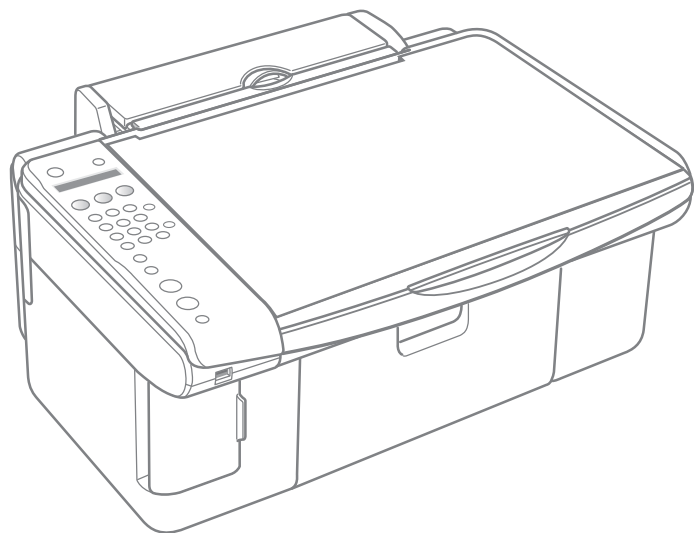


SERVICE MANUAL



Color Inkjet Printer

EPSON Stylus CX5700F/CX5800F
EPSON Stylus CX6900F/CX7000F/DX7000F

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PRECAUTIONS

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

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

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

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

DANGER

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

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. REPLACE MALFUNCTIONING COMPONENTS ONLY WITH THOSE COMPONENTS BY THE MANUFACTURE; INTRODUCTION OF SECOND-SOURCE ICs OR OTHER NON-APPROVED COMPONENTS MAY DAMAGE THE PRODUCT AND VOID ANY APPLICABLE EPSON WARRANTY.
6. 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.

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.

CHAPTER 7. APPENDIX

Provides the following additional information for reference:

- Connector Summary
- Electrical Circuits

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, if not strictly observed, could result in injury or loss of life.



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.



Indicates that a particular task must be carried out according to a certain standard after disassembly and before re-assembly, otherwise the quality of the components in question may be adversely affected.

Revision Status

Revision	Issued Date	Description
A	January 23, 2006	First Release
B	October 18, 2006	<ul style="list-style-type: none"> ■ 1.1 “Overview” (p.10) and 1.7 “Control Panel” (p.46) Mistakes are corrected. ■ 3.3 “Error Indications and Fault Occurrence Causes” (p.91) and 3.4 “Troubleshooting” (p.93) Mistakes are corrected. ■ 3.6 “Fax Function/External Connection (EXT port) Function Check” (p.129) Information is added. ■ Chapter 5 “ADJUSTMENT” (p.182) The previous information is replaced with the model-specific information. ■ Chapter 8 “Stylus CX6900F/CX7000F/DX7000F” (p.249) Stylus CX6900F/CX7000F/DX7000F specific information is added.
C	November 27, 2006	<ul style="list-style-type: none"> ■ 5.1 “Description” (p.183) Information about the latest version of the adjustment program for Stylus CX5700F/CX5800F is added. ■ 7.3 “Electrical Circuits” (p.227) Mistakes are corrected. ■ 8.2.5 “Power-On Sequence” (p.253) Description is added. ■ 8.4.2 “Disassembly Procedures” (p.264) Ink Cartridge Cover is added. ■ 8.4.3.2 “Printhead” (p.266) Disassembly procedure is modified. ■ 8.4.3.3 “Ink Cartridge Cover” (p.268) Disassembly procedure is added. ■ 8.5 “Adjustment” (p.283) Details of adjustment program are modified.
D	December 12, 2007	<ul style="list-style-type: none"> ■ 8.5.4.2 “Head ID Input” (p.290) Information is added.

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CHAPTER

1

PRODUCT DESCRIPTION

1.1 Overview

The product features 5-in-1 functionality (computer-connected printer and scanner, stand-alone copy machine, stand-alone memory card printing, and fax machine.) and is designed for home/personal use. Its main functions are described below.

1.1.1 Features



Refer to **8.1.1 “Features” (p.250)** for information unique to Stylus CX6900F/CX7000F/DX7000F.

□ Printer function

As a printer, the product achieves high-quality output at high speed on plain paper, and uses new pigment ink for improved light fastness, water fastness, gas fastness, rubbing fastness. It includes the following features:

- Maximum print resolution: 5760 (H) x 1440 (V) dpi
- Separate ink cartridge for each color
- ASF (Auto Sheet Feeder) holds up to 100 cut sheets (64 g/m²)
- Borderless printing with EPSON specialty media
- Reduced noise level
- The combination of real black and composite black offers fast and high print density draft mode.

□ Scanner function

Use of a CIS sensor requires no warm-up period, which makes scanning more convenient and allows for a more compact scanner. Additional features include the following:

- Maximum optical resolution: 1200 x 2400 dpi
- Pixel depth: 48 bits (input), 24 bits (output)

□ Stand-alone copy function

Employing the newly-developed ink enables photo-quality copies to be made not only on special media but even on plain paper.

Only the basic copy functions are provided for easier operation.

- Paper size can be selected from two options.

Table 1-1. Paper Size

Paper size	Destination
Letter/4"x6"	EAI
A4/10x15/13x18	Asia, Pacific

- Paper type can be selected from two options; plain paper or photo paper, which also defines copy quality.
- Enlarge / Reduce factor can be selected from two options; actual size (100%) or “Fit to page”.
- Copy margin is automatically selected from three options, according to paper type and paper size; 3 mm, “Small Margins Copy”, or “Borderless Copy”.
- The combination of real black and composite black offers fast and high print density draft mode.
- Copying and printing from a memory card functions can easily be switched with the control panel.

□ Card reader function

The product is equipped with memory card slots that support CompactFlash, SmartMedia, Memory Stick, Memory Stick PRO, Micro Drive, SD Memory Card, and xD-Picture Card as standard.

□ Memory card print function

The product can print images from the memory card in memory card slots in stand-alone mode. The memory card print features are as follows:

- Supports “Index Sheet printing” whereby images can be selected simply by marking an index sheet. Selecting images is easy - just check the desired images and then scan the index sheet.
- Copying and printing from a memory card functions can easily be switched with the control panel.



☐ Fax function

The product has a stand-alone fax function which enables sending and receiving faxes.

- Transmission rate: 33.6K bps or less
- Supported telephone system: PSTN
- Speed dial: Up to 60 entries

☐ Scan function

The product provides scan mode so that data can be scanned and transferred to a connected computer or to e-mail via an application software like the EPSON SMART PANEL.

☐ Simultaneous use of functions

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

☐ Easy control panel

The unit has a simple control panel equipped with 24 buttons including power button, 10 LEDs, and a LCD display (1 line x 16 characters), which provides only the basic functions for easy operation.

☐ Exterior design

Employing a CIS scanner engine has achieved the smaller size.

The control panel attached on the left of the unit gives distinctive look ensuring ease of operation.

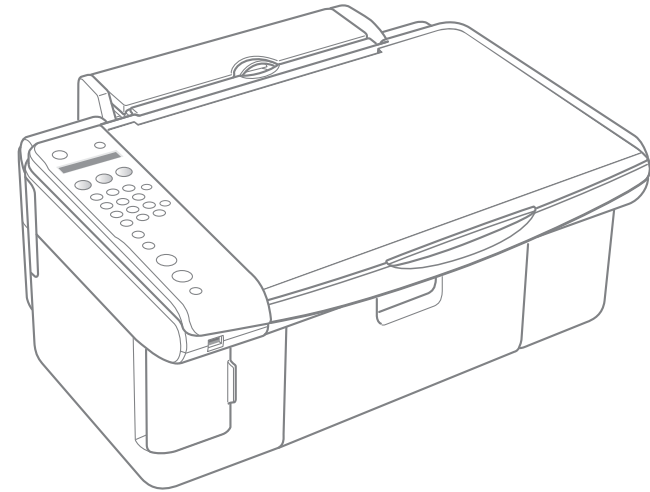


Figure 1-1. External View

1.2 Specifications

1.2.1 Printer Specifications

This section covers specifications of Stylus CX5700F/CX5800F.

1.2.1.1 Physical Specification



Refer to 8.2.1 “Physical Specifications” (p.251) for information unique to Stylus CX6900F/CX7000F/DX7000F.

- ☐ Weight
 - 6.8 kg (without the ink cartridges)
- ☐ Dimension (the paper support and output tray are not set nor opened)
 - 463 mm (W) x 344 mm (D) x 178 mm (H)

1.2.1.2 Printing Specification

- ☐ Print Method
 - On demand ink jet
- ☐ Nozzle Configuration
 - Monochrome 90 nozzles
 - Color 90 nozzles x 3 (Cyan, Magenta, Yellow)

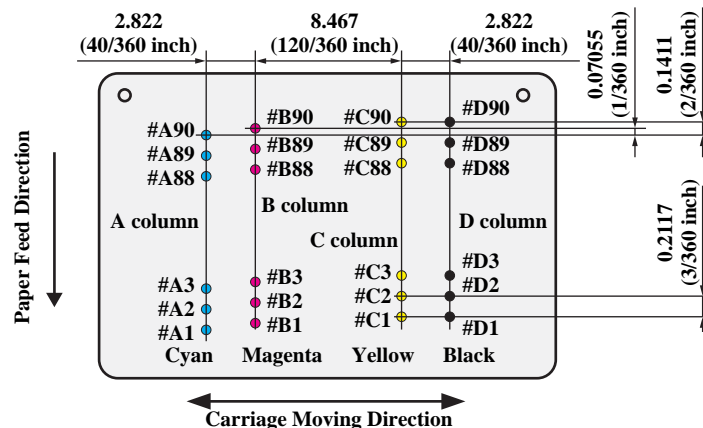


Figure 1-2. Nozzle configuration

- ☐ Print Direction
 - Bi-directional minimum distance printing (with logic seeking)
- ☐ Print Resolution

Table 1-2. Print Resolution

Horizontal direction (across columns)	Vertical direction (paper feed)
360 dpi	120 dpi
360 dpi	360 dpi
360 dpi	720 dpi
720 dpi	720 dpi
1440 dpi	720 dpi
1440 dpi*	1440 dpi*
5760 dpi*	1440 dpi*

Note *: Those resolution are achieved only with the printer driver.

- ☐ Print Speed & Printable Columns

Table 1-3. Character Mode

Character pitch	Printable columns	CR speed
10 CPI (Pica)	80	185 CPS*

Note *: CPS: Characters/Second
This speed is when using normal dot printing mode.

Table 1-4. Graphic Mode (Standard)

Horizontal resolution	Printable area	Max. dot count	CR speed
360 dpi*	209.8 mm (8.26")	2976	360 cps
360 dpi	209.8 mm (8.26")	2976	285 cps
720 dpi	209.8 mm (8.26")	5952	220 cps
1440 dpi	209.8 mm (8.26")	11904	285 cps
2880 dpi	209.8 mm (8.26")	23808	285 cps

Note *: Draft Printing



Table 1-5. Graphic Mode (Borderless Printing)

Horizontal resolution	Printable area	Max. dot count	CR speed
360 dpi*	215.05 mm (8.46")	3048	285 cps
720 dpi	215.05 mm (8.46")	6096	220 cps
1440 dpi	215.05 mm (8.46")	12192	285 cps
2880 dpi	215.05 mm (8.46")	24384	285 cps

Note *: Except Draft Printing

☐ Control code

- ESC/P Raster command
- EPSON Remote command
- ESC/P-R Level-1 command

☐ Internal fonts

- Character code: Alphanumeric with expanded graphics (PC437)
ASCII, 20H to 7FH only
- Fonts: EPSON original fonts
Alphanumeric font: Courier

☐ Input buffer size

- 64 Kbytes

1.2.1.3 Paper Feed Specifications

☐ Paper feed method

Friction feed, using one ASF (Auto Sheet Feeder)

☐ Paper path

Top feed, front out

☐ Paper feed rates

- 203.2 mm/sec (8.0 inch/sec): high quality mode, 25.4-mm feed
- 294.64 mm/sec (11.6 inch/sec): high speed mode, continuous feed

☐ PF (Paper Feed) interval

Programmable in 0.017 mm (1/1440 inch) steps

1.2.1.4 Supported Papers



Refer to 8.2.2 "Supported Papers" (p.251) for information unique to Stylus CX6900F/CX7000F/DX7000F.

☐ Cut sheets

Table 1-6. Cut Sheets

Paper size	Dimensions		Thickness	Weight	Paper type
	Width	Length			
A4	210 mm	297 mm	0.08-0.11 mm	64-90 g/m ² (17-24(lb))	Plain paper Recycled paper
A5	148 mm	210 mm			
A6	105 mm	148 mm			
B5	182 mm	257 mm			
Letter	215.9 mm (8.5")	279.4 mm (11")			
Legal	215.9 mm (8.5")	355.6 mm (14")			
Executive	184.2 mm (7.25")	266.7 mm (10.5")			
Half Letter	139.7 mm (5.5")	215.9 mm (8.5")			
User defined	50.8-329 mm	127- 1117.6 mm			



- Poor quality paper may reduce print quality and cause paper jams or other problems. If you encounter problems, switch to a higher grade paper.
- It is necessary that there is no wrinkle, nap, tear, fold, and so on in the form.
- The curve of form must be 5 mm or below.
- Use paper under normal conditions
 - Temperature 15 to 25°C (59 to 77°F)
 - Humidity 40 to 60% RH

☐ Envelopes

Table 1-7. Envelopes

Paper size	Dimensions		Thickness	Weight	Paper type
	Width	Length			
No.10 * ¹	241.3 mm (9.5")	104.8 mm (4.125")	N/A	75-90 g/m ² (20-24(lb))	Bond paper Air mail PPC
DL * ¹	220 mm	110 mm			
C6 * ¹	162 mm	114 mm			
220 x 132 * ²	132 mm	220 mm	0.1 mm	82 g/m ²	

Note *1: Check that the flap is on the long edge and can be folded.

*2: Bundled with the media such as Photo Quality Ink Jet Cards.

CAUTION



- Use paper under normal conditions
 - Temperature 59 to 77°F (15 to 25°C)
 - Humidity 40 to 60% RH
- Poor quality paper may reduce print quality and cause paper jams or other problems. If you encounter problems, switch to a higher grade of paper.
- It is necessary that there is no wrinkle, nap, tear, fold, and so on in the form.
- Don't use the adhesive envelopes.
- Don't use sleeve insert envelopes and cellophane window envelopes.

☐ EPSON special papers

Table 1-8. EPSON Special Papers

Item	Size	Width (mm)	Length (mm)	Thickness (mm)	Weight (g/m ²)
Bright White Ink Jet Paper	A4	210	297	0.13	92.5
Photo Paper*	4" x 6"	101.6	152.4	0.23	194
Premium Glossy Photo Paper	Letter	215.9	279.4	0.27	255
	A4	210	297		
	8" x 10"	203.2	254		
	5" x 7"	127	178		
	4" x 6"	101.6	152.4		
Premium Semigloss Photo Paper	3R	89	127	0.27	250
	Letter	215.9	279.4		
	A4	210	297		
Matte Paper Heavyweight*	4" x 6"	101.6	152.4	0.23	167
	Letter	215.9	279.4		
Double-sided Matte Paper*	A4	210	297	0.25	178
	Letter	215.9	279.4		
Economy Photo Paper*	A4	210	297	0.23	188
Photo Quality Ink Jet Paper*	A4	210	297	0.12	102
Glossy Photo Paper*	Letter	215.9	279.4	0.23	188
	4" x 6"	101.6	152.4		
Premium Glossy Photo Paper	4" x 6"	101.6	152.4	0.25	238

Note *: Not supported with stand-alone functions of copy and memory card print.



CAUTION

- Use paper under normal conditions
 - Temperature 59 to 77°F (15 to 25°C)
 - Humidity 40 to 60% RH
- Poor quality paper may reduce print quality and cause paper jams or other problems. If you encounter problems, switch to a higher grade of paper.
- It is necessary that there is no wrinkle, nap, tear, fold, so on in the form.
- The curve of form must be 5 mm or below.

1.2.1.5 Printing Area

- Cut sheet (standard printing)

- Printable area

The print quality is guaranteed for the print area above 3 mm bottom margin. For paper width (PW) and paper length (PL), refer to “[1.2.1.4 Supported Papers](#)” (p.13).

Refer to the following table. As for each margin area, refer to [Figure 1-3](#) (p.16).

Table 1-9. Applicable Paper/Printing Area

Paper type		Left margin	Right margin	Top margin	Bottom margin
Cut sheets	A4	3 mm (0.12")	3 mm (0.12")	3 mm (0.12")	3 mm (0.12")
	A5				
	A6				
	B5				
	Letter				
	Legal				
	Executive				
	Half Letter				
	User defined				
EPSON special papers	Bright White Ink Jet Paper	3 mm (0.12")	3 mm (0.12")	3 mm (0.12")	3 mm (0.12")
	Photo Paper				
	Premium Glossy Photo Paper				
	Premium Semigloss Photo Paper				
	Matte Paper Heavyweight				
	Double Sided Matte Paper				
	Economy Photo Paper				
	Photo Quality Ink Jet Paper				
	Glossy Photo Paper				
	Premium Glossy Photo Paper				

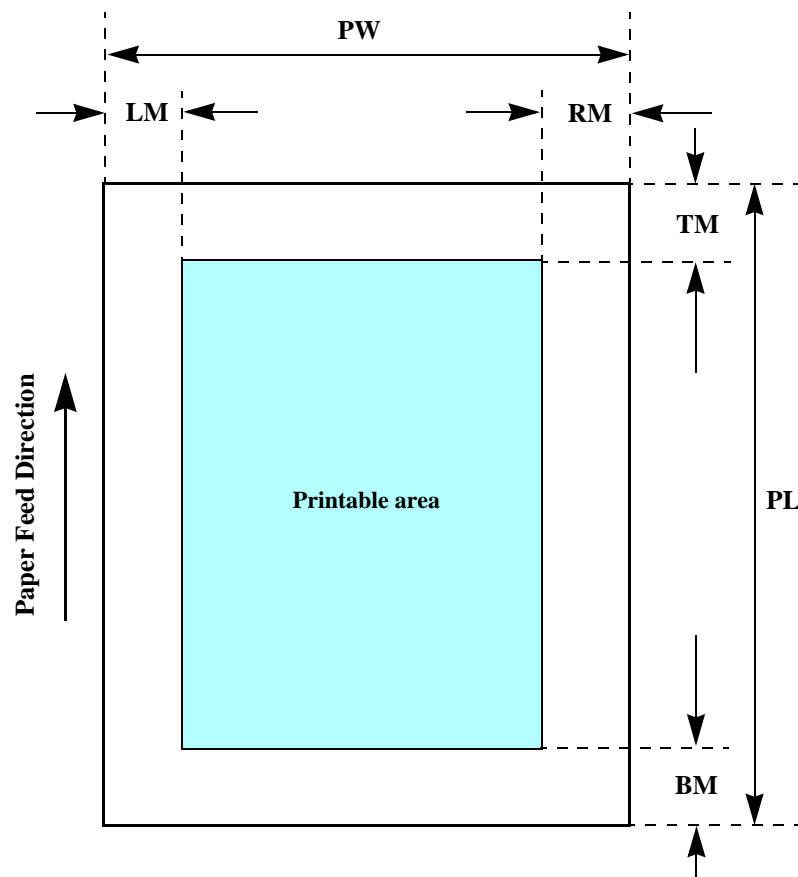


Figure 1-3. Printable Area Cut Sheet (Standard Printing)

□ Cut sheet (borderless printing)

■ Printable area

For paper width (PW) and paper length (PL), refer to “1.2.1.4 Supported Papers” (p.13).

Refer to the following table. The LO, RO, TO, and BO indicate the print margins that bleed off (extend beyond) the left, right, top, and bottom edges of the paper. (Refer to Figure 1-4 (p.17).)

Table 1-10. Applicable Paper/Printing Area (For Printing)

Paper Type	Size	LO (mm)	RO (mm)	TO (mm)	BO (mm)
Photo Paper	4" x 6"	2.54	2.54	1.34	2.54
Premium Glossy Photo Paper	Letter	2.54	2.54	2.96	4.02
	A4	2.54	2.54	2.96	4.02
	8" x 10"	2.54	2.54	2.96	4.02
	5" x 7"	2.54	2.54	2.96	4.02
	4" x 6"	2.54	2.54	1.34	2.54
	3R	2.54	2.54	1.34	2.54
Premium Semigloss Photo Paper	Letter	2.54	2.54	2.96	4.02
	A4	2.54	2.54	2.96	4.02
Matte Paper Heavyweight	Letter	2.54	2.54	2.96	4.02
	A4	2.54	2.54	2.96	4.02
	8" x 10"	2.54	2.54	2.96	4.02
Double-sided Matte Paper	Letter	2.54	2.54	2.96	4.02
	A4	2.54	2.54	2.96	4.02
Economy Photo Paper	A4	2.54	2.54	2.96	4.02
Photo Quality Ink Jet Paper	A4	2.54	2.54	2.96	4.02
Premium Glossy Photo Paper	4" x 6"	2.54	2.54	1.34	2.54

Table 1-11. Applicable Paper/Printing Area (For Copying)

Paper Type	Size	LO (mm)	RO (mm)	TO (mm)	BO (mm)
Photo Paper	4" x 6"	2.54	2.54	2.96	5.08
Premium Glossy Photo Paper	Letter				
	A4				
	8" x 10"				
	5" x 7"				
	4" x 6"				
Premium Semigloss Photo Paper	3R				
	Letter	2.54	2.54	2.96	5.08
	A4				
	5" x 7"				
	4" x 6"				
	3R				

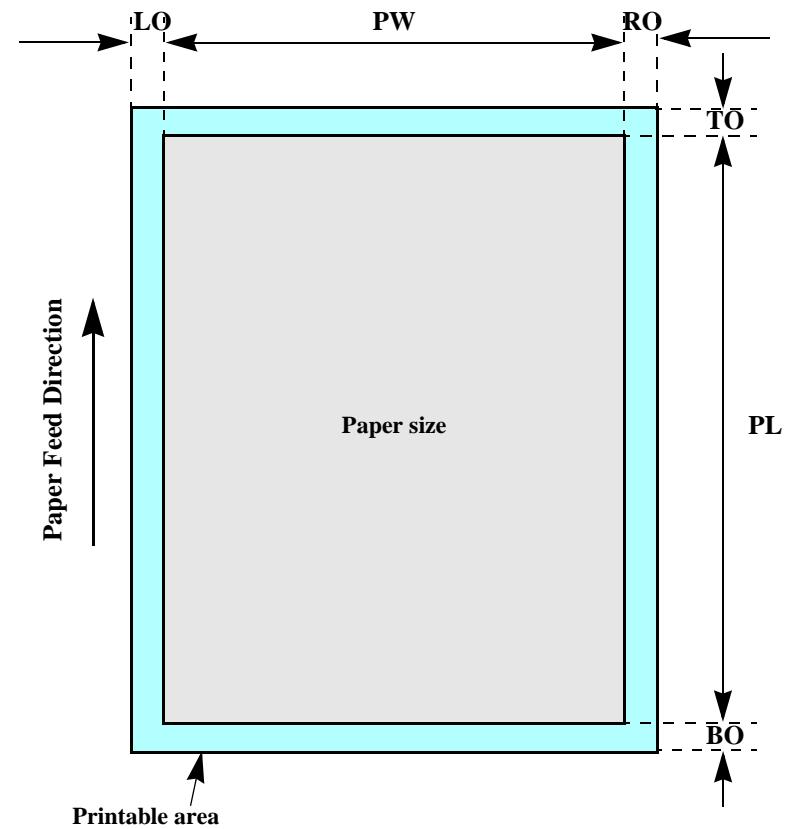


Figure 1-4. Printable Area for Cut Sheet (Borderless Printing)

□ Envelopes

■ Printable area

For paper width (PW) and paper length (PL), refer to “1.2.1.4 Supported Papers” (p.13).

Refer to the following table. As for each margin area, refer to Figure 1-5 (p.18).

Table 1-12. Applicable Paper/Printing Area

Paper type	Left Margin	Right Margin	Top Margin	Bottom Margin
No.10	3 mm (0.12")	3 mm (0.12")	3 mm (0.12")	20 mm (0.79")
DL				
C6				
220 x 132				

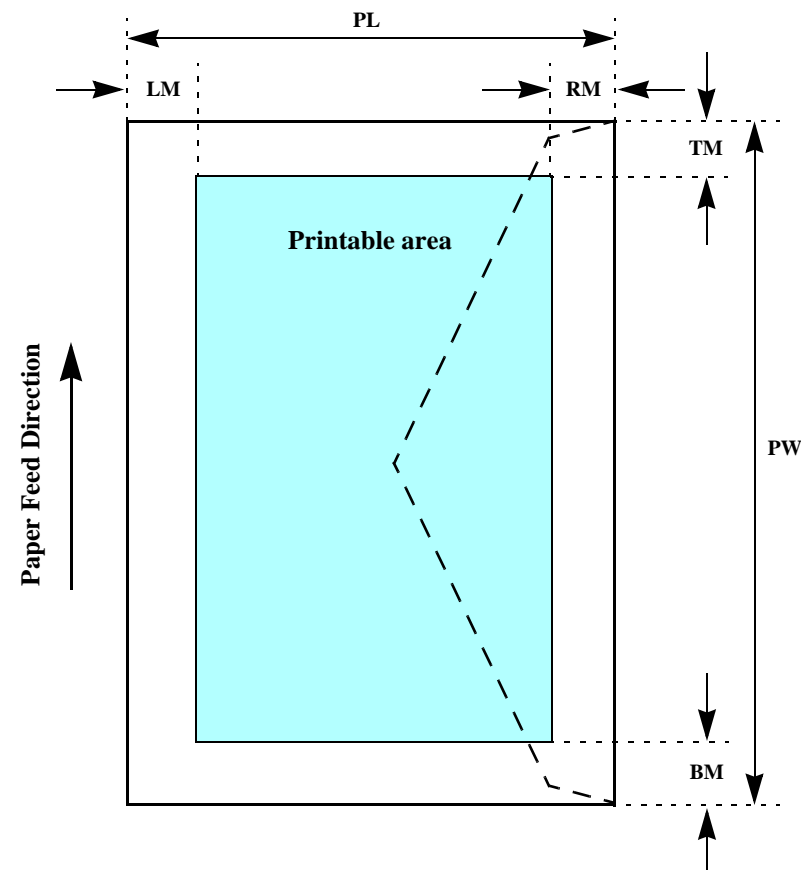


Figure 1-5. Printable Area for Envelopes

1.2.1.6 Ink Cartridge Specifications



Refer to **8.2.3 “Ink Cartridge Specifications” (p.252)** for information unique to Stylus CX6900F/CX7000F/DX7000F.

- ☐ Type/color: EPSON special ink cartridges

Table 1-13. Ink Cartridge

Color	Size	CX5700F	CX5800F
Black	S size	T0621	T0601
	SS size	T0631	---
Cyan	S size	---	T0602
	SS size	T0632	---
Magenta	S size	---	T0603
	SS size	T0633	---
Yellow	S size	---	---
	SS size	T0634	T0604

- ☐ Print Capacity

■ Black Ink Cartridge

- S size: 400 pages/A4 (ISO/IEC10561 Letter Pattern at 360x720 dpi)
- SS size: 250 pages/A4 (360x720 dpi, 5% duty)

■ Color Ink Cartridge

- S size: 460 pages/A4 (360x720 dpi, 5% duty for each color)
- SS size: 250 pages/A4 (360x720 dpi, 5% duty for each color)

- ☐ Shelf life: 6 months after opening the package
2 years without opening the package

- ☐ Storage Temperature

Table 1-14. Storage Temperature

Situation	Storage Temperature	Limit
When stored in individual boxes	-22 to 104 °F (-30 °C to 40 °C)	1 month at 104 °F (40 °C)
When installed in main unit	-4 to 104 °F (-20 °C to 40 °C)	

- ☐ Dimension: 12.7mm (W) x 73.46mm (D) x 55.25mm (H)



The ink in the ink cartridge freezes at 3.2 °F (-16 °C) or less. Ink thaws and is usable after approximately three hours at 77 °F (25 °C).

1.2.2 Scanner Specifications



Refer to 8.2.4 “Scanner Specifications” (p.253) for information unique to Stylus CX6900F/CX7000F/DX7000F.

1.2.2.1 Basic Specifications

- ☐ Product type: Flatbed color image scanner
- ☐ Scanning method: Moving carriage, stationary document
- ☐ Sensor: CIS
- ☐ Maximum scan area: 8.5” x 11.7” (216 mm x 297 mm)
- ☐ Document sizes: A4 or US letter
- ☐ Max. effective pixels: 10,200 x 14,040 pixels (1200 dpi)
- ☐ Resolution
 - Main scan: 1200 dpi
 - Sub scan: 2400 dpi with Micro Step
- ☐ Scanning resolution: 50 to 4800 dpi (selectable in 1-dpi steps), 7200 dpi, 9600 dpi
- ☐ Gradations (pixel depth): 16 bits per pixel (input)
1 or 8 bits per pixel (output)
- ☐ Scanning speed: 1200 dpi
 - Color: Approx. 15 msec/line
 - Monochrome: Approx. 5 msec/line
- ☐ Light source: RGB Three Color LED

1.2.2.2 Detailed Specifications

- ☐ Control commands: ESC/I D7
- ☐ Gamma correction: Two user-defined levels

1.2.2.3 Image Scanning Area

Table 1-15. Image 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

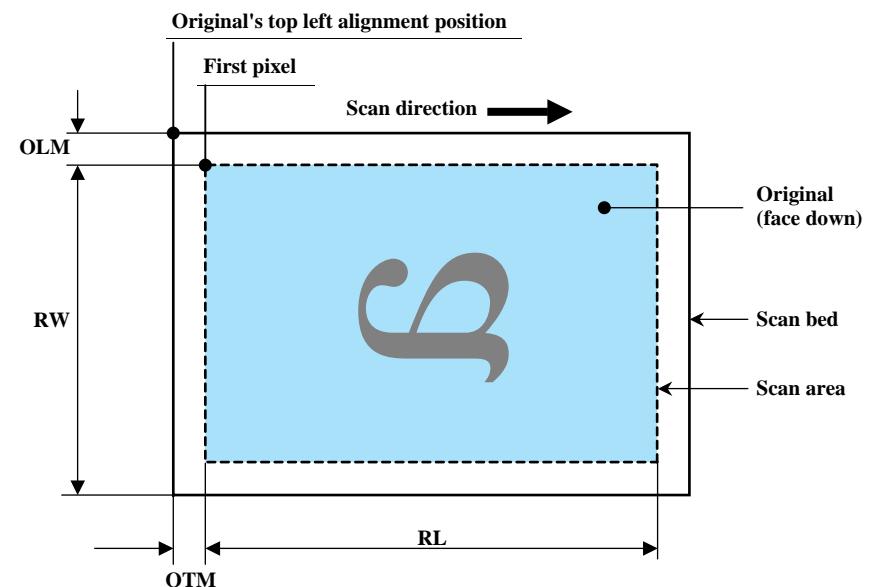


Figure 1-6. Image Scanning Area

1.2.3 Common

1.2.3.1 Electric Specification

- ☐ Primary power input

Table 1-16. Primary Power Input

	100-120 V model	220-240 V model
Rated power supply voltage (ACV)	100 ~ 120	220 ~ 240
Input voltage range (ACV)	90 ~ 132	198 ~ 240
Rated current (A)	0.4 A (max. 0.7 A w/ card slot model) (max. 0.7 A w/o card slot model)	0.2 A (max. 0.3A) (max. 0.3 A w/ card slot model) (max. 0.3 A w/o card slot model)
Rated frequency (Hz)	50 ~ 60	
Input frequency range (Hz)	49.5 ~ 60.5	
Power consumption (W)	Approx. 13 (w/ card slot model) Approx. 13 (w/o card slot model) (Standalone copying, ISO10561 Letter Patter, Plain Paper - Text)	
	Approx. 4.5 (Low-power Mode)	
	Approx. 4.0 (Sleep Mode)	
	Approx. 0.2 (Power Off Mode)	Approx. 0.4 (Power Off Mode)

Note 1: This product complies with the International Energy Star program.

- 2: If Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F is not operated at all for at least five minutes, the standby function reduces the current to the motor to conserve power.
- 3: If the scanner is not operated at all for at least five minutes, the standby function reduces the current to the motor to conserve power.

- ☐ Current resistance
10MΩ or lower (tested between AC input terminal and chassis, test voltage: 500 VDC)
- ☐ Voltage resistance
■ 1500 VAC for one minute

1.2.3.2 Environmental Performance

Table 1-17. Environmental Performance

Condition	Temperature	Humidity*2	Impact	Vibration
Operating	50 ~ 95 °F (10 ~ 35°C) *3	20 ~ 80% *3	1G, 1 x 10 ⁻³ seconds	0.15G
Not operating *1	-4 ~ 104 °F (-20 ~ 40°C)	5 ~ 85%	2G, 2 x 10 ⁻³ seconds	0.50G

Note *1: After unpacking (storage)

*2: No condensation

*3: Under the following conditions

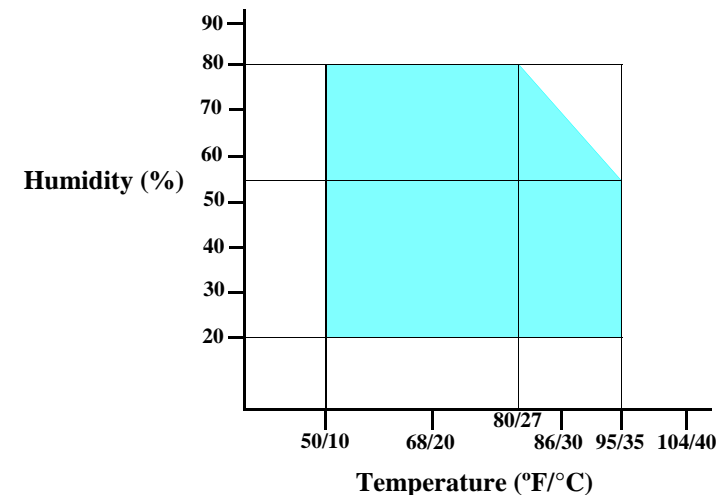


Figure 1-7. Temperature/Humidity Range

1.2.3.3 Durability

- ☐ Total print life: 10,000 pages (black only, A4), or five years (whichever comes first)
- ☐ Printhead Life: Six billion shots (per nozzle) or five years (whichever comes first)
- ☐ Scanner head (MCBF): 36,000 cycles of carriage movement



1.2.3.4 Safety Standards: EMC

Table 1-18. Safety Standards: EMC

Safety	UL 60950 CSA No. 60950 NOM-019-SCFI-1998
EMC	FCC part 15 Subpart B class B ICES003 CSA C108.8 Class B CNS13438 Class B CNS14336 AS/NZS CISPR22 Class B
Telecom regulations	FCC Part 68 IC CS03 COFETEL AS/ACIF002 AS TS001 PSTN01

1.2.3.5 Acoustic Noise

- ☐ Noise level
Approx. 45 dB (according to ISO7779 when for copying)

1.3 Interface

EPSON Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F provides the following interface.

1.3.1 USB Interface

- ☐ Standards
 - “Universal Serial Bus Specifications Revision 2.0”
 - “Universal Serial Bus Device Class Definition for Printing Devices Version 1.1” (printer unit)
 - “Universal Serial Bus Mass Storage Class Bulk-Only Transport Revision 1.0” (storage unit)
- ☐ Transfer rate: 480 Mbps (High Speed Device)
- ☐ Data format: NRZI
- ☐ Compatible connector: USB Series B
- ☐ Recommended cable length: 2 m or less
- ☐ Device ID

Table 1-19. Device ID (TBD)

Product Name	Device ID
Stylus CX5700F	[00H][5AH] MFG:EPSON; CMD:ESCPL2,BDC,D4,ESCPR1; MDL:Stylus[SP] CX5700F; CLS:PRINTER; DES:EPSON[SP]Stylus[SP] CX5700F;
Stylus CX5800F	[00H][5AH] MFG:EPSON; CMD:ESCPL2,BDC,D4,ESCPR1; MDL:Stylus[SP] CX5800F; CLS:PRINTER; DES:EPSON[SP]Stylus[SP] CX5800F;



□ Connector signal layout

Table 1-20. Connector Pin Assignment and Signals

Pin No.	Signal name	I/O	Function description
1	VCC	-	Cable power. Max. power consumption is 2 mA.
2	-Data	Bi-D	Data
3	+Data	Bi-D	Data, pull up to +3.3 V via 1.5 K ohm resistor.
4	Ground	-	Cable ground

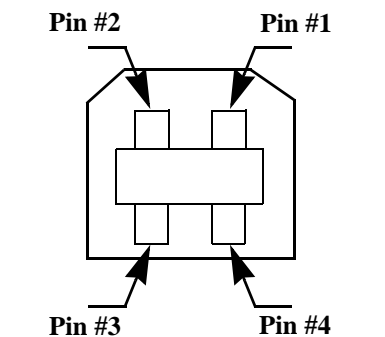


Figure 1-8. USB Pin Assignment

□ Product ID:0x0821

□ Endpoint attribute

Table 1-21. Endpoint Attribute

I/F No.	Endpoint Address	Endpoint Type	Linked Interface
0x00	0x01	Bulk Out	Scanner
	0x02	Bulk In	
0x01	0x04	Bulk Out	Printer
	0x05	Bulk In	
0x02	0x07	Bulk Out	Card
	0x08	Bulk In	

1.3.2 Fax

Table 1-22. Fax

Port name	Connector	Description
Line port	RJ-11	Connects to phone cable from modular wall jack
EXT port	RJ-11	Connects to TAM or Telephone

Note : When Auto Answer is set to “Y”, the devices such as TAM will normally answer the call. However, Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F monitors the transmitted data for a certain period of time and disconnects the “EXT” port to receive fax data under the following conditions:

- When CNG signal is detected after the TAM answered the call.
- When CNG or any sound cannot be detected for more than 20 seconds after the TAM answered the call.

1.3.3 Standard Card Slots

1.3.3.1 Memory Card

Table 1-23. Memory Card

Memory card standards		Slots	Supported memory cards
Compact Flash	CF+ and CompactFlash Specification Revision 1.4 compliant	CF Type II slot	<ul style="list-style-type: none">• Compact Flash (memory card only)• Microdrive
SmartMedia	SmartMedia Standard 2000 compliant	SmartMedia slot	SmartMedia (maximum capacity: 128 MB)
Memory Stick	MemoryStick Standard version 1.3 compliant	Memory Stick/ Memory Stick PRO slot	<ul style="list-style-type: none">• Memory Stick (maximum capacity: 128 MB, including versions with memory select function)• MagicGate Memory Stick (maximum capacity: 128 MB, copy protection function is not supported)• Memory Stick Duo (requires Memory Stick Duo adapter)
Memory Stick PRO	MemoryStick Standard Memory Stick PRO Format Specifications version 1.0 compliant		<ul style="list-style-type: none">• Memory Stick Duo (requires Memory Stick Duo adapter)• Memory Stick PRO Duo (requires Memory Stick Duo adapter)
Memory Stick PRO Duo			
SD	SD Memory Card Specifications / PART1. Physical Layer Specification Version 1.0 compliant	SD/MMC slot	<ul style="list-style-type: none">• SD (Secure Digital) memory card• miniSD card (requires SD adapter)
MultiMedia Card	MultiMedia Card Standard compliant		MultiMedia Card
xD-Picture Card	xD-Picture Card™ Card Specification Version 1.00 compliant	xD-Picture Card slot	xD-Picture Card

CAUTION



Note the following points when handling the memory card.

- Since the SD card and Memory Stick share the same slot, only one can be inserted at a time.
- Since the SmartMedia and xD-Picture Card share the same slot, only one can be inserted at a time.
- When a memory card is being accessed, be sure to keep the memory card slot's cover closed and do not touch the memory card.

1.3.3.2 Supported Power Supply Voltage

- ☐ 3.3 V/ 5 V (both)
- ☐ 3.3 V (only)

NOTE 1: 3.3 V power is supplied to media that support both 3.3 V and 5 V.
 2: Maximum current to memory card is 500 mA.
 3: 5V type memory cards are not supported.

1.3.3.3 Multi-slot Operations

□ Overview

- Only one card is accessible from the computer and available for direct printing at a time even though several different cards can be inserted into their corresponding slots.
- The slots have assigned priority to determine which slot will be accessed first when cards are inserted in several slots at once.
- To select a card that has been inserted in a non-active slot, the card in the active slot must be removed first.
 - Direct printing:
Only the image files in the active slot are valid and have assigned frame numbers. The number of images will not change if a card is also inserted in a non-selected slot.
 - Connection to computer (Windows):
Only one drive is displayed at a time as a “removable disk” and only the card that is in the active slot can be accessed via the removable disk. A card that has been inserted into a non-selected slot cannot be accessed.
 - Connection to computer (Macintosh):
Only the card in the active slot can be mounted on the desktop. A card that has been inserted into a non-selected slot cannot be mounted on the desktop.

□ Details

- Access priority
The access priority among slots is assigned as:
 - 1: CF (Micro Drive)
 - 2: SmartMedia/xD-Picture Card
 - 3: Memory Stick (Memory Stick PRO)/SD (MMC)
- Slot selection when power is turned on
If cards are inserted in several slots when the power is turned on, the active slot is determined by the priority ranks listed above.
Example: If SmartMedia and Memory Stick are both inserted at power-on, the SmartMedia slot becomes the active slot.
- Slot selection after power is turned on
When a card is removed from the active slot, the slot with the next-highest priority becomes the active slot (if a card has been inserted into it). There is no need to re-insert any card before accessing it. If no slots contain any cards, the highest-priority slot (CF Micro Drive) again becomes the active slot. Cards can be removed from non-selected slots in any order.
Example: If a memory stick and CF card are inserted while SmartMedia is selected, CF becomes selected (active) once SmartMedia is removed.



1.4 Stand-alone Copy

1.4.1 Basic Specifications

1.4.1.1 Supported Paper Sizes, Types and Qualities

Table 1-24. Supported Paper Sizes, Types and Qualities (for EAI)

Paper type		Quality*1	Paper size	
Paper name	Panel indication		Paper size	Panel indication
Plain Paper	Plain Paper	Plain Paper	Letter	Letter
Premium Glossy Photo Paper	Photo Paper	Photo Paper	Letter 5" x 7" 4" x 6"	Letter 5" x 7" 4" x 6"
Premium Semigloss Photo Paper	Photo Paper	Photo Paper	Letter	Letter
High Gloss Photo Paper	Photo Paper	Photo Paper	Letter 5" x 7" 4" x 6"	Letter 5" x 7" 4" x 6"

Note *1: The quality of draft copy is not affected by "Paper type" selection.

Table 1-25. Supported Paper Sizes, Types and Qualities (for Asia, Pacific)

Paper type		Quality*1	Paper size	
Paper name	Panel indication		Paper size	Panel indication
Plain Paper	Plain Paper	Plain Paper	A4	A4
Premium Glossy Photo Paper	Photo Paper	Photo Paper*2	A4 13 x 18*4 10 x 15*3	A4 13 x 18*4 10 x 15*3
Premium Semigloss Photo Paper	Photo Paper	Photo Paper*2	Letter	Letter
High Glossy Photo Paper	Photo Paper	Photo Paper*2	Letter 13 x 18*4 10 x 15*3	Letter 13 x 18*4 10 x 15*3

Note *1: The quality of draft copy is not affected by "Paper type" selection.

*2: For photo paper: SN, AF LUT parameter is same as Premium Glossy Photo Paper.

*3: 10 x 15: The panel indicator only. Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F chalks 10 x 15 format up to 4 x 6 format.

*4: 13 x 18: The panel indicator only. Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F chalks 13 x 18 format up to 5 x 7 format.

1.4.1.2 Zoom Function

The zoom function provides enlarged or reduced copies of originals. The either of the following can be selected from the control panel.

- ☐ Actual (The state which "Fit to page" is not selected. It is the power-on default.)
The zoom factor is set to 100%.
- ☐ Fit to page
This function detects the image size of the original and automatically sets the zoom factor of the copy according to the copy paper's printable area.

1.4.1.3 Number of Copies Setting

This function sets the number of copies. The setting range is 1 to 9 and 100.

1.4.1.4 Maximum Copy Size

- ☐ 216 mm x 297 mm



1.4.1.5 Copy Layout

The following copy layout is provided according to “Paper type”, “Paper size” and zoom selections.

- ☐ **Standard copy**
Provided for ordinary use with 3mm copy margin from every side.
- ☐ **Borderless copy**
Borderless printing of copies occurs when the print area is set as larger than the copy paper's size. In such cases, the outer edges of the original image may be omitted in the printed copy.
- ☐ **Small Margins copy**
This function sets a 1.5mm margin on all four sides when printing in order to make maximum use of the original image and copy paper.

NOTE: Only “Standard Copy” can be used in draft copy mode.

Table 1-26. Copy Layout (for EAI)

Zoom	Paper type	Paper size	B&W / Color	Layout
Actual*1	Plain Paper	Letter	B&W, Color	Standard
		4" x 6", 5" x 7"	B&W, Color	Standard
	Photo Paper	Letter, 4" x 6", 5" x 7"	B&W, Color	Small margin
Fit to page*2	Plain Paper	Letter	B&W, Color	Standard
		4" x 6", 5" x 7"	B&W, Color	Standard
	Photo Paper	Letter, 4" x 6", 5" x 7"	B&W, Color	Borderless

Note *1: Actual is the state that “Fit to page” is not selected.

- *2: “Fit to page” automatically sets the enlarge/reduce scale so that the entire image fits into the printable area or the borderless area when borderless layout is selected. When the original image is smaller than general card size (approx. 54mm x 86mm), the print margins will be different from the one that is defined by each layout. The image placement uses the upper left corner as the origin and any margins that occur during the fitting process occur along the bottom and/or right edge.

Table 1-27. Copy Layout (for Asia, Pacific)

Zoom	Paper type	Paper size	B&W / Color	Layout
Actual*1	Plain paper	A4	B&W, Color	Standard
		10 x 15, 13 x 18	B&W, Color	Standard
	Photo Paper	A4, 10 x 15, 13 x 18	B&W, Color	Small margin
Fit to page*2	Plain paper	A4	B&W, Color	Standard
		10 x 15, 13 x 18	B&W, Color	Standard
	Photo paper	A4, 10 x 15, 13 x 18	B&W, Color	Borderless

Note *1: Actual is the state that “Fit to page” is not selected.

- *2: “Fit to page” automatically sets the enlarge/reduce scale so that the entire image fits into the printable area or the borderless area when borderless layout is selected. When the original image is smaller than general card size (approx. 54mm x 86mm), the print margins will be different from the one that is defined by each layout. The image placement uses the upper left corner as the origin and any margins that occur during the fitting process occur along the bottom and/or right edge.



1.4.1.6 Multiple Copies From an Original

Second and subsequent copies can be printed from an original without scanning. When printing two or more copies, under the following settings the scan data can be stored in the unit's memory so that the second and subsequent copies can be printed without scanning.

- ☐ “Draft” mode (monochrome/color)
- ☐ “Text” mode (monochrome)

1.4.2 Copy Speed

1.4.2.1 Black Copy Speed

- ☐ Plain Paper – Draft 13.4 cpm (Copy per minute), Plain Paper – 3.0 cpm
- ☐ Black e-Memo text A4 size pattern, zoom 100%

The above speed is for the second and subsequent copies (the time between ejection of the first page to ejection of the second page).

1.4.2.2 Color Copy Speed

- ☐ Plain Paper – Draft 13.4 cpm (Copy per minute), Plain Paper – 1.0 cpm
- ☐ Color e-Memo text A4 size pattern, zoom 100%

The above speed is for the second and subsequent copies (the time between ejection of the first page to ejection of the second page)

1.4.3 Configuration for Copying

Table 1-28. Configuration for Copying

Copy Mode setting			Scan and Print configuration			
Paper type	B&W / Color ^{*2}	Enlarge / Reduce ^{*1} (%)	Print resolution (H x V dpi)	Dot size	MW	LUT
Plain Paper	B&W	100 (Default)	360 x 360	VSD1	Off	CC2
	Color	100 (Default)	360 x 720	VSD1	On	CC2
Photo Paper	B&W	100 (Default)	1440 x 720	VSD3	On	CC3
	Color	100 (Default)	1440 x 720	VSD3	On	CC3
Draft ^{*3} (Plain paper only)	B&W	100 (Default)	360 x 120	Eco	Off	CC1
	Color	100 (Default)	360 x 120	Eco	Off	CC1

Note *1: “Default” is the state in which “Fit to page” is not selected. When “Fit to page” is selected, scan resolution will be optimized according to enlarge/reduce scale.

*2: Pure black will be used in both B&W and color mode.

*3: With “Draft”, both real black and composite black will be used for black printing.



1.4.4 Relation between Original and Copy

1.4.4.1 Standard Copy

The following table shows the relative positioning of the original and copy.

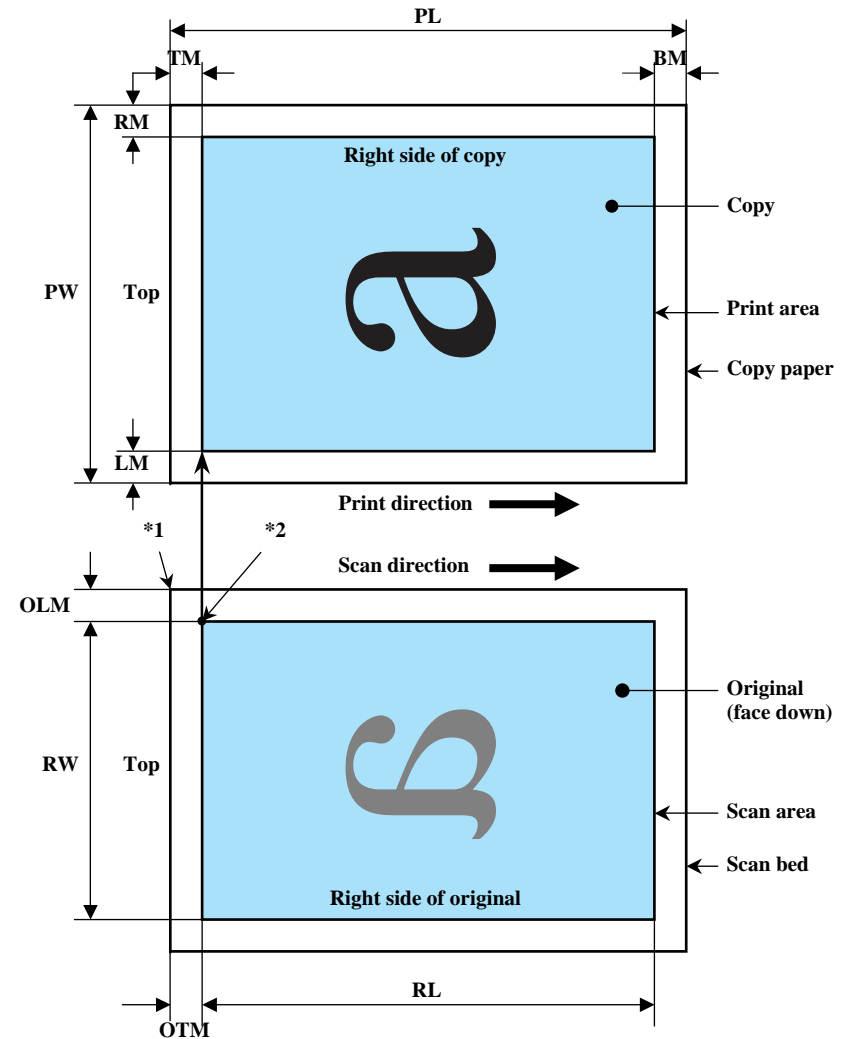
Table 1-29. Original (scanner)

RW (readable width)	OLM (out-of-range left margin)	RL (readable length)	OTM (out-of-range top margin)
216 mm (8.5")	3 mm	297 mm (11.7")	3 mm

Table 1-30. Copy (printer)

RM	LM	TM	BM
3 mm (0.12")	3 mm (0.12")	3 mm (0.12")	3 mm (0.12")

Note : Refer to "1.2.1.4 Supported Papers" (p.13) for paper width (PW) and paper length (PL).



- Note *1: This indicates the top left corner of the original. Normally, this corner is aligned with the scan bed's top right corner as the reference point.
- *2: This indicates the scan start position at the top left of the original, which corresponds to the print start position at the top left of the copy. The bottom right corner position of the copy is within the print area but varies according to the enlarge/reduce setting.

Figure 1-9. Standard Copy

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1.4.4.2 Borderless Copy

The following table shows the relative positioning of the original and copy.

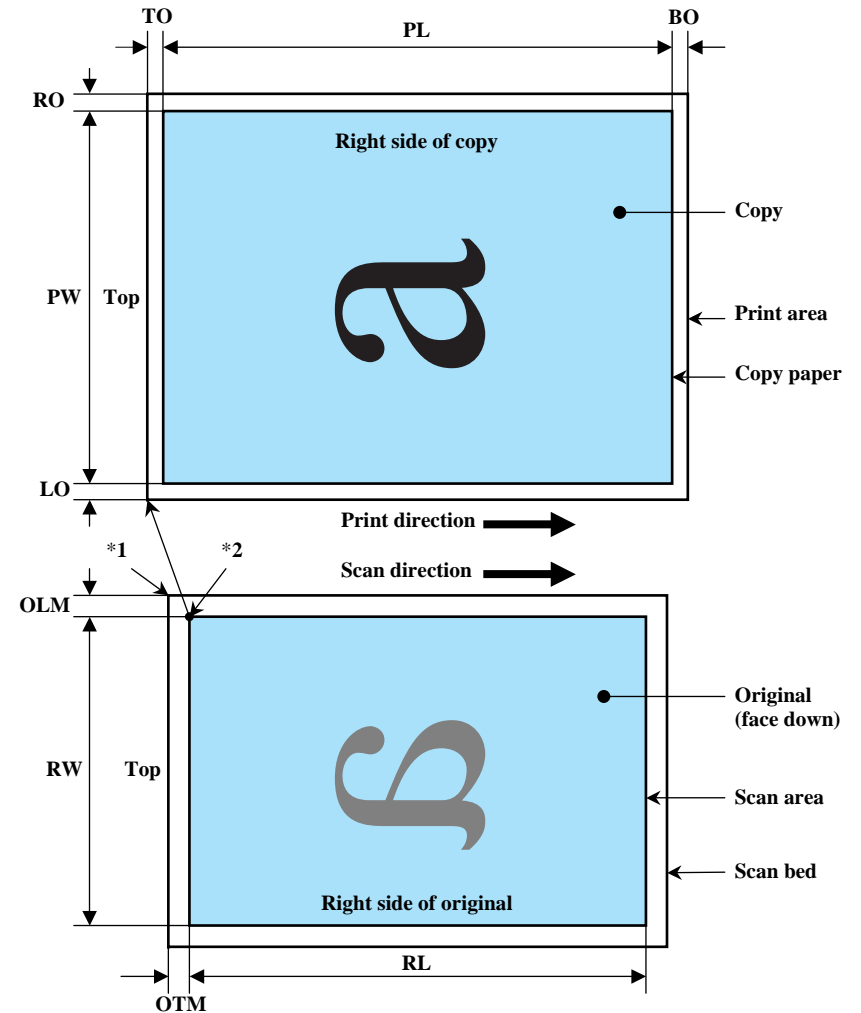
Table 1-31. Original (scanner)

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 \pm 1 mm	297 mm (11.7")	1.5 mm \pm 1 mm

Table 1-32. Copy (printer)

RO	LO	TO	BO
2.5 mm	2.5 mm	3.0 mm	5.0 mm

Note : Refer to "1.2.1.4 Supported Papers" (p.13) for paper width (PW) and paper length (PL).



- Note *1: This indicates the top left corner of the original. Normally, this corner is aligned with the scan bed's top right corner as the reference point.
- *2: This indicates the scan start position at the top left of the original, which corresponds to the print start position at the top left of the copy. The bottom right corner of the print area varies according to the scale setting in the print area.

Figure 1-10. Borderless Copy

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1.4.4.3 Small Margins Copy

The following table shows the relative positioning of the original and copy.

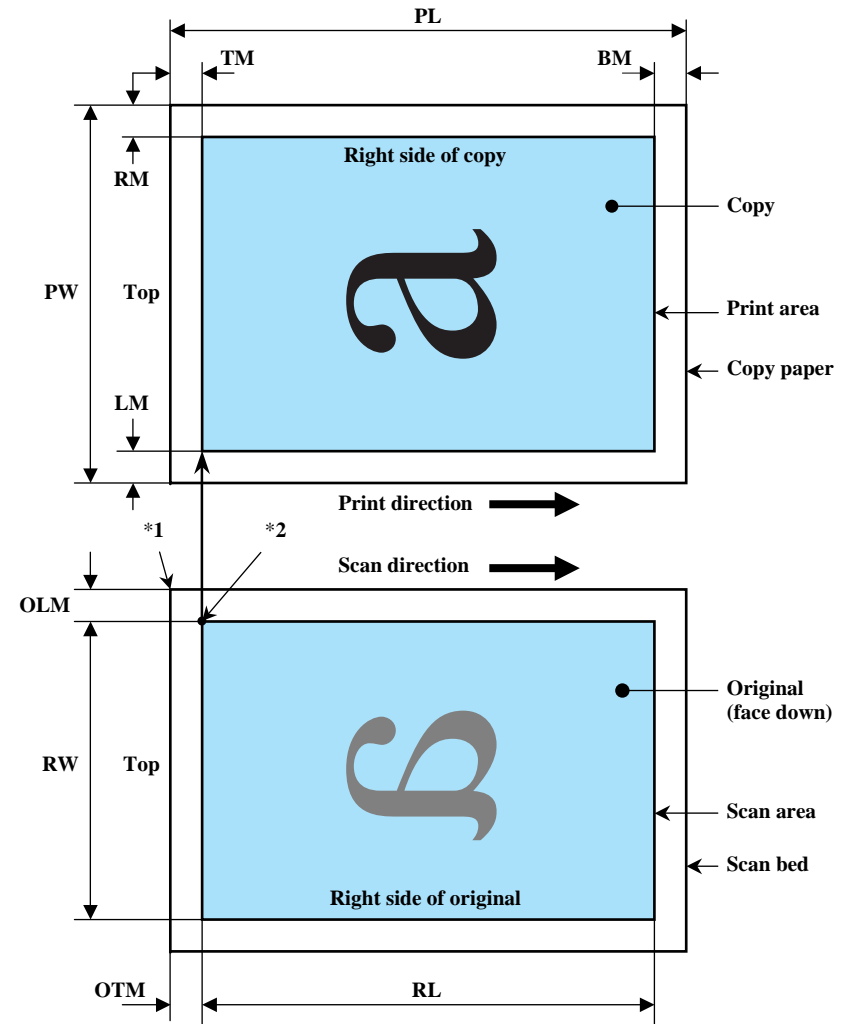
Table 1-33. Original (scanner)

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 \pm 1 mm	297 mm (11.7")	1.5 mm \pm 1 mm

Table 1-34. Copy (printer)

RM	LM	TM	BM
1.5 mm	1.5 mm	1.5 mm	1.5 mm

Note : Refer to "1.2.1.4 Supported Papers" (p.13) for paper width (PW) and paper length (PL).



- Note *1: This indicates the top left corner of the original. Normally, this corner is aligned with the scan bed's top right corner as the reference point.
- *2: This indicates the scan start position at the top left of the original, which corresponds to the print start position at the top left of the copy. The bottom right corner position of the copy is within the print area but varies according to the enlarge/reduce setting.

Figure 1-11. Small Margins Copy

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1.5 Memory Card Print

1.5.1 Basic Specifications

1.5.1.1 File System

DCF Version 1.0 is the only file system that can be used with the product's stand-alone printing functions. Operation is not guaranteed when any other file system is used. The file system used by the card reader function depends on the host's specifications. For a detailed description of the DCF specifications, see "Design Rule for Camera File System Standard, DCF Version 2.0, JEIDA-CP-3461".

1.5.1.2 Media Format

- ☐ Media must be formatted according to DCF Version 1.0 or 2.0 standard.
- ☐ DOS FAT formats (FAT12, FAT16) and single partition (basic partition)

1.5.1.3 File Formats

The file formats supported by the product are described below.

- ☐ JPEG files (*.JPG)
These are photo data files that comply with the Exif Version 2.21. (Exif version 1.0/2.0/2.1/2.2/2.21)
- ☐ Camera specification files (*.MRK)
These are definition files used when in camera specification mode. An "AUTOPRINT.MRK" file whose full path name is no longer than 32 characters is valid.

Note, however, any file that is saved in the following directories or their sub-directories cannot be included as files to be printed.

- ☐ Directories containing system properties or hidden properties
- ☐ Directories that contain any double-byte characters in the directory name
- ☐ "RECYCLED": Windows directory for deleted files
- ☐ "PREVIEW": Directories containing CASIO's DSC thumbnail images
- ☐ "SCENE": Directories containing data for CASIO's DSC Best Shot function
- ☐ "MSSONY": Directories containing SONY's DSC e-mail image data, voice memos, video files, or non-compressed images
- ☐ "DCIM\ALBUM\IMAGE": Directories containing CASIO's DSC album data save directory.

1.5.1.4 Valid Image Size

The maximum image size handled by the product is:

- ☐ Horizontal: $80 \leq X \leq 9200$ (pixels)
- ☐ Vertical: $80 \leq Y \leq 9200$ (pixels)

1.5.1.5 Maximum Number of Photo Data Files

The product can handle up to 999 photo data files. If the amount of photo data to be recorded exceeds the capacity of one memory card, the product uses file sorting rules to sort the photo data into valid photo data in frames numbered from 1 to 999.

Although it is possible to print photo data files with frame numbers over 999 that have been specified for printing by camera specification files, the maximum number of frames that can be specified is 999 frames.

If you insert a memory card that contains over 999 photo data files, only files up to 999 will be printed by the "Print All" or "Print index sheet" functions.

1.5.1.6 Thumbnail Image Data

The product handles thumbnail image data in the DCF Version 1.0 or 2.0 format (Exif format, 160 x 120 pixels).

During the product's Index Sheet and memory card printing modes, the layout is 80 thumbnails per sheet (when using plain paper or special paper in high-speed print mode).

1.5.1.7 File Sorting

The product stores all photo data files in the memory, using the photo data files' full-path file names (for example, "\CIM\100EPSON\EPSN0000.JPG"), and assigned photo frame numbers. Since photo frame numbers are assigned based on the product's own proprietary file sorting rules, the assigned frame numbers do not necessarily match those indicated by digital cameras.



1.5.1.8 File Sorting Rules

The product sorts photo data files based on the following prioritization rule.

- File name is sorted in ASCII order as full path name.

NOTE: Sorting results are not guaranteed if two files have the same full-path file names. (The same full-path file names are not allowed under the DOS specification.)

1.5.1.9 Rules for Acquisition of Date/Time Data

The following priorities are used to fetch date and time information from photo data files.

1. Date/time data that complies with the standard format (Exif) for digital cameras
2. Date/time data that complies with the DOS standard file system (file time stamps)
3. Fixed values (01/01/1980, 00:00:00)

Note that the date/time data assigned to individual photo data files does not necessarily match the date/time when the photo was actually taken. The photo date/time may be modified due to the digital camera's calendar settings (presence/absence of functions, incorrect date/time settings, etc.), processing of the photo data after the photo was taken, or subsequent saving of data. In such cases, the product performs the relevant processing based on the most recently modified date/time data.

1.5.1.10 Number of Sheets which can be Printed in Total

Up to 99 images stored on a card can be printed continuously and up to 99 copies of each image can be specified.

1.5.2 Functions

1.5.2.1 List of Functions

The memory card print menu and its settings are listed in the following table.

The values shown in this table indicate the total number of options and the number of pages or copies that can be printed consecutively.

Table 1-35. List of Functions

Memory card printing	Mode selection	Layout	Paper type	Paper size	Copies/ image
Print index sheet	Print Index Sheet	None	Plain Paper	1	1
Print from index sheet	Print From Index Sheet	• Standard • Borderless	• Plain Paper • Photo Paper	2	1 to 3 (according to marking)
Print all images	Print All / DPOF	• Standard • Borderless	• Plain Paper • Photo Paper	2	1
DPOF *	Print All / DPOF	• Standard • Borderless	• Plain Paper • Photo Paper	2	1 to 99

Note *: It is available only DPOF file exists in the memory card.

Note : “Print index sheet” will be selected as default function of Memory Card Print. But when DPOF file exists in the memory card, “Print All / DPOF” will be selected as default and DPOF print can be done easily.



1.5.2.2 Memory Card Printing Mode

- ☐ Print index sheet printing
This function prints thumbnail images (stored in the memory card) onto an Index Sheet (form) for selecting images to be printed.
The combinations of paper types and paper sizes are fixed as shown right.
- ☐ Print from index sheet printing
This function prints images selected using the Index Sheet.
- ☐ Print all images
This function prints all images up to 999 stored in the memory card. The number of copies per image is fixed to one.
- ☐ DPOF printing
In this mode, the photo frame numbers previously specified via the camera are printed in the number of pages specified via the camera. Only the paper type and layout are specified on the printer side. If the layout assigned multiple photos per output sheet, photos that have different frame sizes are automatically assigned in the specified number of pages in numerical order (of the specified photo frame numbers). If index print mode was set via the camera, the product will print in DPOF index layout. (When in DPOF print mode, the mode cannot be switched by writing the print file specification from the host after inserting the memory card.)

Table 1-36. Memory Card Printing Mode

Setting	Memory card printing mode	Description	Option, setting range, etc.
Layout (no menu)	<ul style="list-style-type: none"> Print from index sheet printing Print all images DPOF printing 	Sets print layout	Fixed in combination with paper type and paper size (refer to “1.5.4 Layout and Paper Type, Paper Size” (p.38))
Paper type	Print index sheet printing	Fixed	Plain Paper
	<ul style="list-style-type: none"> Print from index sheet printing Print all images DPOF printing 	Sets paper type	Plain Paper or Photo Paper
Paper size	Print index sheet printing	Fixed	A4 or Letter
	<ul style="list-style-type: none"> Print from index sheet printing Print all images DPOF printing 	Sets paper size	A4, 10cm x 15cm, or 13cm x 18cm Letter, 4" x 6", or 5" x 7"
Pages/copies	Print index sheet printing	Fixed	Fixed as 1 page (can vary according to the number of image files)
	Print from index sheet printing	Sets number of printout	1 to 3 (set by the marking to the index sheet)
	Print all images	Sets number of printout	1
	DPOF printing	Sets number of printout	The number of copies specified via the camera is used. The setting range is 1 to 99 copies (default is 1 copy).
Quality	Print index sheet printing	Fixed	Prints it by the quality of 360 x 720dpi of Plain Paper. Only the Color print is supported.
	<ul style="list-style-type: none"> Print from index sheet printing Print all images DPOF printing 	Sets print quality	Fixed according to paper type (refer to “1.5.9 Relation between Paper Type and Quality” (p.43))

Note : Letter, 4" x 6", 5" x 7": for EAI
A4, 13x18, 10x15: for Asia, Pacific



1.5.3 Index Sheet

- ☐ 30 thumbnail images are assigned per index sheet.
- ☐ There are three marking areas for each thumbnail and you can set the number of copies up to three.
- ☐ “Paper type” and “Paper size” can be set from the control panel.
- ☐ The layout is fixed according to the paper type and it is not indicated on the sheet. (Refer to “1.5.4 Layout and Paper Type, Paper Size” (p.38))
- ☐ Images are arranged on the Index Sheet in ascending order (of image file number). (Refer to “1.5.1.7 File Sorting” (p.32) and “1.5.1.8 File Sorting Rules” (p.33))
- ☐ Index Sheet will be printed from the last page, in descending order. (The sheet containing first thumbnail comes top of printouts.)
- ☐ When “Print index sheet” is complete successfully, the unit automatically switched to “Print from index sheet” function.



Figure 1-12. Sample of Index Sheet

1.5.3.1 Rules for Scanning Index Sheets

□ Index Sheet scan range

■ Setting an index sheet in scanner

- Place the sheet face down on the scan bed as described below.
Align the corner of the sheet to the upper left origin point on the scan bed and make sure the sheet is not skewed. Skewed sheet is allowed as long as the sheet remains within the scan bed's scan range (the maximum skewing angle is about 2.8°).
- The cover must be closed on the original to enable scanning. (This is to prevent any shifting of the position marks while scanning).
- Do not use paper that allows images to “bleed through” to the rear side. (This is to prevent empty bubbles from being filled in by “bleed-through”).

■ Set scan area and original

Table 1-37. Set Scan Area and Original

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

Place the Index Sheet face down with its top edge aligned to the left edge of the scan bed, and with the corner of the paper set to the original's top left position.

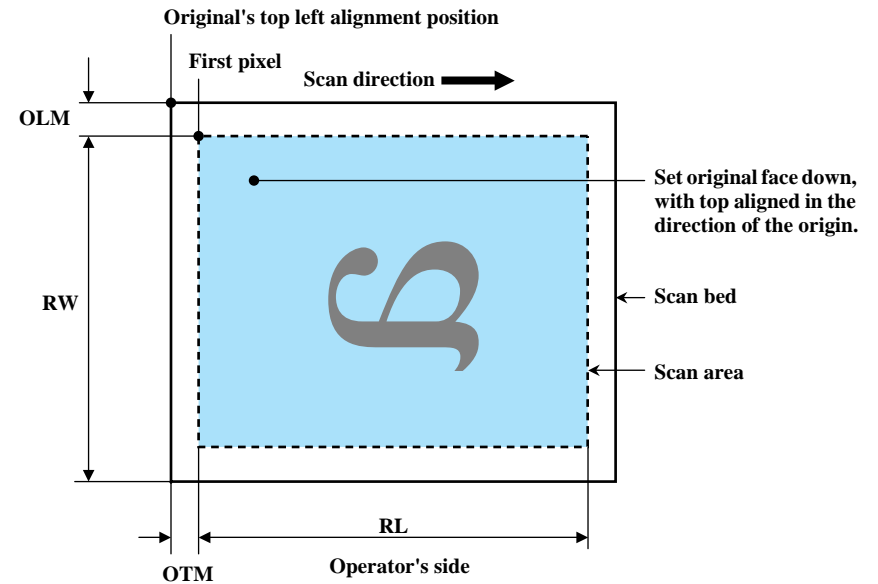


Figure 1-13. Set Scan Area and Original

□ Basic specifications for scanning of index sheets

■ Scanning rules for index sheet

The existence of the following recognition factors is judged using the image pattern matching. (Image is binary.)

Table 1-38. Symbols Check

Position mark	Image	Description	Remarks
Left and right edges (1 each)		Reference point for index marks	NG if dirty (not scannable)
Block codes (30)	■	Sheet information (memory card ID, page)	NG if dirty (not scannable)
Image marks (30 x 3)	●	Determines whether or not to print pixel	Use at least one of these marks
Paper type/Paper size (6)	●	Select paper	NG if dirty (not scannable)
Layout (2)	●	Select layout	NG if dirty (not scannable)
Date format	●	Date format On/Off	Optional

- When two or three marks of one image are filled, larger number will be used for the number of copies. (ex. 1 and 3 are filled, number of copies is 3.)
- When the optional “ALL” mark is filled, all images in the sheet will be printed one by one regardless of each image mark is filled or not.
- Index Sheet error will be caused when any of image mark or “ALL” mark is not filled.
- Index Sheet error will be caused when “Left and right edges”, “Right top EPSON” and “Block codes” are not found correctly due to something like smear.
- Place the index sheet so that the “Left top triangle” can meet the left top corner of the scanner.

<OK/NG mark samples>

- The marks can be recognized if 50 % or more portion of each of them is filled.
- For running out and excessive marking out, the two white/black search patterns shown above are superimposed on the mark, and judgment is made according to this matching ratio. The judgment criteria is as follows.
Black matching: 80 % or more White matching: 50% or more.

■ Errors during scanning or printing of index sheets

- Stops scanning and returns to the menu screen if the card is removed while an index sheet is being scanned or printed.
- Index Sheet error (No index sheet) is displayed if the sheet cannot be scanned because it is dirty, set backwards, etc.
- Index Sheet error (Incorrect marking) is displayed if the image bubbles cannot be read because they are not filled in correctly.
- Index Sheet error (Incorrect card) is displayed if, after printing an index sheet, you try to print from a non-matching memory card, such as a different (replacement) card or a re-edited version of the same card.

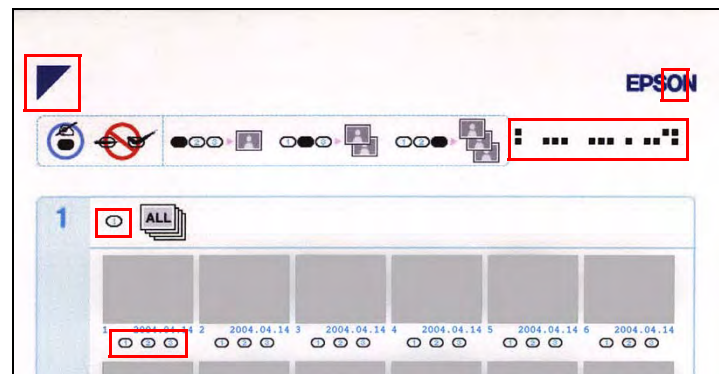


Figure 1-14. Symbols Check

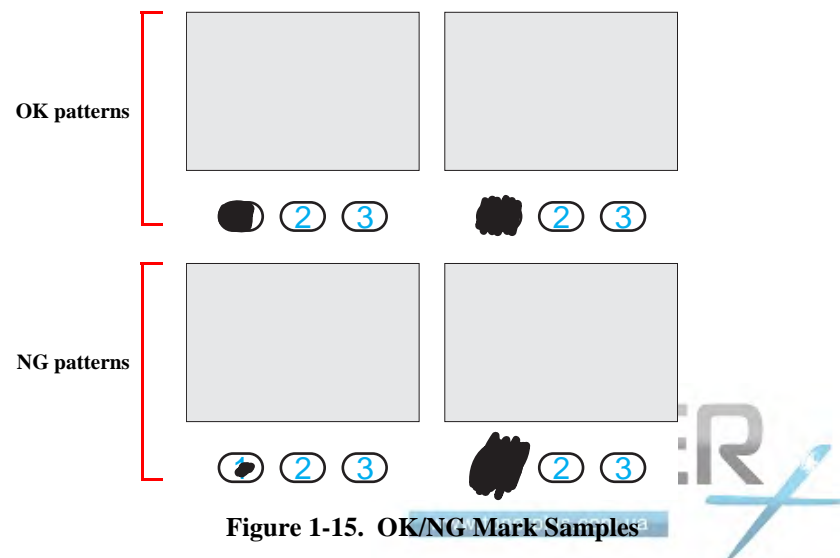


Figure 1-15. OK/NG Mark Samples

1.5.4 Layout and Paper Type, Paper Size

The layout/paper type and size combinations that can be selected are listed below.

Table 1-39. Layout and Paper Type, Paper Size

Layout	Paper type	Paper size	Description
Borderless	Photo Paper	Letter, 4 x 6, 5 x 7	Prints with no margins along top, bottom and both sides
1-up with borders	Plain Paper	Letter, 4 x 6, 5 x 7	Prints with 3 mm margins along top, bottom and both sides
20-up	—	4 x 6	Prints 20 frames per page, laid out in 5 columns and 4 rows (For DPOF index print only)
30-up	—	5 x 7	Prints 30 frames per page, laid out in 6 columns and 5 rows (For DPOF index print only)
80-up	—	4 x 6, 5 x 7	Prints 80 frames per page, laid out in 10 columns and 8 rows (For DPOF index print only)

1.5.5 Options

The functions below will be available by marking to options on the index sheet.

- ☐ Prints all photos one by one shown on the index sheet.

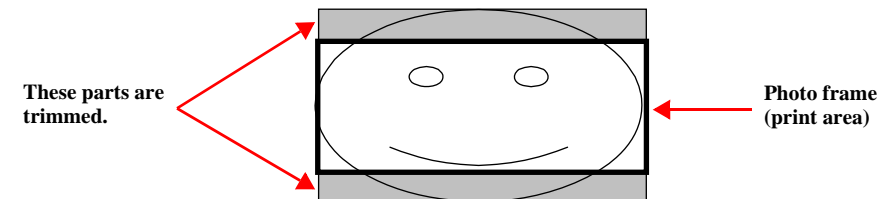
1.5.6 Trimming Function

A trimming function is provided as a means of coordinating photo data with the types of photo frames handled by the product. This function is always activated so that printing photo data is in shapes that fit these photo frames.

This function is described briefly below.

The printed photo frame and the photo to be printed are matched in length along one side and the photo is resized along the perpendicular side to fit the frame on that side. Any part of the photo that does not fit within the photo frame is trimmed away (not printed).

- ☐ The image below shows an example in which the photo data is aligned vertically with the photo frame.



- ☐ The image below shows an example in which the photo data is aligned horizontally with the photo frame.

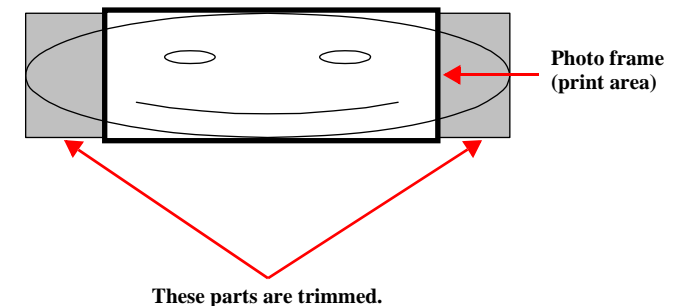


Figure 1-16. Trimming Function

1.5.7 Assignment Rules for Photo Frame Numbers and Rotation

The rules concerning photo frame numbers that are referred to when assigning photos are described below. The numbers shown in each diagram and photo frame below indicate the photo frame numbers used for various types of layout.

The direction of the number shown in each photo frame matches the direction of the printed photo to which the horizontal photo data was allocated. When there are more pixels vertically than horizontally, the vertical photo data is allocated instead, and the number shown in the figure below is then rotated 90° before being printed.

In Index printing mode, the numbers are printed as they are shown below, regardless of the shape of the photo data. However, when the photo data has an equal number of pixels vertically and horizontally the photos are printed without rotation, regardless of the layout. (Note: the vertical photo data refers to when the photo data file itself is set for a vertical (portrait) orientation. Photo data is defined as the vertical photo data if it is taken by a digital camera with a portrait position detecting function.)

