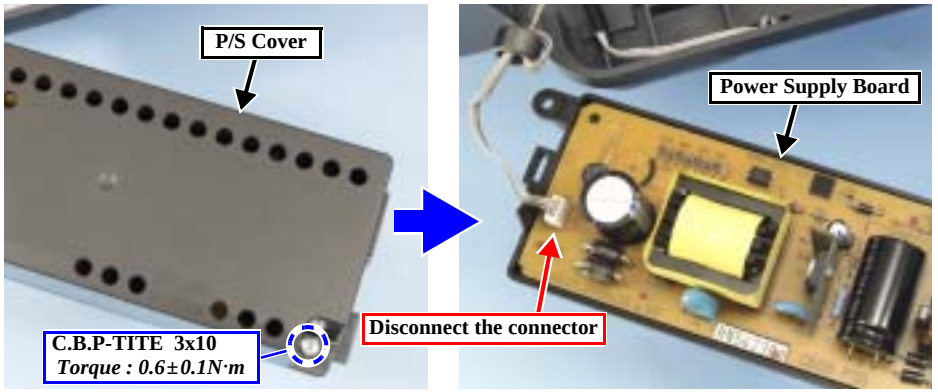


Figure 4-39. Removing the Power Supply Board

4.3.3 Stacker Assy

1. *Remove the Printer Mechanism (p.55)*
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. 4-40)*
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. 4-41)*
5. Remove the screws (x4) securing the Stacker Assy. *(Fig. 4-42)*
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.

(Continued to next page)

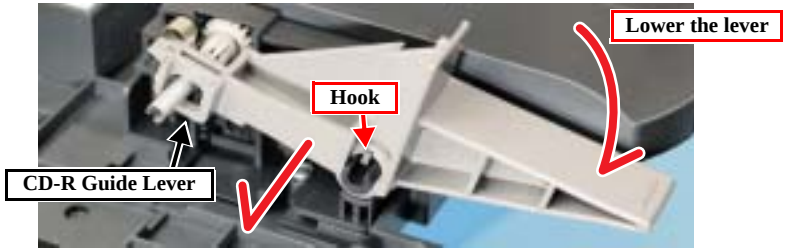


Figure 4-40. Removing the CD-R Guide Lever

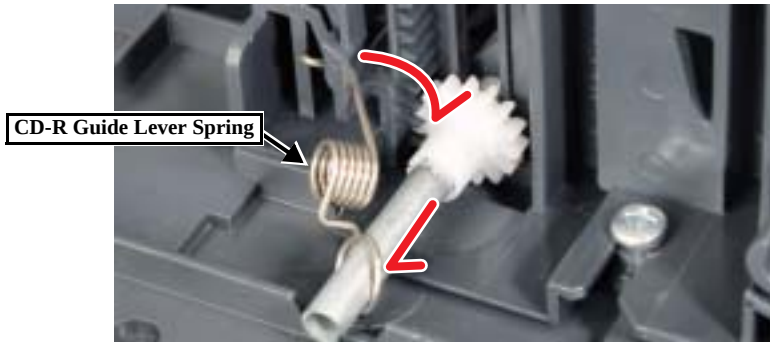


Figure 4-41. Removing the CD-R Guide Lever Spring

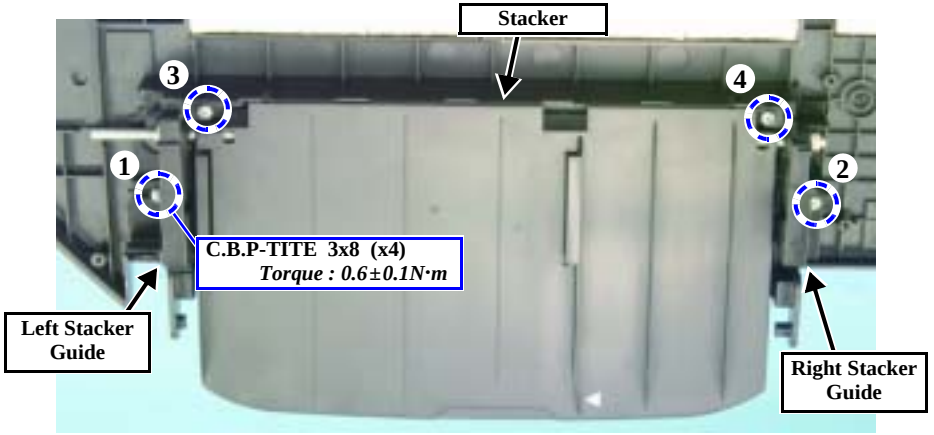


Figure 4-42. Removing the Stacker Assy

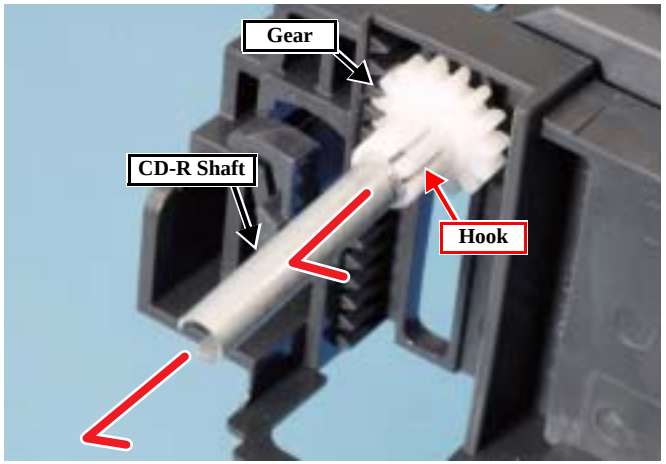


Figure 4-43. Removing the Gear and the CD-R Shaft

REASSEMBLY

- 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. 4-44)*
- 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. 4-45)*
    - 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. 4-42)*
- See *Fig.4-46* for installation of the CD-R Guide Lever Spring.

CHECK POINT

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 4-44. Installing the CD-R Shaft

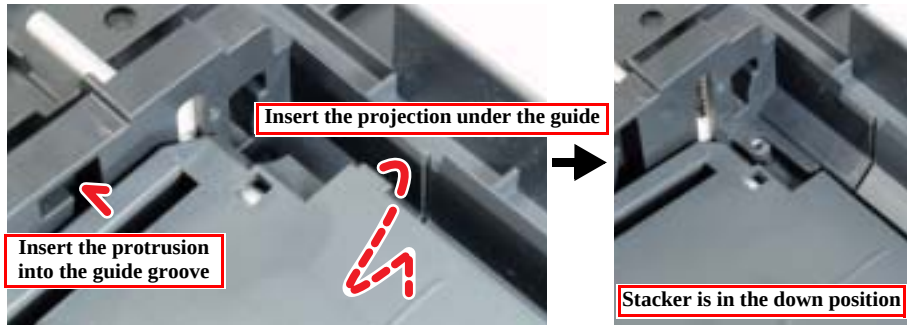
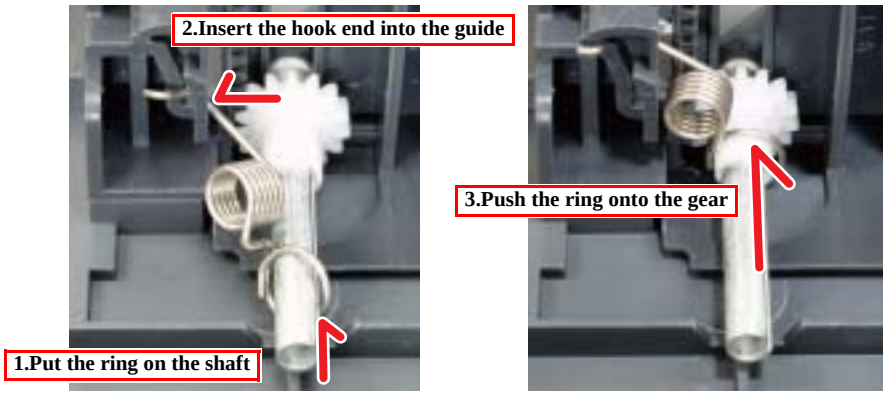


Figure 4-45. Installing the Stacker



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

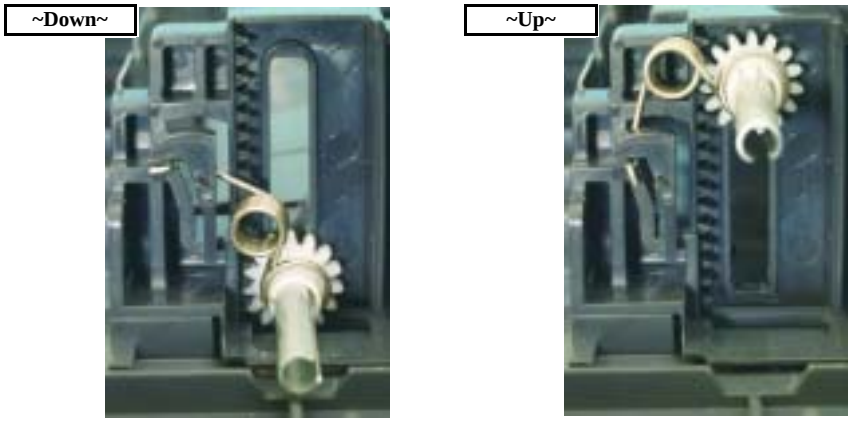


Figure 4-46. Installing the CD-R Guide Lever Spring

4.4 Disassembly of Scanner Unit

4.4.1 Scanner Housing

CAUTION

- **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.**
- **Take care in handling the Housing Lower, remembering that grease is applied to the CR guide area of the Housing Lower. Do not touch any parts with a greasy hand or part.** ***(Fig. 4-48)***
- **Take care not to soil or scratch the Encoder Scale or the lens of the ICS Unit.**

1. *Remove the Scanner Unit (p.44)*
2. Remove the screws (x6) on the bottom of the Scanner Unit. *(Fig. 4-47)*
3. Remove the Scanner Housing, the hinge area in the rear of the Scanner Unit first.

REASSEMBLY

- **When installing the Scanner Housing, engage the hooks (x3) in the front properly first and then engage the hinge area in the rear.**
- **Tighten the screws in the specified order.** ***(Fig. 4-47)***

ADJUSTMENT REQUIRED

When, in subsequent work, the Carriage Assy is removed, or for some other reason, the scanner origin can be shifted from the correct position. After reinstallation, therefore, adjust the origin location.
Refer to "5.4 Scanner Home Position Adjustment" *(p.84)*

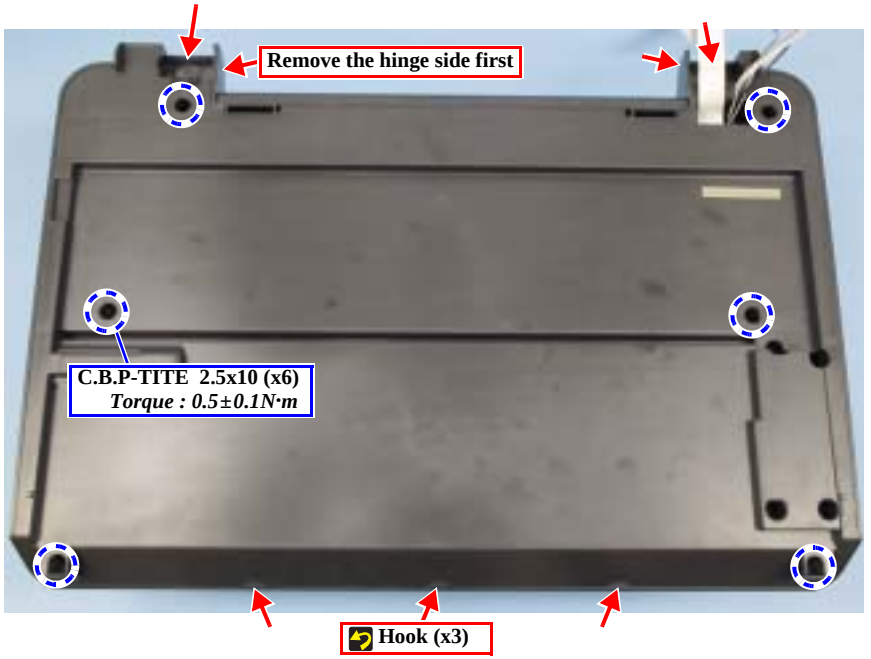


Figure 4-47. Removing the Scanner Housing

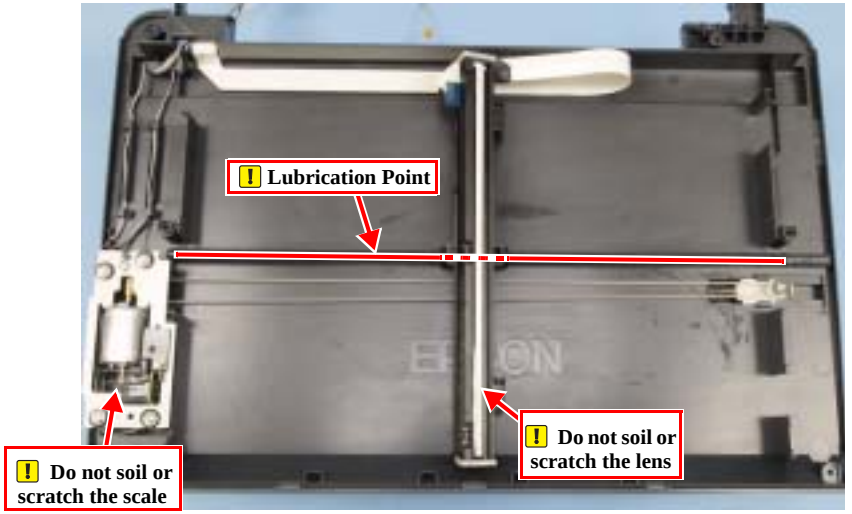


Figure 4-48. Lubrication Point on CR Guide

4.4.2 CIS Unit

CAUTION

Take care in handling the Housing Lower, remembering that grease is applied to the CR guide area of the Housing Lower. Do not touch any parts with a greasy hand or part.

1. *Remove the Scanner Housing (p.59)*
2. Pull out the FFC from the connector of the CIS unit. *(Fig. 4-49)*
3. Turn the CIS Unit by 90 degrees upward, and remove the CIS Unit from the right and left shaft holes of the carriage.

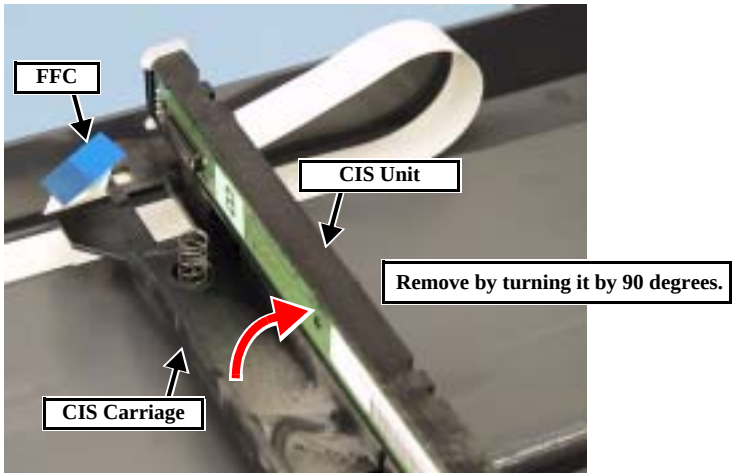


Figure 4-49. Removing the CIS Unit

REASSEMBLY

- **Lubrication is necessary. Refer to the following section and lubricate the specified points:**
  LUBRICATION OF SCANNER UNIT *(p.93)*
- **When replacing the CIS Unit, check the sticker on the Bottom Board, and use the Spacers (x2) of the same specification (A ~ C) as the marking on the sticker, placing them at the right and left positions. *(Fig. 4-50)***
- **Install the Timing Belt on the carriage with care not to confuse the toothed areas of the inside and outside of the belt.**

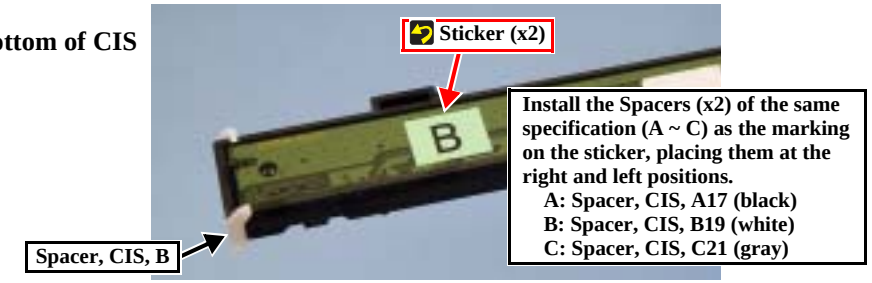
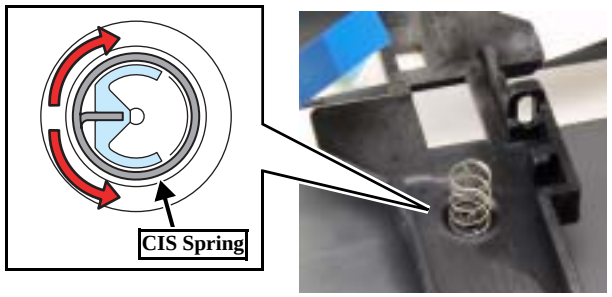
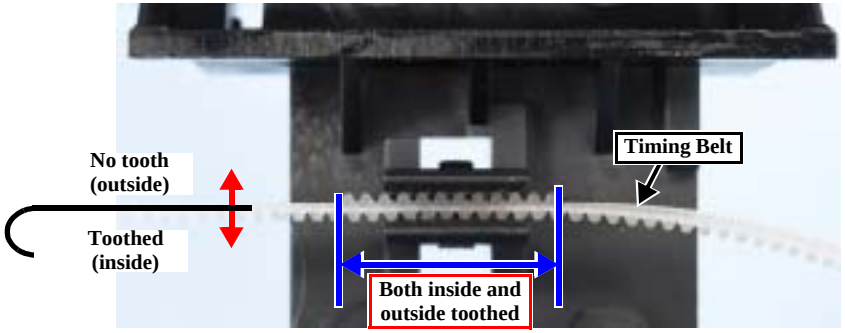


Figure 4-50. Installing Spacers CIS

CHECK POINT

Install the CIS Spring as follows: Engage the end of the spring with the cut portion in the spring catch area of the CIS Carriage first. Then turn the spring to install it.





Bottom of CIS

Figure 4-51.

4.4.3 CR Motor Unit

CAUTION

- **Take care in handling the Housing Lower, remembering that grease is applied to the CR guide area of the Housing Lower. Do not touch any parts with a greasy hand or part. (Especially take great care in handling the Encoder Scale.)**
- **Do not remove or loosen the screw marked with X for the CR Motor Unit shown at right. Remember that the CR Motor Unit must be replaced with a new one if the encoder is shifted from the correct position. *(Fig. 4-53)***

1. *Remove the Scanner Housing (p.59)*
2. Remove the screw fastening the grounding wire. *(Fig. 4-52)*
3. Disconnect the harnesses of the CR Encoder, CR Motor and grounding wire from the Housing Lower.
4. Remove the screw and washers (x4) securing the CR Motor Unit.