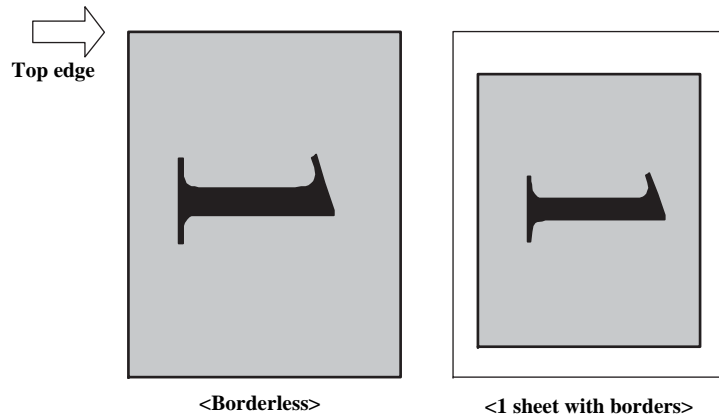


Figure 1-17. Assignment Rules for Photo Frame Numbers and Rotation (1)

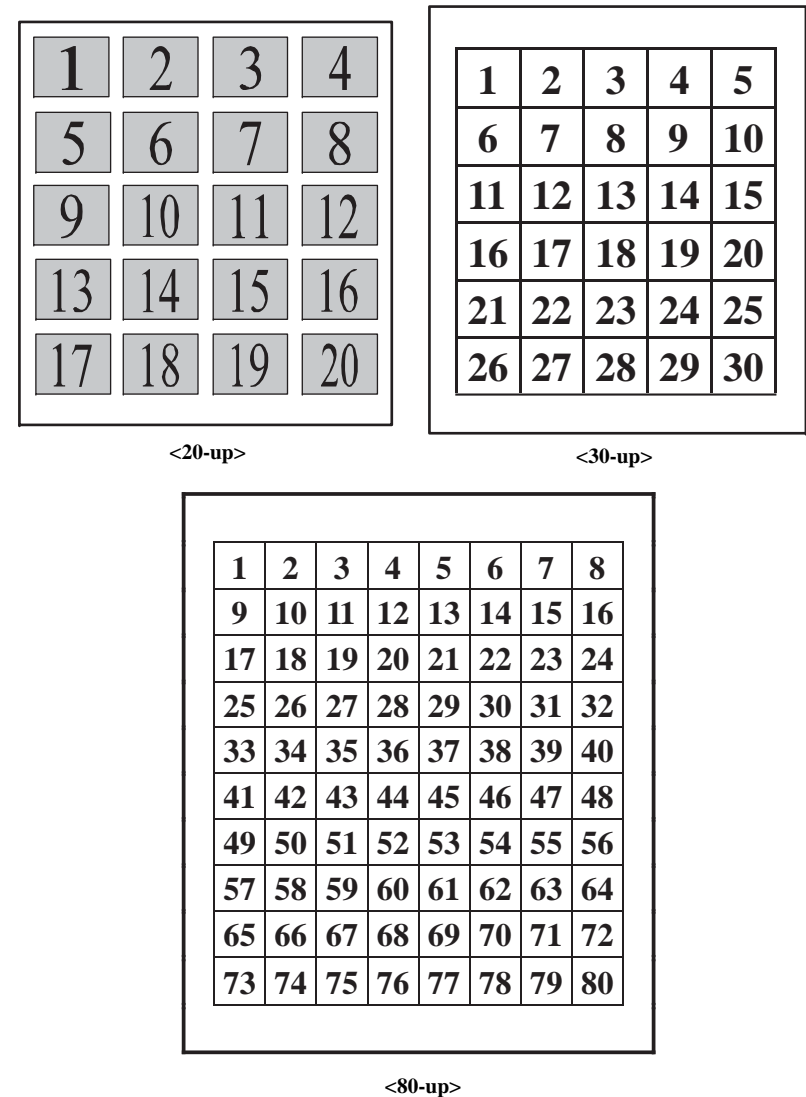


Figure 1-18. Assignment Rules for Photo Frame Numbers and Rotation (2)

1.5.8 Layout Drawings

1.5.8.1 Borderless

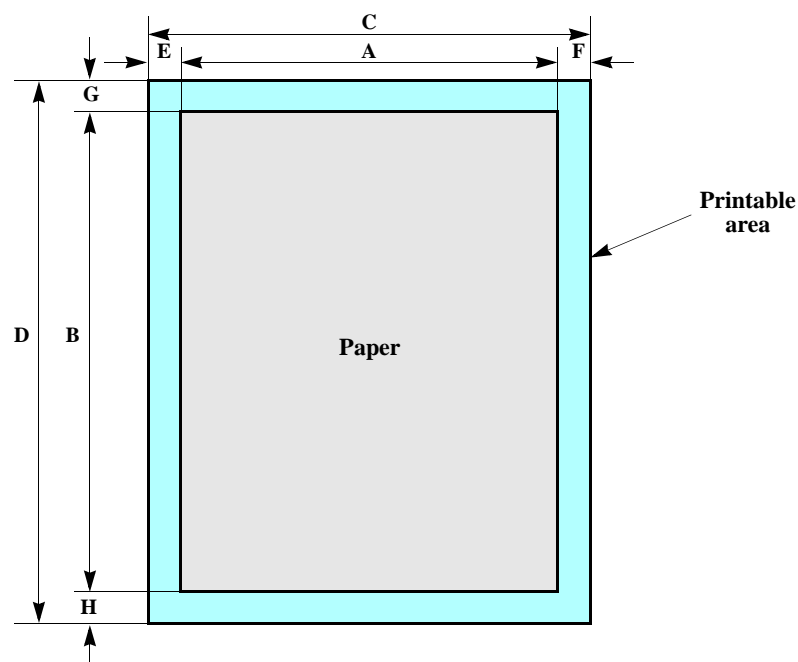


Figure 1-19. Borderless

Table 1-40. Borderless (unit: mm (inch))

Paper type	A	B	C	D	E	F	G	H
Letter	215.90 (8.50)	279.40 (11.00)	220.98 (8.70)	287.53 (11.32)	2.54 (0.10)	2.54 (0.10)	2.96 (0.12)	4.02 (0.16)
4" x 6"	101.60 (4.00)	152.40 (6.00)	106.68 (4.20)	160.53 (6.32)	2.54 (0.10)	2.54 (0.10)	2.82 (0.11)	3.60 (0.14)
5" x 7"	127 (5.00)	178 (7.00)	132.08 (5.20)	186.04 (7.32)	2.54 (0.10)	2.54 (0.10)	2.96 (0.12)	4.02 (0.16)
A4	210	297	215.08	305.04	2.54	2.54	2.96	4.02
10 x 15	101.60	152.40	106.68	160.53	2.54	2.54	2.82	3.60
13 x 18	127	178	132.08	186.04	2.54	2.54	2.96	4.02

Note : Letter, 4" x 6", 5" x 7": for EAI
 A4, 13x18, 10x15: for Asia, Pacific

1.5.8.2 1-up with Borders

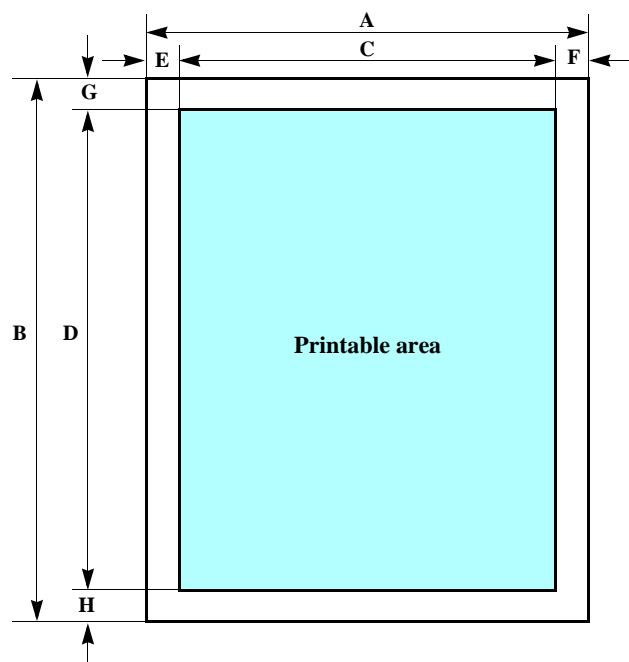


Figure 1-20. 1-up with Borders

Table 1-41. Borderless (unit: mm (inch))

Paper type	A	B	C	D	E	F	G	H
Letter	215.90 (8.50)	279.40 (11.00)	209.90 (8.26)	273.40 (10.76)	3.00 (0.12)	3.00 (0.12)	3.00 (0.12)	3.00 (0.12)
4" x 6"	101.60 (4.00)	152.40 (6.00)	95.60 (3.76)	146.40 (5.76)	3.00 (0.12)	3.00 (0.12)	3.00 (0.12)	3.00 (0.12)
5" x 7"	127.0 (5.00)	178.0 (7.00)	121.0 (4.76)	172.0 (6.76)	3.00 (0.12)	3.00 (0.12)	3.00 (0.12)	3.00 (0.12)
A4	210	297	204	291	3.00	3.00	3.00	3.00
10 x 15	101.60	152.40	95.60	146.40	3.00	3.00	3.00	3.00
13 x 18	127.0	178.0	121.0	172.0	3.00	3.00	3.00	3.00

Note : Letter, 4" x 6", 5" x 7": for EAI
 A4, 13x18, 10x15: for Asia, Pacific

1.5.8.3 20-up

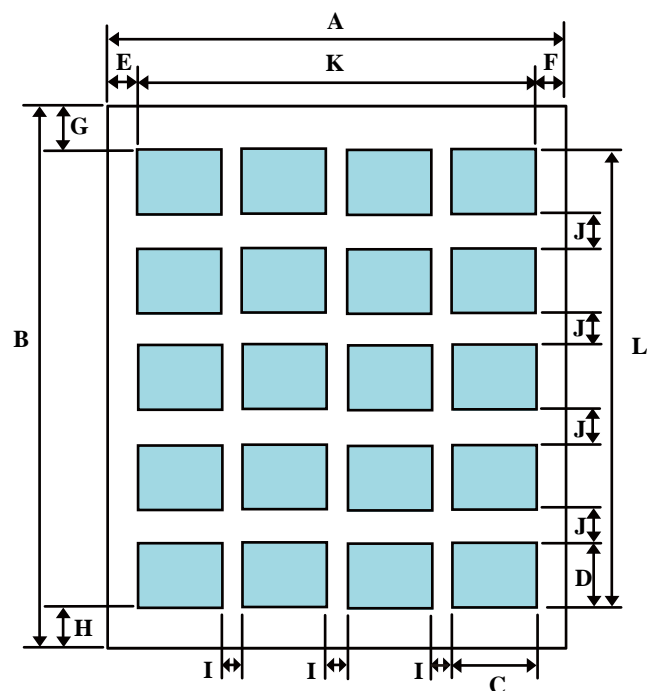


Figure 1-21. 20-up

Table 1-42. 20-up (unit: mm (inch))

Paper type	A	B	C	D	E	F	G	H	I	J	K	L
4" x 6"	101.60 (4.00)	152.40 (6.00)	20.00 (0.79)	20.00 (0.79)	6.10 (0.24)	6.30 (0.25)	19.80 (0.78)	20.30 (0.80)	3.00 (0.12)	3.00 (0.12)	89.30 (3.52)	112.30 (4.42)
10cm x 15cm	101.60	152.40	20.00	20.00	6.10	6.30	19.80	20.30	3.00	3.00	89.30	112.30

Note : Letter, 4" x 6", 5" x 7": for EAI
 A4, 13x18, 10x15: for Asia, Pacific

1.5.8.4 30-up

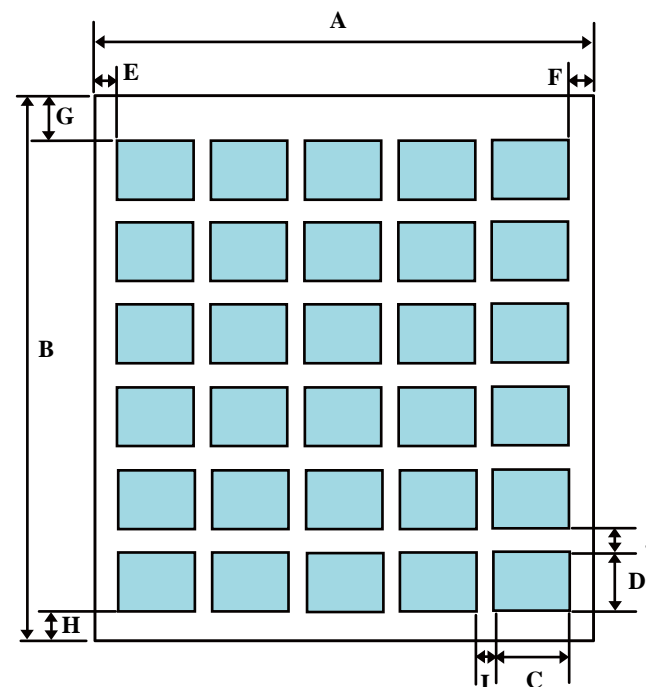


Figure 1-22. 30-up

Table 1-43. 30-up (unit: mm (inch))

Paper type	A	B	C	D	E	F	G	H	I	J
5" x 7"	127.00 (5.00)	178.00 (7.00)	20.0 (0.79)	20.0 (0.79)	4.5 (0.18)	4.5 (0.18)	14.0 (0.55)	14.0 (0.55)	4.5 (0.18)	6.0 (0.24)
13 x 18	127.00	128.00	20.0	20.0	4.5	4.5	14.0	14.0	4.5	6.0

Note : Letter, 4" x 6", 5" x 7": for EAI
 A4, 13x18, 10x15: for Asia, Pacific

1.5.8.5 80-up

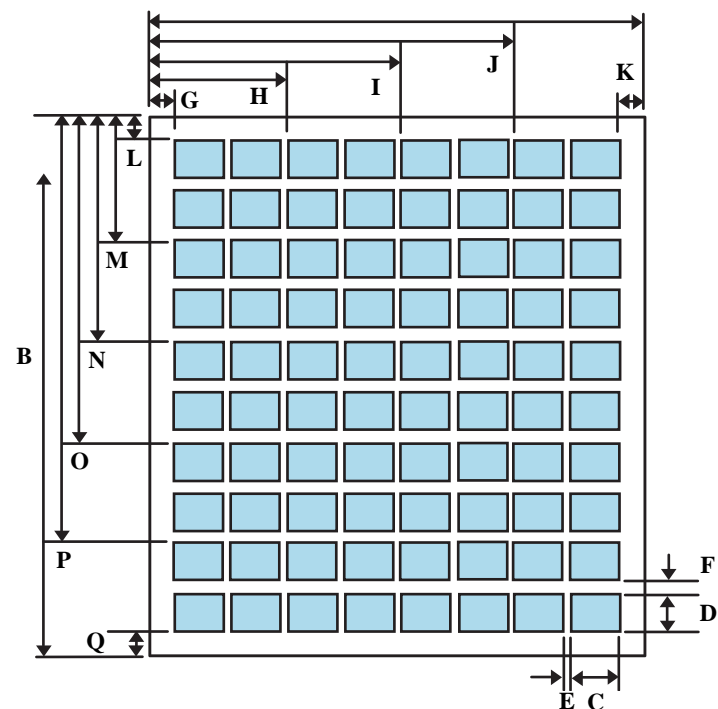


Figure 1-23. 80-up

Table 1-44. 80-up (unit: mm (inch))

Paper type	A	B	C	D	E	F	G	H	I
Letter	215.90 (8.50)	279.40 (11.00)	20.07 (0.79)	20.07 (0.79)	6.10 (0.24)	6.10 (0.24)	6.35 (0.25)	58.67 (2.31)	111.00 (4.37)
A4	210.0	297.0	20.0	20.0	2.0	5.0	18.0	62.0	106.0

Paper type	J	K	L	M	N	O	P	Q
Letter	163.32 (6.43)	6.35 (0.25)	11.94 (0.47)	64.26 (2.53)	116.59 (4.59)	168.91 (6.65)	221.23 (8.71)	11.94 (0.47)
A4	150.0	18.0	26.0	76.0	126.0	176.0	226.0	26.0

1.5.9 Relation between Paper Type and Quality

In this mode, printing is always in color (CMYK), not black ink only.

Table 1-45. Relation between Paper Type and Quality

Paper type	Print resolution (H x V dpi)	Dot size	MW	LUT
Plain Paper	720 x 720	VSD3	On	1
Photo Paper	1440 x 720	VSD3	On	2
Index Sheet (Plain Paper)	360 x 720	VSD1	On	4



1.6 Fax Function

1.6.1 Basic Specifications

☐ Scan

Item		Description
Resolution	B/W	Standard (204 dpi x 98 dpi) as a threshold
		Fine (204 dpi x 196 dpi) as a threshold
		Photo (204 dpi x 196 dpi) with error diffusion
	Color	200 dpi x 200 dpi
Contrast		Three levels
Scan size		Fixed to 216 mm x 297 mm
Maximum scan size		2.3 Mbyte

☐ Dialing

Item	Description
Speed dial	60 entries
Direct dial	64 digits
Redial	Attempt: Fixed to two times
Interval	Fixed to one minute
Buffer	Last one number
Dial mode	Tone/Pulse

Note : The product does not support PBX.

☐ Print

Item	Description
Fax header	Prints max. 28 digits* ¹ . a-z, A-Z, 1-9, 0, space, @ . _ - & / : ; , ? * () ' = + # ! % ~
Paper size	Letter/A4/Legal
Paper type	Fixed to plain
Automatic reduction* ²	Supported (either On or Off can be selected.)
Backup fax reception and reprint* ^{3*4}	Yes (prints all pages in memory)
List	Last transaction (off/send error/every send) Power fail report Fax log (last 30 transactions) Speed dial list
Size mismatch	Print (the data is printed on the current paper)* ⁵
Footer	No

Note *1: Excluding phone number (20 digits).

*2: When automatic reduction is set to on, data whose size is larger than that of the paper will automatically be reduced so that the longer side of data fits the longer side of the paper. Its horizontal to vertical ratio will be maintained.

*3: Received fax data (oldest data) may be deleted in the following cases:

- When scanning for fax.
- When printing fax report (including fax log, last transmission, and speed dial list).
- When incoming call is detected. (The memory (100 Kbyte) is used to monitor the telephone line for 60 seconds after the incoming call is detected.)
- When new fax data is received.
- When reprinting data stored in the memory. (Backup data is duplicated when reprinted.)

*4: When the unit is turned off, backup data will be lost.

*5: After printing, the message that asks the user whether to reprint or not (Reprint fax? 1:Y 2:N) appears on the LCD display.



☐ Transmission

Item	Description
Color	Direct transmission
Monochrome	Memory transmission
Multi-page	100 pages
Manual send/receive	Supported

☐ Communication

Item	Description
Region	US/Canada/Mexico/Australia/Taiwan
ECM*1	Supported (either On or Off can be selected.)
Supported fax standard	G3/Super G3
Transmission and modulation method	V.17/V.34
Transmission speed*2	33600/26400/21600/14400/12000/9600/7200/4800/ 2400 bps
Codec	B/W MMR, MR, MH
	Color Jpeg

Note *1: When ECM is off, V.34 is also set to off. In color mode, ECM automatically turns to on.

*2: The transmission speed is determined automatically by negotiating with the other party according to the fax protocol.

☐ Answering

Item	Description
Auto answer	On/Off by answer mode button
DRD	All/Single/Double/Triple*
TAM I/F	Yes

Note *: Ringer patterns of each setting are described below:

- Single: 2 sec (1.75sec ~ 2.5 sec) ON / 4 sec (3.55 sec ~ 4.45 sec) OFF, then repeat.
- Double: 0.8 sec (0.65 sec ~ 0.95 sec) ON / 0.4 sec (0.35 sec ~ 0.5 sec) OFF / 0.8 sec (0.65 sec ~ 0.95 sec) ON / 4 sec (3.55 sec ~ 4.45 sec) OFF, then repeat.
- Triple: 0.4 sec (0.35 sec ~ 0.5 sec) ON / 0.2 sec (0.13 sec ~ 0.28 sec) OFF / 0.4 sec (0.35 sec ~ 0.5 sec) ON / 0.2 sec (0.13 sec ~ 0.28 sec) OFF / 0.8 sec (0.65 sec ~ 0.95 sec) ON / 4 sec (3.55 sec ~ 4.45 sec) OFF, then repeat.
- Double & Triple
0.8 sec (0.65 sec ~ 0.95 sec) ON / 0.4 sec (0.35 sec ~ 0.5 sec) OFF / 0.8 sec (0.65 sec ~ 0.95 sec) ON / 4 sec (3.55 sec ~ 4.45 sec) OFF / 0.4 sec (0.35 sec ~ 0.5 sec) ON / 0.2 sec (0.13 sec ~ 0.28 sec) OFF / 0.4 sec (0.35 sec ~ 0.5 sec) ON / 0.2 sec (0.13 sec ~ 0.28 sec) OFF / 0.8 sec (0.65 sec ~ 0.95 sec) ON / 4 sec (3.55 sec ~ 4.45 sec) OFF, then repeat.

☐ Memory

Item	Description
Memory size for fax processing	3.5 Mbyte (SDRAM)

Note : The memory for fax processing is used to scan data for fax, print fax data or report, monitor the telephone line, and back up received fax data.



1.7 Control Panel

1.7.1 Buttons

The control panel contains 24 buttons. The buttons are the following 12 buttons and a numeric keypad, which are used to set and execute various operations. All of them are non-lock type buttons.

Table 1-46. Buttons

Button	Function
Power Button	Execute turning on/off the product.
Setup Button	Make transition from other modes to "Setup mode".
Memory Card Button	Make transition from other modes to "Memory Card mode" and selects one of card print mode.
Copy Button	Make transition from other modes to "Copy mode" and sets number of copies.
FAX Button	Make transition from other modes to "FAX mode".
Paper Type Button	Fax mode/Setup mode: Moves the cursor on the panel display (Up or Left). Rest: Select paper type.
Paper Size Button	Fax mode/Setup mode: Moves the cursor on the panel display (Right or Down). Rest: Select paper size.
Answer Button	Fax mode: Space key Rest: Selects one of Answer mode.
Pause/Redial Button	Call of Redial number or "Pause" input
B&W Start Button *1	Start monochrome copy.
Color Start/OK Button	Start card print or color copy.
Cancel/Back Button	Stop job of copying or printing or sometimes work as shift button.

Note *1: B&W means "Black and White".

Refer to "1.7.3.1 Stand-alone Copy / Memory Card Print / FAX / Setup" (p.48) for details about each button.

1.7.2 Indicators

The control panel contains following LCD (1 line x 16 characters) and 10 LEDs, which are used to indicate various status.

Table 1-47. Indicators

LED	Function
Power LED [Green] *1	Light at stand-by. Blink while some operation is proceeding.
Copy LED [Green] *2	Lights while Copy function is ready or proceeding.
Memory card LED [Green] *2	Lights while Memory Card function is ready or proceeding.
Fax LED [Green] *2	Lights while Fax function is ready or proceeding.
Paper Type LED 1,2	Light one of them showing which paper type below is selected.
1 st [Green]	Plain Paper
2 nd [Green]	Photo Paper
Paper Size LED 1,2	Light one of them showing which paper size below is selected.
1 st [Green]	Letter
2 nd [Green]	5" x 7"
3 rd [Green]	4" x 6"
Card Access LED [Green] *3	Light when available memory card is in a slot. Blink when accessing to the card.

Note *1: All LEDs except for Power LED will be turned off while printing or scanning by PC.

*2: Under the button.

*3: This LED is located near the card slot, not on the control panel.

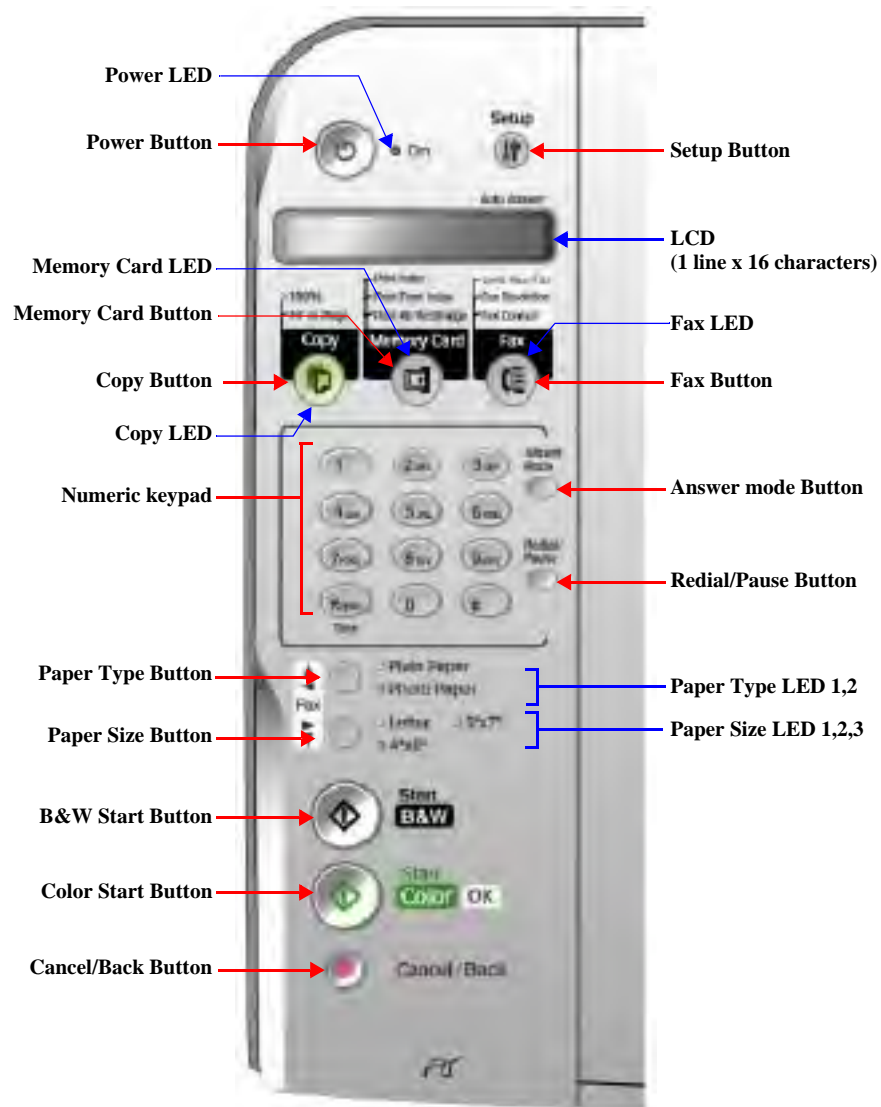


Figure 1-24. Control Panel

1.7.3 Operations

1.7.3.1 Stand-alone Copy / Memory Card Print / FAX / Setup

The functions of the product caused by each button in stand-alone copy mode, memory card print mode, FAX mode or Setup mode are described in the following table.

Table 1-48. Operations

Button	Function			
	Stand-alone Copy	Memory Card Print	FAX mode	Setup mode
Power Button	<ul style="list-style-type: none"> Turn on or off the product. 			
Setup Button	<ul style="list-style-type: none"> Make transition from the current mode to "Setup" mode. When in idling mode, paper error, or ink low state; Head cleaning will start. If there is not enough ink remains, head cleaning will not start. When in idling mode, paper error, ink low, or ink end state; The carriage moves to the ink exchange position. Once the cartridge is replaced, press the "OK" button to start charging the ink. 			
	<ul style="list-style-type: none"> Change to next "Setup" function. <input type="checkbox"/> Case <ul style="list-style-type: none"> [Load/Eject] Change to "Ink Levels". [Ink Levels] Change to "Nozzle check". [Nozzle check] Change to "Head cleaning". [Head cleaning] Change to "Replace Ink". [Replace Ink] Change to "Head alignment". [Head alignment] Change to "Language". [Language] Change to "Beep". [Beep] Change to "Load/Eject". 			
	<ul style="list-style-type: none"> Invalid during printing, scanning, head cleaning, exchanging ink cartridges, and in error status (except for ink error and paper out error). 			
Copy Button	<ul style="list-style-type: none"> Setting ON/OFF of Fit to Page. At the time of factory shipments: OFF. Henceforth, a power supply OFF, a mode change, and a copy start are memorized and it can be used continuously. Usually, in the time of a power supply OFF, a mode change, and a copy start, a setting is memorized as an object for copy modes. It does not update and memorize at the time of a power down. Make transition from the current mode to "Stand-alone copy" mode and set number of copies to "1". 			
	<ul style="list-style-type: none"> Invalid during printing, scanning, head cleaning, exchanging ink cartridges, in error status, and when the printer has a print job. 			



Table 1-48. Operations

Button	Function			
	Stand-alone Copy	Memory Card Print	FAX mode	Setup mode
Memory Card Button	<ul style="list-style-type: none"> Make transition from “Stand-alone Copy” mode to “Memory Card Print” mode, and a setting is memorized as an object for copy modes 	<ul style="list-style-type: none"> Change to next “Memory card print” function. <ul style="list-style-type: none"> □ Case <ul style="list-style-type: none"> ■ [Print Index Sheet] Change to “Print from Index Sheet”, and change paper type and paper size to the one last set in “Print from Index Sheet” or “Print All / DPOF”. ■ [Print from Index Sheet] Change to “Print All / DPOF”. ■ [Print All / DPOF] Change to “Print Index Sheet”, and change paper type and paper size to “Plain Paper” and “Letter (or A4)”. 	<ul style="list-style-type: none"> Make transition from “Fax” mode to “Memory Card Print” mode. 	<ul style="list-style-type: none"> Make transition from “Setup” mode to “Memory Card Print” mode.
	<ul style="list-style-type: none"> Invalid while printing, scanning, head cleaning, stopping printing or copying, exchanging I/C, or in error status except for memory card error and index sheet error. 			
Fax Button	<ul style="list-style-type: none"> Make transition from other modes to “Fax” mode. 		<ul style="list-style-type: none"> Change to next “Fax” function. <ul style="list-style-type: none"> □ Case <ul style="list-style-type: none"> ■ [Send/Rec. Fax] Change to “Fax Resolution” ■ [Fax Resolution] Change to “Fax Contrast” ■ [Fax Contrast] Change to “Send/Rec. Fax” 	<ul style="list-style-type: none"> Make transition from “Setup” mode to “Fax” mode.
Numeric Keypad	<ul style="list-style-type: none"> Number of copies setting. Default: “1”. (It returns to “1” after job finish/Cancel and error release.) 	<ul style="list-style-type: none"> Jump to Menu No. 	<ul style="list-style-type: none"> For fax number For speed dial registration. For example, dial number, name 	<ul style="list-style-type: none"> Jump to Menu No.
Answer Mode Button*	<ul style="list-style-type: none"> Invalid during “Stand-alone Copy” mode and “Memory Card Print” mode. 		<ul style="list-style-type: none"> Space key 	<ul style="list-style-type: none"> Invalid during “Setup” mode.
Redial/Pause Button	<ul style="list-style-type: none"> Invalid during “Stand-alone Copy” mode and “Memory Card Print” mode. 		<ul style="list-style-type: none"> Redial Pause 	<ul style="list-style-type: none"> Invalid during “Setup” mode.
Paper Type Button	<ul style="list-style-type: none"> Alternate paper type of “Plain Paper” and “Photo Paper”. 	<ul style="list-style-type: none"> Alternate paper type of “Plain Paper” and “Photo Paper” which will be used in “Print from Index Sheet” or “Print All / DPOF”. Invalid in “Print Index Sheet”, and then it is fixed to “Plain Paper”. 	<ul style="list-style-type: none"> Menu Select: “▲” Backspace 	<ul style="list-style-type: none"> Menu Select: “▲”
	<ul style="list-style-type: none"> Invalid during printing, scanning, head cleaning, exchanging ink cartridges, in error status, and when the printer has a print job. 			

Table 1-48. Operations

Button	Function			
	Stand-alone Copy	Memory Card Print	FAX mode	Setup mode
Paper Size Button	<ul style="list-style-type: none"> • Alternate paper size of "Letter", "5" x 7" and "4" x 6". 	<ul style="list-style-type: none"> • Alternate paper size of "Letter", "5" x 7" and "4" x 6" which will be used in "Print from Index Sheet" or "Print All / DPOF". • Invalid in "Print Index Sheet", and then it is fixed to "Letter". 	<ul style="list-style-type: none"> • Menu Select: "▼" • The cursor moves to right 	<ul style="list-style-type: none"> • Menu Select: "▼"
	<ul style="list-style-type: none"> • Invalid while printing, scanning, head cleaning, stopping printing or copying, exchanging I/C, or in error status. 			
B&W Start Button	<ul style="list-style-type: none"> • Start monochrome copy. • When a copy start, a copy number of copies setting, paper type selection, paper size selection, and a setting of Fit to Page are updated and memorized. At the time of a copy end, it returns to a memorized panel setting. • When it becomes a paper out error in continuation copy mode, as a copy end, a paper out error is canceled automatically and changed into an Idle state. 	---	<ul style="list-style-type: none"> • Start monochrome Fax. 	---
	<ul style="list-style-type: none"> • It is error release & continuation processing during error generating. • Invalid during printing, scanning, head cleaning, exchanging ink cartridges, in error status, and when the printer has a print job. 			
Color Start Button	<ul style="list-style-type: none"> • Start color copy. • When a copy start, a copy number of copies setting, paper type selection, paper size selection, and a setting of Fit to Page are updated and memorized. At the time of a copy end, it returns to a memorized panel setting. • When it becomes a paper out error in continuation copy mode, as a copy end, a paper out error is canceled automatically and changed into an Idle state. 	<ul style="list-style-type: none"> • Start memory card print. • Works as the [OK] button when selecting menu. 	<ul style="list-style-type: none"> • Start color Fax. • Works as the [OK] button when selecting menu. 	<ul style="list-style-type: none"> • Works as the [OK] button when selecting menu.
	<ul style="list-style-type: none"> • It is error release & continuation processing during error generating. • Invalid during printing, scanning, head cleaning, exchanging ink cartridges, in error status, and when the printer has a print job. 			

Table 1-48. Operations

Button	Function			
	Stand-alone Copy	Memory Card Print	FAX mode	Setup mode
Cancel/Back Button	<ul style="list-style-type: none"> During printing, stop printing and cancel the job of printing/copy. It returns to a memorized panel setting without performing initialization of a panel setting at this time. The initial value at the time of a copy number of copies setting: Return a number of copies setting to one copy, and update and memorize a copy number of copies setting. When Cancel/Back SW is pushed while copying it, the rejection paper is done at the same time as canceling Job. 	<ul style="list-style-type: none"> During printing, stop printing and cancel the job of printing. It returns to a memorized panel setting without performing initialization of a panel setting at this time. 	<ul style="list-style-type: none"> When Stop SW is pushed while faxing it, the job is canceled. During settings of the fax and setup, when the Cancel/Back button is pushed, the menu is returned to 1 level upper menu. 	<ul style="list-style-type: none"> the menu is returned to 1 level upper menu.
	<ul style="list-style-type: none"> There is a paper, or when there may be a paper, ejects a paper. It is error release & printing stop & job cancellation at the time of error generating. 			
B&W Start Button + Stop Button	<ul style="list-style-type: none"> Start draft monochrome copy when "Plain Paper" and "Letter" are selected. Invalid while printing, scanning, cleaning head, stopping printing or copying, exchanging I/C, or in ink out error, or without "Letter" is selected. 		<ul style="list-style-type: none"> Invalid during "Fax" mode and "Setup" mode. 	
Color Start Button + Stop Button	<ul style="list-style-type: none"> Start draft color copy when "Plain Paper" and "Letter" are selected. Invalid while printing, scanning, cleaning head, stopping printing or copying, exchanging I/C, or in ink out error, or without "Letter" is selected. 		<ul style="list-style-type: none"> Invalid during "Fax" mode and "Setup" mode. 	

Note *: Answer mode can only be switched when the LCD display shows the first screen (HH:MM [Y/N]).



1.7.3.2 Memory Card Insertion/Ejection

The functions of the product caused by memory card insertion or ejection are described in the following table.

Table 1-49. Memory Card Insertion/Ejection

Action	Function
Card Insertion	<ul style="list-style-type: none"> Recognize the card and light Card Access LED if it is right. The LED blinks while accessing the memory card. The Power LED blinks during the card recognition. Return from the low power panel mode.
Card Ejection	<ul style="list-style-type: none"> Turn off Card Access LED. Stop print job while memory card print is in process and eject paper. Clear memory card error if memory card is wrong.

1.7.3.3 Low Power Panel Mode

Without any panel operation for 15 minutes while the printer and scanner unit are in standby status, the product moves into the low power panel mode in which power consumption for the panel decreases.

The product recovers from that mode by pushing any button but Power Button or printing/scanning by the computer.

The product is turned off by pushing Power Button in that mode.

Table 1-50. Low Power Panel Mode

Action	Function
Transition to low power mode	<ul style="list-style-type: none"> Turn off all LEDs except for Power LED and Card Access LED. Blink Decimal Point LED slowly. No move in error status except for memory card error and index sheet error. Ejecting of memory card or accessing it by PC has no effect on low power mode.
Recovery from low power mode	<ul style="list-style-type: none"> Recall the panel status as that before moving to low power panel mode. Inserting or ejecting of memory card or accessing it by PC has no effect on low power mode.

1.7.3.4 Maintenance Operation

☐ Nozzle Check Pattern Print

Nozzle check pattern can be printed only with the product. Remaining amount of ink of each color is also printed by the unit of 10%.

To activate this function, turn on the product while depressing Ink Button. After printing the pattern, the product moves to ordinary standby status.

The example of nozzle check pattern is explained below.

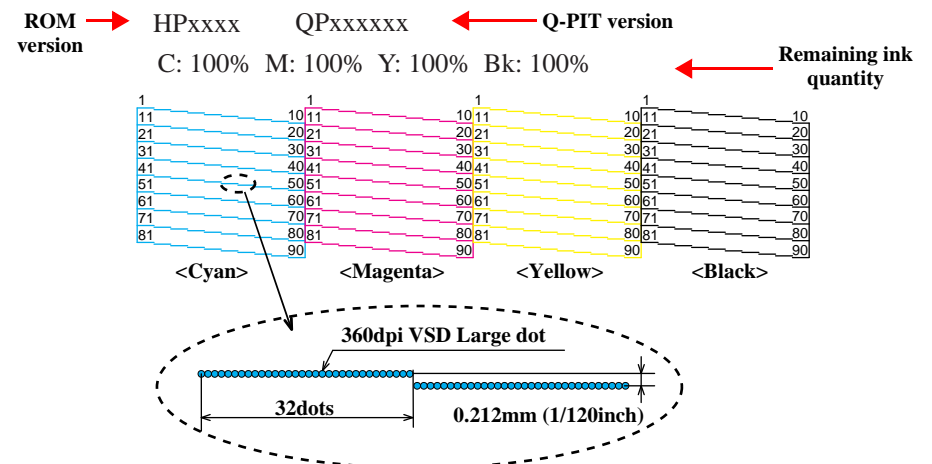


Figure 1-25. Nozzle Check Pattern

☐ Head cleaning

When head cleaning cannot be made due to an Ink low state / Ink out state / Ink cartridge less state, "Ink cartridge doesn't have enough ink for head cleaning." is displayed.

☐ Replace Ink

Printhead carriage moves to take the cartridge in disappearing to the ink exchange position. The ink charge begins when the OK button is pressed after ink cartridge is exchanged.

Moreover, When the ink cartridge is not exchanged, ink is not charged.

☐ Head alignment

Alignment adjustments can be made to maintain high print quality during bidirectional printing. This function can be used for basic adjustments.



- ☐ Supported paper size can be changed by pressing the copy button and other specified buttons. Simultaneously as shown in the table below.

Table 1-51. Maintenance Operation

Action	Function
B&W Start button with Paper Type and Paper Size buttons	<ul style="list-style-type: none"> • Setting is changed into A4 (Plain Paper) & 10 x 15cm (Real 4 x 6 inch/PGPP) by pressing this combination SW. • Invalid during printing, Scanning, head cleaning, Ink cartridge exchanging, error generating, and when it have a printing data. • All LEDs flash when the change is accepted.
Color Start button with Paper Type and Paper Size buttons	<ul style="list-style-type: none"> • Setting is changed into Letter (Plain Paper) & 4 x 6 inch (PGPP) by pressing this combination SW. • Invalid during printing, Scanning, head cleaning, Ink cartridge exchanging, error generating, and when it have a printing data. • All LEDs flash when the change is accepted.

1.7.3.5 Service Operation

Table 1-52. Service Operation

Action	Function
Any button with Power button	<ul style="list-style-type: none"> • Enter to maintenance setting mode. • Make all LED turn on for 1 second at the time of shift. • The contents of initialization when each SW is pressed are shown in the following clause. After initialization is usually started as the mode reflecting an initialized setting. • Usually return to the mode without initializing if another SW is pressed, when B&W or the color start SW is not pressed 3 seconds or more (for 10 seconds).
The B&W start button is pressed 3 seconds or more within 10 seconds after shift.	<ul style="list-style-type: none"> • Reset ink overflow counter while in maintenance mode • This can be used to recover the unit from a maintenance request error caused by waste ink overflow.

1.7.4 Printer Condition and Panel Status

Note : “---”: No change
Blink: 0.5sec. On + 0.5sec. Off repetition

Note *1: When the LCD indication is longer than 16 characters, the indication scrolls automatically except for Menu number ([*]).

*2: In case where there are three images in the memory card.

Table 1-53. Printer Condition and Panel Status


Printer status	Indicators											
	LCD Message*1	Power LED	Copy LED	Memory Card LED	Fax LED	Paper Type LED		Paper Size LED			Card Access LED	
						1	2	1	2	3		
Power on (Normal ready mode)	HH:MM AM [or PM] Y	On	—	—	—	—	—	—	—	—	—	
Card printing mode (Print All/ DPOF)	3. Img: 03*2 ALL/PB	—	—	On	—	Selected type is On		Selected size is On			—	
Card printing mode (Index Sheet scanning & printing)	2. Img: 03*2 Scn Idx	—	—	On	—	Selected type is On		Selected size is On			—	
Card printing mode (Print index sheet)	1. Img: 03*2 Prt Idx	—	—	On	—	On	—	On	—	—	—	
Copying mode	HH:MM AM [or PM] Y	—	On	—	—	Selected type is On		Selected size is On			—	
Ink low	[Cyan, Magenta, Yellow, Black] ink low -> Press the OK button to begin ink cartridge replacement.	—	—	—	—	—	—	—	—	—	—	
PG lever operation (Standard: “L”)	Paper thickness lever is set for printing on sheets of paper.	—	—	—	—	—	—	—	—	—	—	
PG lever operation (Large: “H”)	Paper thickness lever is set for printing on envelopes.	—	—	—	—	—	—	—	—	—	—	
Index Sheet error (Index Sheet contents)	No photos selected or photos marked incorrectly. Select photos correctly and try again.	—	—	—	—	—	—	—	—	—	—	
Index Sheet error (Memory card mismatch)	Memory card data does not match index sheet. Replace the card or index sheet and try again.	—	—	—	—	—	—	—	—	—	—	
Index Sheet error (Incorrect placement)	No index sheet detected or sheet placed incorrectly. Correct the sheet placement and try again.	—	—	—	—	—	—	—	—	—	—	
Memory card error	No memory card	—	—	—	—	Off	Off	Off	Off	Off	—	
Power on (Data Processing)	Please wait	Blink	—	—	—	—						—

Table 1-53. Printer Condition and Panel Status

Printer status	Indicators										
	LCD Message*1	Power LED	Copy LED	Memory Card LED	Fax LED	Paper Type LED		Paper Size LED			Card Access LED
						1	2	1	2	3	
Reading a memory card (recognizing image data)	---	Blink	—	—	—	—	—	—	—	—	—
Stopping printing and cancelling the print job	---	Blink	—	—	—	—	—	—	—	—	—
The scanner is operating by a computer	Scanning *** **%	Blink	—	—	—	Off	Off	Off	Off	Off	—
Printing by a computer	Printing	Blink	—	—	—	Off	Off	Off	Off	Off	—
DSC direct printing	Printing	Blink	—	—	—	Selected type is On		Selected type is On			—
Copying	Printing	Blink	On	—	—	Selected type is On		Selected type is On			—
Card printing (DPOF)	Printing	Blink	—	On	—	Selected type is On		Selected size is On			—
Card printing (Print All)	Printing	Blink	—	On	—	Selected type is On		Selected size is On			—
Card printing (Index Sheet scanning & printing)	Printing	Blink	—	On	—	Selected type is On		Selected size is On			—
Card printing (Print index sheet)	Printing	Blink	—	On	—	On	—	On	—	—	—
Paper out	Paper out -> Load paper into the sheet feeder, then press the OK button.	—	—	—	—	—	—	—	—	—	—
Ink Sequence Processing	Charging...	Blink	—	—	—	—	—	—	—	—	—
Ink Cartridge Change Mode	Charging...	Blink	—	—	—	—	—	—	—	—	—
Ink out	[Cyan, Magenta, Yellow, Black] ink out -> Press the OK button to begin ink cartridge replacement.	—	—	—	—	—	—	—	—	—	—
No Ink cartridge	No [Cyan, Magenta, Yellow, Black] ink cartridge -> Press the OK button to install a new ink cartridge.	—	—	—	—	—	—	—	—	—	—
Ink cartridge error/Read error/Write error	[Cyan, Magenta, Yellow, Black] Ink cartridge error -> Cartridge replacement is necessary. Press the OK button to begin.	—	—	—	—						
Paper jam	Paper jam -> Press the OK button. Remove any remaining jammed paper by hand.	—	—	—	—	—	—	—	—	—	—
Reset request/Stop request/Job cancel request (1 second)	---	On (1 sec.)	—	—	—	On (1 sec.)	On (1 sec.)	On (1 sec.)	On (1 sec.)	—	—
Power on (Initializing operation)	Please wait.	Blink	—	—	—	—	—	—	—	—	—

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Table 1-53. Printer Condition and Panel Status

Printer status	Indicators										
	LCD Message*1	Power LED	Copy LED	Memory Card LED	Fax LED	Paper Type LED		Paper Size LED			Card Access LED
						1	2	1	2	3	
Maintenance request (Liquid waste overflow)	Service required. See your documentation for details.	Blink	—	—	—	Blink	Blink	Blink	Blink	Blink	—
Fatal error (Printer)	Printer error ->See your documentation and call service if necessary.	Blink	—	—	—	Blink	Blink	Blink	Blink	Blink	—
Fatal error (Scanner)	Scanner error ->See your documentation and call service if necessary.	On	On	On	On	On	On	On	On	On	—
Power off (Processing termination)	Turning off	Blink	Off	Off	Off	Off	Off	Off	Off	Off	—
Power off (In case of that there are un-transmitting fax data or non-printing fax data.)	The job is not complete yet. Turn off the power? 1:Y 2:N	Blink	Off	Off	Off	Off	Off	Off	Off	Off	—
Fax mode	Enter fax number or press set up.	—	—	—	On	—	—	—	—	—	—
Scanning (Fax mode)	Scanning *** **%	—	—	—	On	—	—	—	—	—	—
Fax Receiving	Receiving *	—	—	—	On	—	—	—	—	—	—
Fax Dialing	Dialing: ****	—	—	—	On	—	—	—	—	—	—
Fax Connecting	Connecting...	—	—	—	On	—	—	—	—	—	—
Printing (Fax mode)	Printing	—	—	—	On	—	—	—	—	—	—
Setup mode	1. Load/Eject	—	—	—	—	—	—	—	—	—	—

1.7.4.1 Error Status

☐ Fatal error

Mechanical or internal trouble has occurred. Fatal error can be classified into either printer fatal error or scanner fatal error.

☐ Maintenance request

Part(s) inside Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F has reached its end of life.

☐ Paper jam

Paper remains in the paper path.

☐ Paper out

Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F has failed to load papers.

☐ Ink out/No ink cartridge/Incorrect ink cartridge

- There is no ink remaining in the installed Bk, Y, M or C cartridge(s)
- Ink cartridge(s) is not installed.
- Unauthorized ink cartridge(s) is installed.

1.7.5 Memory Functions (TBD)

1.7.5.1 Parameters that are retained while mode transition

The following parameters are retained for each mode while the mode transition from “Copy” mode to “Memory Card Print” mode or vice versa.

- ☐ “Paper Type” and “Paper Size” are retained for each mode as default.
- ☐ Zoom is retained for “Copy” mode as default.

NOTE: Paper Type and Paper Size are commonly used in “Print From Index Sheet” and “Print All / DPOF”.

1.7.5.2 Parameters that are retained when power is turned off

The following parameters are retained when the unit's power is off. They are listed along with the corresponding memory functions in the table below.

- ☐ Copy mode is selected when the product is turned on apart from the mode when it was turned off before.
- ☐ Paper Type and Paper Size are retained for each mode as default.
- ☐ Zoom is retained for copy mode as default.

Table 1-54. Memory Functions

Mode	Parameter retained in memory	Factory setting
Copy	Paper Type	Plain Paper
	Paper Size	Letter or A4
	Zoom (The status of Fit to Page)	100% (OFF)
Memory Card Print	Paper Type	Photo Paper
	Paper Size	4" x 6" or 10x15*1

Note *1: The panel indicator only. Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F chalks 10 x 15 format up to 4" x 6" format.



1.7.6 Printer Initialization (TBD)

There are four kinds of initialization and each of them is explained below.

1. Power-on initialization

This printer is initialized when turning Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F power on, or printer recognized the cold-reset command (remote RS command).

When printer is initialized, the following actions are performed.

- (a) Initializes printer mechanism
- (b) Clears input data buffer
- (c) Clears print buffer
- (d) Sets default values

2. Operator initialization

This printer is initialized when turning Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F power on again within 10 seconds from last power off, or printer recognized the -INIT signal (negative pulse) of parallel interface.

When printer is initialized, the following actions are performed.

- (a) Cap the printer head
- (b) Eject a paper
- (c) Clears input data buffer
- (d) Clears print buffer
- (e) Sets default values

3. Software initialization

The ESC@ command also initialize the printer.

When printer is initialized, the following actions are performed.

- (a) Clears print buffer
- (b) Sets default values

4. Power-on initialization except I/F

Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F recognized the IEEE 1284.4 "rs" command.

When printer is initialized, the following action is performed.

- (a) Initializes printer mechanism
- (b) Clears input data buffer
- (c) Clears print buffer
- (d) Sets default values except I/F



CHAPTER

2

OPERATING PRINCIPLES



2.1 Overview

This section describes the operating principles of the Printer Mechanism, Scanner Mechanism and Electrical Circuit Boards.

- ☐ Main Board
 - ASSY SP MAIN BOARD 8808
- ☐ Power Supply Board
 - ASSY SP POWER SUPPLY 8808
- ☐ Panel Board
 - ASSY SP PANEL BOARD 8808
- ☐ I/F Board
 - ASSY SP PICTBRIDGE BOARD
- ☐ Fax Board
 - ASSY SP FAX BOARD 8808

2.2 Printer Mechanism

2.2.1 Printer Mechanism

This printer consists of the Printhead, Carriage Mechanism, Paper Loading Mechanism, Paper Feeding Mechanism, Ink System.

Like the previous printers, the Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F is equipped with two DC motors; one for the Paper Loading/Feeding Mechanism and the Pump Mechanism with the CR Lock Mechanism, and one for the CR Mechanism. The ASF Unit for the Paper Loading Mechanism uses rear entry front eject system. The Paper Feeding Mechanism uses the LD Roller and Retard Roller to feed paper to the Printer Mechanism in the same way as previous printers.

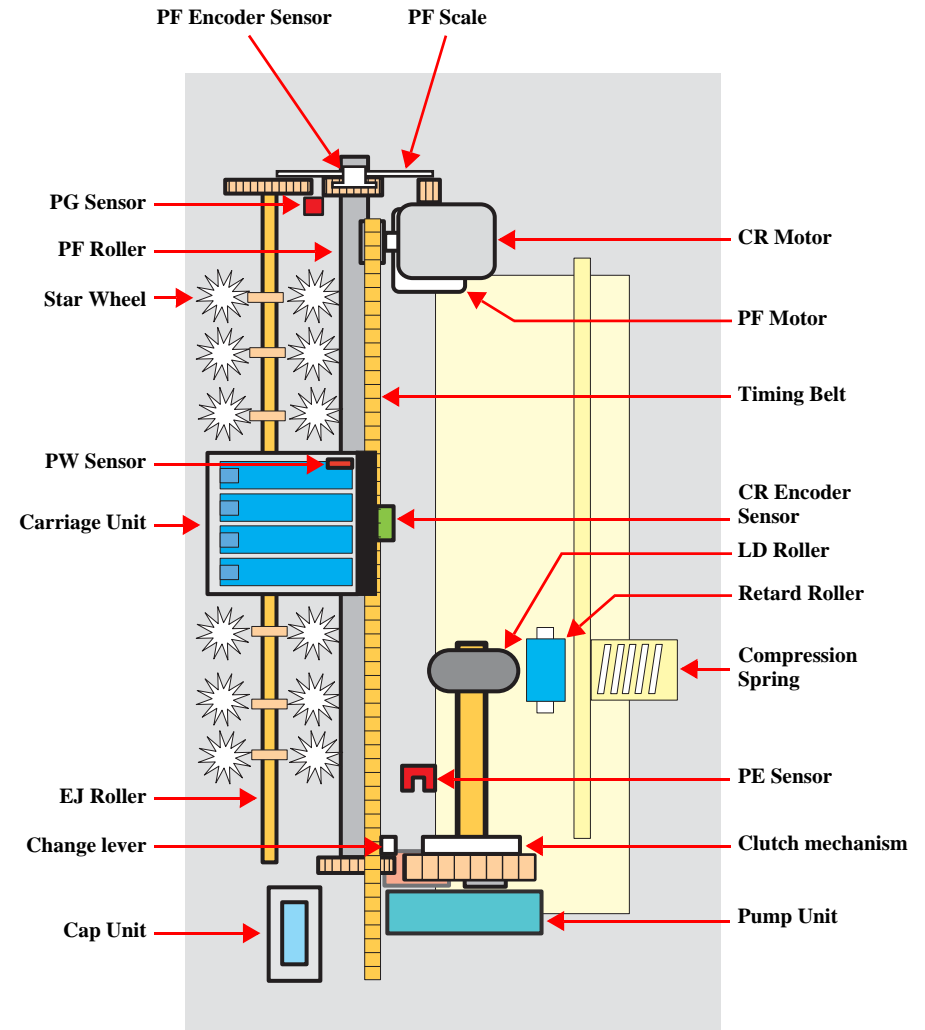


Figure 2-1. Printer Mechanism block diagram

2.2.2 Printhead

The Printhead is the same D4-CHIPS type as the previous SPC and makes it possible to perform economy dot printing and variable dot printing.

The Printhead nozzle configuration is as follows.

☐ Nozzle layout

- Black : 90 nozzles x 1 row
- Color : 90 nozzles x 3 row/color (Cyan, Magenta, Yellow)

The nozzle layout when viewed from the back surface of the Printhead is shown below.

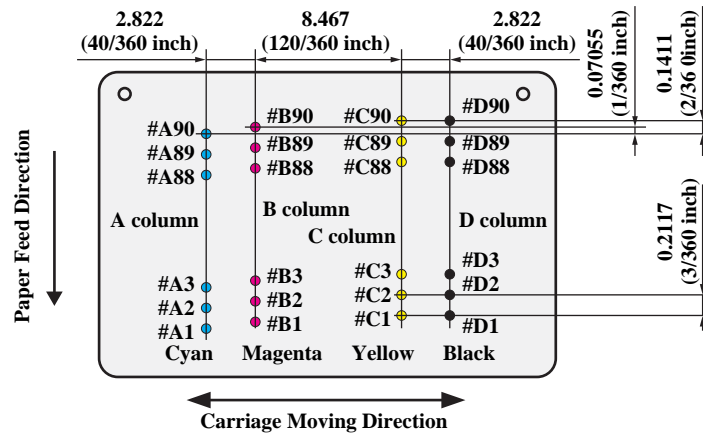


Figure 2-2. Nozzle layout

The Printhead has the Electric Poles (CSIC Connectors) to store the ink consumption amount data into the CSIC chip mounted on the Ink Cartridge. By storing the ink consumption amount data, this printer can detect the ink consumption status, such as Ink Low/Out condition.

The basic operating principles of the Printhead, which plays a major role in printing, are the same as the previous printer; on-demand method which uses PZT (Piezo Electric Element). The Printhead has its own Head ID (13-digit code for this Printhead for Stylus CX5700F/CX5800F, 20-digit code for Stylus CX6900F/CX7000F/DX7000F) which adjusts PZT voltage drive features to address unit-to-unit variation of the head.

So, you are required to store the Head ID pasted on the Printhead into the EEPROM by using the Adjustment Program when replacing the Printhead, the Main Board Unit, the Printer Mechanism with new one. (Note: there are no resistor arrays to determine the Head ID on the Main Board (ASSY SP MAIN BOARD 8808).) And then, based on the stored Head ID into the EEPROM, the Main Board (ASSY SP MAIN BOARD 8808) generates appropriate PZT drive voltage.

Following explains the basic components for the Printhead.

☐ PZT

PZT is an abbreviation of Piezo Electric Element. Based on the drive waveform generated on the Main Board, the PZT selected by the nozzle selector IC on the Printhead pushes the top of the ink cavity, which has ink stored, to eject the ink from each nozzle on the nozzle plate.

☐ Electric poles for CSIC

This Electric Poles connects the CSIC chip mounted on the Ink Cartridge. By using this poles, current ink consumption amount data is read out from the CSIC chip. And, the latest ink consumption amount data is written into the CSIC chip.

☐ Nozzle Plate

The plate with nozzle holes on the Printhead surface is called Nozzle Plate.

☐ Filter

When the Ink Cartridge is installed, if any dirt or dust around the cartridge needle is absorbed into the Printhead, there is a great possibility of causing nozzle clog and disturbance of ink flow, and alignment failure and dot missing finally. To prevent this problem, a filter is set under the cartridge needle.

☐ Ink Cavity

The ink absorbed from the Ink Cartridge goes through the filter and then is stored temporarily in this tank called “ink cavity” until PZT is driven.

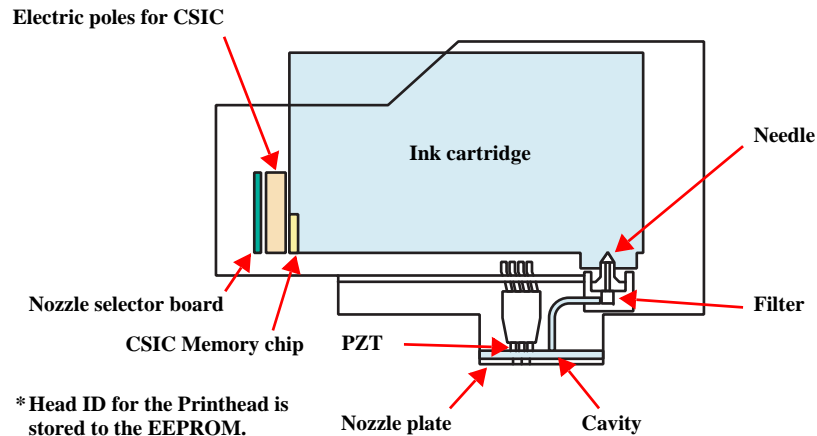


Figure 2-3. Printhead sectional drawing

2.2.2.1 Printing Process

This section explains the process which the Printheads of On-Demand inkjet printers eject ink from each nozzle.

1. **Normal state:**

When the printing signal is not output from the Main Board (ASSY SP MAIN BOARD 8808), or the PZT drive voltage is not applied, the PZT does not change the shape. Therefore, the PZT does not push the ink cavity. The ink pressure inside the ink cavity is kept normal. (refer to [Figure 2-4 \(p.62\)](#): Normal state)

2. **Ejecting state:**

When the print signal is output from Main Board (ASSY SP MAIN BOARD 8808), the nozzle selector IC located on the Printhead latches the data once by 1-byte unit. Based on the drive waveform (common voltage) generated on the Main Board, the PZT selected by the nozzle selector IC pushes the top of the ink cavity. By this operation, the ink stored in the ink cavity is ejected from nozzles. (refer to [Figure 2-4 \(p.62\)](#): Ejecting state)

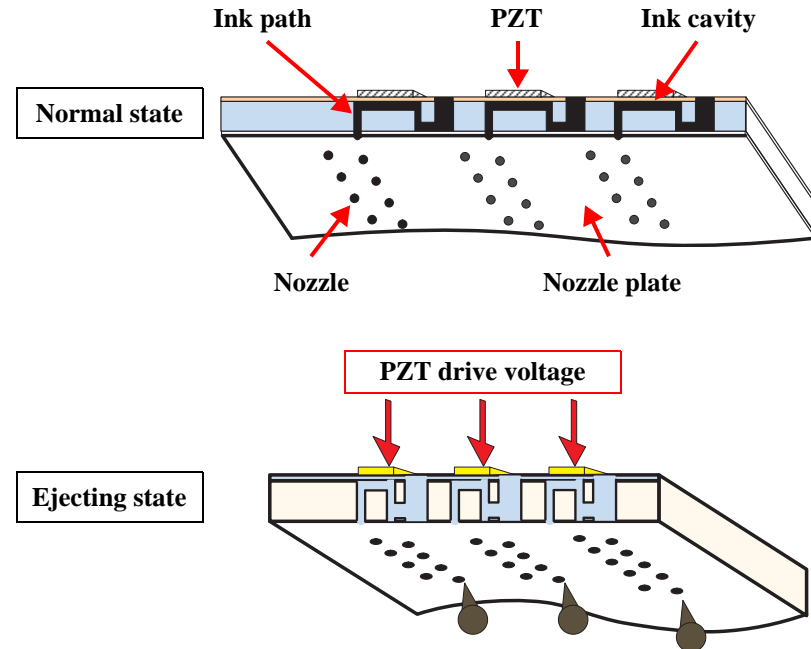


Figure 2-4. Printhead printing process

2.2.2.2 Printing Method

The dot printing systems of EPSON Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F are variable dot printing systems.

☐ Variable dot printing

This printing mode is developed to improve the print quality on exclusive paper. This mode is basically the same as variable dot printing mode used on other products; micro dot, middle dot and large dot compose this mode. The printing dot size varies according to the print data and this mode enables to output even sharper image on exclusive paper.



2.2.3 Carriage Mechanism

The Carriage Mechanism consists of Carriage Unit (including the Printhead, CR Encoder Board and PW Sensor), CR Motor, Timing Belt and CR Scale etc. Following figure shows you each component for the CR Mechanism.

2.2.3.1 Carriage Mechanism

The following DC motor controls the CR Mechanism on this printer.

Table 2-1. Carriage Motor specification

Items	Specifications
Type	DC motor with brushes
Drive Voltage	42 V (DC) $\pm 5\%$ (voltage applied to driver)
Armature resistance	29.1 $\Omega \pm 10\%$
Inductance	20.1 mH $\pm 25\%$
Drive Method	PWM, constant-current chopping
Driver IC	A6615

Close loop control based on the CR Motor (DC Motor) and CR Encoder has advantages in stabilized print quality.

- ☐ Heat generation control
Using low-cost DC motors, this product grasps the variations of the torque constants, coil resistances and power supply voltages of the individual DC motors adequately to carry out heat generation control according to individual differences.
- ☐ CR variation measurement sequence
The variations of the torque constant, coil resistance and power supply voltage of the motor are measured in a CR variation measurement sequence when the CR mechanical load is in the initial status and saved into the EEPROM. According to the variations (individual differences) measured in this sequence, the voltage is corrected to make the drive current value constant (without an individual difference).

☐ CR measurement sequence

To set the appropriate drive current value according to the variation of the CR mechanical load, the mechanical load is measured in a CR measurement sequence and saved into the EEPROM in a power-on or I/C change sequence. A fatal error will occur if too much load is applied to the CR drive system.

The above control and sequences correct the drive current value of the CR Motor according to not only the mechanical load but also the variations of the motor and like. In addition, the resultant CR drive current value is used to calculate a heating value, and when the specified heating value is reached, wait time is provided per CR path for printing.

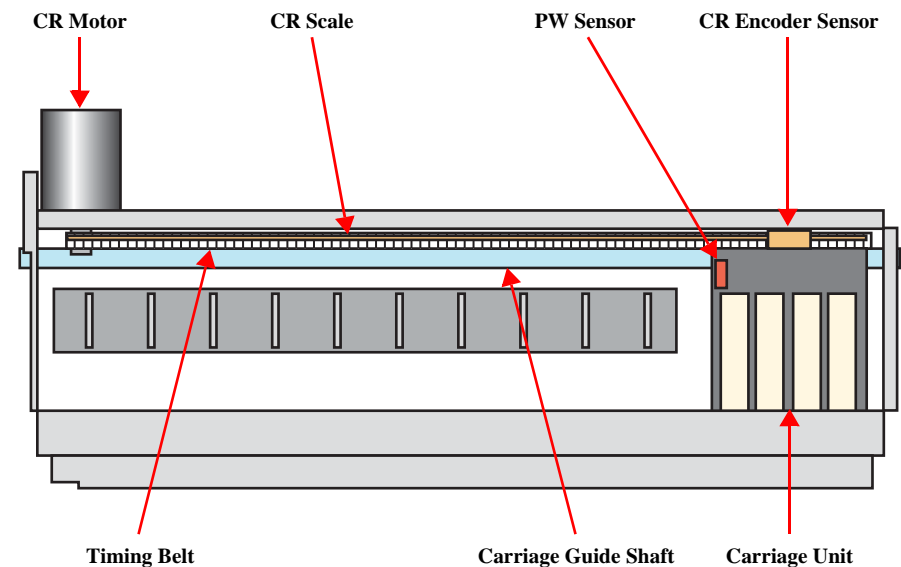


Figure 2-5. Carriage Mechanism

2.2.3.2 Carriage Home Position Detection

Like other conventional models, the carriage home position is detected using the CR Motor drive current and the CR Encoder speed/position signals. Fundamental home position detection sequence is described below.

1. Current position temporary detection sequence determines if the carriage is in the carriage lock position and releases the carriage if it is locked.
2. The carriage is moved to the left frame hit position and the carriage motor is stopped.
3. The position that is specified steps right from the stopping place is defined as an origin, and from that time, positional information is monitored by the linear encoder.

If the positional information could not be gained during detecting carriage home position due to the following causes, fatal error occurs.

- Obstructions on the carriage path or other factors are giving too much pressure on the CR motor.
- CR linear encoder failure, CR linear scale defect, etc.

2.2.3.3 Sequence Used for PW Detection

The PW (paper width detection) Sensor installed on the Carriage Unit bottom is used to control the printer according to various sequences.

The following briefly describes the PW Sensor operating principle.

A dark voltage is measured by the PW Sensor in three places on the right end plane (area without the absorber) of the Front Paper Guide every time power is switched on, and the measurement values are saved into the EEPROM as threshold values.

- Threshold value > detection voltage: Paper present
- Threshold value < detection voltage: Paper absent

The following sequences are performed.

- ☐ Paper Left/Right Edge Detection Control
Before start of printing (immediately after the end of paper locating), or during printing, whether paper is present or not is detected to prevent off-paper printing on the Paper Guide by borderless printing used in a wrong way.
- ☐ Paper Top Edge Detection Control
Detects paper leading edge at start of printing. Also sets the amount of extension for the paper leading edge during borderless printing.
- ☐ Paper Bottom Edge Detection Control
Sets the amount of extension for the paper trailing edge during printing.



2.2.4 Paper Loading/Feeding Mechanism

The following DC motor controls the Paper loading/feeding mechanism on this printer.

Table 2-2. PF Motor specifications

Item	Description
Motor type	DC motor with brushes
Drive voltage	42 V (DC) \pm 5 % (voltage applied to driver)
Armature resistance	27.5 Ω \pm 10 %
Inductance	21.4 mH \pm 25 %
Driving method	PWM, constant-current chopping
Driver IC	A6615

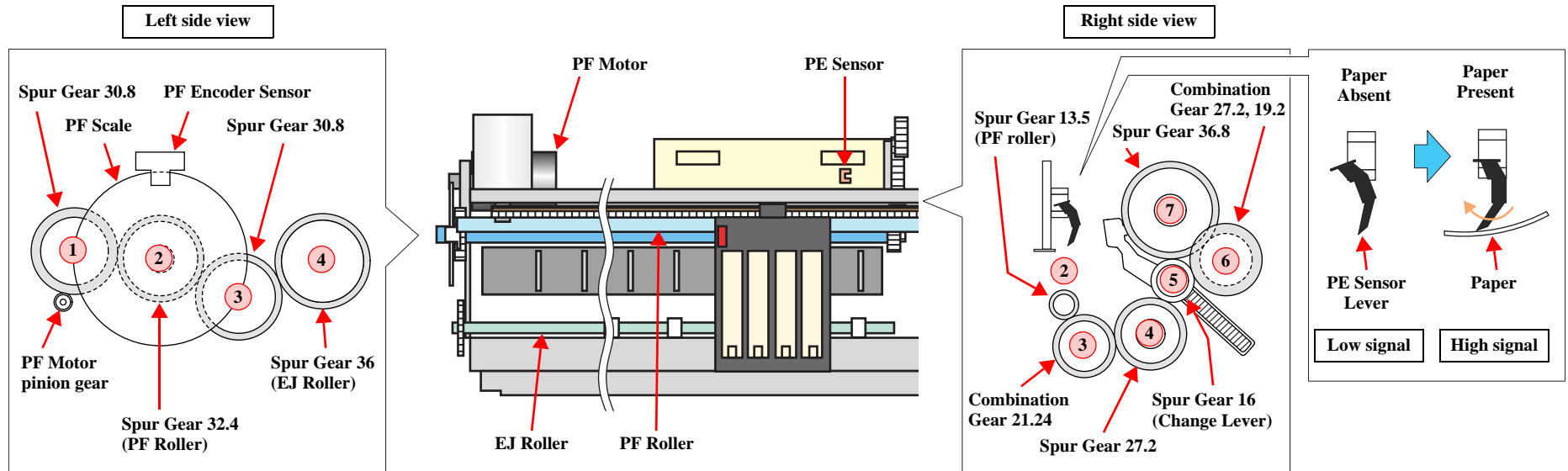
The drive of the PF motor is transmitted to the LD roller shaft and the PF roller through gears for the Paper loading/feeding mechanism. The Paper loading mechanism plays a role in loading a paper from the ASF unit to the PF roller. And also, the Paper feeding mechanism plays a role in feeding a paper loaded from the ASF unit. The functions of the Paper loading/feeding mechanism varies depending on the rotational direction of the PF motor as the table below.

Table 2-3. ASF unit function & PF Motor rotational direction

Directions *	Corresponding functions
Clockwise	<ul style="list-style-type: none"> • Pick up and feed a paper • Set the Change Lever on the Clutch mechanism
Counterclockwise	<ul style="list-style-type: none"> • Release the Change Lever from the Clutch mechanism

Note *: The PF Motor pinion gear rotation direction = seen from the left side of the printer.

Following shows you the transmission path of the PF Motor drive to the LD Roller, the PF Roller and the EJ Roller. (The numbers in the following figure show you the order of transmission path.)



Note : The Clutch gear is molded on the backside of the Spur Gear 36.8 such as Combination gear.

Figure 2-6. Paper loading/feeding mechanism

For your reference, the top or the end of a paper is usually detected with the PE Sensor. In case that the PE Sensor cannot detect the top of a paper in the paper loading sequence, the printer indicates the “Paper Out error”. If the PE Sensor cannot detect the end of a paper in the paper feeding sequence, the printer indicates the “Paper Jam error”. As for the details, refer to Chapter 3 “[TROUBLESHOOTING](#)”.

2.2.4.1 Paper Loading Mechanism

The Paper loading mechanism consists of the Change Lever in the Pump Unit, the Holder Shaft Unit (including the Clutch mechanism) and the ASF Unit. The Change Lever and the Clutch mechanism play a major role in the Paper loading mechanism as follows.

1. ASF home position detection function

The ASF Unit on this printer does not have the ASF Home Position Sensor. Instead of the ASF Home Position Sensor, the Change Lever and the Clutch mechanism is used to detect the ASF home position.

When the Change Lever is set on the Clutch mechanism with the counterclockwise rotation of the PF Motor pinion gear, the ASF home position is detected by this lever for the paper loading operation. In this time, the printer cannot load a paper from ASF Unit because the drive of the PF Motor is not transmitted to the LD Roller Shaft.

2. Paper loading function

When the Change Lever is released from the Clutch mechanism with the clockwise rotation of the PF Motor pinion gear, the ASF home position detection function is changed over to the paper loading function. Therefore, the printer can load a paper from ASF Unit because the drive of the PF Motor is transmitted to LD Roller Shaft.

During paper loading, paper is transported from the ASF Unit into the printer by the rotation of the 2 cams of the LD Roller.

- Cam (Large) : Hopper release
- Cam (Small) : Paper Back Lever release

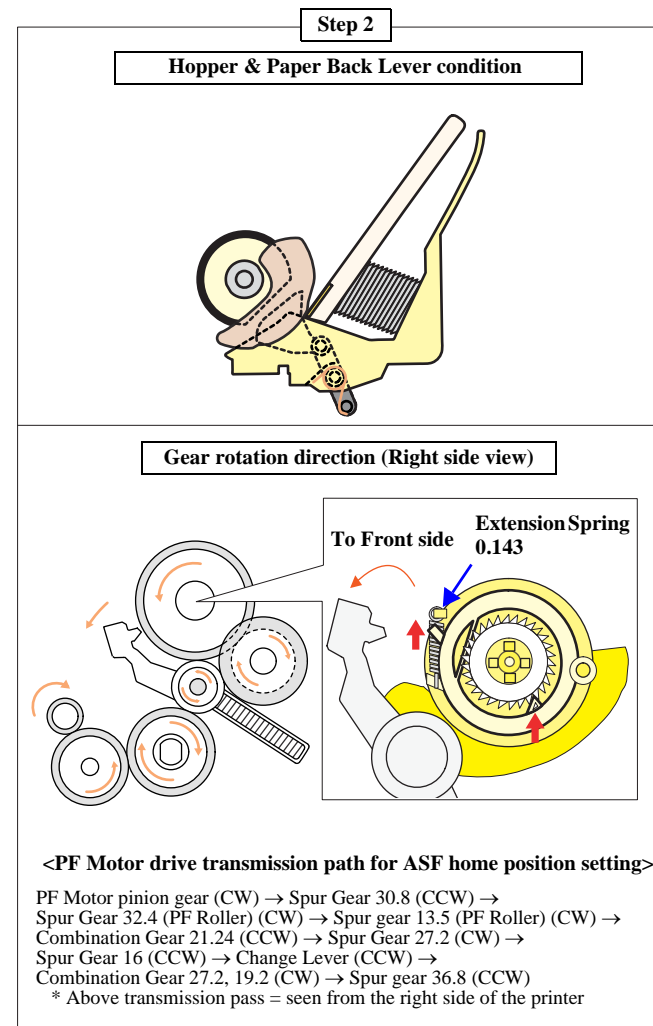
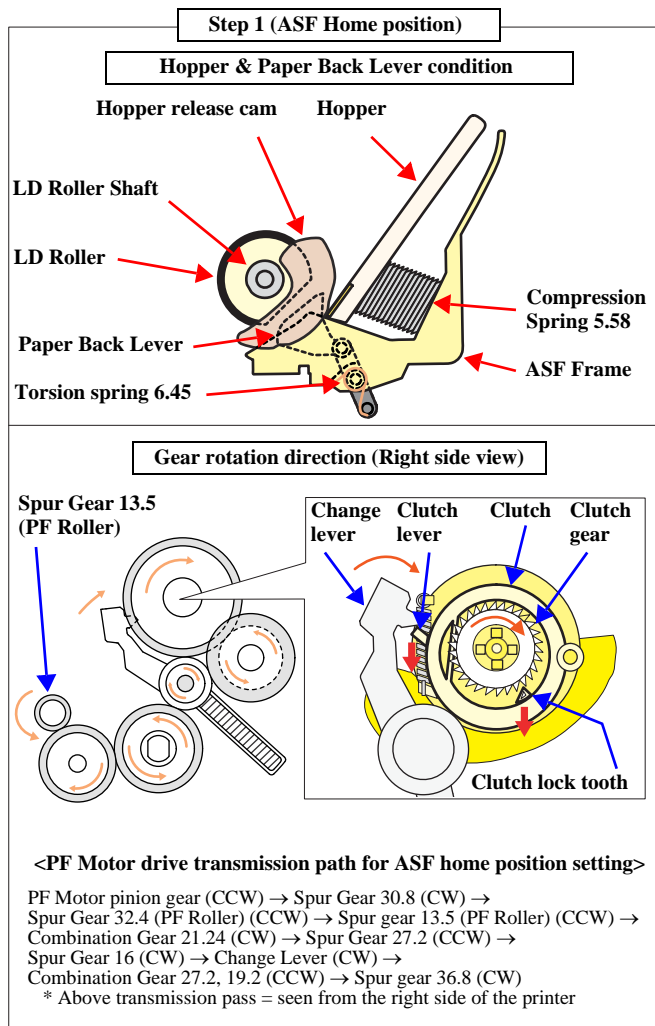
When 1 page paper is loaded, the cams mentioned above prepare the Hopper and Paper Back Lever for the next paper loading operation, and the remaining paper is returned to the standby position.

[Figure 2-7 \(p.67\)](#) and [Figure 2-8 \(p.68\)](#) show you the ASF paper loading sequence and the operation of each mechanism.



When the PF Motor pinion gear rotates CCW direction (right side view), the Change Lever pushes down the Clutch lever as right figure and the Clutch lock tooth is disengaged from the Clutch Gear. As the result, the LD Roller Shaft dose not rotate at all because the drive of the PF Motor is not transmitted. In this time, the Hopper is also pushed down by the two cams on the LD Roller Shaft, and the Paper Back Lever is set to avoid that papers are slipped down from the paper set position.

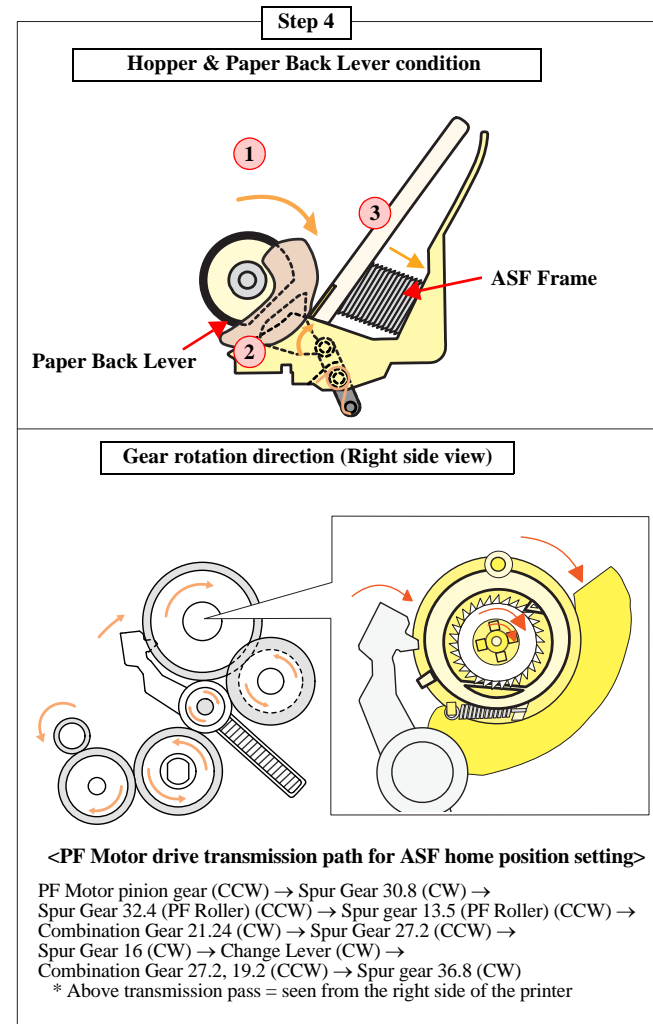
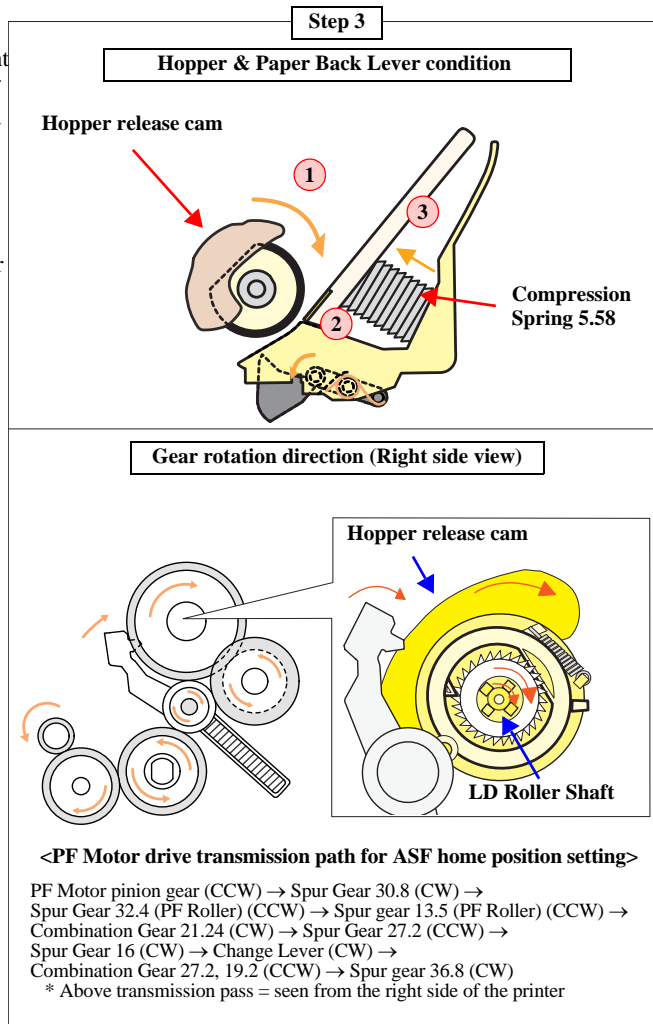
This position is the ASF home position.



When a paper is loaded from the ASF Unit, the Change Lever moves to the front side of the printer with the CW rotation (right side view) of the PF Motor pinion gear and releases the Clutch lever. As the result, the Clutch turns back to the engagement position by the tension force of the Extension Spring 0.143. And, the Clutch gear is engaged with the Clutch lock tooth to transmit the drive of the PF Motor as left figure. In this time, the Change Lever is locked instantaneously by the protrusion on the backside of the Carriage Unit to change over from the ASF home position detection function to the paper loading function surely.

Figure 2-7. ASF paper loading sequence (Step 1, 2)

The PF Motor pinion gear rotates CCW direction (right side view), and the drive of the PF Motor is transmitted to the LD Roller Shaft through the Clutch lock tooth and the Clutch gear. After the LD Roller pushes down the Paper Back Lever into the ASF Frame, the Hopper is released by the tension force of the Compression Spring 5.58. And, a paper is picked up with the frictional force between the LD Roller and the Pad Hopper.



While the LD Roller rotates CCW direction (right side view) continuously, the top of a paper is loaded to the PF Roller. In this rotation, the Hopper returns to the open position and the Paper Back Lever is pushed up by the cam of the LD Roller. In this time, this lever returns papers to the standby position in ASF Unit for next paper loading operation. Then, when the rolling LD Roller & the Clutch come at the above "Step1" position, the Clutch lever is locked with the Change Lever again. In this time, the drive of the PF Motor is interrupted and the drive is transmitted only to the PF Roller side for the paper feeding sequence.

Figure 2-8. ASF paper loading sequence (Step 3, 4)

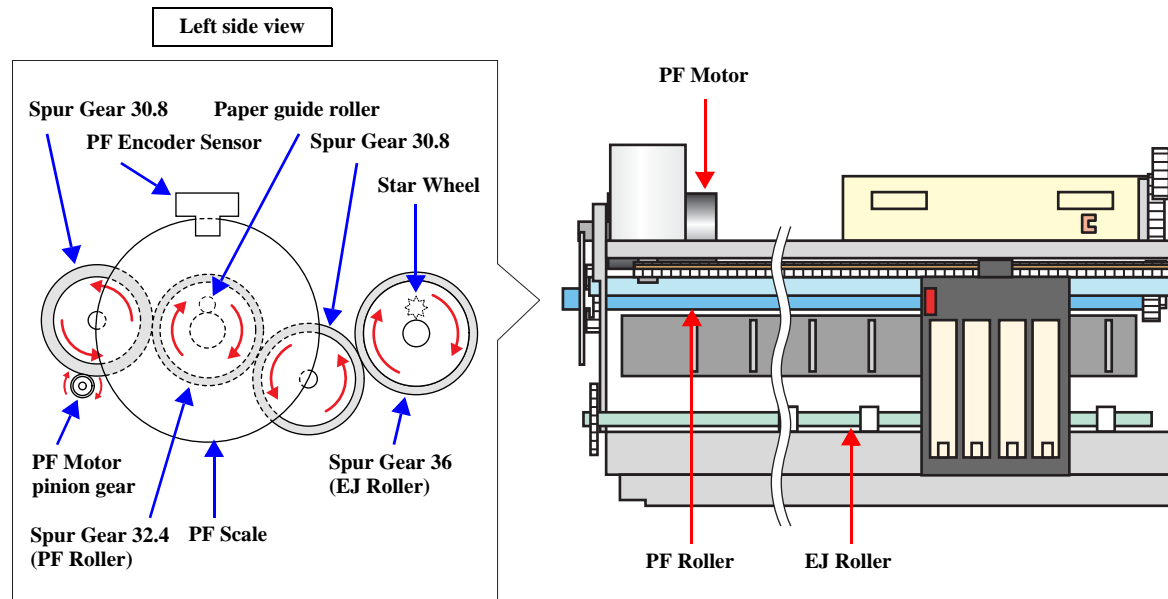
2.2.4.2 Paper Feeding Mechanism

The Paper feeding mechanism consists of PF Motor, PF Roller, EJ Roller, PE Sensor, PF Encoder and PF Scale etc. The Paper feeding mechanism feeds a paper loaded from ASF Unit by using pairs of rollers.

1. One pair is the PF Roller and the Paper Guide Roller which is assembled in the Paper Guide Upper Unit. The drive of the PF Motor is transmitted to the Paper Guide Roller through the PF Roller.
2. Another pair is the EJ Roller and the Star Wheel which is assembled on the EJ Frame Unit. The drive of the PF Motor is transmitted to the Star Wheel through the EJ Roller.

Following figure shows you the transmission path for the PF Roller & the Paper Guide Roller and the EJ Roller & the Star Wheel.

The top of a paper is loaded to the PF Roller from the ASF Unit in the paper loading sequence. And then, when the PF Motor pinion gear rotates CW direction (left side view), a paper is fed by the PF Roller & the Paper Guide Roller and the EJ Roller & the Star Wheel in the printing operation & the paper feed sequence.



Transmission path (left side view)

- PF Motor pinion gear (CW) → Spur Gear 30.8 (CCW) → Spur gear 32.4 (PF Roller) (CW)
- PF Motor pinion gear (CW) → Spur Gear 30.8 (CCW) → Spur gear 32.4 (PF Roller) (CW) → Spur Gear 30.8 (CCW) → Spur Gear 36 (EJ Roller) (CW)

Figure 2-9. Paper feeding mechanism

2.2.5 Ink System Mechanism

The Ink System Mechanism consists of Pump mechanism with Carriage lock mechanism and Capping mechanism with Wiper mechanism. Following table lists the function for each mechanism.

Table 2-4. Function for each mechanism

Mechanism	Function
Capping mechanism *	This is to cover the surface of the Printhead with the cap in order to prevent the nozzle from increasing viscosity.
Wiper mechanism	This is to remove the foreign material and unnecessary ink on the nozzle plate of the Printhead.
Pump mechanism	This is to eject the ink from the Ink Cartridge, the ink cavity and the cap to the Waste Ink Pad.
Carriage lock mechanism	This is to lock the Carriage Unit with the Change Lever while the Carriage Unit is at the home position.

Note : Like the previous printers, this printer adopts the valveless cap system. The air valve system used for the previous printer have two functions by the CR position in the capping condition as follows.

1) Valve closing condition (CL position)

By closing the air valve, the ink is forcibly absorbed from the Ink Cartridge or the ink cavity by the Pump Unit and is ejected to the Waste Ink Pad while the Carriage Unit is in the CL position.

2) Valve opening condition (Ink absorption position)

By opening the Air valve, the negative pressure is decreased and only the ink inside the Cap is ejected while the Carriage Unit is in the further right side than the CL position. (the ink is not absorbed from the Ink Cartridge or the ink cavity.)

The following shows you the Carriage Unit position for each condition easily.

Printing area	CR home position	CL position (valve closing condition)	Ink absorption position (valve opening condition)
---------------	------------------	--	--

But, on the valveless cap system, the above 2) operation is done outside the capping position. The Carriage Unit moves outside the CR home position and the pump absorbs the ink inside the Cap.



2.2.5.1 Capping Mechanism

The Capping mechanism covers the Printhead with the Cap to prevent the nozzle from increasing viscosity when the printer is in stand-by state or when the printer is off.

□ Wiper with the Cap unit

The wiping operation is controlled by the Carriage Unit movement. This operation is usually performed with every CL sequence which is to absorb the ink from the ink cartridge, the ink cavity by the Pump unit. Following figure shows you the mechanism for the wiping operation.

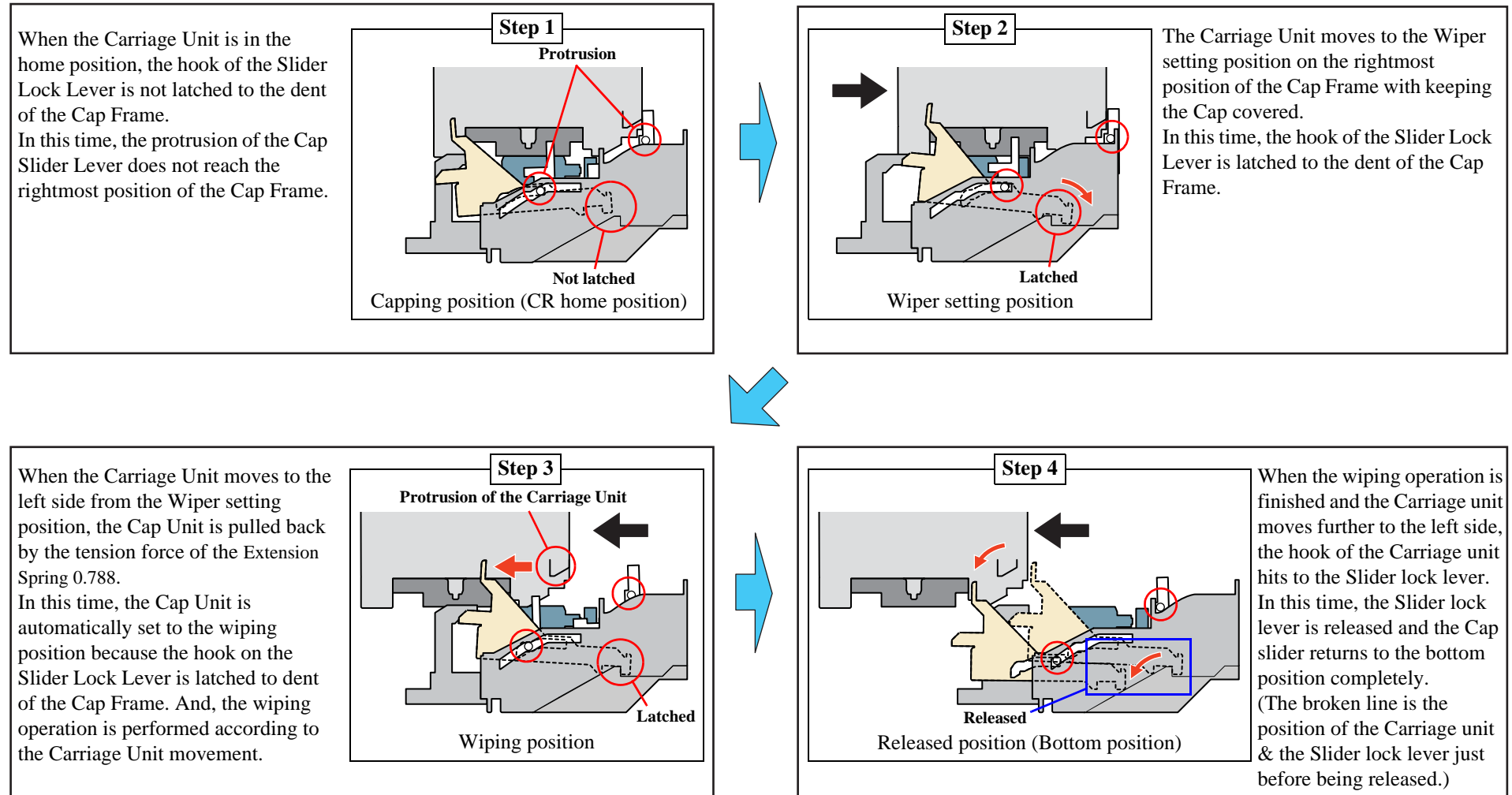


Figure 2-10. Wiper mechanism

2.2.5.2 Pump Unit Mechanism

The PF Motor also controls the Pump Unit mechanism (including the Change Lever) as well as the Paper loading/feeding mechanism. The drive of the PF Motor is always transmitted to the Pump Unit. (And also, its drive is transmitted to the LD Roller through the Clutch mechanism & the Change Lever.)

On this printer, the Pump Unit mechanism including the Change Lever plays a major role expecting the ink eject operation. And, these operations control depending on the PF Motor rotational direction as the following table below.

Table 2-5. PF Motor rotational direction & Ink system mechanism

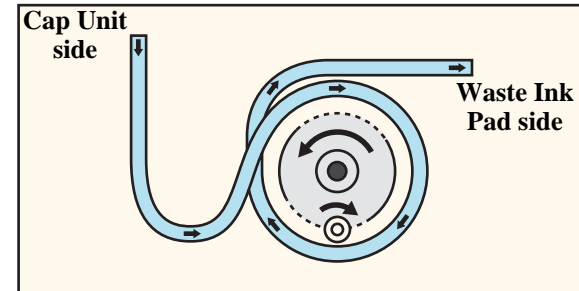
Directions *	Functions
Clockwise	<ul style="list-style-type: none"> • Pump release
Counterclockwise	<ul style="list-style-type: none"> • Absorbs the ink • Release the Change Lever from the Clutch mechanism

Note *: The PF Motor rotational direction = seen from the left side of the printer.

1. Ink eject operation (usual operation)

The ink is absorbed from the Ink Cartridge, the ink cavity and is ejected to the Waste Ink Pad from the Cap when the Ink Tube is pressed by a roller in the Pump Unit.

Following figure shows you the overview of the Pump Unit mechanism operation.



Note : The PF Motor rotational direction = seen from the right side of the printer.

Figure 2-11. Pump mechanism

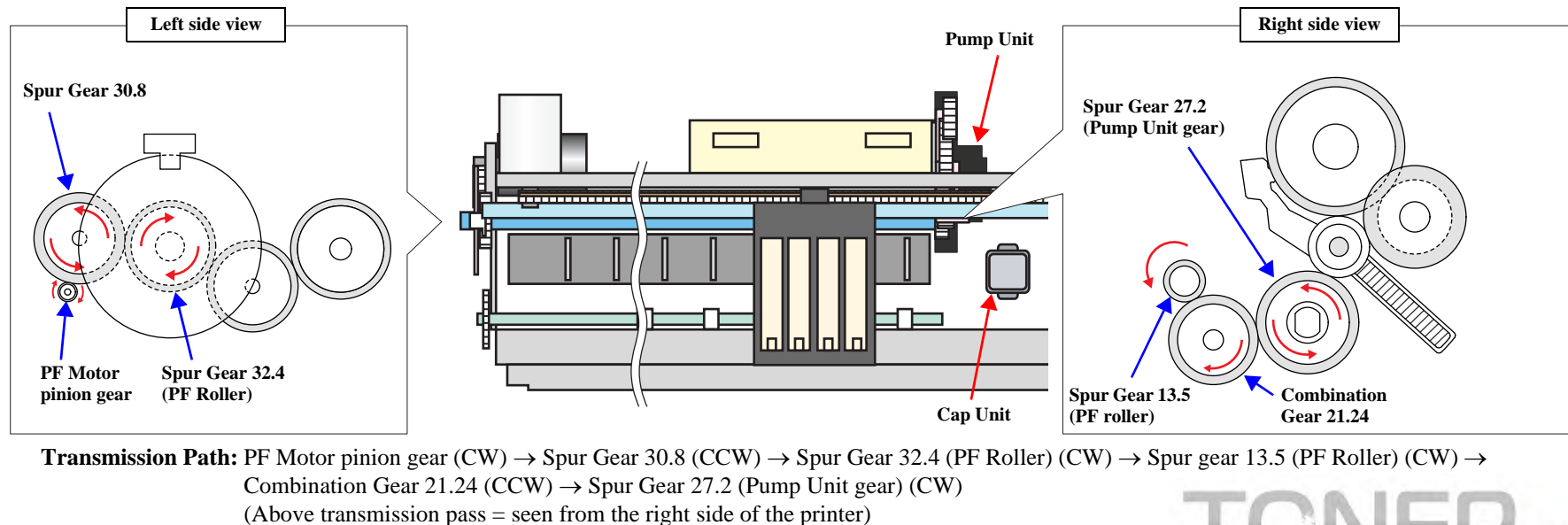


Figure 2-12. PF Motor drive transmission path to the Pump Unit

2. Carriage lock operation by the Change Lever

Unlike the previous printer, this printer does not have the Carriage Lock Lever with the Wiper.

Instead of the Carriage Lock Lever, the Change Lever is set to the front side of the printer while the Carriage Unit is in the CR home position.

(As for the detailed mechanism for setting the Change Lever, refer to [Figure 2-7 \(p.67\)](#) Step 2)

2.2.6 Ink Sequence

□ Initial ink charge

After the printer is purchased and the power is turned on for the first time, the printer must perform the Initial Ink Charge to charge the ink inside the ink cavity. When the Initial Ink Charge is completed properly, the printer releases the flag inside the EEPROM. Initial Ink Charge will take about 100 seconds for EPSON Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F. If the power is turned off during the Initial Ink Charge, the CL3 will be performed at next power on timing.

□ Manual Cleaning

The EPSON Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F provides three types of manual cleaning to clean air bubbles, clogged ink with viscosity or foreign substances.

The manual CL can be performed by the Control Panel Operation, the Printer Driver Utility and the Adjustment Program.

■ CL1

- Ink absorption (Maximum)
Black Ink: 0.181 (TBD) g, Color Ink: 0.543 (TBD) g
- Wiping operation
Wipes the nozzle plate by the rubber part on the Cap Unit.
- Flashing operation
Prevents color from mixing, and stabilizes ink surface inside the nozzle.

■ CL2

- Ink absorption (Maximum)
Black Ink: 0.445 (TBD) g, Color Ink: 1.335 (TBD) g
- Wiping operation
Wipes the nozzle plate by the rubber part on the Cap Unit.
- Flashing operation
Prevents color from mixing, and stabilizes ink surface inside the nozzle.

■ CL3

- Ink absorption (Maximum)
Black Ink: 1.015 (TBD) g, Color Ink: 3.045 (TBD) g
- Wiping operation
Wipes the nozzle plate by the rubber part on the Cap Unit.
- Flashing operation
Prevents color from mixing, and stabilizes ink surface inside the nozzle.



Independently of the printing path after the previous CL, perform manual CL from CL1 to CL3 in order if the cumulative printing timer counter is less than 9 min. Only when the cumulative printing timer counter is more than 9 min, execute only CL1. Additionally, if the I/C is Ink Low or Out condition, any manual cleaning is prohibited and it is displayed on the LED indicators.

□ Timer Cleaning

Like the previous printers, this printer does not have Lithium battery which is used for the backup power source for Timer IC. So, this printer manages the printer off period or cleaning cycle by using the following method.

The Printer Driver sends the timer command to the printer before printing. The timer command is generated based on the PC's timer and it consists of year, month, date, hour, minute and second. As soon as the printer receives the timer command from the Printer Driver, the printer stores its command in the EEPROM. Then, it is compared with the latest CL time which is stored in the EEPROM. And, in case that the timer cleaning period is over the specific period, the printer performs the timer cleaning automatically. In this time, the printer stores the timer command in the EEPROM.

Maximum 3.32 (TBD) g of the ink is consumed in the timer cleaning. (0.830 (TBD) g of black ink and 2.490 (TBD) g of color ink are consumed.)

□ Flashing

Two different flushing operations are executed for the following reasons.

■ Pre-printing flushing

This is done before a start of printing to eliminate ink viscosity in the Printhead nozzles.

■ Periodic flushing

This is done during printing to prevent ink viscosity in the Printhead nozzles from increasing.

2.3 Scanner Mechanism

The Scanner Mechanism of EPSON Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F is constructed of a Scanner Carriage Unit, Scanner Motor, etc., in the same way as previous A4 size scanners.

2.3.1 Scanner Carriage Mechanism

2.3.1.1 Scanner Carriage Unit Overview

The Scanner Carriage Unit is constructed of a CIS Board (including linear CCD), Rod Lens Array, LED (light source), etc.

- CIS Board
This takes the light information read from the document by the Rod Lens Array and converts it to digital information using the linear CCD.
- Rod Lens Array
Many rod-shaped lenses are arranged in parallel, and the upright multiple images of each lens is overlapped to form a single continuous image. Compared to a regular lens, this has the special ability to reduce the distances between images. It can project at 1 to 1 size for imaging a linear CCD with a width identical to an A4 size document.
- LED
The unit uses an LED for an exposure light source. Using an LED eliminates the need for an inverter board, and power consumption is reduced.

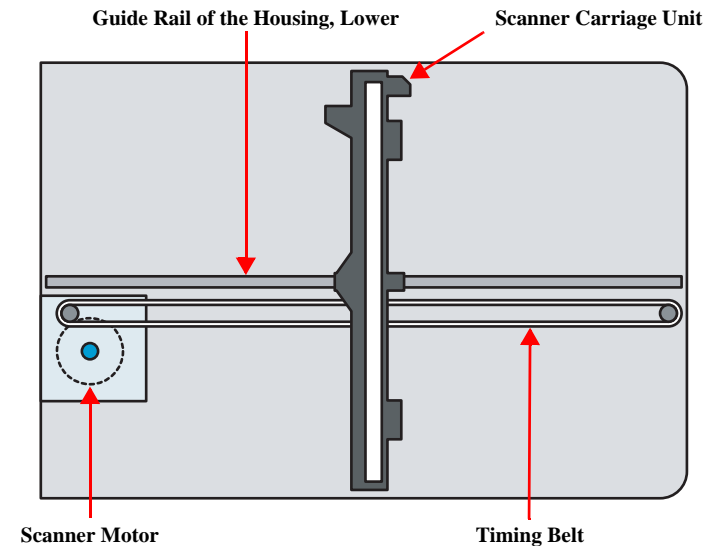


Figure 2-13. Scanner Mechanism

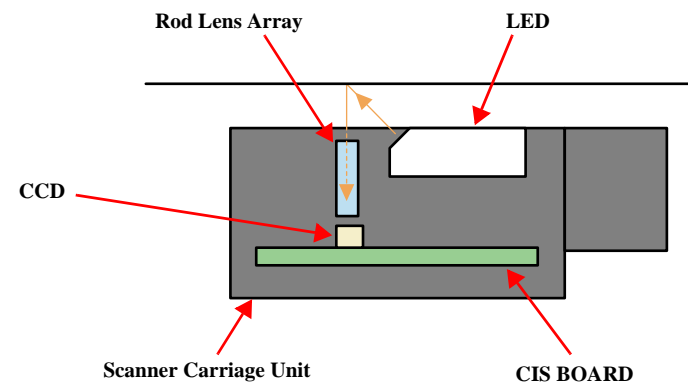


Figure 2-14. Scanning image

2.3.1.2 Scanner Carriage Unit Movement Overview

Scanning image is performed in the main scan direction (=1 line) by the CCD sensor and in the sub-scan direction (=several lines) combined with Scanner Carriage Unit movement. (refer to the figure below)

Line type, color CCD sensor can scan 1 line in main scan direction (parallel to the Scanner Carriage Unit) by one time. When scanning next lines after the second line in sub-scan direction, CR driving moves the Scanner Carriage Unit, which has CCD sensor inside, and scan the other lines. The scanned data is sent to the control board. The scanned data for “n” lines and “n-1” line are processed consecutively.

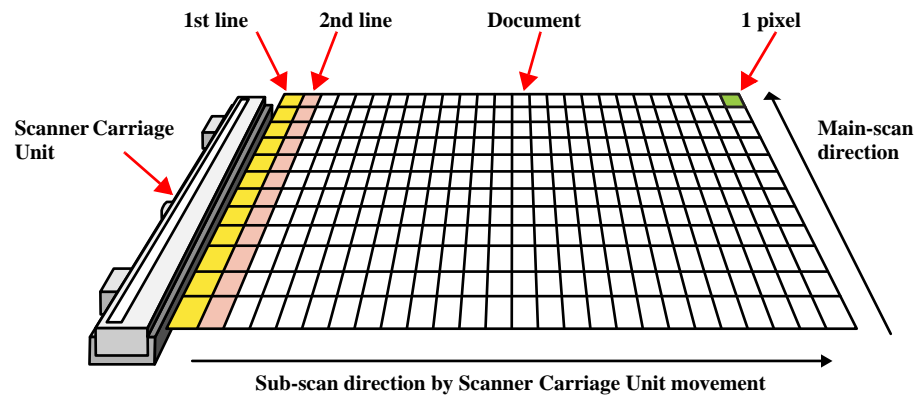


Figure 2-15. Scanner Carriage Unit movement

The table below shows the specifications for the stepping motor that controls the Scanner Carriage Mechanism.

Table 2-6. Scanner Motor specifications

Item	Description
Motor type	PM type stepping motor
Drive voltage	42 V (DC)
Coil resistance	38 $\Omega \pm 7\%$ (at 68 °F/20 °C)
Inductance	28.19 mH (at 68 °F/20 °C reference value)
Driving method	PWM
Driver IC	A6615

Drive of the Scanner Motor is transferred to the Scanner Carriage Unit by the Scanner Timing Belt. The Scanner Carriage Unit slides in the secondary scanning direction. The Scanner Motor uses a stepping motor and drives using open loop control.

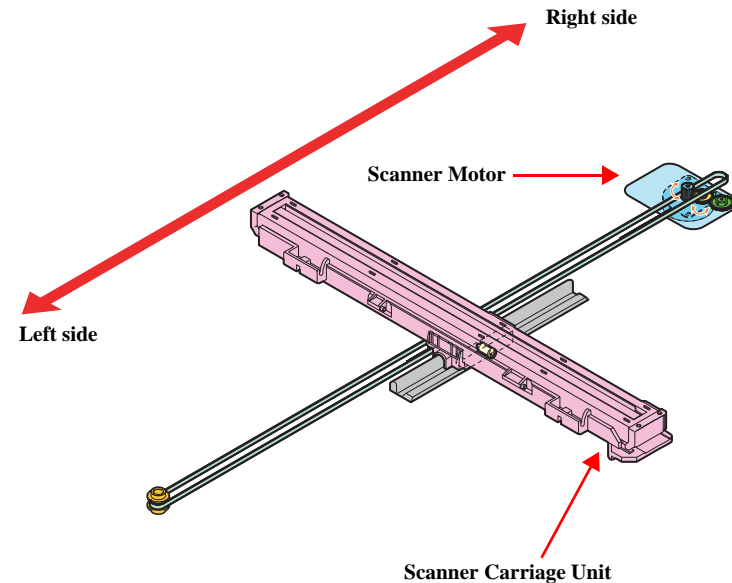


Figure 2-16. Scanner Carriage Unit Mechanism

2.4 Electrical Circuit Operating Principles

The electric circuit of the EPSON Stylus CX5700F/CX5800F consists of the following boards:

- Main Board (CPU + Soldering Flash ROM)
 - ASSY SP MAIN BOARD 8808
- Power Supply Board
 - ASSY SP POWER SUPPLY 8808

This section provides operating principles of ASSY SP MAIN BOARD 8808 and ASSY SP POWER SUPPLY 8808. Refer to [Figure 2-17 \(p.77\)](#) for the major connection of the each boards and their roles.

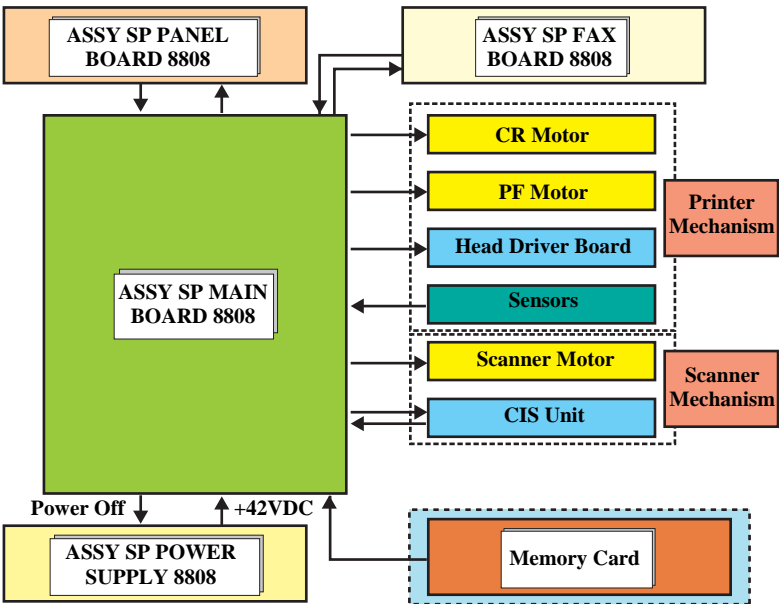


Figure 2-17. Electric circuit

2.4.1 ASSY SP POWER SUPPLY 8808

In ASSY SP POWER SUPPLY 8808 of EPSON Stylus CX5700F/CX5800F, the simulated oscillating stimulation flyback converter circuit method is used, and it supplies +42VDC to the drive line. The application of the output voltage is described below.

Table 2-7. Application Of The DC Voltages

Voltage	Application
+42VDC	<ul style="list-style-type: none">• Motors (CR Motor, PF Motor, Scanner Motor)• Printhead common voltage• Printhead nozzle selector 42V drive voltage

AC voltage input from AC inlet first goes through filter circuit that removes high frequency components and is then converted to DC voltage via the rectifier circuit and the smoothing circuit. DC voltage is then lead to the switching circuit and FET Q1 preforms the switching operation. By the switching operation of the primary circuit, +42VDC is generated and stabilized at the secondary circuit.



2.4.2 ASSY SP MAIN BOARD 8808

The logic circuit of ASSY SP MAIN BOARD 8808 is composed of the follows;

- Logic line (CPU, SDRAM, P-ROM and so on)
- Motor control/drive circuit (CR Motor, PF Motor, Scanner Motor)
- Head control/drive circuit
- USB Interface control circuit
- Sensor circuit
- Combination circuit (RTC circuit, Reset circuit, EEPROM circuit)

The printer mechanism is controlled by the above circuits. Following explains the major characteristics of this ASSY SP MAIN BOARD 8808.

- Lithium battery is not mounted
- Adoption of 3.3V/1.8V drive logic circuit components
The 5V formed by A6615 (U11) of ASSY SP MAIN BOARD 8808 and the 3.3V generated by BD9774 (U32) are used as the drive voltage for many elements. When SPC shifts to low power mode, the 3.3V that was generated by BD9774 (U32) is stepped down to 1.8V by FS8860 (U17), and elements that had been driven by 3.3V are then driven by 1.8V for less power consumption.

Table 2-8. 3.3V/1.5V & 5V Drive Components

5VDC	3.3 VDC	3.3/1.8VDC
• Motor driver (U11)	• RTC (U2) • Flash ROM (U4) • SDRAM (U5) • CPLD (U12) • Head Driver (U314)	• CPU (U3)

2.4.2.1 Main Elements

Table 2-9 (p.78) shows the function of the each main elements on ASSY SP MAIN BOARD 8808.

Table 2-9. Main Elements

IC	Location	Function
Flash ROM	U4	16Mbit • Firmware storage
SDRAM	U5	Bus= 16 bit, 256 Mbit SDRAM
RTC	U2	• EEPROM (TBD) • Reset function • Timer function
CPU	U3	CPU mounted on the ASSY SP MAIN BOARD 8808 is driven by clock frequency 67 MHz, 133 MHz and controls the printer, scanner, and SDRAM.
Motor driver	U11	• CR/PF/Scanner motor drive IC • Dropping 42V line to 5V
Regulator	U17	Dropping 3.3V line to 1.8V
CPLD	U12	Controls the Head driver and the Motor driver.
Head Driver	U314	Converts digital data to analog data and transmit the data to the Printhead.

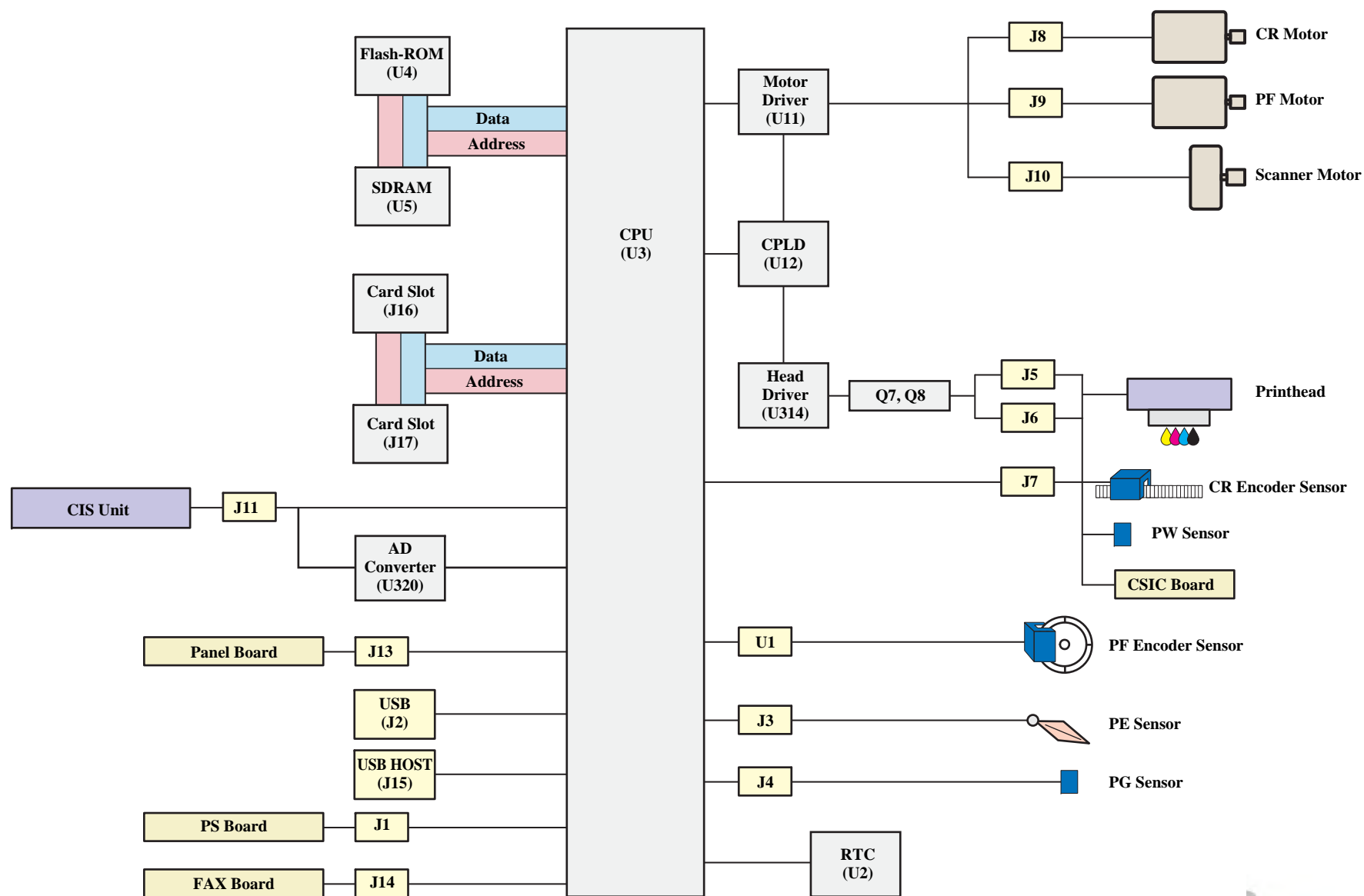


Figure 2-18. Block Diagram For ASSY SP MAIN BOARD 8808

2.4.2.2 Printhead Driver Circuit

The Printhead driver circuit consists of the following two components:

- Head common driver circuit (Common driver U314 & Wave amplifier transistor Q7, Q8)
- Nozzle selector IC on the Printhead driver

The common driver (U314) generates a basic drive waveform according to the output signals from Complex Programmable Logic Device (U12). The basic drive waveform is amplified by the transistors Q7 and Q8 (the amplified one is called drive waveform.) and then transferred to the nozzle selector IC on the Printhead driver board. Print data is converted to serial data by the CPLD and then sent to the nozzle selector IC on the Printhead driver board. Based on the serial data, the nozzle selector IC determines the nozzles to be actuated. The selected nozzles are driven by the drive waveforms amplified by the transistor Q7 and Q8. Refer to [Figure 2-19 \(p.80\)](#) for the Printhead driver circuit block diagram.

□ Head common driver circuit

The basic drive waveform is generated in the common driver (U314) based on the following 13 signal lines output from the CPLD (U12); DATA0-DATA9, LAT, RST, and PSAVE.

By the DATA signal output from the CPLD, the original data for the basic drive waveform is written in the memory in the common driver (U314). The addresses for the written data are determined by DATA0-DATA9 signals. Then, the necessary data is selected from the address and appropriate basic drive waveform is generated. Generated basic drive waveform is transferred to nozzle selector IC on the Printhead driver board through the transistor Q7 and Q8 and applied to the nozzle PZT specified by nozzle selector IC.

□ Nozzle selector circuit

Printing data is allocated to the four rows (the number of the head nozzle rows) and converted into serial data by the CPLD (U12). Then the converted data is transferred to the nozzle selector IC through the four signals lines (PRIO8 to PRIO11). Data transmission from the CPLD to the nozzle selector synchronizes with the LAT signal and SCK clock signal. Based on the transmitted data, appropriate nozzle is selected and the PZTs of the selected nozzle are driven by the drive waveform output from the head common driver.

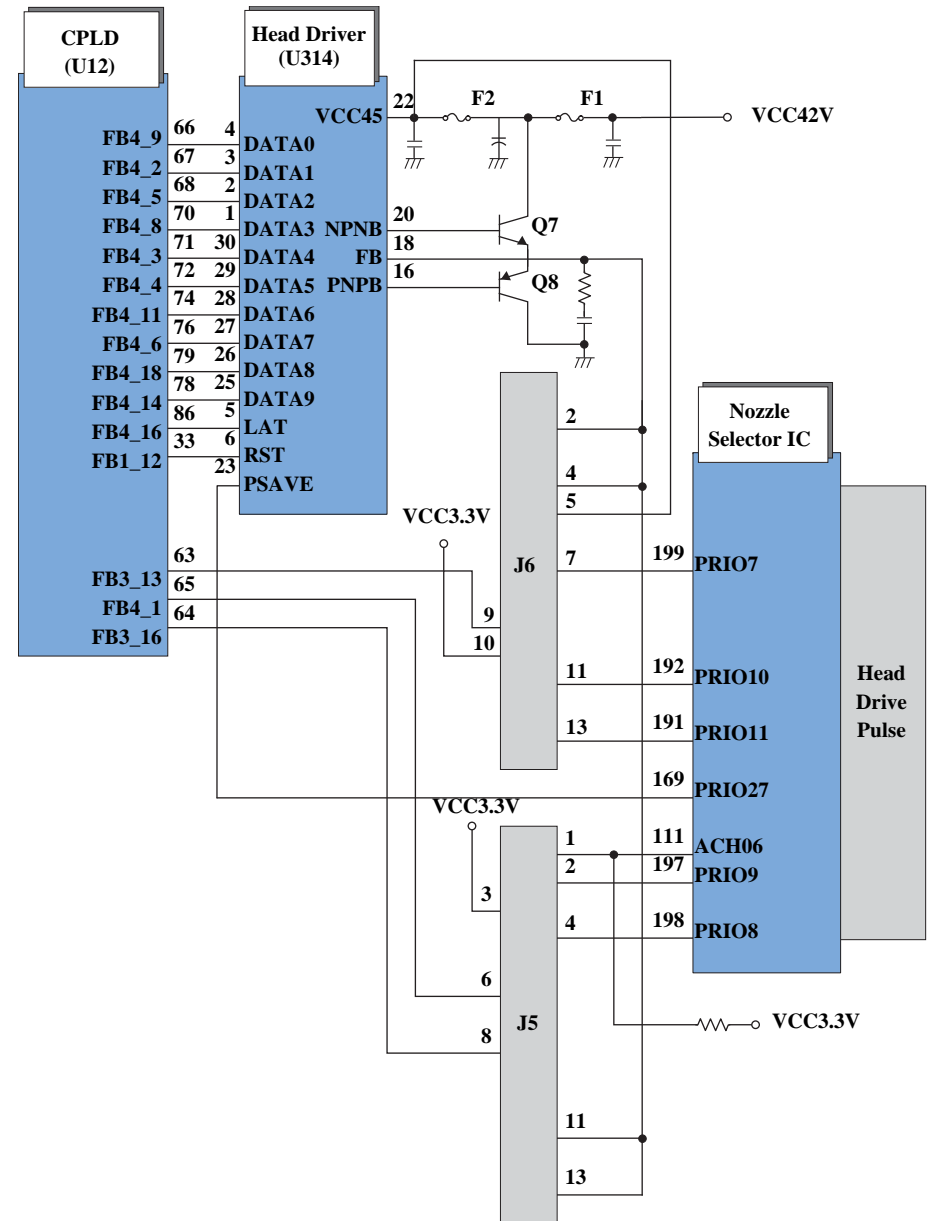


Figure 2-19. Printhead Driver Circuit

2.4.2.3 Motor Driver Circuit

CR/PF Motor drive circuit

The motor driver IC (U11) on ASSY SP MAIN BOARD 8808 drives CR/PF Motors. This product uses DC motor and performs constant current PWM drive. Based on the output pulse (signal) from CR Encoder or PF Encoder, the CPU (U3) sets the appropriate drive current value for each operational action and outputs the value as a special control signal to the Motor Driver (U11). Then, based on the signal output from the CPU, the Motor Driver outputs the motor drive current to the CR/PF Motors. When no data has been received for 5 minutes, the CPU sets the Motor Driver current value to 0, turning off the Motor Driver, in order to conserve electricity.

Scanner Motor Driver Circuit

The motor driver IC (U11) on ASSY SP MAIN BOARD 8808 drives Scanner Motor. This product uses PM type stepping motor and performs constant current bi-polar drive. The Motor Driver IC (U11) forms the motor drive waveform based on the signal output from the CPU (U3), controlling the Scanner Motor. When no data has been received for 5 minutes, the CPU sets the Motor Driver current value to 0, turning off the Motor Driver, in order to conserve electricity.

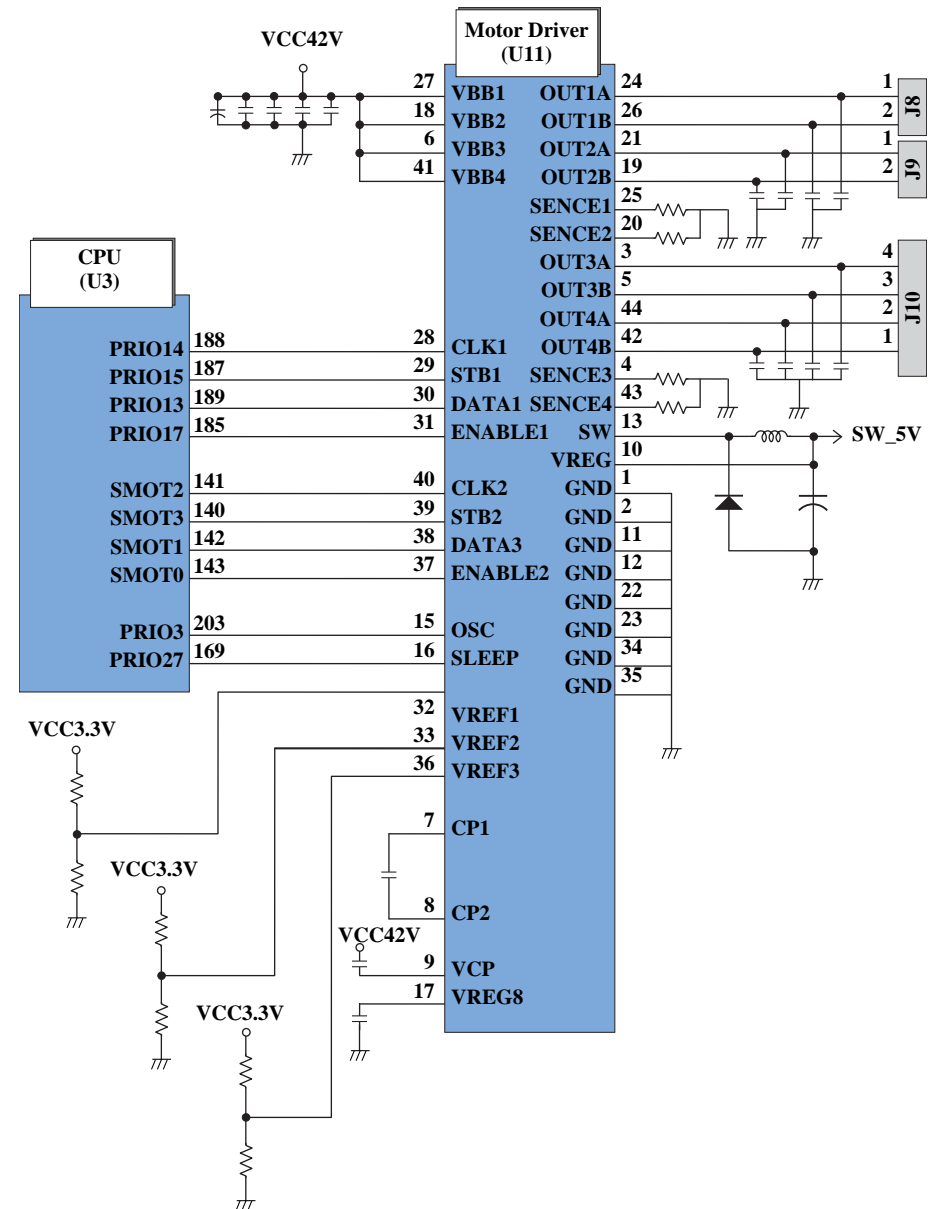


Figure 2-20. Motor Driver Circuit Block Diagram

2.4.2.4 Combination Circuit

This printer differs from previous models by using a combination IC that integrates the reset circuit, EEPROM and RTC.

Reset Circuit (TBD)

RTC IC (U2) on ASSY SP MAIN BOARD 8808 monitors the three voltage: +3.3V for the logic line, +5V for the logic line and +42V for the drive line. Reset Circuit outputs the reset signal to CPU (U3) in the following case.

- ☐ +3.3V line reset circuit
The 3.3V line is monitored at the VDD port of U2, and if an abnormal voltage is detected, a reset signal for the CPU is output from the FRST port of U2.
- ☐ +5V line reset circuit
The 5V line is monitored at the VDD2 port of U2, and if an abnormal voltage is detected, a reset signal for the CPU is output from the RST port of U2.
- ☐ +42V line reset circuit
The 42V line is monitored at the VEX port of U2, and if an abnormal voltage is detected, a reset signal for the CPU is output from the EXO port of U2.

EEPROM Control Circuit (TBD)

When the printer power is turned off, the following information is stored in EEPROM (U2) which is nonvolatile memory. And, when the printer power is on, CPU (U3) reads the information from EEPROM.

Information stored in EEPROM is listed below.

- Various ink counter (I/C consumption counter, Waste Ink Pad counter, etc.)
- Mechanical setting value (Head ID, Bi-D Adjustment, USB ID, etc.)

EEPROM is connected to CPU with 4 lines and each line has the following function.

- CE : Chip selection signal
- CLK : Data synchronism clock pulse
- DI : Data writing line (serial data) at power off.
- DO : Data reading line (serial data) at power on.

RTC Circuit

By adoption of the large-capacity capacitor (C167) for timer, the Power-off timer can be backed up for about one week after power-off.

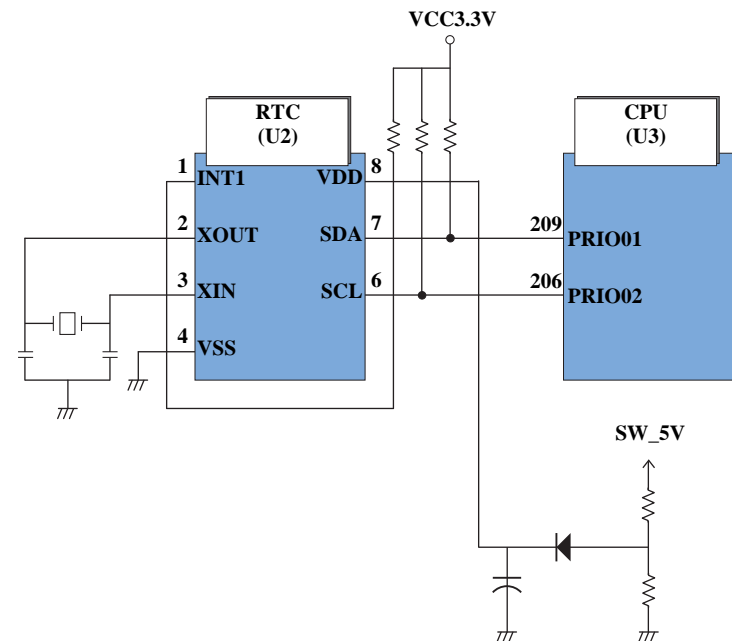


Figure 2-21. RTC Circuit Block Diagram

2.4.2.5 Sensor Circuit

CPU (U3) on the ASSY SP MAIN BOARD 8808 monitors the status of the printer with several sensors. However, unlike the previous product, ASF Unit on this printer does not have ASF Sensor. Instead of ASF Sensor, Change Lever and the Clutch mechanism is used to detect ASF home position. (As for the ASF home position detection, refer to “2.2.4 Paper Loading/Feeding Mechanism” (p.65).)

□ PE Sensor

This sensor is mounted at the right side center of the Printer Mechanism, and it detects the presence/absence of paper when the paper passes through the Paper Guide Rear. The PE Sensor is constructed of a transmissive photosensor and the PE Sensor Lever.

- Paper Absent : Because the PE Sensor Lever does not interfere between the photosensor terminals, a low signal is output to the CPU.
- Paper Present : The PE Sensor Lever interferes between the photosensor terminals, and a high signal is output to the CPU.

□ PG Sensor

This sensor is mounted at the left end lower section of the Printer Mechanism, and it detects the condition of PG (Platen Gap). The detection method used by the PG Sensor is mechanical contact points.

- PG Normal : A low signal is output to the CPU.
- PG Large : A high signal is output to the CPU.

□ PW Sensor

The sensor is mounted to the bottom of the Carriage Unit. It detects the top and bottom, left and right edges of the paper being fed.

- Paper absent : A low signal is output to the CPU.
- Paper present : A high signal output to the CPU.

□ CR Encoder Sensor

The sensor is composed of a transmissive photosensor mounted to the back of the carriage and a linear scale mounted in the CR scan direction. Minimum resolution of 1/180 inch is provided, and output to the CPU is a high signal for the black slits on the linear scale and a low signal for transparent slits. Control of the CR Motor is based on the output signal. The home position of the Carriage Unit is detected by this sensor.

□ PF Encoder Sensor

The sensor is composed of a transmissive photo sensors mounted to the loop scale of the PF Roller Unit left side and to ASSY SP MAIN BOARD 8808. Minimum resolution of 1/180 inch is provided, and output to the CPU is a high signal for the black slits on the loop scale and a low signal for the transparent slits on the loop scale. Control of the PF Motor is based on the output signal.

□ Thermistor (THM)

The thermistor is directly mounted on the Printhead driver board. It monitors the temperature around the Printhead and determines the proper head drive voltage to uniform the weight of the ink fired from the Printhead. This information is fed back to the CPU analog port. When the temperature rises, the head drive circuit lowers the drive voltage: When the temperature lowers, the head drive circuit rises the drive voltage.



The block diagram for the sensor circuit is shown below.

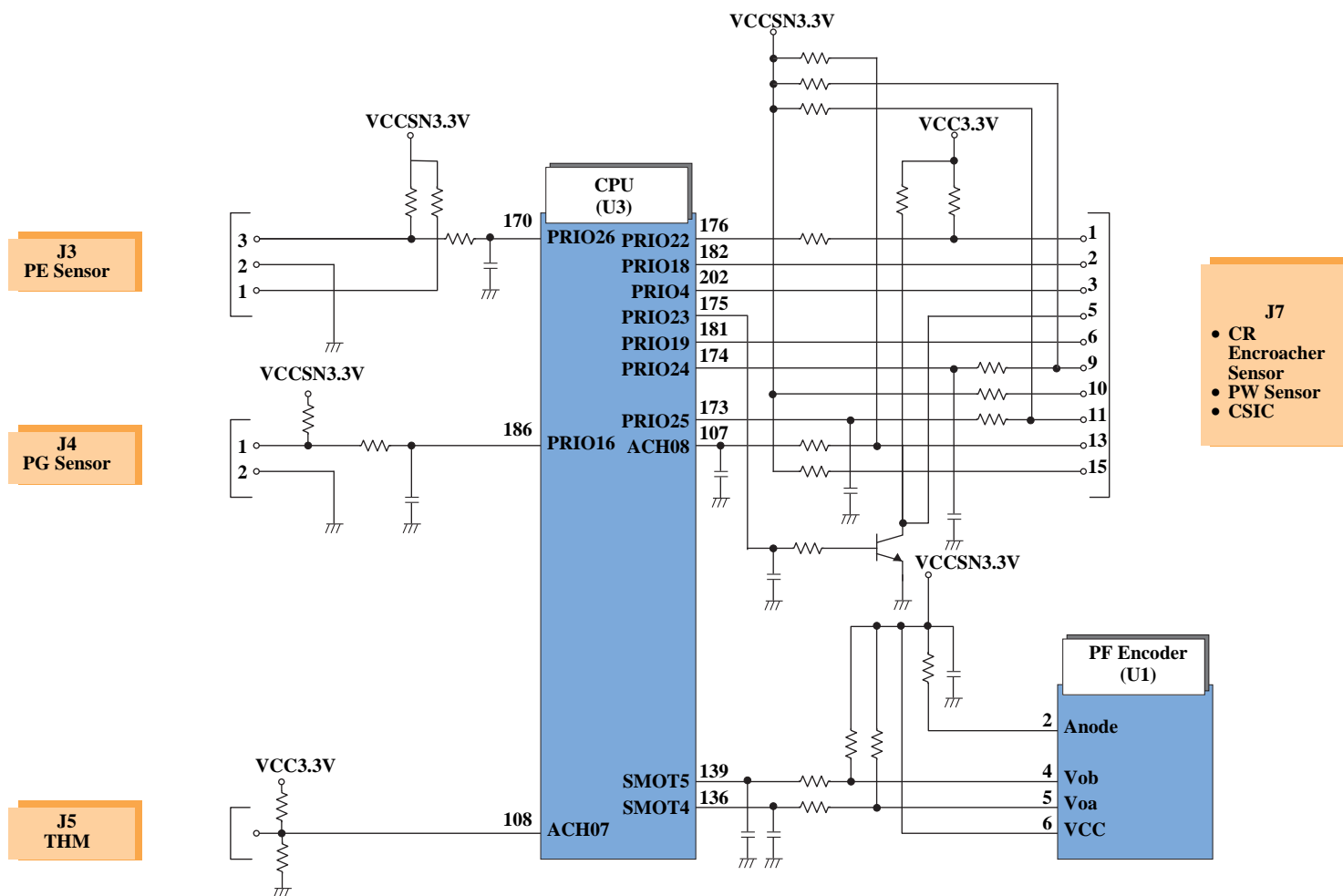


Figure 2-22. Sensor Circuit Diagram

2.5 Fax Function

2.5.1 Configuration of Applications

Fax function consists of the following applications:

- ❑ **User Interface:** Conveys the button operations input from the control panel to the Fax Scan and the Fax Scheduler, and controls the LCD display and such.
- ❑ **Fax Scan:** Scans the documents that you want to send by fax, based on the preset resolution/contrast.
- ❑ **Fax Scheduler:** Receives the commands from the User Interface, scanned data from the Fax Scan, and received data from T30 Engine as jobs, arranges those jobs, and sends them to the appropriate applications.
- ❑ **Fax Print:** Receives jobs (fax data, report, etc.) from the Fax Scheduler, and print them according to the preset settings.
- ❑ **T30 Engine:** Controls the protocol for fax communications.
 <Sending>
 Determines the resolution, communication speed, compression method by negotiating with the other end of the line, converts the scanned data to send data, and transmits the data through SFX336 Modem Driver.
 <Receiving>
 Judges whether the incoming call is a fax call or not. T30 Engine receives the data by controlling the protocol based on the fax information of the caller, and send the received data to the Fax Scheduler.
- ❑ **SFX336 Modem Driver:** Communicates according to the commands from T30 Engine.

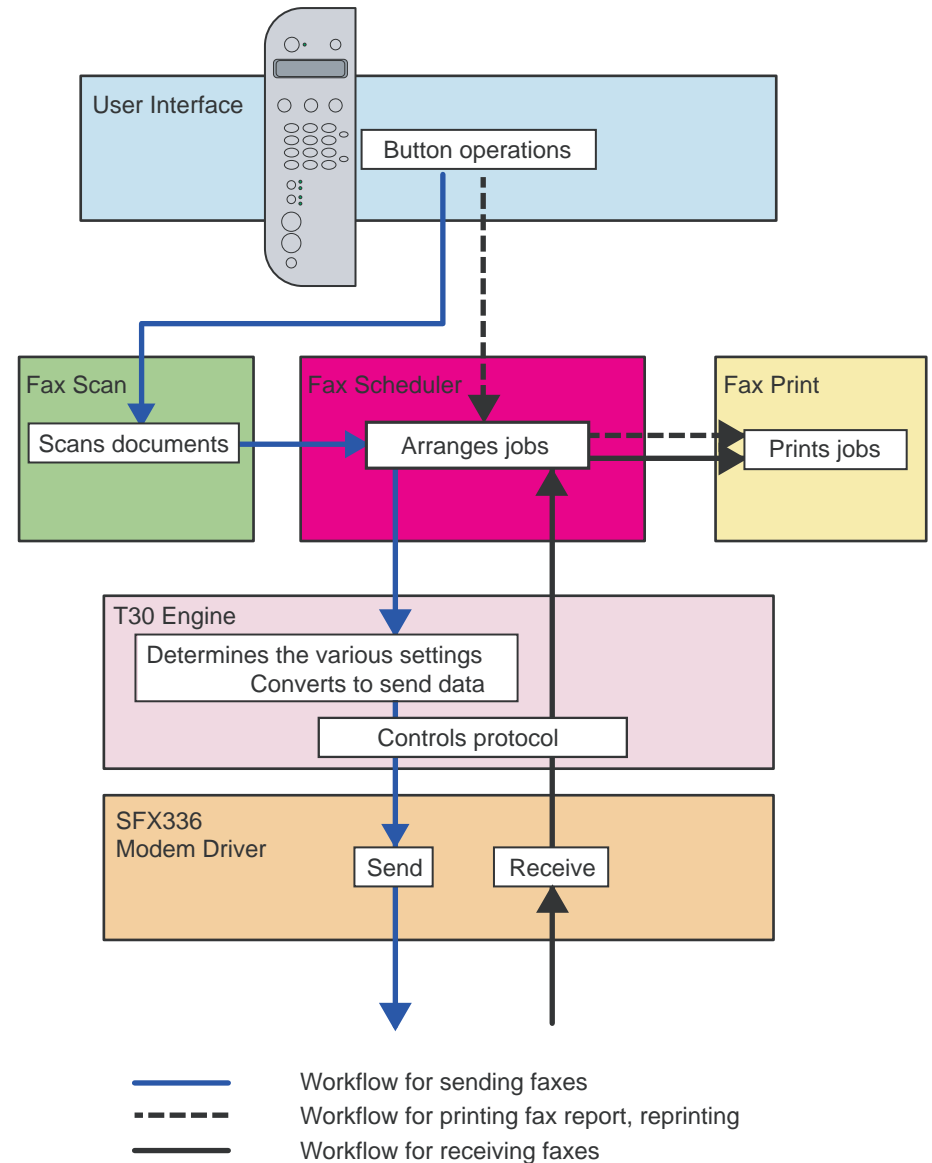


Figure 2-23. Fax Function

2.5.2 Memory Configuration for Fax

The printer employs a SDRAM (3.5 MB) for fax memory.

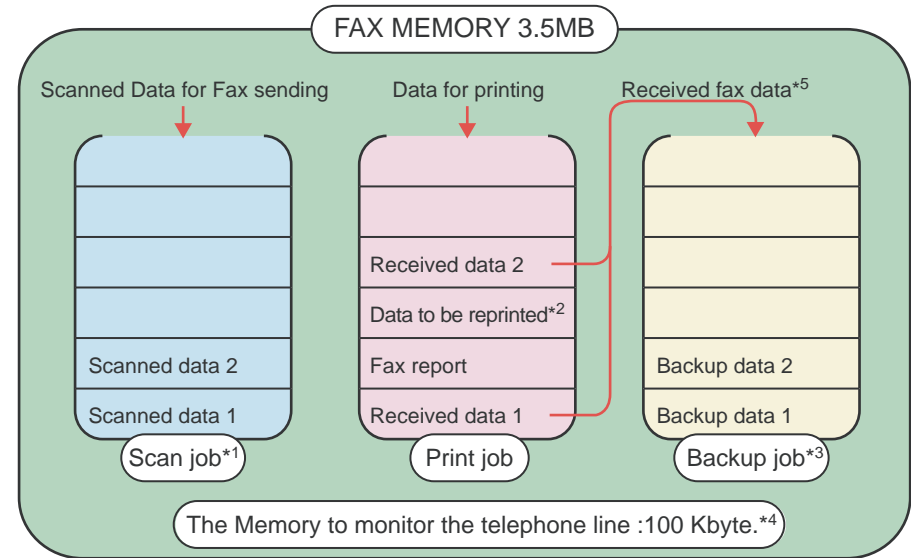
As a characteristic of SDRAM, data stored in the memory (including backup data) will be deleted once the unit is turned off.

File system inside the memory can basically be divided into three folders as follows:

Table 2-10. Fax Memory File System

Folder	Description
Scan job	<ul style="list-style-type: none"> Stores scanned data to send faxes. Used as a work area for converting send data. Maximum size to be stored: 2.3 MB
Print job	<ul style="list-style-type: none"> Stores all the received data and fax report as print jobs. Printed/Cancelled fax data move to the backup folder. (Fax report will be deleted.)
Backup job	<ul style="list-style-type: none"> Stores all the received data. Data in this folder will be printed when reprinting. If the printer runs out of memory during fax operation, the oldest data in this folder will automatically be deleted.

Note : 100 Kbytes of the whole memory is used to monitor the telephone line for 60 seconds after the call is detected to check whether the call is a fax signal or not.



Note *1: Maximum size to be stored or to be used for the conversion of the transmission data: 2.3 MB.

*2: Data copied from the Backup job to be reprinted. (All pages in the Backup job.)

*3: When the fax memory is full, oldest data in the Backup job will automatically be deleted to reserve memory for fax operations.

*4: 100 Kbytes of the whole memory is reserved to monitor the telephone line for 60 seconds when the incoming call is detected.

*5: All the received fax data moves to the Backup job no matter if the data is printed or not.

Note *: The data in Scan job and Print job is processed with FIFO (first in, first out).

Figure 2-24. Fax Memory File System

2.5.3 Workflow for Sending Faxes

1. When the user tries to send faxes from the LCD menu, the User Interface tells the Fax Scan to perform scanning.
2. The Fax Scan scans the data based on the preset resolution and the contrast. When the scanning is complete, scanned data is sent to the Fax Scheduler.
3. T30 Engine starts to communicate according to the preset parameters through the Modem Driver.
4. By negotiating with the other end of the line, the resolution and the compression method are determined. The scanned data is transmitted with the header and the time added.

NOTE 1: For monochrome faxes, data will be sent after all the scanning is complete.

2: For color faxes or larger sized data, the Fax Scan scans only the first page and establishes the connection with the other end of the line. From the second pages, the unit performs scanning and sending data alternately page by page to avoid out of memory situations.

2.5.4 Workflow for Receiving Faxes

1. T30 Engine starts to receive data when the Engine detects the fax signal through the Modem Driver.
2. The received data is sent to the Fax Scheduler. When the Fax Print is ready, the data is transferred to the Fax Print.
3. The Fax Print examines the condition of the printer, and judges if it is okay to print.
4. The printer starts printing based on the preset settings (such as auto reduction).
5. When the printing is finished, the received data moves to the Backup folder.

NOTE 1: When the Auto Answer is set to off, the user must confirm that the incoming call is a fax signal by using the telephone connected to the EXT jack, press the "Start" button (B&W or Color), and receive the fax (manual answer mode).

2: When an error occurs during printing the first page, an incomplete page will be printed. When an error occurs while printing the second or subsequent page, printing will stop after printing the pages that have no errors.

3: All the received data will be moved to the Backup folder regardless of the data is printed or not.

4: Printing will be started after receiving all the data.



2.5.5 List of Settings

Following items can be set with the control panel:

Table 2-11. List of Settings

Setting	Option	Description
Resolution	Standard	Adjusts the fax quality for the original you're faxing.
	Fine	
	Photo	
Contrast	Light	Adjusts the contrast for the original you're faxing.
	Normal	
	Dark	
Paper size	Letter (8.5 x 11, Default)	Indicates the paper size of the paper loaded in the printer for printing received faxes.
	Legal (8.5 x 14)	
	A4 (8.3 x 11.7)	
Automatic reduction	On (Default)	Indicates whether to reduce the received data in size in order to fit the selected paper size.
	Off	
Last transmission report	On error (Default)	Indicates whether or when to print a report for outgoing faxes. On error: Prints only when an error occurs. On send: Prints for every outgoing faxes. Off: Turns off report printing.
	On send	
	Off	
Fax mode	B&W only (Default)	Indicates the fax mode for outgoing faxes.
	B&W/Color	
Dial tone	Tone (Default)	Indicates the dialing mode.
	Pulse	
DRD	All (Default)	Indicates the ring pattern.
	Single	
	Double	
	Triple	
	Double & Triple	

Table 2-11. List of Settings

Setting	Option	Description
ECM: On/Off	On (Default)	Indicates whether to use the Error Correction Mode, which allows the unit to request the caller automatically to resend the data that cannot be received properly.
	Off	
V.34: On/Off	On (Default)	Indicates the transmission speed. On: 33.6 Kbps Off: 14.4 Kbps
	Off	
Rings to answer	4 (Default)	Indicates the number of incoming rings required before the unit will automatically answer the call.
	1, 2, 3, 5, 6, 7, 8, or 9	



CHAPTER

3

TROUBLESHOOTING



3.1 Overview

This chapter describes unit-level troubleshooting. Refer to the flowchart in this chapter to identify the defective unit and perform component level repair if necessary. This chapter also explains motor coil resistance, sensor specification and error indication.

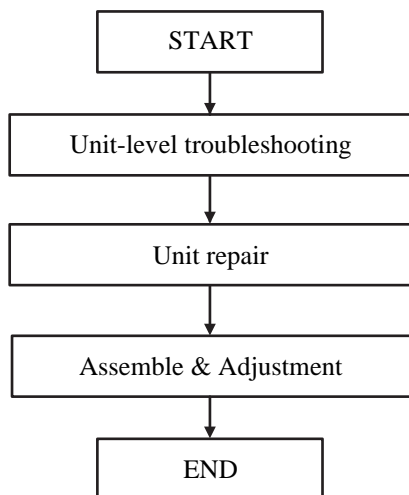


Figure 3-1. Troubleshooting flowchart

3.2 Troubleshooting for Motors and Sensors

Table 3-1. Motor, coil resistance

Motor	Location	Check point	Resistance
Scanner motor	J10	Pin 1 and 3 Pin 2 and 4	$37\Omega \pm 10\%$

Note : Since CR Motor and PF Motor are DC motors, the resistance among the electric poles varies. Therefore, judge if it is normal or abnormal based on if there is operation of the motor or not; the resistance values cannot be used to judge the abnormality. However, it is difficult to judge accurately, if it is not clear, replace the motor.

Table 3-2. Sensor check point

Sensor name	Check point	Signal level	Switch mode
PE Sensor	J3 / Pin 1 and 2	Less than 0.4V	Off: No paper
		More than 2.4V	On : Detect the paper
PG Sensor	J4 / Pin 1 and 2	—	On : PG large Off: PG normal

3.3 Error Indications and Fault Occurrence Causes

This section describes the LCD messages and fault occurrence causes at occurrence of the following errors during any sequence/operation (e.g. power-on sequence, paper feeding/loading sequence, ink sucking sequence).

LCD MESSAGES AND FAULT OCCURRENCE CAUSES

Error item	LCD message	Occurrence causes	Table to refer to
Index Sheet error (Memory card mismatch)	Memory card data does not match index sheet. Replace the card or index sheet and try again.	Memory card data does not match index sheet	Table 3-5 (p. 95)
Index Sheet error (Index Sheet contents)	No photos selected or photos marked incorrectly. Select photos correctly and try again.	No photos selected or photos marked incorrectly.	Table 3-6 (p. 96)
Index Sheet error (Incorrect placement)	No index sheet detected or sheet placed incorrectly. Correct the sheet placement and try again.	No index sheet detected or sheet placed incorrectly.	Table 3-7 (p. 96)
Memory card error	No memory card	<ul style="list-style-type: none"> An unsupported memory card is inserted. No image is saved in the memory card. 	Table 3-8 (p. 97)
Paper out	Paper out -> Load paper into the sheet feeder, then press the OK button.	Failed to load papers.	Table 3-9 (p. 97)
No Ink cartridge	No [Cyan, Magenta, Yellow, Black] ink cartridge -> Press the OK button to install a new ink cartridge.	<ul style="list-style-type: none"> Indicated color ink cartridge is not installed. Indicated color ink cartridge is running out of ink. 	For Stylus CX5700F/CX5800F, see Table 3-10 (p. 101)
Ink cartridge error/Read error/ Write error	[Cyan, Magenta, Yellow, Black] Ink cartridge error -> Cartridge replacement is necessary. Press the OK button to begin.	Installed ink cartridge(s) is not genuine.	For Stylus CX6900F/CX7000F/ DX7000F, see Table 8-1 (p. 254)
Paper jam	Paper jam -> Press the OK button. Remove any remaining jammed paper by hand.	Paper remains in the paper path.	Table 3-11 (p. 102)
Maintenance request (Liquid waste overflow)	Service required. See your documentation for details.	Part(s) inside Stylus CX5700F/CX5800F/CX6900F/ CX7000F/DX7000F has reached its end of life.	Table 3-12 (p. 104)
Fatal error (Printer)	Printer error ->See your documentation and call service if necessary.	Mechanical or internal trouble has occurred.	Table 3-13 (p. 105)
Fatal error (Scanner)	Scanner error ->See your documentation and call service if necessary.	Mechanical or internal trouble has occurred.	



SUPERFICIAL PHENOMENON-BASED TROUBLESHOOTING

Superficial Phenomenon	Table to refer to
Multiple Sheets of Paper are Always Loaded without LEDs or STM3 Messages	Table 3-14 (p. 112)
Abnormal Noise	Table 3-15 (p. 113)
Poor Scanned Image Quality	Table 3-16 (p. 113)
Poor Printing Quality	For Stylus CX5700F/CX5800F, see Table 3-17 (p. 114) For Stylus CX6900F/CX7000F/DX7000F, see Table 8-2 (p. 256)

FAX TROUBLESHOOTING

Superficial Phenomenon	Table to refer to
LCD Message-Based Troubleshooting	Table 3-18 (p. 120)
Communication Error	Table 3-19 (p. 122)
Memory Full (Out of Memory)	Table 3-20 (p. 123)
Cannot Receive Faxes	Table 3-21 (p. 123)
Cannot Dial	Table 3-22 (p. 123)
Cannot Receive/Send Faxes in Color	Table 3-23 (p. 124)
Others	Table 3-24 (p. 124)



3.4 Troubleshooting

You can identify the troubles by using the checklist in this section after confirming the LED indication on the printer. If you connect Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F to your computer and see an error message on the STM3, you can short the total repair time. And, when you find out the defective parts, replace them by referring the Chapter 4 “[DISASSEMBLY/ASSEMBLY](#)” (p.135). The following tables describe the error check points.

Table 3-3. Check Point for the Communication Error according to Each Phenomenon

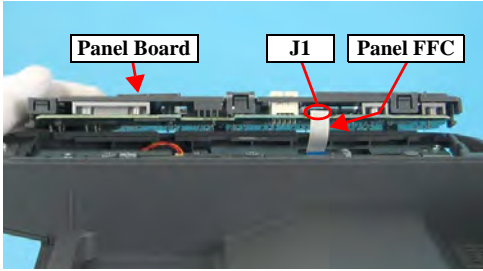
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Power on Anywhere 	When turning on the power, the SPC does not operate at all.	Panel Unit	1. Check if the Panel FFC is connected to J1 on the Panel Board. 	1. Connect the Panel FFC to J1 on the Panel Board.
			2. Check if the Panel FFC is not damaged.	2. Replace the Panel FFC with new one.
			3. Check if the Panel Board is not damaged.	3. Replace the Panel Board with new one.

Table 3-3. Check Point for the Communication Error according to Each Phenomenon

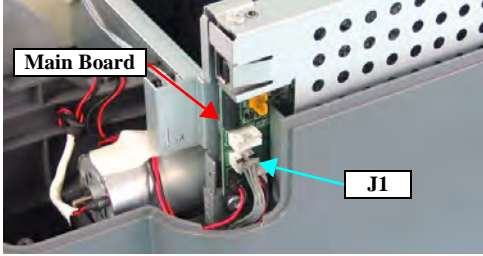
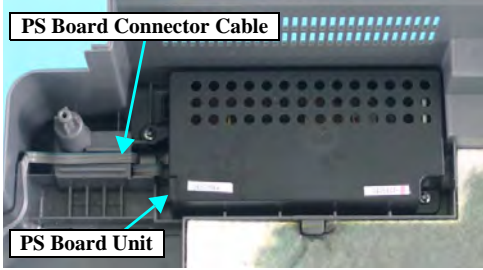
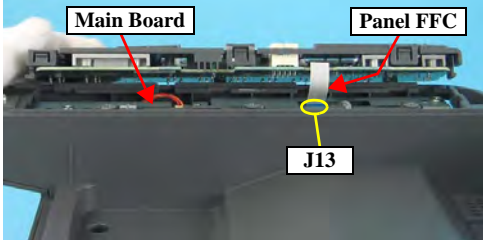
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Power on Anywhere 	When turning on the power, the SPC does not operate at all.	PS Board Unit	1. Check if the PS Board Connector Cable is connected to J1 on the Main Board. 	1. Connect the PS Board Connector Cable to J1 on the Main Board.
			2. Check if the PS Board Connector Cable/PS Board is not damaged. 	2. Replace the PS Board Unit with new one. * If the problem is not solved, replace the Main Board with new one.
<ul style="list-style-type: none"> Operation — 	When turning on the power, the power on sequence is performed correctly. But, when any printer job is sent to the SPC, a communication error is indicated with STM3.	USB Cable	1. Check if the USB Cable is connected between the SPC and the PC.	1. Connect the USB Cable to the SPC and the PC.
		Main Board Unit	1. Check if an incorrect model name is not stored into the EEPROM on the Main Board. 2. Check if the Panel FFC is connected to J13 on the Main Board. 	1. Use the Adjustment Program to write the correct value to the EEPROM. 2. Connect the Panel FFC to J13 on the Main Board.

Table 3-4. Check Point for the Error Before the Initial Ink Charge according to Each Phenomenon

Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Power on Inside HP 	The SPC does not perform the initial ink charge and an error is indicated with LEDs and STM3.	Ink Cartridge	1. Check if the Ink Cartridge can be used by installing it to other SPC.	1. Replace the Ink Cartridge with a brand-new one.
		Main Board	1. Check if an incorrect data is not stored into the EEPROM on the Main Board.	1. Set the proper destination by using Adjustment Program.
<ul style="list-style-type: none"> Power on Anywhere 	The SPC does not perform the ink replacement CL and an error is indicated with LEDs and STM3.	Ink Cartridge	1. Check if the Ink Cartridge can be used by installing it to other SPC.	1. Replace the Ink Cartridge with a brand-new one.
	The SPC does not perform the printing operation and an error is indicated with LEDs and STM3.	Ink Cartridge	1. Check if the ink is remaining in the Ink Cartridge.	1. Replace the Ink Cartridge with a brand-new one.
			2. Check if the Ink Cartridge can be used by installing it to other SPC.	2. Replace the Ink Cartridge with a brand-new one.

Table 3-5. Check Point for the Index Sheet Error (Memory Card Mismatch) according to Each Phenomenon

Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Operation – 	This error is generated when attempting to print from Index Sheet.	Index Sheet	1. Check if the Index Sheet was printed from an inserted Memory Card.	1. Switch to Index Sheet printed from an inserted Memory Card.
		Memory Card	1. Check if the Memory Card storing the Index Sheet data is inserted.	1. Insert Memory Card storing the Index Sheet data.
			2. Check if the Memory Card is not damaged.	2. Replace the Memory Card with a new one.

Table 3-6. Check Point for the Index Sheet Error (Index Sheet Contents) according to Each Phenomenon

Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Operation – 	This error is generated when attempting to print from Index Sheet.	Index Sheet	1. Check if mark of Index Sheet has been properly covered over.	1. Properly cover over mark.

Table 3-7. Check Point for the Index Sheet Error (Incorrect Placement) according to Each Phenomenon

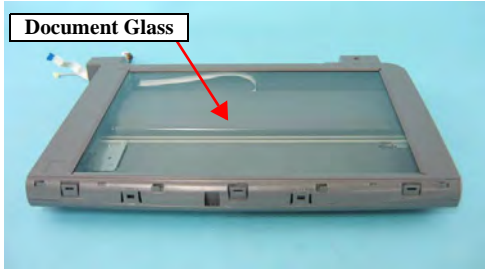
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Operation – 	This error is generated when attempting to print from Index Sheet.	Index Sheet	1. Check if the Index Sheet is set in the right way.	1. Set the Index Sheet correctly.
			2. Check if the Index Sheet standard position is not clean.	2. Reprint the Index Sheet.
		Document Cover	1. Check if the Document Cover is not open.	1. Close the Document Cover.
		Scanner Housing Upper	1. Check if the Document Glass is not clean. 	1. Clean the Document Glass.

Table 3-8. Check Point for the Memory Card Error according to Each Phenomenon

Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Operation — 	The Memory Card is unrecognized and an error is displayed.	Memory Card	1. Check if the Memory Card is acceptable.	1. Replace the Memory Card with an acceptable one.
		Main Board Unit	2. Check if the Memory Card is not damaged.	2. Replace the Memory Card with a new one.
			1. Check if the Memory Card slot pins on the Main Board is not bent.	1. Change the Main Board Unit with a new one.

Table 3-9. Check Point for the Paper Out Error according to Each Phenomenon

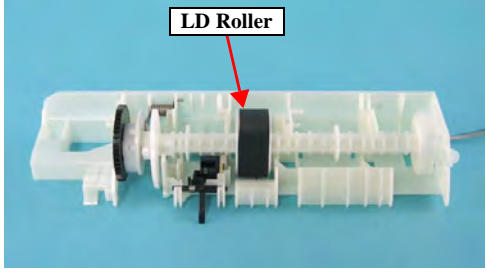
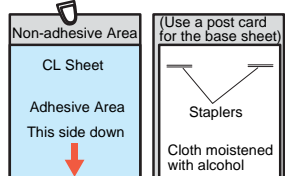
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Operation — 	The LD Roller cannot pick up paper, although the LD Roller attempt to rotate correctly.	Holder Shaft Unit	1. Check if any paper dust is not adhered to the surface of the LD Roller. 	1. Set a cleaning sheet in the ASF Unit as shown: adhesive face-up. Then holding the top edge, send a 1-page job from the printer driver. The “micro pearl” paper dust on the LD Roller surface is removed. To remove severe smear, staple a cloth moistened with alcohol to a post card and clean the roller in the same manner. 

Table 3-9. Check Point for the Paper Out Error according to Each Phenomenon

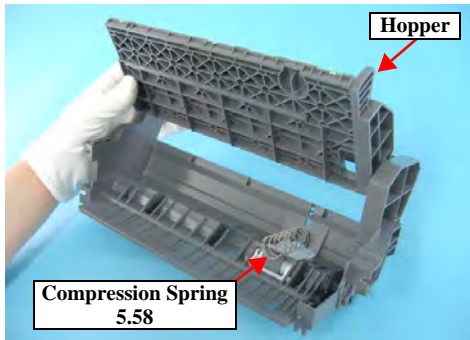
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Operation — 	The Hopper does not operate during the paper loading sequence although the LD Roller rotates to load paper from the ASF Unit.	ASF Unit	<p>1. Check if the Hopper operates correctly in the paper loading sequence.</p> 	<p>1. Reassemble the Compression Spring 5.58 between the ASF Frame and the Hopper.</p>

Table 3-9. Check Point for the Paper Out Error according to Each Phenomenon

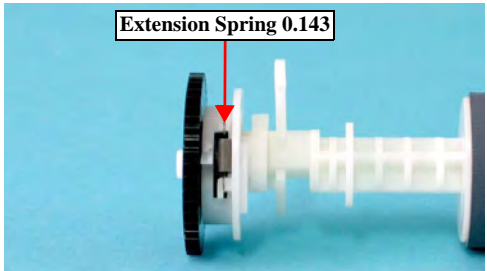
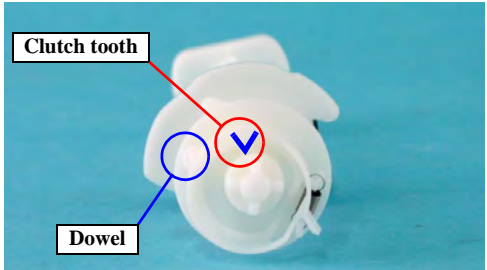
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> • Operation • — 	The drive of the PF Motor is not transmitted to the LD Roller Shaft.	Holder Shaft Unit	1. Check if the Extension Spring 0.143 does not come off in the Clutch mechanism. 	1. Reassemble the Extension Spring 0.143 in the Clutch mechanism.
			2. Check if the Clutch does not come off from the dowel of the LD Roller Shaft. 	2. Reassemble the round portion of the Clutch on the dowel of the LD Roller Shaft.
			3. Check if the Clutch tooth is not damaged.	3. Replace the Holder Shaft Unit with a new one.
			4. Check if the Clutch is not damaged.	4. Replace the Holder Shaft Unit with a new one.