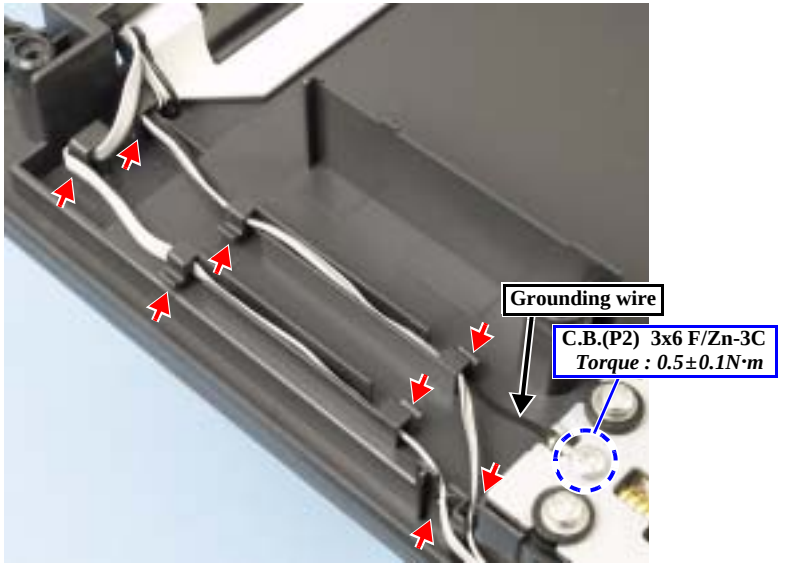
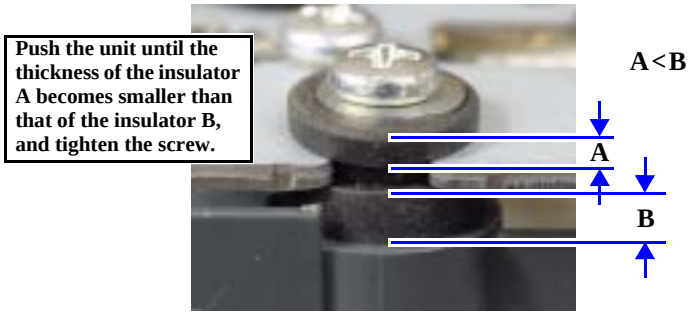


Figure 4-52. CR Motor Unit 1

REASSEMBLY

- **When installing the CR Motor Unit on the Housing Lower, push it adequately so that the insulators are compressed to such thickness as shown below.**



- **Route the harnesses as shown. (*Fig.4-52* , *Fig.4-53*)**

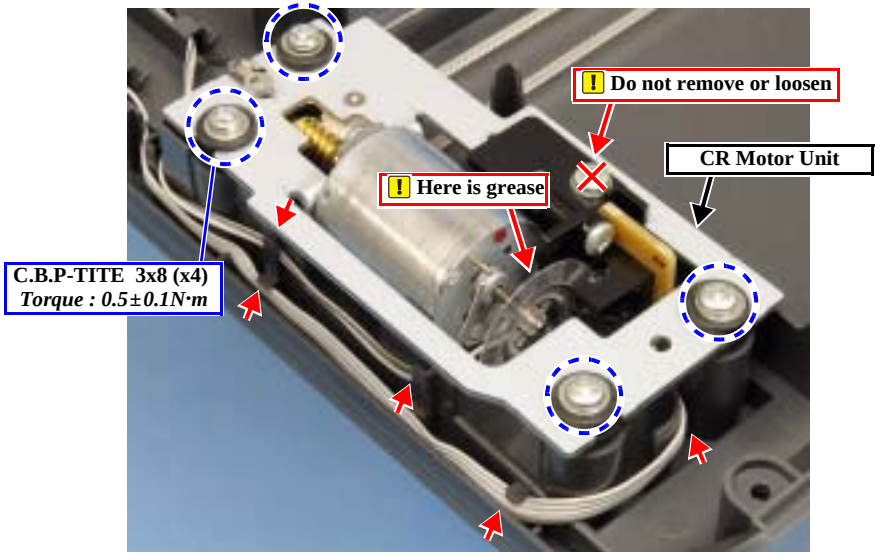


Figure 4-53. CR Motor Unit 2

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.55)*
2. Disconnect the FFC of the PF Encoder, remove the screw, and remove the PF Encoder. *(Fig. 4-54)*
3. Remove the PF Scale. (Tape is stuck in the center circle area)
4. Release the lead wires of the PF Motor. *(Fig. 4-60)*
5. Remove the Harness Holder. *(Fig. 4-55)*
6. Remove the screws (x2) securing the PF Motor, and remove the PF Motor in the lateral direction. *(Fig. 4-56)*

REASSEMBLY

- **Install the PF Motor with its labeled area facing outward. *(Fig. 4-56)***
- **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 *(p.74)***

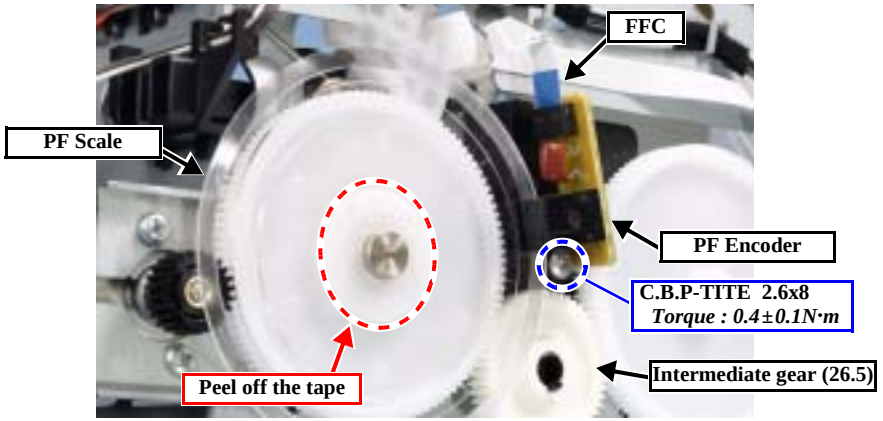


Figure 4-54. Removing the PF Encoder / PF Scale

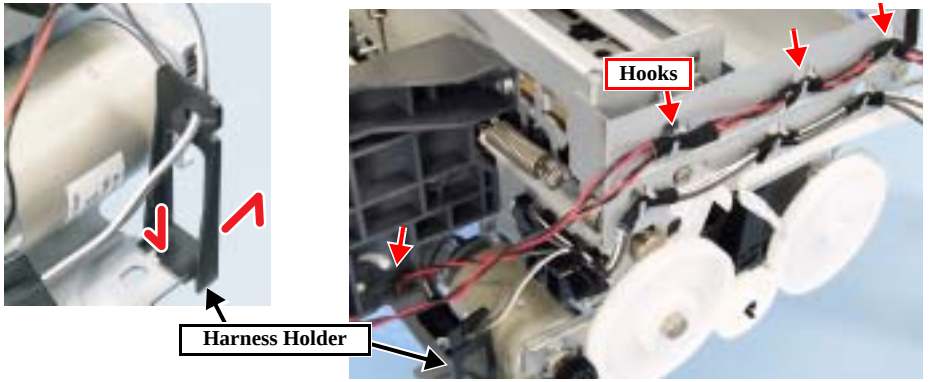


Figure 4-55. Removing the Harness Holder

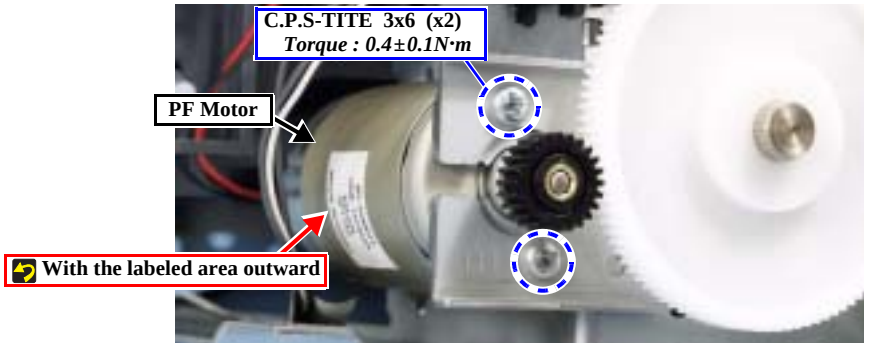


Figure 4-56. Removing the PF Motor

4.5.2 I/S Assy

CAUTION

- **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.**
- **Do not touch the head cleaner (wiper) with your bare hand, and make sure that it is free from grease. Touching with your bare hand or adhering grease can cause nozzle clogging.**

1. *Remove the Printer Mechanism (p.55)*
2. Remove the tube from the Waste Ink Assy (as required).
3. Remove the screws (x2), and remove the I/S Assy. *(Fig. 4-57)*

REASSEMBLY

- **Lubrication is necessary. Refer to the following section and lubricate the specified points:**
  LUBRICATION AT INSTALLATION OF I/S ASSY *(p.91)*
- **After installing the I/S Assy to the printer frame, make sure that its position is adjusted as shown in *Fig.4-58* .**
- **Tighten the screws in the specified order. *(Fig. 4-57)***
- **Catch the Waste Ink Tube in the groove shown in the figure on the bottom of the I/S Assy. *(Fig. 4-59)***
- **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 4-57. Removing the I/S Assy

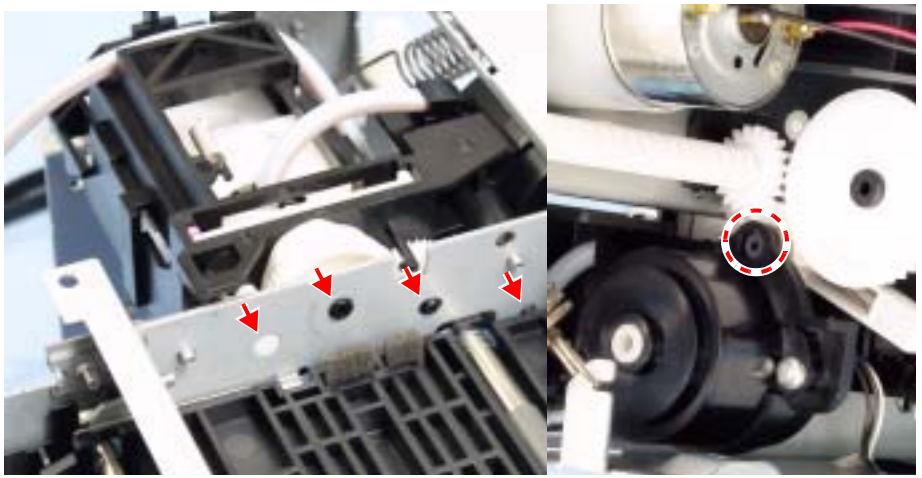


Figure 4-58. Installing the I/S Assy

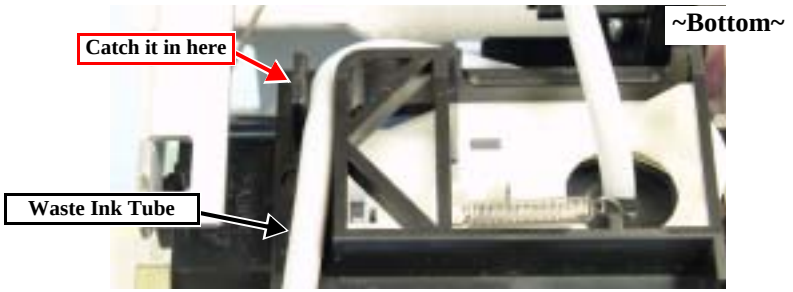


Figure 4-59. Installing the Waste Ink Tube (I/S Assy)

4.5.3 ASF Assy

1. *Remove the Printer Mechanism (p.55)*
2. *Remove the I/S Assy (p.63)*
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. 4-60)*
4. Remove the screw securing the LD Roller Guide. *(Fig. 4-61)*
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. 4-62)*
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.

REASSEMBLY

- **Lubrication is necessary. Refer to the following section and lubricate the specified points:**
  LUBRICATION OF ASF ASSY *(p.92)*
  LUBRICATION AT INSTALLATION OF ASF ASSY *(p.91)*
- **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. 4-62)***

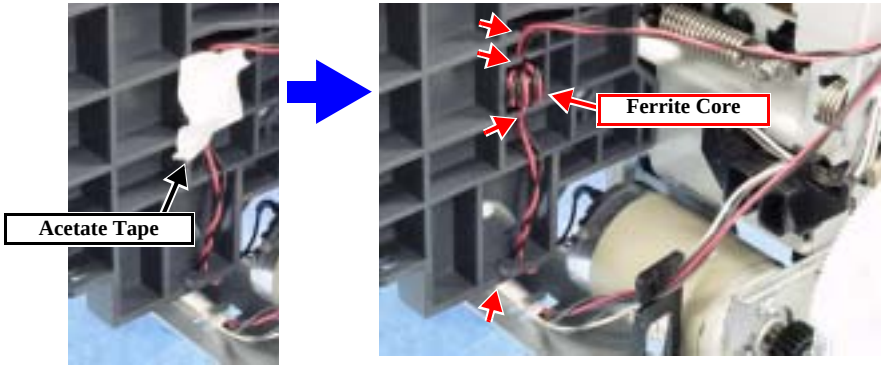


Figure 4-60. Lead Wires on the ASF Assy

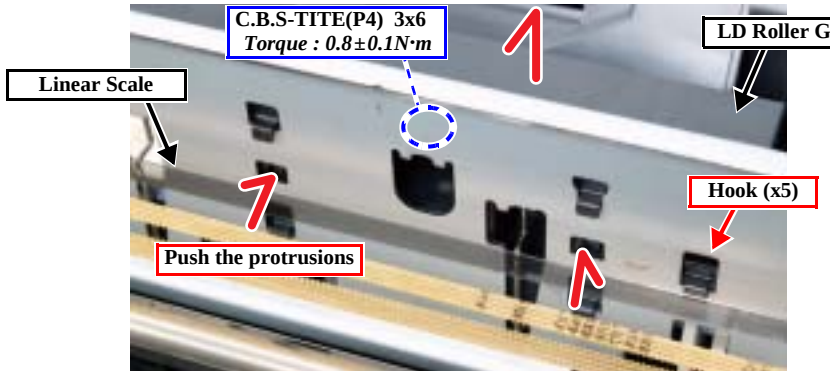


Figure 4-61. LD Roller Guide

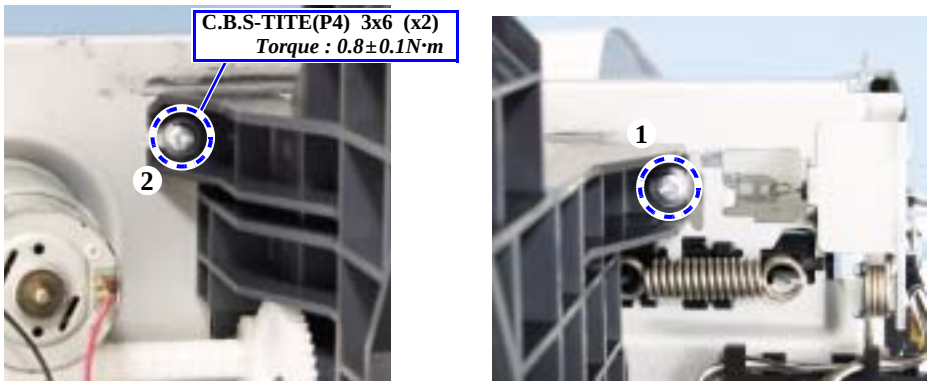


Figure 4-62. Removing the screw (ASF Assy)

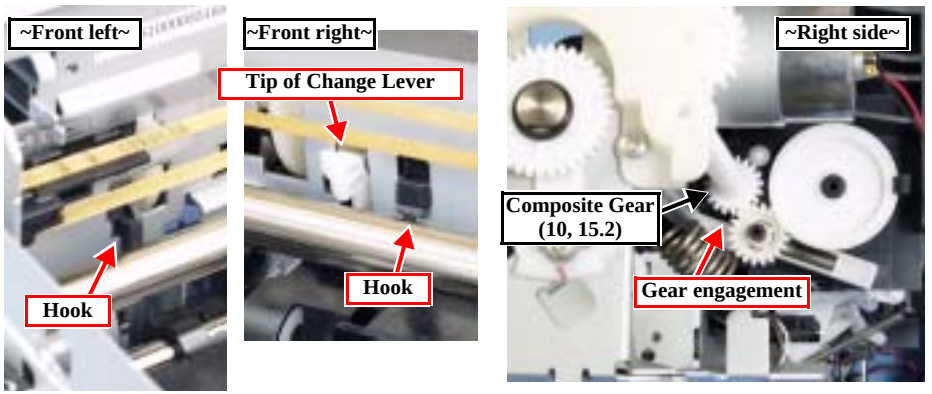


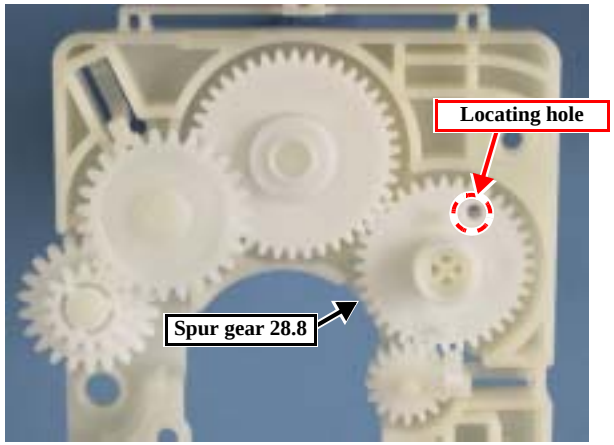
Figure 4-63. Removing the ASF Assy

4.5.4 APG Assy

1. *Remove the Printer Mechanism (p.55)*
2. At the right side of the printer, remove the screws (x2) securing the APG Assy. *(Fig. 4-64)*
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).