Table 3-9. Check Point for the Paper Out Error according to Each Phenomenon

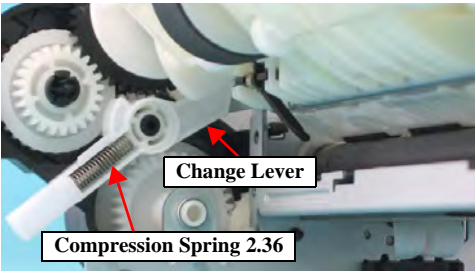
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> • Operation • — 	The drive of the PF Motor is not transmitted to the LD Roller Shaft.	Ink System Unit	1. Check if the Compression Spring 2.36 does not come off in the Change Lever. 	1. Replace the Ink System Unit with a new one.
<ul style="list-style-type: none"> • Operation • — 	The LD Roller is not set to the ASF home position and paper is always loaded from the ASF Unit during the paper loading sequence.	Ink System Unit	1. Check if the tip of the Change Lever is not damaged.	1. Replace the Ink System Unit with a new one.

Table 3-10. Check Point for the No Ink Cartridge/Ink Cartridge Error/Read Error/Write Error according to Each Phenomenon

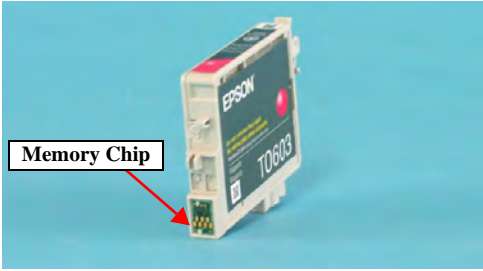
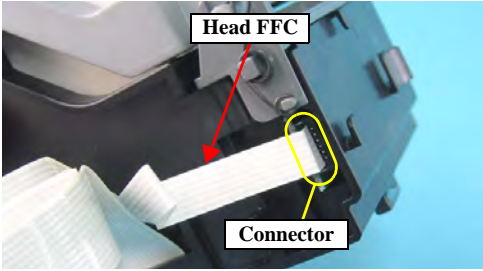
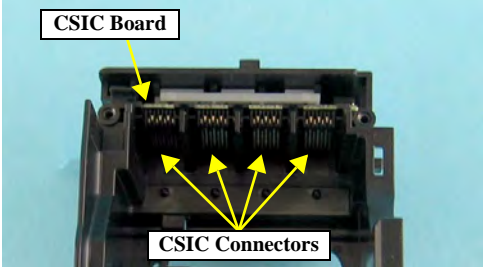
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Power on Inside HP 	After the Carriage has detected the HP, an error is displayed.	Ink Cartridge	1. Check if Ink Cartridge is properly installed.	1. Install the Ink Cartridge properly.
			2. Check if the Memory Chip is not disconnected or not chipped.	2. Replace the Ink Cartridge with a new one.
				
		CSIC Board	1. Check if the Head FFC is connected to connector on the CSIC Board.	1. Connect the Head FFC to connector on the CSIC Board.
				
		CSIC Connector	2. Check if the CSIC Board is not damaged.	2. Replace the Carriage Unit with a new one.
			3. Check if the CSIC Connector is not damaged.	1. Replace the Carriage Unit with a new one.
				

Table 3-11. Check Point for the Paper Jam Error according to Each Phenomenon

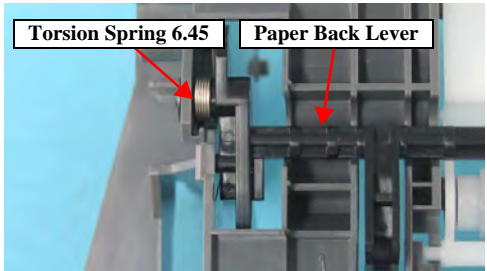
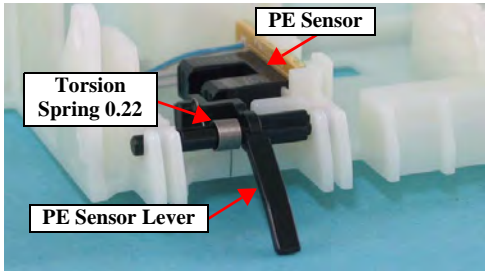
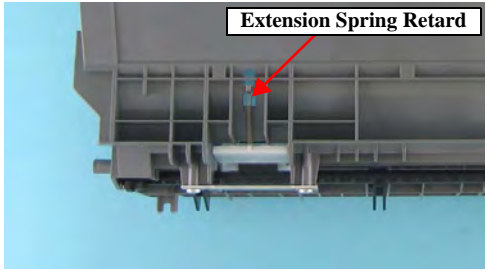
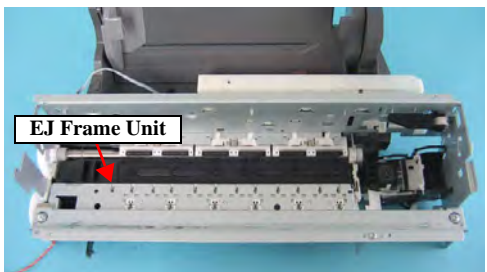
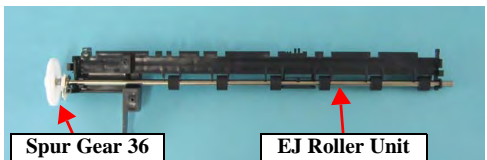
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> • Operation • Outside HP 	The paper feeding sequence is performed without loading paper in the paper loading sequence.	ASF Unit	1. Check if the ASF Unit is properly installed. 2. Check if the Paper Back Lever operates correctly in the paper loading sequence. 	1. Install the ASF Unit properly. 2. Set the Torsion Spring 6.45 between the ASF Frame and the Paper Back Lever.
		Holder Shaft Unit	1. Check if the Torsion Spring 0.22 is properly installed. 	1. Set the Torsion Spring 0.22 between the Holder Shaft and the PE Sensor Lever.

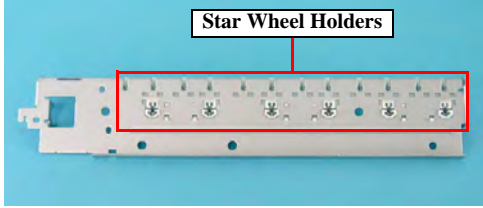
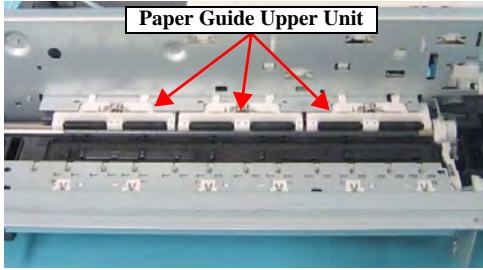
Table 3-11. Check Point for the Paper Jam Error according to Each Phenomenon

Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> • Operation • Outside HP 	Paper is being resent during paper feeding operation.	ASF Unit	1. Check if the Extension Spring Retard operates correctly in the paper loading sequence. 	1. Set the Extension Spring Retard between the Retard Roller Unit and the ASF Frame.
	When turning on the power, the Carriage Unit move to the home position correctly. But, the paper feeding sequence is performed without loading paper in the paper loading sequence.	Holder Shaft Unit*	1. Check if the Torsion Spring 0.22 is properly installed.	1. Set the Torsion Spring 0.22 between the Holder Shaft and the PE Sensor Lever.
<ul style="list-style-type: none"> • Operation • — 	The leading edge of paper does not go through between the EJ Roller Unit and the Star Wheel.	EJ Frame Unit**	1. Check if the EJ Frame Unit is correctly assembled. 	1. Reassemble the EJ Frame Unit correctly.
			2. Check if the EJ Roller Unit is correctly assembled. 	2. Reassemble the EJ Roller Unit correctly.

* The Carriage Unit can move to home position even if the Torsion Spring 0.22 comes off. However, the PE Sensor Lever keeps the high signal condition in the next operation. Therefore, the paper jam error is detected.

** In case that the paper jam error occurs in each operation, the jammed paper contacts the nozzle surface of the Printhead and the Printhead may be damaged.

Table 3-11. Check Point for the Paper Jam Error according to Each Phenomenon

Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Operation — 	The leading edge of paper does not go through between the EJ Roller Unit and the Star Wheel.	EJ Frame Unit**	3. Check if the Star Wheel Holders does not come off. 	3. Reassemble the Star Wheel Holders correctly.
			4. Check if the Spur Gear 36 is not damaged.	4. Replace the EJ Frame Unit with a new one.
	The leading edge of paper is not loaded to the PF Roller Unit.	Paper Guide Upper Unit **	1. Check if the Paper Guide Upper Unit is correctly assembled. 	1. Reassemble the Paper Guide Upper Unit to the Main Frame correctly.

** In case that the paper jam error occurs in each operation, the jammed paper contacts the nozzle surface of the Printhead and the Printhead may be damaged.

Table 3-12. Check Point for the Maintenance Request according to Each Phenomenon

Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Operation — 	An error is indicated on the LCD.	Waste ink pads	1. Check if the Waste Ink Pads is saturated.	1. Change the Waste Ink Pads and initialize the Waste Ink Pad Counter. Refer to Waste Ink Pad Counter (p.210).

Table 3-13. Check Point for the Fatal Error according to Each Phenomenon

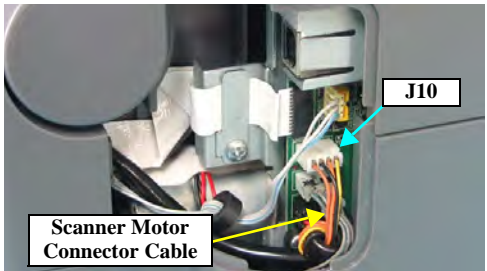
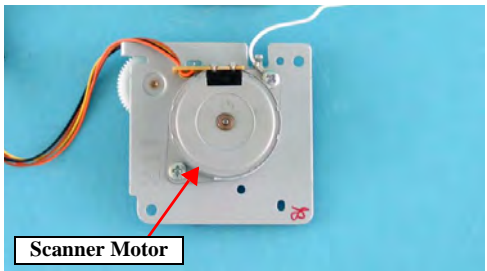
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Power on Anywhere 	The Scanner Unit does not initialize when the power is turned on.	Scanner Motor	1. Check if the Scanner Motor Connector Cable is connected to J10 on the Main Board. 	1. Connect the Scanner Motor Connector Cable to J10 on the Main Board.
			2. Check if the coil resistance of the Scanner Motor is about 37Ω by using the tester (<i>refer to Table 3-1</i>). 	2. Replace the Scanner Motor with a new one.
			3. Check if the Scanner Motor Connector Cable is not damaged.	3. Replace the Scanner Motor with a new one.

Table 3-13. Check Point for the Fatal Error according to Each Phenomenon

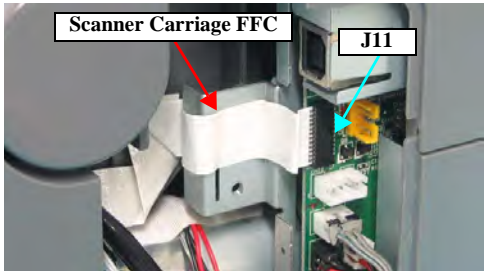
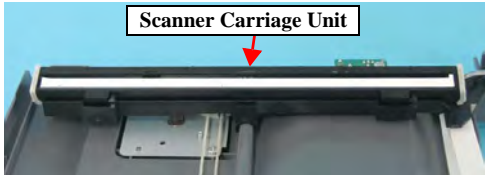
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Power on Anywhere 	The Scanner Unit does not initialize when the power is turned on.	Scanner Carriage FFC	1. Check if the Scanner Carriage FFC is connected to J11 on the Main Board. 	1. Connect the Scanner Carriage FFC to J11 on the Main Board.
			2. Check if the Scanner Carriage FFC is not damaged.	2. Replace the Scanner Carriage FFC with a new one.
<ul style="list-style-type: none"> Power on Anywhere 	The Scanner Unit does not initialize when the power is turned on.	Scanner Carriage Unit	1. Check if the Scanner Carriage Unit is not damaged. 	1. Replace the Scanner Carriage Unit with a new one.

Table 3-13. Check Point for the Fatal Error according to Each Phenomenon

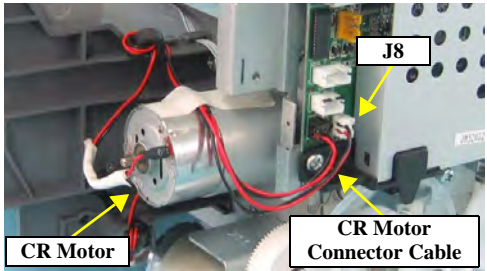
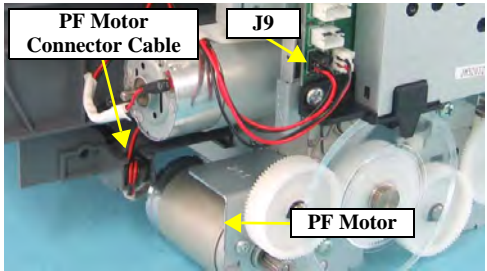
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Power on Anywhere 	When turning on the power, the CR Motor does not operate at all.	CR Motor	1. Check if the CR Motor Connector Cable is connected to J8 on the Main Board. 	1. Connect the CR Motor Connector Cable to J8 on the Main Board.
			2. Check if the CR Motor Connector Cable is not damaged.	2. Replace the CR Motor with a new one.
			3. Check if the CR Motor operates.	3. Replace the CR Motor with a new one.
	When turning on the power, the PF Motor does not operate at all.	PF Motor	1. Check if the PF Motor Connector Cable is connected to J9 on the Main Board. 	1. Connect the PF Motor Connector Cable to J9 on the Main Board.
			2. Check if the PF Motor Connector Cable is not damaged.	2. Replace the PF Motor with a new one.
			3. Check if the PF Motor operates.	3. Replace the PF Motor with a new one.

Table 3-13. Check Point for the Fatal Error according to Each Phenomenon

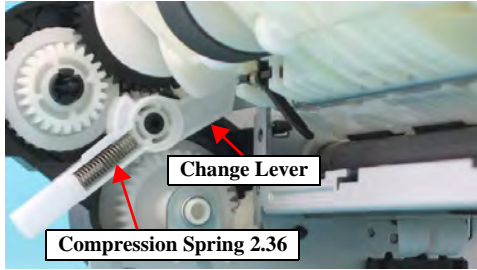
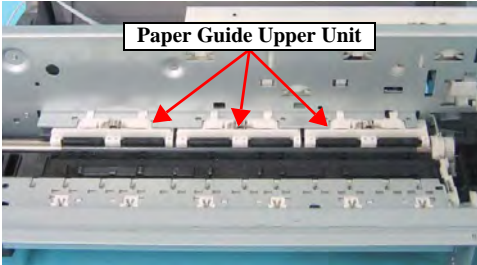
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Power on Anywhere 	When turning on the power, the Carriage Unit collides to the Change Lever located to the front side of the printer.	PF Motor	1. Check if the PF Motor Connector Cable is connected to J9 on the Main Board.	1. Connect the PF Motor Connector Cable to J9 on the Main Board.
			2. Check if the PF Motor Connector Cable is not damaged.	2. Replace the PF Motor with a new one.
			3. Check if the PF Motor operates.	3. Replace the PF Motor with a new one.
		Ink System Unit	1. Check if the Compression Spring 2.36 does not come off in the Change Lever. 	1. Replace the Ink System Unit with a new one.
<ul style="list-style-type: none"> Power on Anywhere 	The Carriage Unit collides with the Guide Upper Unit when power is turned on.	Paper Guide Upper Unit	1. Check if the Paper Guide Upper Unit is correctly assembled. 	1. Reassemble the Paper Guide Upper Unit to the Main Frame correctly.

Table 3-13. Check Point for the Fatal Error according to Each Phenomenon

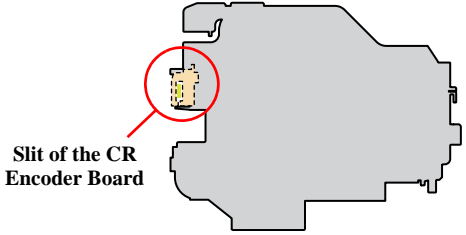
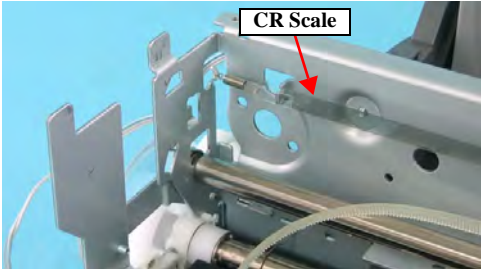
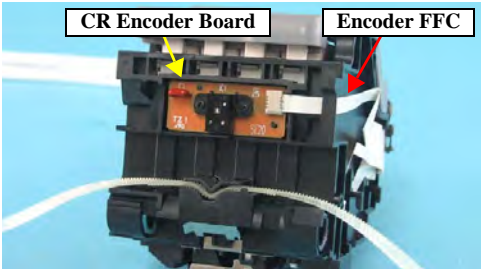
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Power on Anywhere 	When turning on the power, the Carriage Unit collides with the right side of the Main Frame.	CR Scale	1. Check if the CR Scale does not come off or it properly passes through the slit of the CR Encoder Board. 	1. Reassemble the CR Scale correctly. * If the problem is not solved, replace the Main Board with a new one.
			2. Check if the CR Scale is not damaged or contaminated. 	2. Replace the CR Scale with a new one or clean it completely.
		CR Encoder Board	1. Check if the Encoder FFC is connected to the CR Encoder Board. 	1. Connect the Encoder FFC to the CR Encoder Board.
			2. Check if the Encoder FFC is not damaged.	2. Replace the Encoder FFC with a new one.
			3. Check if the CR Encoder Board is not damaged.	3. Replace the CR Encoder Board with a new one.

Table 3-13. Check Point for the Fatal Error according to Each Phenomenon

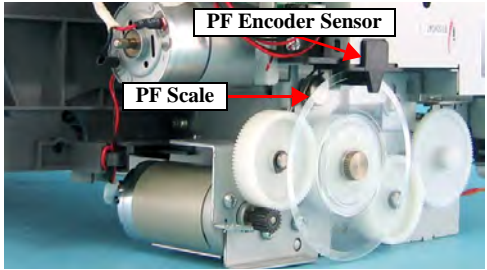
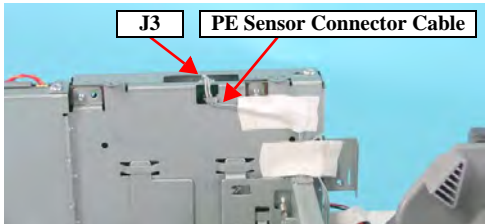
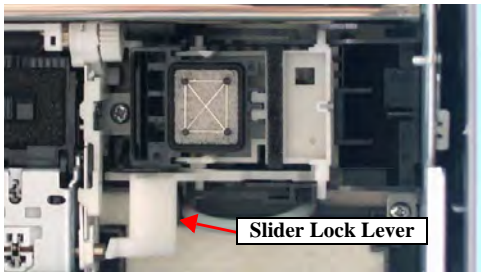
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Power on Anywhere 	The eject rollers are rotating at high speed when power is turned on. (For about 1 cycle.)	PF Scale / Main Board Unit	1. Check if the PF Scale is not damaged or contaminated. 	1. Replace the PF Scale with a new one.
			2. Check if the PF Encoder Sensor is not damaged.	2. Replace the Main Board Unit with a new one.
<ul style="list-style-type: none"> Operation Anywhere 	The Scanner Carriage Unit does not operate.	Guide Rail of the Housing, Lower	1. Check if the grease is enough on the Guide Rail surface of the Housing, Lower.	1. After wiping the grease on the Guide Rail of the Housing, Lower with a dry, soft cloth, coat it with grease (G-26 Grease). (Refer to Chapter 6 "MAINTENANCE" (p.212).)
			2. Check if the Guide Rail of the Housing, Lower is set correctly.	2. Reassemble the Guide Rail of the Housing, Lower to the Scanner Carriage Unit.
<ul style="list-style-type: none"> Operation Anywhere 	The paper feeding sequence is performed without loading a paper in the paper loading sequence.	Holder Shaft Unit	1. Check if the PE Sensor Connector Cable is connected to J3 on the Main Board. 	1. Connect the PE Sensor Connector Cable to J3 on the Main Board.
			2. Check if the PE Sensor Connector Cable is not damaged.	2. Replace the PE Sensor with a new one.
			3. Check if the PE Sensor is not damaged.	3. Replace the PE Sensor with a new one.

Table 3-13. Check Point for the Fatal Error according to Each Phenomenon

Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> • Operation • Anywhere 	The Carriage Unit climbs over the Slider Lock Lever set to the wiping position and the Carriage Unit collides with its lever.	Front Frame	1. Check if the Slider Lock Lever is correctly released by the CR movement. 	1. Replace the Front Frame with a new one.
		Main Frame	1. Check if the Slider Lock Lever is correctly released by the CR movement.	1. Replace the Printer Mechanism with a new one.

3.4.1 Superficial Phenomenon-Based Troubleshooting

This section explains the fault locations of the error states (print quality and abnormal noise) other than the error states (LCDs) in the previous section.

Table 3-14. Check Point When Multiple Sheets of Paper are Always Loaded without LEDs or STM3 Messages

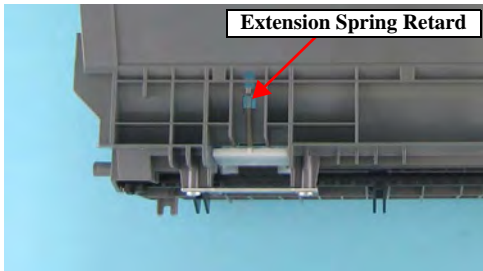
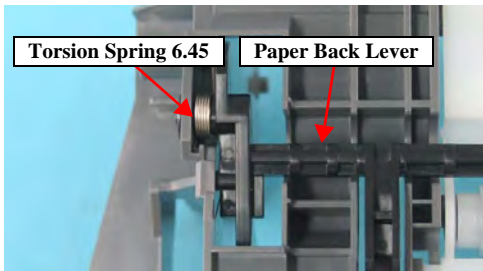
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Operation – 	The LEDs and STM3 are not indicating error conditions. But, multiple sheets of paper are always loaded from the ASF Unit.	ASF Unit	1. Check if the Extension Spring Retard operates correctly in the paper loading sequence. 	1. Set the Extension Spring Retard between the Retard Roller Unit and the ASF Frame.
			2. Check if the Paper Back Lever operates correctly in the paper loading sequence. 	2. Set the Torsion Spring 6.45 between the ASF Frame and the Paper Back Lever.

Table 3-15. Check Point for the Abnormal Noise

Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Anytime Anywhere 	The abnormal noise occurs at the first power on timing and during each operation although the printing operation is performed.	Carriage Unit	1. Check if the grease on the Carriage Guide Shaft is sufficient.	1. Wipe off the remaining grease on the Carriage Guide Shaft and lubricate it on its shaft.
		Front Frame	1. Check if the grease on the Front Frame is sufficient.	1. Wipe off the remaining grease on the Front Frame and lubricate it on its frame.
		Ink System Unit	1. Check if the Change Lever moves smoothly.	1. Replace the Ink System Unit with a new one.
	The bottom of the Carriage Unit contacts the surface of the EJ Frame Unit.	EJ Frame Unit	1. Check if the EJ Frame Unit is not bent up.	1. Replace the EJ Frame Unit with a new one.
	The Carriage Unit collides with the Paper Guide Upper Unit during each operation.	Paper Guide Upper Unit	1. Check if the Paper Guide Upper Unit is attached securely. (check if it interferes with the Carriage Unit)	1. Reassemble the Paper Guide Upper to the Main Frame.

Table 3-16. Check Point for Poor Scanned Image Quality

Scanned image Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> Scanned image is not clear. 	There are dusts on the Document Glass. (white dots appear on the scanned image)	Scanner Housing Upper	1. Check if there is not any dust on the Document Glass.	1. Remove the extraneous matter from the Document Glass. (Refer to the Chapter 6 “MAINTENANCE” (p.212).)
	There are dusts on the LED in the Rod Lens Array. (vertical stripes appear on the scanned image)	Scanner Carriage Unit	1. Check if there is not any dust on the LED.	1. Remove the extraneous matter from the Document Glass (blow away the dusts).
	The LED of Scanner Carriage Unit does not light up.	Scanner Carriage Unit	1. Check if the LED lights up.	1. Replace the Scanner Carriage Unit with new one.



Table 3-17. Check Point for the Poor Printing Quality

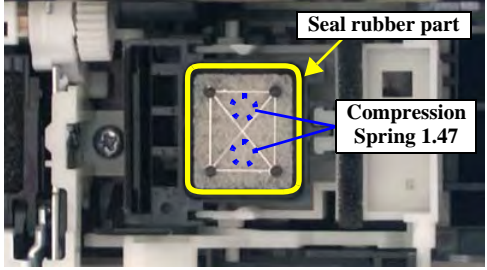
Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
• Dot missing and mixed colors	Ink is scarcely ejected to the Cap from the Printhead.	Ink System Unit (Cap Unit)	1. Check if there is not any foreign material/damage around the seal rubber part on the Cap Unit. 	1. Remove the foreign material around the seal rubber parts carefully.
			2. Check if the Compression Spring 1.47 is correctly mounted on the Cap Unit.	2. Replace the Ink System Unit with a new one.
	Ink is ejected to the Cap from the Printhead, but the SPC does not recover from the error after cleaning or ink change.	Printhead	1. Check if it returns to normal by performing CL operation or replacing the Ink Cartridge.	1. Perform CL operation and the Ink Cartridge replacement specified times. If it doesn't work, change the Printhead with a new one.
			2. Check if the Printhead is not damaged.	2. Replace the Printhead with a new one.
		Cleaner Blade	1. Check if the Cleaner Blade does not have paper dust or bending.	1. Replace Ink System Unit with a new one.
		Main Board	1. Check if the Main Board is not damaged.	1. Replace the Main Board with a new one.

Table 3-17. Check Point for the Poor Printing Quality

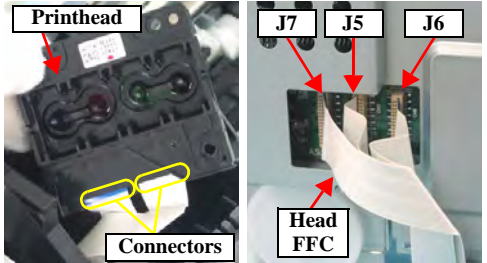
Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
• White streak / abnormal discharge	Ink is ejected to the Cap from the Printhead, but printing is not done at all after cleaning or ink change, or abnormal discharge occurs.	Head FFC	1. Check if the Head FFC is securely connected to the Printhead Connectors and the Main Board Connectors (J5, J6, J7).	1. Connect the Head FFC to the Printhead and the Main Board Connectors.
				
			2. Check if the Head FFC is not damaged.	2. Replace the Head FFC with a new one.
		Printhead	1. Check if it returns to normal by performing CL operation or replacing the Ink Cartridge.	1. Perform CL operation and the Ink Cartridge replacement specified times. If it doesn't work, change the Printhead with a new one.
		Main Board Unit	1. Check if the Main Board is not damaged.	1. Replace the Main Board Unit with a new one.

Table 3-17. Check Point for the Poor Printing Quality

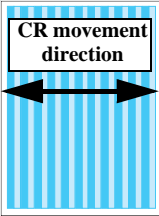
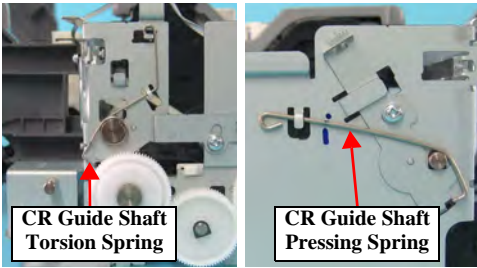
Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> White streak/ color unevenness occurrence 	<p>Vertical banding appears against the CR movement direction. And, it looks like uneven printing.</p>  <p>[Note] If the problem is not solved, replace the CR Motor with a new one.</p>	Adjustment	1. For printing in the Bi-D mode, check if Bi-D Adjustment has been performed properly.	1. Perform Bi-D Adjustment to eliminate displacements between the upper and lower rules. (Refer to Chapter 5 “ADJUSTMENT” (p.182).)
		Printhead	1. Check if each segment is printed correctly in the Nozzle Check Pattern.	1. Perform Head Cleaning and check the Nozzle Check Pattern. (Refer to Chapter 5 “ADJUSTMENT” (p.182).) If the problem is not solved, replace the Printhead with a new one.
		Carriage Unit / Carriage Guide Shaft	1. Check if there is not any foreign material on the surface of the Carriage Guide Shaft.	1. Remove foreign objects from surface of the Carriage Guide Shaft.
			2. Check if the Carriage Guide Shaft is properly secured to Main Frame by the CR Guide Shaft Torsion Spring and the CR Guide Shaft Pressing Spring.	2. Reassemble the Carriage Guide Shaft correctly.
				
			3. Check if the grease is enough on the surface of the Carriage Guide Shaft.	3. After wiping the grease on the Carriage Guide Shaft and the Carriage with a dry, soft cloth, coat it with grease (G-71 Grease). (Refer to Chapter 6 “MAINTENANCE” (p.212).)
			4. Check if any damage is not observed on the surface of the Carriage Guide Shaft.	4. Replace the Carriage Guide Shaft with a new one.
		Front Frame	1. Check if there is not any foreign material on the surface of the Front Frame.	1. Remove foreign matter from the Front Frame.
			2. Check if the Front Frame is lubricated with enough grease.	2. After wiping the grease on the Front Frame with a dry, soft cloth, coat it with grease (G-71 Grease). (Refer to Chapter 6 “MAINTENANCE” (p.212).)
			3. Check if the Front Frame has not been deformed.	3. Replace the Front Frame with a new one.

Table 3-17. Check Point for the Poor Printing Quality

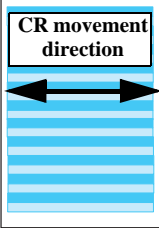
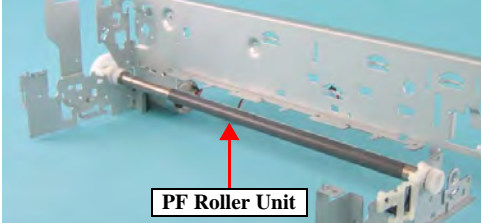
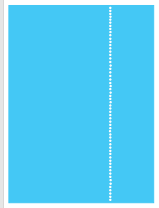
Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> White streak/ color unevenness occurrence 	<p>Micro banding appears horizontally along the CR movement direction and it appears with the same width.</p>  <p>[Note] If the problem is not solved, replace the PF Motor with a new one.</p>	Printer driver & exclusive paper	1. Check if the suitable paper is used according to the printer driver setting.	1. Use the suitable paper according to the printer driver setting.
		Printhead	1. Check if each segment is printed correctly in the Nozzle Check Pattern.	1. Perform the Head Cleaning and check the Nozzle Check Pattern. (Refer to Chapter 5 “ADJUSTMENT” (p.182).) If the problem is not solved, replace the Printhead with a new one.
		PF Roller Unit	1. Check if there is not any foreign material on the surface of the PF Roller Unit. 	1. Clean the surface of the PF Roller Unit carefully with the soft cloth.
	<p>The Star wheel mark against the CR movement direction.</p> 	EJ Frame Unit	2. Check if the PF Roller Unit is not damaged.	2. Replace the PF Roller Unit with a new one.
			1. Check if the Star Wheel Holder does not come off. 2. Check if the surface of the EJ Frame Unit is flat.	1. Reassemble the Star Wheel Holder correctly. 2. Replace the EJ Frame Unit with a new one.
	Printing is blurred.	Printer driver & exclusive paper	1. Check if the suitable paper is used according to the printer driver setting.	1. Use the suitable paper according to the printer driver setting.
		Printhead	1. Check if the correct Head ID is stored into the EEPROM by using the Adjustment Program.	1. Input 13 digits code of the Head ID into the EEPROM by using the Adjustment Program.

Table 3-17. Check Point for the Poor Printing Quality

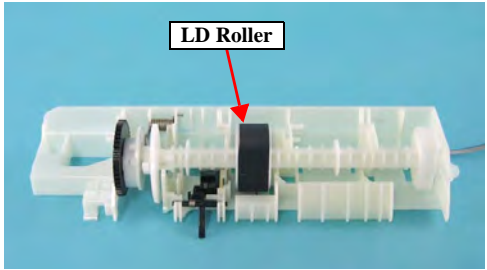
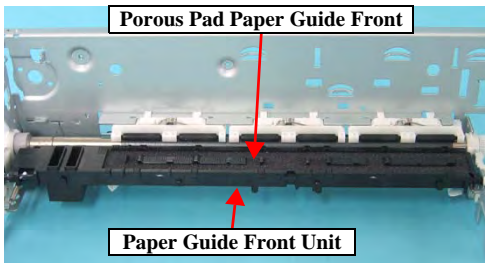
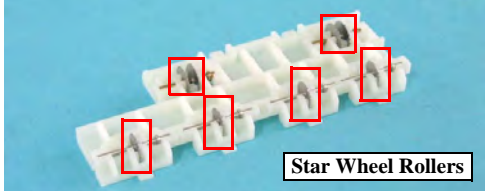
Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
• Print start position slip	The printing operation is correctly performed. But, the top margin is insufficient than usual one.	Holder Shaft Unit	1. Check if any paper dust is not adhered to the surface of the LD Roller. 	1. Set a cleaning sheet in the ASF, adhesive face-up. Then holding the top edge, send a 1-page job from the printer driver. The micro pearl on the LD Roller surface is removed. To remove severe smear, staple a cloth moistened with alcohol to a post card and clean the roller in the same manner. As for the cleaning sheet, refer to "Remedy of the Paper out error" (p.97). * If the problem is not solved, replace the Holder Shaft Unit with a new one.
• Ink stain of paper	Ink stain occurs at the back, top end or bottom end of the print paper.	Paper Guide Front Unit	1. Check if the Paper Guide Front Unit does not have the ink stain. 	1. Clean the Paper Guide Front Unit with a soft cloth.
			2. Check if heaps of ink are not formed on Porous Pad Paper Guide Front.	2. Replace the Paper Guide Front Unit with a new one.
		EJ Frame Unit	1. Check if the EJ Roller Unit does not have the ink stain.	1. Clean the EJ Roller Unit with a soft cloth.
		PF Roller Unit	1. Check if the PF Roller Unit does not have the ink stain.	1. Clean the PF Roller Unit with a soft cloth.

Table 3-17. Check Point for the Poor Printing Quality

Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
• Ink stain of paper	Ink sticks to other than the print area of the paper, resulting in contamination	Printhead	1. Check if the Printhead Cover does not have the ink drop.	1. Clean the Printhead Cover carefully with a soft cloth.
		Paper Guide Upper Unit	1. Check if the Paper Guide Upper Unit does not have the ink stain.	1. Clean the Paper Guide Upper Unit with a soft cloth.
		EJ Frame Unit	1. Check if the Star Wheel Rollers does not have the ink stain. 	1. Clean the Star Wheel Rollers with a soft cloth.

3.5 Fax Troubleshooting

3.5.1 LCD Message-Based Troubleshooting

When an error code or an error message appears on the LCD display, check the table below and perform the appropriate procedure accordingly.



- **Meaning of the error codes: “0ABXX Error”**
 A=0: for monochrome, A=1: for color
 B=0: for V.17 non-ECM, B=1: for V.17 ECM, B=2: for V.34 ECM
 XX: error code
- **Note that error codes in Table 3-18, Table 3-19, and Table 3-20 are described as “000xx Error” for convenience.**

Table 3-18. LCD Message-Based Troubleshooting

LCD Message	Description	Remedy
00001 Error	No status. Incoming call from a non-fax machine or an unidentified signal is detected.	---
No dial tone	The telephone cable is not connected to Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F properly.	Connected the telephone cable to the “LINE” jack of Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F properly.
	The telephone cable is connected to the “EXT” jack of the printer.	
	The telephone line may not be working.	Check the telephone line. Verify if the phone line works by connecting a phone to it.
	The telephone line has no dial tone.	Please contact the telephone company.
00003 Error	Common modulations are not supported with the other end of the line.	Refer to Table 3-19 “Communication Error” (p.122) .
No answer	The other end of the line does not answer.	Check the number and dial again.
	The other end of the line answered but no answer tone is detected.	
Line busy	The line is busy.	Try again later.
Operator cancelled	Cancel key on the control panel is pressed.	---
00007 Error	Not correct flow of V8 answer. (This error will not happen.)	Refer to Table 3-19 “Communication Error” (p.122) .
00008 Error	Command repeat error	
	Command CRC error occurred more than three times repeatedly.	
00009 Error	Communication error Failed to receive a fax because no DIS or DTC was found at the beginning of the received data.	



Table 3-18. LCD Message-Based Troubleshooting

LCD Message	Description	Remedy
00010 Error	Fax signal cannot be detected.	Check the telephone line.
	The telephone line is disconnected during sending/receiving faxes.	
	Communication error	Refer to Table 3-19 "Communication Error" (p.122) .
00011 Error	Time-out occurred when establishing control channel in v.34 mode.	Refer to Table 3-19 "Communication Error" (p.122) .
00012 Error	Resending CFR failed more than four times.	
00013 Error	Same as Command repeat error but the error is detected at another location in the code.	
00014 - 00025 Error	Reserved	---
00026 Error	Training failed.	Refer to Table 3-19 "Communication Error" (p.122) .
00027 Error	Received too many PPR when receiving in non-V.34 mode.	
00028 Error	Received too many PPR when receiving in V.34 mode.	
00029 - 00030 Error	Reserved	---
00031 Error	TX G3 Page image data not ready error	Refer to Table 3-19 "Communication Error" (p.122) .
Remote fax no color mode	The other end of the line does not support color mode.	Send the fax again in monochrome.
Memory full	Out of Memory	Refer to Table 3-20 "Memory Full (Out of Memory)" (p.123) .
Power fail	Power failure occurred during sending/receiving/printing/redialing.	Confirm the PS Board Connector Cable/PS Board is not damaged, and retry.
00035 Error	Rx non ECM data is invalid.	Refer to Table 3-19 "Communication Error" (p.122)
00036 Error	Rx ECM data is invalid.	
00037 Error	Tx non ECM data is invalid.	
00038 Error	Tx ECM data is invalid.	
00039 Error	Tx frame retry failed three times.	
00040 Error	Obtained unexpected DCN when receiving.	
00041 Error	Obtained unexpected DCN when sending.	

3.5.2 Superficial Phenomenon-Based Troubleshooting

When Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F malfunctions, carefully observe the condition of the printer and perform the appropriate procedure with reference to the following tables:

- ❑ Table3-19 “Communication Error” (p.122)
- ❑ Table3-20 “Memory Full (Out of Memory)” (p.123)
- ❑ Table3-21 “Cannot Receive Faxes” (p.123)
- ❑ Table3-22 “Cannot Dial” (p.123)
- ❑ Table3-23 “Cannot Receive/Send Faxes in Color” (p.124)
- ❑ Table3-24 “Others” (p.124)

Table 3-19. Communication Error

Error code / Phenomenon	Description	Remedy
00003 Error	Common modulations are not supported with the other end of the line.	<ul style="list-style-type: none"> • Turn off v.34 and try again. • Turn off ECM and try again. • When using xDSL, check the connection from “Line” jack to the fax via the xDSL splitter. • When using TAM, check the connection from “Line” jack to the TAM via the fax. • Check if the telephone line makes any sounds.
00007 Error	Not correct flow of V8 answer.(This error will not happen.)	
00008 Error	Command repeat error	
00009 Error	Failed to receive a fax because no DIS or DTC was found at the beginning of the received data.	
00011 Error	Time-out occurred when establishing control channel in v.34 mode.	
00012 Error	Resending CFR failed more than four times.	
00013 Error	Same as Command repeat error but the error is detected at another location in the code.	
00026 Error	Training failed.	
00027 Error	Received too many PPR when receiving in non-V.34 mode.	
00028 Error	Received too many PPR when receiving in V.34 mode.	
00031 Error	TX G3 Page image data not ready error	
00035 Error	Rx non ECM data is invalid.	
00036 Error	Rx ECM data is invalid.	
00037 Error	Tx non ECM data is invalid.	
00038 Error	Tx ECM data is invalid.	
00039 Error	Tx frame retry failed three times.	
00040 Error	Obtained unexpected DCN when receiving.	
00041 Error	Obtained unexpected DCN when sending.	

Table 3-20. Memory Full (Out of Memory)

Error code / Phenomenon	Description	Remedy
00033 Error	Job data remain in the memory for the following reasons: <ul style="list-style-type: none"> • No paper in the tray. • Paper jam • No ink • The paper is not large enough to print the received data. • Received data exceeds the memory size. 	Load papers in the tray and press “OK” to start printing. Clear the cause of the jam and press “OK” to start printing. Replace the ink. Press “1” to print the current page or press “2” to print the next page. Ask the sender to resend the fax in several batches.*

Note *: In the case where the size of the data exceeds 3.5 Mbyte.

Table 3-21. Cannot Receive Faxes

Error code / Phenomenon	Description	Remedy
Cannot receive faxes	The telephone cable is not connected properly.	Connect the telephone cable properly.
	The telephone line is not working.	Verify if the phone line works by connecting to a phone to it.
	Auto answer is set to “N”.	Set to “Y”.
	DRD setting is incorrect.	Set the setting to “ALL” and try again. Should other ring patterns be selected, contact the telephone company.
	Out of memory	Print all the data saved in the memory to make room for new data.
	Calling signal cannot be detected.	Contact the telephone company or obtain the fax log for more analysis.

Table 3-22. Cannot Dial

Error code / Phenomenon	Description	Remedy
Cannot dial	The telephone cable is not connected properly.	Connect the telephone cable properly.
	The telephone line is not working.	Verify if the phone line works by connecting to a phone to it.
	Pulse/Tone dial setting error	Turn the setting to the other one and try again.



Table 3-23. Cannot Receive/Send Faxes in Color

Error code / Phenomenon	Description	Remedy
Cannot receive faxes in color	ECM is set to off.	Set to on and try again.
Cannot send faxes in color	Fax mode is set to "B&W only".	Set to "B&W/Color".

Table 3-24. Others

Error code / Phenomenon	Description	Remedy
No button beeps during sending/receiving faxes	Buttons only beep in on-hook state.	---
Cannot resume scanning once interrupted by an incoming fax	Scanning is automatically canceled by an incoming fax.	Try again.
Cannot print all the received data when printing data stored in memory	The size of the memory is 3.5 Mbyte. When full, oldest data are deleted to make room for new ones.	---
Cannot specify the pages to print	It is impossible to specify which pages to print. Wait for the desired pages to be printed. Pressing the "Cancel" button will stop printing the remaining pages.	---
Images run off the paper	Auto reduction is set to off.	Set auto reduction to on and reprint the data.
	Paper size setting does not match the size of the received data.	Choose the correct setting and reprint the data.
	Paper size setting does not match the size of papers in the tray.	Choose the correct setting or load correct sized papers in the tray and reprint the data.
"Reprint fax? 1:Y 2:N" appears on the LCD after printing	Size of papers in the tray is too short or narrow.	Load correct sized papers in the tray and press "1", or press "2" to cancel. Fax printing supports A4,Letter, or Legal only.
	The paper is too rough for the PW sensor to work properly.	Make sure that the paper is flat.
	Paper is skewed.	Adjust the paper guide position.
Some transactions are not recorded on the fax log.	Fax log only saves "sent" or "received" result. "Scanned" or "printed" data is not recorded.	---



3.5.3 Fax Log

Fax Log prints information about the last 30 fax transmissions. Therefore, results of the previous fax transmissions can be checked with the Fax Log even after the error message on the LCD display disappears.

□ Printing Fax Log

1. Press the [Fax] button once to enter the Fax mode, then press [Setup].
2. Press the ▲ or ▼ button to display “Print Report”, and press [OK].
3. Press the ▲ or ▼ button to display “Fax Log”, and press [OK].

EPSON Activity Log for CX5700F/CX5800F						
01/16/2006	09:36 AM	Send	xx-xxxx-xxxx	0:00	0	No answer
01/18/2006	03:27 PM	Receive	xx-xxxx-xxxx	4:38	5	OK
01/21/2006	12:01 AM	Receive	xx-xxxx-xxxx	1:23	1	00033 Error
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Figure 3-2. Fax Log Sample

Table 3-25. Fax Log Contents

Display Item		Display Format	Description
(1)	Date	MM/DD/YYYY	Recorded date
(2)	Time*1	HH:MM AM (or PM)*2	Time that Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F dialed/answered.
		HH:MM (24-hour)*3	
(3)	Job Type	Send	Indicates whether the log is sent one or received one.*4
		Receive	
(4)	Identification*1	0~9, #, *, -, T (max. 35 digits)	Called fax numbers for sending, TSIs (such as telephone numbers) for receiving.
(5)	Duration	MM:SS	00:00 if not connected.
(6)	Pages	numeral (max. 3 digits)	Only counts sent/received pages with MCF.
(7)	Result	OK	Transmission completed
		Operator canceled	Operator canceled
		No dial tone	Error has occurred. Refer to Table 3-18 “LCD Message-Based Troubleshooting” (p.120) for details.
		No answer	
		Line busy	
		Power failure	
		Remote no color fax	
		xxxxx Error	

Note *1: As for redialing, the last dialed time and number are recorded.

*2: For US, Canada, and Mexico

*3: For Taiwan and Australia

*4: Fax Log only records send and receive information. Operations such as scanning document to be sent by fax or printing received fax data are not recorded.

Note 1: If the Fax Log cannot be printed completely, the message that asks if the user want to print it again appears on the LCD display.

2: Fax Log is only printed when the user specifies it using the control panel.

3: Fax transmission information will not be deleted by printing Fax Log.

4: When Fax Log is full, the oldest transmission information is deleted.

3.5.4 Last Transmission

Last Transmission prints information about the last fax transmission. Users can select when or whether to print Last Transmission from the following options:

Table 3-26. Last Transmission Setting

Setting	Description
On error (Default)	Prints only when an error occurs.
On send	Prints for every outgoing faxes.
Off	Turns off report printing.

Last Transmission can also be printed by following the procedure below regardless of the above setting.

☐ Printing Last Transmission

1. Press the [Fax] button once to enter the Fax mode, then press [Setup].
2. Press the ▲ or ▼ button to display “Print Report”, and press [OK].
3. Press the ▲ or ▼ button to display “Last Transmission”, and press [OK].

EPSON Transmit Report for CX5700F/CX5800F						
01/05/2006	08:11 PM	Send	xx-xxxx-xxxx	1:03	1	OK
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Figure 3-3. Last Transmission Sample

Table 3-27. Last Transmission Contents

Display Item		Display Format	Description
(1)	Date	MM/DD/YYYY	Recorded date
(2)	Time*1	HH:MM AM (or PM)*2	Time that Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F dialed/answered
		HH:MM (24-hour)*3	
(3)	Job Type	Send	Indicates whether the log is sent one or received one.*4
		Receive	
(4)	Identification	0~9, #, *, -, T (max. 35 digits)	Called fax numbers for sending, TSIs (such as telephone numbers) for receiving
(5)	Duration	MM:SS	---
(6)	Pages	numeral (max. 3 digits)	Only counts sent/received pages with MCF
(7)	Result	OK	Transmission completed
		Operator canceled	Operator canceled
		No dial tone	Error has occurred Refer to Table 3-18 “LCD Message-Based Troubleshooting” (p.120) for details.
		No answer	
		Line busy	
		Power failure	
		Remote no color fax	
		xxxxx Error	

Note *1: As for redialing, the last dialed time is recorded.

*2: For US, Canada, and Mexico

*3: For Taiwan and Australia

*4: Fax Log only records send and receive information. Operations such as scanning document to be sent by fax or printing received fax data are not recorded.

Note : If the Fax Log cannot be printed completely, the message that asks if the user want to print it again appears on the LCD display.



3.5.5 Power Fail

Power Fail is printed automatically when the power comes back on.

EPSON Power fail report for CX5700F/CX5800F					
01/02/2006	07:45 PM	Receive	xx-xxxx-xxxx	1	Power failure
(1)	(2)	(3)	(4)	(5)	(6)

Figure 3-4. Power Fail Sample

Table 3-28. Power Fail Contents

Display Item		Display Format	Description
(1)	Date	MM/DD/YYYY	Recorded date
(2)	Time	HH:MM AM (or PM)*1	Time that Stylus CX5700F/CX5800F/ CX6900F/CX7000F/DX7000F dialed/ answered
		HH:MM (24-hour)*2	
(3)	Job Type	Send	---
		Receive	
(4)	Identification	0~9, #, *, -, T (max. 20 digits)	Called fax numbers for sending, TSIs (such as telephone numbers) for receiving
(5)	Pages	numeral (max. 3 digits)	Only counts sent/received pages with MCF
(6)	Result	Power failure	---

Note *1: For US, Canada, and Mexico

*2: For Taiwan and Australia

Note : All the “Receive” type log from the Fax Log is printed under some conditions mentioned in [Table 3-29 “Power Fail Contents”](#) below.

The table below shows the items to be printed on Power Fail when power failure occurs under the following conditions:

Table 3-29. Power Fail Contents

Condition	Job Type	Display Item
In standby	N/A	N/A
Printing (except for printing received data)		

Table 3-29. Power Fail Contents

Condition	Job Type	Display Item
Scanning (except for scanning document to send by fax)	N/A	N/A
Accessing memory card		
Accessing digital camera (PictBridge)		
Scanning document to send by fax	Send	“0” in Pages
Dialing/Redialing for fax transmission		
Connecting for fax transmission		
Sending	Send	The number of sent pages (pages sent with MCF/RTP) in Pages
Receiving fax data	Receive	The number of received pages (pages received with MCF) in Pages
Received data exist in memory	Receive	Obtains all the “Receive” type log from the Fax Log and prints them on Power Fail Report.
Receiving when received data exist in memory	Receive	<ul style="list-style-type: none"> The number of received pages (pages received with MCF) in Pages Obtains all the “Receive” type log from the Fax Log and prints them on Power Fail Report.
Receiving when printing received data	Receive	<ul style="list-style-type: none"> The number of received pages (pages received with MCF) in Pages Obtains all the “Receive” type log from the Fax Log and prints them on Power Fail Report.
Printing received data	Receive	Obtains all the “Receive” type log from the Fax Log and prints them on Power Fail Report.
Size of papers in the tray is found too short or narrow when printing received data		
Paper jam occurred when printing received data		
Ink ran out when printing received data		
Redialing	Send	“0” in Pages
Receiving data during redialing	Receive	The number of received pages (pages received with MCF) in Pages

3.5.6 Glossary

Acronyms and abbreviations concerning fax functions used in this manual are explained below.

Table 3-30. Fax Control Signals

Term	Description
CFR	Confirmation to Receive frame: the called fax terminal sends this signal to the calling fax terminal to indicate that the called fax terminal is now ready to receive data.
DCN	Disconnect Frame; indicates the call is done. The calling fax terminal transmits it before hanging up.
DIS	Digital Identification Signal; identifies the capabilities of the called fax terminal.
DTC	Digital Transmit Command; used by the calling fax terminal to poll the called fax terminal.
MCF	Message Confirmation Frame: confirmation by the receiver that it is ready to receive the next page.
PPR	Partial Page Request; indicates that the previous message has not been satisfactorily received and that the frames specified in the associated facsimile information field are required to be retransmitted.
RTP	Retrain Positive: indicates that a complete message has been satisfactory received and that additional pages may follow after retransmission of training.
TSI	Transmitting Subscriber Information: a frame that may be sent by the caller, with the caller's telephone number.

Table 3-31. General

Term	Description
bps	Bits per second.
CRC	Cyclic Redundancy Check: an error checking technique used to ensure the accuracy of transmitting digital data.
DRD	Distinctive Ring Detection. This provides the ability to have one additional telephone number ring in on your existing phone line. Each telephone number has a unique ring tone to alert you which number has been called.

Table 3-31. General

Term	Description
ECM	Error Collection Mode. ECM automatically detects and corrects errors in the fax transmission process that are sometimes caused by telephone line noise.
G3	A fax protocol published in 1980 by the ITU. Group 3 protocol is specified in several standards: T.4 and T.6 specify the image format, T.30 specifies the session management protocol which supports the establishment of a fax transmission.
Jpeg	Joint Photographic Experts Group; an ISO/ITU standard still image format.
MH	Modified Huffman; MH coding is used in fax machines to encode black-and-white images (bitmaps).
MMR	Modified Modified READ; a two-dimensional data compression scheme.
MR	Modified Read; a two-dimensional compression technique that includes the vertical line concentrating on space between the lines and within given characters.
PBX	Private Branch Exchange. A small version of the telephone office's larger central switching office, either automatically or manually operated, serving extensions in a business complex and providing access to the public network.
PSTN	Public Switched Telephone Network; a public telephone network, which refers to the international telephone system based on copper wires carrying analog voice data.
Rx	Receiver.
TAM	Telephone Answering Machine.
Tx	Transmitter.
V.8/V.17/V.34	ITU-T Recommendations used for fax negotiations.
xDSL	xDigital Subscriber Line; refers collectively to all types of digital subscriber lines, the two main categories being ADSL and SDSL. Upload speed is lower than download speed for ADSL and symmetrical for SDSL.



3.6 Fax Function/External Connection (EXT port) Function Check

3.6.1 Outline

Fax function/External connection (EXT port) function must be checked in addition to usual printing/scanning function after repairing/refurbishing the defective units. The following table describes each check method. Select an applicable Fax Function check method in your repair center and implement this operation.

Table 3-32. Fax Function/EXT port Function check

Checked Function	Check Method	Necessary Tools	Check Point
Fax Function	Method A* ¹ (PC FAX) (p.129)	<ul style="list-style-type: none"> • PC (OS: Win XP) • Repaired/Refurbished unit (1unit) • Telephone line simulator*¹ (1pcs.) • Fax cable (2pcs.) 	<p>[Sender's check point] Make sure that printer send fax data correctly.</p> <p>[Receiver's check point] Make sure that printer receive fax data correctly.</p>
	Method B* ¹ (Only simulator) (p.133)	<ul style="list-style-type: none"> • Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F (guaranteed unit) • Repaired/Refurbished unit (1unit) • Telephone line simulator*¹ (1pcs.) • Fax cable (2pcs.) 	
	Method C (PBX FAX) (p.134)	<ul style="list-style-type: none"> • Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F (guaranteed unit) • Repaired/Refurbished unit (1unit) • PBX in your office (internal phone) • Fax cable (2pcs.) 	
External Connection (EXT port) Function	--- * ²	<ul style="list-style-type: none"> • Telephone (1pcs.) • Fax cable (1pcs.) 	<ol style="list-style-type: none"> 1. Check if you can hear ringing tone from telephone before receiving fax. In this case, the telephone sounds ringing. 2. Check if you can't hear dial tone from the telephone during receiving fax data. In this case, the telephone doesn't sound dial tone.

Note *1: In case of these methods, you have to use telephone line simulator for checking fax function. For your reference, web site address of the simulator is outlined below.
(as of 5th April 2006)

http://www.telephonetribute.com/telco_line_simulators.html

<http://www.skutchelectronics.com/sims.htm>

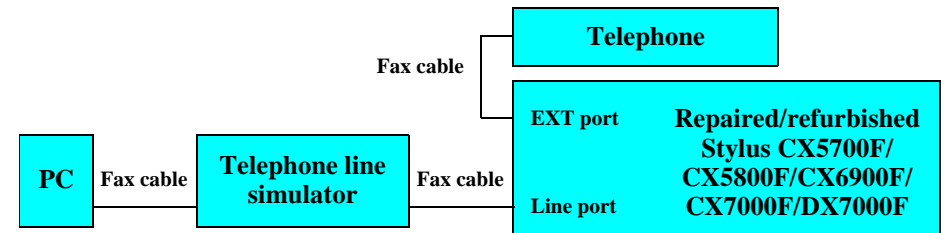
*2: You have to check this test whether you select any check method above.

3.6.2 Fax Function and External Connection Function Check

The following shows the detailed check condition/procedure of each method.

3.6.2.1 Fax Function Check by [Method A] and External Connection Function Check

SETTING METHOD



*Regarding FAX number, refer to the telephone line simulator's manual.

*Repaired/refurbished Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F is represented by "R" unit from this.
*Select default setting to "R" unit before this check referring to the following table.

Table 3-33. Default Settings of Repaired Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F ("R")

No	Function	Default Setting
1	Resolution	Standard
2	Contrast	Normal
3	Paper size	For US, Canada, Mexico:"Letter" For Australia, Taiwan:"A4"
4	Automatic reduction	On
5	Last transmission report	Off
6	Dial mode	Tone
7	DRD	All
8	ECM	On
9	V.34	On
10	Rings to answer	"5" *For Taiwan is "3"

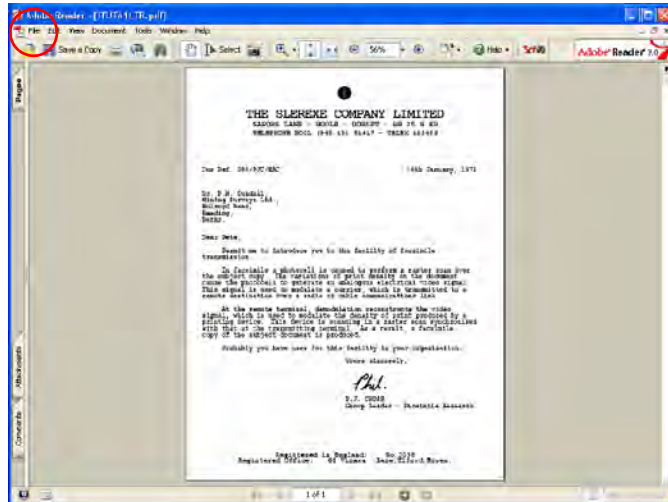
Note *: This default setting is applied for [Condition B] and [Condition C].

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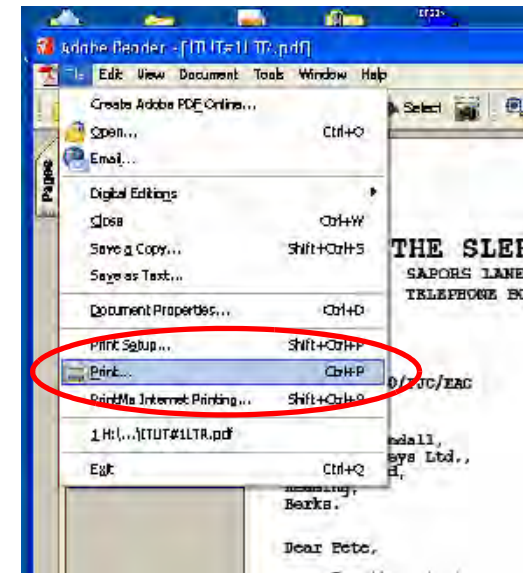
CHECK PROCEDURE

[Sender: PC =>Receiver: "R" unit]

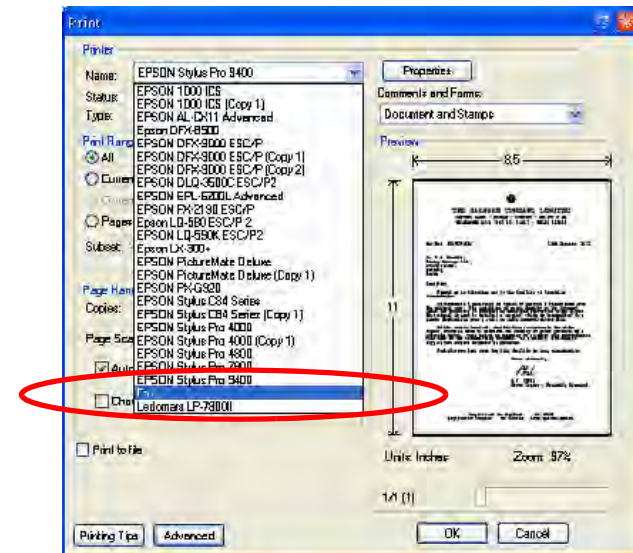
1. Install test chart (test chart name: "ITUT#1LTR.pdf") to PC.
2. Open test chart and select "File" menu.



3. Select "Print.....".

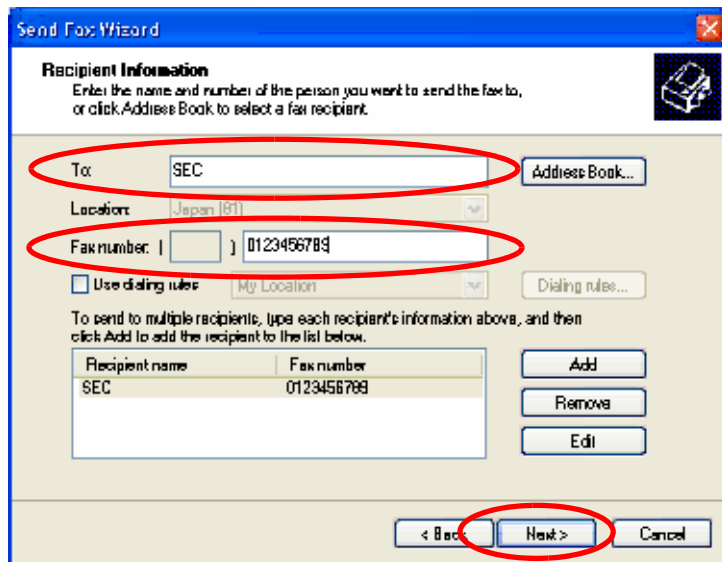


4. Select "Fax" from "Printer Name".



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5. Input "Receiver Name" and "Fax Number", and click "Next" button.



Send Fax Wizard

Recipient Information
Enter the name and number of the person you want to send the fax to, or click Address Book to select a fax recipient.

To: SEC Address Book...

Location: Japan (BT)

Fax number: 0123456789

☐ Use dialing rules My Location Dialing rules...

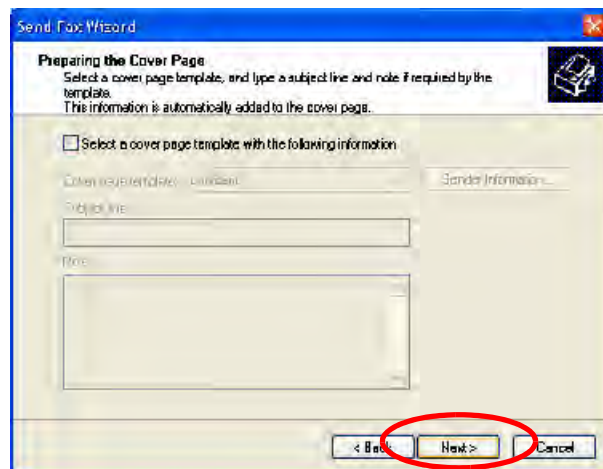
To send to multiple recipients, type each recipient's information above, and then click Add to add the recipient to the list below.

Recipient name	Fax number
SEC	0123456789

Add Remove Edit

< Back Next > Cancel

6. Click "Next" button.



Send Fax Wizard

Preparing the Cover Page
Select a cover page template, and type a subject line and note if required by the template. This information is automatically added to the cover page.

☐ Select a cover page template with the following information:

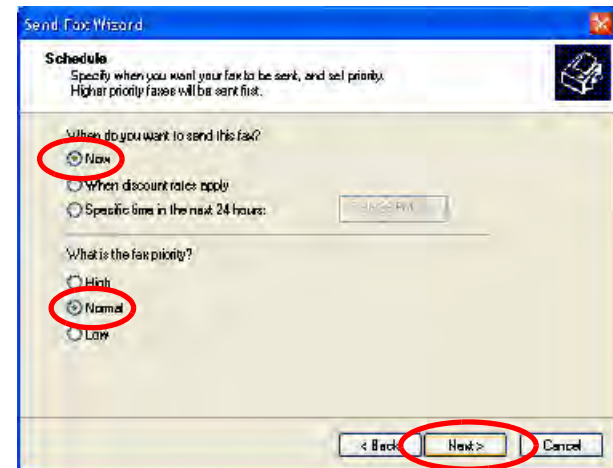
Cover recipient(s): recipient Sender Information...

Subject line:

Note:

< Back Next > Cancel

7. Check as below screen, and click "Next" button.



Send Fax Wizard

Schedule
Specify when you want your fax to be sent, and set priority. Higher priority faxes will be sent first.

When do you want to send this fax?

☒ Now

☐ When discount rates apply

☐ Specific time in the next 24 hours: [TIME] PM

What is the fax priority?

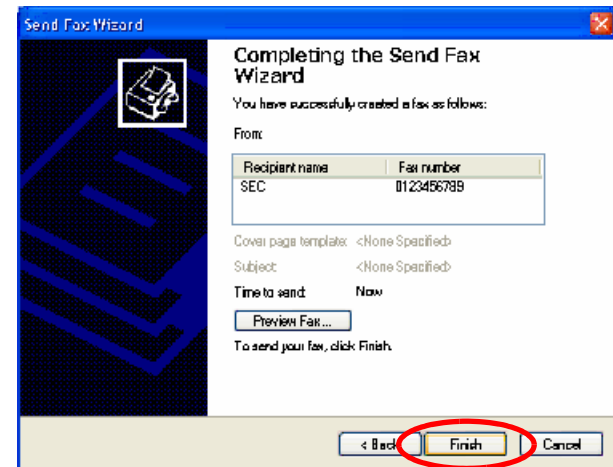
☐ High

☒ Normal

☐ Low

< Back Next > Cancel

8. Click "Finish" button to send fax data from PC to "R" unit.



Send Fax Wizard

Completing the Send Fax Wizard
You have successfully created a fax as follows:

From:

Recipient name	Fax number
SEC	0123456789

Cover page template: <None Specified>

Subject: <None Specified>

Time to send: Now

Preview Fax...

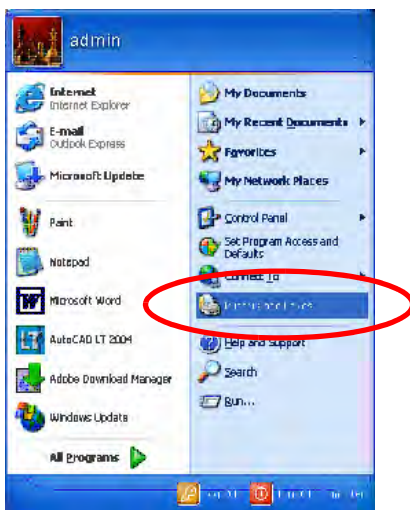
To send your fax, click Finish.

< Back Finish Cancel

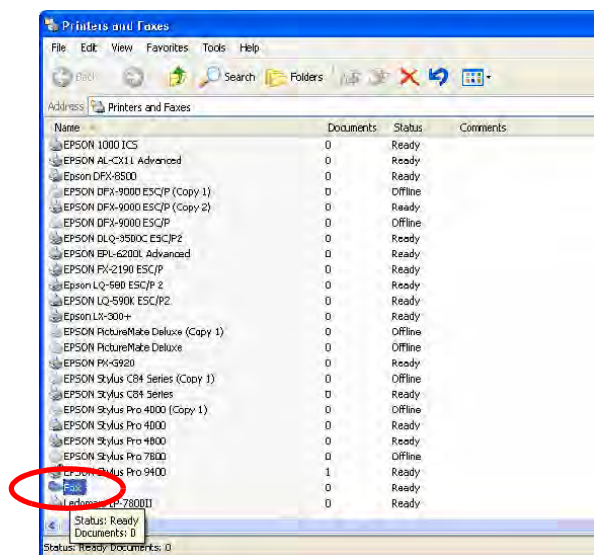
9. Confirm if telephone rings correctly during calling tone of "R" unit rings.
10. Confirm if dial tone of telephone is lost during "R" unit receives fax data without calling tone.

[Sender: "R" unit => Receiver: PC]

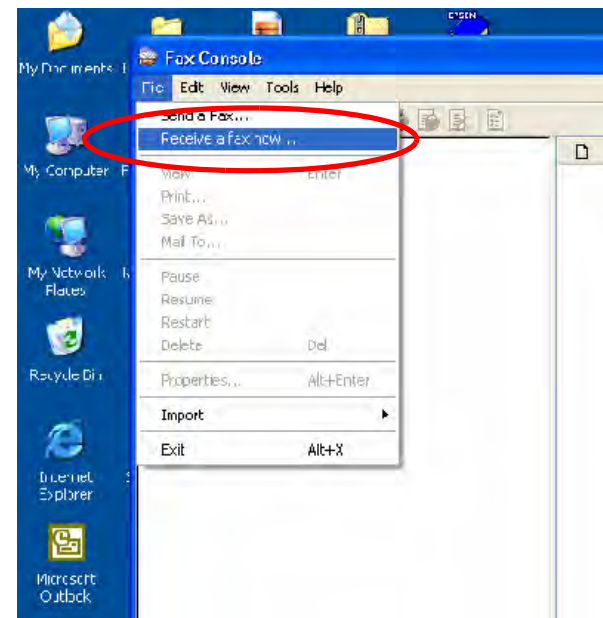
1. Select "Printer and Faxes" from Windows start menu.



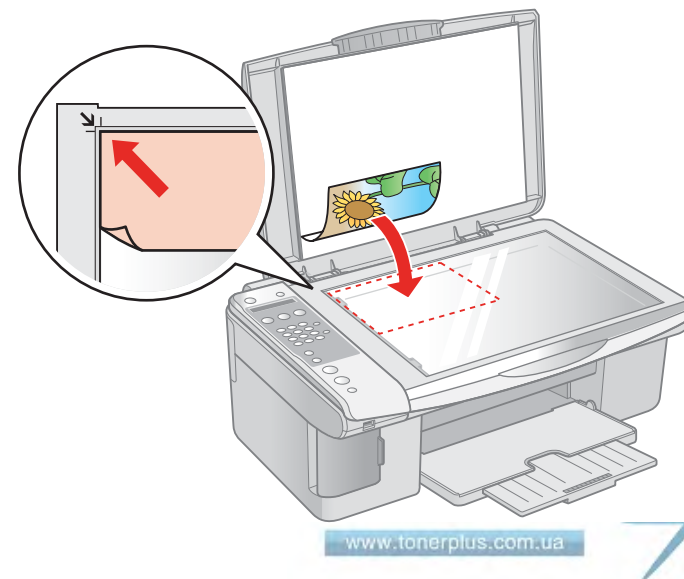
2. Select "Fax console" window.



3. Select "Receiver a fax now....." from file menu.



4. Set test chart on the document glass of "R" unit.



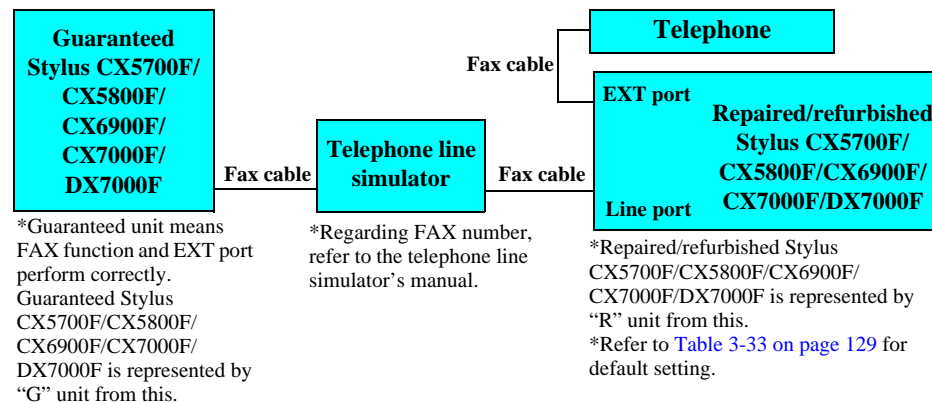
- Enter fax mode by pushing fax button.
- Input fax number of PC on "R" unit. (Regarding FAX number, refer to the telephone line simulator's manual.)
- Push "B&W" button.
- Push "2" button after being displayed as "Send another page? 1:Y 2:N" on LCD panel to send fax data from "R" unit to PC.

CHECK POINT OF "R" UNIT

Checked Function	Check Timing	Check Point
Fax Function	After sending of fax data	Make sure that "R" unit sends fax data correctly.
	After receiving of fax data	Make sure that "R" unit receives fax data correctly.
External Connection (EXT port) Function	During calling of fax (Step 9)	Check if you can hear ringing tone from telephone before receiving fax. In this case, the telephone sounds ringing.
	During receiving fax data (Step 10)	Check if you can't hear dial tone from the telephone during receiving fax data. In this case, the telephone doesn't sound dial tone.

3.6.2.2 Fax Function Check by [Method B] and External Connection Function Check

SETTING METHOD



CHECK PROCEDURE

[Sender: "R" unit => Receiver: "G" unit]

- Set test chart on the document glass of "R" unit.
- Enter fax mode by pushing fax button.
- Input fax number of "G" unit on "R" unit. (Regarding FAX number, refer to the telephone line simulator's manual.)
- Push "B&W" button.
- Push "2" button after being displayed as "Send another page? 1:Y 2:N" on LCD panel to send fax data from "R" unit to "G" unit.

[Sender: "G" unit => Receiver: "R" unit]

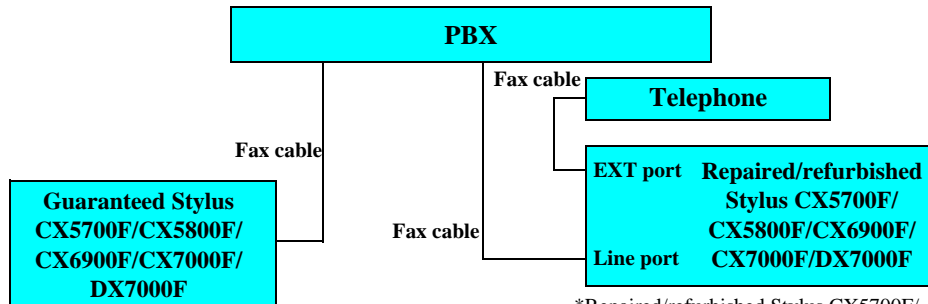
- Set test chart on the document glass of "G" unit.
- Enter fax mode by pushing fax button.
- Input fax number of "R" unit on "G" unit. (Regarding FAX number, refer to the telephone line simulator's manual.)
- Push "B&W" button.
- Push "2" button after being displayed as "Send another page? 1:Y 2:N" on LCD panel to send fax data from "G" unit to "R" unit.
- Confirm if telephone rings correctly during calling tone of "R" unit rings.
- Confirm if dial tone of telephone is lost during "R" unit receives fax data without calling tone.

CHECK POINT OF "R" UNIT

Checked Function	Check Timing	Check Point
Fax Function	After sending of fax data	Make sure that "R" unit sends fax data correctly.
	After receiving of fax data	Make sure that "R" unit receives fax data correctly.
External Connection (EXT port) Function	During calling of fax (Step 6)	Check if you can hear ringing tone from telephone before receiving fax. In this case, the telephone sounds ringing.
	During receiving fax data (Step 7)	Check if you can't hear dial tone from the telephone during receiving fax data. In this case, the telephone doesn't sound dial tone.

3.6.2.3 Fax Function Check by [Method C] and External Connection Function Check

SETTING METHOD



*Guaranteed unit means FAX function and EXT port perform correctly.
Guaranteed Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F is represented by "G" unit from this.

*Repaired/refurbished Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F is represented by "R" unit from this.
*Refer to Table 3-33 on page 129 for default setting.

CHECK PROCEDURE

[Sender: "R" unit => Receiver: "G" unit]

1. Set test chart on the document glass of "R" unit.
2. Enter fax mode by pushing fax button.
3. Input fax number of "G" unit on "R" unit. (Regarding FAX number, refer to the telephone line simulator's manual.)
4. Push "B&W" button.
5. Push "2" button after being displayed as "Send another page? 1:Y 2:N" on LCD panel to send fax data from "R" unit to "G" unit.

[Sender: "G" unit => Receiver: "R" unit]

1. Set test chart on the document glass of "G" unit.
2. Enter fax mode by pushing fax button.
3. Input fax number of "R" unit on "G" unit. (Regarding FAX number, refer to the telephone line simulator's manual.)
4. Push "B&W" button.
5. Push "2" button after being displayed as "Send another page? 1:Y 2:N" on LCD panel to send fax data from "G" unit to "R" unit.
6. Confirm if telephone rings correctly during calling tone of "R" unit rings.
7. Confirm if dial tone of telephone is lost during "R" unit receives fax data without calling tone.

CHECK POINT OF "R" UNIT

Checked Function	Check Timing	Check Point
Fax Function	After sending of fax data	Make sure that "R" unit sends fax data correctly.
	After receiving of fax data	Make sure that "R" unit receives fax data correctly.
External Connection (EXT port) Function	During calling of fax (Step 6)	Check if you can hear ringing tone from telephone before receiving fax. In this case, the telephone sounds ringing.
	During receiving fax data (Step 7)	Check if you can't hear dial tone from the telephone during receiving fax data. In this case, the telephone doesn't sound dial tone.

CHAPTER

4

DISASSEMBLY/ASSEMBLY



4.1 Overview

This section describes procedures for disassembling the main components of Stylus CX5700F/CX5800F. Unless otherwise specified, disassembly units or components can be reassembled by reversing the disassembly procedure. 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”. Tips 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 reassembling 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 work.

4.1.1 Precautions

See the precautions given under the heading “WARNING” and “CAUTION” in the following column when disassembling or assembling Stylus CX5700F/CX5800F.



- **Disconnect the power cable before disassembling or assembling the printer.**
- **If you need to work on the printer with power applied, strictly follow the instructions in this manual.**
- **Wear protective goggles to protect your eyes from ink. If ink gets in your eye, flush the eye with fresh water and see a doctor immediately.**
- **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.**
- **Never touch the ink or wasted ink with bare hands. If ink comes into contact with your skin, wash it off with soap and water immediately. If irritation occurs, contact a physician.**



- **When transporting the printer after installing the ink cartridge, be sure to pack the printer for transportation without removing the ink cartridge.**
- **Use only recommended tools for disassembling, assembling or adjusting the printer.**
- **Observe the specified torque when tightening screws.**
- **Apply lubricants as specified. (Refer to “6.1.3 Lubrication” (p215) for details.)**
- **Make the specified adjustments when you disassemble the printer. (Refer to Chapter 5 “ADJUSTMENT” (p182) for details.)**
- **Make sure the tip of the waste ink tube is located at correct position when reassembling the waste ink tube. Otherwise it will cause ink leakage.**
- **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.**

4.1.2 Tools

Use only specified tools to avoid damaging of the printer.

Table 4-1. Tools

Name	Supplier*	Part No.
Phillips Screwdriver (No.1)	EPSON	1080530
Phillips Screwdriver (No.2)	EPSON	1080532
Flathead Screwdriver	EPSON	1080527
Precision Screwdriver #1 (-)	EPSON	1080525
Tweezers	EPSON	1080561
Longnose pliers	EPSON	1080564
Acetate Tape	EPSON	1003963

Note *: Available in the market



4.1.3 Work Completion Check

If any service is made to the printer, use the checklist shown below to confirm all works are completed properly and the printer is ready to be returned to the user.

Table 4-2. Work Completion Check

Classification	Part	Check Item	Check Column
Printer unit	Self test	Operation is normal?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	On line test	Print is normally done?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	Printhead (nozzle check pattern print)	Ink gets out normally from all the nozzles?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	CR mechanism	CR smoothly operates?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		CR makes abnormal sound during its operation?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	Paper loading mechanism	Paper is smoothly loaded?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Paper jam does not happen?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Paper does not warp during paper loading?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Multiple papers are not fed?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Abnormal sound is not heard during paper loading?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		There is no obstacles at paper route?	<input type="checkbox"/> OK / <input type="checkbox"/> NG

Table 4-2. Work Completion Check

Classification	Part	Check Item	Check Column
Scanner unit	Mechanism	Glass surface is not dirty?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Alien substance is not mixed in the CR movement area?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	CR mechanism	CR smoothly operates?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		CR operates together with scanner unit?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		CR makes abnormal sound during its operation?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	LED	LED normally turns on and white reflection test is done near home position?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
On line test	On line test	Operation is normal?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Copy	Copy	Local copy is normal?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Adjustment	Designated adjustment items	Adjustment condition is suitable?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Lubrication	Designated lubrication items	Lubrication is done at designated place?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Lubrication volume is suitable?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Function	Firmware version	The newest version	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Dispatch packing	Ink cartridge	Ink cartridge is normally installed?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	Waste Ink Pads	Remaining life of waste ink pads are sufficient?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	Protection during distribution	Printer CR is in the cap position?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Others	Attached goods	All of attached goods from users are packed?	<input type="checkbox"/> OK / <input type="checkbox"/> NG



4.2 Caution regarding Assembling/Disassembling of the Printer Mechanism, and How to Ensure of Quality on Re-assembled Product

On current low end models, we basically forbade to remove Housing, Lower from Printer Mechanism in your repair. This is because there is a possibility of Main Frame deformation when a part (such as Ink System Unit) is removed from Printer Mechanism without Housing, Lower.