CHECK POINT

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



REASSEMBLY

Install the APG Assy by the following procedure: *(Fig. 4-65)*

1. **Install the composite gear (10, 15.5).**
2. **Pass a pin (o2mm) 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.4-63* .**

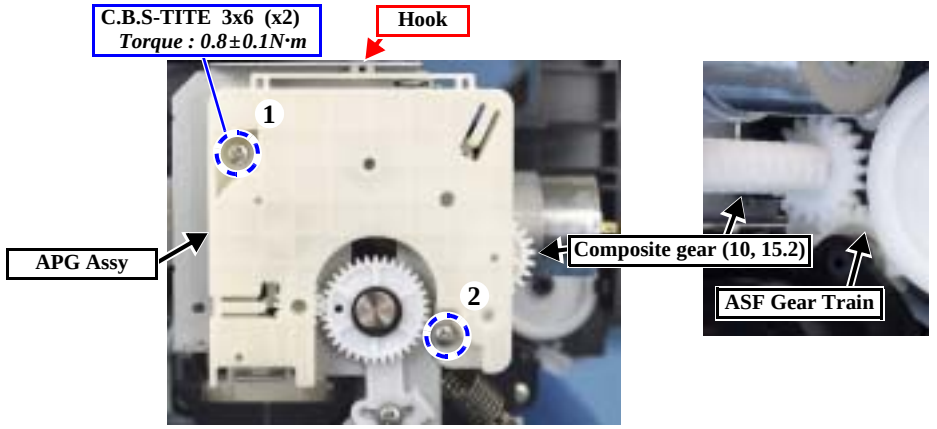


Figure 4-64. Removing the APG Assy

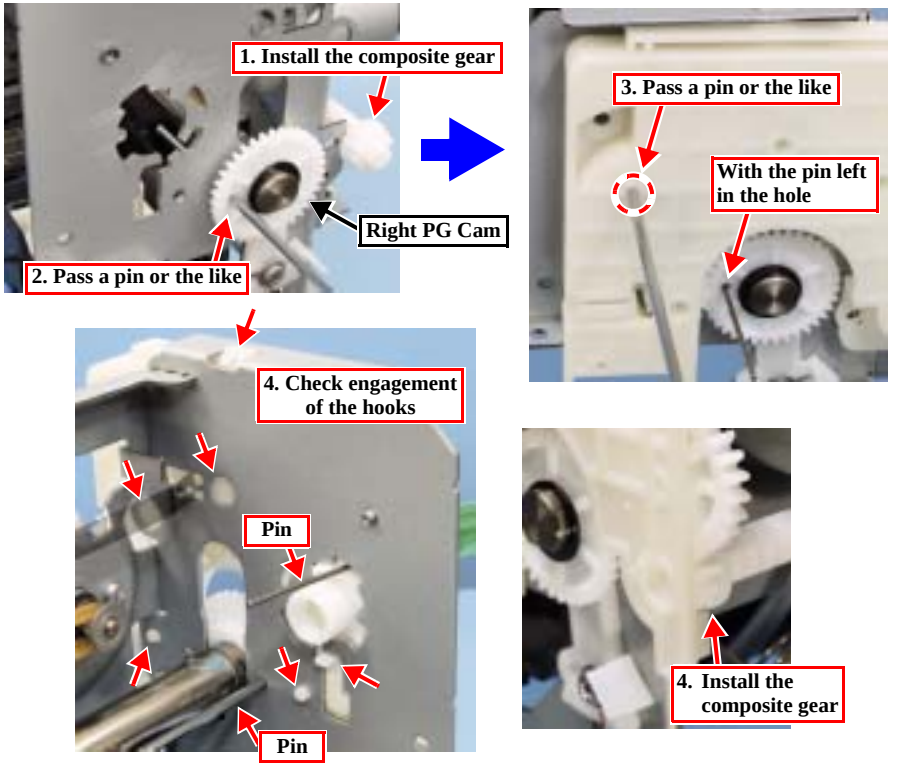


Figure 4-65. Installing the APG Assy

4.5.5 CR Motor

1. *Remove the Printer Mechanism (p.55)*
2. *Remove the I/S Assy (p.63)*
3. *Remove the ASF Assy (p.64)*
4. At the rear of the printer, disconnect the harness of the CR Motor from the frame.
5. At the rear of the printer, remove the tension spring of the Driven Pulley Assy. *(Fig. 4-67)*
6. Remove the screws (x2), and remove the CR Motor. *(Fig. 4-68)*

REASSEMBLY

- **Lubrication is necessary. Refer to the following section and lubricate the specified points:**
  LUBRICATION OF DRIVEN PULLEY *(p.91)*
- **Install the CR Motor with its printed area facing upward.**

- **Install the Timing Belt with the tooth side facing inside and without torsion.**
- **When the CR Motor has been replaced with a new one, wind acetate tape (18x20 mm) x4 around the harness as shown. *(Fig. 4-66)***

ADJUSTMENT REQUIRED

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 *(p.74)***

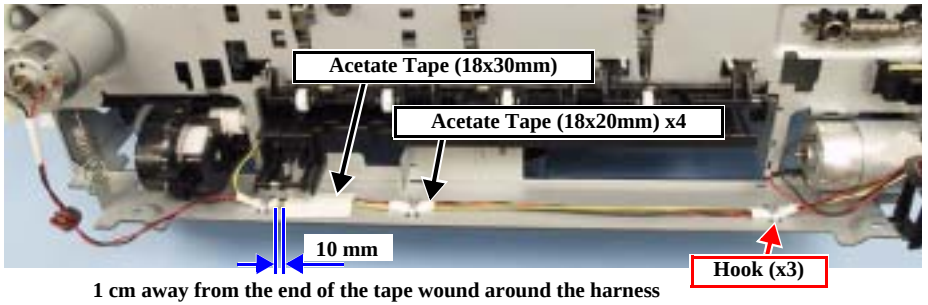


Figure 4-66. Removing the CR Motor Harness

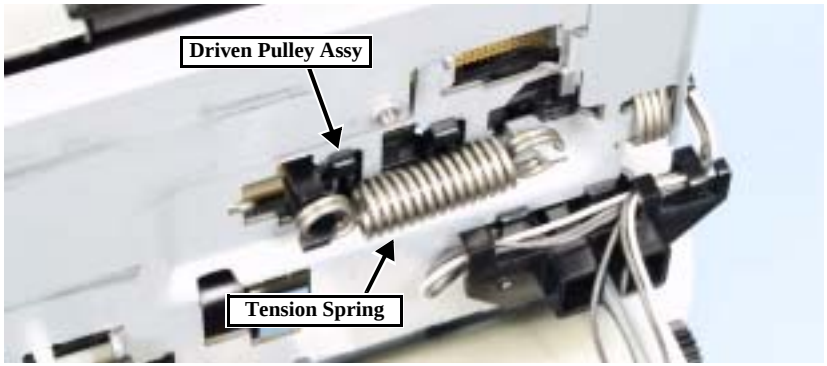


Figure 4-67. Removing the Tension Spring

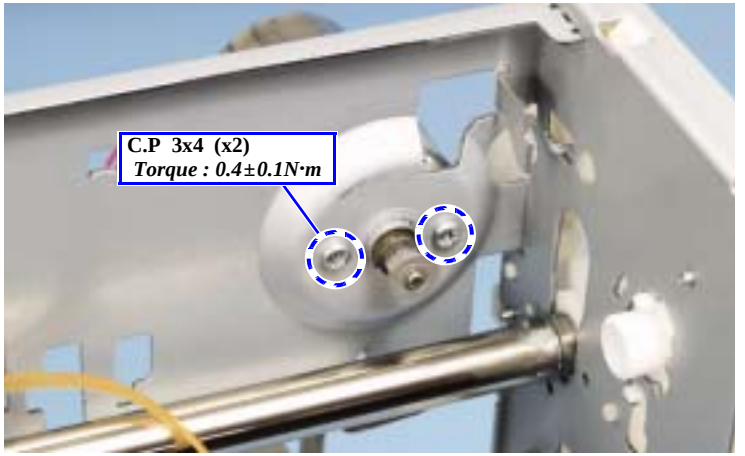


Figure 4-68. Removing the CR Motor

4.5.6 Carriage Assy

1. *Remove the Printer Mechanism (p.55)*
2. *Remove the Linear Scale (p.54)*
3. *Remove the PF Scale and PF Encoder (p.62)*
4. *Remove the APG Assy (p.65)*
5. *Remove the I/S Assy (p.63)*
6. *Remove the ASF Assy (p.64)*
7. *Remove the Driven Pulley Assy (p.66)*
8. Release the Head FFC from the front frame. *(Fig. 4-74)*
9. Remove the screw, and remove the Cable Holder Frame. *(Fig. 4-69)*
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. 4-70)*
11. At the right side of the printer, remove the spring, remove the washer, and the Right PG Cam. *(Fig. 4-71)*
12. Remove the Carriage Assy together with the CR Guide Shaft from the left side of the printer frame.

(Continued to next page)

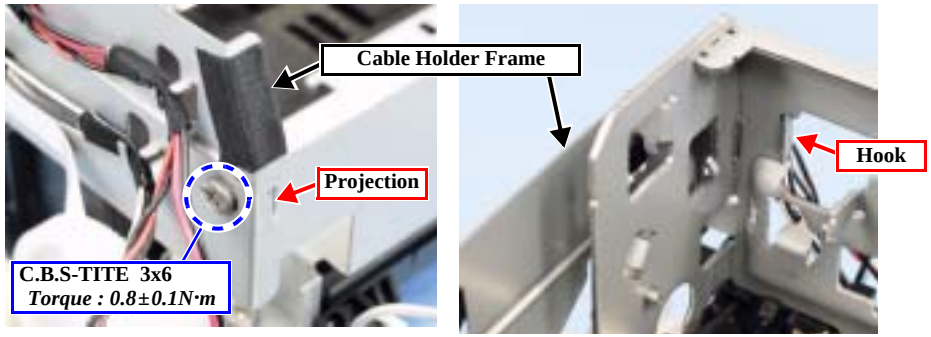


Figure 4-69. Removing the Cable Holder Frame

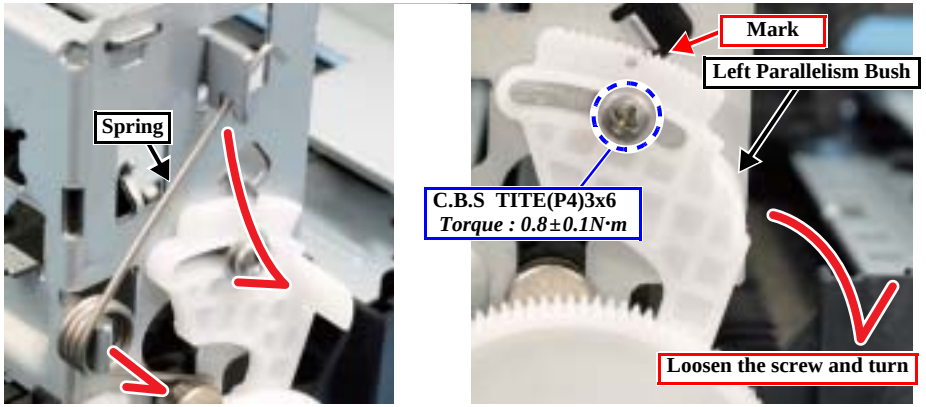


Figure 4-70. Removing the Carriage Assy (at left side)

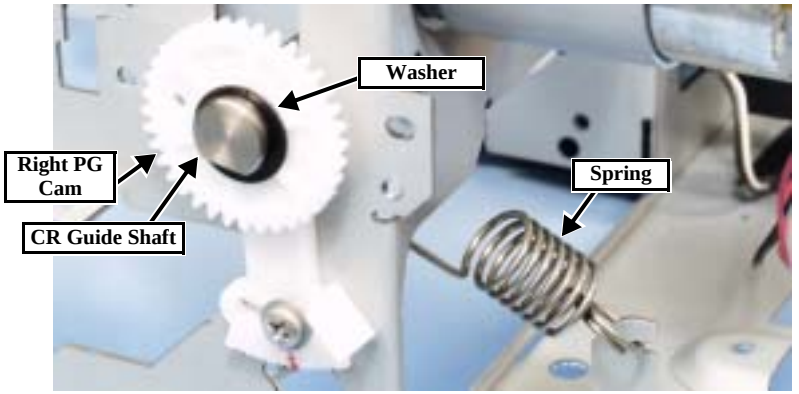


Figure 4-71. Removing the Carriage Assy (at right side)

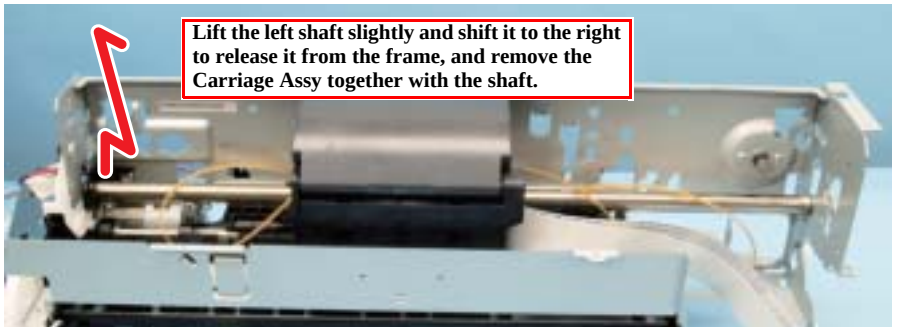
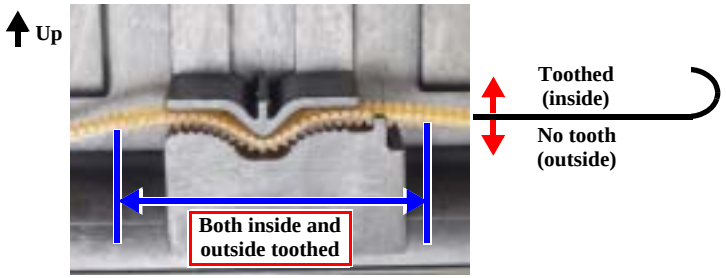


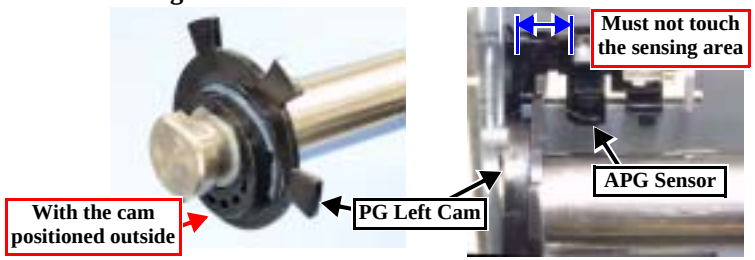
Figure 4-72. Removing the Carriage Assy

REASSEMBLY

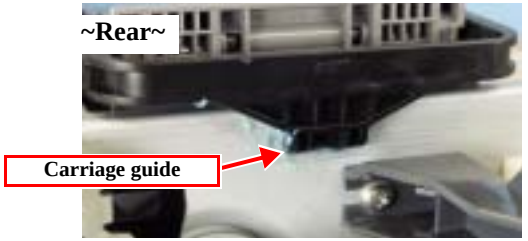
- **Lubrication is necessary. Refer to the following section and lubricate the specified points:**
  LUBRICATION OF CARRIAGE ASSY AND CR GUIDE SHAFT *(p.90)*
  LUBRICATION AT INSTALLATION OF CARRIAGE ASSY *(p.90)*
- **Install the Timing Belt on the carriage with care not to confuse the toothed areas 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. 4-69)*

ADJUSTMENT REQUIRED

When installing the Carriage Assy, refer to the following sections and perform the necessary adjustments:

- 5.2 PG Adjustment *(p.75)*
- 5.1.1 Adjustment by Use of Adjustment Program *(p.74)*

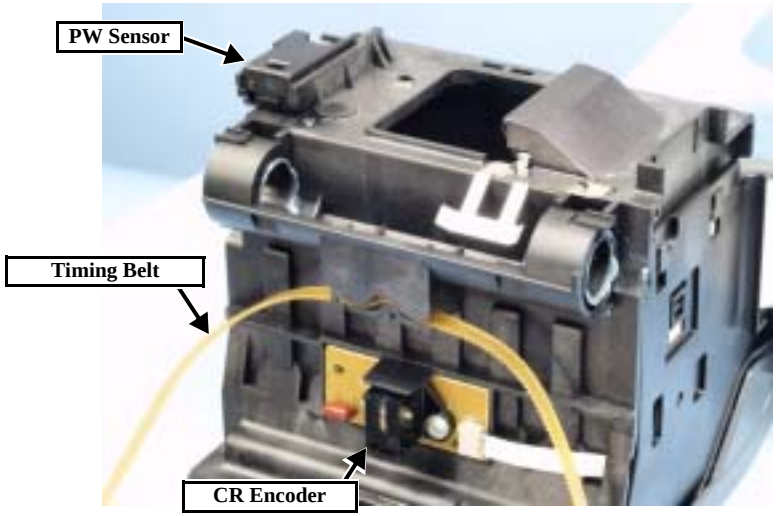
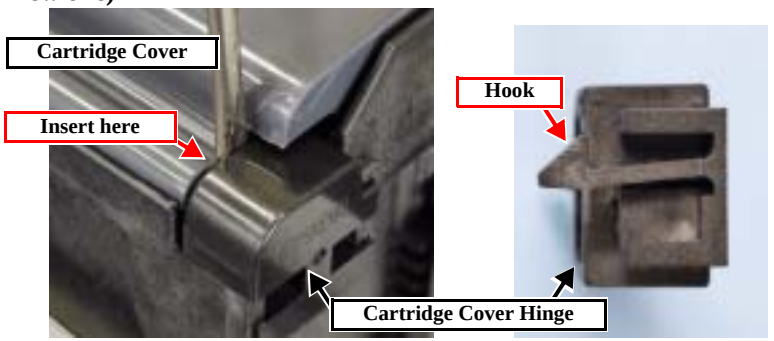


Figure 4-73. Carriage Assy (rear)

CHECK POINT

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.55)*
2. Remove the Head FFC from the Front Frame. *(Fig. 4-74)*
3. Release the harness of the CD-R sensor from the hook of the Eject Frame. *(Fig. 4-75)*
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. 4-76)*

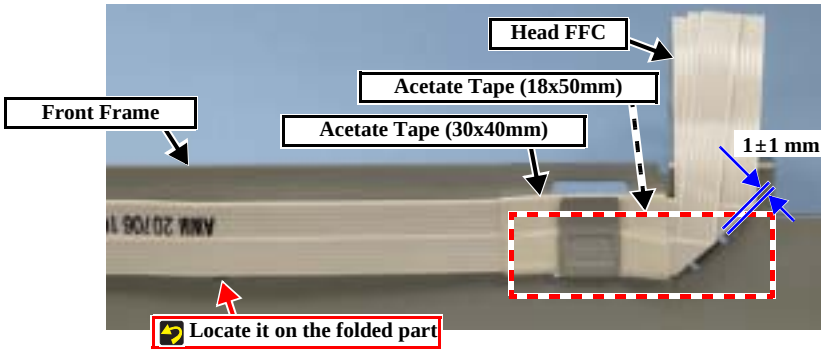
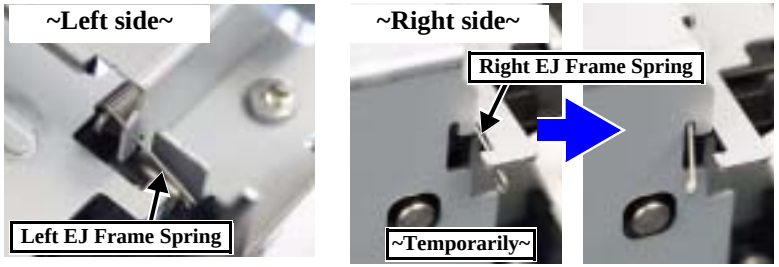


Figure 4-74. Removing the Head FFC

REASSEMBLY

- **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. 4-76)***
- **After installing the Front Frame, confirm the engagement of the projections (x2), and then tighten the screws in the specified order. *(Fig. 4-75)***
- **Lubrication is necessary. Refer to the following section and lubricate the specified points:**
  Lubrication of Front Frame *(p.90)*
- **After installing the Cable Holder Frame, confirm the engagement of the projection, and then tighten the screw. *(Fig. 4-75)***
- **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. 4-74)***

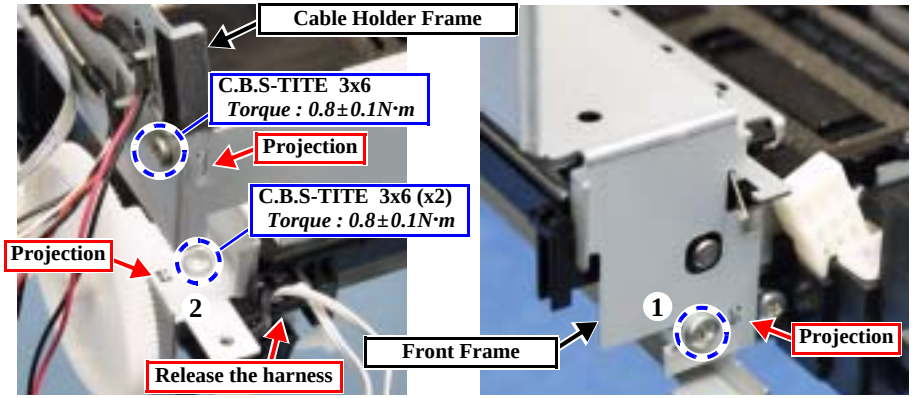


Figure 4-75. Removing the Front Frame

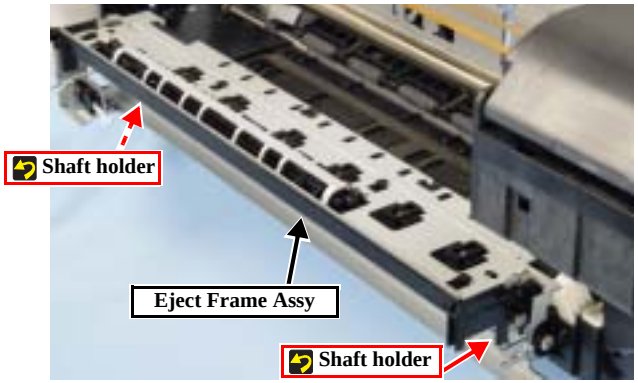


Figure 4-76. Removing the Eject Frame Assy

4.5.8 Upper Paper Guides

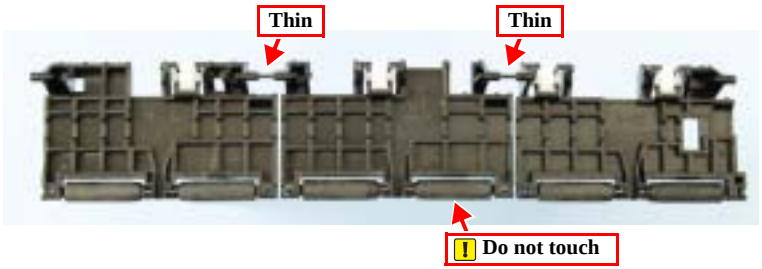
CAUTION

- **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.55)*
2. *Remove the I/S Assy (p.63)*
3. *Remove the ASF Assy (p.64)*
4. Remove torsion springs (x3) at the rear of the printer. *(Fig. 4-78)*
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. 4-79)*

CHECK POINT

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.