For this reason, we recommend that a new Printer Mechanism be replaced along with the Housing, Lower when a part cannot be replaced without removing the Printer Mechanism.

On these models, you have to remove Housing, Lower from Printer Mechanism when replacing [Waste Ink Pads] with new one.

Therefore, we clarify caution regarding assembling/disassembling of the Printer Mechanism without Housing, Lower, and how to ensure of quality on repaired production this section.

[Caution regarding assembling/disassembling of the Printer Mechanism]

1) Main Frame

(a) Control of assembled standard position.

[Reason]

- The assembled accuracy of each part composed of Printer Mechanism is based on Housing, Lower.

[Service treatment]

- Confirm that there is no gap between Main Frame and Housing, Lower.

[Reference]

- To ensure the assembled accuracy, you have to control the assembled standard position of main frame against X/Y/Z-axis direction.

[X-axis direction]

- Make sure that main frame is correctly placed on the groove of Housing, Lower.
- Make sure that there is no gap between Main Frame and Housing, Lower.

[Y-axis direction]

- Make sure that main frame is correctly placed on the groove of Housing, Lower.
- Make sure that there is no gap between Main Frame and Housing, Lower.

[Z-axis direction]

- Align dowel of Housing, Lower with positioning hole of Main Frame and ensure there is no gap.

(b) How to assemble of ASF Unit/Main Board Unit/Paper Guide Upper Unit

[Reason]

- There is a possibility that main frame deformation is caused extra force in assembling. As the result, printing failure/operation failure occurs.

[Service treatment]

- Hold the opposite side by hand while you are installing the above parts.

2) CR Guide Frame

(a) Control of vertical level

[Reason]

- There is a possibility that printing failure occurs by CR Guide Frame deformation.

[Service treatment]

- Handle Front Frame in assembling/disassembling carefully.

3) Carriage Unit

(a) Handling of Carriage Unit

[Reason]

- If Carriage Unit is damaged in assembling/disassembling of your repair, there is a possibility that vital problem occur in user's further operation.

[Service treatment]

- Handle Carriage Unit in assembling/disassembling carefully.

[How to ensure of quality on re-assembled product]

We judge that the quality of re-assembled product is ensured if there is no problem about the print result by adjustment program.



4.3 Disassembly Procedures

The flowchart below shows step-by-step disassembly procedures. When disassembling each unit, refer to the page number shown in the figure.

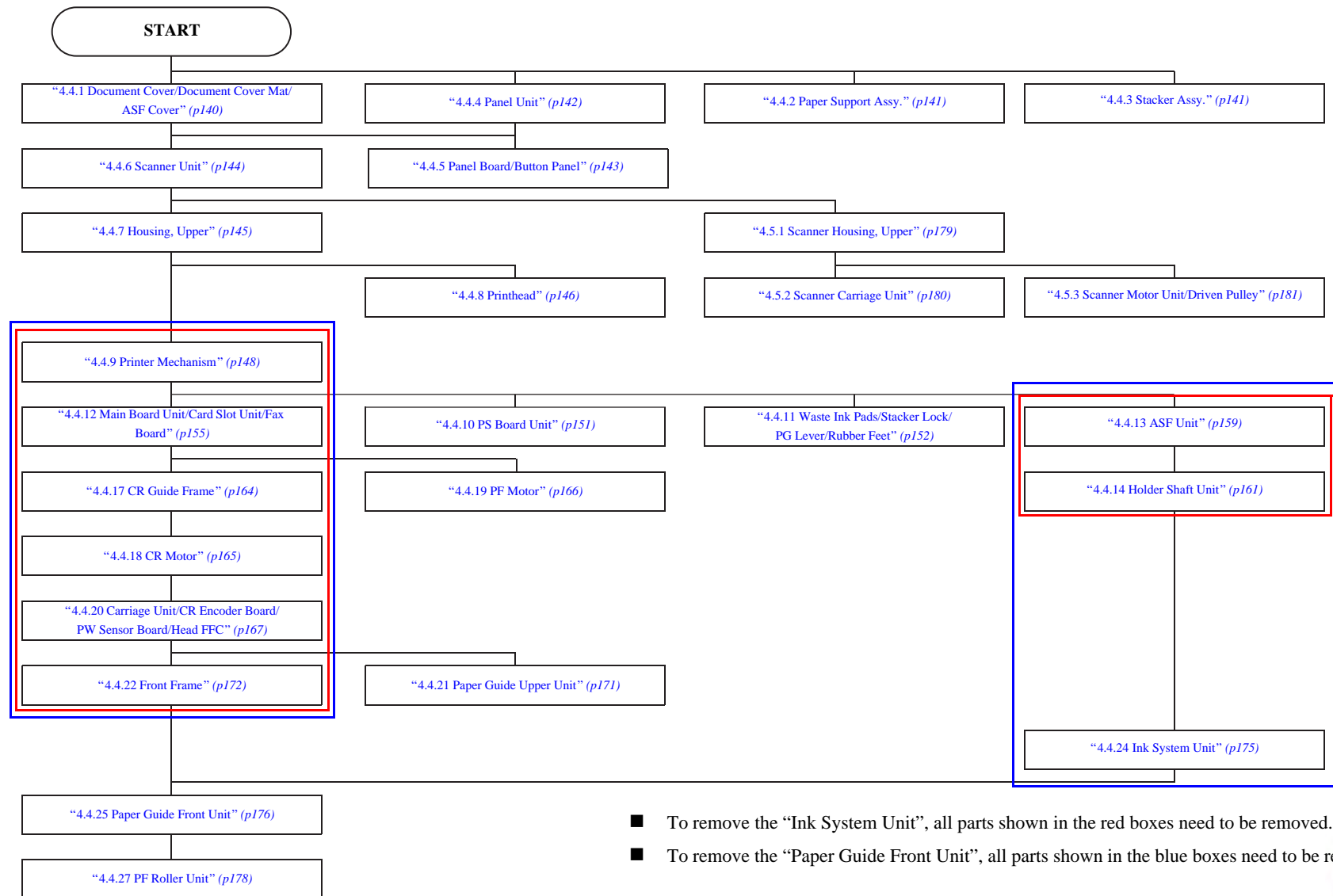


Figure 4-1. Disassembling Flowchart



4.4 Printer Section

4.4.1 Document Cover/Document Cover Mat/ASF Cover

□ External view

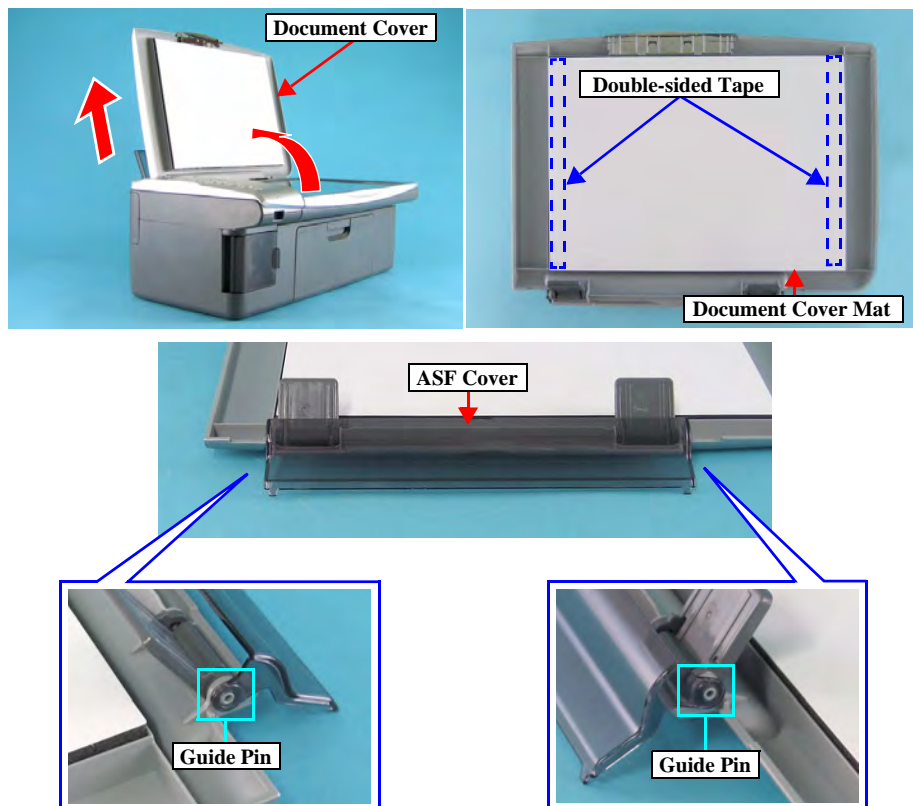


Figure 4-2. Removing Document Cover/Document Cover Mat/ASF Cover

□ Part/Unit that should be removed before removing Document Cover/Document Cover Mat/ASF Cover

None

□ Removal procedure

■ Document Cover

1. Open the Document Cover and remove it by pulling out upward.

■ Document Cover Mat

1. Remove the Document Cover Mat that is secured to the Document Cover with the double-sided tapes (x2).

■ ASF Cover

1. Release the guide pins (x2, □) that secure the ASF Cover, and remove it from the Document Cover.

4.4.2 Paper Support Assy.

□ External view

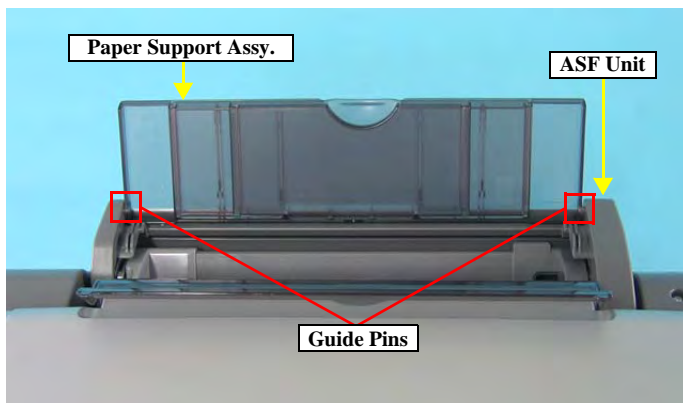



Figure 4-3. Removing Paper Support Assy.

□ Part/Unit that should be removed before removing Paper Support Assy.

None

□ Removal procedure

1. Release the guide pins (x2, ) that secure the Paper Support Assy, and remove the Paper Support Assy. from the ASF Unit.

4.4.3 Stacker Assy.

□ External view

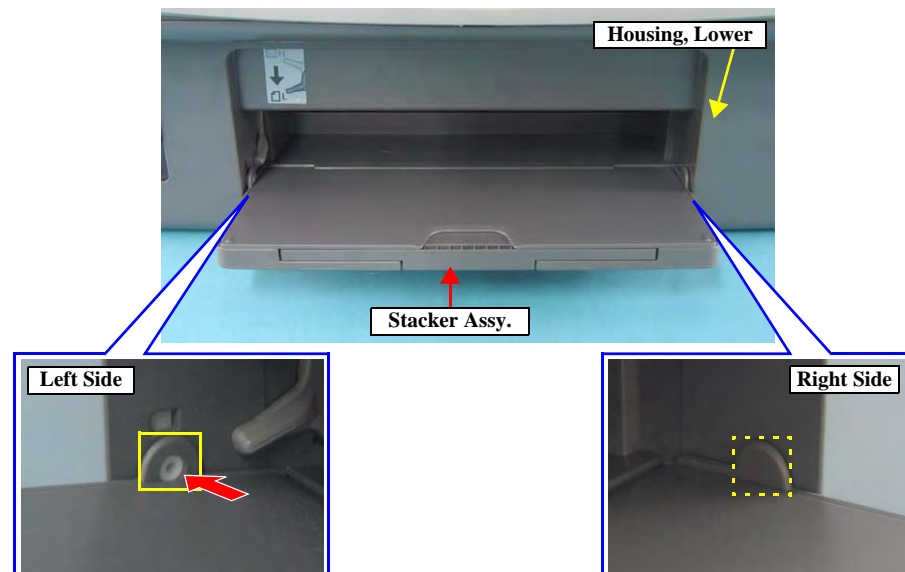



Figure 4-4. Removing Stacker Assy.

□ Part/Unit that should be removed before removing Stacker Assy.

None

□ Removal procedure

1. Open the Stacker Assy.
2. Release the guide pin (x1, ) that secures the Stacker Assy. with a precision screwdriver (-), and remove the Stacker Assy.

4.4.4 Panel Unit

External view

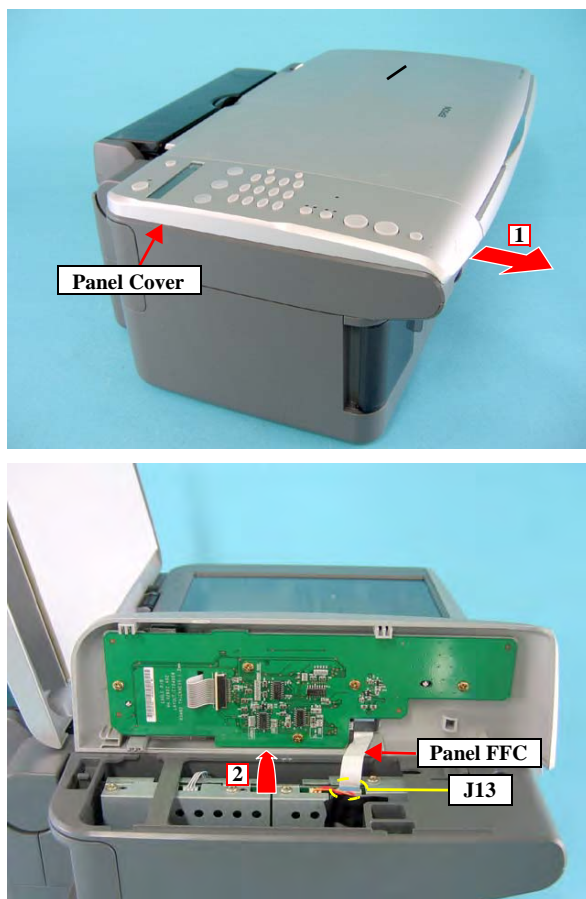



Figure 4-5. Removing Panel Unit

Part/Unit that should be removed before removing Panel Unit

None

Removal procedure

1. Slide the Panel Unit forward, and release the tabs (x4, .

CHECK POINT





When removing the Panel Unit, disconnect the Panel FFC from the Main Board side (J13).

2. Disconnect the Panel FFC from the Main Board Connector (J13), and remove the Panel Unit.

REASSEMBLY



When installing the Panel Unit to the Housing, Upper, match the notches (x4 ) of the Housing, Upper with the tabs (x4, ) of the Panel Unit.

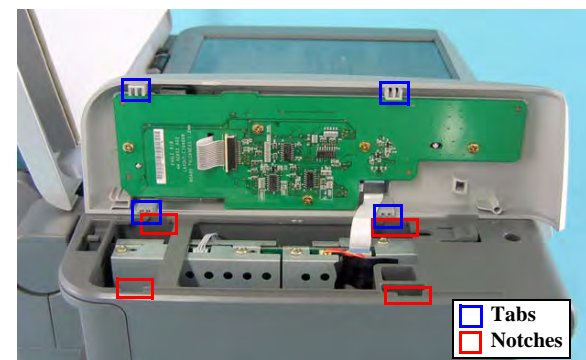


Figure 4-6. Installing Panel Unit

4.4.5 Panel Board/Button Panel

□ External view

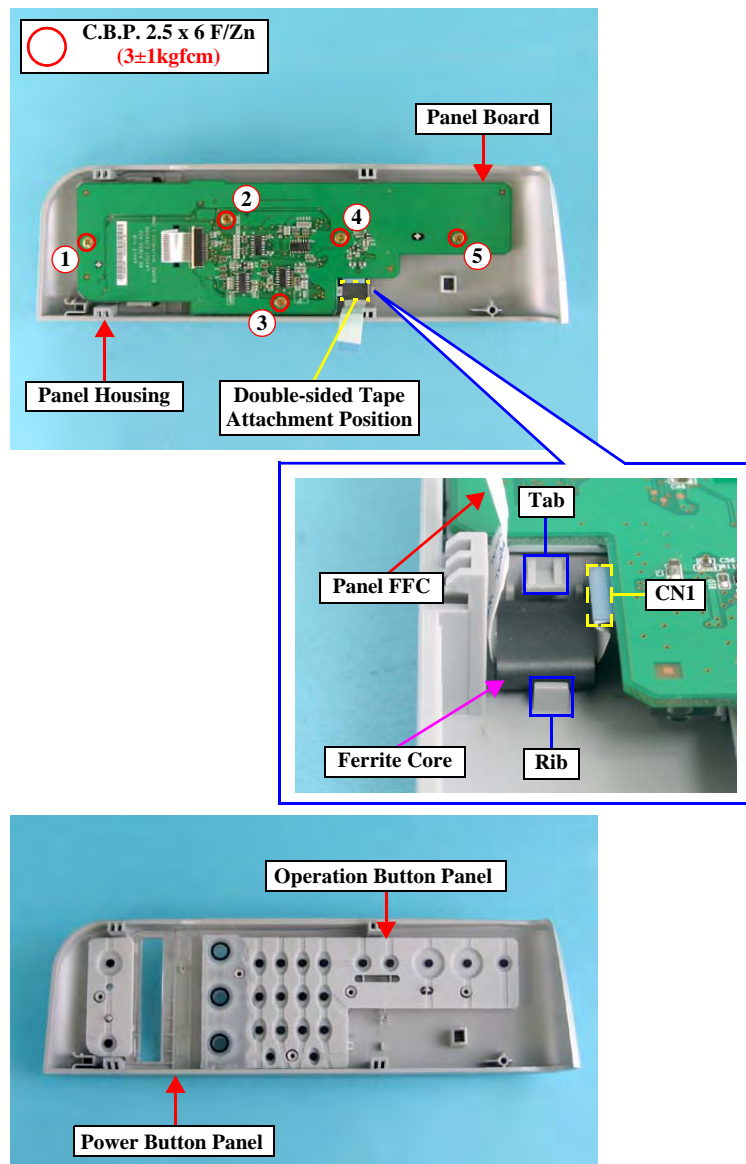




Figure 4-7. Removing Panel Board/Button Panel

□ Part/Unit that should be removed before removing Panel Board/Button Panel Unit

□ Removal procedure

1. Remove the screws (x5, ) that secure the Panel Board to the Panel Housing.
2. Peel off the double-sided tape that secure the ferrite core to the Panel Housing.
3. Release the Panel Board together with the ferrite core and the Panel FFC from the tab and rib of the Panel Housing.
4. Remove the Panel FFC and the ferrite core from the connector (CN1) on the Panel Board.
5. Remove the Power Button Panel and the Operation Button Panel from the Panel Housing.



- When installing the Panel Board to the Panel Housing, match the guide pins (x2, ) of the Panel Housing with the positioning holes (x2) of the Panel Board.

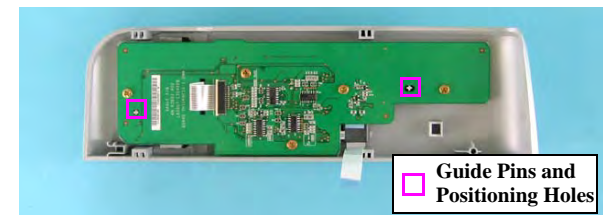


Figure 4-8. Installing Panel Board

- Tighten the screws in the order shown in the figure.

4.4.6 Scanner Unit

□ External view (1)

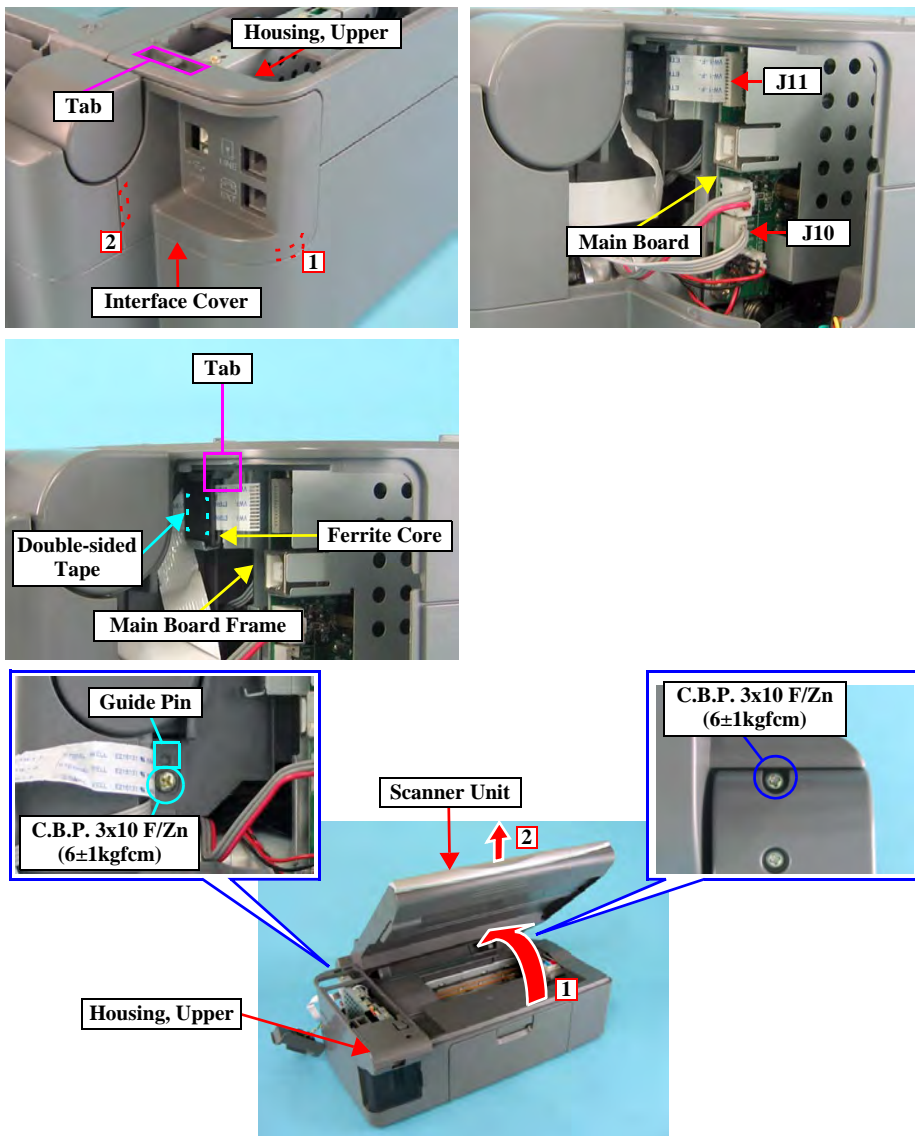






Figure 4-9. Removing Scanner Unit


□ Part/Unit that should be removed before removing Scanner Unit

Document Cover / Panel Unit

□ Removal procedure


1. While releasing the tab (x1, ) of the Housing, Upper, release the tabs (x2,  ) that secure the Interface Cover with a precision screwdriver (-), and remove the Interface Cover.
2. Disconnect the following Connector Cable and FFC from the connectors on the Main Board.
 - J10: Scanner Motor Connector Cable
 - J11: Scanner Carriage FFC
3. Peel off the double-sided tape that secures the ferrite core to the Main Board Frame, and remove the ferrite core from the Main Board Frame while releasing the tab (x1, ) of the Housing, Upper.



Do not damage the Scanner Carriage FFC when removing/ installing the screw (x1, ).

4. Remove the screws (x2,  ) that secure the Scanner Unit.
5. Open the Scanner Unit, and remove it by pulling out upward.



- Do not pinch the FFC or any Connector Cables between the Scanner Unit and the Housing, Upper.
- Align the guide pin (x1, ) of the Scanner Unit and the positioning hole (x1) of the Housing, Upper.

4.4.7 Housing, Upper

CHECK POINT



The removal procedures differ depending on the model. For Stylus CX6900F/CX7000F/DX7000F, refer to 8.4.3.1 "Housing, Upper" (p.265).

External view

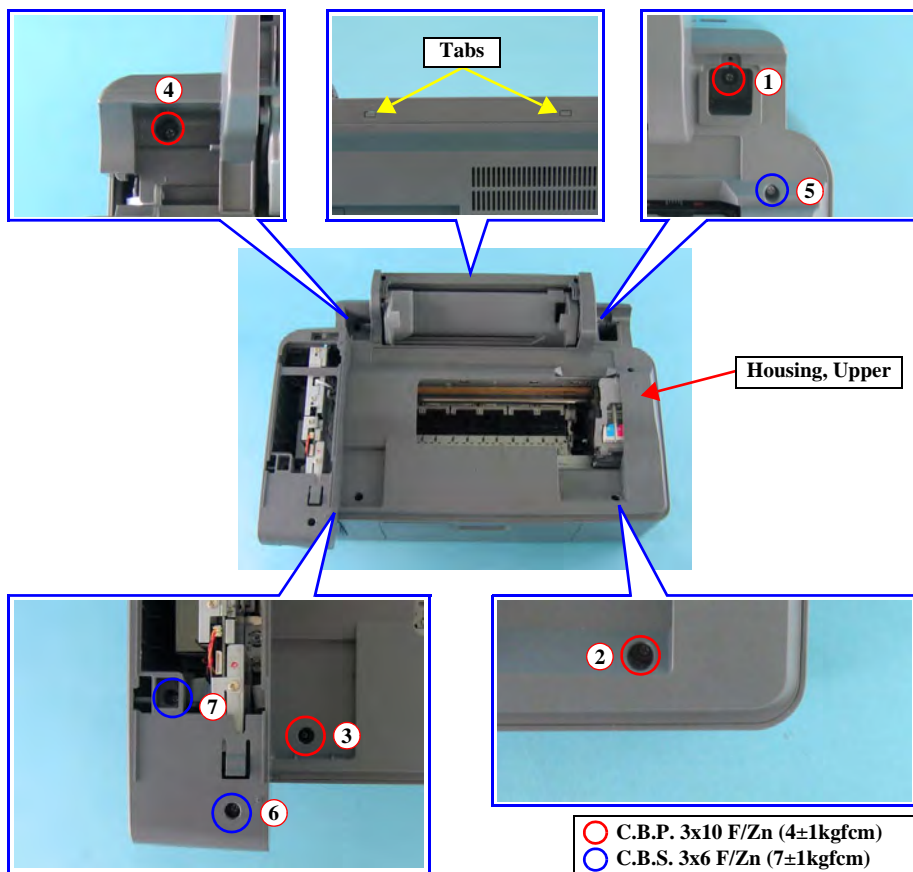


Figure 4-10. Removing Housing, Upper

- Part/Unit that should be removed before removing Housing, Upper
Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit

Removal procedure

1. Remove the screws (x7,) that secure the Housing, Upper.
2. Release the tabs (x2) that secure the Housing, Upper with a flathead screwdriver or a similar tool, and lift up to remove the Housing, Upper.



Tighten the screws in the order shown in the figure.

4.4.8 Printhead

CHECK
POINT



The removal procedures differ depending on the model. For Stylus CX6900F/CX7000F/DX7000F, refer to 8.4.3.2 "Printhead" (p.266).

External view

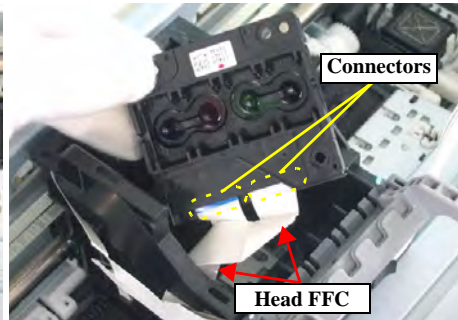
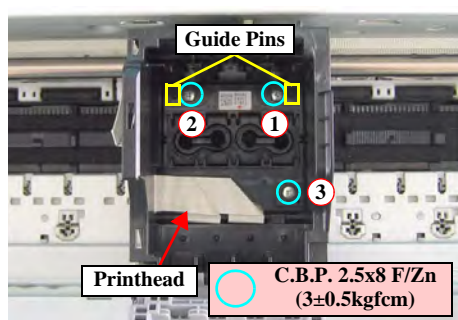
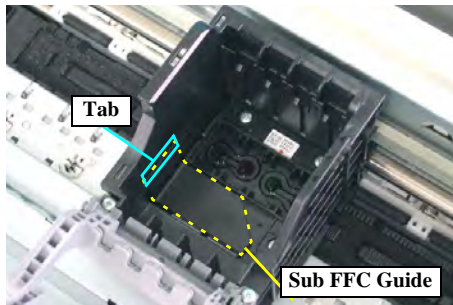
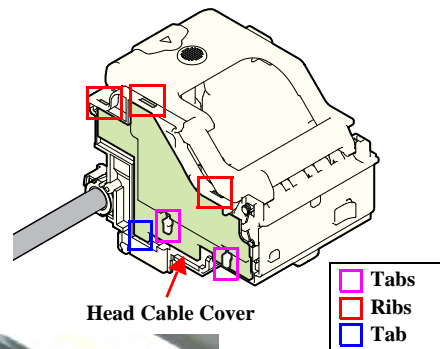
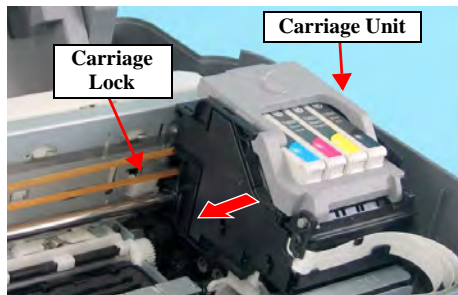


Figure 4-11. Removing Printhead

Part/Unit that should be removed before removing Printhead

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper

Removal procedure

1. Release the Carriage Lock with a flathead screwdriver or a similar tool, and move the Carriage Unit to the center of the printer.
2. Remove all the Ink Cartridges from the Carriage Unit.

CAUTION



When performing the following work, be careful not to bend the tabs (□) of the Carriage Unit.

3. Release the tab (x1, □) on the downside of the Head Cable Cover with a precision screwdriver (-), slide the Cover downward, and remove the Head Cable Cover.
4. Release the tab (x1, □) that secures the Sub FFC Guide with a precision screwdriver (-), and remove the Sub FFC Guide.


CAUTION



Do not touch or damage the nozzles or the ink supply needles of the Printhead.

5. Remove the screws (x3, ○) that secure the Printhead, and lift up to remove the Printhead with a longnose pliers.
6. Disconnect the Head FFCs (x2) from the connectors (x2) of the Printhead, and remove the Printhead.



- When installing the Printhead to the Carriage Unit, match the guide pins (x2, ) of the Carriage Unit with the positioning holes (x2) of the Printhead.
- Tighten the screws in the order shown in the figure.
- When installing the Sub FFC Guide, insert the rib of the Sub FFC Guide to the notch of the Carriage Unit as shown below

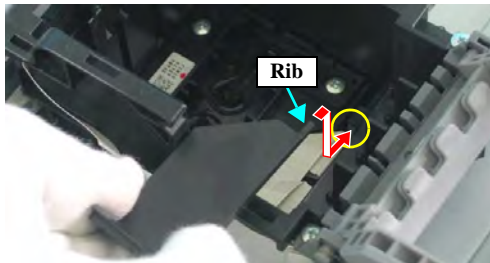


Figure 4-12. Installing Sub FFC Guide



After removing/replacing the Printhead, perform the adjustments mentioned below. (Refer to Chapter 5 “ADJUSTMENT”)

- “Ink Charge / Print Nozzle Check (p.184)” (only after replacement)
- “Input Machine ID/Head ID (p.184)” (only after replacement)
- “Procedure of “Print-TOF” (TOF Adjustment) (p.194)”
- “Procedure of “Print-PW” (PW Adjustment) (p.200)”
- “Procedure of “Print-HeadIncline” (Head Angular Adjustment) (p.196)”
- “Procedure of “Print-Bi Mode” (Bi-d Adjustment) (p.198)”
- “PF offset (Disenable PF Deterioration Offset) (p.210)”
- “Procedure of “Print PF” (PF Adjustment) (p.202)”
- “Procedure of “Print BandFeed” (BandFeed Adjustment) (p.204)”

4.4.9 Printer Mechanism

CHECK POINT



The removal procedures differ depending on the model. For Stylus CX6900F/CX7000F/DX7000F, refer to 8.4.3.4 "Printer Mechanism/Housing, Lower" (p.269).

External view (1)

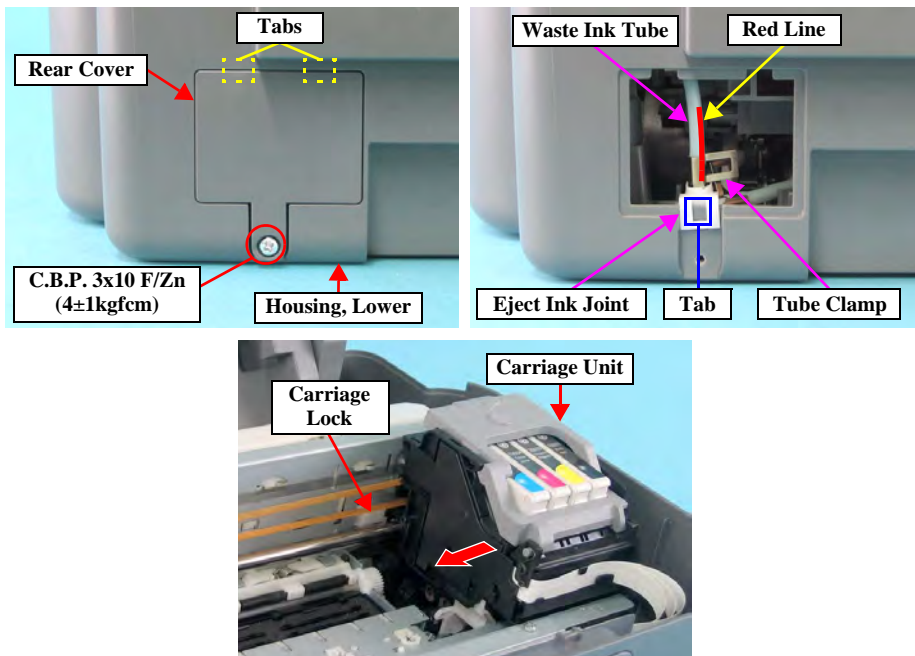



Figure 4-13. Removing Printer Mechanism (1)

Part/Unit that should be removed before removing Printer Mechanism

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper

Removal procedure

1. Remove the screw (x1, ) that secures the Rear Cover, and remove the Rear Cover.

CAUTION



- The Waste Ink Tube may be broken when it is removed. If it breaks, replace the Ink System Unit.
- Ink may leak from the Waste Ink Tube. Prepare cleaning rags beforehand, and be careful not spread ink onto surrounding area.

CHECK POINT



When removing the Waste Ink Tube, insert a plastic tweezers or a similar tool between the rib of the Eject Ink Joint and the Waste Ink Tube, and pick up the Waste Ink Tube.

2. Remove the Eject Ink Joint from the Housing, Lower, grasp the handle of the Tube Clamp and slide it upwards, and carefully remove the Waste Ink Tube (of the Ink System Unit side).
3. Release the Carriage Lock with a flathead screwdriver, and move the Carriage Unit to the center of the printer.

□ External view (2)

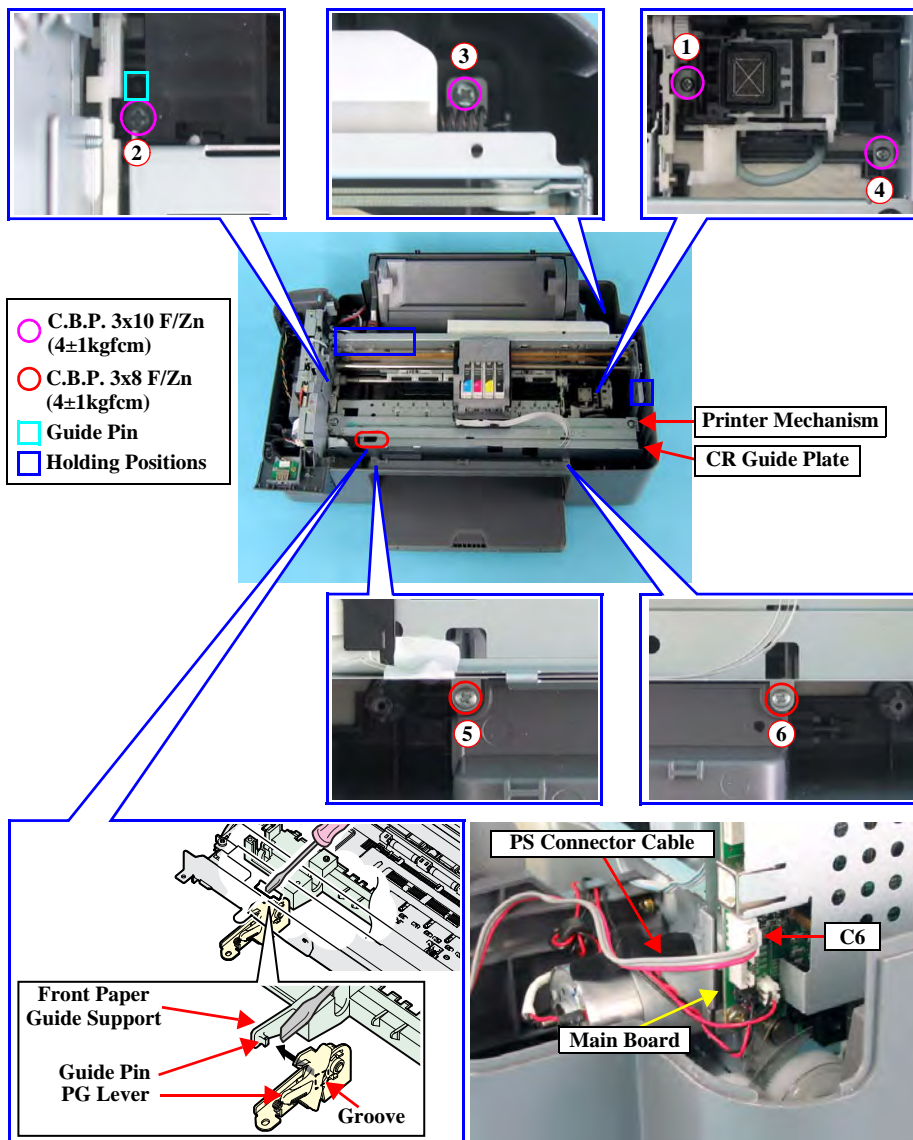


Figure 4-14. Removing Printer Mechanism (2)

4. Remove the screws (x6, ●●) that secure the Printer Mechanism.
5. Disconnect the PS Connector Cable from the connector (J1) of the Main Board.

CAUTION






Hold the designated position and lift the Printer Mechanism upward when performing the following step in order to prevent warping of the Main Frame.

6. Hold up the left side of the Printer Mechanism while releasing the guide pin of the Front Paper Guide Support from the groove of the PG Lever with a precision screwdriver (-), and remove whole Printer Mechanism from the Housing, Lower.



When installing the Printer Mechanism to the Housing, Lower, insert the Waste Ink Tube to the Eject Ink Joint and securely fasten the Waste Ink Tube with the Tube Clamp, or ink may leak from the Tube.



- When installing the Printer Mechanism to the Housing, Lower, match the guide pin (x1, ) of the Housing, Lower with the positioning hole (x1) of the Printer Mechanism.
- Tighten the screws in the order as shown in the figure.
- When installing the Eject Ink Joint to the Housing, Lower, match the tab (x1, ) of the Eject Ink Joint with the positioning hole (x1) of the Housing, Lower.
- When installing the Waste Ink Tube to the Eject Ink Joint, install them so that the handle of the Tube Clamp and the red line of the Waste Ink Tube are on the right side.
- When installing the Rear Cover, match the tabs (x2, ) of the Rear Cover with the notches (x2) of the Housing, Lower.



The assembled accuracy of each part composed of Printer mechanism is based on Housing, Lower. To ensure the assembled accuracy, you have to control the assembled standard position of main frame against X/Y/Z-axis direction as the following figure.

- [X-axis direction]
Confirm that Printer Mechanism is properly placed in the channel of Housing, Lower and that there is no gap.
- [Y-axis direction]
Confirm that Printer Mechanism is properly placed in the channel of Housing, Lower and that there is no gap.
- [Z-axis direction]
Align the positioning hole (x1) of Printer Mechanism with the guide pin (x1) of Housing, Lower, and confirm that there is no gap

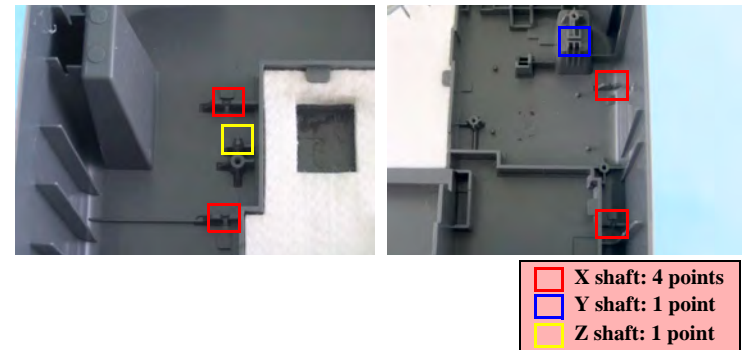


Figure 4-15. Assembled Standard Position of Main Unit

4.4.10 PS Board Unit

□ External view

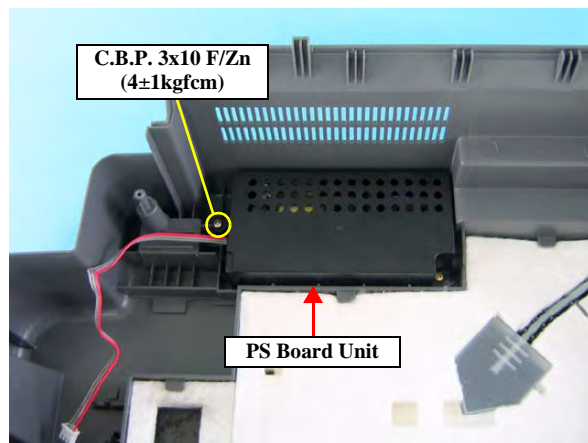



Figure 4-16. Removing PS Board Unit

□ Part/Unit that should be removed before removing PS Board Unit

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
Housing, Upper / Printer Mechanism

□ Removal procedure

1. Remove the screw (x1, ) that secures the PS Board Unit, and remove the PS Board Unit.

ADJUSTMENT
REQUIRED



After replacing the PS Board Unit, perform the following adjustment. (Refer to Chapter 5 “ADJUSTMENT”)

- “Procedure of “CR Variation” (CR Motor Heat Protection Control Adjustment) (p.206)” (only after replacement)

4.4.11 Waste Ink Pads/Stacker Lock/PG Lever/Rubber Feet

CHECK
POINT



The removal procedures differ depending on the model. For Stylus CX6900F/CX7000F/DX7000F, refer to 8.4.3.5 "Waste Ink Pads/Stacker Lock/PG Lever/Rubber Feet" (p.272).

□ External view (1)

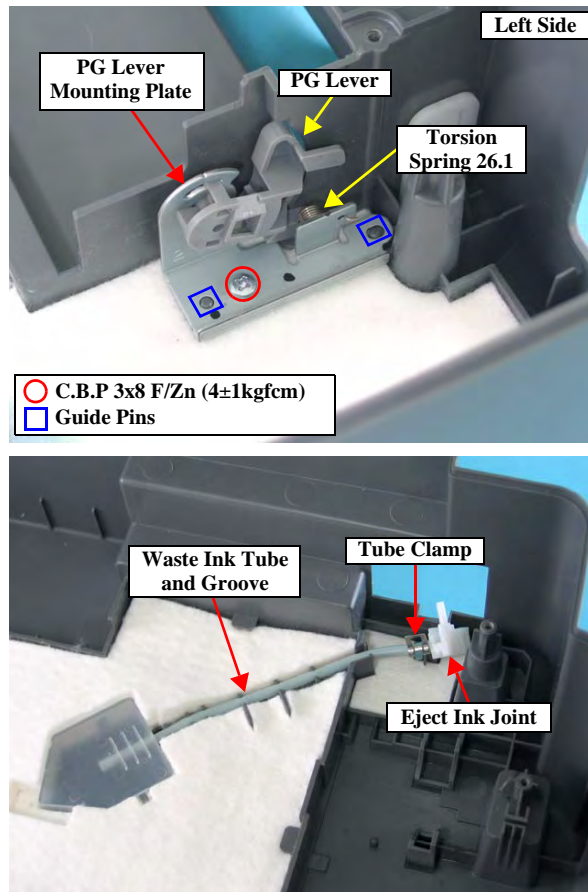



Figure 4-17. Removing Waste Ink Pads

□ Part/Unit that should be removed before removing Waste Ink Pads/Stacker Lock/PG Lever/Rubber Feet

Document Cover / Paper Support Assy. / Stacker / Panel Unit / Scanner Unit/Housing, Upper / Printer Mechanism

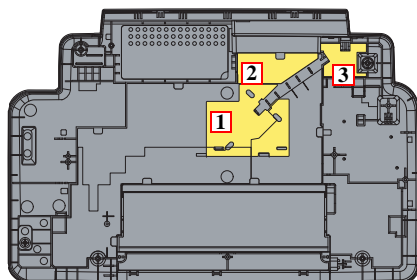
□ Removal procedure

■ Waste Ink Pads Removal

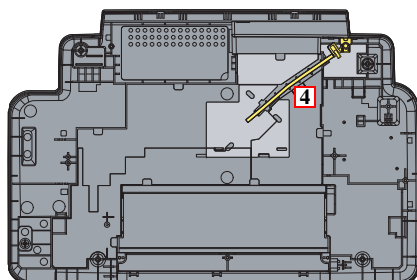
1. Remove the screw (x1, ) that secures the PG Lever Mounting Plate, and remove the PG Lever, PG Lever Mounting Plate and Torsion Spring 26.1 all together from the Housing, Lower.
2. When removing the Waste Ink Tube, make sure to follow the steps below.
 1. Release the Waste Ink Tube from the groove of the Housing, Lower.
 2. Disconnect the Waste Ink Tube from the Waste Ink Cover.
 3. Remove the Waste Ink Tube together with the Tube Clamp and the Eject Ink Joint.
3. Remove eight pieces of the Waste Ink Pads and the Waste Ink Cover from the Housing, Lower

- When installing the Waste Ink Pads, be sure to follow the steps below.

Step 1



Step 2



Step 3

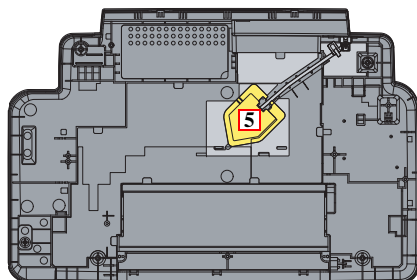
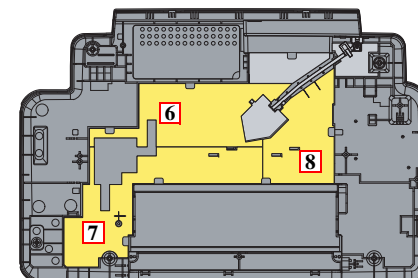


Figure 4-18. Installing Waste Ink Pads (1)

Step 4



Step 5

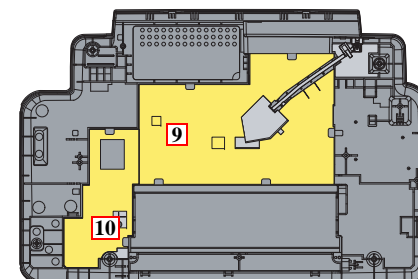



Figure 4-19. Installing Waste Ink Pads (2)

- When installing the Waste Ink Tube to the Housing, Lower, insert the Waste Ink Tube to both the groove of the Housing, Lower and the Eject Ink Joint and securely fasten the Waste Ink Tube with the Tube Clamp, or ink may leak from the Tube.
- When installing the PG Lever Mounting Plate to the Housing, Lower, match the guide pins (x2, ) of the Housing, Lower with the positioning holes (x2) of the PG Lever Mounting Plate.

ADJUSTMENT
REQUIRED

After replacing the Waste Ink Pads, perform the following adjustment. (Refer to Chapter 5 “ADJUSTMENT”)

- “Waste Ink Pad Counter (p.210)” (only after replacement)

□ External view (2)

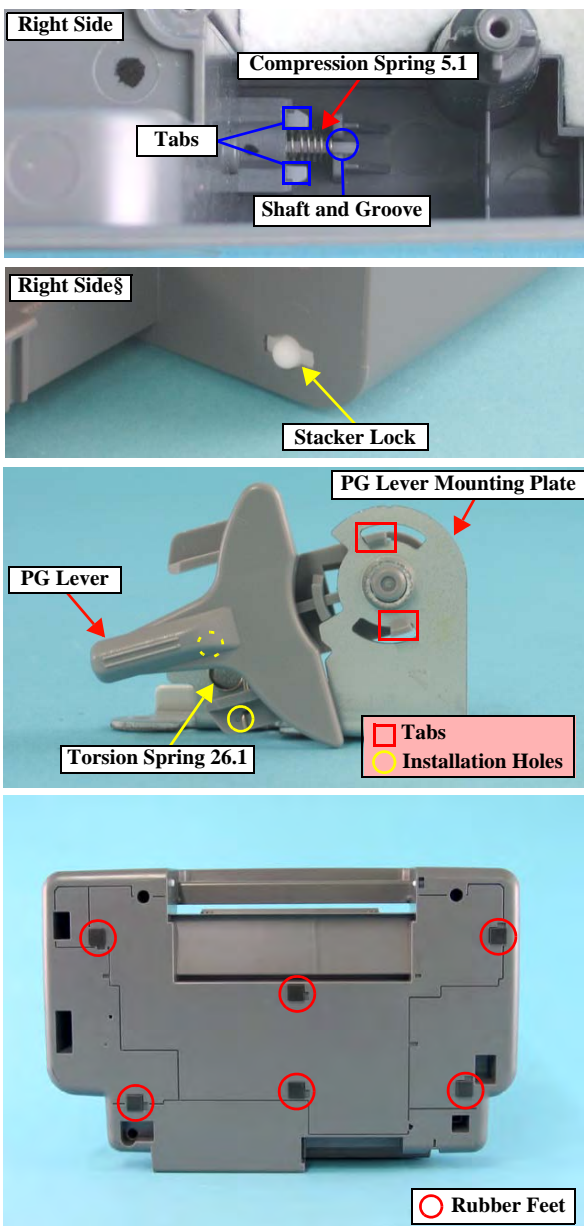



Figure 4-20. Removing Stacker Lock/PG Lever/Rubber Feet



■ Stacker Lock Removal

1. Remove the tabs (x2, ) that secure the Stacker Lock, and remove the Stacker Lock and Compression Spring 5.1 from the Housing, Lower.



Pass the shaft of the Stacker Lock through the groove of the Housing, Lower.

■ PG Lever Removal

1. Release the tabs (x2, ) that secure the PG Lever to the PG Lever Mounting Plate.
2. Remove Torsion Spring 26.1 from the installation holes (x2, ) of the PG Lever and the PG Lever Mounting Plate, and remove the PG Lever.

■ Rubber Feet Removal

1. Remove the rubber feet (x6) from the Housing, Lower.

4.4.12 Main Board Unit/Card Slot Unit/Fax Board

CHECK
POINT



The removal procedures differ depending on the model. For Stylus CX6900F/CX7000F/DX7000F, refer to 8.4.3.6 "Main Board Unit/Card Slot Unit/Fax Board" (p.275).

External view (1)

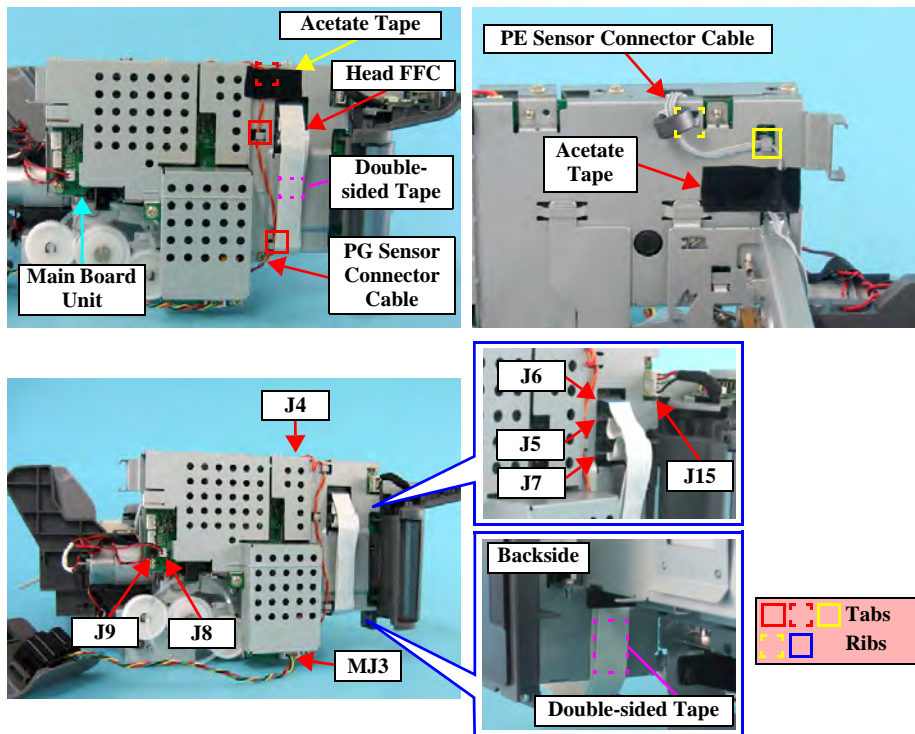




Figure 4-21. Removing Main Board Unit (1)

Part/Unit that should be removed before removing Main Board Unit/Card Slot Unit/Fax Board

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper / Printer Mechanism

Removal procedure

Main Board Removal

1. Peel off the acetate tape (x1) that secures the PG Sensor Connector Cable.
2. Release the PG Sensor Connector Cable from the tabs (x3, ) of the Main Board Unit.
3. Peel off the acetate tape (x1) that secures the PE Sensor Connector Cable, and release the PE Sensor Connector Cable from the tabs (x2, ) of the Main Board Unit.
4. Disconnect the following connector cables and FFCs from the connectors on the Main Board.
 - J3: PE Sensor Connector Cable
 - J4: PG Sensor Connector Cable
 - J5: Head FFC
 - J6: Head FFC
 - J7: Head FFC
 - J8: CR Motor Connector Cable
 - J9: PF Motor Connector Cable
 - J15: USB Host Cable
5. Disconnect the following cable from the connector on the Fax Board.
 - MJ3: Modular Connector Cable
6. Peel off the double-sided tapes (x2) that secure the Head FFC to the Main Board Unit, and remove the Head FFC.

□ External view (2)

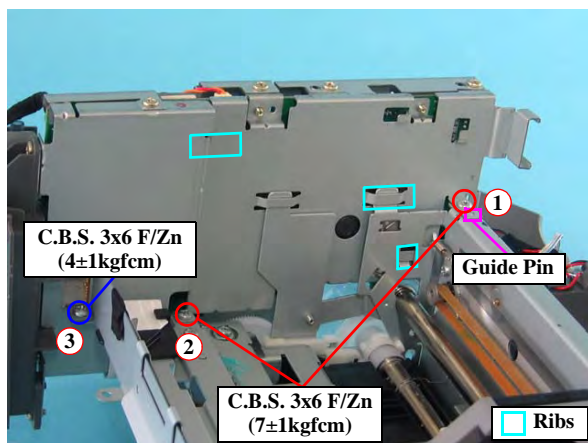




Figure 4-22. Removing Main Board Unit (2)

7. Remove the screws (x3,  ) that secure the Main Board Unit, and remove the Main Board Unit from the Printer Mechanism.



- Insert the PF Scale into the slit of the PF Encoder Sensor.

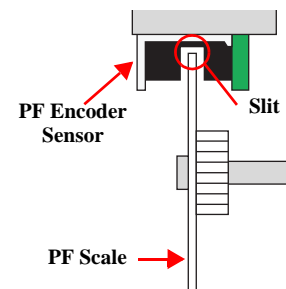




Figure 4-23. Installing PF Scale

- **PF Scale position control**
Use the following procedure to confirm that the PF Scale is positioned in the center of the PF Encoder Sensor.
1. Do a trial assembly of the Main Board Unit, and check if the PF Scale is positioned in the center of the PF Encoder Sensor.
 2. If the PF Scale is positioned in the center of the PF Encoder Sensor, adjustment is complete.
- Insert the ribs (x3, ) of the Main Frame into the tabs (x3) of the Main Board Unit.
- Match the positioning hole (x1) of the Main Board Unit with the guide pin (x1, ) of the Main Frame.
- Tighten the screws in the order as shown in the figure.

□ External view (3)

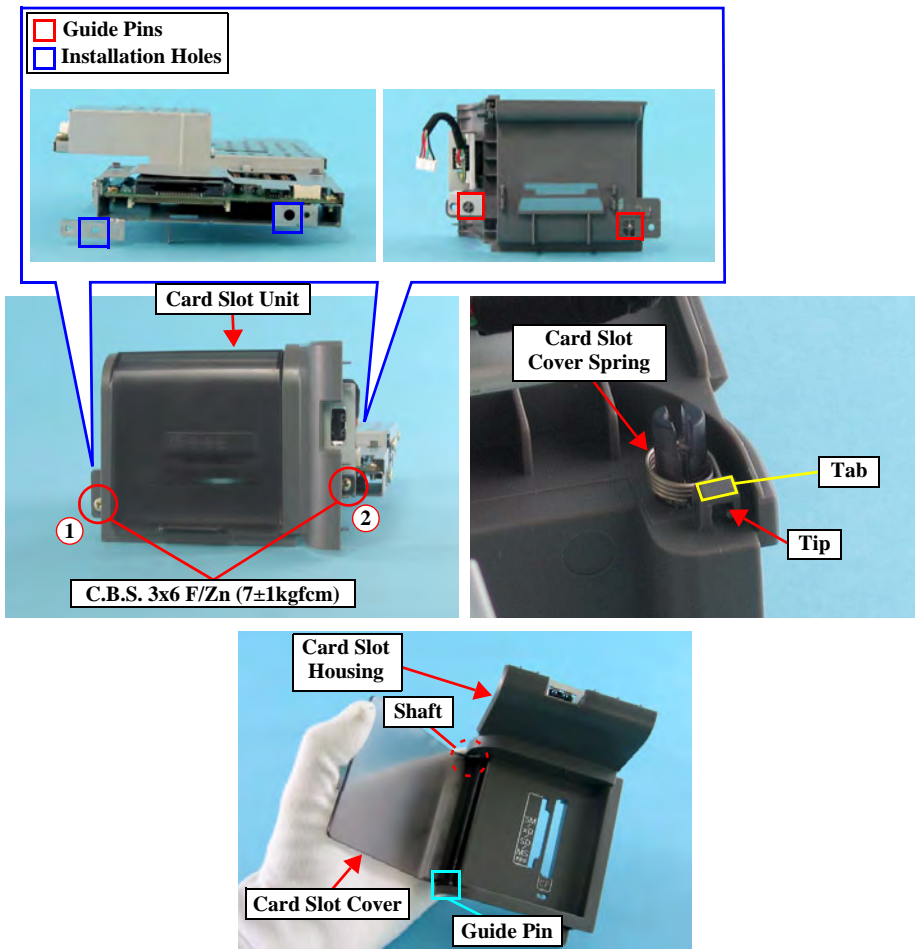





Figure 4-24. Removing Main Board Unit (2)

■ Card Slot Unit Removal

1. Remove the screws (x2, ) that secure the Card Slot Unit, and remove the Card Slot Unit from the Main Board Unit.
2. Release the tip of the Card Slot Spring from the tab (x1, ) of the Card Slot Housing, and remove the Card Slot Spring.
3. Release the guide pin (x1, ) of the Card Slot Cover from the Card Slot Housing, and remove the Card Slot Cover.



- Set the shaft of the Card Slot Cover into the Card Slot Housing and align the guide pin.
- Install the Card Slot Spring as shown below.

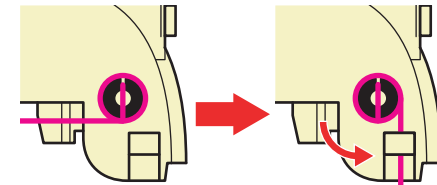




Figure 4-25. Installing Card Slot Spring

- Tighten the screws in the order shown in the figure.
- Match the guide pins (x2, ) of the Card Slot Housing with the positioning holes (x2, ) of the Main Board Unit.

External view (4)

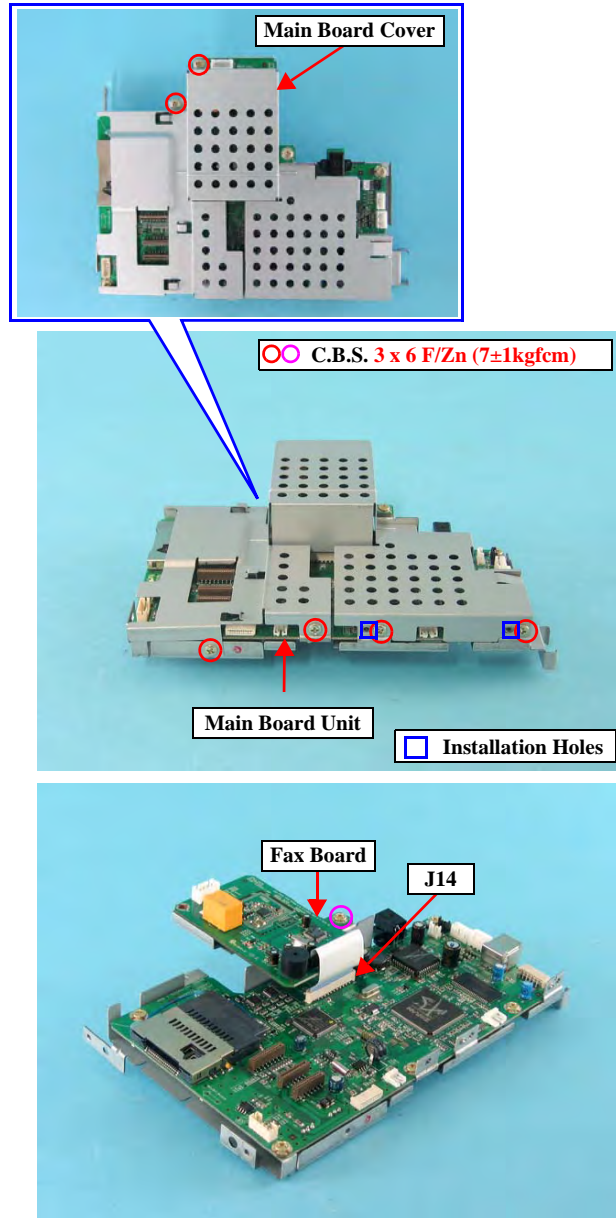




Figure 4-26. Removing Fax Board Unit

Fax Board Removal

1. Remove the screws (x6, ) that secure the Main Board Cover, and remove the Main Board Cover from the Main Board Unit.
2. Disconnect the following connector cable from the connector on the Main Board.
 - J14: Fax Board Connector Cable
3. Remove the screw (x1, ) that secures the Fax Board, and remove the Fax Board from the Main Board Unit.



When installing the Main Board Cover to the Main Board Unit, match the guide pins (x2, ) of the Main Board Unit with the Main Board Cover (x2).



After removing/replacing the Main Board Unit, perform the adjustments mentioned below. (Refer to Chapter 5 “ADJUSTMENT”)

- “Outline of Adjustment Procedure (p.189)”
- “Input Machine ID/Head ID (p.184)”
- “Procedure of “Print-TOF” (TOF Adjustment) (p.194)”
- “Procedure of “Print-PW” (PW Adjustment) (p.200)”
- “Procedure of “Print-HeadIncline” (Head Angular Adjustment) (p.196)”
- “Procedure of “Print-Bi Mode” (Bi-d Adjustment) (p.198)”
- “PF offset (Disenable PF Deterioration Offset) (p.210)”
- “Procedure of “CR Variation” (CR Motor Heat Protection Control Adjustment) (p.206)”
- “Procedure of “Print PF” (PF Adjustment) (p.202)”
- “Procedure of “Print BandFeed” (BandFeed Adjustment) (p.204)”

4.4.13 ASF Unit

□ External view (1)

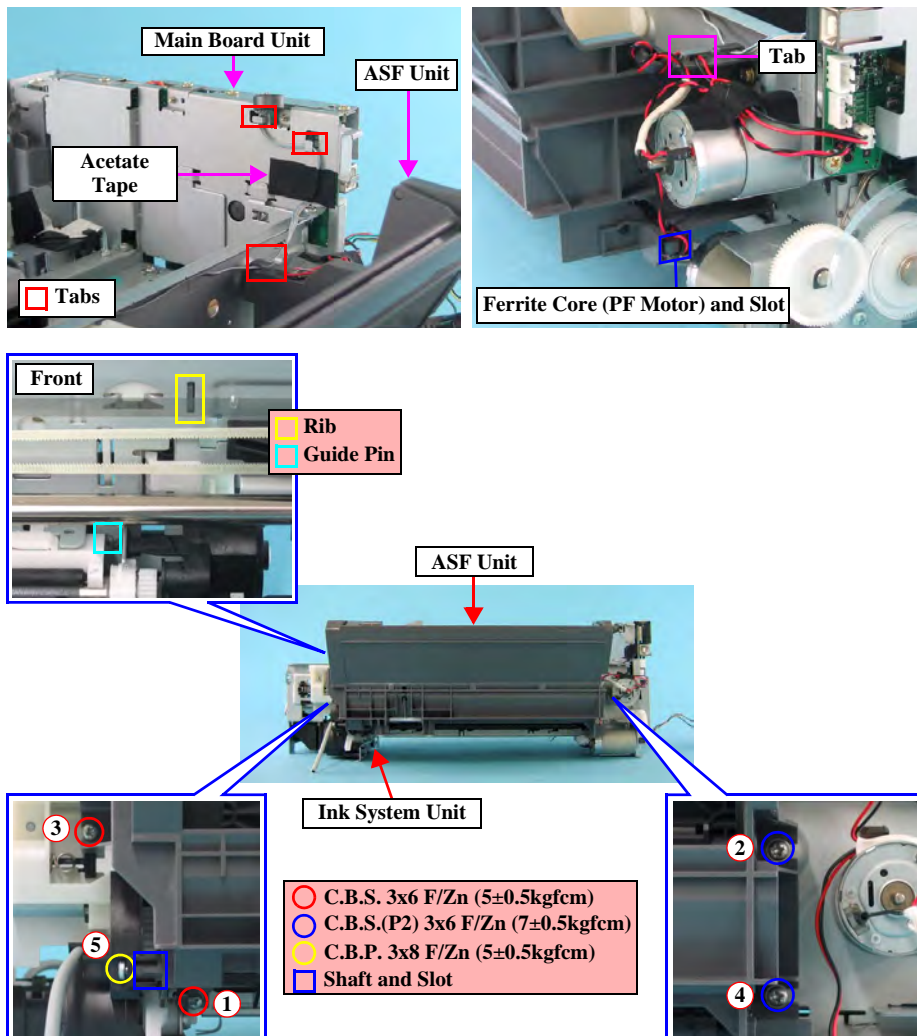







Figure 4-27. Removing ASF Unit (1)



□ Part/Unit that should be removed before removing ASF Unit

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
Housing, Upper / Printer Mechanism

□ Removal procedure

1. Peel off the acetate tape (x2) that secures the PE Sensor Connector Cable to the shield plate of the o, and release the PE Sensor Connector Cable from the tabs (x3, ) of the ASF Unit and the Main Board Unit.
2. Release the CR Motor Connector Cable from the tab (x1, ) of the ASF Unit.
3. Remove the Ferrite Core of the PF Motor Connector Cable from the slot of the ASF Unit.
4. Remove the screws (x5,   ) that secure the ASF Unit, and remove the ASF Unit from the Printer Mechanism.



- Match the guide pin (x1, ) and the rib (x1, ) of the ASF Unit with the positioning holes (x2) of the Main Frame.
- Insert the shaft of the ASF Unit into the slot of the Ink System Unit.
- Tighten the screws in the order shown in the figure.

□ External view (2)

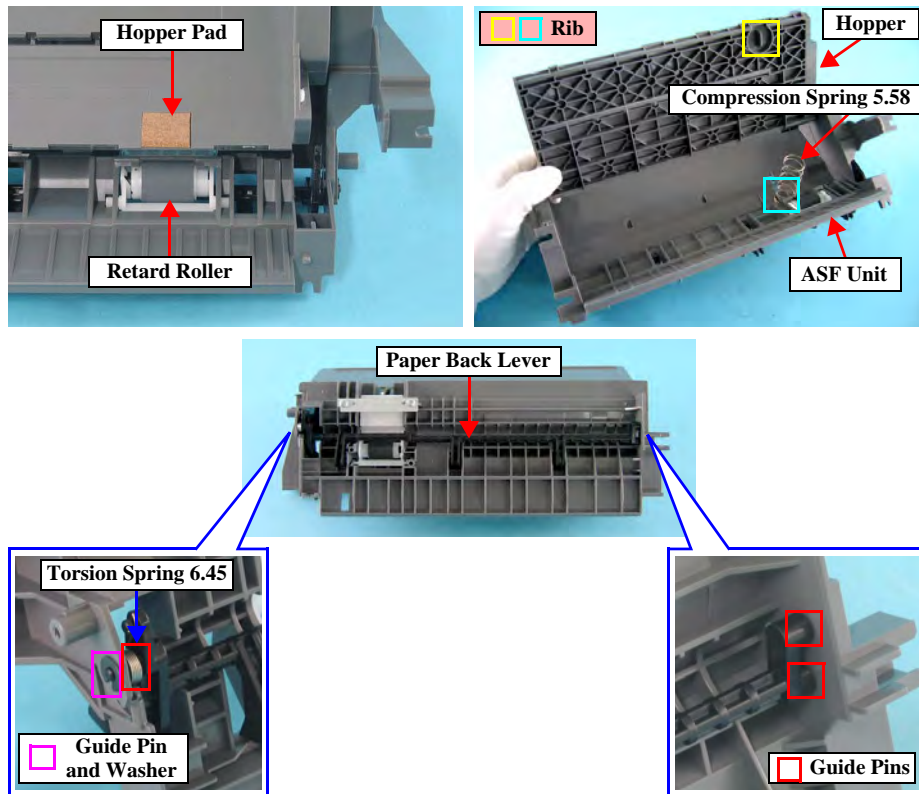


Figure 4-28. Removing ASF Unit (2)

5. Open the Hopper, and remove Compression Spring 5.58.
6. Remove the washer that secures the left shaft of the Paper Back Lever.



Do not touch the Retard Roller and the Hopper Pad.

7. Bend the Paper Back Lever, release the guide pins (2 each, □) on both ends of the lever from the ASF Unit, and remove the Paper Back Lever and Torsion Spring 6.45.



- When installing Torsion Spring 6.45, hitch the L-shaped tip of Torsion Spring 6.45 to the shaft of the Paper Back Lever, and hitch the short tip to the groove of the ASF Unit.

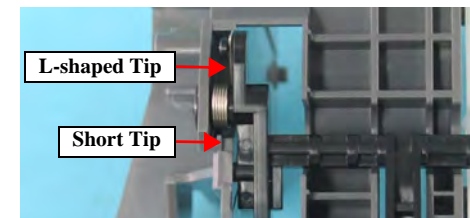


Figure 4-29. Installing Torsion Spring 6.45

- Compression Spring 5.58 should be hitched to the rib (x2, □) of the ASF Frame and the rib (x1, □) of the Hopper.



- After replacing the ASF Unit with a new one, always apply G-26 grease and G-46 grease to the specified positions.
 - See Chapter 6: [Figure 6-6 \(p.216\)](#) for details.
- After removing/replacing the ASF Unit, perform the adjustments described below. (Refer to Chapter 5 “ADJUSTMENT”)
 - “Procedure of “Print-TOF” (TOF Adjustment) (p.194)”
 - “Procedure of “Print-PW” (PW Adjustment) (p.200)”
 - “PF offset (Disable PF Deterioration Offset) (p.210)”
 - “Procedure of “Print PF” (PF Adjustment) (p.202)”
 - “Procedure of “Print BandFeed” (BandFeed Adjustment) (p.204)”

4.4.14 Holder Shaft Unit

External view

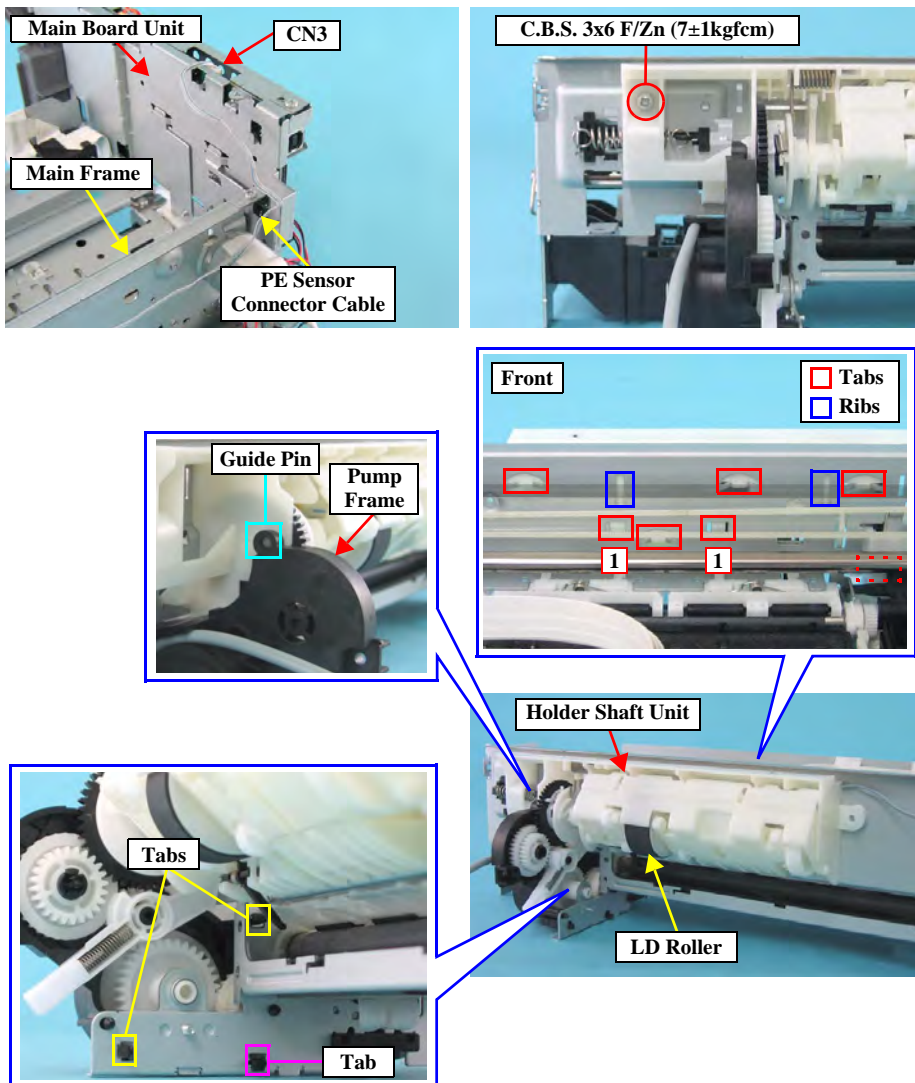



Figure 4-30. Removing Holder Shaft Unit

Part/Unit that should be removed before removing Holder Shaft Unit


Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
Housing, Upper / Printer Mechanism / ASF Unit




Removal procedure

1. Slide the Carriage Unit to the left side of the printer.
2. Disconnect the PE Sensor Connector Cable from the connector (CN3) on the Main Board
3. Remove the screw (x1, ) that secures the Holder Shaft Unit.

CAUTION






- Do not open the Pump Frame too wide. Doing so may break the tab (x1, ) on the downside of the Pump Frame.
- Never touch the LD Roller.

4. When removing the Holder Shaft Unit from the Main Frame, follow the steps described below.
 1. Release the tabs (x2, ) that secure the Pump Frame to the Main Frame.
 2. Move the Pump Frame to the home position, and release the guide pin (x1, ) of the Holder Shaft Unit.
 3. Push the tabs (x2, ) of the Holder Shaft Unit, and remove the Holder Shaft Unit upward.

REASSEMBLY



- Match the guide pin (x1, ) of the Holder Shaft Unit with the positioning hole (x1) of the Pump Frame.
- Secure the Holder Shaft Unit with the tabs (x6, ) and the ribs (x2, )

ADJUSTMENT REQUIRED



After removing/replacing the Holder Shaft Unit, perform the adjustments mentioned below. (Refer to Chapter 5 “ADJUSTMENT”)

- “Procedure of “Print-TOF” (TOF Adjustment) (p.194)”
- “Procedure of “Print-PW” (PW Adjustment) (p.200)”

4.4.15 Spur Gear 36.8/Extension Spring 0.143/Clutch

□ External view

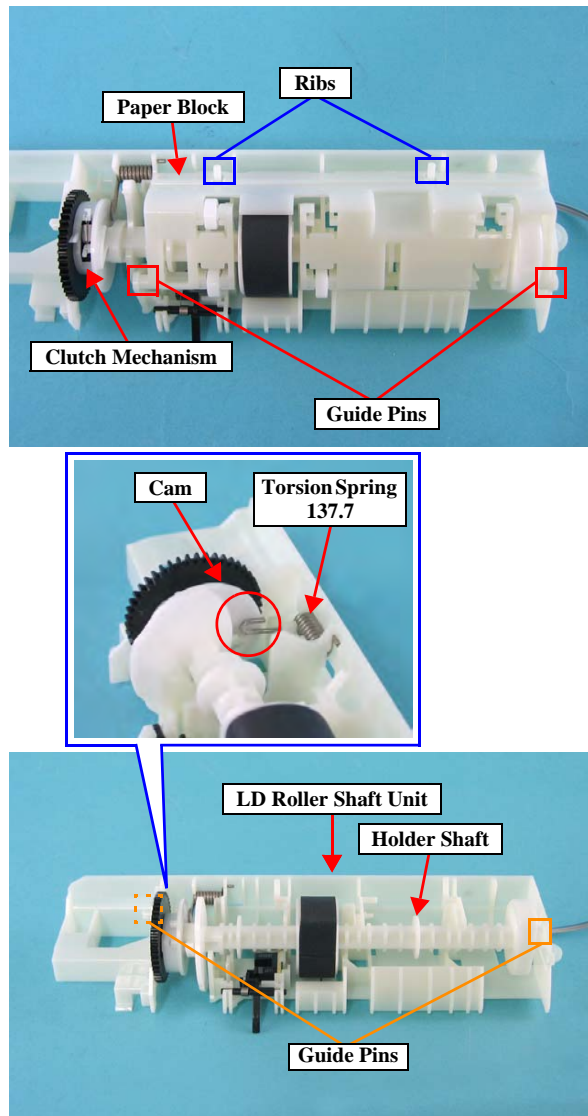



Figure 4-31. Removing Spur Gear 36.8/Extension Spring 0.143/Clutch

□ Part/Unit that should be removed before removing Spur Gear 36.8/Extension Spring 0.143/Clutch

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper / Printer Mechanism / ASF Unit / Holder Shaft Unit

□ Removal procedure

1. Release the guide pins (x2, ) that secure the Paper Block to the Holder Shaft, and remove the Paper Block.
2. Remove the LD Roller Shaft together with the Clutch Mechanism from the Holder Shaft.
3. Remove the Spur Gear 36.8 from the LD Roller Shaft.
4. Remove the Extension Spring 0.143, and remove the Clutch from the LD Roller Shaft.



■ Assemble the LD Roller Shaft Unit as shown below.

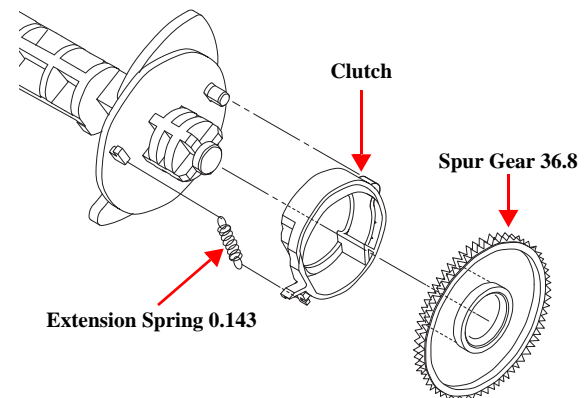




Figure 4-32. Assembling LD Roller Shaft Unit

- Match the guide pins (x2, ) of the LD Roller Shaft with the positioning holes of the Holder Shaft.
- Hold down the Cam of the LD Roller Shaft with the tip of the Torsion Spring 137.7.
- Match the ribs (x2, ) of the Holder Shaft with the notches (x2) of the Paper Block.