REASSEMBLY

Install the springs properly, while paying attention to the tip position of each spring. *(Fig. 4-78)*

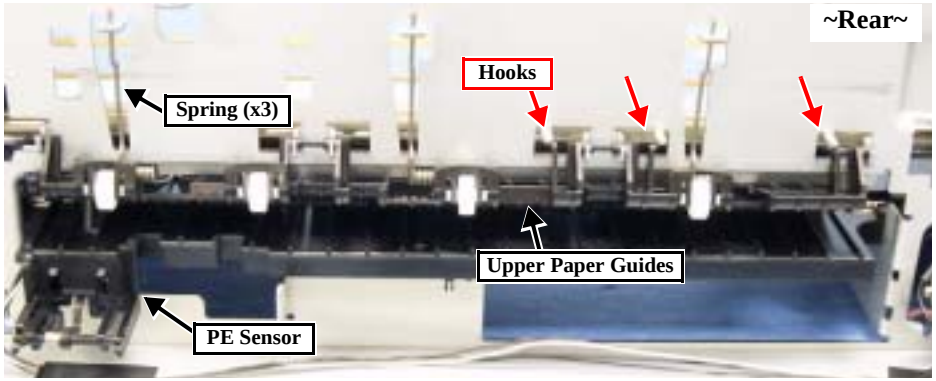


Figure 4-77. Upper Paper Guides Layout (rear of the printer)

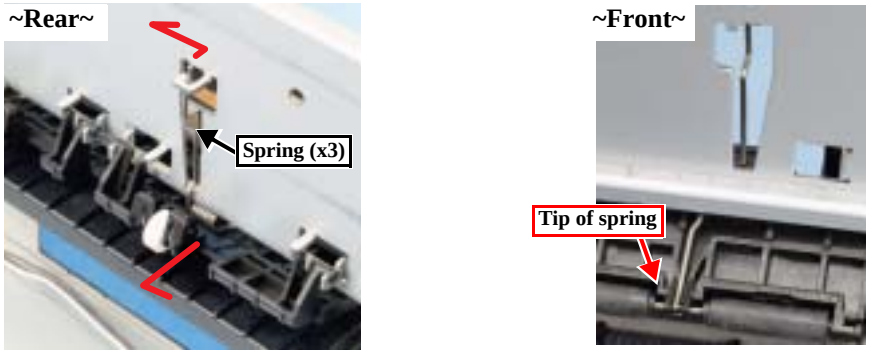


Figure 4-78. Removing the Springs

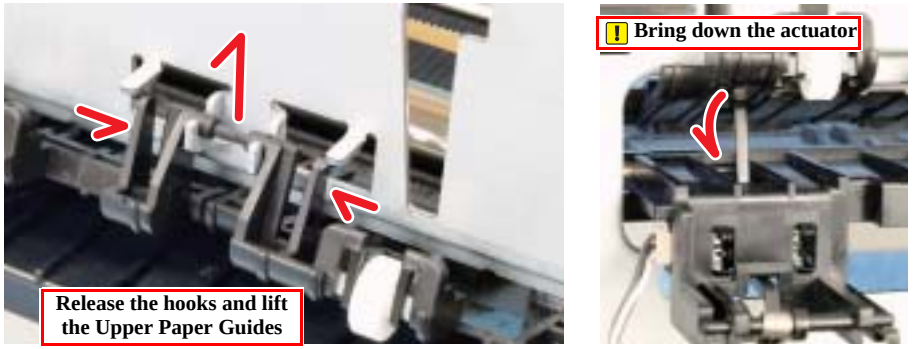


Figure 4-79. Removing the Upper Paper Guides

4.5.9 Paper Guide Front Assy

CAUTION

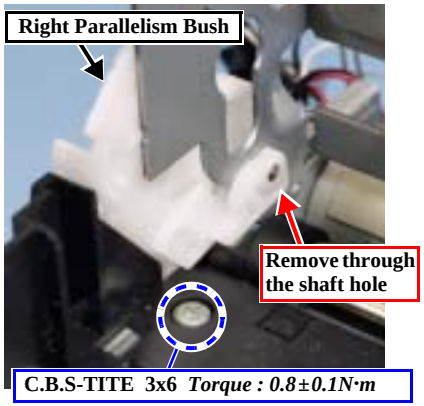
Do not touch any of the rubber rollers of the Paper Eject Roller Assy or coated surface of the PF Roller Assy; otherwise, the print quality may drop.

1. *Remove the Printer Mechanism (p.55)*
2. *Remove the PF Scale and PF Encoder (p.62)*
3. *Remove the Linear Scale (p.54)*
4. *Remove the APG Assy (p.65)*
5. *Remove the I/S Assy (p.63)*
6. *Remove the ASF Assy (p.64)*
7. *Remove the Driven Pulley Assy (p.66)*
8. *Remove the Eject Frame Assy (p.69)*
9. *Remove the Carriage Assy (p.67)*
10. *Remove the Upper Paper Guides (p.70)*
11. Remove the Right Parallelism Bush from the Left Frame.
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.
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.

REASSEMBLY

- **Lubrication is necessary. Refer to the following section and lubricate the specified points:**
  LUBRICATION OF PAPER GUIDE FRONT ASSY *(p.89)*
- **Lead out the harness of the CD-R Sensor as shown below.**

- **See *Fig. 4-81* and install the Ground Spring.**



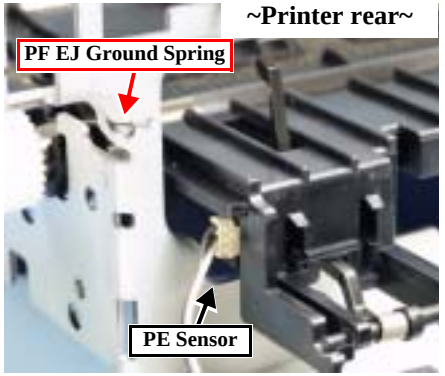


Figure 4-80. Removing the Paper Guide Front Assy 1

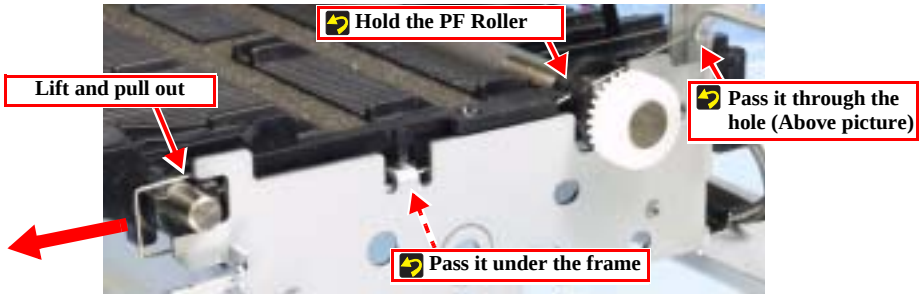
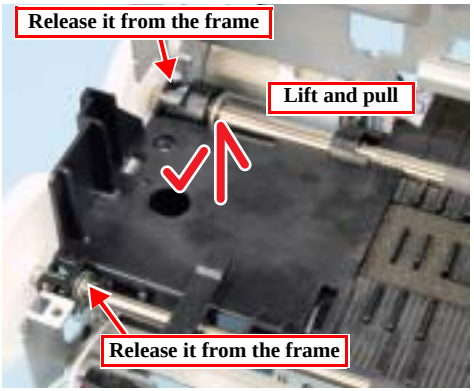


Figure 4-81. Removing the PF EJ Ground Spring



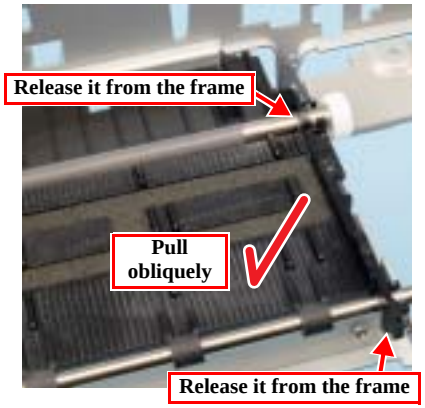


Figure 4-82. Removing the Paper Guide Front Assy 2

CHAPTER

5

ADJUSTMENT

5.1 Overview

The adjustments of Stylus PHOTO RX560/580/590 are roughly classified to the following types.

Table 5-1. Adjustment Items

Priority order		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Unit \ Parts		EEPROM data copy	Market setting	USB ID input	Waste ink pad counter	Ink charge	Head ID input	TOP margin adjustment	Head Angular adjustment	Bi-D adjustment	PW sensor adjustment	CR heat protection control	PF EJ adjustment	BRS/PFP adjustment	Scanner origin adjustment
ASF	Removal	–	–	–	–	–	–	O	–	–	–	–	O	O	–
	Replacement	–	–	–	–	–	–	O	–	–	–	–	O	O	–
CR motor	Removal	–	–	–	–	–	–	–	–	O	–	–	–	–	–
	Replacement	–	–	–	–	–	–	–	–	O	O	O	–	–	–
Paper guide upper	Removal	–	–	–	–	–	–	O	–	O	O	–	O	O	–
	Replacement	–	–	–	–	–	–	O	–	O	O	–	O	O	–
Front frame	Removal	–	–	–	–	–	–	–	–	O	–	–	O	O	–
	Replacement	–	–	–	–	–	–	–	–	O	–	–	O	O	–
Printhead	Removal	–	–	–	–	–	–	O	O	O	O	–	O	O	–
	Replacement	–	–	–	–	O	O	O	O	O	O	–	O	O	–
Main board	Removal	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Replacement	O	–	–	–	–	–	–	–	–	–	–	–	–	–
	Replacement (EEPROM Copy NG)	–	O	O	O (Replace pads)	–	O	O	O	O	O	O	O	O	O
Holder shaft unit	Removal	–	–	–	–	–	–	O	–	–	–	–	–	–	–
	Replacement	–	–	–	–	–	–	O	–	–	–	–	–	–	–
EJ roller ASSY	Removal	–	–	–	–	–	–	–	–	–	–	–	O	O	–
	Replacement	–	–	–	–	–	–	–	–	–	–	–	O	O	–
PS board	Removal	–	–	–	–	–	–	O	O	O	O	O	O	O	–
	Replacement	–	–	–	–	–	–	O	O	O	O	O	O	O	–
Paper guide ASSY	Removal	–	–	–	–	–	–	O	O	O	O	–	O	O	–
	Replacement	–	–	–	–	–	–	O	O	O	O	–	O	O	–
PF motor	Removal	–	–	–	–	–	–	O	–	O	O	–	O	O	–
	Replacement	–	–	–	–	–	–	O	–	O	O	–	O	O	–
Waste ink pad	Removal	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Replacement	–	–	–	O	–	–	–	–	–	–	–	–	–	–
CR unit	Removal	–	–	–	–	–	–	O	O	O	O	O	O	O	–
	Replacement	–	–	–	–	–	–	O	O	O	O	O	O	O	–
CR guide shaft	Removal	–	–	–	–	–	–	O	O	O	O	O	O	O	–
	Replacement	–	–	–	–	–	–	O	O	O	O	O	O	O	–
Star wheel ASSY	Removal	–	–	–	–	–	–	–	–	O	–	–	O	O	–
	Replacement	–	–	–	–	–	–	–	–	O	–	–	O	O	–
PF roller ASSY	Removal	–	–	–	–	–	–	O	–	–	–	–	O	O	–
	Replacement	–	–	–	–	–	–	O	–	–	–	–	O	O	–
Printer Mechanism	Removal	–	–	–	–	–	–	O	O	O	O	O	O	O	–
	Replacement	–	–	–	–	–	–	O	O	O	O	O	O	O	–
Scanner	Removal	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Replacement	–	–	–	–	–	–	–	–	–	–	–	–	–	O

CHECK POINT

- **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** 5.4 Scanner Home Position Adjustment *(p.84)***.**
- **Make the mechanical adjustments before making adjustments that use the adjustment program.**

5.1.1 Adjustment by Use of Adjustment Program

☐ 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.

CHECK POINT

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

5.2 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- <APGHome>	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
- Dummy ink cartridge

CAUTION

- **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.**

CHECK POINT

- **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.55)*"
- **With Stylus PHOTO RX560/580/590, 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.65)*" **and below.)**

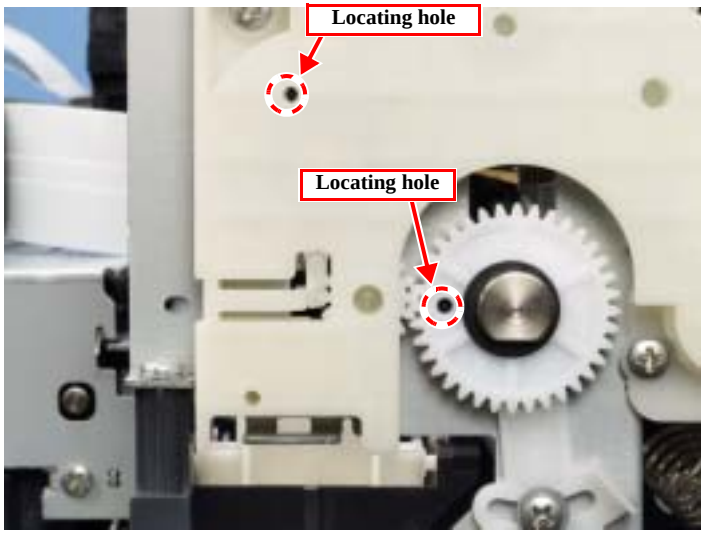


Figure 5-1. PG Position at PG Adjustment

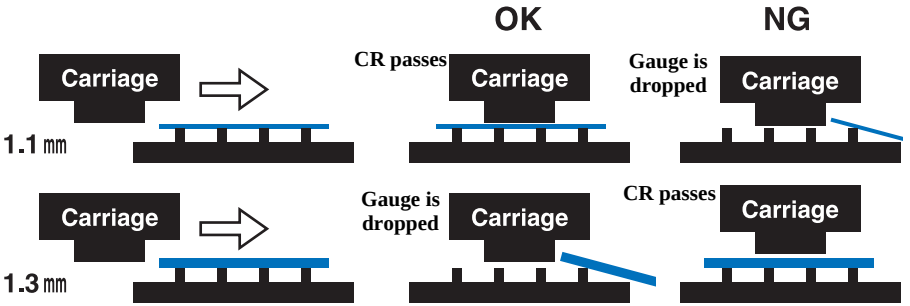


Figure 5-2. PG Criteria

☐ 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. 4-69)*
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 positions shown in the figure. *(Fig. 5-3)*
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 positions shown in the figure. *(Fig. 5-3)*
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)

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.

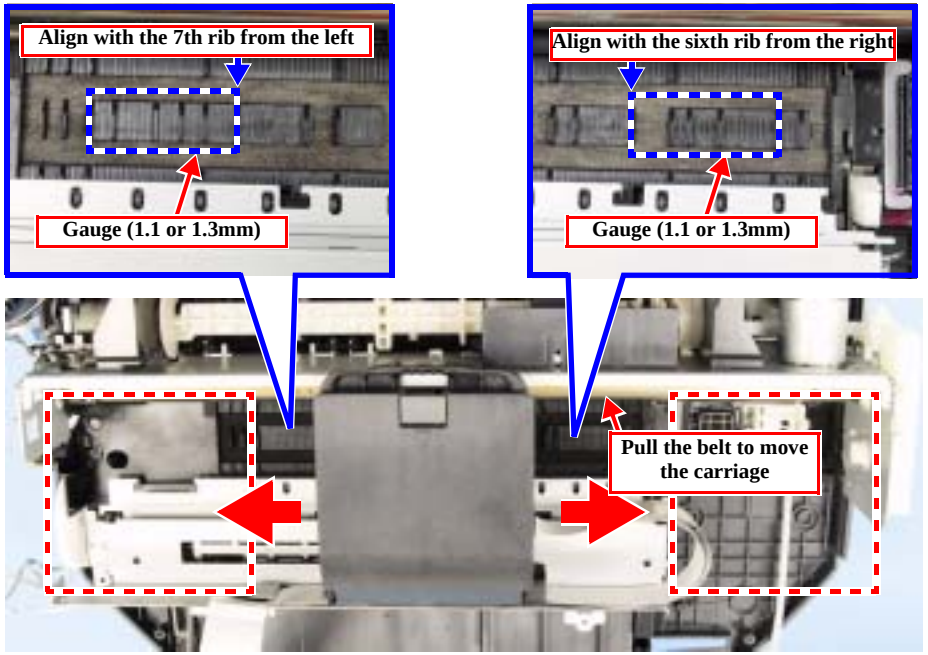


Figure 5-3. PG Adjustment 1

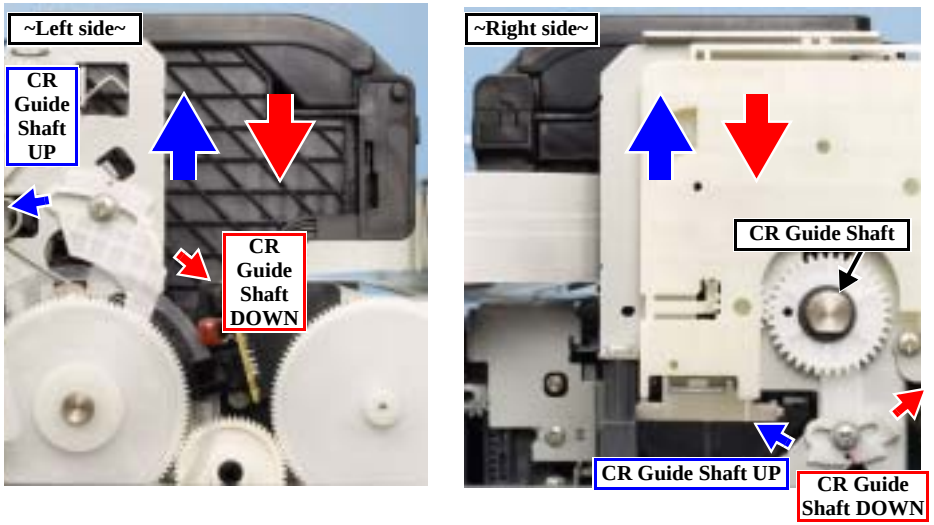


Figure 5-4. PG Adjustment 2

5.3 Banding Reduction System (BRS) Adjustment / Paper Feed Profile Correction (PFP)

5.3.1 Overview

This section describes the BRS/PFP adjustment.

CHECK POINT

- **For outline of BRS/PFP, refer to** 2.3 Banding Reduction System (BRS)/ Paper Feed Profile Correction (PFP) *(p.19)* **in Chapter 2 "Operating Principles".**
- **Be sure to make** 5.4 Scanner Home Position Adjustment *(p.84)* **before performing the BRS/PFP adjustment.**
- **In each adjustment described here, a printed adjustment pattern is to be read with a scanner, and a correction value is to be calculated from the scanned data. Therefore, a specified scanner must be prepared. For scanning, make sure that the document table of the scanner is free from dust and dirt.**

☐ Tools and papers for the adjustment

Table 5-3. Tools and Papers for BRS/PFP Adjustment

	Tool / Paper	Tool Code	Remarks
Common	PFP Base Scale	1453980	
BRS	Matte Paper-Heavyweight (A4)	–	
PFP	Premium Photo Paper Glossy (EAI) / Premium Glossy Photo Paper (Other) (Size: 4x6)	–	

☐ Specified scanner for the adjustment

CAUTION

- **Before starting adjustment, install onto the personal computer the driver for the scanner to be used for the adjustment.**
- **No scanner other than those specified below can be used for the adjustments described here, since the profiles necessary for the adjustments are not available with any scanner other than those specified.**

For the BRS/PFP adjustment, any of the scanners listed in Table 5-4 can be used to read the pattern.
At the start of the adjustment program, select the scanner to be used.