4.4.16 PE Sensor Board/PE Sensor Lever

□ External view

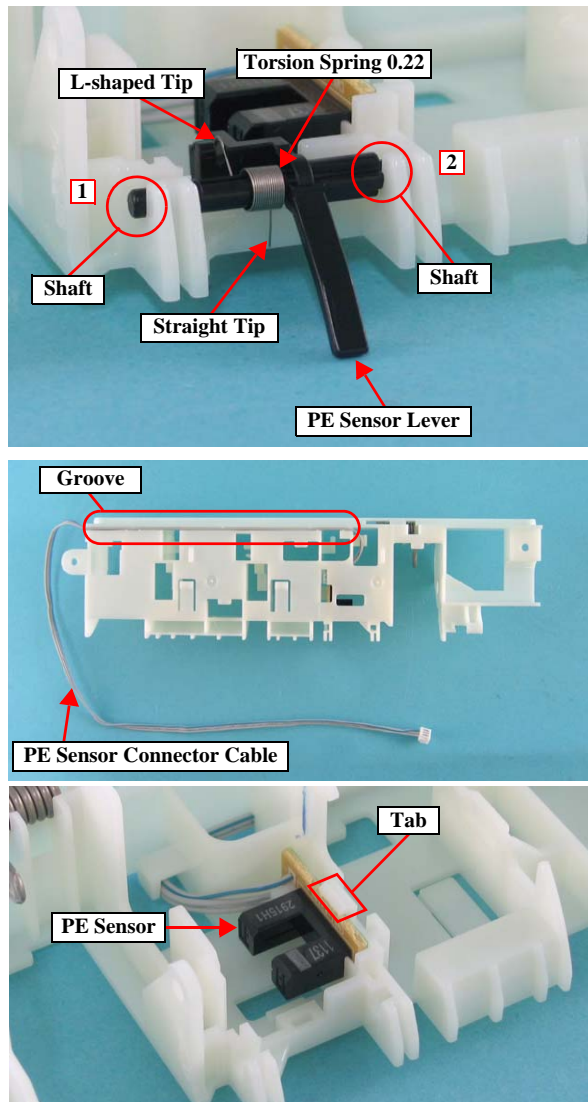



Figure 4-33. Removing PE Sensor Board/PE Sensor Lever

□ Part/Unit that should be removed before removing PE Sensor Board/PE Sensor Lever

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper / Printer Mechanism / ASF Unit / Holder Shaft Unit / Spur Gear 36.8 / Extension Spring 0.143 / Clutch

□ Removal procedure

1. Remove the shaft of the PE Sensor Lever from the Holder Shaft, and remove the PE Sensor Lever and Torsion Spring 0.22 in the order shown in the figure.
2. Remove Torsion Spring 0.22 from the PE Sensor Lever.
3. Release the PE Sensor Connector Cable from the groove of the Holder Shaft.
4. Release the tab (x1, ) that secures the PE Sensor, and remove the PE Sensor from the Holder Shaft.



- Fasten the L-shaped tip of Torsion Spring 0.22 to the concave portion of the PE Sensor Lever, and fasten the straight tip to the Holder Shaft.
- Route the PE Sensor Connector Cable to the groove of the Holder Shaft so that the Cable does not run off.

4.4.17 CR Guide Frame

CHECK
POINT



The removal procedures differ depending on the model. For Stylus CX6900F/CX7000F/DX7000F, refer to 8.4.3.7 "CR Guide Frame" (p.279).

External view

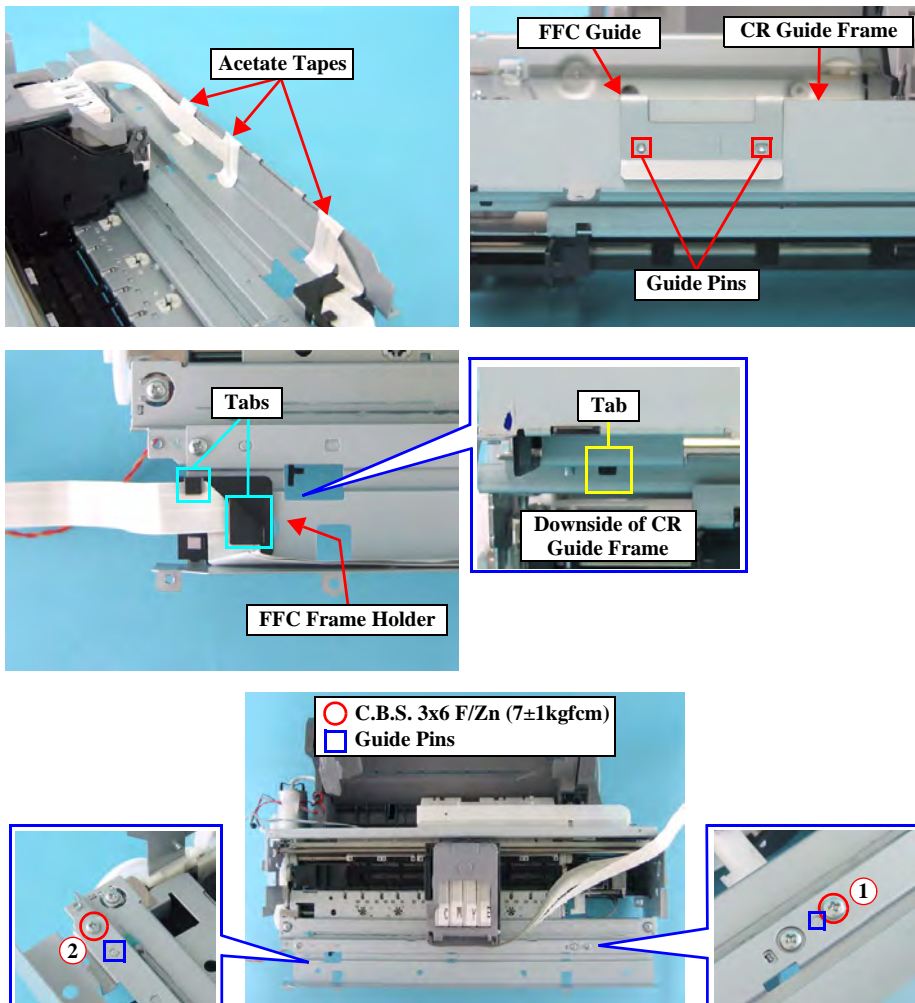






Figure 4-34. Removing CR Guide Frame


Part/Unit that should be removed before removing CR Guide Frame

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper / Printer Mechanism / Main Board Unit

Removal procedure

1. Peel off the acetate tape (x3) that secure the Head FFCs (x3).
2. Release the guide pins (x2, ) that secure the FFC Guide, and remove the FFC Guide from the CR Guide Frame.
3. Release the tab (x1, ) on the bottom of the CR Guide Frame that secures the FFC Frame Holder, and remove the FFC Frame Holder together with the Head FFC.
4. Release the Head FFC from the tabs (x2, ) of the FFC Frame Holder.
5. Release the Head FFCs (x3) secured with the double-sided tape (x1) from the CR Guide Frame.
6. Remove the screws (x3, ) that secure the CR Guide Frame, and remove the CR Guide Frame from the Printer Mechanism.



- Match the guide pins (x2, ) of the Front Frame with the positioning holes (x2) of the CR Guide Frame.
- Tighten the screws in the order as shown in the figure.
- Attach the Head FFCs (x3) with double-sided tape against the mark-off line on the CR Guide Frame.

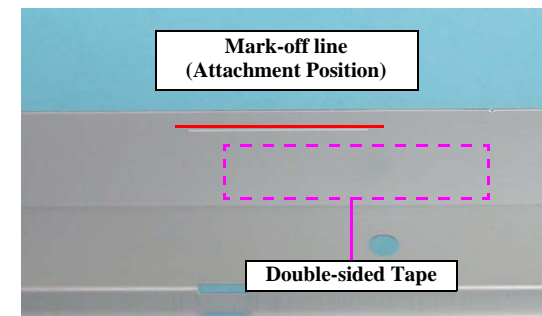


Figure 4-35. Attaching Head FFC

4.4.18 CR Motor

□ External view

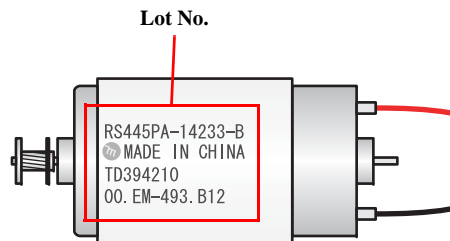
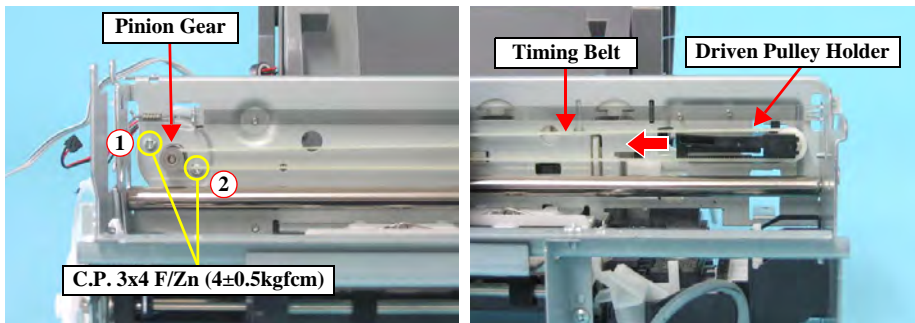
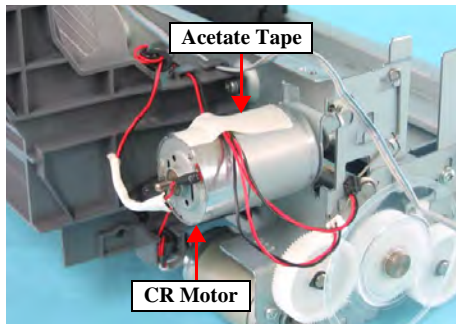


Figure 4-36. Removing CR Motor

□ Part/Unit that should be removed before removing CR Motor


Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
Housing, Upper / Printer Mechanism / Main Board Unit / CR Guide Frame

□ Removal procedure

1. Slide the Carriage Unit to the center of the printer.
2. Peel off the acetate tape (x1) from the CR Motor, and release the CR Motor Connector Cable and the PF Motor Connector Cable.
3. Release the CR Motor Connector Cable from the tab of the ASF Unit.
4. Loosen the tension of the Timing Belt by pressing the Driven Pulley Holder in the direction of the arrow shown in the figure, and remove the Timing Belt from the pinion gear of the CR Motor.



Do not damage the pinion gear of the CR Motor.

5. Remove the screws (x2, ) that secure the CR Motor, and remove the CR Motor from the Printer Mechanism.



- Install the CR Motor so that the Lot Number faces upward.
- Tighten the screws in the order shown in the figure.
- Make sure that there is no gap between the CR Motor and the Main Frame.



After removing/replacing the CR Motor, perform the adjustments mentioned below. (Refer to Chapter 5 “ADJUSTMENT”)

- “Procedure of “Print-PW” (PW Adjustment) (p.200)”
- “Procedure of “Print-Bi Mode” (Bi-d Adjustment) (p.198)”
- “Procedure of “CR Variation” (CR Motor Heat Protection Control Adjustment) (p.206)” (only after replacement)

4.4.19 PF Motor

□ External view

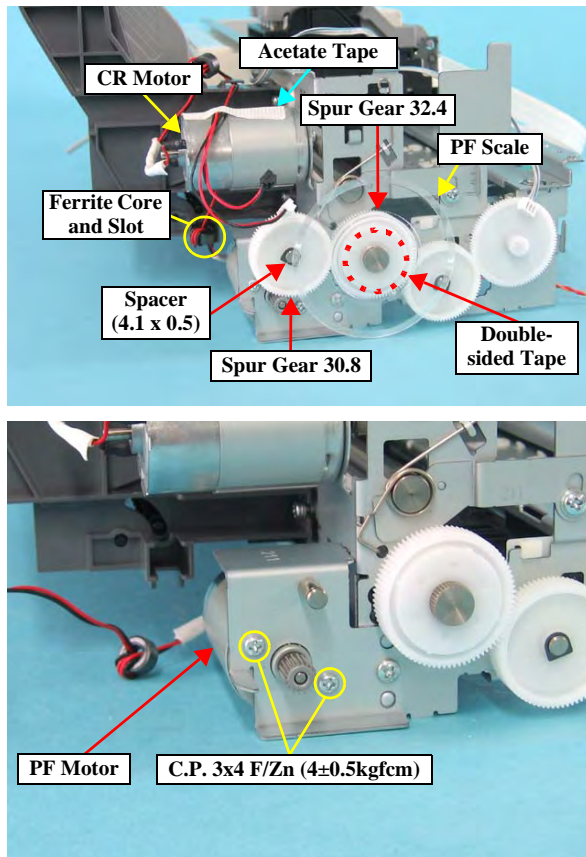


Figure 4-37. Removing PF Motor

□ Part/Unit that should be removed before removing PF Motor

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
Housing, Upper / Printer Mechanism / Main Board Unit


□ Removal procedure

1. Peel off the acetate tape (x1) from the CR Motor, and release the CR Motor Connector Cable and the PF Motor Connector Cable.
2. Remove the Ferrite Core (x1) of the PF Motor Connector Cable from the slot (x1) of ASF Unit.
3. Remove the PF Scale that is secured with the double-sided tape (x1) to the Spur Gear 32.4.
4. Remove the Spacer (4.1 x 0.5) that secures Spur Gear 30.8, and remove Spur Gear 30.8 from the Main Frame.



Do not damage the following parts.

- Pinion gear of the PF Motor
- PF Scale
- Spur Gear 30.8

5. Remove the screws (x2, ) that secure the PF Motor, and remove the PF Motor from the Printer Mechanism.



- Install the PF Motor so that the Lot Number faces upward.

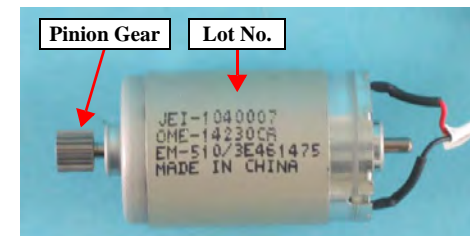


Figure 4-38. Installing PF Motor

- Make sure that there is no gap between the PF Motor and the Main Frame.



After removing/replacing the PF Motor, perform the adjustments mentioned below. (Refer to Chapter 5 “ADJUSTMENT”)

- “Procedure of “Print-TOF” (TOF Adjustment) (p.194)”
- “PF offset (Disable PF Deterioration Offset) (p.210)”
- “Procedure of “Print PF” (PF Adjustment) (p.202)”
- “Procedure of “Print BandFeed” (BandFeed Adjustment) (p.204)”

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4.4.20 Carriage Unit/CR Encoder Board/ PW Sensor Board/Head FFC

CHECK
POINT



The removal procedures differ depending on the model. For Stylus CX6900F/CX7000F/DX7000F, refer to 8.4.3.8 "Carriage Unit/CR Encoder Board/PW Sensor Board/ Head FFC" (p.280).

External view (1)

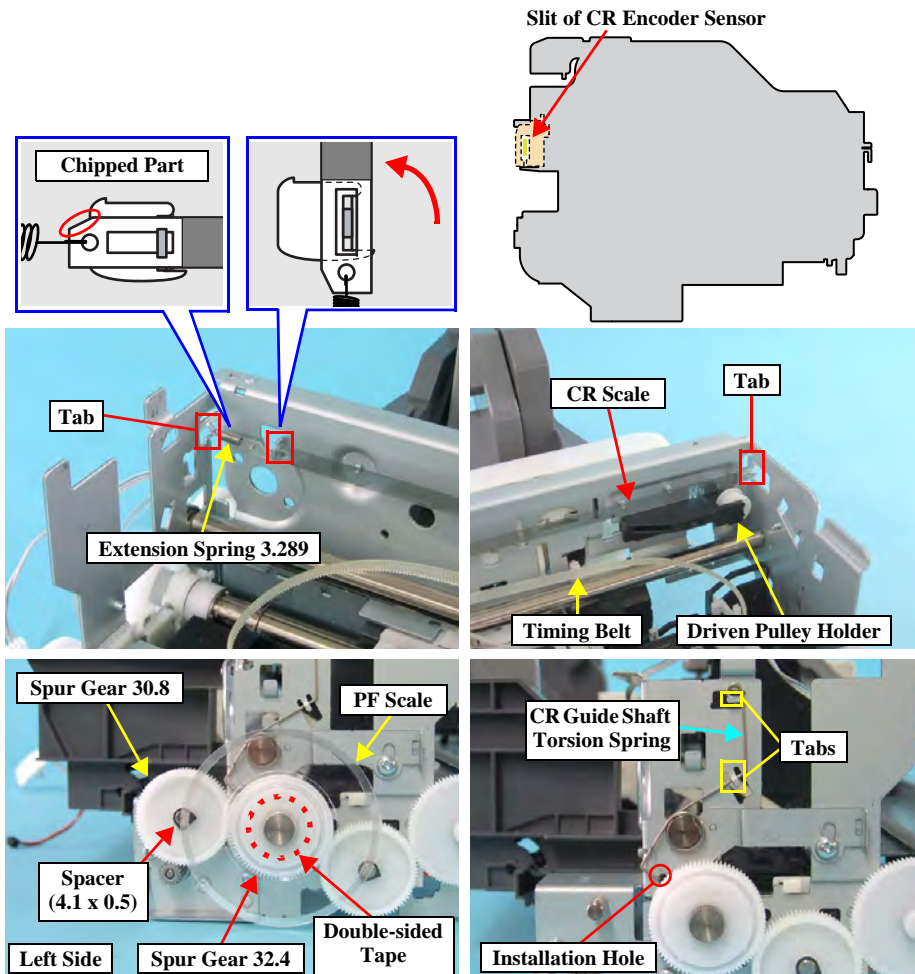


Figure 4-39. Removing Carriage Unit (1)

Part/Unit that should be removed before removing Carriage Unit

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper / Printer Mechanism / Main Board Unit / CR Guide Frame / CR Motor

Removal procedure

1. Release the Timing Belt from the Driven Pulley Holder.

CAUTION



Pay attention to the following instructions:

- Do not touch the CR Scale with bare hands.
- Do not damage the CR Scale.
- Handle the Extension Spring 3.289 in a way that does not extend it.


2. Remove the CR Scale from the Main Frame.

CAUTION



Be cautious of the following points.

- Do not touch the PF Scale with bare hands.
- Do not damage the PF Scale.

3. Remove the PF Scale that is secured to Spur Gear 32.4 with the double-sided tape (x1).
4. Remove the Spacer (4.1 x 0.5) that secures Spur Gear 30.8, and remove Spur Gear 30.8 from the Main Frame.
5. Release CR Guide Shaft Torsion Spring from the tabs (x2, ) of the Main Frame, and remove CR Guide Shaft Torsion Spring from the Main Frame.

□ External view (2)

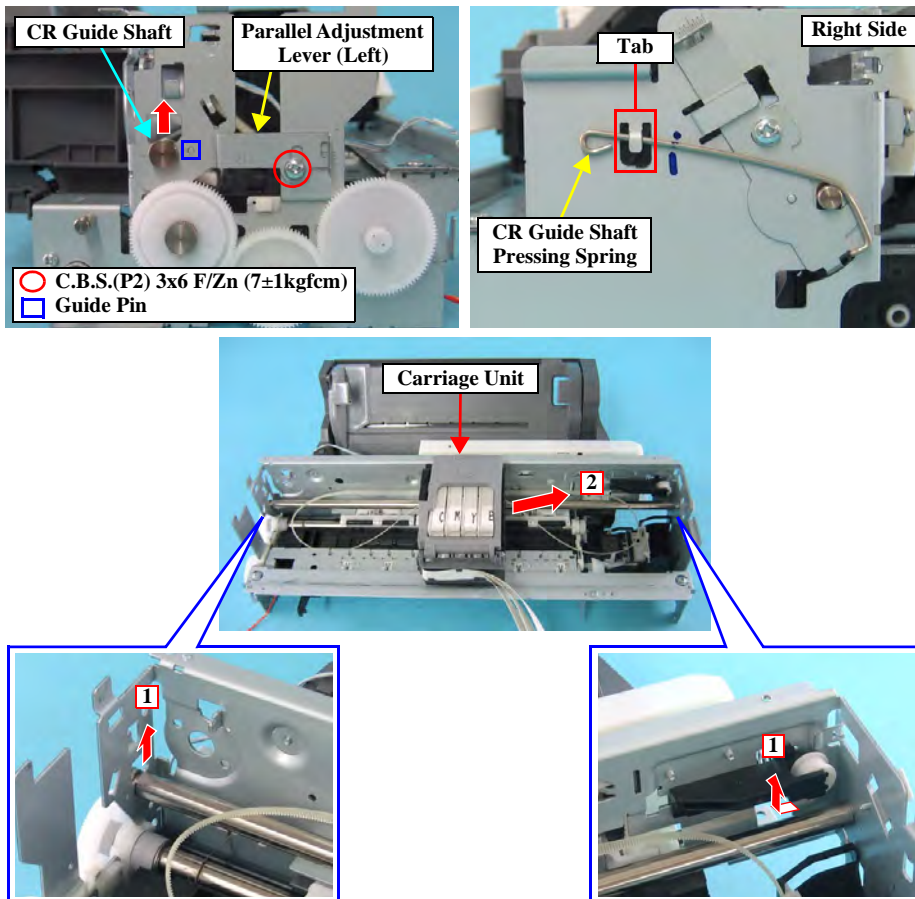


Figure 4-40. Removing Carriage Unit (2)

6. Remove the screw (x1, ○) that secures the Parallel Adjustment Lever (Left), and remove the Parallel Adjustment Lever (Left) from Main Frame while lifting left end of the Carriage Guide Shaft upward.
7. Release the CR Guide Shaft Pressing Spring from the tab (x1, □) of the Main Frame, and remove the CR Guide Shaft Pressing Spring from the Main Frame.
8. Remove the Carriage Unit and the Carriage Guide Shaft from Printer Mechanism as follows.
 1. Lift up the left end of the Carriage Guide Shaft and shift in left direction until releasing right end of the Carriage Guide Shaft from the notch of the Main Frame.
 2. Remove the Carriage Guide Shaft along with the Carriage Unit from the Main Frame.



- Do not damage the Carriage Guide Shaft.
- Do not stain the Timing Belt with the grease (G-71 Grease).

9. Pull out the Carriage Guide Shaft from the Carriage Unit.



- When installing the Parallel Adjustment Lever to the Main Frame, match the guide pin (x1, □) of the Main Frame with the positioning hole (x1) of the Parallel Adjustment Lever (left).
- When installing the CR Scale, pay attention to the following instructions.
 - Pass the CR Scale into the slit of the CR Encoder Sensor.
 - Chipped portion of the CR Scale should be facing upward.
 - Making sure that Extension Spring 3.289 is not twisted, hitch one side of Extension Spring 3.289 to the hook of the Main Frame.

ADJUSTMENT
REQUIRED

- After replacing the Carriage Unit with a new one, always apply G-71 grease to the specified parts.
 - Refer to Chapter 6: [Figure 6-7 \(p.216\)](#) for details.
- After replacing the Carriage Unit, perform the adjustments mentioned below. (Refer to Chapter 5 “ADJUSTMENT”)
 - “Procedure of “Print-TOF” (TOF Adjustment) (p.194)”
 - “Procedure of “Print-PW” (PW Adjustment) (p.200)”
 - “Procedure of “Print-HeadIncline” (Head Angular Adjustment) (p.196)”
 - “Procedure of “Print-Bi Mode” (Bi-d Adjustment) (p.198)”
 - “Procedure of “CR Variation” (CR Motor Heat Protection Control Adjustment) (p.206)” (only after replacement)
 - “Procedure of “Print PF” (PF Adjustment) (p.202)”
 - “Procedure of “Print BandFeed” (BandFeed Adjustment) (p.204)”
- After replacing the Carriage Guide Shaft, perform the adjustments mentioned below. (Refer to Chapter 5 “ADJUSTMENT”)
 - “Procedure of “Print-PW” (PW Adjustment) (p.200)”
 - “Procedure of “Print-Bi Mode” (Bi-d Adjustment) (p.198)”
 - “Procedure of “CR Variation” (CR Motor Heat Protection Control Adjustment) (p.206)” (only after replacement)

□ External view (3)

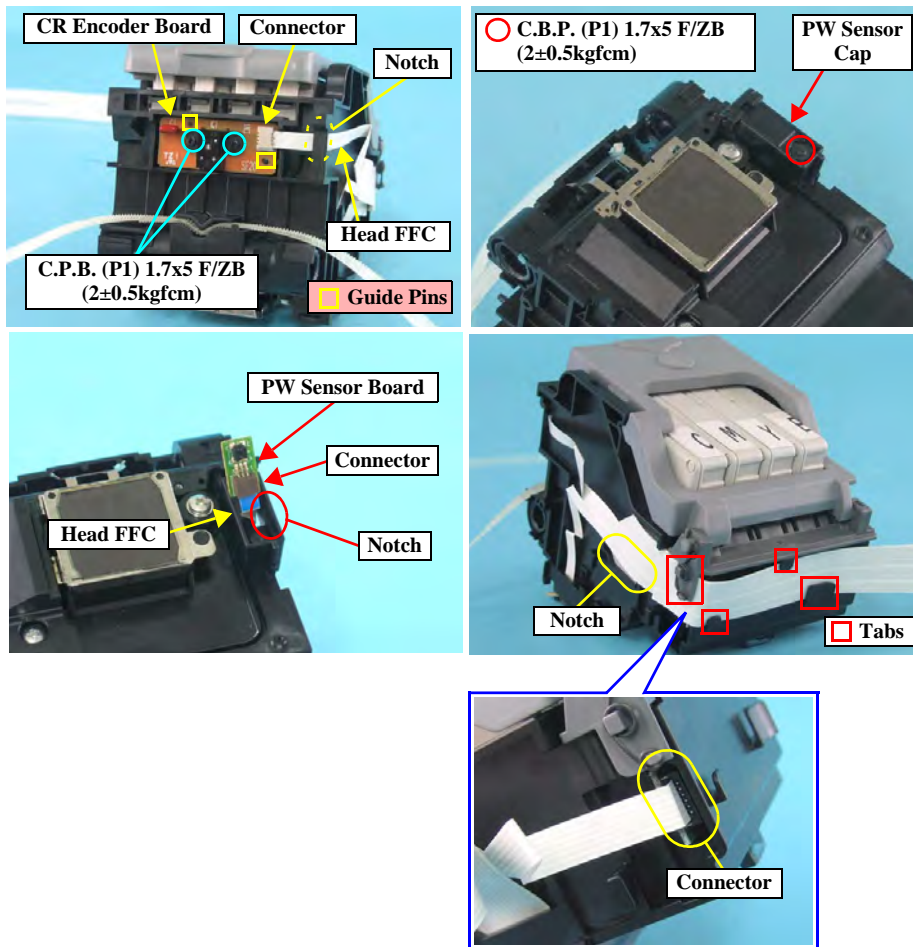



Figure 4-41. Removing Carriage Unit (3)


■ CR Encoder Removal

1. Disconnect the Head FFC from the connector of the CR Encoder Board, and pull out the Head FFC from the notch of the Carriage.
2. Remove the screws (x2, ) that secure the CR Encoder Board, and remove the CR Encoder Board.



Match the guide pins of the Carriage (x2, ) with the positioning hole (x2) of the CR Encoder Board.

■ PW Sensor Board Removal


1. Remove the screw (x1, ) that secures the PW Sensor Cap, and remove the PW Sensor Cap.
2. Disconnect the Head FFC from the connector of the PW Sensor Board, pull out the Head FFC from the notch of the Carriage, and remove the PW Sensor Board.



After replacing the PW Sensor Board, perform the adjustments mentioned below. (Refer to Chapter 5 “ADJUSTMENT”)

- “Procedure of “Print-PW” (PW Adjustment) (p.200)”

■ Head FFC Removal

1. Remove the Printhead from the Carriage Unit.
2. Pull out the Head FFC from the notch of the Carriage.
3. Release the Head FFC from the tabs (x4, ) that secure the Head FFC.
4. Disconnect the Head FFC from the connector on the CSIC board.

4.4.21 Paper Guide Upper Unit

□ External view

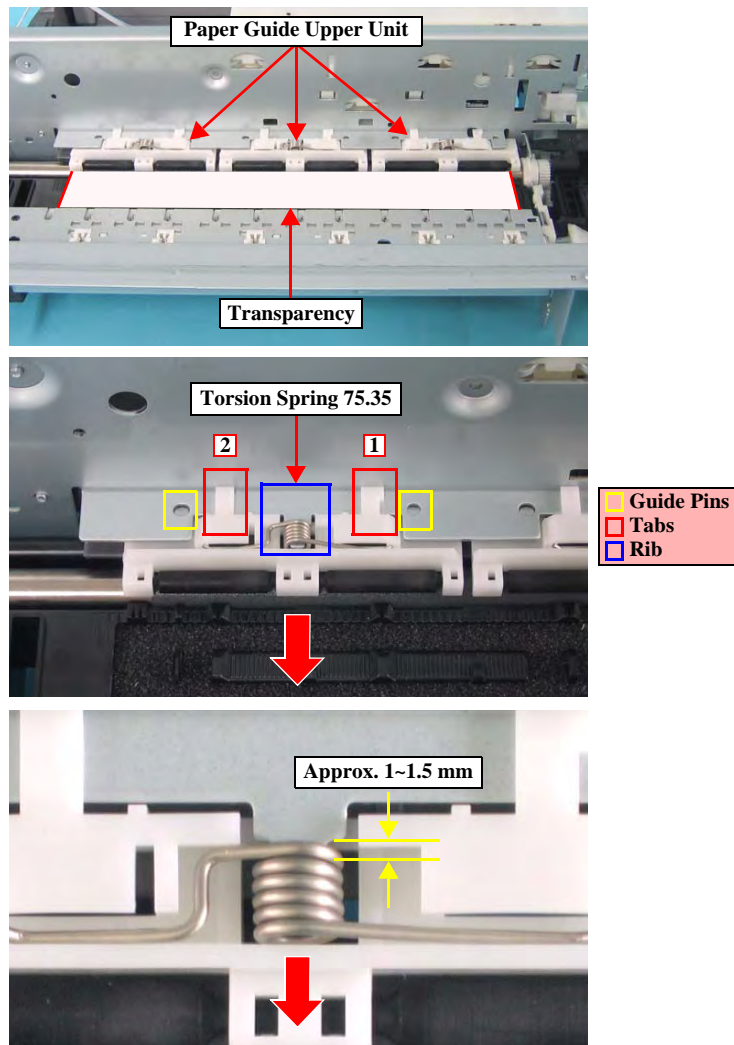


Figure 4-42. Removing Paper Guide Upper Unit

- **Part/Unit that should be removed before removing Paper Guide Upper Unit**
Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
Housing, Upper / Printer Mechanism / Main Board Unit / CR Guide Frame /
CR Motor / Carriage Unit

□ Removal procedure

1. Set a transparency sheet.
2. Release the guide pins (2 each, □) that secure the Paper Guide Upper Unit (x3), and remove the Paper Guide Upper Unit (x3) along with Torsion Spring 75.35 (1 each) from the Main Frame.



Reassembly of the Paper Guide Upper Unit

1. Set Torsion Spring 75.35 onto the Paper Guide Upper Unit.
2. Temporarily place the tabs (x2, □) of the Paper Guide Upper Unit onto the Main Frame in order as shown in the figure.
3. Insert the coil section of Torsion Spring 75.35 into the rib.
4. Align the positioning holes (x2) of the Main Frame with the guide pins (x2, □) of the Paper Guide Upper Unit, and set the Paper Guide Upper Unit along with Torsion Spring 75.35.
5. Pull the coil section of Torsion Spring 75.35 toward you, hold the margin at approximately 1~1.5 mm, and eliminate the gap with the Paper Guide Upper Unit.



After removing/replacing the Paper Guide Upper Unit, perform the following adjustments. (Refer to Chapter 5 “ADJUSTMENT”)

- “Procedure of “Print-TOF” (TOF Adjustment) (p.194)”
- “PF offset (Disenable PF Deterioration Offset) (p.210)”
- “Procedure of “Print PF” (PF Adjustment) (p.202)”
- “Procedure of “Print BandFeed” (BandFeed Adjustment) (p.204)”

4.4.22 Front Frame

□ External view

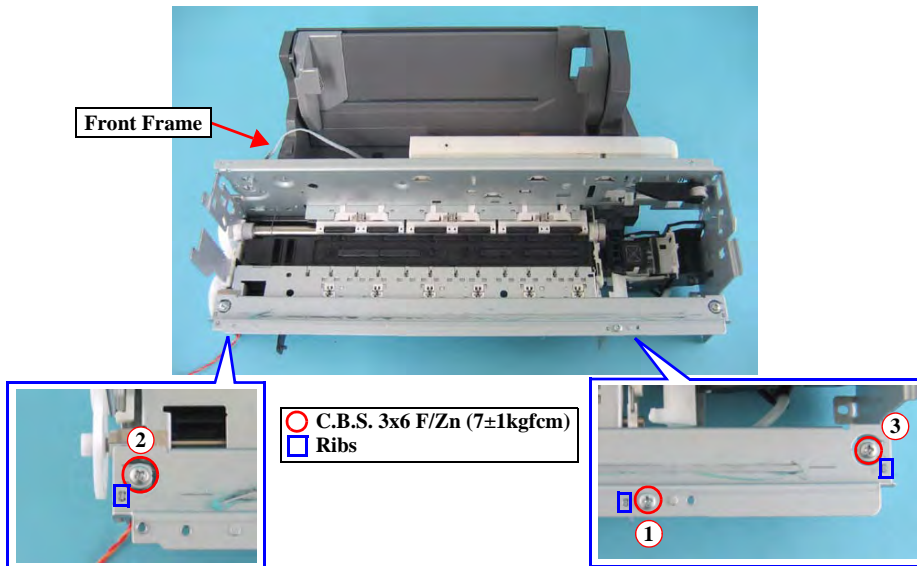


Figure 4-43. Removing Front Frame

□ Part/Unit that should be removed before removing Front Frame

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
Housing, Upper / Printhead / Printer Mechanism / Main Board Unit /
CR Guide Frame / CR Motor / Carriage Unit

□ Removal procedure

1. Remove the screws (x3, ○) that secure the Front Frame, and remove the Front Frame from the Printer Mechanism.



- Match the ribs (x3, □) of the Main Frame with the positioning holes of the Front Frame.
- Tighten the screws in the order shown in the figure.



- After replacing the Front Frame with a new one, always apply G-71 grease to the specified parts.
 - Refer to Chapter 6: [Figure 6-10 \(p.217\)](#) for details.
- After removing/replacing the Front Frame, perform the adjustments mentioned below. (Refer to Chapter 5 "ADJUSTMENT")
 - "Procedure of "Print-PW" (PW Adjustment) (p.200)"
 - "Procedure of "Print-HeadIncline" (Head Angular Adjustment) (p.196)"
 - "Procedure of "Print-Bi Mode" (Bi-d Adjustment) (p.198)"

4.4.23 EJ Frame Unit

□ External view (1)

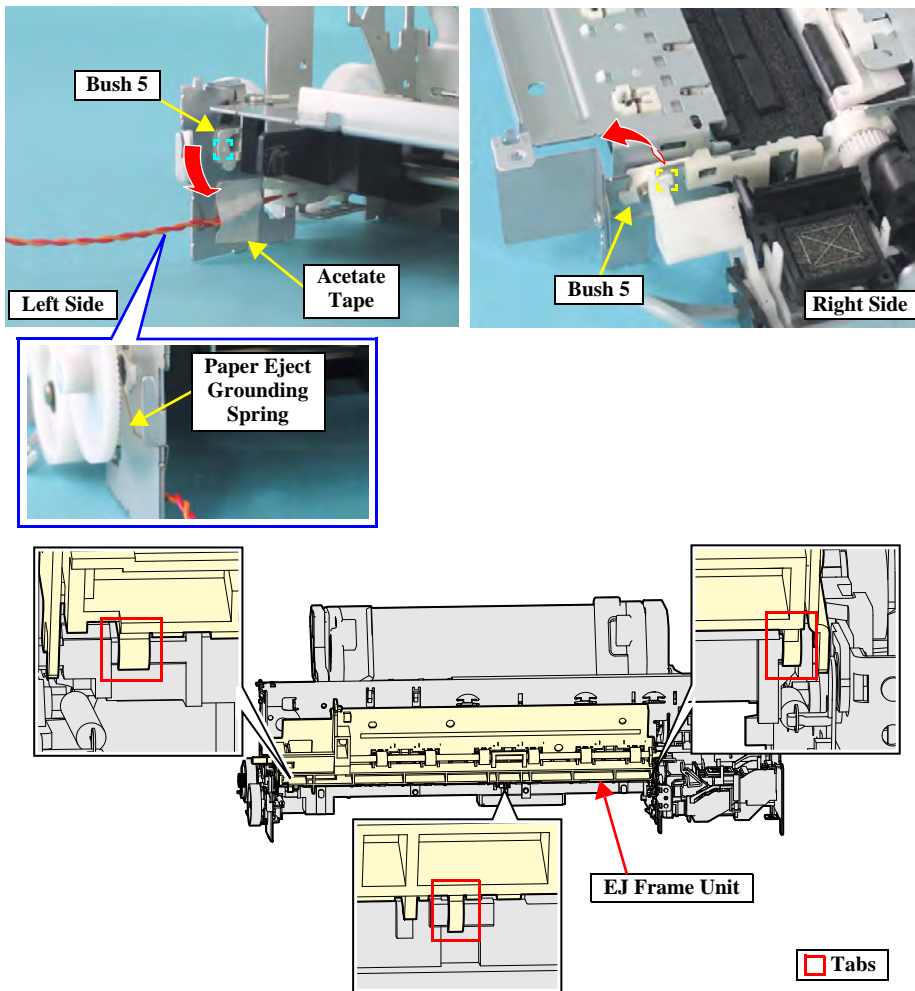


Figure 4-44. Removing EJ Frame Unit (1)




□ Part/Unit that should be removed before removing EJ Frame Unit

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
Housing, Upper / Printhead / Printer Mechanism / Main Board Unit /
CR Guide Frame / CR Motor / Carriage Unit / Front Frame

□ Removal procedure



- Do not hold the EJ Frame Unit while handling the Printer Mechanism in your repair.
- Do not touch the rubber portion of the Eject Roller.

1. Peel off the acetate tape (x1) that secures the PG Sensor Connector Cable.
2. Remove the Paper Eject Grounding Spring from the left side of the EJ Frame Unit.
3. Release the guide pin (x1, ) of Bush 5 on the left side of the EJ Frame Unit, and rotate the Bush 5 downward by 90°.
4. Release the guide pin (x1, ) of Bush 5 on the right side of the EJ Frame Unit, and rotate the Bush 5 upward (or downward) by 90°.
5. Release the tabs (x3, ) that secure the EJ Frame Unit while lifting the near side of the EJ Frame Unit upward.

□ External view (2)

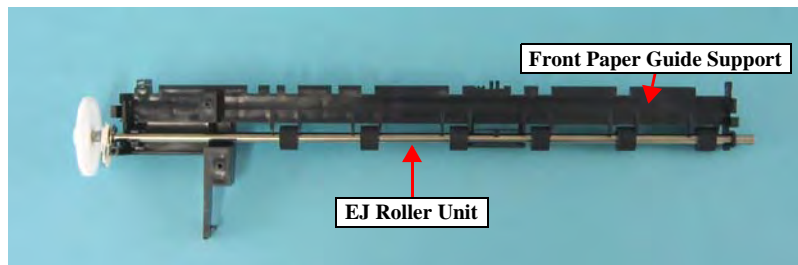
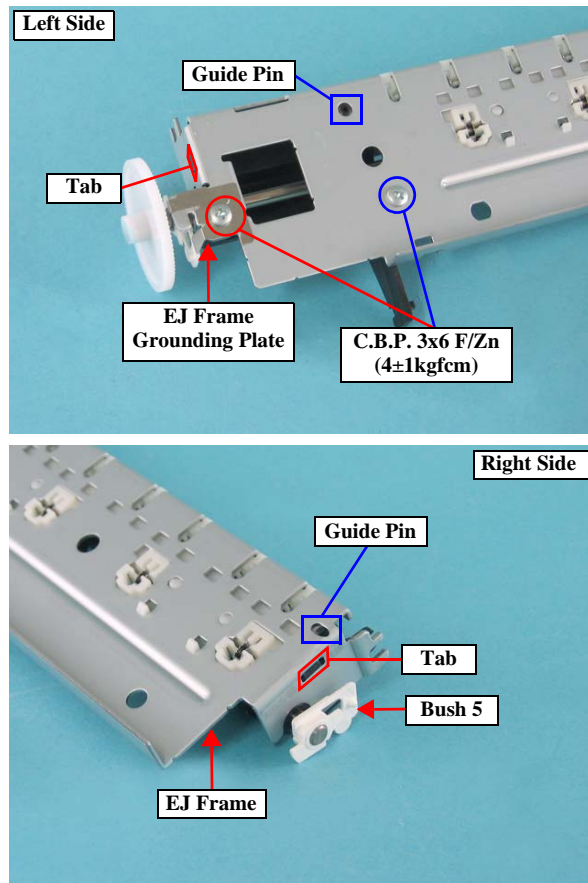






Figure 4-45. Removing EJ Roller Unit (2)

6. Remove the right Bush 5 from the EJ Frame Unit.
7. Remove the screw (x1, ) that secures the EJ Frame Grounding Plate, and remove the EJ Frame Grounding Plate.
8. Remove the screw (x1, ) that secures the Front Paper Guide Support.
9. Remove the Front Paper Guide Support together with the EJ Roller Unit while releasing the tabs (x2, ) that secure the Front Paper Guide Support.



- Match the guide pins (x2, ) of the Front Paper Guide Support with the positioning holes (x2) of the EJ Frame.
- Confirm that Bush 5s on both sides are securely inserted into the notches of the Main Frame.

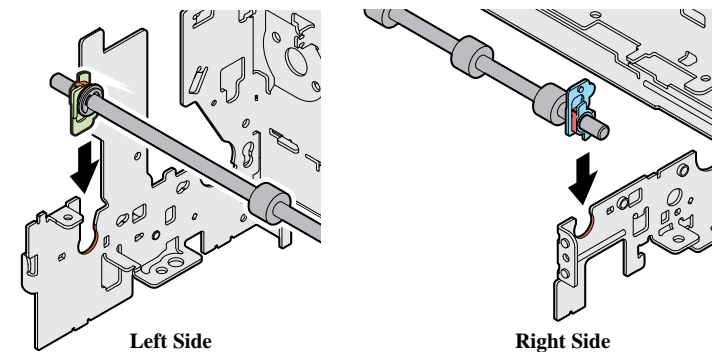


Figure 4-46. Installing Bush 5s

- Make sure that there is no gap between the EJ Frame Unit and the Main Frame.
- Check if the EJ Roller Unit moves smoothly.



- After replacing the EJ Roller Unit with a new one, always apply grease G-46 to the specified parts.
 - See Chapter 6: [Figure 6-9 \(p.216\)](#) for details.
- After removing/replacing the EJ Roller Unit, perform the adjustments mentioned below. (Refer to Chapter 5 “ADJUSTMENT”)
 - “PF offset (Disenable PF Deterioration Offset) (p.210)”
 - “Procedure of “Print PF” (PF Adjustment) (p.202)”
 - “Procedure of “Print BandFeed” (BandFeed Adjustment) (p.204)”

4.4.24 Ink System Unit

External view

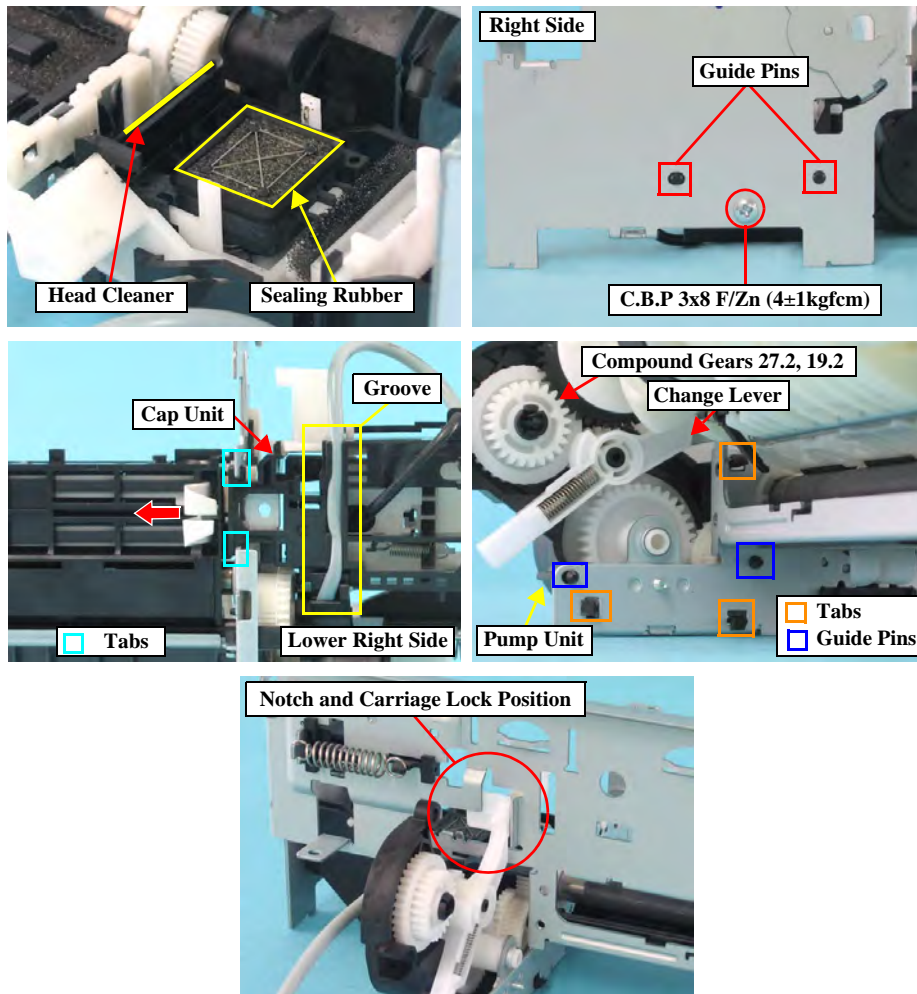


Figure 4-47. Removing Ink System Unit



Part/Unit that should be removed before removing Ink System Unit

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper / Printhead / Printer Mechanism / Main Board Unit / ASF Unit / Holder Shaft Unit / CR Guide Frame / CR Motor / Carriage Unit / Front Frame

Removal procedure


CAUTION

- Do not touch or damage the Sealing Rubber or the Head Cleaner when performing the following work.
- Mark the connection location before removing the Ink Tube.

1. Release the Ink Tube from the groove on the downside of the Cap Frame.
2. Remove the screw (x1, ) that secures the Cap Unit.
3. Slide the Cap Unit to the inside of the Main Frame, and release the tabs (x2, ) of the Cap Unit from the Main Frame.



CAUTION

When removing the Ink System Unit, be careful not to drop the Change Lever and Compound Gears 27.2, 19.2.

4. Release the Carriage Lock from the notch of the Main Frame.
5. Carefully release the tabs (x3, ) that secure the Pump Unit to the Main Frame, and remove the Pump Unit.
6. Remove the whole Ink System from the Printer Mechanism, and remove the gears (x4) and the Pump Pulley.



When installing the Ink System Unit, follow the steps described below.

1. Place the Carriage Lock inside the notch of the Main Frame as shown in the figure.
2. Match the guide pins (x2, ) of the Pump Unit with the positioning holes (x2) of the Main Frame.
3. Match the guide pins (x2, ) of the Cap Unit with the positioning holes (x2) of the Main Frame.
4. Place the Ink Tube into the groove, and install the Ink System Unit.

4.4.25 Paper Guide Front Unit

□ External view

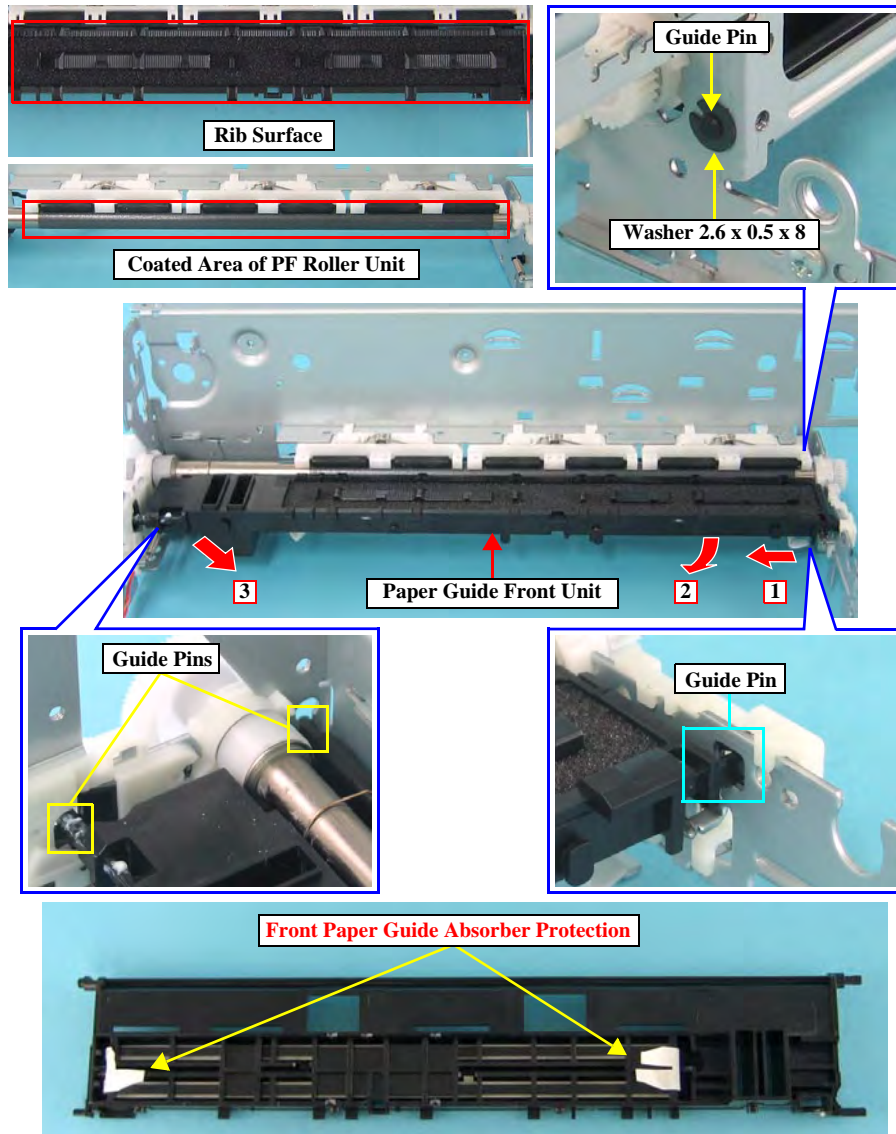


Figure 4-48. Removing Paper Guide Front Unit

- **Part/Unit that should be removed before removing Paper Guide Front Unit**
 Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
 Housing, Upper / Printhead / Printer Mechanism / Main Board Unit /
 ASF Unit / Holder Shaft Unit / CR Guide Frame / CR Motor / Carriage Unit /
 Front Frame / EJ Frame Unit / Ink System Unit



□ Removal procedure

CAUTION



When performing the following work, pay attention to the following instructions:

- Do not damage the ribs on the surface of the Paper Guide Front Unit.
- Do not touch or damage the coated area of the PF Roller Unit
- Be careful not to bend the **Front Paper Guide Absorber Protection** (x3).

1. Remove the Plain Washer (x1) that secures the Paper Guide Front Unit with tweezers.
2. Slide the Paper Guide Front Unit toward left while releasing the guide pin (x1, ) from the installation hole of the Main Frame.
3. Release the left guide pins (x2, ) of the Paper Guide Front Unit from the installation holes of the Main Frame while lowering the right end of the Paper Guide Front Unit.

REASSEMBLY



- Make sure that the **Front Paper Guide Absorber Protection** (x3) are facing inward.
- If ink has spread to the ribs on the upper surface of the Paper Guide Front Unit, clean off the ink with a cotton swab.

ADJUSTMENT REQUIRED



After removing/replacing the Paper Guide Front Unit, perform the following adjustments. (Refer to Chapter 5 “ADJUSTMENT”)

- “Procedure of “Print-TOF” (TOF Adjustment) (p.194)”
- “Procedure of “Print-PW” (PW Adjustment) (p.200)”
- “Procedure of “Print-HeadIncline” (Head Angular Adjustment) (p.196)”
- “Procedure of “Print-Bi Mode” (Bi-d Adjustment) (p.198)”
- “PF offset (Disable PF Deterioration Offset) (p.210)”
- “Procedure of “Print PF” (PF Adjustment) (p.202)”
- “Procedure of “Print BandFeed” (BandFeed Adjustment) (p.204)”

4.4.26 PG Sensor

External view

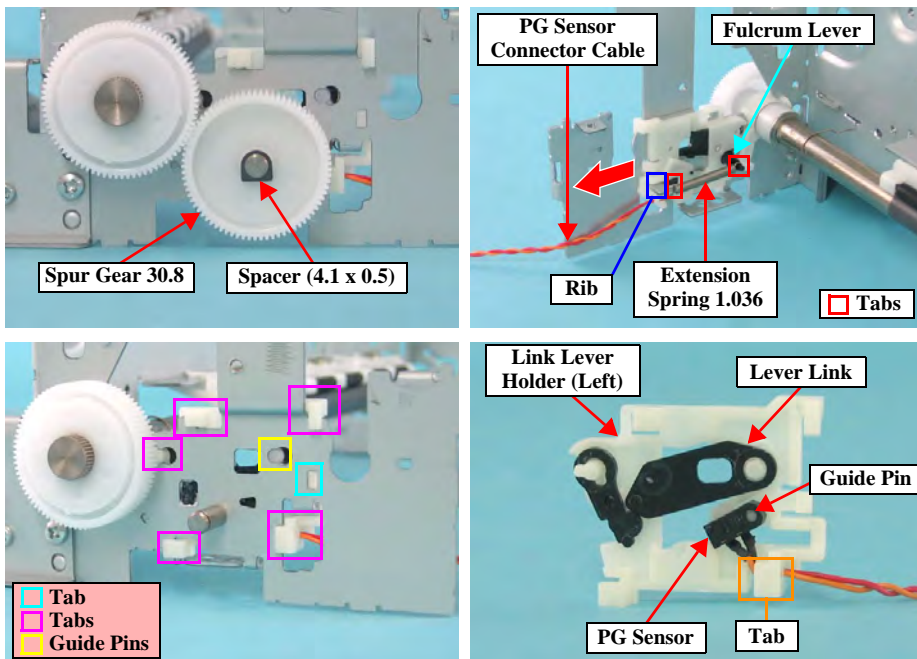






Figure 4-49. Removing PG Sensor



Part/Unit that should be removed before removing PG Sensor

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper / Printhead / Printer Mechanism / Main Board Unit / ASF Unit / Holder Shaft Unit / CR Guide Frame / CR Motor / Carriage Unit / Front Frame / EJ Frame Unit / Ink System Unit / Paper Guide Front Unit

Removal procedure

1. Remove the Spacer (x1) that secures Spur Gear 30.8, and remove Spur Gear 30.8 from the Main Frame.
2. Remove Extension Spring 1.036 from the tabs (1 each, ) of the Main Frame and the Fulcrum Lever (Left).
3. Remove the tab (x1, ) that secures the Link Lever Holder (Left) with tweezers, and then slide it in the direction of the arrow shown in the figure.
4. Release the Link Lever Holder (Left) from the rib (x1, ) of the Main Frame, and remove the Fulcrum Lever (Left) and the Lever Link along with the Link Lever Holder (Left).
5. Release the PG Sensor Connector Cable from the tab (x1, ) of the Link Lever Holder (Left), and remove the PG Sensor.



- Install the PG Sensor onto the guide pin of the Link Lever Holder (Left).
- Secure the Link Lever Holder (Left) with the tabs (x6, ) and the guide pin (x1, .



- After changing the Link Lever and the Link Lever Holder (Left) for new ones, always apply G-26 grease to the specified parts.
- See Chapter 6: [Figure 6-11 \(p.217\)](#) for details.

4.4.27 PF Roller Unit

□ External view (1)

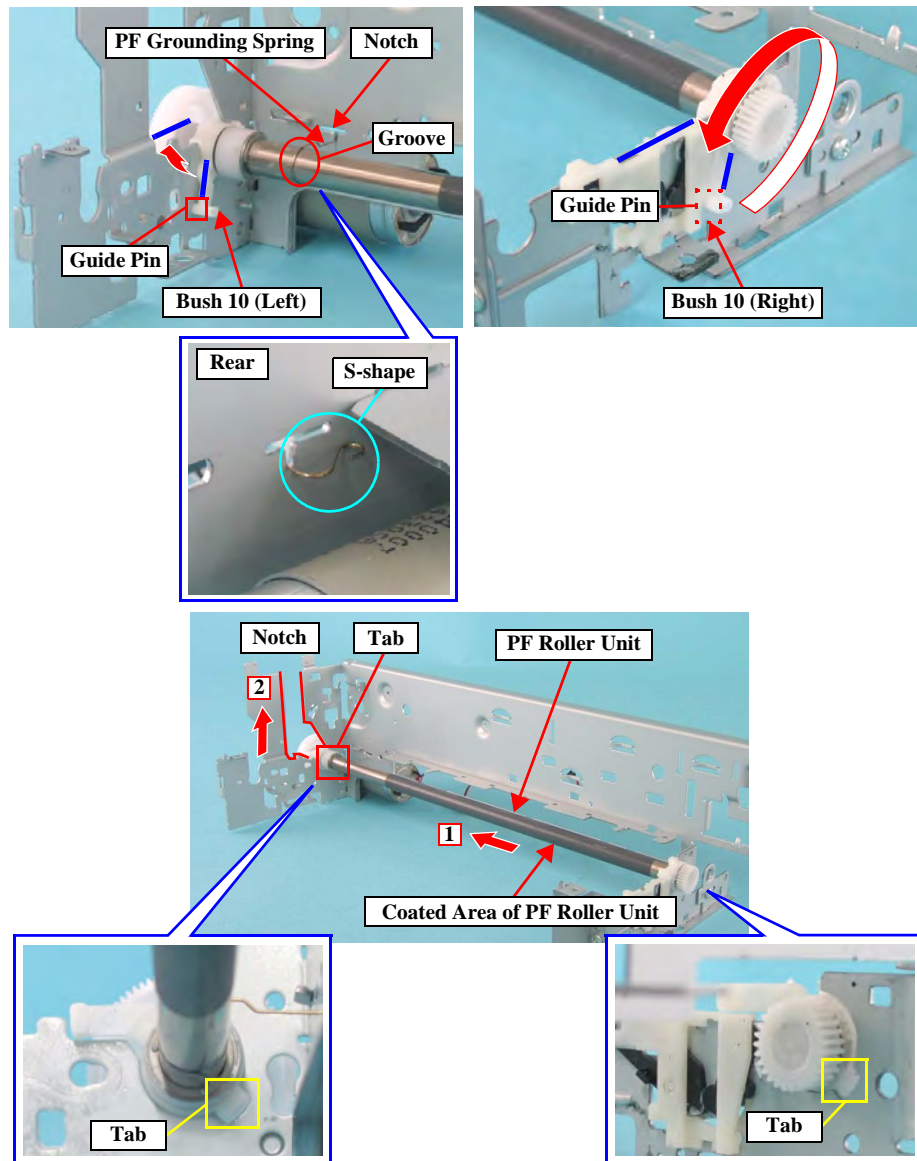


Figure 4-50. Removing PF Roller Unit

□ Part/Unit that should be removed before removing PF Roller Unit

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper / Printhead/ Printer Mechanism / Main Board Unit / ASF Unit / Holder Shaft Unit / CR Guide Frame / CR motor / Carriage Unit / Paper Guide Upper Unit / Front Frame / EJ Frame Unit / Ink System Unit / Paper Guide Front Unit / PG Sensor

□ Removal procedure



Do not touch or damage the coated area of the PF Roller Unit when performing the following work.

1. Release the PF Grounding Spring from the notch of the Main Frame with tweezers, and remove the PF Grounding Spring from the PF Roller Unit.
2. Release the guide pin (x1, □) of Bush 10 (Left) from the Main Frame, and rotate Bush 10 (Left) to the position shown by the figure.
3. Release the guide pin (x1, □) of Bush 10 (Right) from the Main Frame, and rotate Bush 10 (Right) to the position shown by the figure.
4. Slide the PF Roller Unit toward left, and release the tabs (x1 each, □) of Bush 10 (Left/Right).
5. Remove the PF Roller Unit along the notch at the left end of the Main Frame.



Hitch the PF Grounding Spring to the groove of the PF Roller Unit.



- After changing the PF Roller Unit for a new one, always apply G-26 grease to the specified parts.
 - See Chapter 6: [Figure 6-13 \(p.217\)](#) and [Figure 6-14 \(p.218\)](#) for details.
- After replacing the PF Roller Unit, perform the adjustments mentioned below. (Refer to Chapter 5 “ADJUSTMENT”)
 - “Procedure of “Print-TOF” (TOF Adjustment) (p.194)”
 - “Procedure of “Print-PW” (PW Adjustment) (p.200)”
 - “PF offset (Disenable PF Deterioration Offset) (p.210)”
 - “Procedure of “Print PF” (PF Adjustment) (p.202)”
 - “Procedure of “Print BandFeed” (BandFeed Adjustment) (p.204)”

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4.5 Scanner Section

4.5.1 Scanner Housing, Upper

□ External view

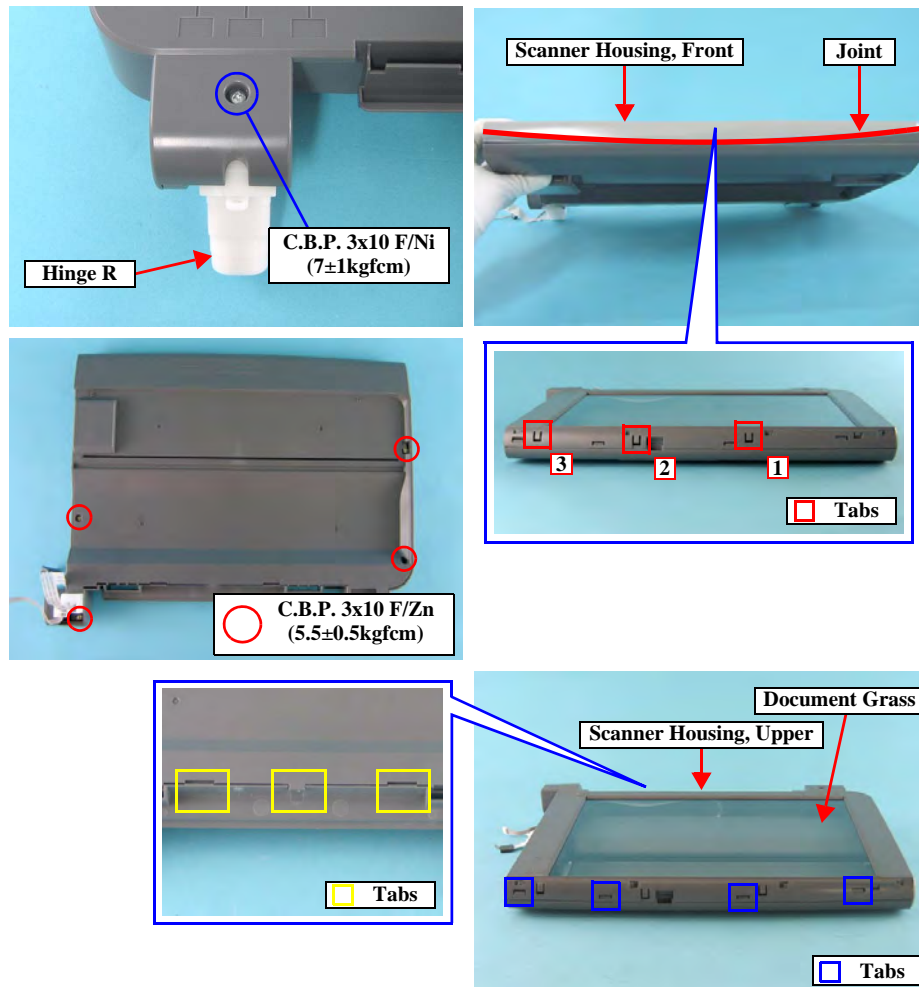



Figure 4-51. Removing Scanner Housing, Upper

- Part/Unit that should be removed before removing Scanner Housing, Upper
Document Cover / Scanner Unit
- Removal procedure






- Following work should be performed in a room where there is little dust. A clean room or a clean bench would be preferable.
- Do not damage the document glass on the Scanner Housing, Upper.

1. Remove the screw (x1, ) that secures the hinge R, and remove the hinge R from the Scanner Unit.



- Do not scratch the Scanner Housing, Upper and the Scanner Housing, Front with a precision screwdriver (-).

2. Insert a precision screwdriver into the joint of the Scanner Housing, Upper and the Scanner Housing, Front, release the tabs (x3, ) that secure the Scanner Housing, Front in the order shown in the figure, and remove the Scanner Housing, Front.
3. Remove the screws (x4, ) that secure the Scanner Housing, Upper.
4. Release the tabs (x4, ) that secure the Scanner Housing, Upper, and remove the Scanner Housing, Upper.




- Match the notches (x3) of the Scanner Housing, Upper with the tabs (x3, ) of the Scanner Housing, Lower.
- Place the Scanner Housing, Front onto the Scanner Housing, Upper as shown below, slide the Scanner Housing, Front downward, and install it while pressing the Scanner Housing, Front against the Scanner Housing, Upper.



Figure 4-52. Installing Scanner Housing, Front

4.5.2 Scanner Carriage Unit

□ External view

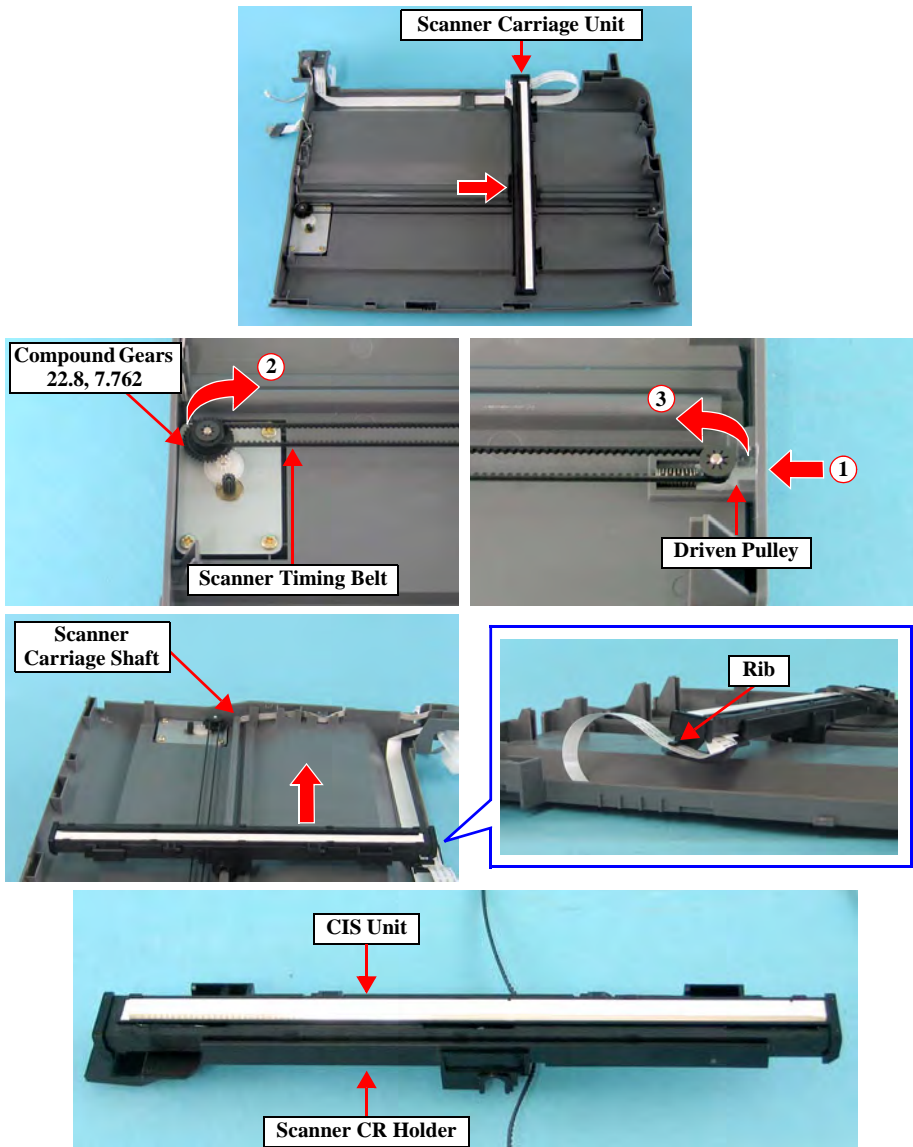


Figure 4-53. Removing Scanner Carriage Unit

- Part/Unit that should be removed before removing Scanner Carriage Unit
Document Cover / Scanner Unit

□ Removal procedure



Do not scratch the Rod Lens Array when removing the Scanner Carriage Unit.

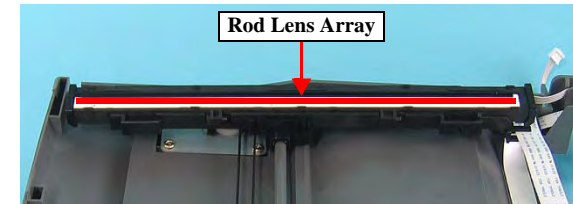


Figure 4-54. Handling Scanner Carriage Unit

1. Move the Scanner Carriage Unit to the center of the printer.
2. Push the Driven Holder to the direction of the arrow, and remove Compound Gears 22.8, 7.762, Driven Holder, and Scanner Timing Belt.



Do not damage the Scanner Carriage FFC as it is secured with double-sided tape and the ferrite core.

3. Disconnect the Scanner Carriage FFC from the Scanner Carriage Unit, and remove the Scanner Carriage Unit together with the Scanner Timing Belt.
4. Lift up the CIS Unit, and remove the CIS Unit from the Scanner CR Holder.
5. Remove the Scanner Timing Belt from the Scanner Carriage Unit.



After changing the Scanner Carriage Shaft for a new one, always apply G-26 grease to the specified parts.

- See Chapter 6: [Figure 6-4 \(p.215\)](#) for details.

4.5.3 Scanner Motor Unit/Driven Pulley

□ External view

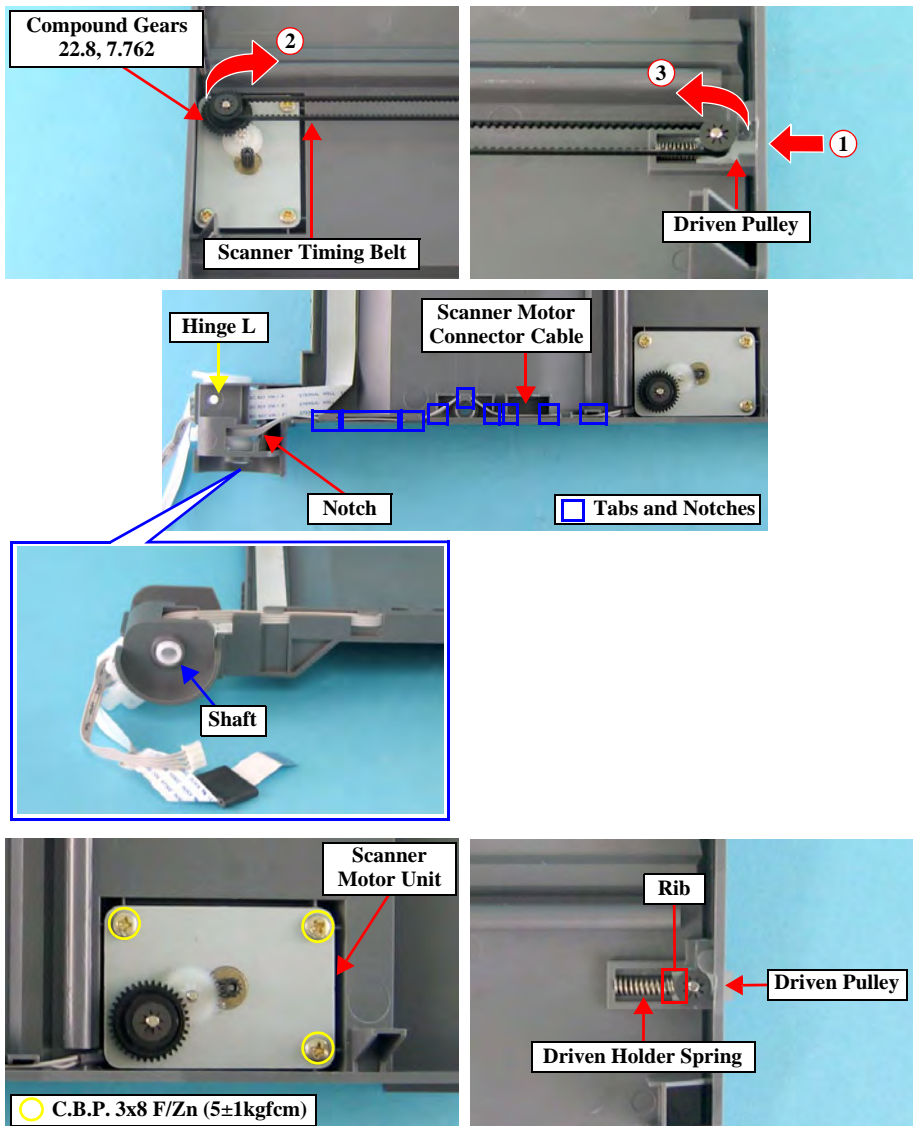




Figure 4-55. Removing Scanner Motor Unit/Driven Pulley

□ Part/Unit that should be removed before removing Scanner Motor Unit/Driven Holder

Document Cover / Scanner Unit

□ Removal procedure

1. Move the Scanner Carriage Unit to the center of the Scanner Unit.
2. Push the Driven Holder to the direction of the arrow, and remove Compound Gears 22.8, 7.762, Driven Holder, and Scanner Timing Belt.
3. Release the shaft of the hinge L from the bearing of the Scanner Housing, Lower.
4. Disconnect the Scanner Motor Connector Cable from the tab of the hinge L, and pull the cable out from the notch of the Scanner Housing, Lower.
5. Release the Scanner Motor Connector Cable from the tab and the notch of the Scanner Housing, Lower.
6. Remove the screws (x3, ) that secure the Scanner Motor Unit, and remove the Scanner Motor Unit.
7. Remove the Driven Holder Spring from the rib (x1, ) of the Driven Holder, and remove the Driven Holder.



- Route the Scanner Motor Connector Cable as shown in the figure.
- Insert the Driven Holder Spring into the rib of the Driven Holder.

CHAPTER

5

ADJUSTMENT



5.1 Description

This document is to explain how to use new Adjustment Program for CX5700F/5800F. Unlike adjustment program for CX1500/ME100, this program has only necessary functions for your service activity. However, please use this program by reading this document surely because this program is different from other models.

5.1.1 System Requirements

- ☐ OS: Windows 2000/XP
- ☐ I/F: USB

CHECK
POINT



- See “8.5 Adjustment” (p.283) for adjustment of Stylus CX6900F/CX7000F/DX7000F.
- You can use this adjustment program without installing printer driver and twain for Stylus CX5700F/CX5800F.
- As for the adjustment program of Stylus CX5700F/CX5800F ver. 1.0.0.0 or later, user interface and operating procedures have been improved from the previous versions. If you are using the improved version of the program, refer to “8.5.2 Details of adjustment program” (p.283). Contents of the improved version of the program and that of Stylus CX6900F/CX7000F/DX7000F are the same except for the followings:

Table 5-1. Points of difference

	Head ID digits	Number of adjustment input values	Upper limit of waste ink pad counter
Stylus CX5700F/ CX5800F	15-digit	a total of eight values <ul style="list-style-type: none"> • VSD1 (Bk/CL) • VSD2 (Bk/CL) • VSD3 (Bk/CL) • Eco (Bk/CL)) 	15,700 points
Stylus CX6900F/ CX7000F/ DX7000F	18-digit	a total of ten values <ul style="list-style-type: none"> • VSD1 (Bk/CL) • VSD2 (Bk/CL) • VSD3 (Bk/CL) • VSD4 (Bk/CL) • Eco (Bk/CL)) 	14,000 points



5.1.2 Details of Adjustment Program

Explanation of Each Function in Adjustment Program

You should use this program for adjustment & maintenance of the captioned models. Following is the items of each function.

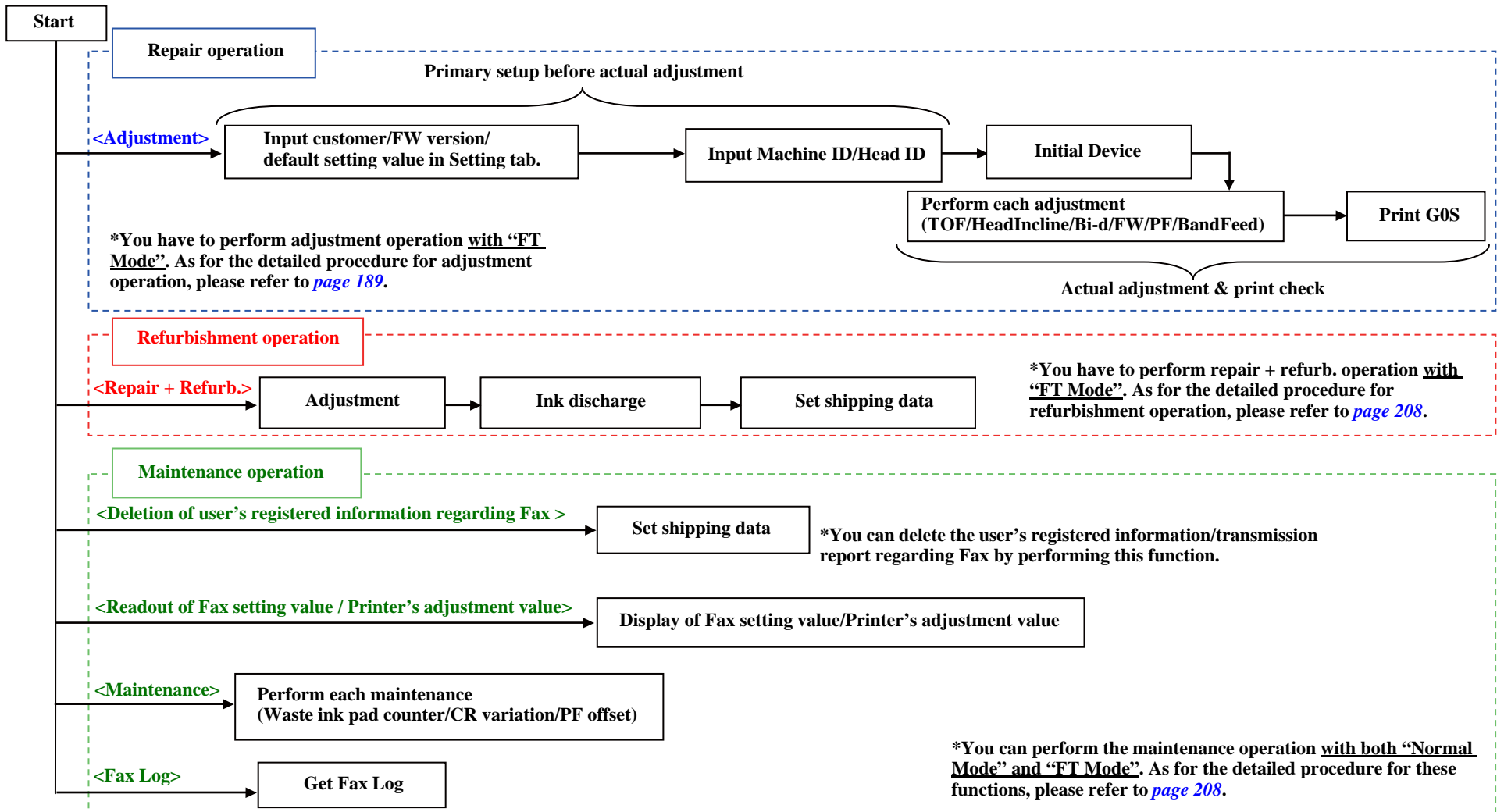
Table 5-2. Explanation of Each Function in Adjustment Program

Tab in Main Screen	Item	Function	Purpose	Reference Page
Operation	Station1: QR and Card Check	2. Input Machine ID/Head ID	This is to store customer & default setting value in Setting tab into EEPROM.	<i>page 189 to page 209</i>
	Station2: Printing Adjustment Pattern	1. Initial Device	This is to read out current setting value for printer and display the result on screen.	
		2. Ink Charge / Print Nozzle Check	This is to perform cleaning and printing operation.	
		3. Print – TOF	This is to print TOF pattern and perform TOF adjustment.	
		4. Print – HeadIncline	This is to print HeadIncline pattern and perform HeadIncline adjustment.	
		5. Bi Mode (Bi-d adjustment)	This is to print Bi-d pattern and perform Bi-d adjustment	
		6. Print PW	This is to print PW pattern and perform PW adjustment.	
		7. Print PF	This is to print PF pattern and perform PF adjustment.	
		8. Print BandFeed	This is to print Band pattern and perform Band Feed adjustment.	
		9. Print G0S / 11. Print SF	This is to print final check pattern.	
		10. CR Variation	This is to input the proper CR variation.	
		14. Ink discharge	This is to discharge ink from print head by using shipping liquid.	
	Station3: Other	1. Set shipping data	This is to set shipping data (factory setting). (You can use to delete user's registered information / transmission record regarding Fax.)	
Setting	Station 1	---	This is to set correct customer and F/W version.	<i>page 189 to page 209</i>
	Set Initial Bi-d Value	---	This is to set default setting value for printer.	
Extend Rom	Display of Fax setting value	Readout	This is to check setting value regarding Fax.	<i>page 209 to page 211</i>
	Display of Printer's adjustment value (adjustment value)	Readout	This is to check adjustment value regarding Printer.	
Maintenance	Waste ink pad counter	Readout	This is to read out current waste ink pad counter.	
		Reset	This is to reset waste ink pad counter.	
	CR Variation (CR motor heat protection control)	Input	This is to input maximum offset value of CR motor head protection control.	
	PF offset (Disenable PF deterioration offset)	Reset	This is to reset PF offset value.	
		Input	This is to input maximum offset value of PF offset.	
Fax Log	Get Fax Log	---	This is to read out Fax log for investigation.	