Table 5-4. Specified Scanner for BRS/PFP Adjustment

Model	Sensor System	Remarks
Perfection 4990Photo	CCD	
Perfection V700 Photo	CCD	
Stylus Photo RX520/RX530/ Stylus CX7700/CX7800	CIS	Use the built-in scanner
Stylus PHOTO RX560/580/590	CIS	Use the built-in scanner

Note : When the BRS/PFP adjustment for Stylus PHOTO RX560/580/590 is to be performed, use its built-in scanner.

CHECK POINT

The drying time necessary after the printing of the BRS adjustment pattern varies with the sensor system of the scanner used for the adjustment. No drying is required for the PFP adjustment pattern or PFP confirmation pattern.

- **When scanner with CCD is used**
  Scanning just after printing is possible. (Drying for two minutes or so is recommended if it can be afforded.)
- **When scanner with CIS is used**
  Drying for five minutes or more is needed after the printing of the BRS adjustment pattern.

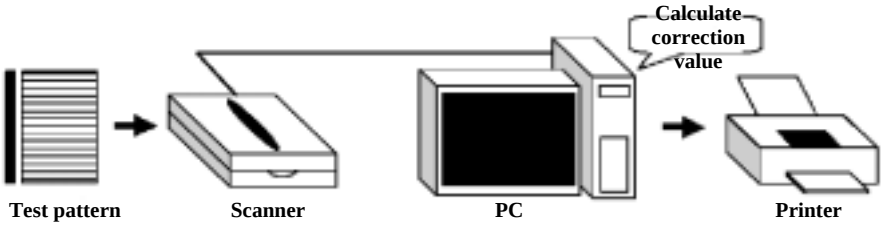


Figure 5-5. System Configuration

☐ Adjustment flow

Make the adjustment according to the following adjustment flow:

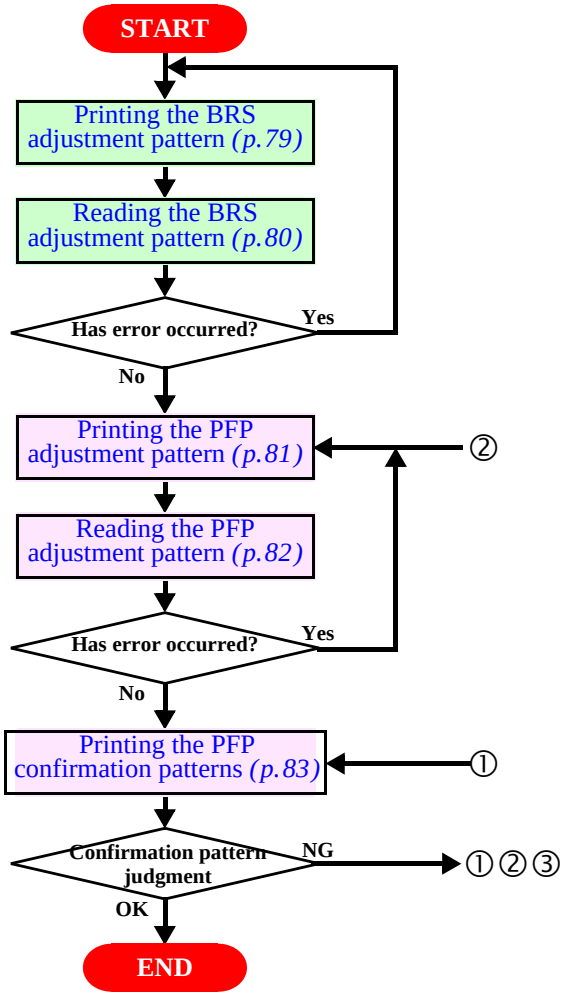


Figure 5-6. BRS/PFP Adjustment Flow

CHECK POINT

If an error has been displayed on the adjustment program, confirm the following points and perform the adjustment again.
If an error occurs even after confirmation of the following points, the error is attributable to any problem with the scanner. Therefore, perform the adjustment again using another scanner.

1. **Make sure that the printer for which the correction value is registered is the same one that was used to print the adjustment pattern.**
2. **Make sure that the printed pattern is located on the document table properly along the scale.**
3. **Make sure that there is no clearance between the reference scale and the printed pattern.**
4. **Make sure that the scanner glass surface and the reference scale are free from dust and dirt.**

5.3.2 Adjustment Procedure

5.3.2.1 BRS adjustment

☐ Printing the BRS adjustment pattern

1. Set an A4 sheet of Matte Paper-Heavyweight on the paper support.
2. Select “BRS adjustment” on the adjustment program.
3. Print the adjustment pattern by clicking the [Print] button of “1. Print the adjustment pattern”.
4. Wait for more than five minutes to dry the printed pattern.

CHECK POINT

- **The adjustment program, using the unit identification code, judges whether the printer for which the correction value is registered is the same one that was used to print the adjustment pattern.**
- **When a scanner with a CIS system is to be used to read the adjustment pattern, wait for more than five minutes to dry the printed pattern and then start scanning.**
  When a scanner with a CCD system is to be used, the printed pattern can be read without waiting for drying after printing.
  (See Table 5-4. Specified Scanner for BRS/PFP Adjustment *(p. 77)***)**

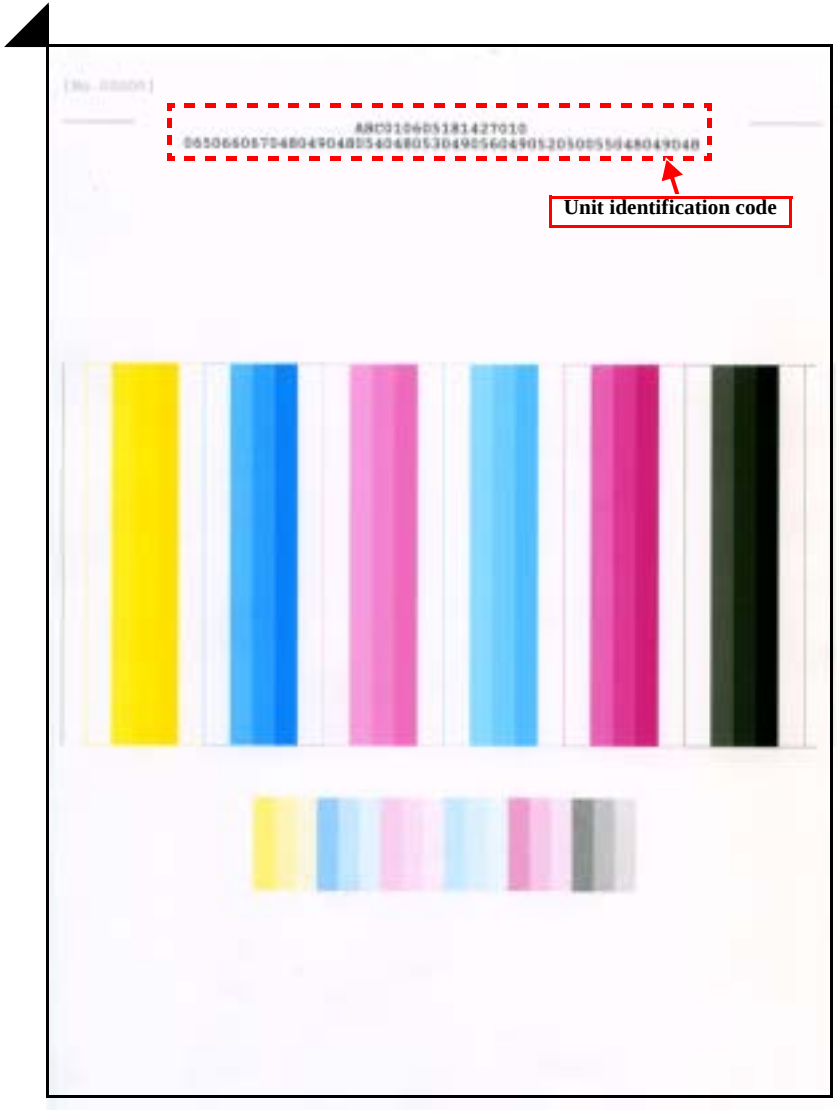


Figure 5-7. BRS Adjustment Pattern

☐ Reading the BRS adjustment pattern

5. Set the reference scale and the printed BRS adjustment pattern on the scanner, and press the [Read] button of “3. Read the adjustment pattern”.
6. The BRS correction value will be automatically calculated based on the read adjustment pattern and be written on the serial flash ROM.
   In case an error has occurred, check and make sure that the document table glass and the reference scale are free from dust and dirt and the reference scale and adjustment pattern are not on a slant. Then repeat the procedure from step 5 above.

CAUTION

When setting the reference scale and adjustment pattern on the scanner, observe the following instructions:

- **Position the top right corner of the reference scale at the scanner origin and set the reference scale in such a position that its right side is in close contact with the document table glass end.**
- **Place the adjustment pattern along the reference scale as shown at right. In doing so, position the adjustment pattern so that it is in parallel with the reference scale and there is no clearance between them.**

Figure 5-8. Positioning the Reference Scale and BRS Adjustment Pattern (View from Back of Document Table Glass)

5.3.2.2 PFP adjustment

☐ Printing the PFP adjustment pattern

1. Set Premium Photo Paper Glossy (EAI) or Premium Glossy Photo Paper (Other) of 4x6 in size on the paper support.
2. Select “PFP adjustment” on the adjustment program.
3. Print the adjustment pattern by clicking the [Print] button of “1. Print the adjustment pattern”.

CHECK POINT

The adjustment program, using the unit identification code, judges whether the printer for which the correction value is registered is the same one that was used to print the adjustment pattern.

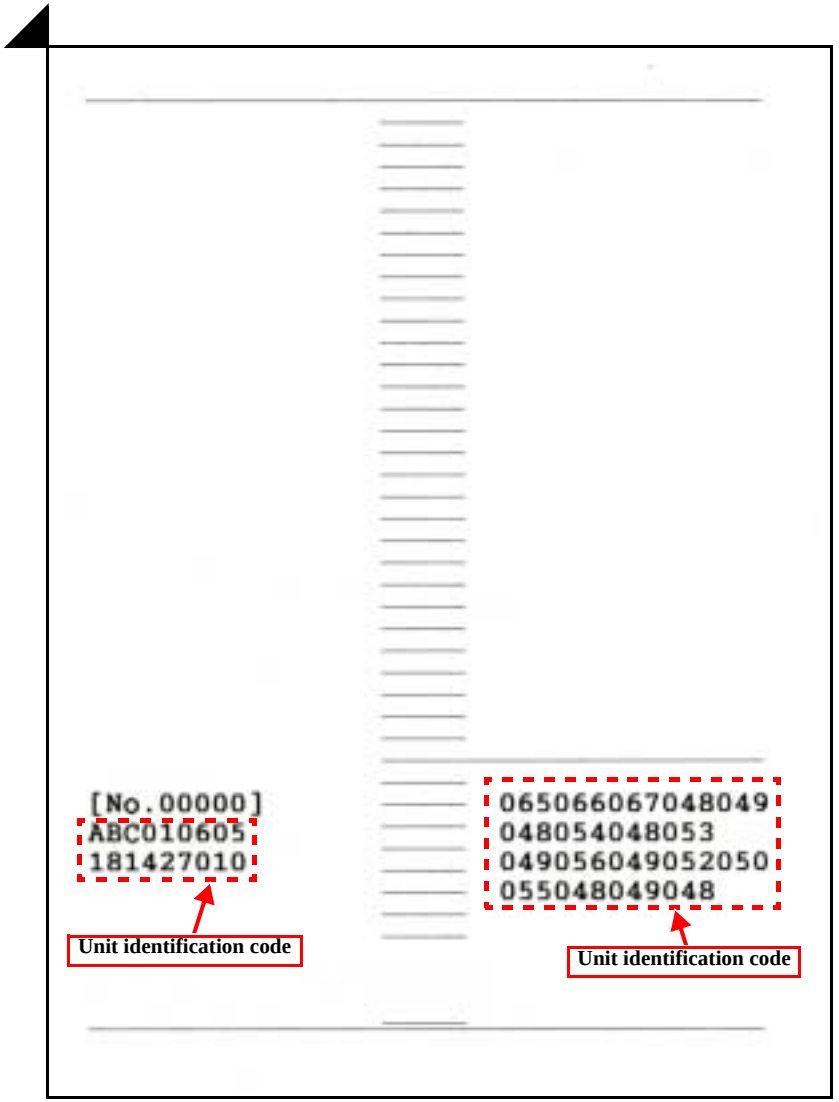


Figure 5-9. PFP Adjustment Pattern

☐ Reading the PFP adjustment pattern

4. Set the reference scale and the printed BRS adjustment pattern, which must be dried for more than five minutes beforehand, on the scanner and press the [Read] button of “3. Read the adjustment pattern”.
5. The PFP correction value will be automatically calculated based on the read adjustment pattern and be written on the serial flash ROM.
   In case an error has occurred, check and make sure that the document table glass and the reference scale are free from dust and dirt and the reference scale and adjustment pattern are not on a slant. Then repeat the procedure from step 4 above.

CAUTION

When setting the reference scale and adjustment pattern on the scanner, observe the following instructions:

- **Position the top right corner of the reference scale at the scanner origin and set the reference scale in such a position that its right side is in close contact with the document table glass end.**
- **Place the adjustment pattern along the reference scale as shown at right. In doing so, position the adjustment pattern so that it is in parallel with the reference scale and there is no clearance between them.**

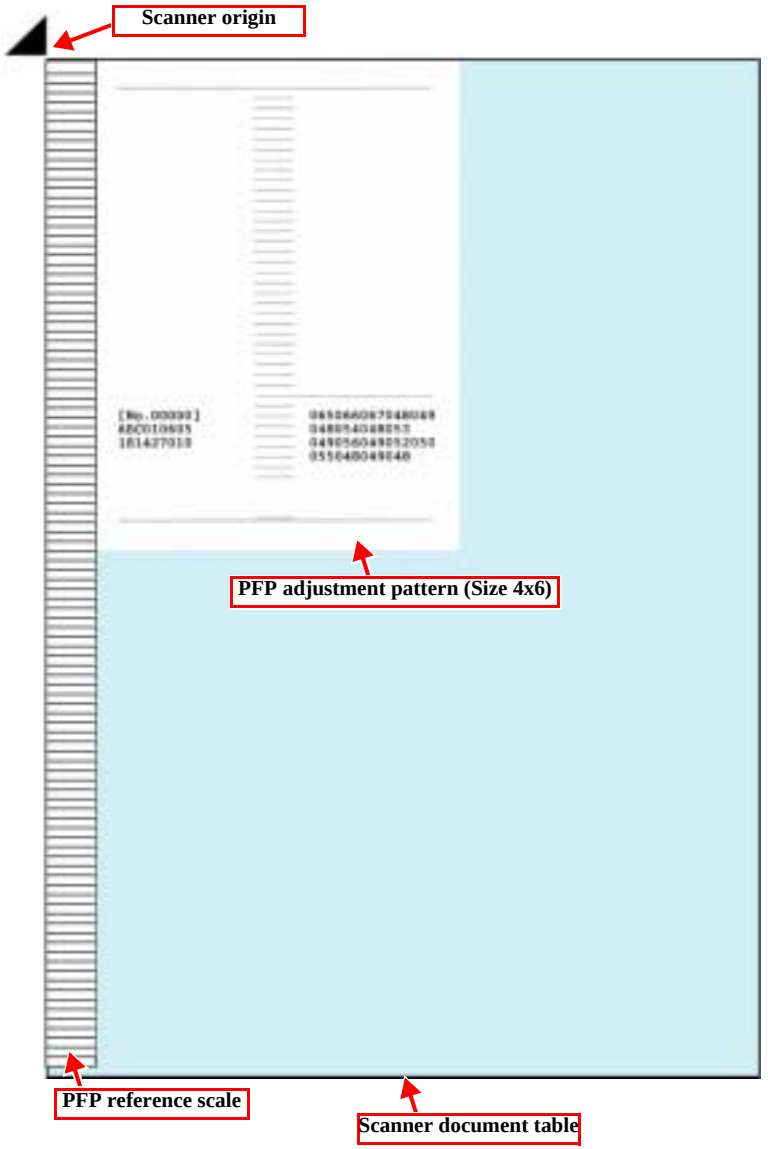


Figure 5-10. Positioning the Reference Scale and PFP Adjustment Pattern (View from Back of Document Table Glass)

☐ Printing the PFP confirmation patterns

6. Set Premium Photo Paper Glossy (EAI) or Premium Glossy Photo Paper (Other) of 4x6 in size on the paper support, and click the [Print] button of “4. Print the confirmation patterns”.

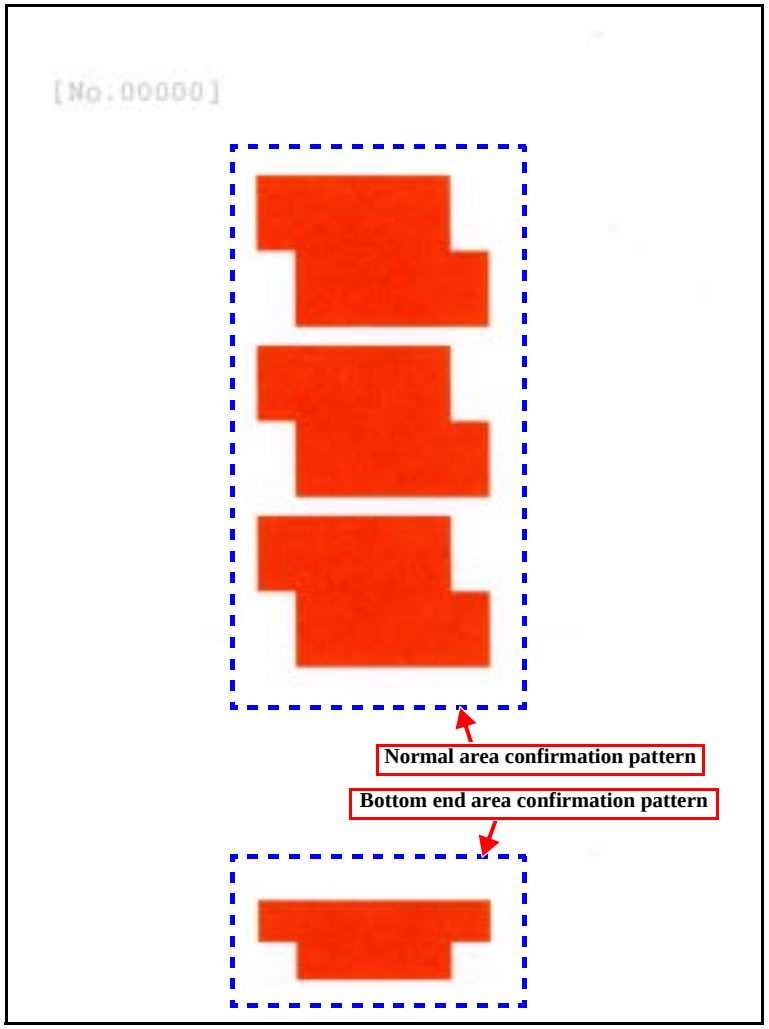


Figure 5-11. PFP Confirmation Patterns

☐ Judging the confirmation patterns

7. By consulting Fig. 5-12, check that all the printed confirmation patterns are free from banding.

If there is banding, follow the procedure below:

① Print the confirmation patterns again and check if there is banding.