How to Use Adjustment Program

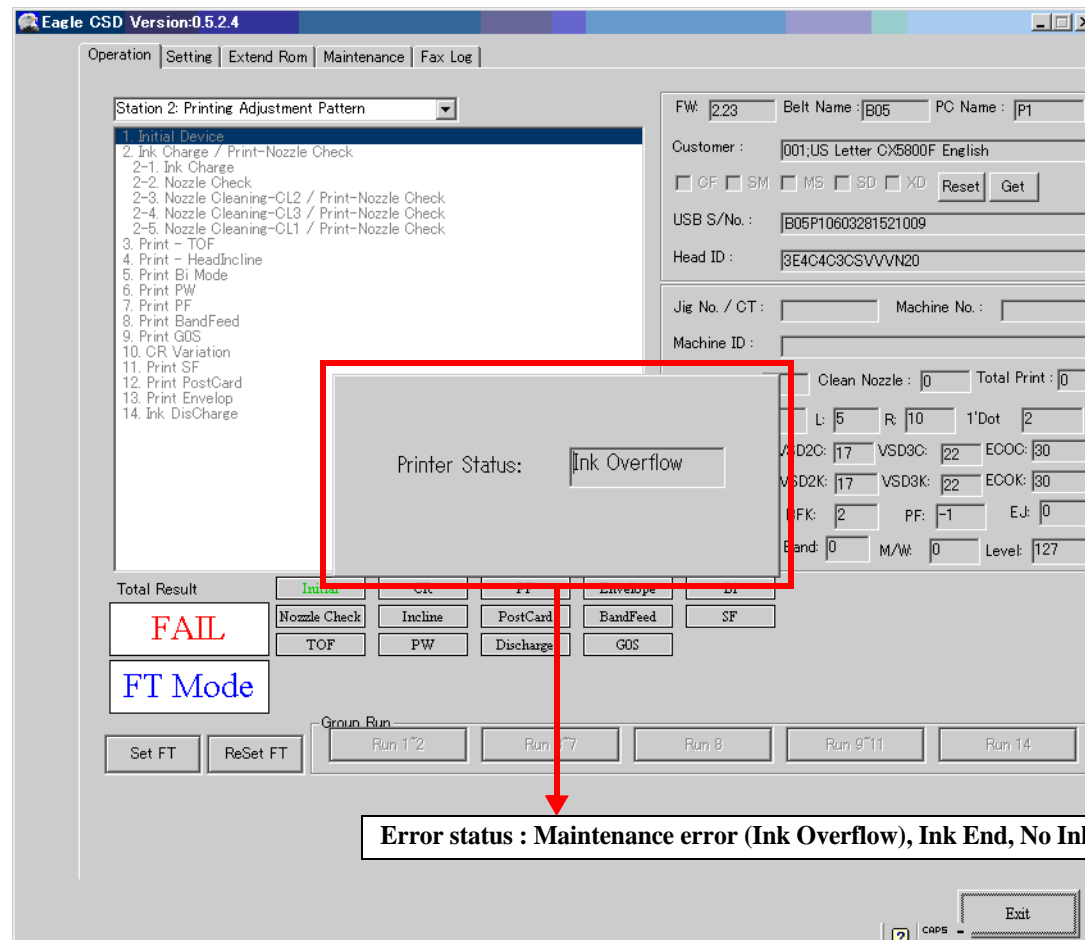
CHECK
POINT

- Please understand this explanation surely.
- “Set shipping data” function can be performed with both “Normal Mode” and “FT Mode”. When you perform refurbishment operation, please do it with “FT Mode” to save repair time. (Repair time means that switching “FT Mode” and “Normal Mode”.)



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NOTE : If the printer is not in stand-by condition, adjustment program cannot be worked correctly. In this case, error status is displayed on the screen.



5.1.3 Required Adjustment

Table 5-3. Required Adjustment

Priority		1	2	3	4	5	6	7	8	9	10	11	12
Replaced Part	Adjustment Item	Head ID input ^{#1}	Waste ink pad counter ^{#2}	Initialize PF deterioration offset ^{#2}	Disable PF deterioration offset ^{#2}	Ink charge	Top margin adjustment	Head angular adjustment	Bi-d adjustment	First dot adjustment / PW sensor adjustment ^{#3}	PF adjustment	PF band adjustment	CR offset ^{#4}
ASF unit	Removal	---	---	---	---	---	O	---	---	O	O	O	---
	Replacement	---	---	---	---	---	O	---	---	O	O	O	---
CR motor	Removal	---	---	---	---	---	---	---	O	O	---	---	---
	Replacement	---	---	---	---	---	---	---	O	O	---	---	O
Paper guide upper	Removal	---	---	---	---	---	O	---	---	---	O	O	---
	Replacement	---	---	---	---	---	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	(Pad replacement)	---	O	---	O	O	O	O	O	O	O
Holder shaft unit	Removal	---	---	---	---	---	O	---	---	O	---	---	---
	Replacement	---	---	---	---	---	O	---	---	O	---	---	---
EJ roller assy	Removal	---	---	---	---	---	---	---	---	---	O	O	---
	Replacement	---	---	---	---	---	---	---	---	---	O	O	---
PS board	Removal	---	---	---	---	---	---	---	---	---	---	---	---
	Replacement	---	---	---	---	---	---	---	---	---	---	---	O
Paper guide front	Removal	---	---	---	---	---	O	O	O	O	O	O	---
	Replacement	---	---	---	---	---	O	O	O	O	O	O	---
PF motor	Removal	---	---	---	---	---	O	---	---	---	O	O	---
	Replacement	---	---	---	---	---	O	---	---	---	O	O	---

Table 5-3. Required Adjustment

Priority		1	2	3	4	5	6	7	8	9	10	11	12
Replaced Part	Adjustment Item	Head ID input ^{*1}	Waste ink pad counter ^{*2}	Initialize PF deterioration offset ^{*2}	Disable PF deterioration offset ^{*2}	Ink charge	Top margin adjustment	Head angular adjustment	Bi-d adjustment	First dot adjustment / PW sensor adjustment ^{*3}	PF adjustment	PF band adjustment	CR offset ^{*4}
Waste ink pad	Removal	---	---	---	---	---	---	---	---	---	---	---	---
	Replacement	---	O	---	---	---	---	---	---	---	---	---	---
PW sensor	Removal	---	---	---	---	---	---	---	---	O	---	---	---
	Replacement	---	---	---	---	---	---	---	---	O	---	---	---
CR unit	Removal	---	---	---	---	---	O	O	O	O	O	O	---
	Replacement	---	---	---	---	---	O	O	O	O	O	O	O
CR guide shaft	Removal	---	---	---	---	---	---	---	O	O	---	---	---
	Replacement	---	---	---	---	---	---	---	O	O	---	---	O
EJ frame unit	Removal	---	---	---	---	---	---	---	---	---	O	O	---
	Replacement	---	---	---	---	---	---	---	---	---	O	O	---
PF roller assy	Removal	---	---	---	O	---	O	---	---	O	O	O	---
	Replacement	---	---	O	---	---	O	---	---	O	O	O	---
Printer mechanism	Removal	---	---	---	---	---	---	---	---	---	---	---	---
	Replacement	---	---	O	---	---	---	---	---	---	---	---	---

Note *1: This can be performed in the primary setup.

*2: This is function exclusively for service and is in “Maintenance” tab.

*3: This adjustment can be performed simultaneously in PW adjustment.

*4: This is in “Operation” tab (for inputting the proper offset value) & “Maintenance” tab (for inputting max. offset value).



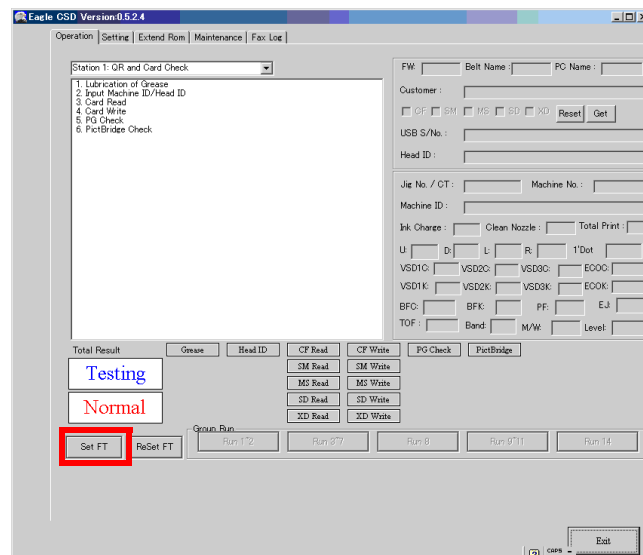
5.2 Outline of Adjustment Procedure

Following shows the concrete procedure from primary setup to the end of actual adjustment.

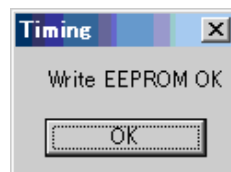
CHECK
POINT

- Primary setup must be performed prior to running the adjustments.
- This section describes the adjustment program of Stylus CX5700F/CX5800F ver 0.5.2.4 or earlier.

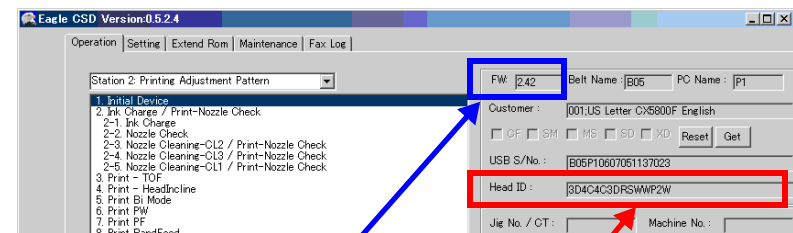
- Step 1) Download “Printer FT 0.5.2.3.zip” file and unzip this file.
 Step 2) Turn on the power of CX5700F/5800F.
 Step 3) Connect PC and CX5700F with USB cable.
 Step 4) Open the adjustment program. (MECTRL.exe: latest program ver. 0.5.2.4)
 Step 5) Enter to “FT Mode” by clicking “Set FT” button.



And then, click “OK” button.

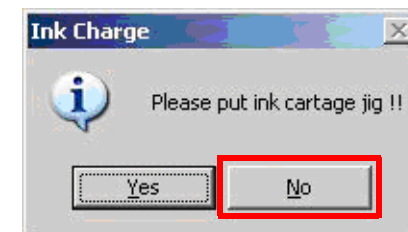


- Step 6) Click on “Operation” tab, and select “Station2: Printing Adjustment Pattern”. Double-click on “Initial Device” to read out Head ID.



Current F/W version & Head ID is displayed.

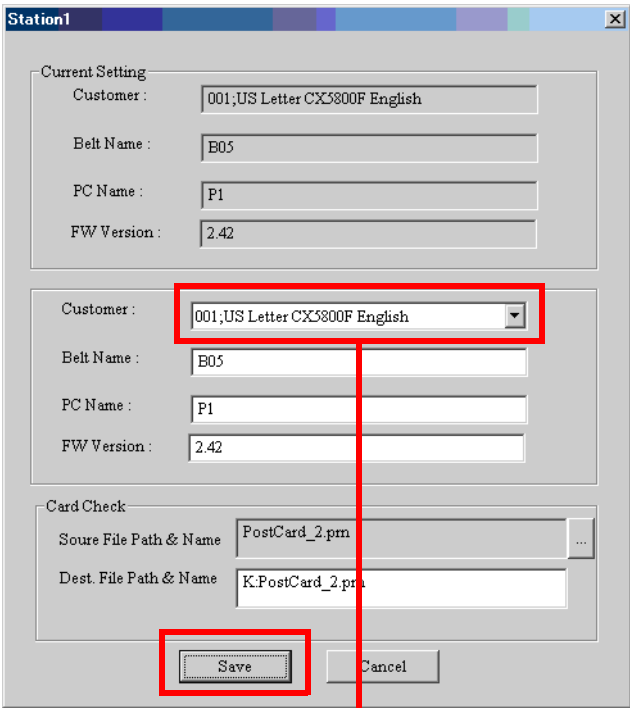
And then click on the “No” button.



CHECK
POINT

Head ID is displayed on the screen by this step.
 Due to this, you can input Head ID in Step 9) smoothly without checking the Head ID label on print head.

Step 7) Click on “Setting” tab, and select “Station1”. Then, click “Save” button.

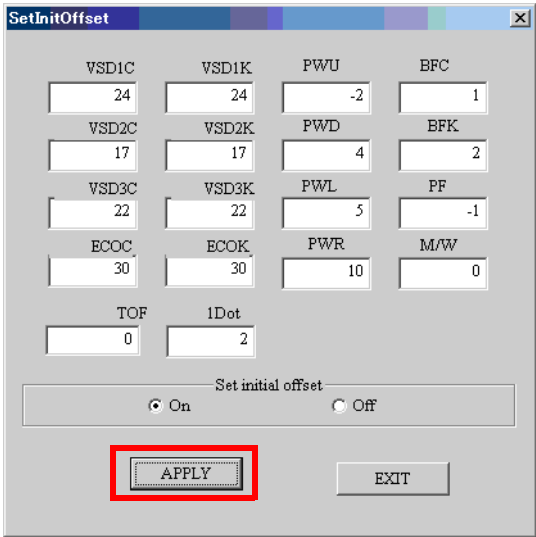


Proper customer is usually displayed

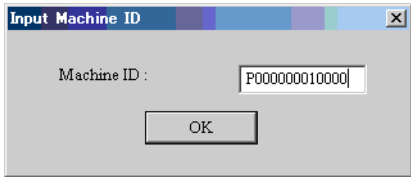
Customer
001; US Letter CX5800F English
002; Canada Letter CX5800F French
012; Mexico Letter CX5700F Spanish
043; Australia A4 CX5700F English
021; Taiwan A4 CX5700F English

Note : Unless the proper customer has to be selected, user may possibly encounter some problems.

Step 8) Select “Initial Set Bi-d value”, and click “Apply” button.



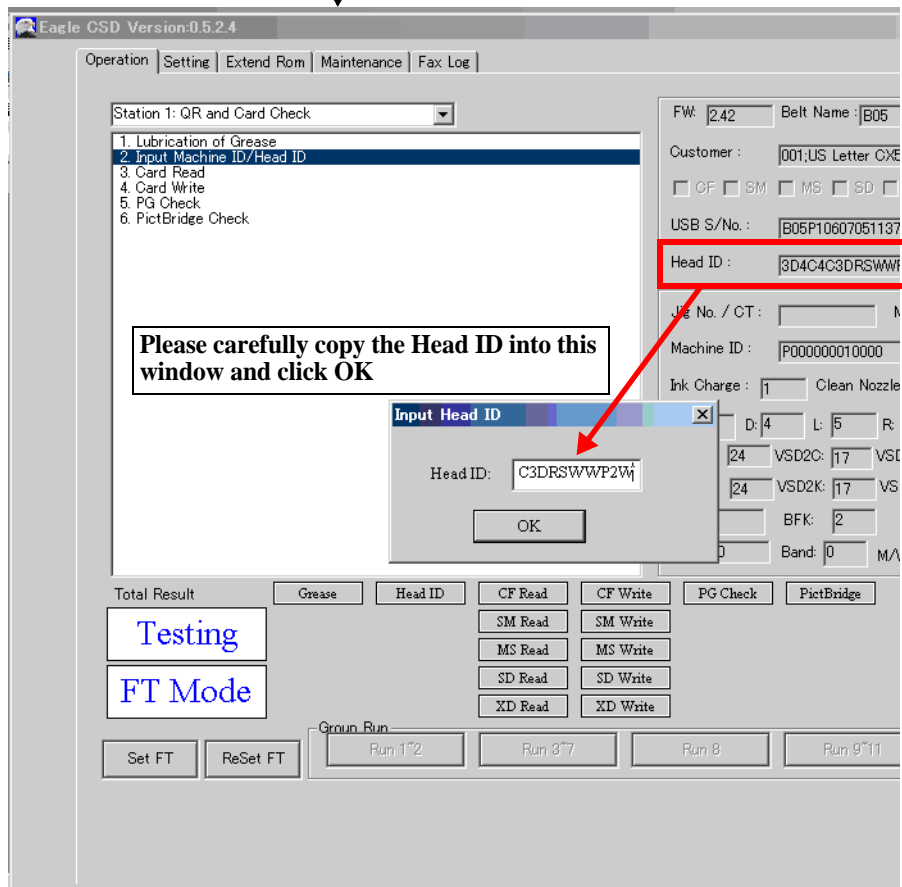
Step 9) Click on “Operation” tab, and select “Station1: QR and Card Check”. Double-click on “Input Machine ID/Head ID”.



Note : Machine ID is 13 digits code, and there is different among customers. Please input Machine ID by obeying the following instruction.

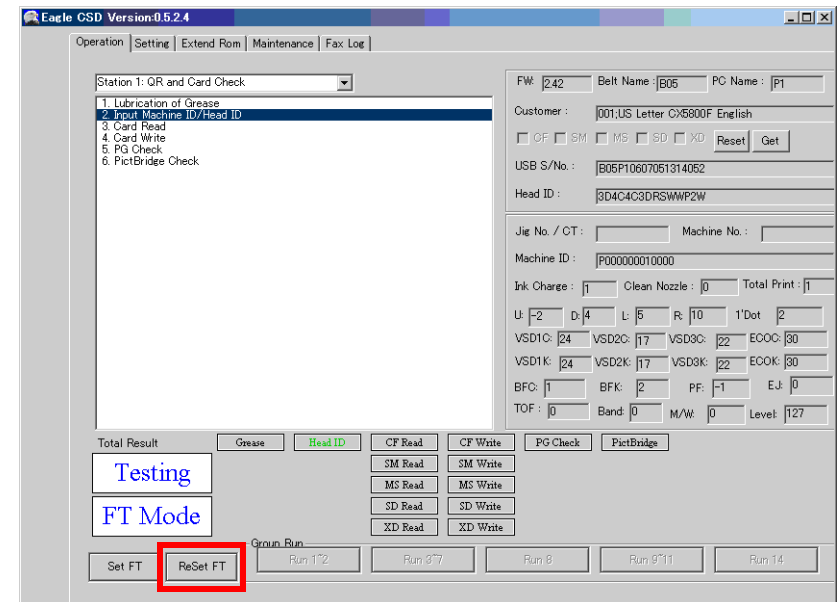
Customer	Input Machine ID
001; US Letter CX5800F English	P000000010000
002; Canada Letter CX5800F French	P000000020000
012; Mexico Letter CX5700F Spanish	P000000120000
043; Australia A4 CX5700F English	P000000430000
021; Taiwan A4 CX5700F English	P000000210000

Click "OK" button after inputting Machine ID.
And then, input Head ID continuously.

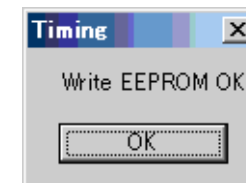


Click "OK" button after inputting Head ID.

Step 10) Enter "Normal Mode" by clicking "ReSet FT" button.



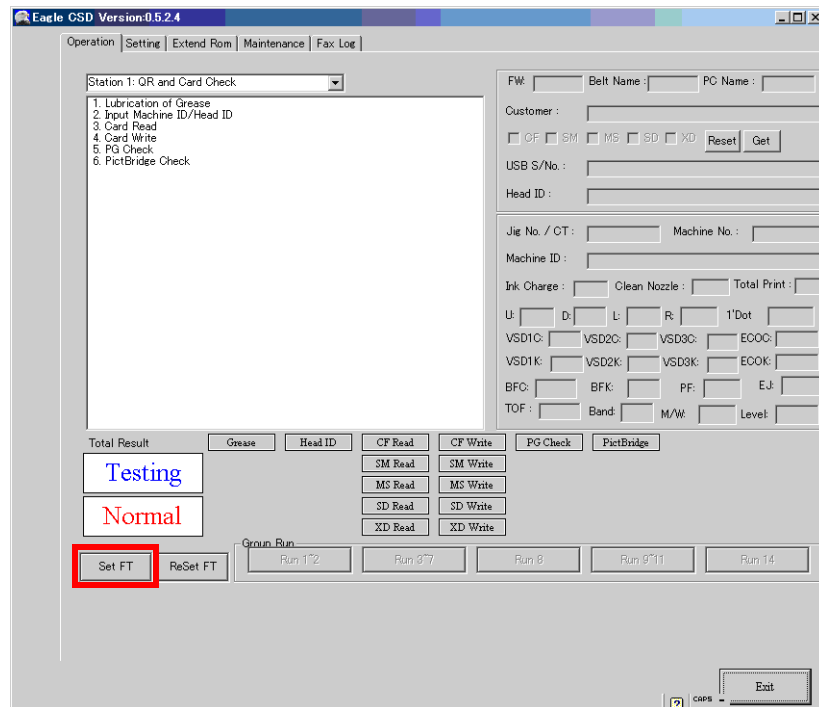
And then, click "OK" button.



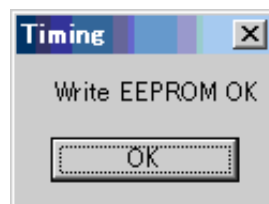
Step 11) Turn off the power of CX5700F, and turn on the power again.

- *When turning on the power, cleaning may be automatically performed.
- *Please wait at least 90 seconds for the printer to be ready.

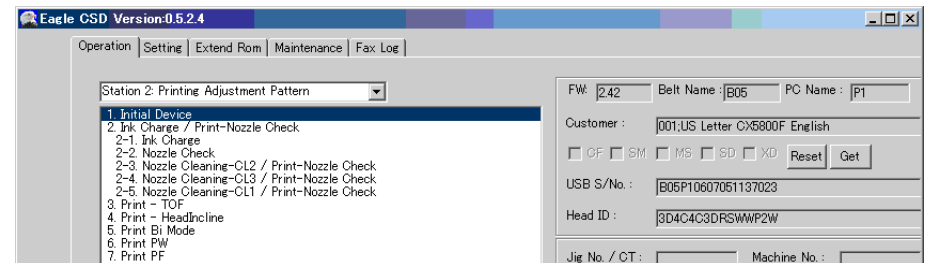
Step 12) Enter to “FT Mode” by clicking “Set FT” button.



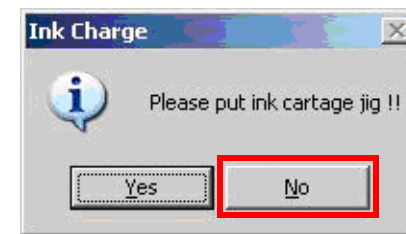
And then, click “OK” button.



Step 13) Click on “Operation” tab, and select “Station2 : Printing Adjustment Pattern”. Double-click on “Initial Device” to go to each adjustment.



And then click on the “No” button.

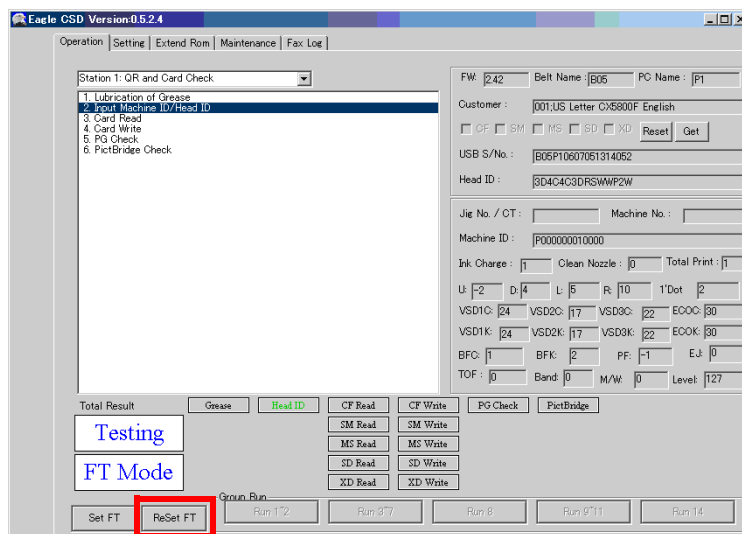


At this point, the primary setup is complete, and the program is now ready to perform the printer adjustments, as described on [page 208](#).

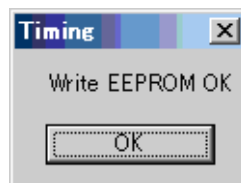
Step 14) Perform necessary adjustment.

Adjustment item	Reference page
"Print -TOF" (TOF adjustment)	page 194
"Print -HeadIncline" (Head Angular adjustment)	page 196
"Print -Bi Mode" (Bi-d adjustment)	page 198
"Print PW" (PW adjustment)	page 200
"Print PF" (PF adjustment)	page 202
"Print BandFeed" (BandFeed adjustment)	page 204
"CR Variation" (CR motor heat protection control adjustment)	page 206
"Print-G0S"/"Print-SF" (Final Check Print)	page 207

Step 15) If finished each adjustment & check pattern printing, enter "Normal Mode" by clicking "ReSet FT" button.



And then, click "OK" button.



Step 16) Close adjustment program, and disconnect USB cable from CX5700F.

Step 17) Replace the installed ink cartridge with new one by using panel function.

<Ink cartridge replacement by panel function>

- 17-1. Press the "Setup" button.
- 17-2. Select "5. Replace cartridge" by pressing paper size button 5 times.
- 17-3. Press "OK" button. And then, move CR unit to the ink replacement position.
- 17-4. Replace the installed ink cartridge with new one.
- 17-5. Press "OK" button. And then, CX5700F is automatically performed ink replacement CL.



When engineers input Head ID by using adjustment program, ink amount data of ink cartridge used in adjustment operation is reset and STM3 displays as 100%. Due to this, customer may possibly encounter unexpected dot missing. Therefore, please replace ink cartridge with new one after adjustment surely to prevent this problem.

5.2.1 How to Perform Each Adjustment

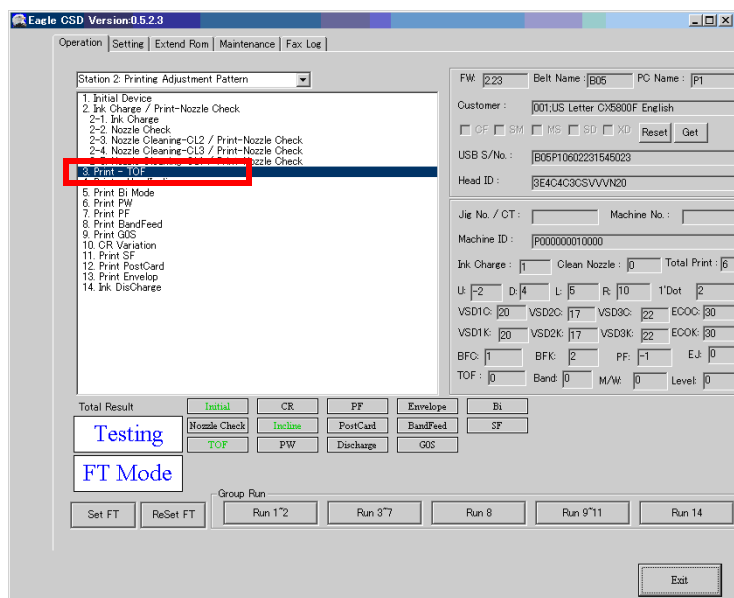
Following shows the procedure of each adjustment item and final check pattern printing.



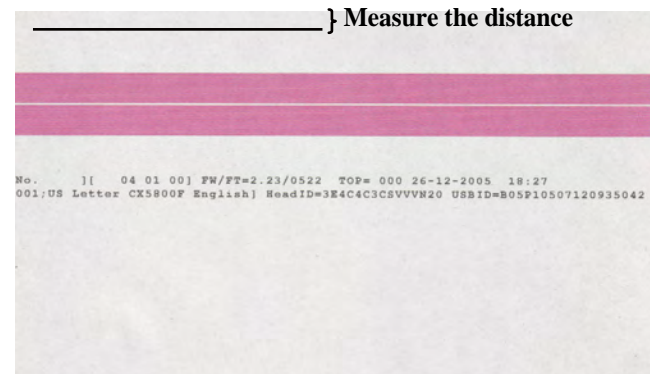
If you perform primary setup operation once, you can perform multiple adjustment items continuously.

Procedure of “Print-TOF” (TOF Adjustment)

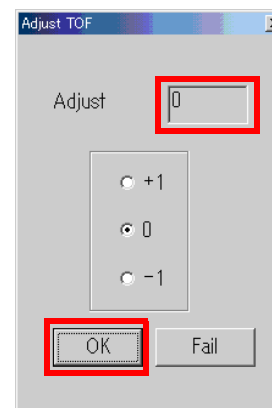
Step 1) Double-click “3. Print-TOF” to print check pattern.



Step 2) Measure the distance between printed line and paper top edge.



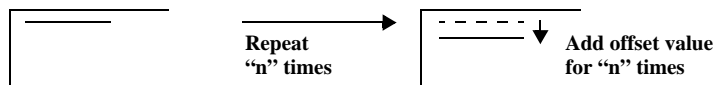
Step 3) Select adjustment value (+1, 0, -1) from measurement result, and click “OK” button.



Distance between printed line and paper top edge	Selected value
~ 2.0 mm	+1
2.0 ~ 4.0 mm	0
4.0 mm ~	-1

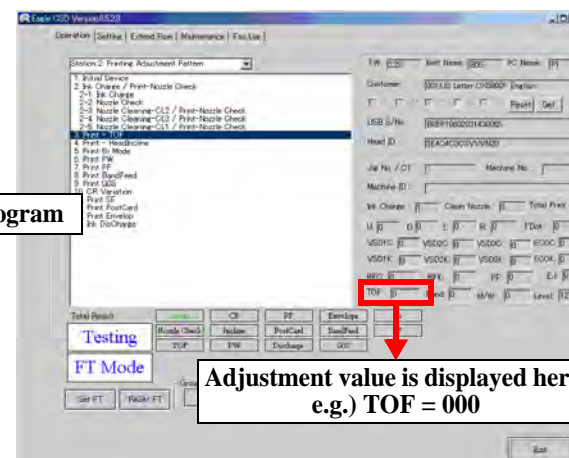
**CHECK
POINT**

1. When you select "+1" or "-1" and click "OK" button, the adjustment value is registered into EEPROM. And, check pattern is reprinted automatically.
2. This adjustment can be repeated until the distance between printed line and paper top edge comes in 2.0 ~ 4.0 mm. Therefore, if the adjustment is not enough at one time, please repeat this adjustment several times.

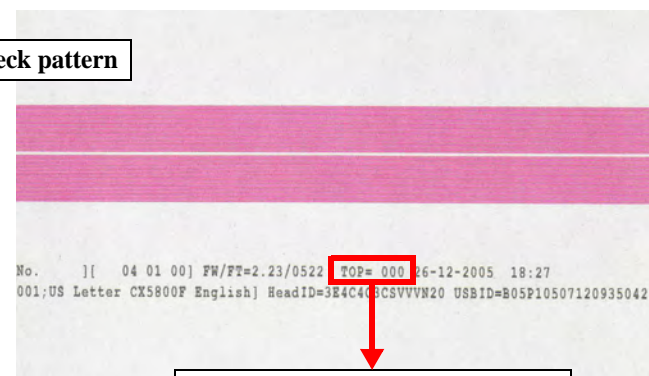


[How to check TOF value after adjustment]

Program



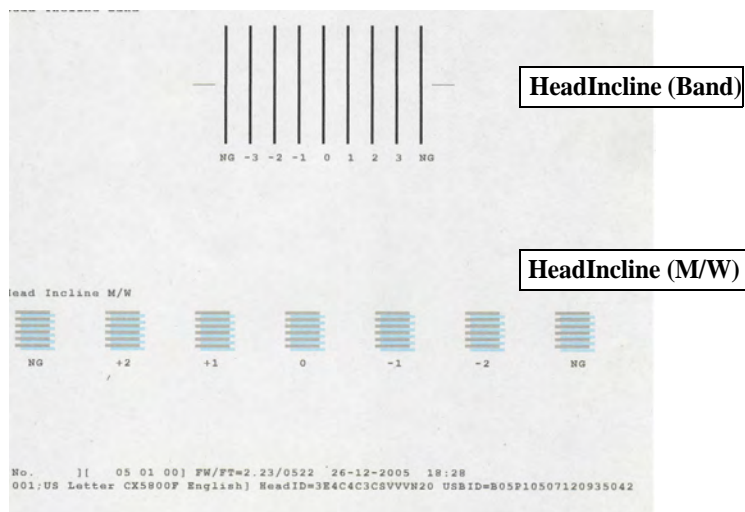
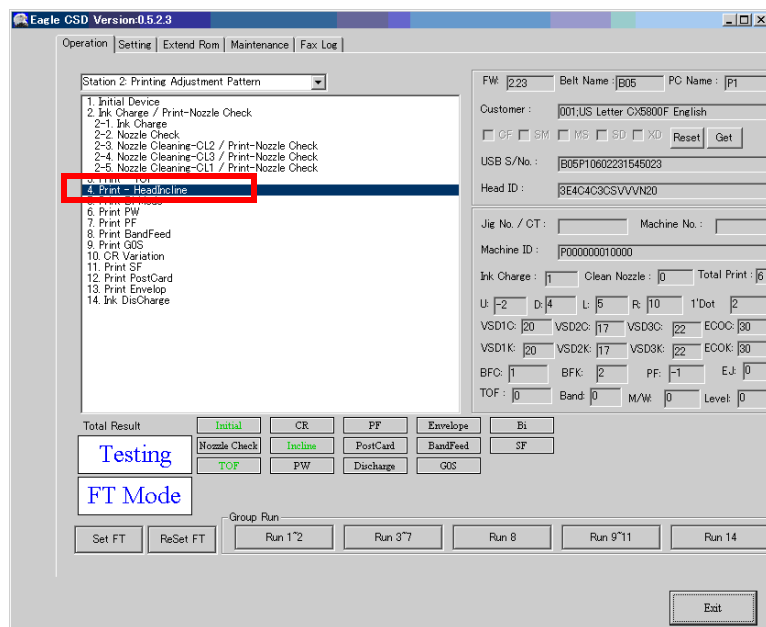
Check pattern



Adjustment value is written here.
e.g.) TOP = 000

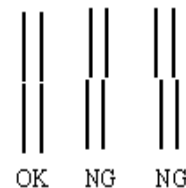
Procedure of "Print-HeadIncline" (Head Angular Adjustment)

Step 1) Double-click "4. Print-HeadIncline" to print check pattern.



Step 2) Select adjustment value (number of OK pattern), and click "OK" button.

-HeadIncline (Band)

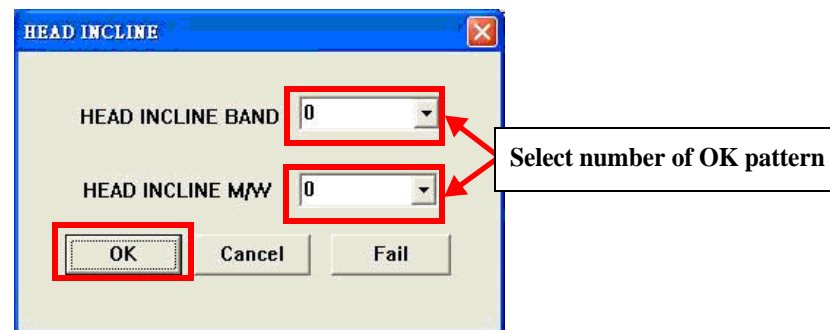


OK means non-gap line between Top side and bottom side.

-HeadIncline (M/W)

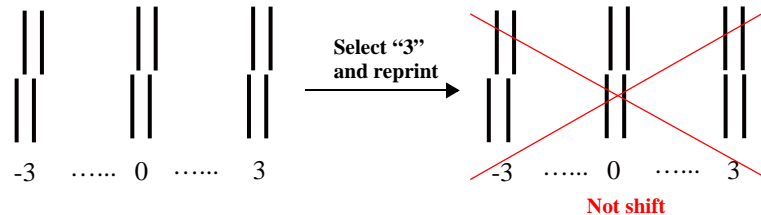


OK means non-gap/non-overlap pattern between gray bar and cyan bar.



**CHECK
POINT**

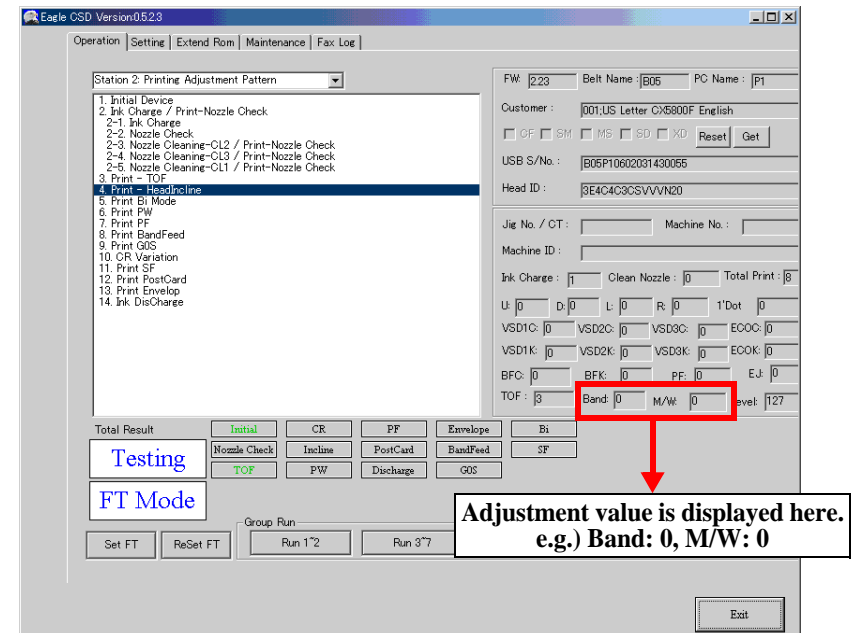
1. You can select adjustment value from limited range. (Unlike other adjustment, selected adjustment value is not shifted to center (0 position) of next check pattern to continue adjustment.) Therefore, you don't need to repeat this adjustment.



Therefore, if you don't find OK pattern, please try the following operation.

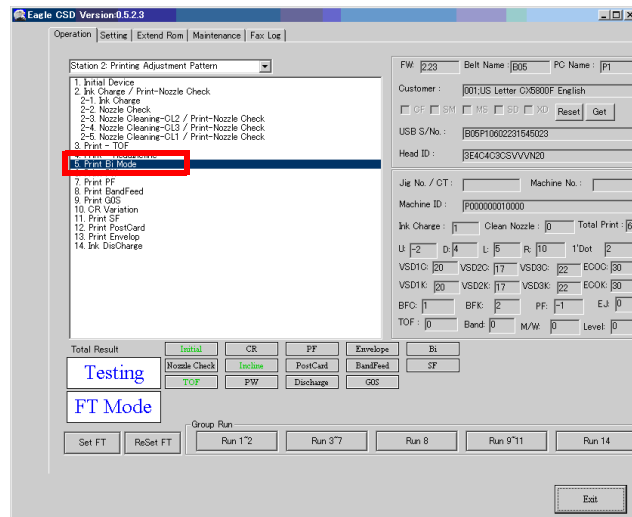
- 1) Remove Print Head and re-assembly it.
- 2) If NG in 1), replace Print Head with new one again.
2. When you select the specific adjustment value and click "OK" button, the adjustment value is registered into EEPROM.
3. Even if you click "OK" button, check pattern is not automatically reprinted. Therefore, if you want to confirm adjustment result, please print check pattern in this adjustment again or print final check pattern.

[How to check HeadIncline value after adjustment]

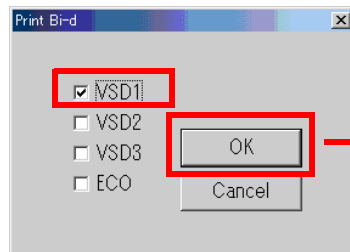


Procedure of "Print-Bi Mode" (Bi-d Adjustment)

Step 1) Double-click "5. Print-Bi Mode" to print check pattern.

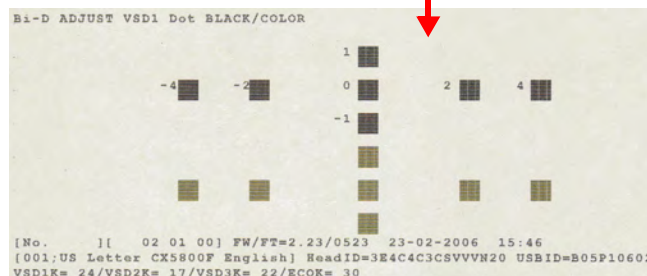


Step 2) Check dot type that you want to adjust, and click "OK" button. And then, print check pattern of selected mode automatically.

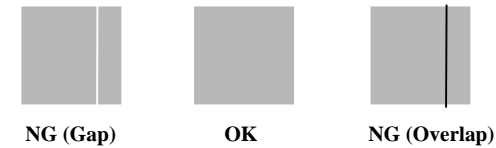


*You have to perform Bi-d adjustment with Bk & Color mode in all dot size. (VSD1/VSD2/VSD3/Eco)

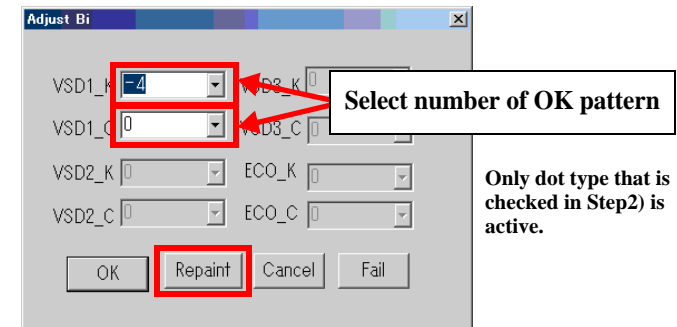
When checking only VSD1, print Bk & Color pattern in VSD1 Bi-d pattern.



Step 3) Select adjustment value (number of OK pattern), and click "Reprint" to check.



OK means non-gap/non-overlap pattern.



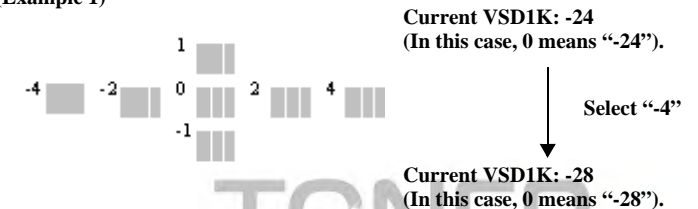
Only dot type that is checked in Step2) is active.

CHECK POINT



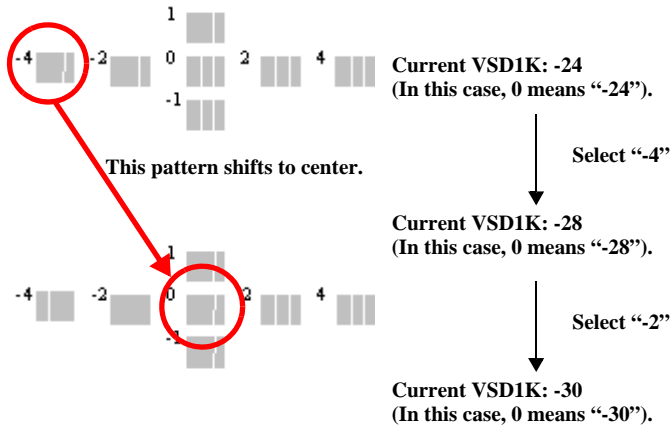
1. When you select number of OK pattern and click "OK" or "Reprint" button, the adjustment value is registered into EEPROM.
2. Although "-6" is not in check pattern, you can select the value in the input screen of adjustment value.
3. This adjustment can be repeated until you find OK pattern. Therefore, if the adjustment is not enough at one time, please repeat this adjustment several time.

(Example 1)



CHECK
POINT

(Example 2)



4. Please note that the numbers shown next to the Bi-d patterns are adjustment values only. After you input the selected value (i.e. -4), the corresponding pattern will move to pattern "0" the next time you print the Bi-d adjustment page. On the other hand, in the printer's memory this value will be added to the actual stored data. In this example, -4 will be added to -24 and therefore will become -28.
5. Even if you click "OK" button, check pattern is not automatically reprinted. Therefore, if you want to confirm adjustment result, please print check pattern in this adjustment again or print final check pattern.

[How to check Bi-d value after adjustment]

Program

**Adjustment value is displayed here.
e.g.) VSDC1C: 0, VSD1K: 0**

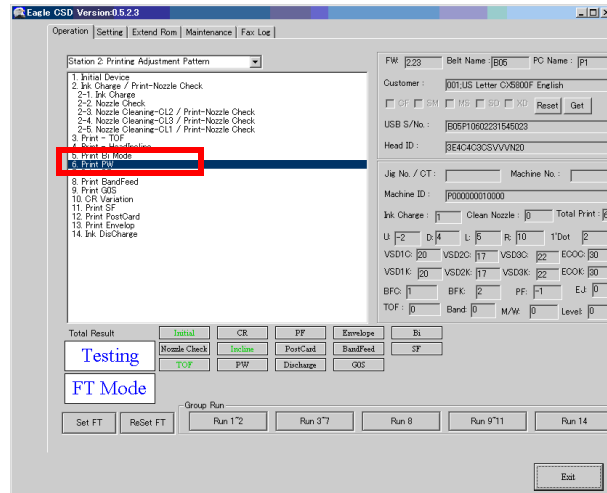
Check pattern

**Adjustment value is written here.
e.g.) VSDC1C: 0, VSD1K: 0**

Procedure of "Print-PW" (PW Adjustment)

You can perform PW adjustment and 1st dot adjustment in this adjustment.

Step 1) Double-click "5. Print-PW" to print check pattern.



Step 2) Measure the distance between printed line and each paper edge (top/bottom, right/left)



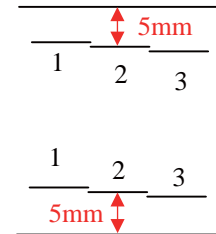
[PW adjustment]
 Top side: blue line
 Bottom side: blue line
 Right side: black line
 Left side: black line

[1st dot adjustment]
 Red line in left side

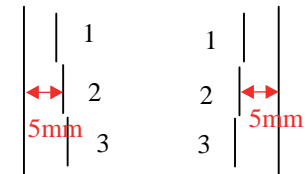
Step 3) Select number of blue & black line on 5mm from each paper edge for PW adjustment. Then, select number of overlapped portion between red line and black line (left side) and click "OK" button.

<PW adjustment>

Top side & Bottom side

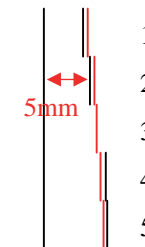


Left side & Right side



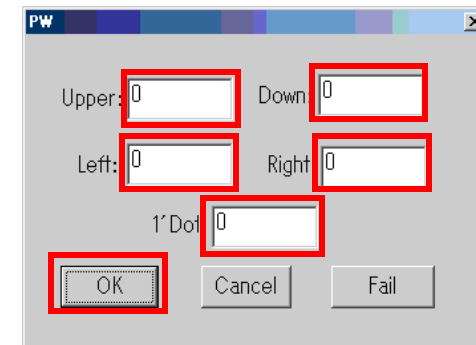
In this case, you have to select "2" in all edges.

<1st dot adjustment>



Black line: line for PW adjustment
 Red line: line for 1st dot adjustment

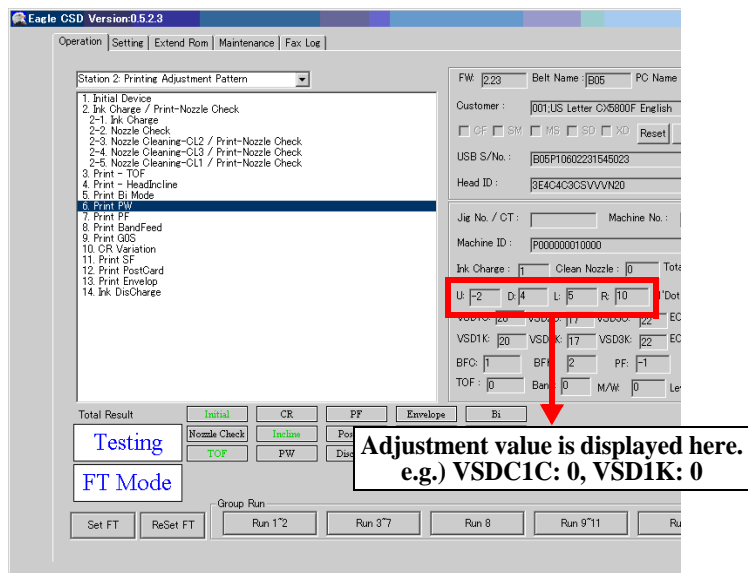
For PW adjustment, you have to select "2".
 For 1st dot adjustment, you have to select "3".



**CHECK
POINT**

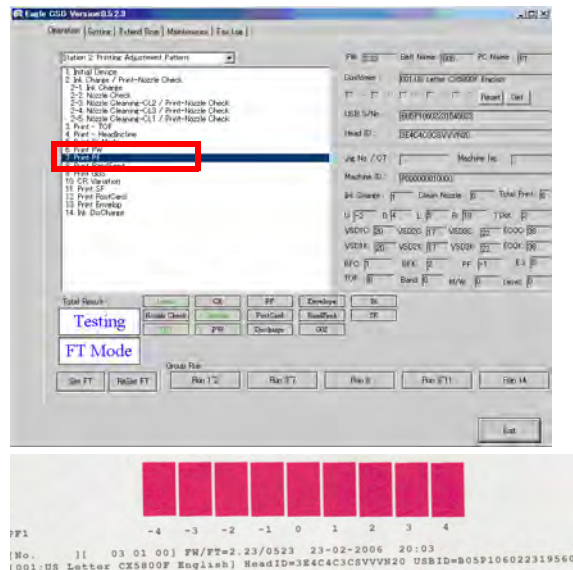
1. When you select number of OK pattern and click "OK" button, the adjustment value is registered into EEPROM.
2. You can select adjustment value from limited range. (Unlike other adjustment, selected adjustment value is not shifted to center (0 position) of next check pattern to continue adjustment.)
3. Even if you click "OK" button, check pattern is not automatically reprinted. Therefore, if you want to confirm adjustment result, please print check pattern in this adjustment again or print final check pattern.

[How to check Bi-d value after adjustment]

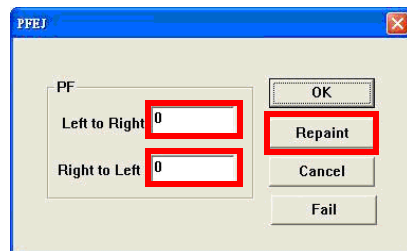
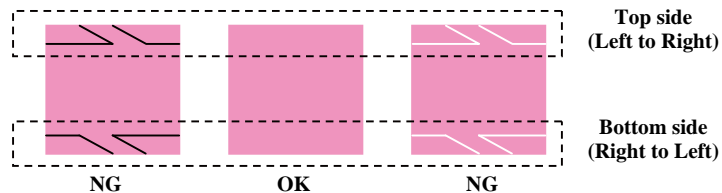


Procedure of "Print PF" (PF Adjustment)

Step 1) Double-click "7. Print PF" to print check pattern.



Step 2) Select adjustment value (number of OK pattern), and click "Reprint" button.

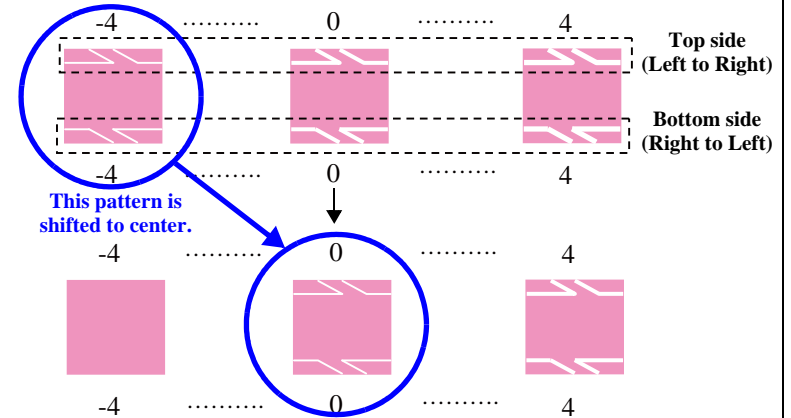


CHECK
POINT

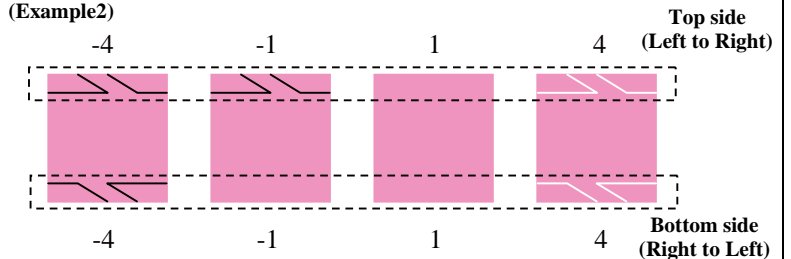


1. When you select number of OK pattern and click "OK" or "Reprint" button, the adjustment value is registered into EEPROM. And, check pattern is reprinted automatically.
2. This adjustment can be repeated until you find OK pattern. Therefore, if the adjustment is not enough at one time, please repeat this adjustment several time.

(Example1)

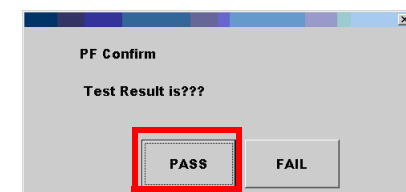


(Example2)



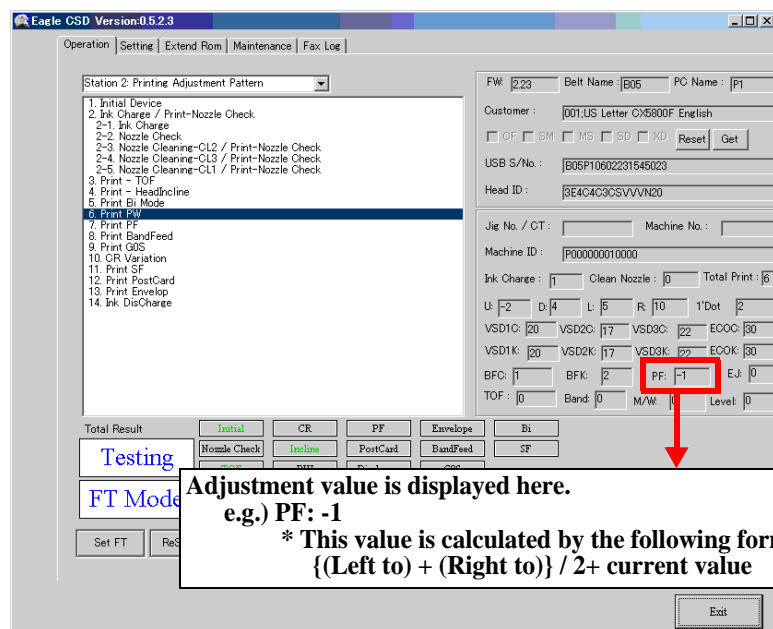
In this case, you have to select "1" for "Left to Right" And "-1" for "Right to Left".

3. Only when you click "OK" button in this adjustment, the following message is appeared. Please go ahead next adjustment by pressing "PASS" button.



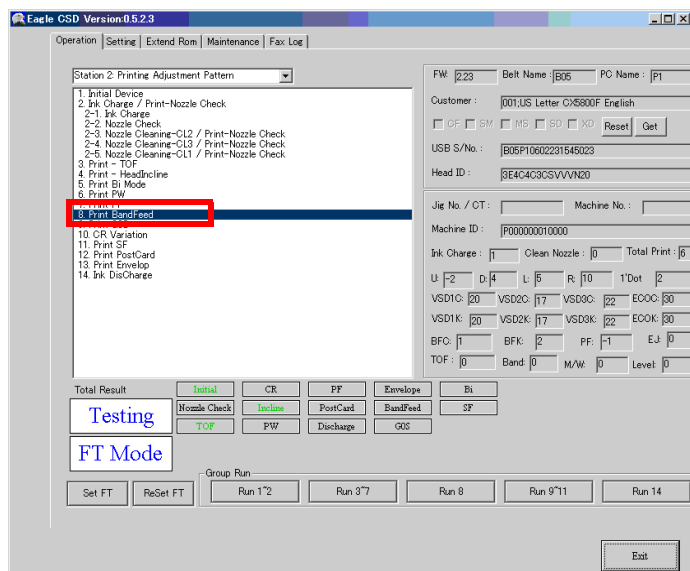
www.tonerplus.com.ua

[How to check PF value after adjustment]



Procedure of “Print BandFeed” (BandFeed Adjustment)

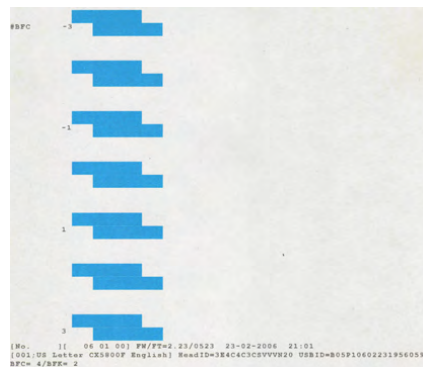
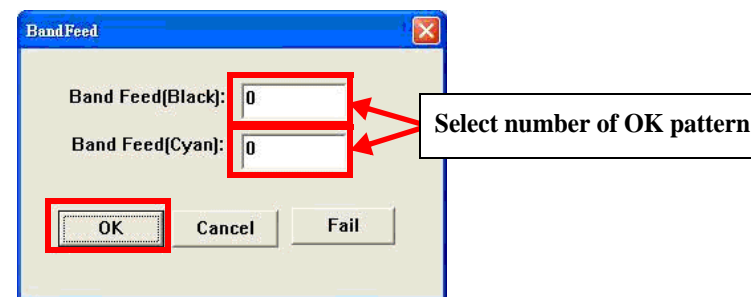
Step 1) Double-click “8. Print BandFeed” to print check.



Step 2) Select adjustment value (number of OK pattern), and click “OK” button.

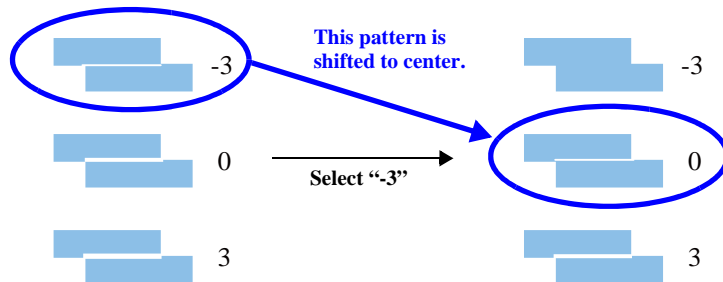


OK means non-gap/non-overlap pattern.



CHECK
POINT

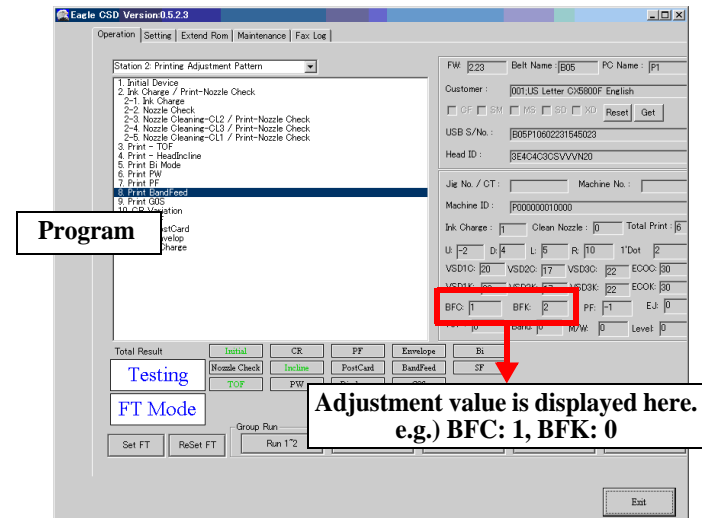
1. When you select number of OK pattern and click "OK" button, the adjustment value is registered into EEPROM.
2. Although "-6" is not in check pattern, you can select the value in the input screen of adjustment value.
3. This adjustment can be repeated until you find OK pattern. Therefore, if the adjustment is not enough at one time, please repeat this adjustment several times.



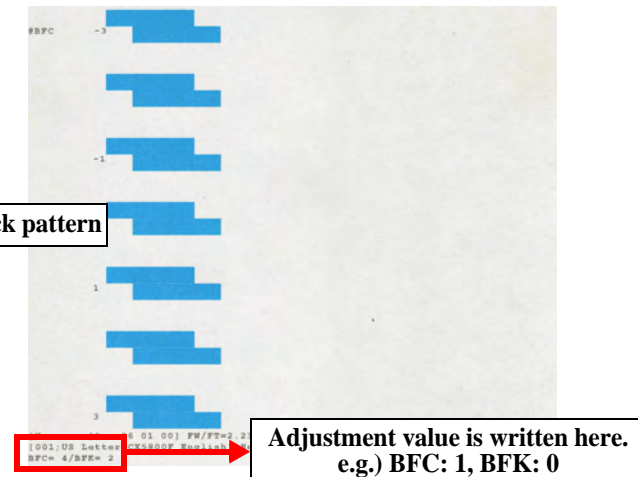
However, adjustable range is -5 to 5.

4. Even if you click "OK" button, check pattern is not automatically reprinted. Therefore, if you want to confirm adjustment result, please * print check pattern in this adjustment again or print final check pattern.

[How to check PF value after adjustment]



Check pattern



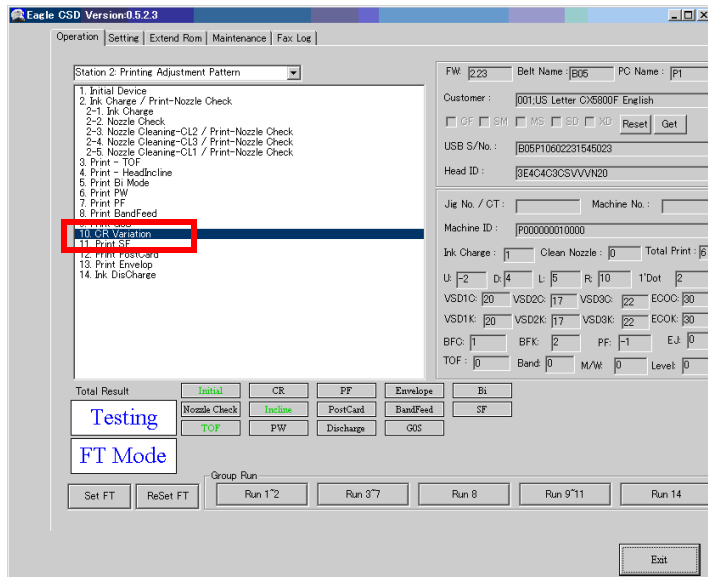
Procedure of “CR Variation” (CR Motor Heat Protection Control Adjustment)

There are two kinds of adjustment method regarding this item.

One is to input the proper offset value of CR motor heat protection control, another is to input max. offset value. Please select the proper method according replacement parts in your repair.

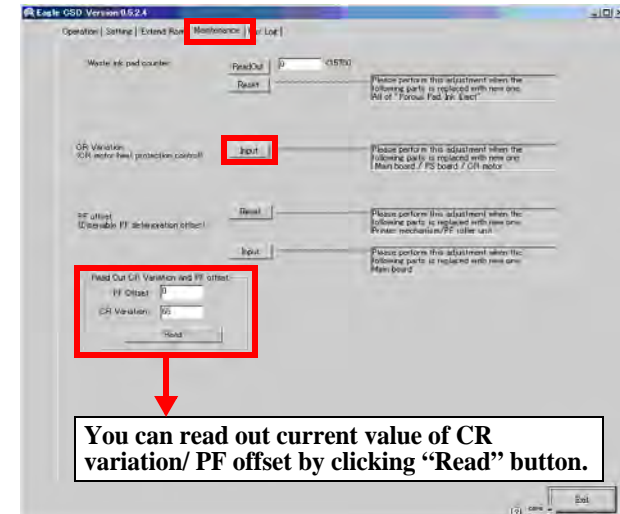
(1) How to input the proper offset value of CR motor heat protection control

Step 1) Double-click “10. CR Variation” to input the proper offset value.



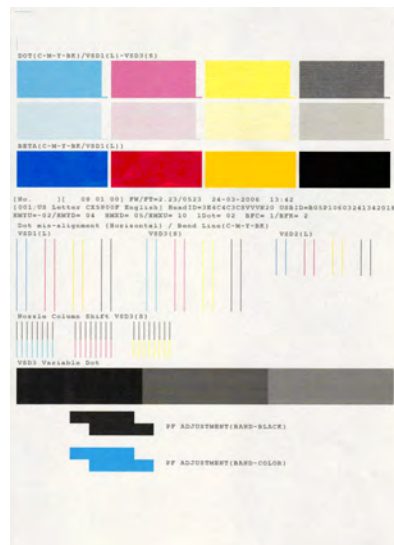
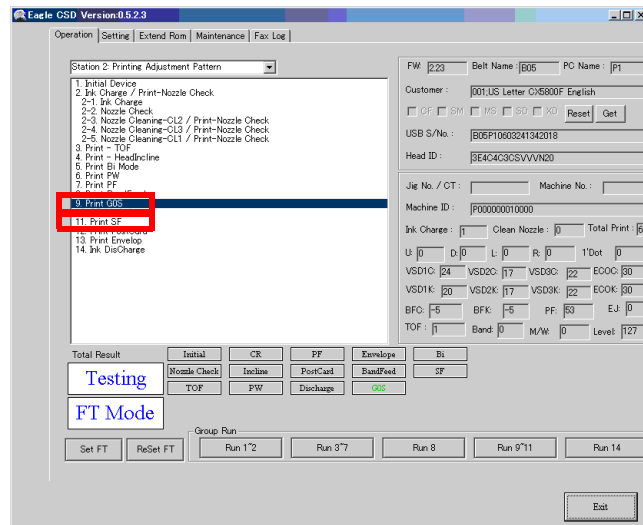
(2) How to input max. offset value of CR motor heat protection control

Step 1) Select “Maintenance” tab in main menu screen, and click “Input” to input max. offset value.



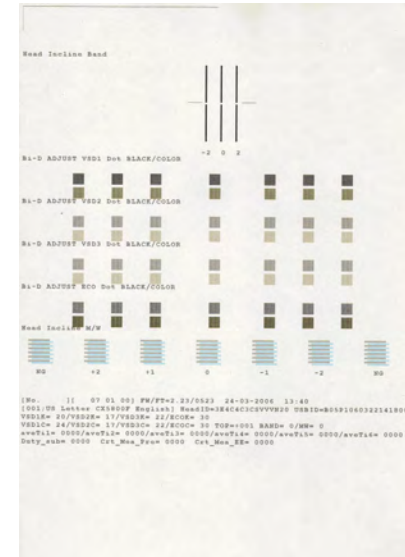
Procedure of "Print-G0S/Print-SF" (Final Check Print)

Step 1) Double-click "9. Print G0S/11. Print SF" to print final check pattern.



G0S pattern

- TOF pattern
- Dot missing pattern
- Beta pattern
- Alignment pattern
- VSD3 variable dot pattern
- PF pattern



SF pattern

- HeadIncline pattern
- Bi-d pattern

Step 2) Check Final Check Pattern Print by comparing the following standard.

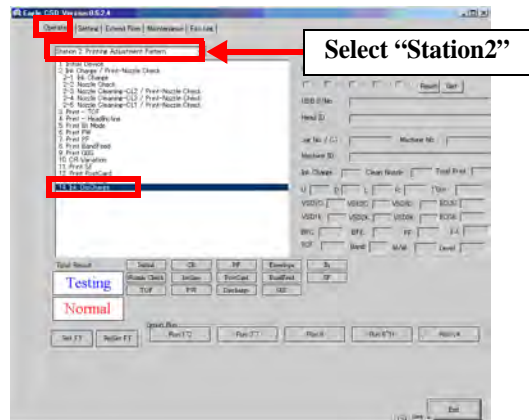
Check items	Standard
TOF pattern	Top margin: 4 ~ 6mm Left margin: 2 ~ 4mm
Dot missing pattern	Make sure that printed lines are printed at equal intervals.
BETA (Bk-C-M-Y)	Make sure that there is no dot missing.
Alignment pattern	Make sure that there is no miss-alignment dot.
VSD3 variable dot pattern.	Make sure that there is no dot missing.
PF pattern	Make sure non-gap / non-overlap between two bars.
HeadIncline pattern	Make sure on-gap line between top side and bottom side.
Bi-d pattern	Make sure that the printed line is straight.

5.3 How to Use Function Used Exclusively for Service

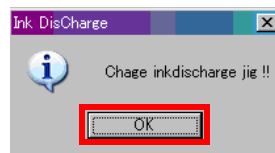
5.3.1 Ink Discharge

This is to discharge ink from print head by using shipping liquid.

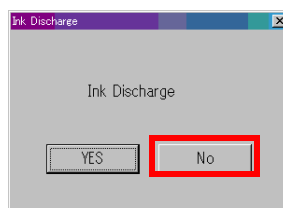
- Step 1) Select "Operation" tab in main menu, and double-click "14. Ink Discharge" in "Station2" to discharge ink from print head.



- Step 2) Remove ink cartridge after moving CR unit to ink replacement position, and set ink supply tool. Then, click "OK" button.

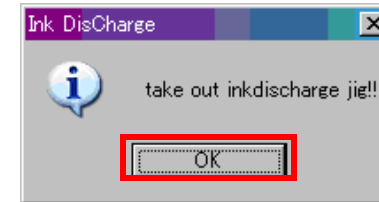


- Step 3) Click "No" button.



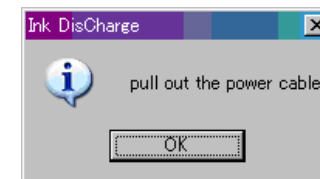
This is imperfect screen.
If you click "Yes", ink
discharge will be repeated.

- Step 4) Remove ink supply tool from CR unit, and click "OK" button.

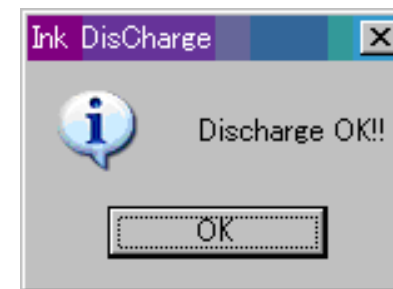


* Printer will turned off the power automatically.

- Step 5) Click "OK" button after pulling out the power cable.

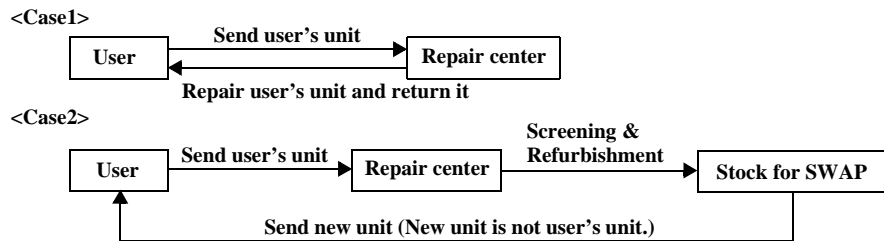


- Step 6) Click "OK" button.

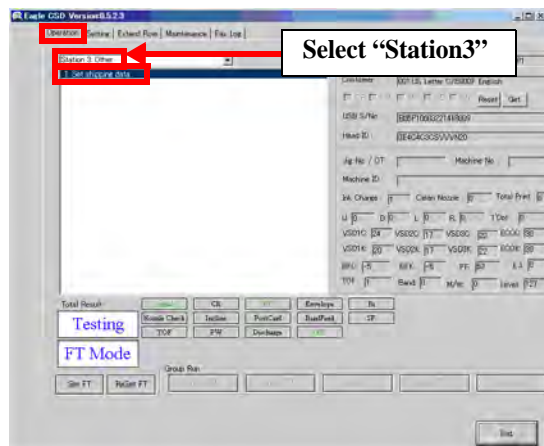


5.3.2 Set Shipping Data

This is to set shipping data (factory setting). Due to this, you can use to delete user's registered information/transmission record regarding Fax. If the returned units are refurbished for SWAP (Case2), you have to clear them at this time.

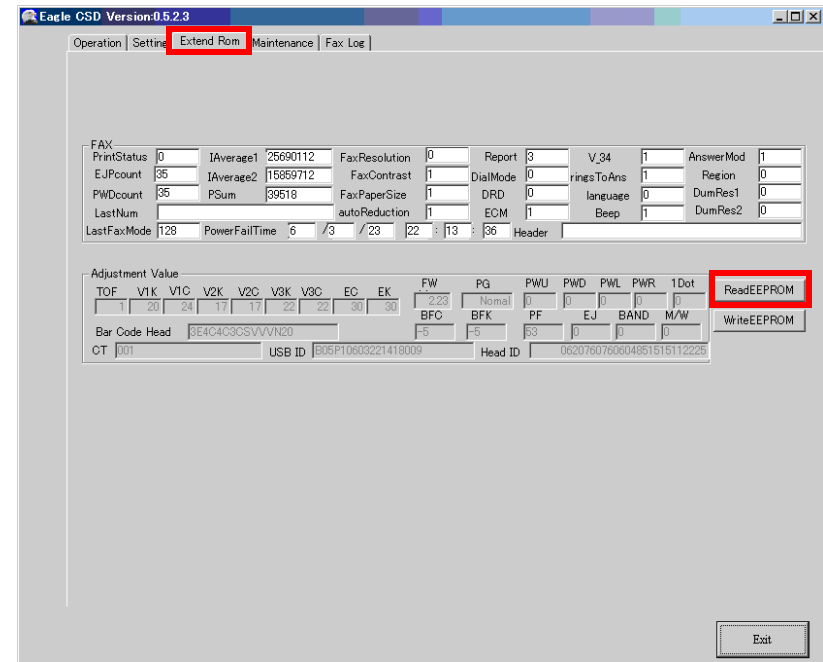


Step 1) Select “Operation” tab in main menu, and double-click “1. Set shipping data” in “Station3” to delete user's registered information/transmission record.



5.3.3 Extend Rom

Step 1) Select “Extend Rom” tab in main menu screen, and click “ReadEEPROM” to read out EEPROM data.



Note : Do not use “WriteEEPROM” function in your repair.
This function is for investigation of defective unit and is not usual used in repair activity.

CHECK POINT



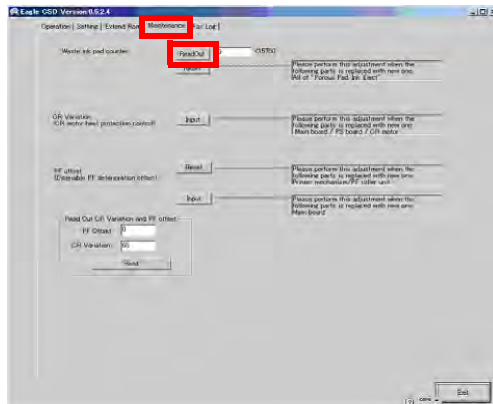
1. Printer will turned off the power automatically after setting shipping data.
2. Printer will perform initial ink charge at next P-on timing.
3. Perform this function without I/C. Therefore, you have to perform ink discharge beforehand in refurbishment.
4. You can use ink supply tool for Stylus CX 4600 series.
5. Unless the proper customer has to be selected, user may possibly encounter some problems.

5.3.4 Maintenance

A. Waste Ink Pad Counter

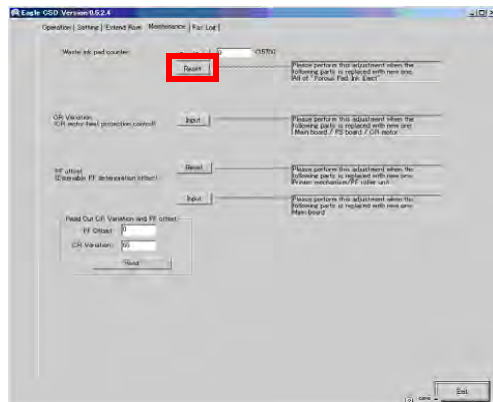
- (1) Readout of current waste ink pad counter

Step 1) Select “Maintenance” tab in main menu screen, and click “ReadOut” to read out current waste ink pad counter.



- (2) Reset of waste ink pad counter

Step 1) Select “Maintenance” tab in main menu screen, and click “ReadOut” to reset current waste ink pad counter.



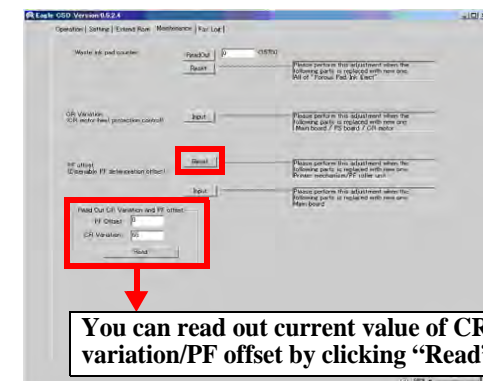
B. CR Variation (CR Motor Heat Protection Control)

- (1) Input of max. offset value of CR motor heat protection control.
Please refer to [page 206](#).

C. PF offset (Disable PF Deterioration Offset)

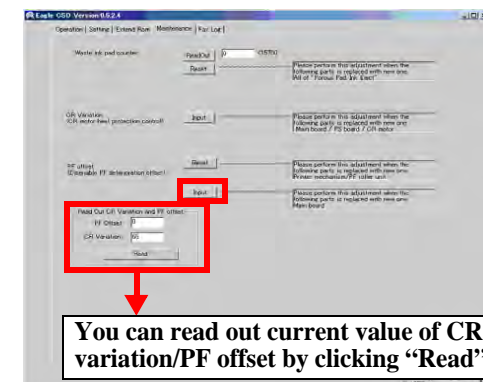
- (1) Reset of PF offset

Step 1) Select “Maintenance” tab in main menu screen, and click “Reset” to reset current PF offset value.



- (2) Reset of PF offset

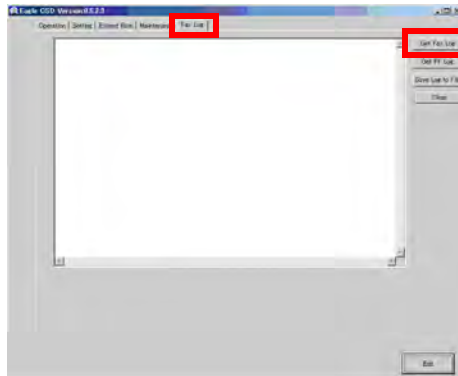
Step 1) Select “Maintenance” tab in main menu screen, and click “Input” to input max. PF offset value.