② If there is banding recognized by cheking at ①, repeat the above procedure from printing the PFP adjustment patterns.

③ If there is still banding recognized by cheking at ②, the banding is attributable to a defective mechanism.In such a case, remove the defective mechanism, check and install the new mechanism.

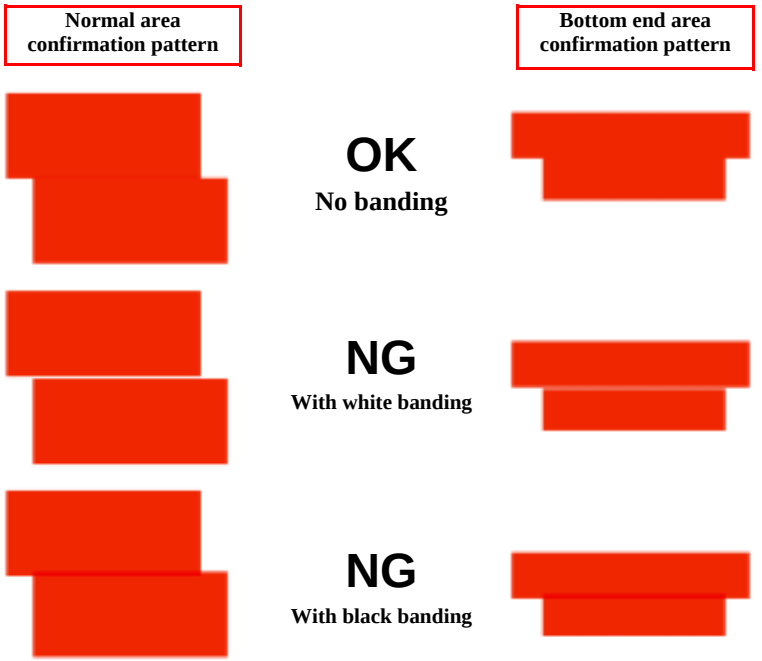


Figure 5-12. Judging the PFP Confirmation Patterns

5.4 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.

CHECK POINT

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

Table 5-5. Tools

Tool Name	Availability	Tool Code
PC (OS: Windows 98/XP)	○	–
Scanner origin adjustment program • EPSON Scanner Function Test-Guinness	EPSON	
USB cable (Printer ~ PC)	○	–
Origin Adjustment tool	EPSON	1401646

Note : "○": available on the market, "EPSON": available from EPSON

CHECK POINT

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.

5.4.1 Preparations for Use of the Adjustment Program

1. Execute the supplied file and install (overwrite) the adjustment program onto the PC.
2. Start the adjustment program by one of the following methods:
   - Execute "FT.exe" in the folder that has been installed as described above.

CHECK POINT

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.

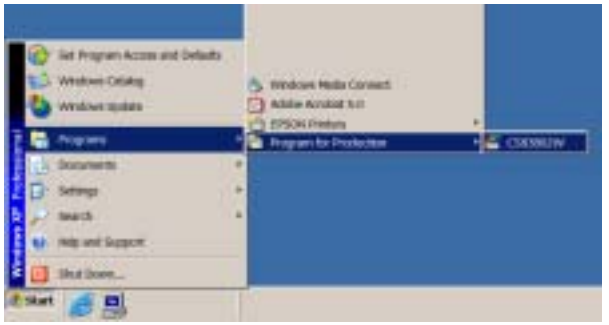


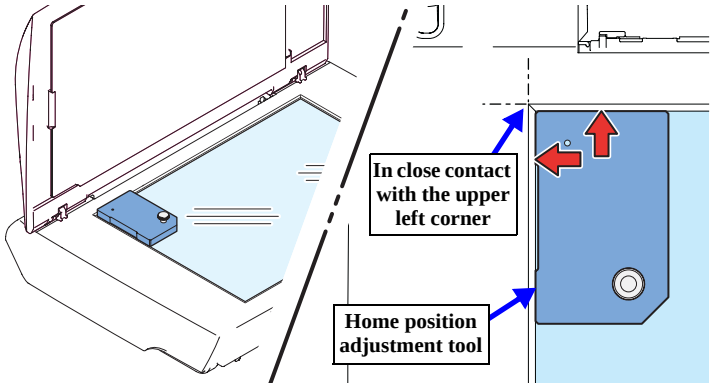
Figure 5-13. Installing the Adjustment Program (Scanner Home Position)

5.4.2 Home Position Adjustment Procedure

1. Connect the Stylus PHOTO RX560/580/590 to the PC with the USB cable, turn the power on, and set the home position adjustment tool.

CHECK POINT

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.



2. Run the adjustment program. Upon start, the "Select Parameter Set" window will open. *(See Figure 5-14)*
   Select "Guinness" and click [OK].
3. When the window shown in the figure is displayed, click the "SGL" icon on the toolbar. *(See Figure 5-15)*
4. When the window shown in the figure is displayed, click the [Execute] button to run the program. *(See Figure 5-16)*
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. *(See Figure 5-17)*

CHECK POINT

After adjustment, perform "Home Position Confirmation" and make certain that the adjusted values have been written in EEPROM.

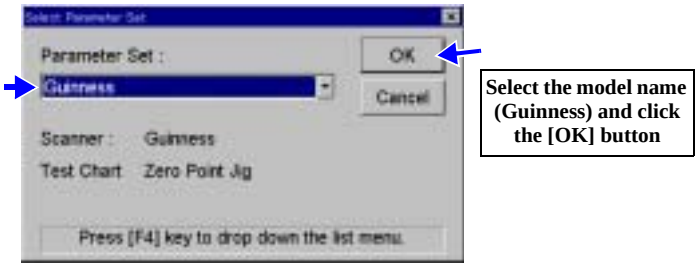


Figure 5-14. Parameter Setting

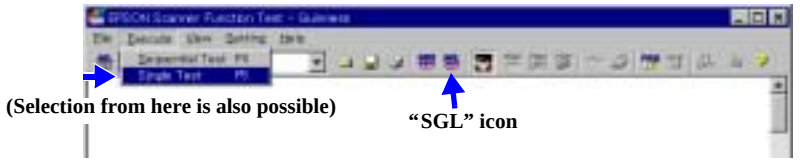


Figure 5-15. Single Test Dialog Display

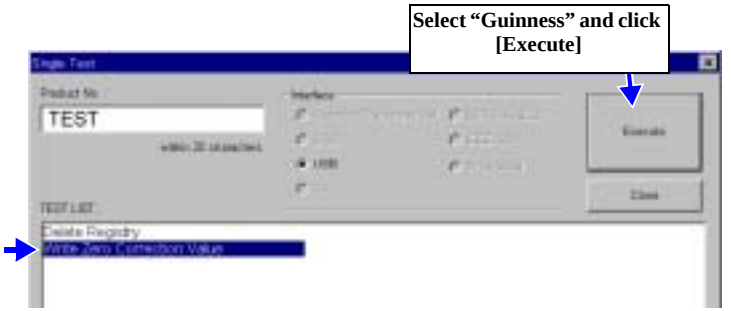


Figure 5-16. Execution of Home Position Adjustment

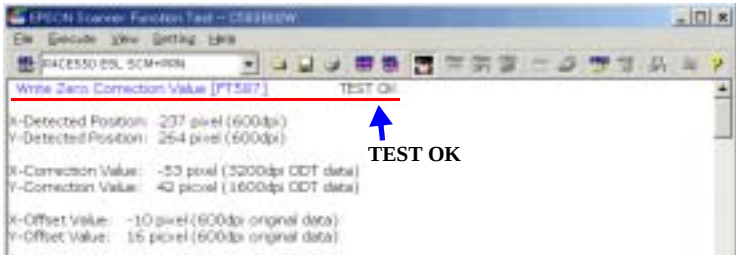


Figure 5-17. OK Screen

5.4.3 Home Position Confirmation Procedure

By the following procedure, confirm that the adjusted values have been written in EEPROM:

1. Select the following item in the combobox at the upper left of the program window.
   "Guinness" *(See Figure 5-18)*
2. Click the "SGL" icon on the tool bar of the adjustment program to display the Single Test dialog.
3. On the Single Test dialog screen, select "**Origin Detection Test**" and click the **[Execute]** button. *(See Figure 5-19)*
4. The window will shows the results. Then check that the following results are OK. *(See Figure 5-20)*
   - Origin Detection Test [FT587]
   - Origin Correction Flag
   - Main Scan Correction Value
   - Sub Scan Correction Value

Figure 5-18. Writing Result Confirmation 1

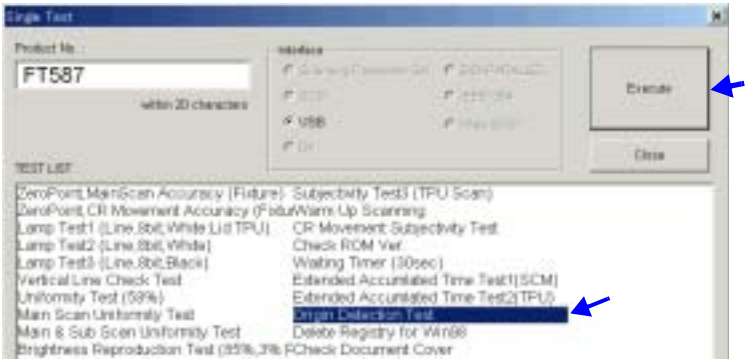


Figure 5-19. Writing Result Confirmation 2

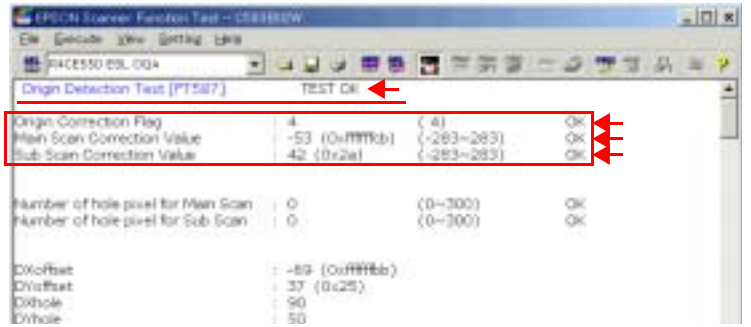


Figure 5-20. Writing Check Results

CHAPTER

6

MAINTENANCE

6.1 Overview

This section describes maintenance work to maintain the functions and performance of Stylus PHOTO RX560/580/590.

CAUTION

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.51
Waste Ink Pads (x2)	Under the platen (on the Lower Case Assy)	p.56

CHECK POINT

- **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.**

6.1.2 Cleaning

CAUTION

For cleaning, do not use such a solvent as thinner.

Table 6-2. 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 that is soaked with alcohol diluted with pure water.
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.

CAUTION

- **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.**

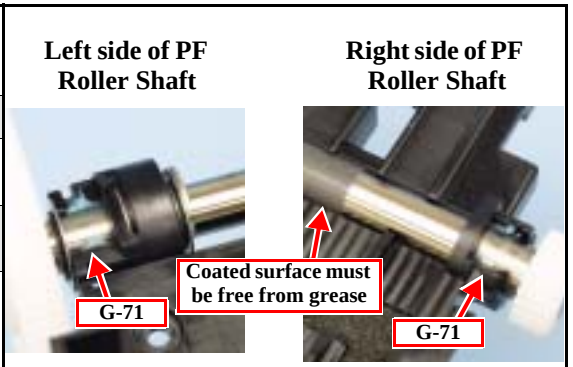
☐ Specified lubricant, etc.

Table 6-3. Specified Lubricant, etc.

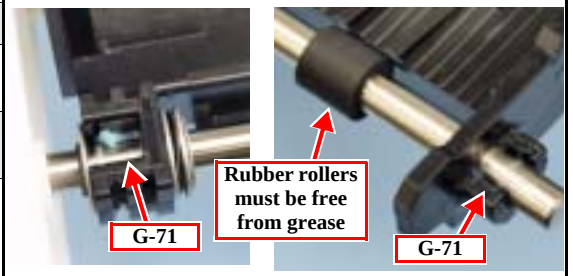
Type	Name	Parts Code	Available
Grease	G-71	1304682	EPSON
	G-74	1409257	
	G-45	1033657	
Insulating Tape	Acetate Tape	1003963	

LUBRICATION OF PAPER GUIDE FRONT ASSY

Lubrication Points	PF Roller Shaft and the shaft holders (2 positions: right and left)
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.

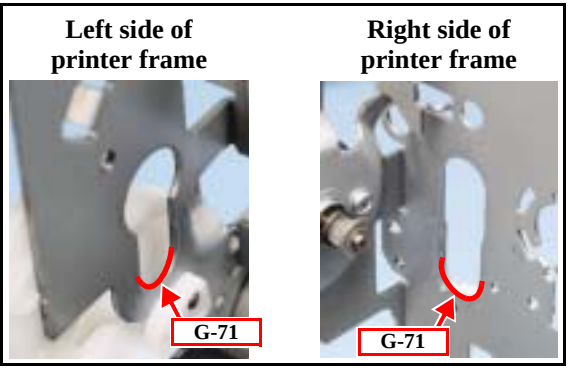


Lubrication Points	Paper Eject Roller Shaft and shaft holders (2 positions: right and left)
Type	G-71
Amount of Application	ø 1x3 mm
Applying Tool	Injector
Precautions	Make sure that the rubber rollers on the Paper Eject Roller Shaft are free from grease.

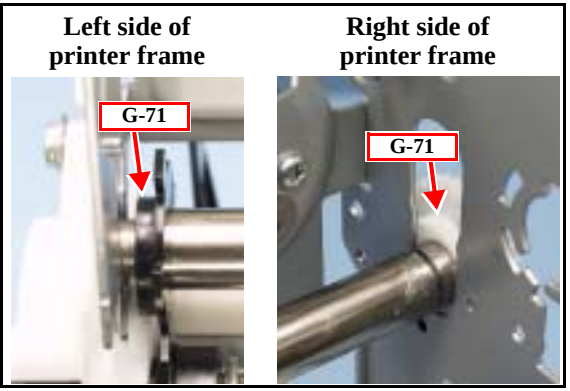


LUBRICATION AT INSTALLATION OF CARRIAGE ASSY

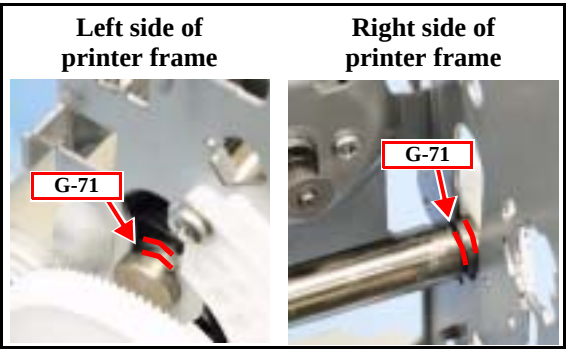
Lubrication Points	Shaft holder hole in the printer frame (for CR Guide Shaft) (2 positions: right and left)
Type	G-71
Amount of Application	ø 1x Half periphery
Applying Tool	Injector
Precautions	



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

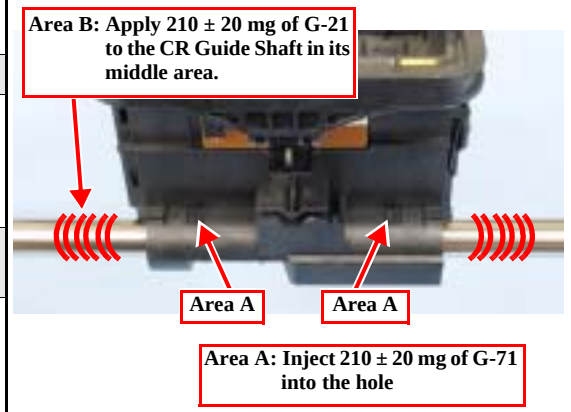


Lubrication Points	CR Guide Shaft (Grooves for pressure springs)
Type	G-71
Amount of Application	ø 1x 5 mm (x2)
Applying Tool	Injector
Precautions	



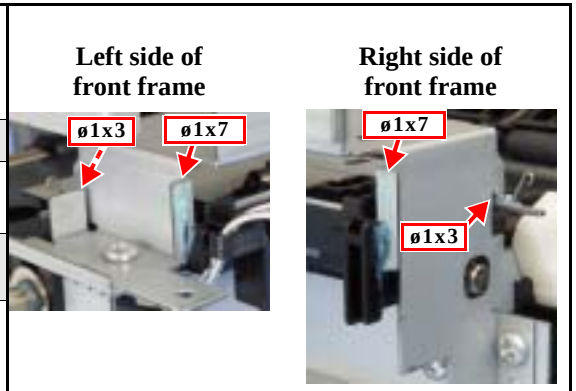
LUBRICATION OF CARRIAGE ASSY AND CR GUIDE SHAFT

Lubrication Points	CR Guide Shaft and Carriage Assy
Type	G-71
Amount of Application	Area A: 210±20 mg (x2) Area B: 210±20 mg (x2)
Applying Tool	Injector
Precautions	Make sure that the belt and any parts other than those specified are free from grease.



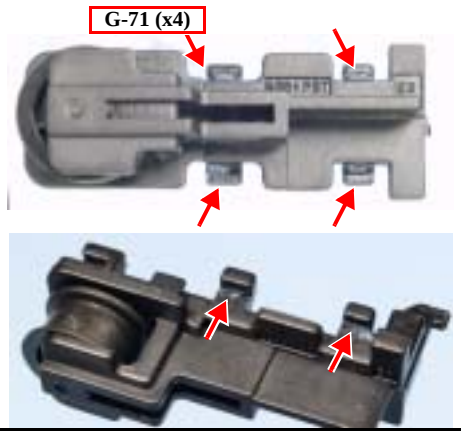
LUBRICATION OF FRONT FRAME

Lubrication Points	Sliding surface and spring catch area on the front frame (2 positions each: right and left)
Type	G-71
Amount of Application	ø 1x3 mm x2 ø 1x7 mm x2
Applying Tool	Injector
Precautions	Make sure that the Eject Frame Assy moves up and down smoothly.



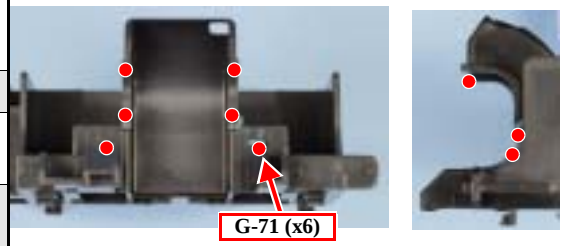
LUBRICATION OF DRIVEN PULLEY

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	



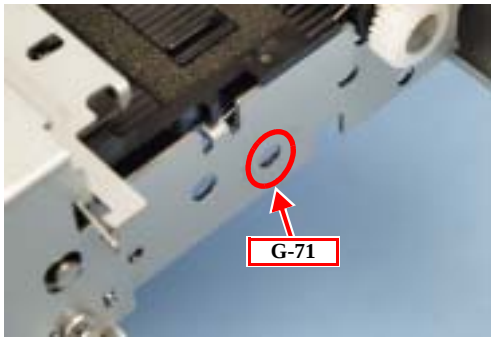
LUBRICATION AT INSTALLATION OF ASF ASSY

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	



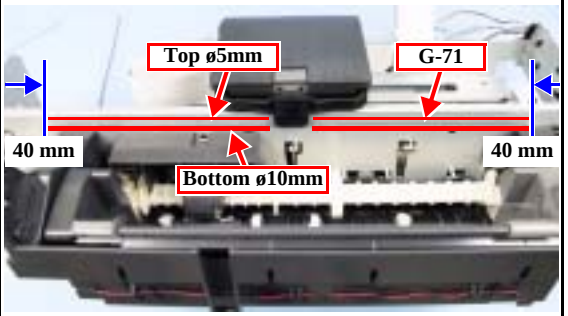
LUBRICATION AT INSTALLATION OF I/S ASSY

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 PRINTER MECHANISM ASSY

Lubrication Points	Surfaces which come in contact with the carriage (rear of printer frame)
Type	G-71
Amount of Application	ø 5 mm : Top ø 10 mm : Bottom
Applying Tool	Injector
Precautions	Move the Carriage Assy to the center and apply grease to the top and bottom surfaces of the right and left areas.

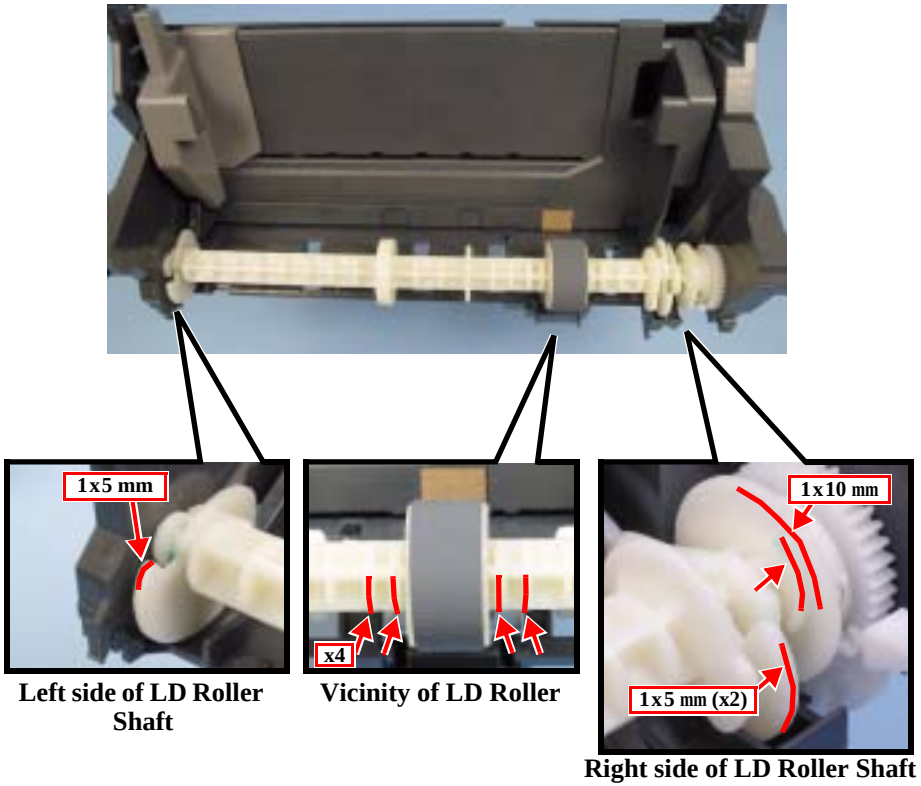


LUBRICATION OF ASF ASSY

Described below are the lubrication points of the ASF Assy for the case where the LD Roller Shaft is locked and those for the case where the Hopper has been released.

☐ When LD Roller Shaft is locked

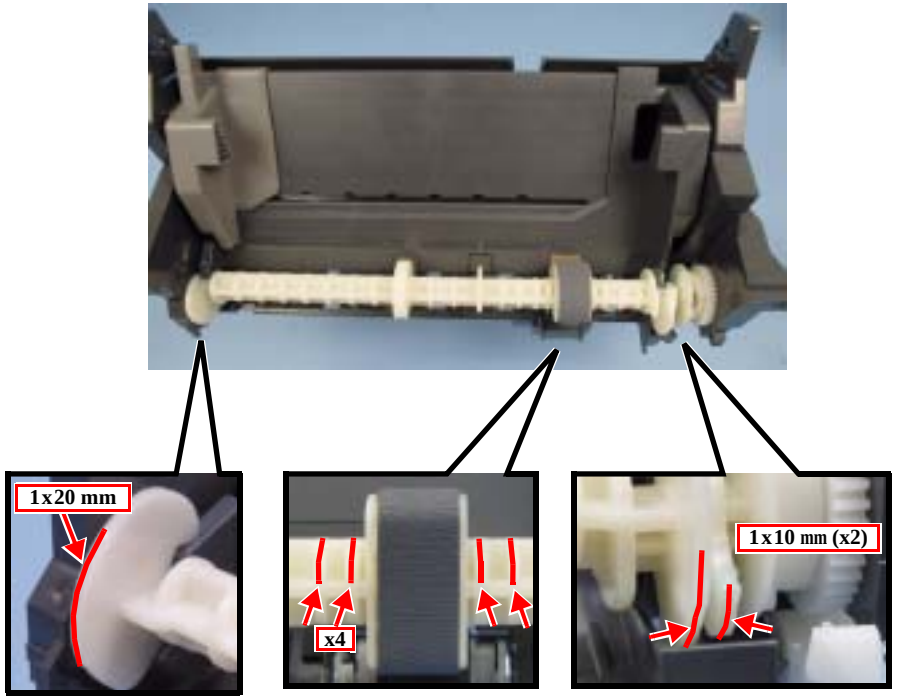
Lubrication Points	LD Roller Assy
Type	G-71
Amount of Application	Left side of the LD Roller Shaft: ø1x5 mm Vicinity of the LD Roller: On the rib (x4) Right side of the LD Roller Shaft: ø1x5 (x2) ø1x10
Applying Tool	Injector
Precautions	When LD Roller Shaft is locked



Left side of LD Roller Shaft | **Vicinity of LD Roller** | **Right side of LD Roller Shaft**

☐ When Hopper has been released

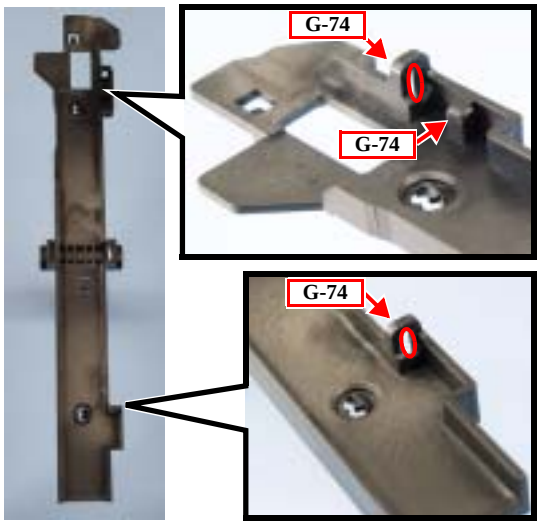
Lubrication Points	LD Roller Assy
Type	G-71
Amount of Application	Left side of the LD Roller Shaft : ø1x20 mm Vicinity of the LD Roller: On the rib (x4) Right side of the LD Roller Shaft: ø1x10 (x2)
Applying Tool	Injector
Precautions	When Hopper has been released



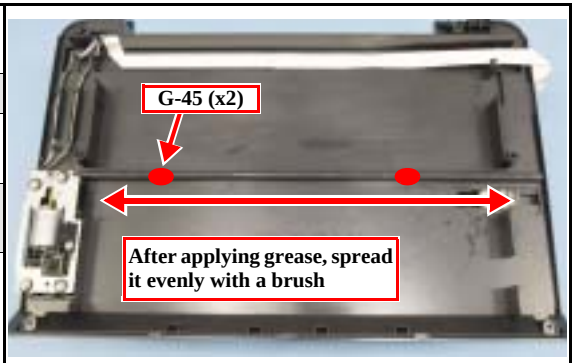
Left side of LD Roller Shaft | **Vicinity of LD Roller** | **Right side of LD Roller Shaft**

LUBRICATION OF SCANNER UNIT

Lubrication Points	CR CIS
Type	G-74
Amount of Application	
Applying Tool	
Precautions	Apply grease at three points shown.



Lubrication Points	CR shaft of Housing Lower
Type	G-45
Amount of Application	
Applying Tool	Injector and brush
Precautions	After applying grease at a point shown, spread it with a brush evenly over the whole shaft.



CHAPTER

7

APPENDIX

7.1 Connectors

Table 7-1. Connectors on the Main Board

CN No.	Color	Connected to	Remarks
CN1	–	(USB2.0 interface connector)	For connection to PC
CN2	–	(USB interface connector)	For connection in the front
CN3	White	Power Supply Board	3-pin
CN4	White	CD-R Sensor (Guide & Tray)	4-pin
CN6	White	PE Sensor	3-pin
CN7	Black	APG Sensor	3-pin
CN8	(FFC)	PF Encoder	5-pin
CN10	(FFC)		13-pin
CN11			13-pin
CN12			9-pin
CN13	Black	PF Motor	2-pin
CN14	White	CR Motor	2-pin
CN15	(FFC)	CSIC Board	13-pin
CN16		PW Sensor	6-pin
CN17	White	CR Motor (Scanner Unit)	2-pin
CN19	(FFC)	CIS Unit	14-pin
CN20	White	Scanner Encoder	4-pin
CN22	(FFC)	Panel Board	8-pin
CN23	(FFC)	LCD Module	11-pin
CN101	–	(CF Slot)	
CN102	–	(MS/SD/xD/MMC Slot)	

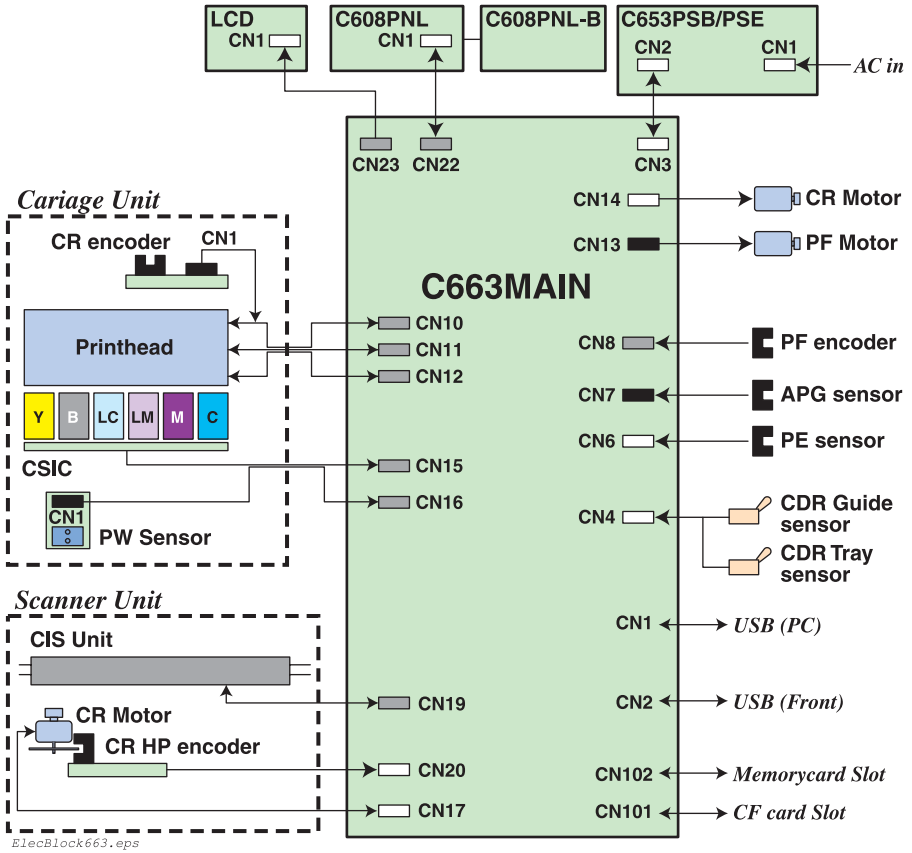


Figure 7-1. Connector Assignments

☐ Printhead FFC

Main Board Side						Head PCB Side			
CN10		CN11		CN12		CN2		CN1	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
13	COMA_1	13	XHOT	9	VHV	1	XHOT	1	VHV
12	GND2_2	12	GND	8	GND	2	GND	2	GND
11	COMA_3	11	SCK	7	VDD	3	SCK	3	VDD
10	GND2_1	10	GND	6	CH_A	4	GND	4	CH_A
9	COMB_2	9	CH_B	5	GND	5	CH_B	5	GND
8	GND2_3	8	VDD2	4	NCHG	6	VDD2	6	NCHG
7	GND	7	GND	3	GND	7	GND	7	GND
6	S11	6	COMB_3	2	LAT	8	COMB_3	8	LAT
5	GND	5	GND2_2	1	GND	9	GND2_2	9	GND
4	S12	4	COMB_1			10	COMB_1		
3	GND	3	GND2_3			11	GND2_3		
2	S13	2	COMA_2			12	COMA_2		
1	TH	1	GND2_1			13	GND2_1		
						14	ANODE		
						15	COMA_1		
						16	GND2_2		
						17	COMA_3		
						18	GND2_1		
						19	COMB_2		
						20	GND2_3		
						21	GND		
						22	S11		
						23	GND		
						24	S12		
						25	GND		
						26	S13		
						27	TH		

☐ Mechanism FFC

Main Board Side		CSIC Board side		Main Board Side		Encoder Board side	
CN15		CN-		CN16		CN-	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
13	VHV	1	VHV	6	ENA	1	ENA
12	GND	2	GND	5	VDD	2	VDD
11	COM	3	COM	4	ENB	3	ENB
10	GND	4	GND	3	GND	4	GND
9	VDD	5	VDD	2	PW	5	PW
8	ENABLE	6	ENABLE	1	LEDON	6	LEDON
7	CH_A	7	CH_A				
6	CVDD	8	CVDD				
5	CRST	9	CRST				
4	GND	10	GND				
3	CSCK	11	CSCK				
2	COO	12	COO				
1	SDA1	13	SDA1				

☐ CR Motor

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

☐ PF Motor

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

☐ PE Sensor

Pin No.	Signal on Main Board	Signal on Mechanism Side	Remarks
1	PRN-PE	SIG	PE Sensor signal
2	PRN-PE	GND	Grounding
3	PRN-PE	VCC	Power to PE Sensor (+3.3V_SN)

☐ APG HP Sensor

Pin No.	Signal on Main Board	Signal on Mechanism Side	Remarks
1	APG-HP	SIG	APG Sensor signal
2	APG-HP	GND	Grounding
3	APG-HP	VCC	Power to APG Sensor (+3.3V_SN)

☐ CD-R Tray / Mode Sensor

Pin No.	Signal on Main Board	Signal on Mechanism Side	Remarks
1	CDR-MD	SIG	CD-R Guide Sensor signal
2	CDR-MD	GND	Grounding
3	CDR-TRY	SIG	CD-R Tray Sensor signal
4	CDR-TRY	GND	Grounding

☐ PF Encoder

Pin No.	Signal on Main Board	Signal on Mechanism Side	Remarks
1	PF-ENC	GND	Grounding
2	PF-ENC	ENCB	PF Encoder B signal
3	PF-ENC	EVDD	Power to PF Encoder (+3.3V_SN)
4	PF-ENC	ENCA	PF Encoder A signal
5	PF-ENC	GND	Grounding

☐ Power cable connector

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

☐ Switch panel connector

Pin No.	Signal	DESCRIPRION
1	PSW	PSW of E01A73B*
2	GND	Grounding
3	+3.3V	+3.3V
4	SDI	PNLSDI of E01A73B*
5	SCLK	PNLCLK of E01A73B*
6	SLAT	PNLLAT of E01A73B*
7	SENB	PNLLEDEN of E01A73B*
8	SDO	PNLSDO of E01A73B*

SCANNER UNIT

☐ CIS Unit

Pin No.	SYMBOL	I/O	DESCRIPRION
1	LEDCA	---	LED COMMON (Anode)
2	øLEDB	I	LED PULSE BLUE
3	øLEDG	I	LED PULSE GREEN
4	øLEDR	I	LED PULSE REG
5	VDD	---	DIGITAL POWER SUPPLY
6	GND	---	GROUND
7	TR	I	START PULSE
8	RES1	I	RESOLUTION SELECT 1
9	RES2	I	RESOLUTION SELECT 2
10	XRST	I	RESET PULSE
11	MCK	I	MASTER CLOCK
12	GND	---	GROUND
13	VAD	---	ANALOG POWER SUPPLY
14	VOS	O	ANALOG OUTPUT SIGNAL

☐ Scanner Encoder Board

Pin No.	Signal	Connected to	Function
1	GND	GND	Grounding
2	ChA	ENC_A	Scanner encoder A signal
3	Vcc	Vcc	Power to scanner encoder (+3.3V_SN)
4	ChB	ENC_B	Scanner encoder B signal

☐ Scanner motor connector

Pin No.	Signal on Main Board	Signal on Motor Side	Remarks
1	SCN_B	B	Scanner motor wire B
2	SCN_A	A	Scanner motor wire A

7.2 Component Layout

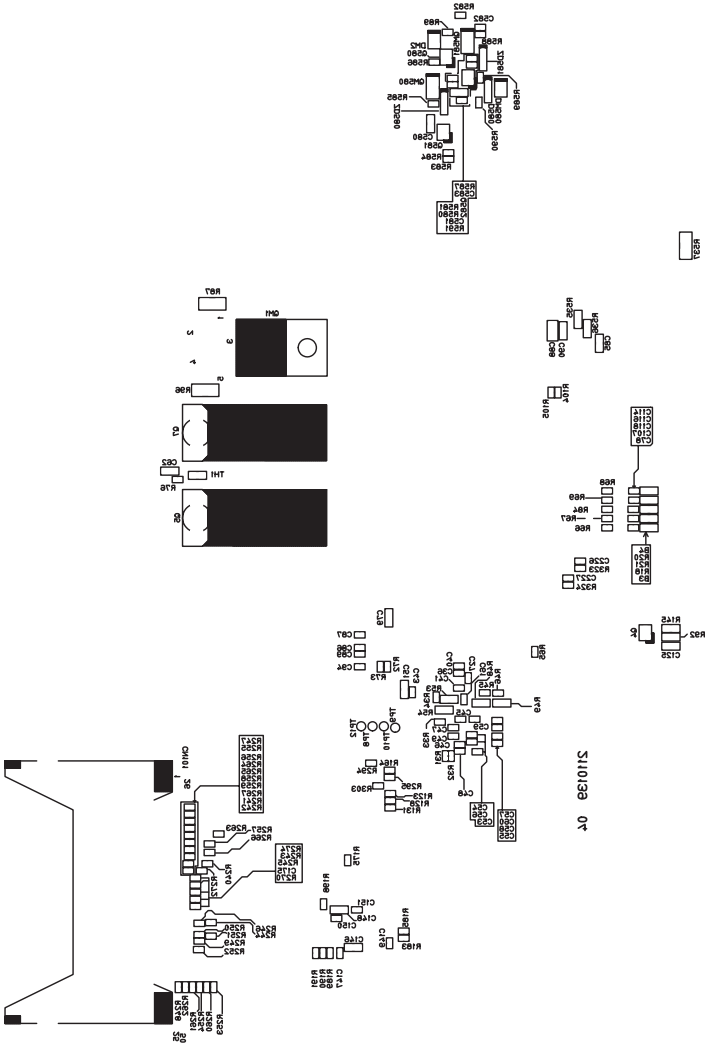


Figure 7-2. C663MAIN Component Layout (Back)

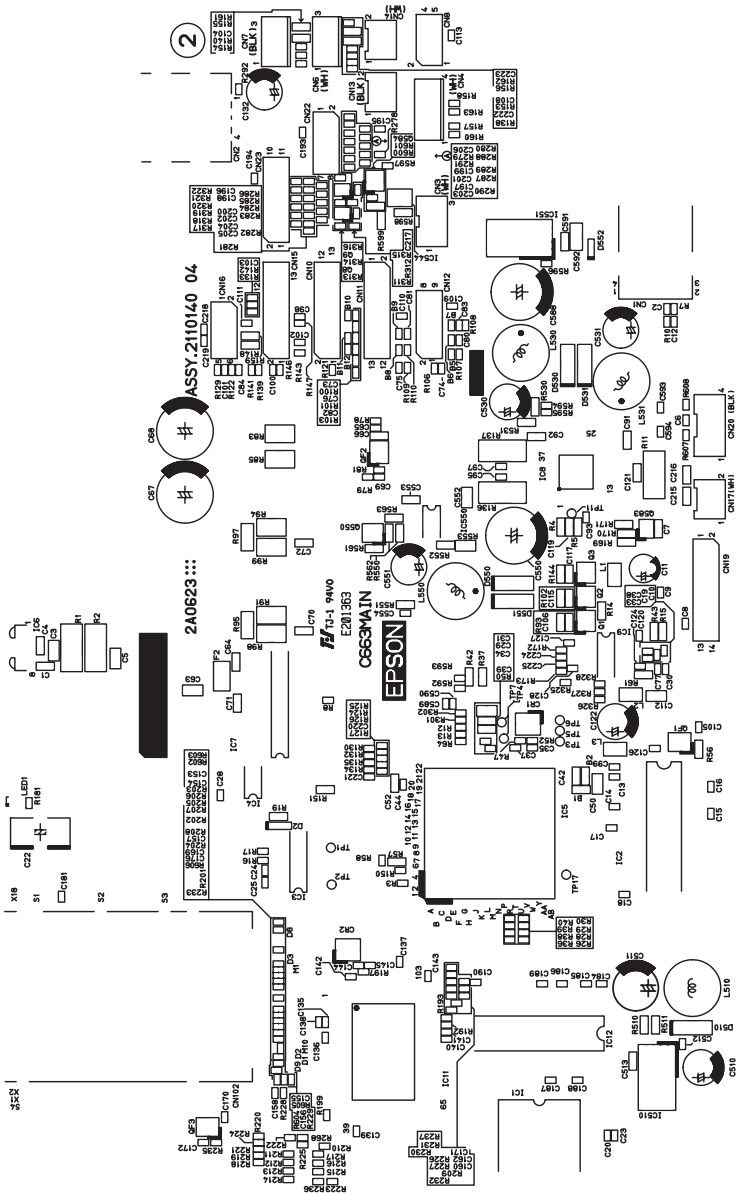


Figure 7-3. C663MAIN Component Layout (Front)

7.3 Electric Circuit Diagrams

This section shows electric circuit diagrams of Stylus PHOTO RX560/580/590.

Table 7-2. Circuit Diagrams List

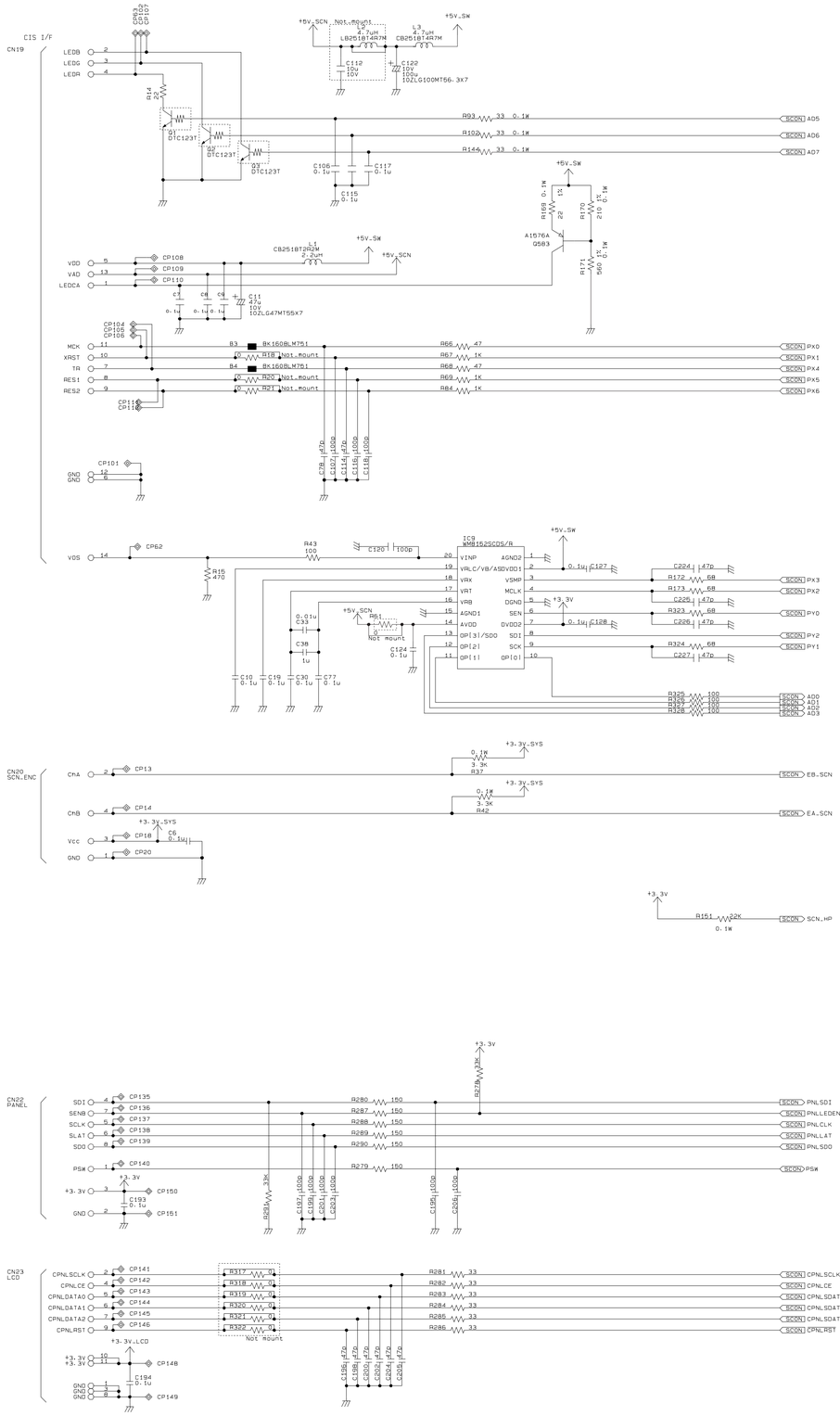
Circuit Board	Circuit Board Name	Number of Pages
Main Board	C663Main	3
Panel Board	C663PNL	1
	C663PNL-B	1
Power Supply Board	C653PSB	1
	C653PSE	1

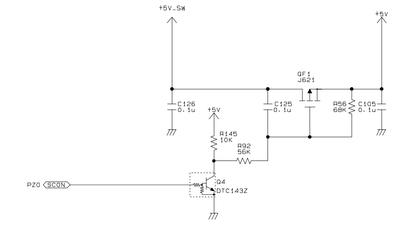
Input terminal		Frequency-modulation rate
CA19	CA18	
0	0	No modulation
0	1	-1%
1	0	-2%
1	1	-3%

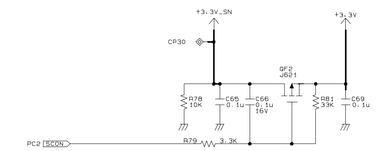
Input terminal		CLK4BM_Port
	CA17	
	0	NonSSCG
	1	SSCG

Input terminal		CRYSTAL /OSCILLATOR
	C420	
	0	CRYSTAL
	1	OSCILLATOR

Model : PM-A820
Stylus PHOTO RX560/580/590
Board : C663Main
Sheet : 1/3
Rev. : E







Model : PM-A820
Stylus PHOTO RX560/580/590
Board : C663Main
Sheet : 2/3
Rev. : F

IC11
USX2007-NW-02

IC551
NJM2846DL3-05(TE1)

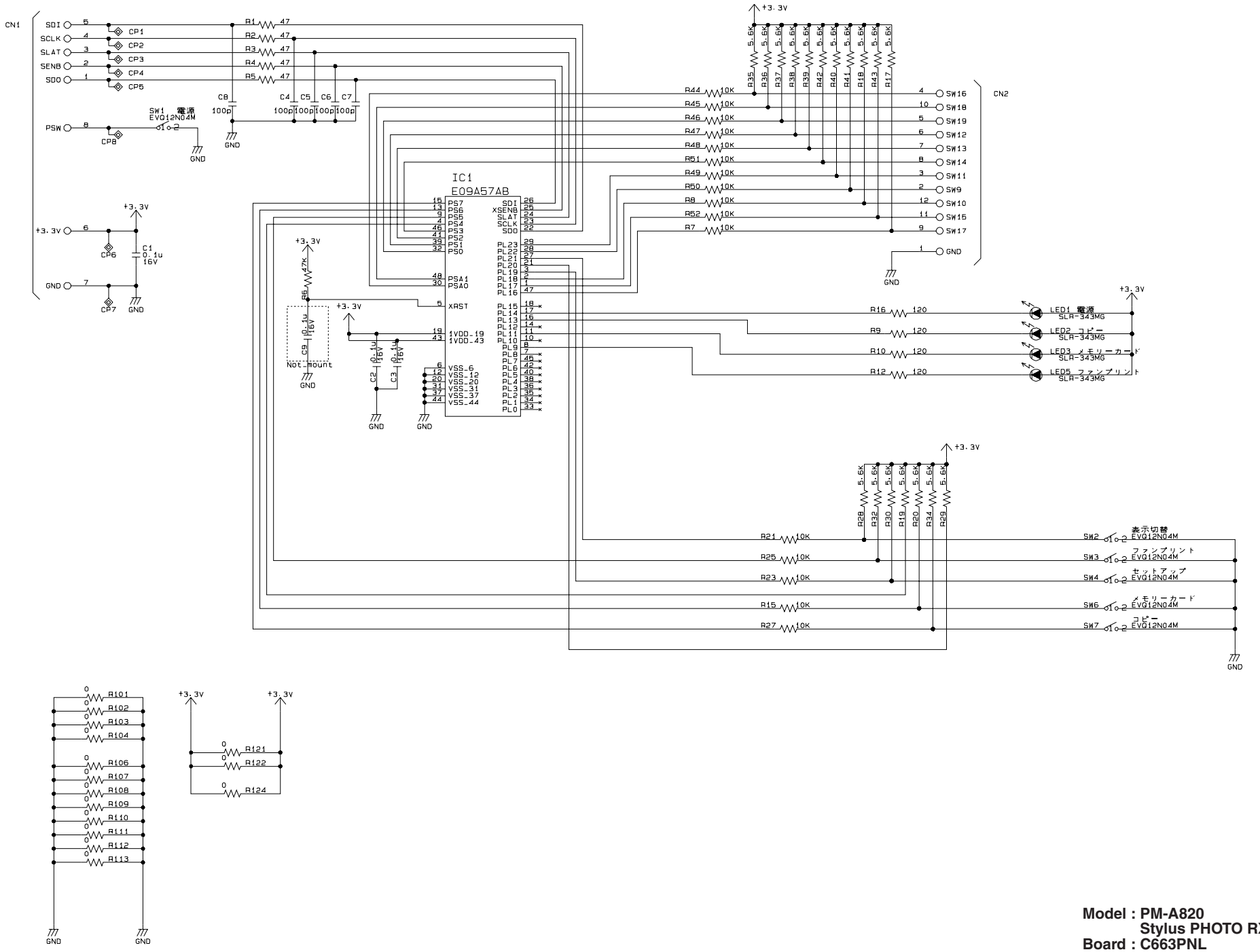
CN2
USB_A
For PictBridge

CN101
CF

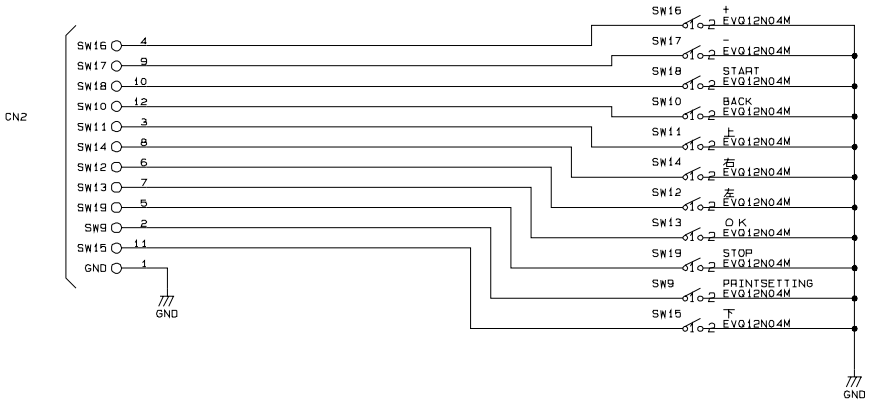
CN102
MS/SD/xD/MMC

GPIO7	GPIO2	WAIT TIME
L	L	800ms
L	H	1.600ms
H	L	2.400ms
H	H	3.200ms

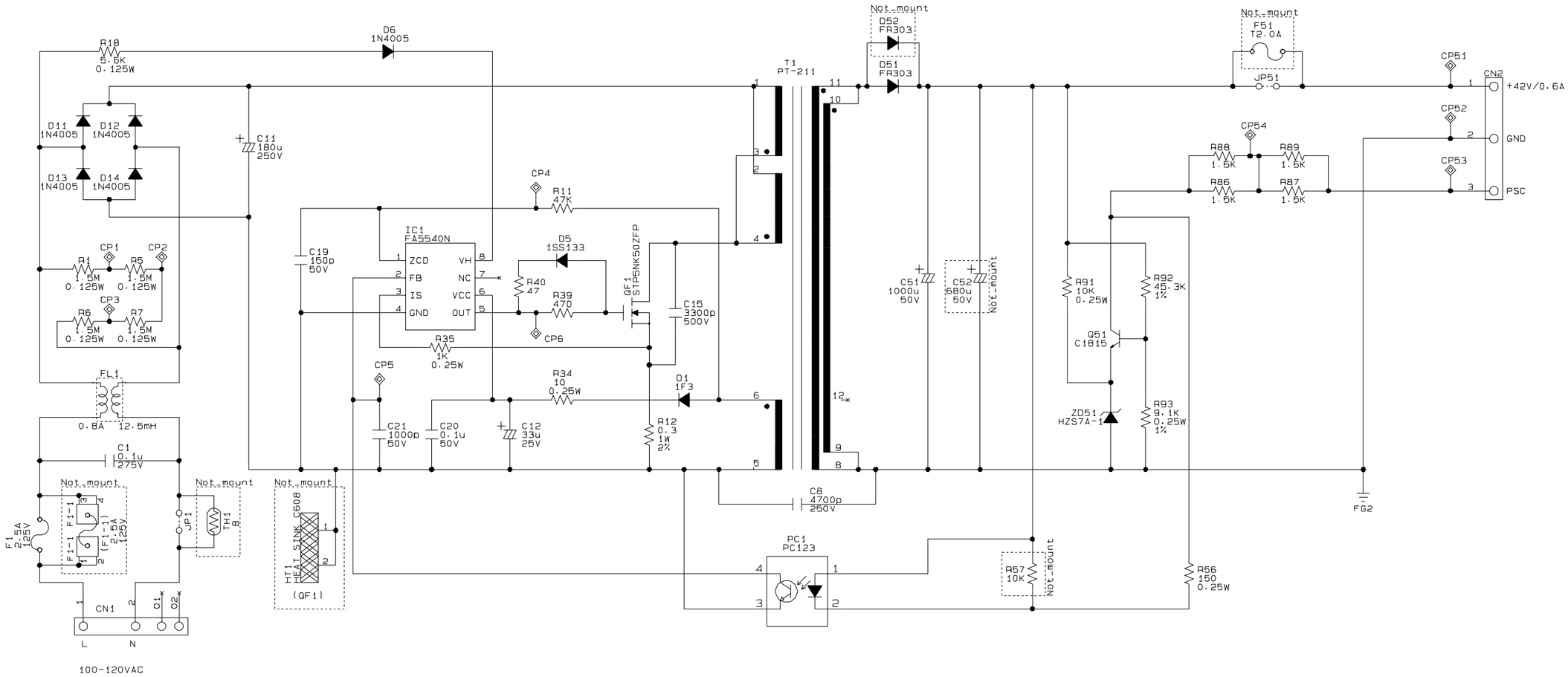
Model : PM-A820
Stylus PHOTO RX560/580/590
Board : C663Main
Sheet : 3/3
Rev. : D



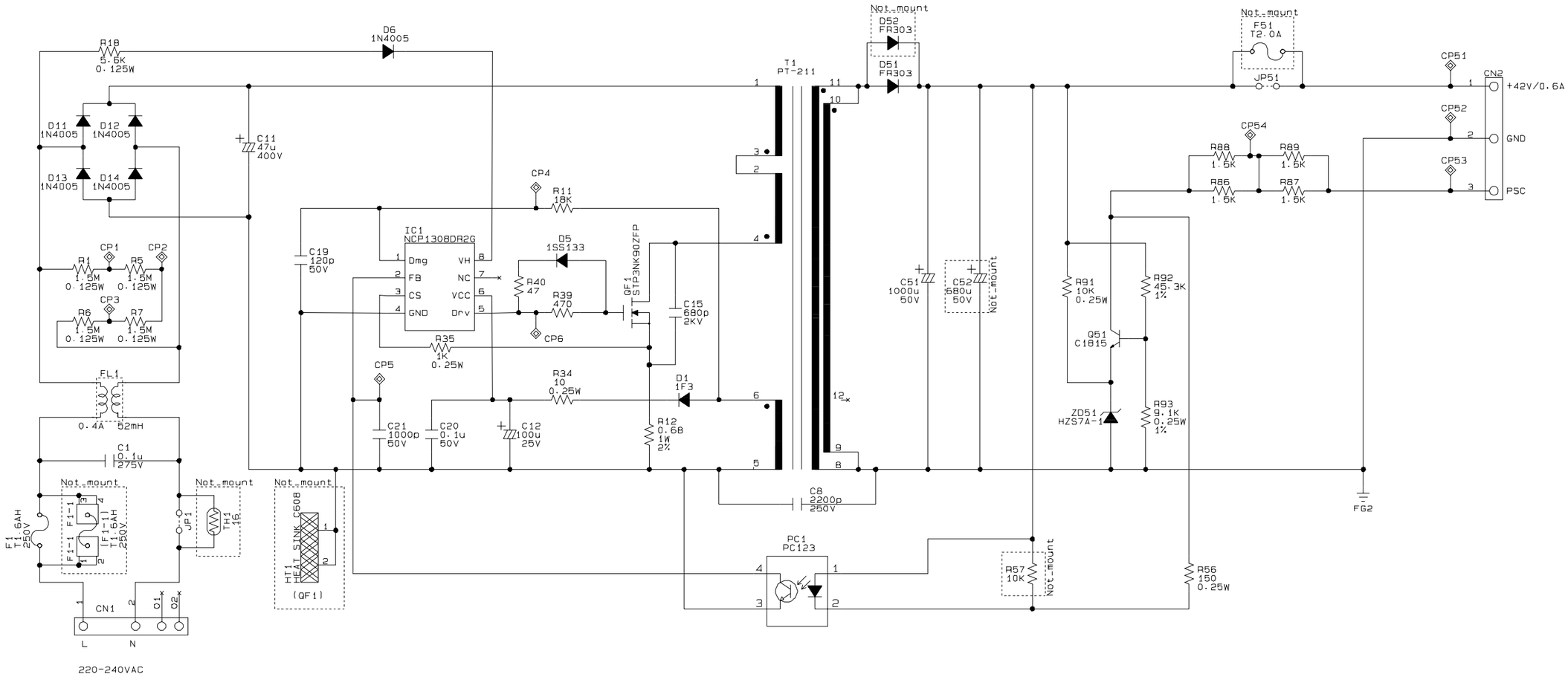
Model : PM-A820
Stylus PHOTO RX560/580/590
Board : C663PNL
Sheet : 1/1
Rev. : B



Model : PM-A820
Stylus PHOTO RX560/580/590
Board : C663PNL-B
Sheet : 1/1
Rev. : A



Model : PM-A820
Stylus PHOTO RX560/580/590
Board : C653PSB
Sheet : 1/1
Rev. : B



Model : Stylus PHOTO RX560/580/590
Board : C653PSE
Sheet : 1/1
Rev. : C

7.4 Exploded Diagrams & ASP Reference List

Refer to SPI (Service Parts information) for exploded diagrams and ASP reference list.