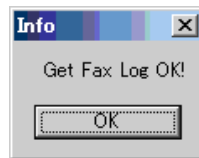
5.3.5 Fax Log

You can use this function to investigate the cause of the transmission error.

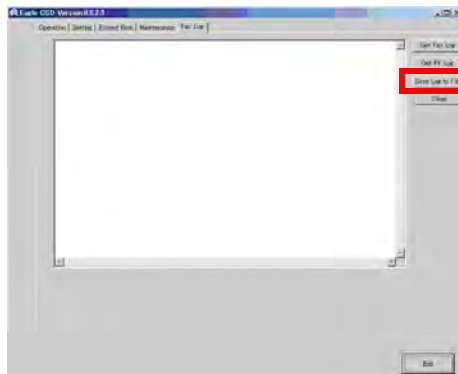
- Step 1) Select “Maintenance” tab in main menu screen, and click “Get Fax Log” to get the error status.



- Step 2) Click “OK” button after the following message is displayed.



- Step 3) Click “Save Log to File” to save.



CHAPTER

6

MAINTENANCE



6.1 Overview

This section provides information to maintain Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F in its optimum condition.

6.1.1 Cleaning

This printer has no mechanical components which require regular cleaning except the Printhead. Therefore, when returning Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F to the user, check the following parts and perform appropriate cleaning if stain is noticeable.

CAUTION



- **Never use chemical solvents, such as thinner, benzine, and acetone to clean the exterior parts of Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F like the Housing. These chemicals may deform or deteriorate the components of the printer.**
- **Be careful not to damage any components when you clean inside Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F.**
- **Do not scratch the coated surface of the PF Roller Unit. Use soft brush to wipe off any dusts. Use a soft cloth moistened with alcohol to remove the ink stain.**
- **Do not use cleaning sheet included in the media for normal usage. It may damage the coated surface of PF Roller Unit. If the adhesive surface of the cleaning sheet is set to the LD Roller shaft side and used to clean the LD Roller surface, it is no problem.**
- **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.**

- **Exterior parts**
Use a clean soft cloth moistened with water, and wipe off any dirt. If the exterior parts are stained by the ink, use a cloth moistened with neutral detergent to wipe it off.
- **Inside Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F**
Use a vacuum cleaner to remove any paper dust.

- **LD Roller**
When paper loading function does not operate because friction of the LD Roller is lowered by any paper dust, set the adhesive side up of the cleaning sheet (included in the media) to remove any paper dust. Repeat loading the cleaning sheet several times.
- **Document glass**
Remove dust or any paper with a clean dry cloth. In case dirt is serious or alien substance is stick, wipe it off with a cloth moistened with neutral detergent. In case Stain is remained, wipe again with a dry clean cloth.

6.1.2 Service Maintenance

If any abnormal print (dot missing, white line, etc.) has occurred or the printer indicates the "Maintenance request error" (This error is displayed as "Maintenance call error" in the STM3), take the following actions to clear the error.

- **Printhead cleaning**
When dot missing or banding phenomenon has occurred, you need to perform the Printhead cleaning operation*¹ by using the Printhead cleaning function. This function can be performed by the control panel operation, the printer driver utility and the Adjustment program.
In case that the cleaning sequence is performed by the control panel operation, confirm that the printer is in stand-by state (the Power LED is lighting), and hold down the Ink SW on the control panel for more than 3 seconds. Then, the printer starts the cleaning sequence (the Power LED blinks during this sequence).
In case that you select and perform the manual cleaning by the printer driver utility, the most appropriate cleaning mode is selected. The following is the process to perform the Printhead cleaning from the printer driver utility.
As for the operation of the Adjustment program, refer to Chapter 5 Adjustment.

Note *1: The Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F has three modes for manual cleaning, and even during printing, the appropriate cleaning mode is automatically selected and performed according to various conditions. Therefore the ink consumption amount for manual cleaning varies depending on each mode (Refer to Chapter 2).



1. Select the “EPSON Status Monitor 3” in the printer driver utility, and make sure that the printer is in stand-by state by using the Status monitor 3. If the printer is in stand-by state, the following figure is indicated on the monitor.

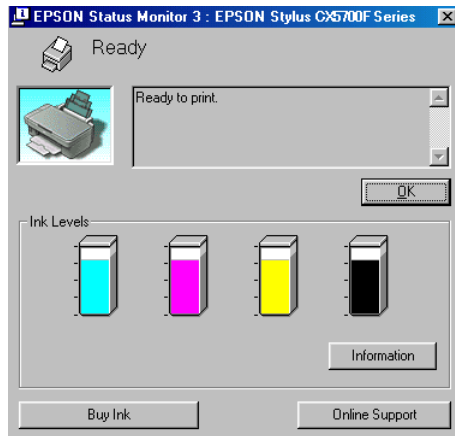


Figure 6-1. Status Monitor 3 Indication

2. Select the “Head Cleaning” in the printer driver utility, and perform the Printhead cleaning. After performing the Printhead cleaning operation, print a nozzle check pattern by selecting the “Nozzle Check”. If you repeat the Printhead cleaning operation without selecting the “Nozzle Check”, CL1, the weakest cleaning, will be repeated.

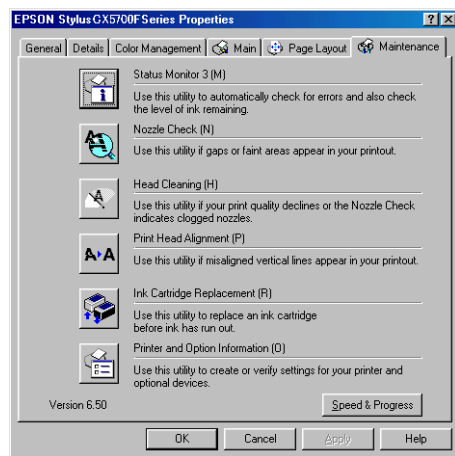


Figure 6-2. Head Cleaning Function in the Printer Driver Utility

- Maintenance request error (Maintenance call error)

Ink is used for the Printhead cleaning operation as well as the printing operation. When the ink is used for the Printhead cleaning operation, the ink is drained to the Waste ink pads and the amount of the waste ink is stored as the waste ink counter into the EEPROM on the Main Board. Due to this, when the waste ink counter has reached the limit of the absorbing capability of the Waste ink pads, the Maintenance call error is indicated on Status monitor 3 as following figure.

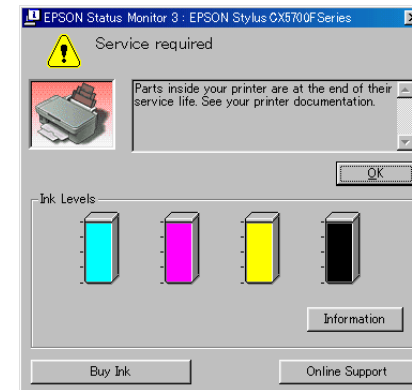


Figure 6-3. Maintenance error indication in STM3

In this case, replace to new Waste ink pads and clear the waste ink counter stored into the EEPROM. The waste ink counter can be reset only from the Adjustment program because this printer dose not have the waste ink counter reset function by the control panel SW. As for the procedure, refer to Chapter 5 Adjustment.

In your repair activity, check the waste ink counter along with the firmware version, Main Board checker program version and nozzle check pattern on the nozzle check pattern printing. If the waste ink counter is closed to its limit, recommend that the Waste ink pads will be replaced with new one. This is because the “Maintenance request error” will may occur after returning the repaired product to the customer.

6.1.3 Lubrication

The characteristics of the grease have great affects on the mechanical function and durability, especially does the characteristics about temperature environment. The type and amount of the grease used to lubricate the printer parts are determined based on the results of the internal evaluations. Therefore, be sure to apply the specified type and amount of the grease to the specified part of the printer mechanism during servicing.

CAUTION


- Never use oil or grease other than those specified in this manual. Use of different types of oil or grease may damage the component or give bad influence on the printer function.
- Never apply larger amount of grease than specified in this manual.

Table 6-1. Specified lubricants

Type	Name	EPSON code	Supplier
Grease	G-26	1080614	EPSON
Grease	G-45	1033657	EPSON
Grease	G-71	1304682	EPSON
Grease	G-74	1409257	EPSON
Grease	TC-55E	1400725	EPSON

CAUTION


When using G-74, it is recommended to use a flux dispenser (1049533) together.

□ Refer to the following figures for the lubrication points.

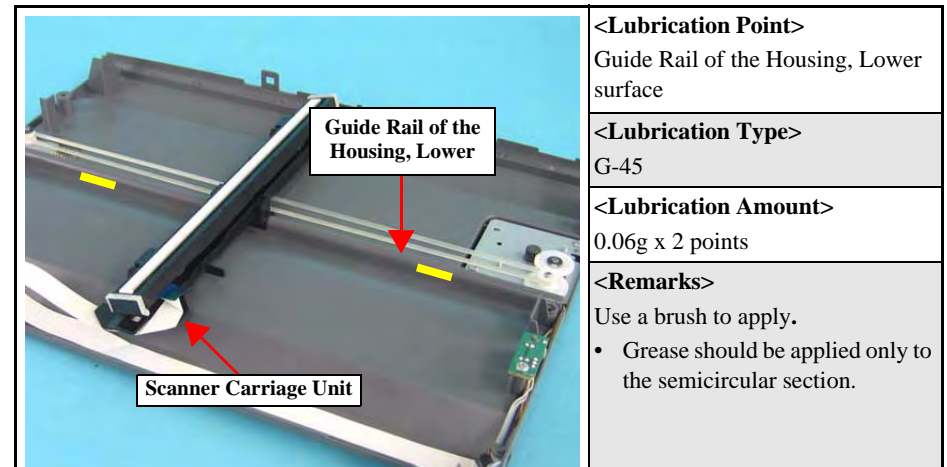


Figure 6-4. Lubrication on Guide Rail of the Housing, Lower Surface

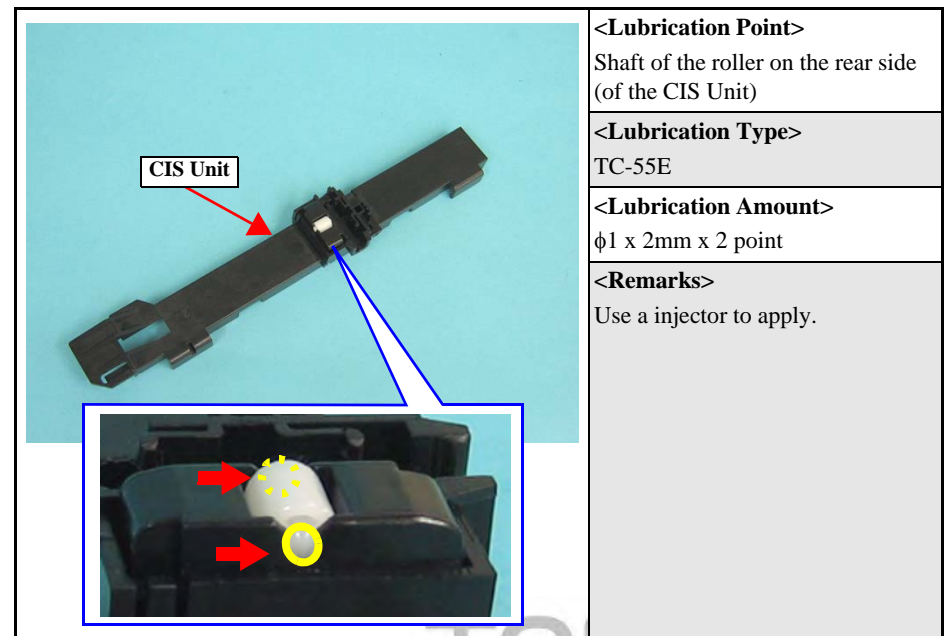


Figure 6-5. Lubrication on CIS Unit

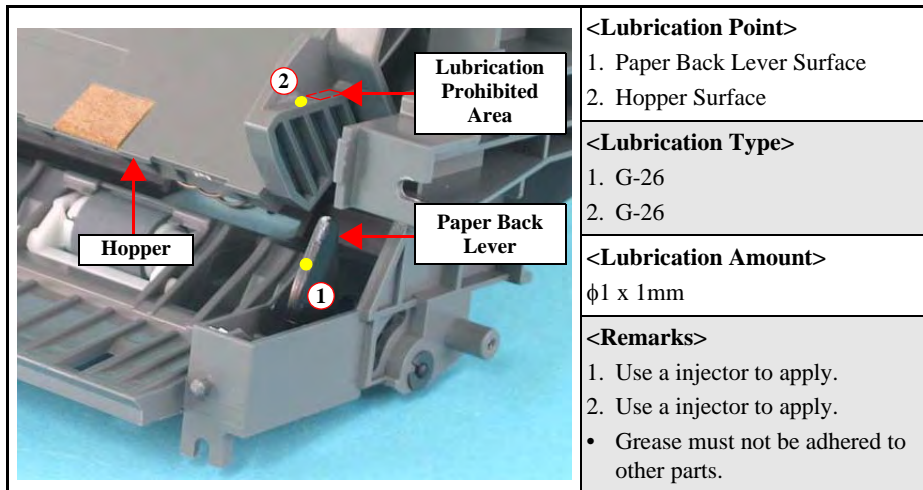


Figure 6-6. Lubrication on ASF Unit

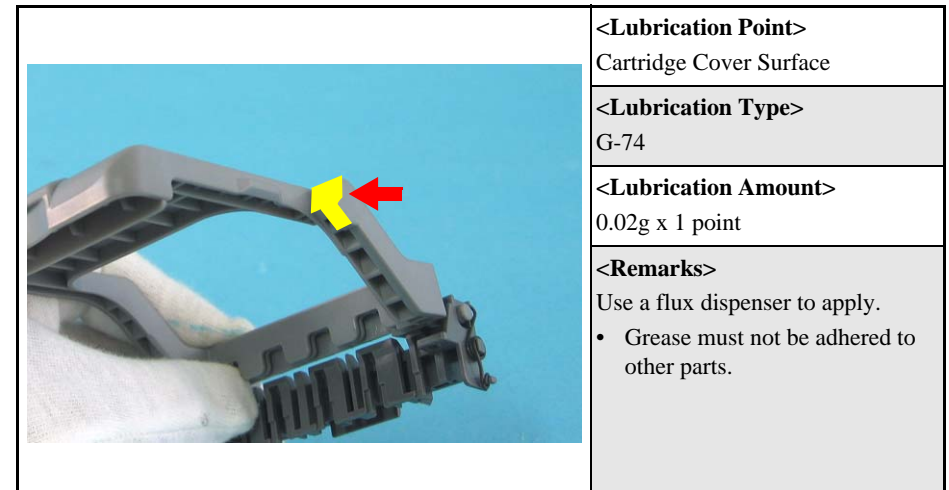


Figure 6-8. Lubrication on Carriage Unit (2)

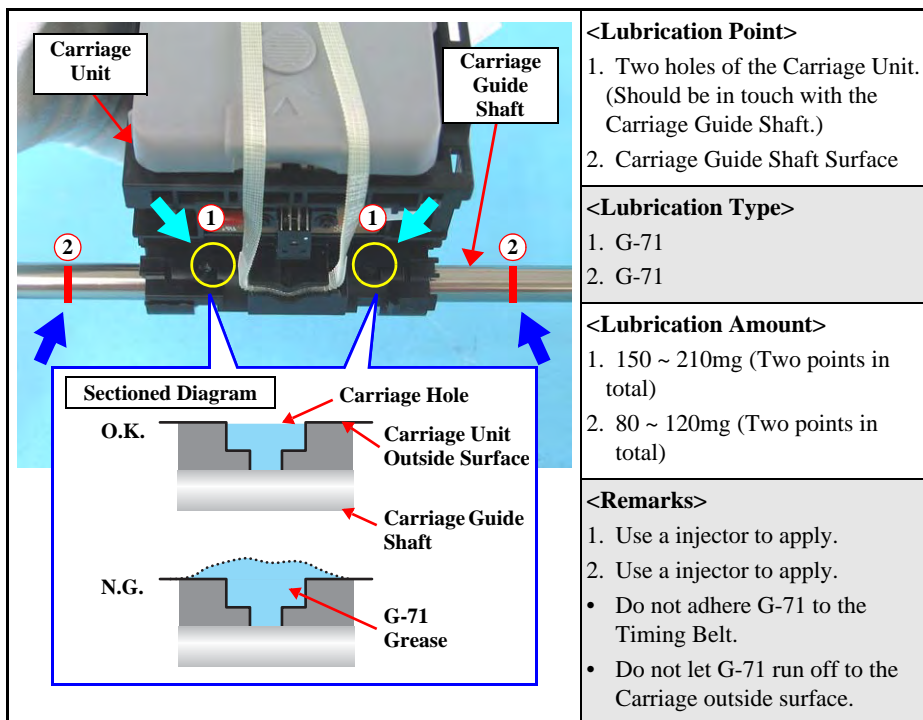


Figure 6-7. Lubrication on Carriage Unit (1)

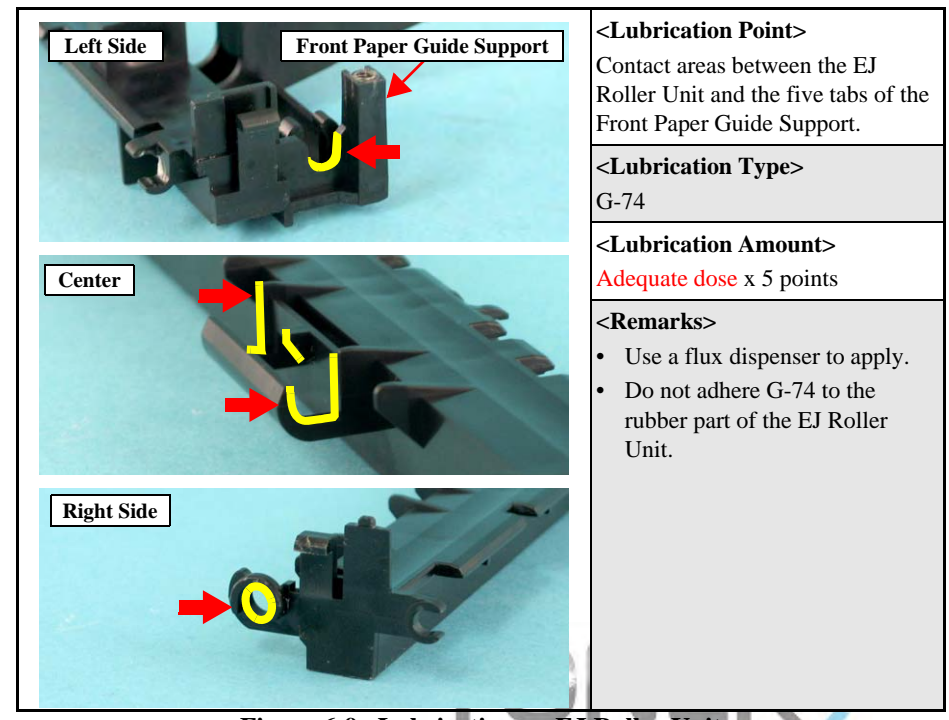


Figure 6-9. Lubrication on EJ Roller Unit

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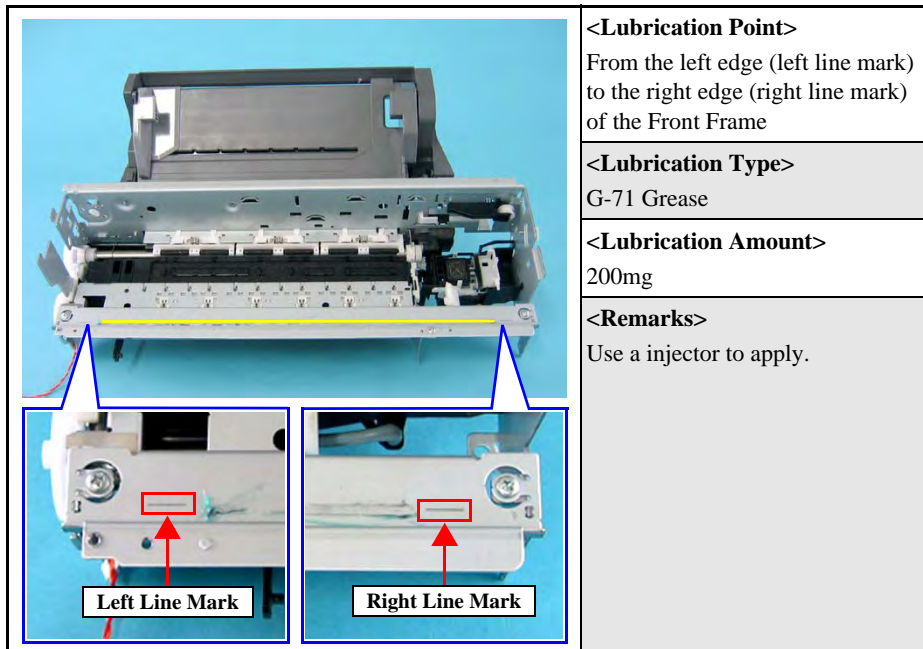


Figure 6-10. Lubrication on Front Frame

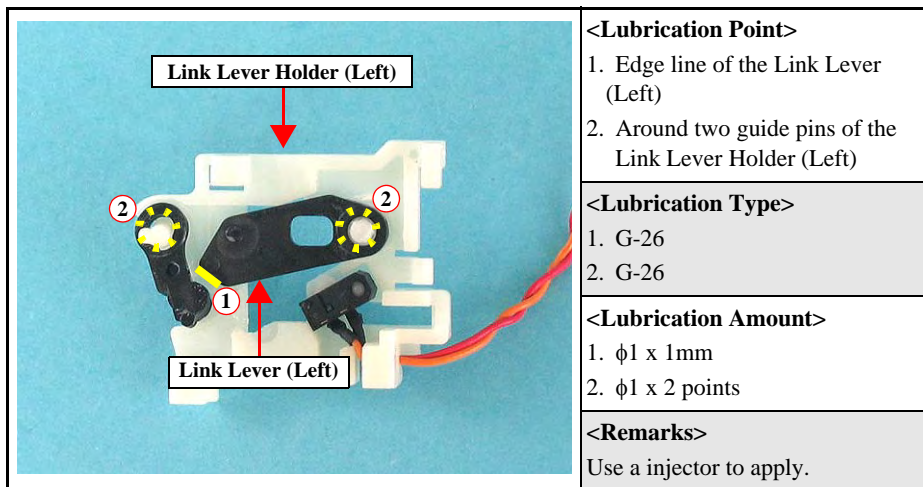


Figure 6-11. Lubrication on Link Lever (Left)

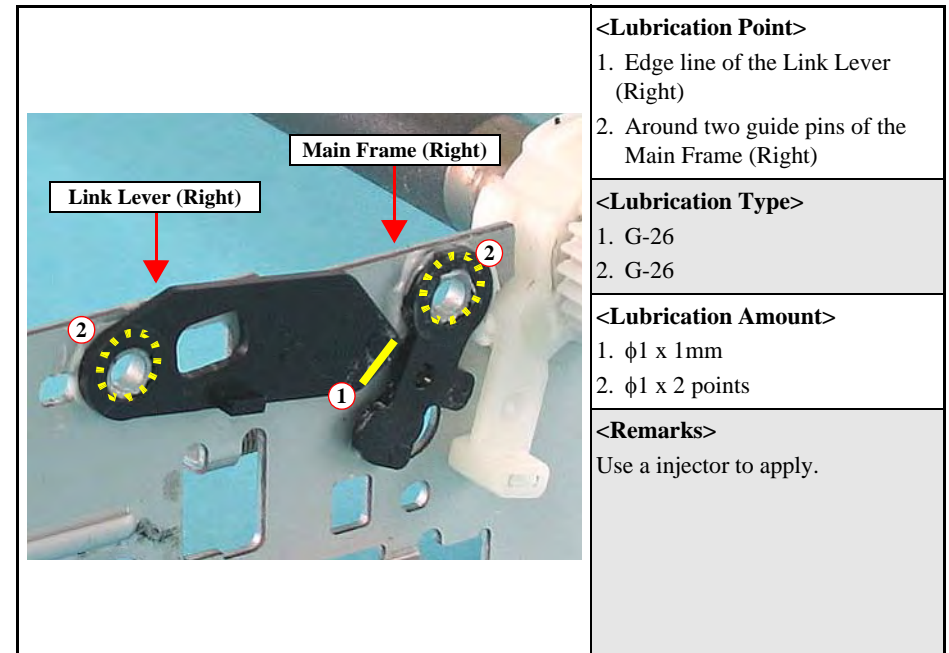


Figure 6-12. Lubrication on Link Lever (Right)

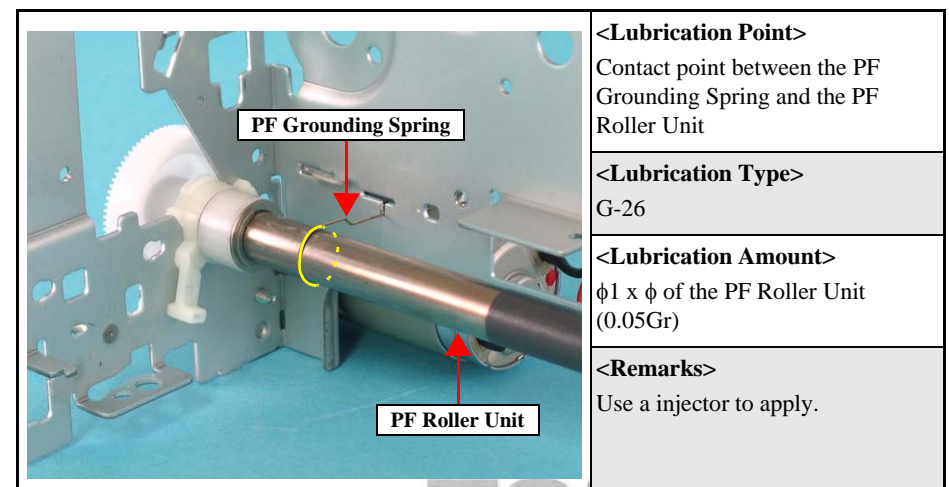
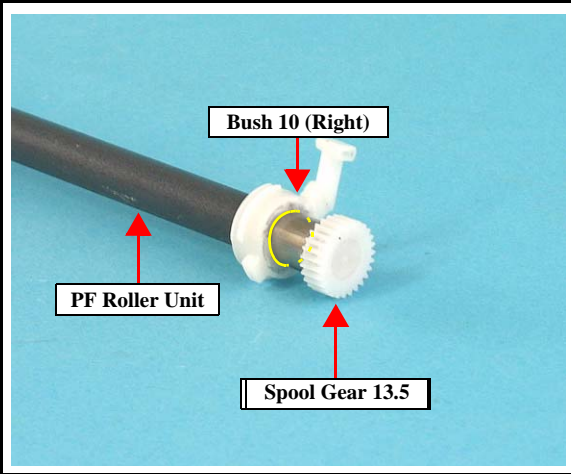


Figure 6-13. Lubrication on PF Roller Unit (1)



<Lubrication Point> Contact point between Bush 10 (Right) and PF Roller Unit
<Lubrication Type> G-26
<Lubrication Amount> φ1 x φ of the PF Roller Unit
<Remarks> Use a injector to apply. <ul style="list-style-type: none">Do not adhere G-26 to Spool Gear 13.5.

Figure 6-14. Lubrication on PF Roller Unit (2)

CHAPTER

7

APPENDIX



7.1 Connector Summary

7.1.1 Major Component Unit

The major component units of this printer are as follows:

- Main Board (ASSY SP MAIN BOARD 8808)
- Power Supply Board (ASSY SP POWER SUPPLY 8808)
- Panel Board (ASSY SP PANEL BOARD 8808)
- Fax board (ASSY SP FAX BOARD 8808)

The figure below shows how to connect these components.

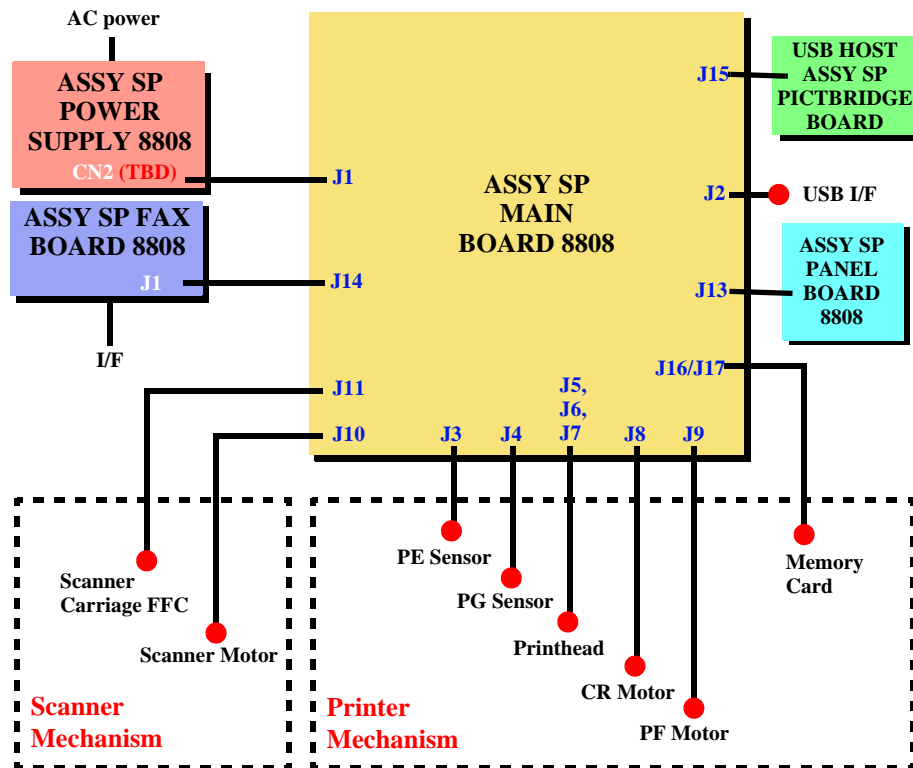


Figure 7-1. Connection of the Major Components

See the following tables for the connector summary for ASSY SP MAIN BOARD 8808 and each connector's pin alignment.

Table 7-1. Connector Summary for ASSY SP MAIN BOARD 8808

Connector	Function	Table to refer to
J1	For connection with the Power Supply Board	Table 7-2 (p.220)
J2	For connection with the USB interface	"1.3.1 USB Interface" (p.22)
J3	For connection with the PE Sensor	Table 7-3 (p.221)
J4	For connection with the PG Sensor	Table 7-4 (p.221)
J5 to J7	For connection with the Printhead	Table 7-5 (p.221), Table 7-6 (p.221), Table 7-7 (p.222)
J8	For connection with the CR Motor	Table 7-8 (p.222)
J9	For connection with the PF Motor	Table 7-9 (p.222)
J10	For connection with the Scanner Motor	Table 7-10 (p.222)
J11	For connection with the Scanner Carriage FFC	Table 7-11 (p.222)
J13	For connection with the Panel Board	Table 7-12 (p.223)
J14	For connection with the Fax Board	Table 7-13 (p.223)
J15	For connection with the USB Host I/F Board	Table 7-14 (p.223), Table 7-15 (p.224)
J16/J17	For connection with the Memory Card	Table 7-15 (p.224)

Table 7-2. J1 - ASSY SP POWER SUPPLY 8808

Pin	Signal Name	I/O	Function
1	VCC	—	+42V
2	PSC	I	Power supply control
3	GND	—	Ground

Table 7-3. J3 - PE Sensor

Pin	Signal Name	I/O	Function
1	PE	I	PE Sensor signal
2	GND	—	Ground
3	PEV	—	Power supply for PE Sensor

Table 7-4. J4 - PG Sensor

Pin	Signal Name	I/O	Function
1	PG	I	PG Sensor signal
2	GND	—	Ground

Table 7-5. J5 - Printhead

Pin	Signal Name	I/O	Function
1	PH_THM	I	Head temperature signal
2	PH_Y	O	Print data output for Yellow nozzles
3	VCC	—	+3.3V
4	PH_K	O	Print data output for black nozzles
5	GND	—	Ground
6	PH_NCHG	O	All nozzle fire selection pulse
7	GND	—	Ground
8	PH_LAT	O	Head data latch pulse output
9	GND	—	Ground
10	GND	—	Ground
11	COM	O	Head drive pulse (trapezoid waveform)
12	GND	—	Ground
13	COM	O	Head drive pulse (trapezoid waveform)

Table 7-6. J6 - Printhead

Pin	Signal Name	I/O	Function
1	GND	—	Ground
2	COM	O	Head drive pulse (trapezoid waveform)
3	GND	—	Ground
4	COM	O	Head drive pulse (trapezoid waveform)
5	VCC	O	+42V power supply for nozzle selector
6	GND	—	Ground
7	PH_CLK	—	Serial clock
8	GND	—	Ground
9	PH_CH	O	Charge signal for the trapezoidal wave-form
10	VCC	—	+3.3V
11	PH_M	O	Print data output for Magenta nozzles
12	GND	—	Ground
13	PH_C	O	Print data output for cyan nozzles

Table 7-7. J7 - Printhead

Pin	Signal Name	I/O	Function
1	PH_COI	I	Cartridge detect signal
2	PH_CSDA	I/O	CSIC transmit and receive data
3	PH_CRST	O	Reset signal for address counter of CSIC
4	GND	—	Ground
5	PH_CVDD	O	Power supply for CSIC
6	PH_CSCK	I/O	Clock signal for CSIC read/write
7	GND	—	Ground
8	GND	—	Ground
9	ENCA	I	Encoder feed back signal ch.A
10	EVDD	—	Power for CR Encoder
11	ENCB	I	Encoder feed back signal ch.B
12	GND	—	Ground
13	CARRIER_SENSOR	I	PW Sensor signal
14	GND	—	Ground
15	VCC	—	Power supply for PW sensor

Table 7-8. J8 - CR Motor

Pin	Signal Name	I/O	Function
1	PMOUT1A	O	CR Motor drive signal (A)
2	PMOUT1B	O	CR Motor drive signal (B)

Table 7-9. J9 - PF Motor

Pin	Signal Name	I/O	Function
1	PMOUT2A	O	PF Motor drive signal (A)
2	PMOUT2B	O	PF Motor drive signal (B)

Table 7-10. J10 - Scanner Motor

Pin	Signal Name	I/O	Function
1	PMOUT3A	O	Phase drive signal (-A)
2	PMOUT3B	O	Phase drive signal (B)
3	PMOUT4A	O	Phase drive signal (A)
4	PMOUT4B	O	Phase drive signal (-B)

Table 7-11. J11 - Scanner Carriage

Pin	Signal Name	I/O	Function
1	LED_Power	—	Power supply for LED
2	LED B	O	LED cathode (Blue)
3	LED G	O	LED cathode (Green)
4	LED R	O	LED cathode (Red)
5	VDD	—	Power supply for 5V_SW (digital)
6	GND	—	Ground
7	CIS_SP	O	Start Pulse
8	CIS_DT_RS	I/O	Reset Pulse
9	CIS_CLK	O	Master Clock
10	GND	—	Ground
11	VAD	—	Power supply for filtered 5V_SW (analog)
12	CIS_Vout	I	Signal OUT

Table 7-12. J13 - ASSY SP PANEL BOARD 8808

Pin	Signal Name	I/O	Function
1	POWER_ON	O	Power On signal
2	Output enable	O	Output enable signal
3	SW_5V	I	+5 V
4	VCC	—	+3.3 V
5	Card_LED	I	Card LED control
6	PSDO	O	Serial data output for LED control
7	PLAT	O	Switch data load signal and LED data latch signal
8	GND	—	Ground
9	PSCLK	O	Shift clock for serial data I/O
10	PSDI	O	Switch data serial data input

Table 7-13. J14 - ASSY SP FAX BOARD 8808

Pin	Signal Name	I/O	Function
1	GND	—	Ground
2	SW_5V	I	+5 V
3	GND	—	Ground
4	VCC	—	+3.3 V
5	VCC	—	+3.3 V
6	RESETn	O	Reset
7	GND	—	Ground
8	FAX_IRQ	I	Fax Interrupt Request
9	SBD7	I/O	System Data Bus (7)
10	SBD6	I/O	System Data Bus (6)
11	SBD5	I/O	System Data Bus (5)
12	SBD4	I/O	System Data Bus (4)

Table 7-13. J14 - ASSY SP FAX BOARD 8808

Pin	Signal Name	I/O	Function
13	SBD3	I/O	System Data Bus (3)
14	SBD2	I/O	System Data Bus (2)
15	SBD1	I/O	System Data Bus (1)
16	SBD0	I/O	System Data Bus (0)
17	SBA6	O	System Address Bus (6)
18	SBA5	O	System Address Bus (5)
19	SBA4	O	System Address Bus (4)
20	SBA3	O	System Address Bus (3)
21	SBA2	O	System Address Bus (2)
22	SBA1	O	System Address Bus (1)
23	SBA0	O	System Address Bus (0)
24	FAX_CS _n	O	Fax Chip Select signal
25	SBWR _n	O	TBD
26	SBRD _n	O	TBD

Table 7-14. J15 - USB HOST ASSY SP PICTBRIDGE BOARD

Pin	Signal Name	I/O	Function
1	USB_Pow	O	Power supply
2	HDM	O	Data-
3	HDP	O	Data+
4	GND	—	Ground
5	GND	—	Ground



Table 7-15. J16 - Memory Card

Pin	Signal Name	I/O	Function
1	SM_GND	—	Ground
2	SM_CLE	O	Command latch enable signal
3	SM_ALE	O	Address latch enable signal
4	SM/WE	O	Write enable signal
5	SM/WP	—	Ground
6	SM_D0	I/O	SSFDC data (Bit 0)
7	SM_D1	I/O	SSFDC data (Bit 1)
8	SM_D2	I/O	SSFDC data (Bit 2)
9	SM_D3	I/O	SSFDC data (Bit 3)
10	SM_GND	—	Ground
11	SM_CD	I	Card detect signal
12	SM_VCC	—	Power supply for Smart Media
13	SM_D4	I/O	SSFDC data (Bit 4)
14	SM_D5	I/O	SSFDC data (Bit 5)
15	SM_D6	I/O	SSFDC data (Bit 6)
16	SM_D7	I/O	SSFDC data (Bit 7)
17	SM_LVD	—	Not connected
18	SM_GND	—	Ground
19	SM_R/-B	I	TBD
20	SM/RE	O	TBD
21	SM/CE	O	Chip enable signal
22	SM_VCC	—	Power supply for Smart Media
23	MS_VSS	—	Ground
24	MS_BS	I	Serial protocol bus state signal
25	MS_VCC	—	Not connected

Table 7-15. J16 - Memory Card

Pin	Signal Name	I/O	Function
26	MS_SDIO	I/O	Serial protocol data signal
27	MS_DADT2	—	Not connected
28	MS_INS	O	Serial protocol data signal
29	MS_DADTA3	—	Not connected
30	MS_SCLK	I	Clock
31	MS_VCC	—	Power supply for Memory Stick
32	MS_VSS	—	Ground
33	SD_CD/DATA3	I/O	Card Detect /Data Line (Bit 3)
34	SD_CMD	O	Command/Response
35	SD_VSS1	—	Ground
36	SD_VDD	—	Power supply for Memory Card
37	SD_CLK	O	Clock
38	SD_VSS2	—	Ground
39	SPI_DATA0	I/O	TBD
40	SD_DADTA1	—	Not connected
41	SD_DADT2	—	Not connected
42	XD_GND	—	Not connected
43	XD_CD	I	Card detect signal
44	XD_R/-B	I	TBD
45	XD_/RE	O	TBD
46	XD_/CE	O	Chip enable signal
47	XD_CLE	O	Command latch enable signal
48	XD_ALE	O	Address latch enable signal
49	XD_WE	O	Write enable signal
50	XD_/WP	—	Ground

Table 7-15. J16 - Memory Card

Pin	Signal Name	I/O	Function
51	XD_GND	—	Ground
52	XD_D0	I/O	XD data (Bit 0)
53	XD_D1	I/O	XD data (Bit 1)
54	XD_D2	I/O	XD data (Bit 2)
55	XD_D3	I/O	XD data (Bit 3)
56	XD_D4	I/O	XD data (Bit 4)
57	XD_D5	I/O	XD data (Bit 5)
58	XD_D6	I/O	XD data (Bit 6)
59	XD_D7	I/O	XD data (Bit 7)
60	XD_VCC	—	Power supply for xD-Picture Card
61	XD_VCC	—	Power supply for xD-Picture Card
62	SM_CD1(GND)	—	Ground
63	SM_CD2(CD_SW)	I	TBD
64	SM_WP1(GND)	—	Ground
65	SM_WP2(WP_SW)	I	TBD
66	SD_CD	I	TBD
67	SD_CD_PW(GND)	—	Ground
68	SD_WP	I	TBD
69	SD_IO(GND)	—	Ground

Table 7-16. J17 - Memory Card

Pin	Signal Name	I/O	Function
1	GND	—	Ground
2	D03	I/O	Data bus for CF slot (3)
3	D04	I/O	Data bus for CF slot (4)
4	D05	I/O	Data bus for CF slot (5)
5	D06	I/O	Data bus for CF slot (6)
6	D07	I/O	Data bus for CF slot (7)
7	/CE1	O	Card enable signal
8	A10	O	Address bus for CF slot (10)
9	/OE	O	Output enable signal
10	A09	O	Address bus for CF slot (9)
11	A08	O	Address bus for CF slot (8)
12	A07	O	Address bus for CF slot (7)
13	VCC	O	Power supply for CompactFlash
14	A06	O	Address bus for CF slot (6)
15	A05	O	Address bus for CF slot (5)
16	A04	O	Address bus for CF slot (4)
17	A03	O	Address bus for CF slot (3)
18	A02	O	Address bus for CF slot (2)
19	A01	O	Address bus for CF slot (1)
20	A00	O	Address bus for CF slot (0)
21	D00	I/O	Data bus for CF slot (0)
22	D01	I/O	Data bus for CF slot (1)
23	D02	I/O	Data bus for CF slot (2)
24	WP	I	Write protect
25	/CD2	O	Card detect signal

Table 7-16. J17 - Memory Card

Pin	Signal Name	I/O	Function
26	/CD1	O	Card detect signal
27	D11	—	Not connected
28	D12	—	Not connected
29	D13	—	Not connected
30	D14	—	Not connected
31	D15	—	Not connected
32	/CE2	O	Card enable signal
33	/VS1	—	Not connected
34	I/ORD	O	I/O read
35	I/OWR	O	I/O write
36	/WE	O	Write enable signal
37	CFRDBS	O	Ready
38	VCC	O	Power supply for CompactFlash
39	/CSEL	—	TBD
40	VS2	—	Not connected
41	RESET	O	Reset
42	CFWAITN	O	Bus cycle extension
43	INPACK	—	+3.3 V
44	/REG	O	Address bus for CF slot (11)
45	BVD2	—	Not connected
46	BVD1	—	Not connected
47	D08	—	Not connected
48	D09	—	Not connected
49	D10	—	Not connected
50	GND	—	Ground

7.2 Exploded Diagram / Parts List

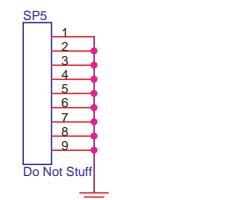
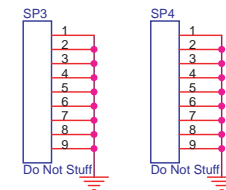
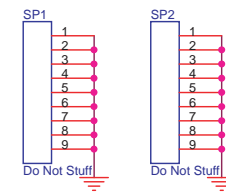
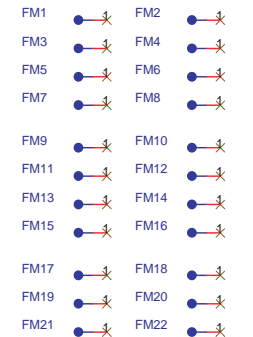
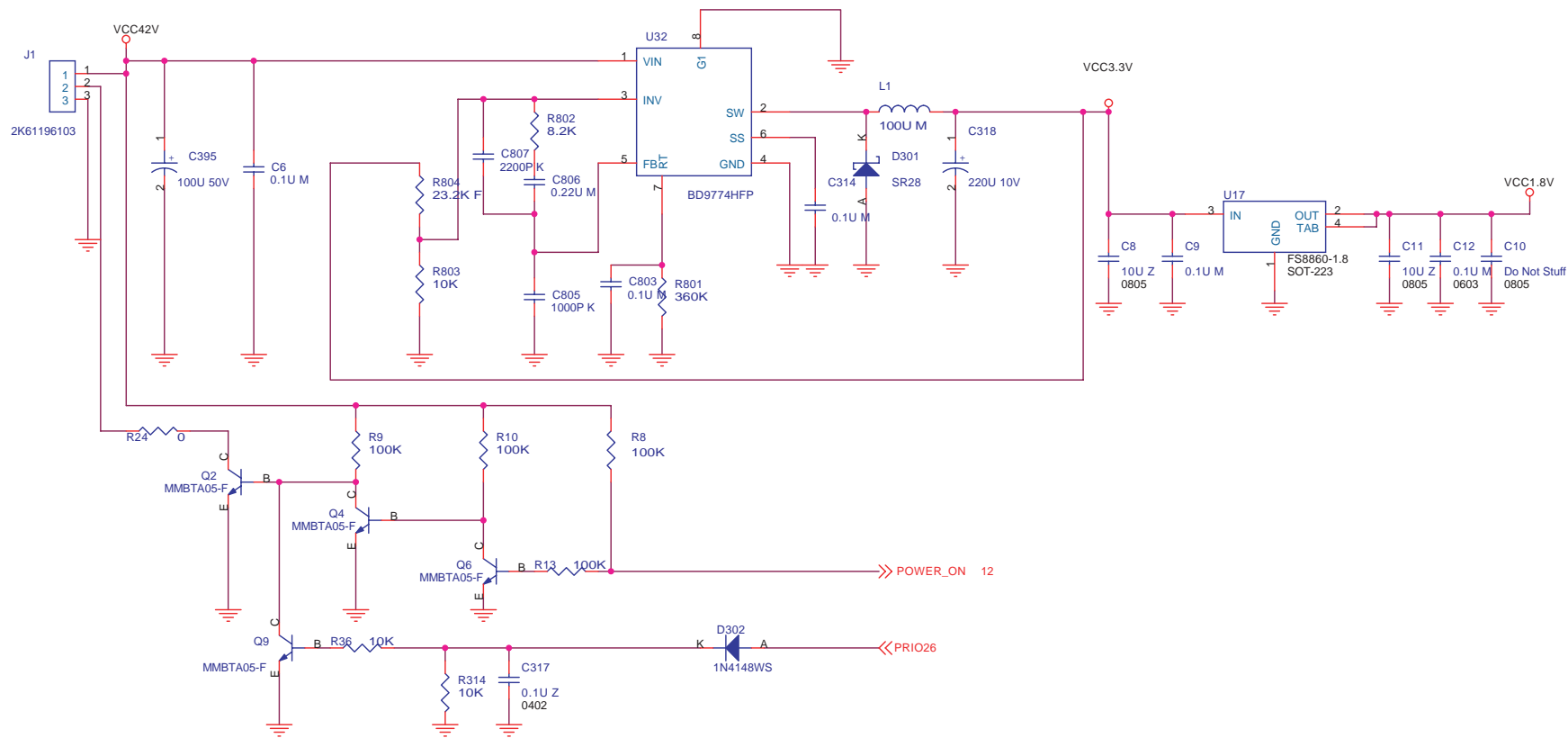
This manual does not provide exploded diagrams or parts list.
For the information, see SPI (Service Parts Information)

7.3 Electrical Circuits

The electric circuit diagrams below are shown at the following pages:

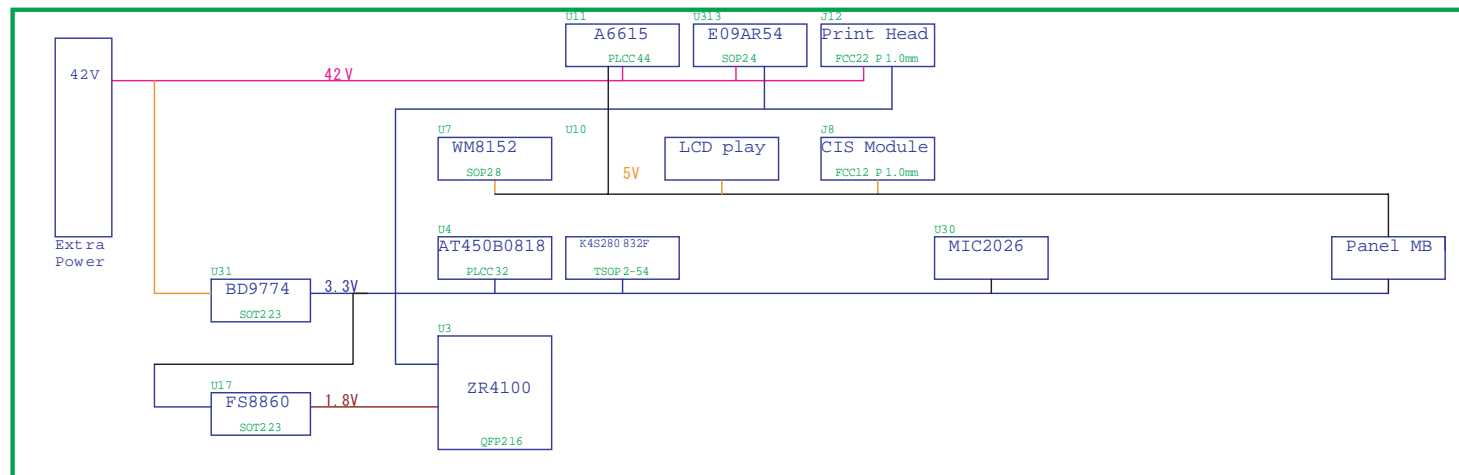
- ☐ ASSY SP MAIN BOARD 8808
- ☐ ASSY SP POWER SUPPLY 8808
- ☐ ASSY SP PANEL BOARD 8808
- ☐ ASSY SP FAX BOARD 8808
- ☐ ASSY SP CSIC BOARD
- ☐ ASSY SP PICTBRIDGE BOARD





SP1-SP5 is screw position point

Power Consumption Diagram









Make sure that all the planes have correct bypassing and at least one bypass cap close to VCC pins of each chip!!

VCC 3.3V

C31 0.1U 0402

C32 0.1U 0402

C33 0.1U 0402

C34 0.1U 0402

C35 0.1U 0402

C36 0.1U 0402

C37 0.1U 0402

C38 0.1U 0402

C39 0.1U 0402

C40 0.1U 0402

C41 0.1U 0402

C42 0.1U 0402

C43 0.1U 0402

C44 0.1U 0402

C45 0.1U 0402

C46 0.1U 0402

C47 0.1U 0402

#160 #172 #208

VCC 1.8V

C48 0.1U 0402

C49 0.1U 0402

C50 0.1U 0402

C51 0.1U 0402

C52 0.1U 0402

C53 0.1U 0402

C54 0.1U 0402

C55 0.1U 0402

C56 0.1U 0402

C57 0.1U 0402

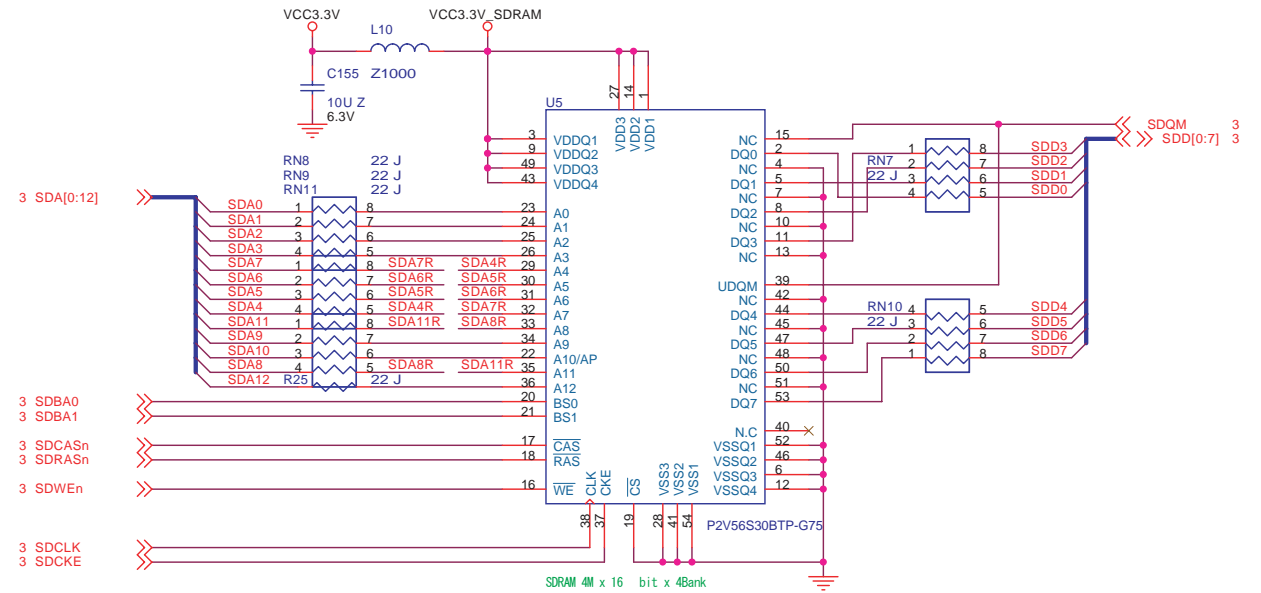
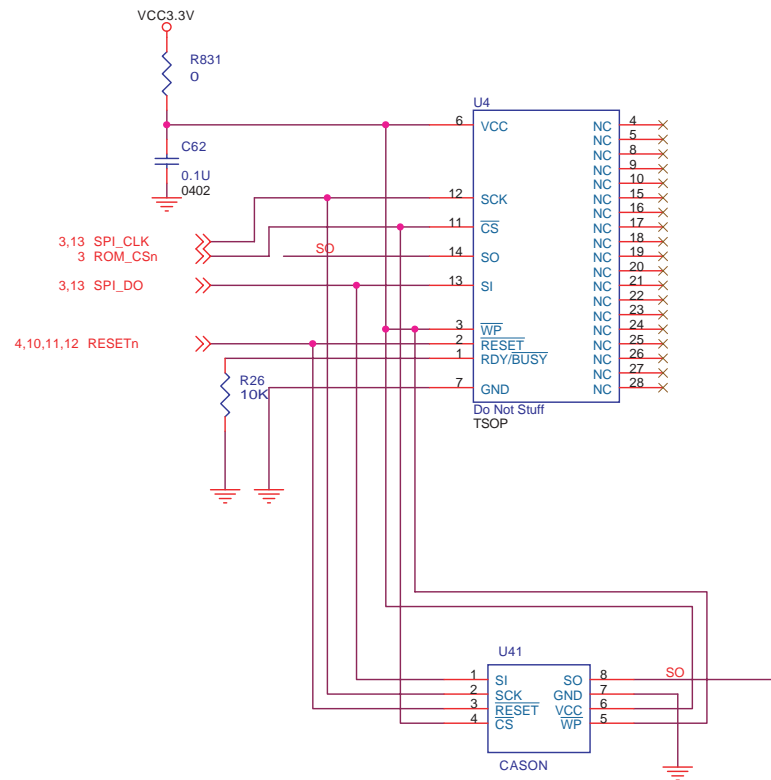
C58 0.1U 0402

C59 0.1U 0402

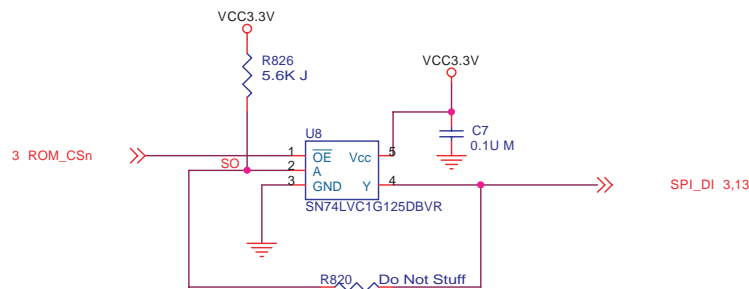
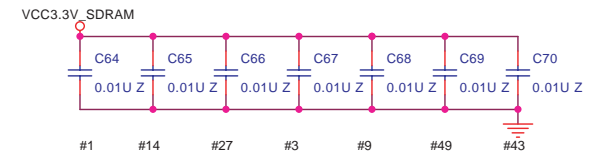
C60 0.1U 0402

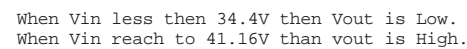
C61 0.1U 0402

#10 #30 #40 #50 #62 #74 #84 #180 #196 #205



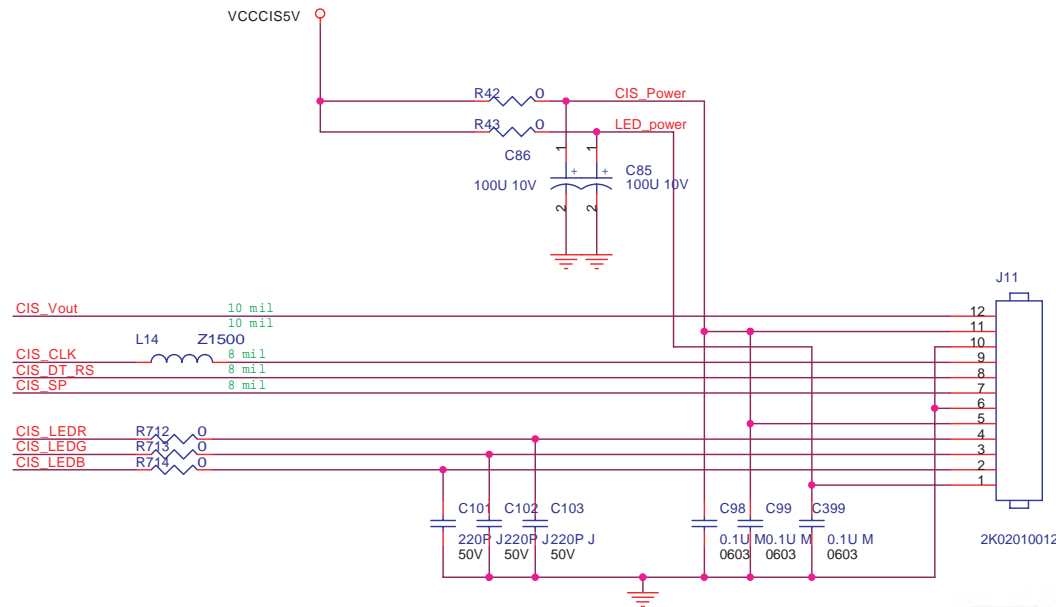
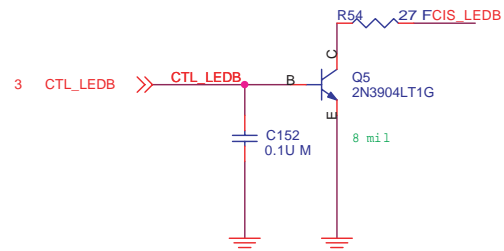
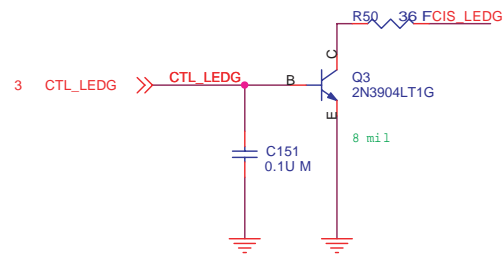
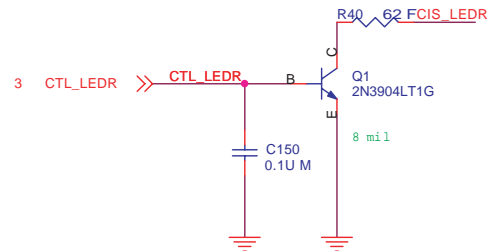
Close to SDRAM



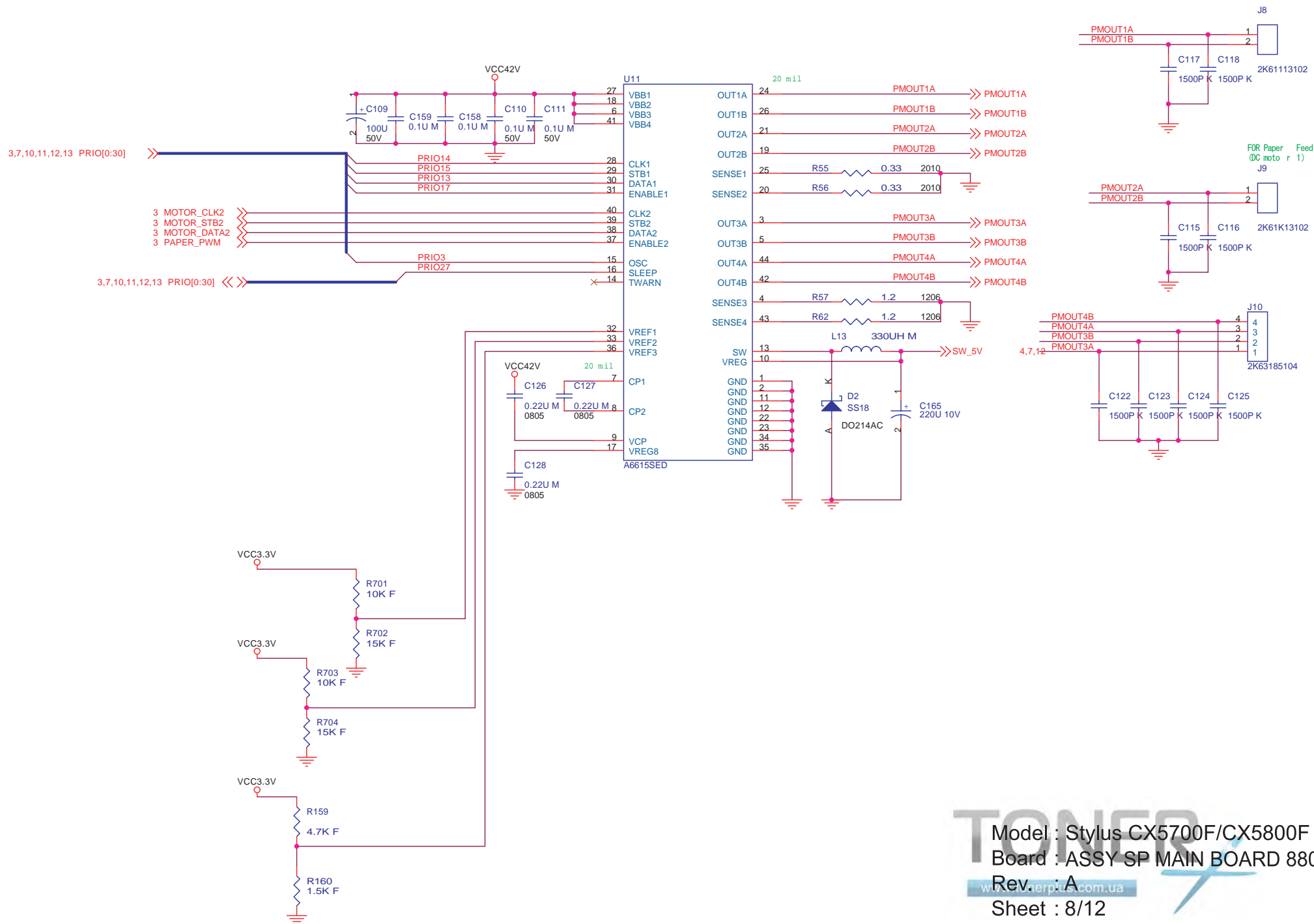


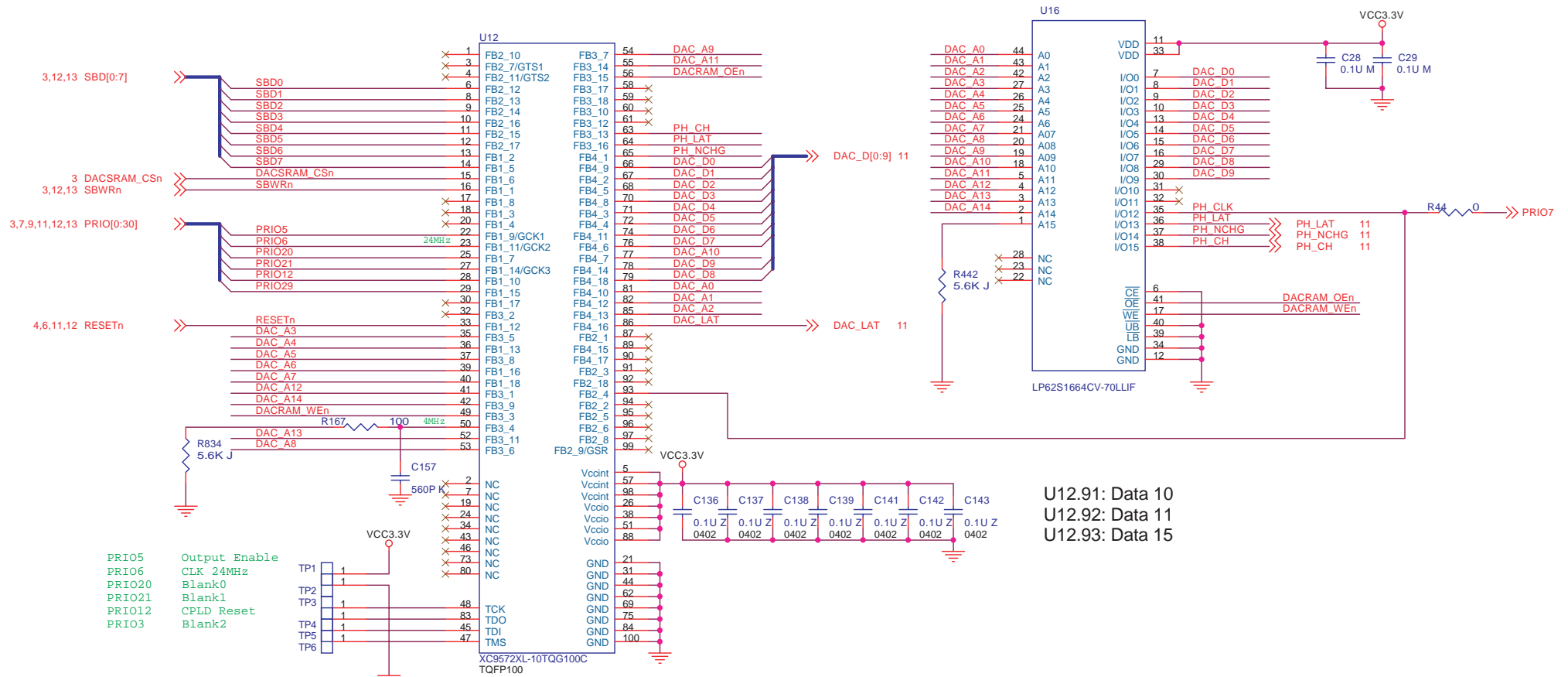
7 CIS_Vout << CIS_Vout

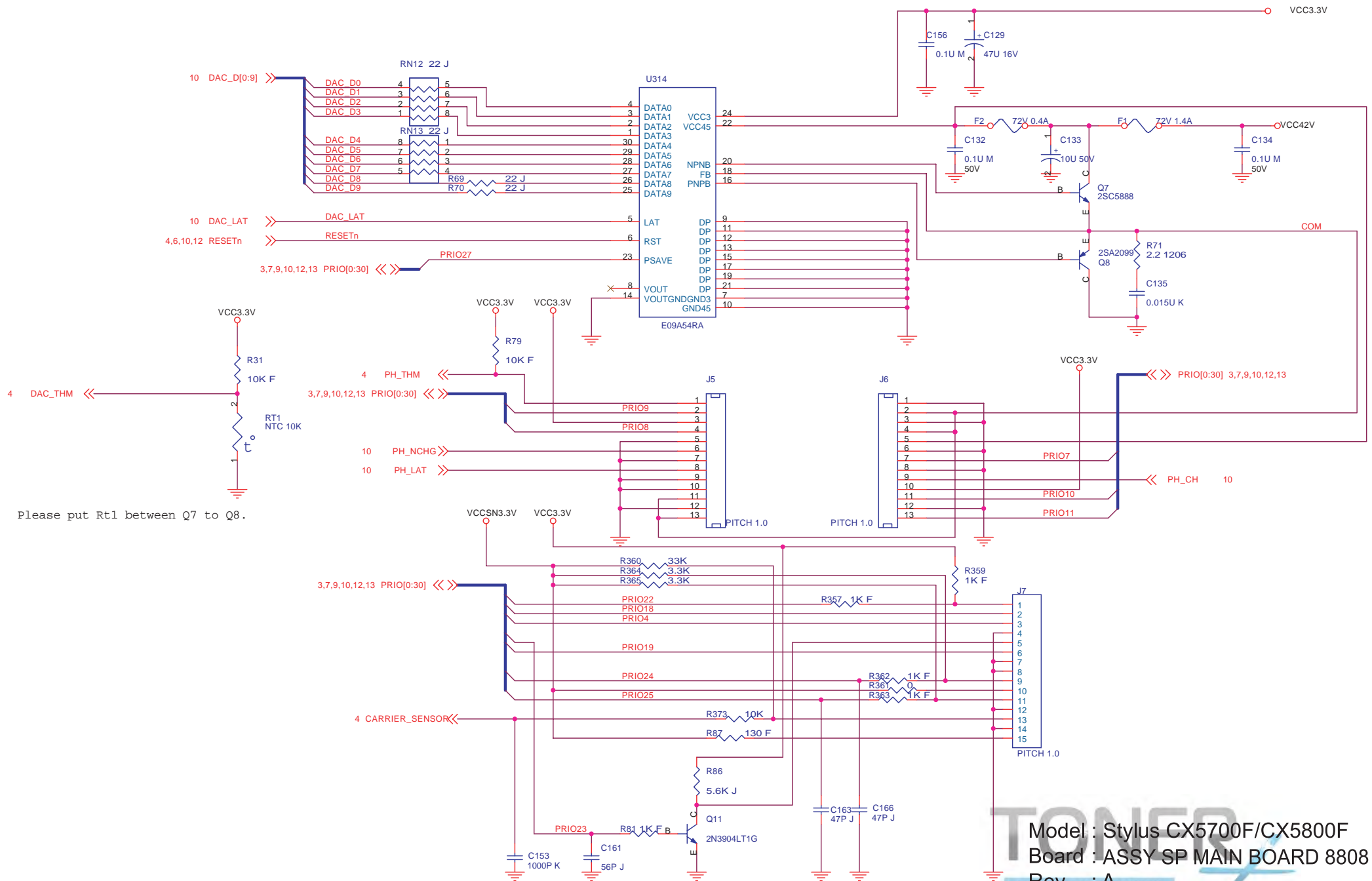
3 CIS_CLK << CIS_CLK
3 CIS_DT_RS << CIS_DT_RS
3 CIS_SP << CIS_SP



CIS pin definition		
No.	Symbol	Function
(1)	LEDA	LED Common Anode
(2)	LEDB	LED Pulse Blue
(3)	LEDG	LED Pulse Green
(4)	LEDR	LED Pulse Red
(5)	VDD	Digital Power 5V
(6)	GND	Ground
(7)	TR	Start Pulse
(8)	RS	Reset Pulse
(9)	M	Master Clock
(10)	GND	Ground
(11)	VAD	Analog Power 5V
(12)	Vout	Signal OUT

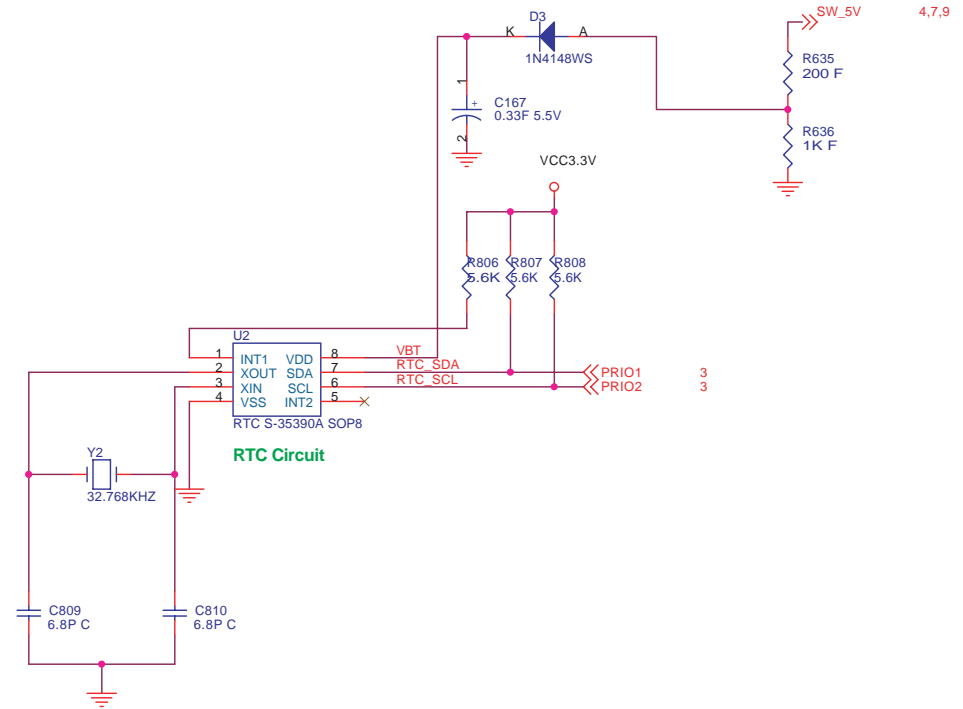
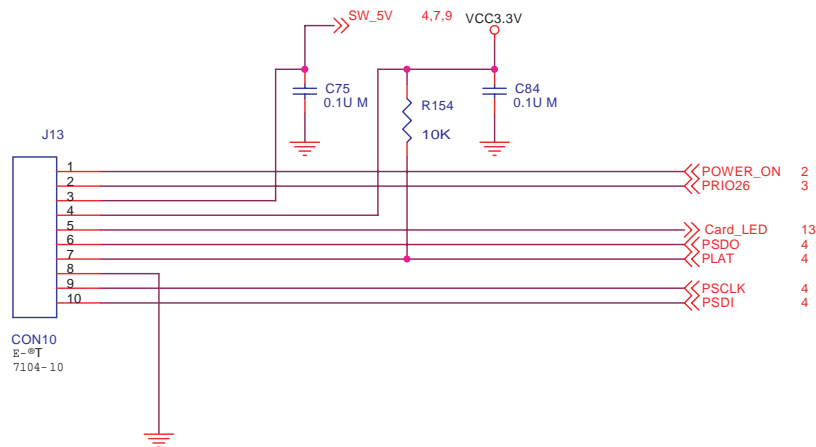
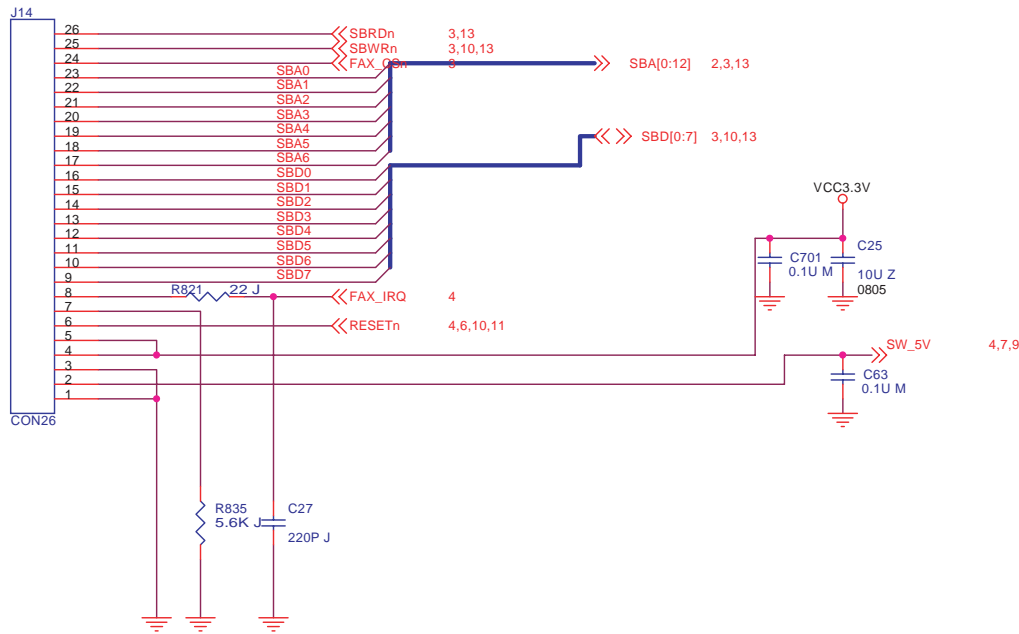




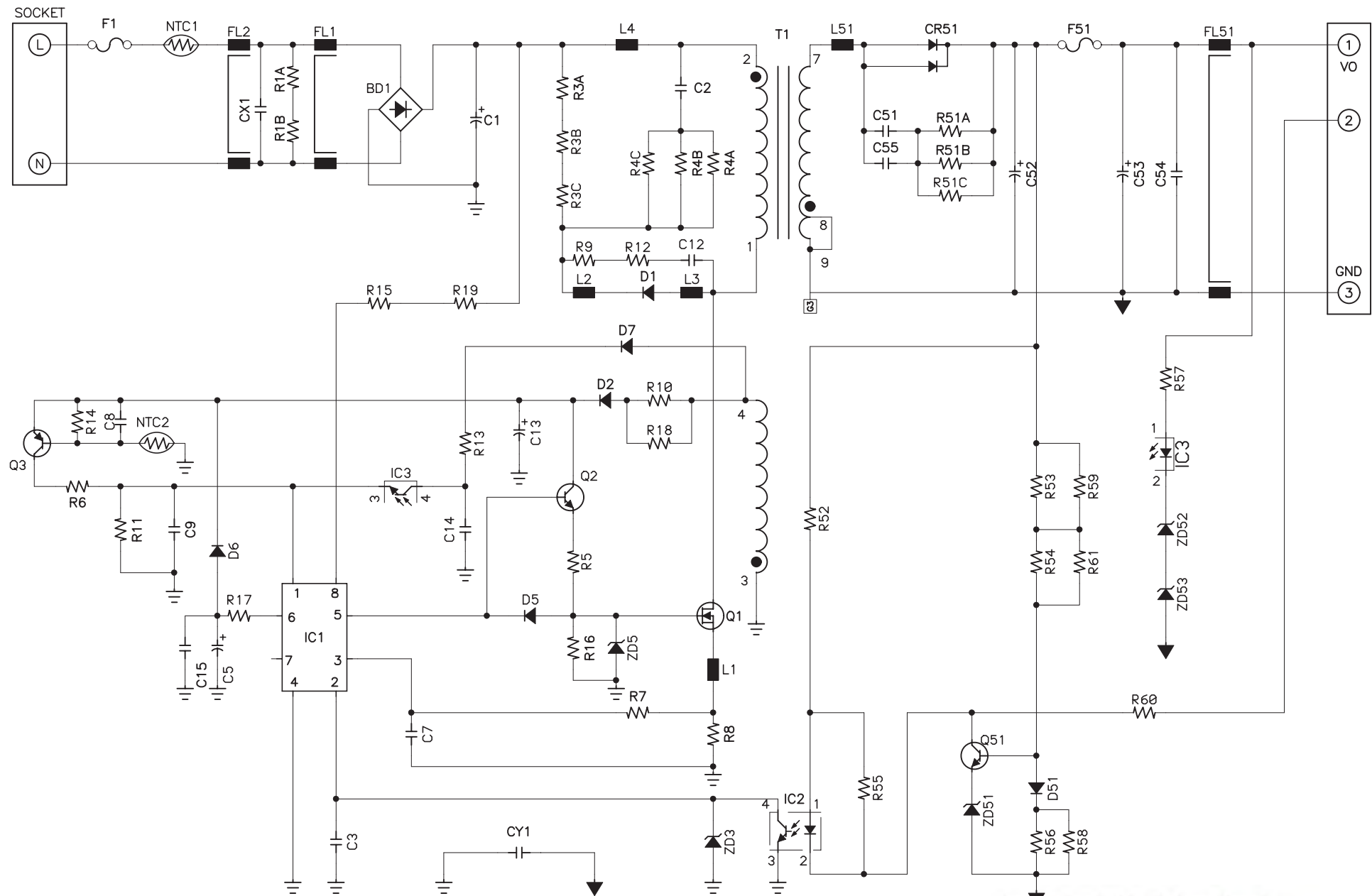


Form Panel Board

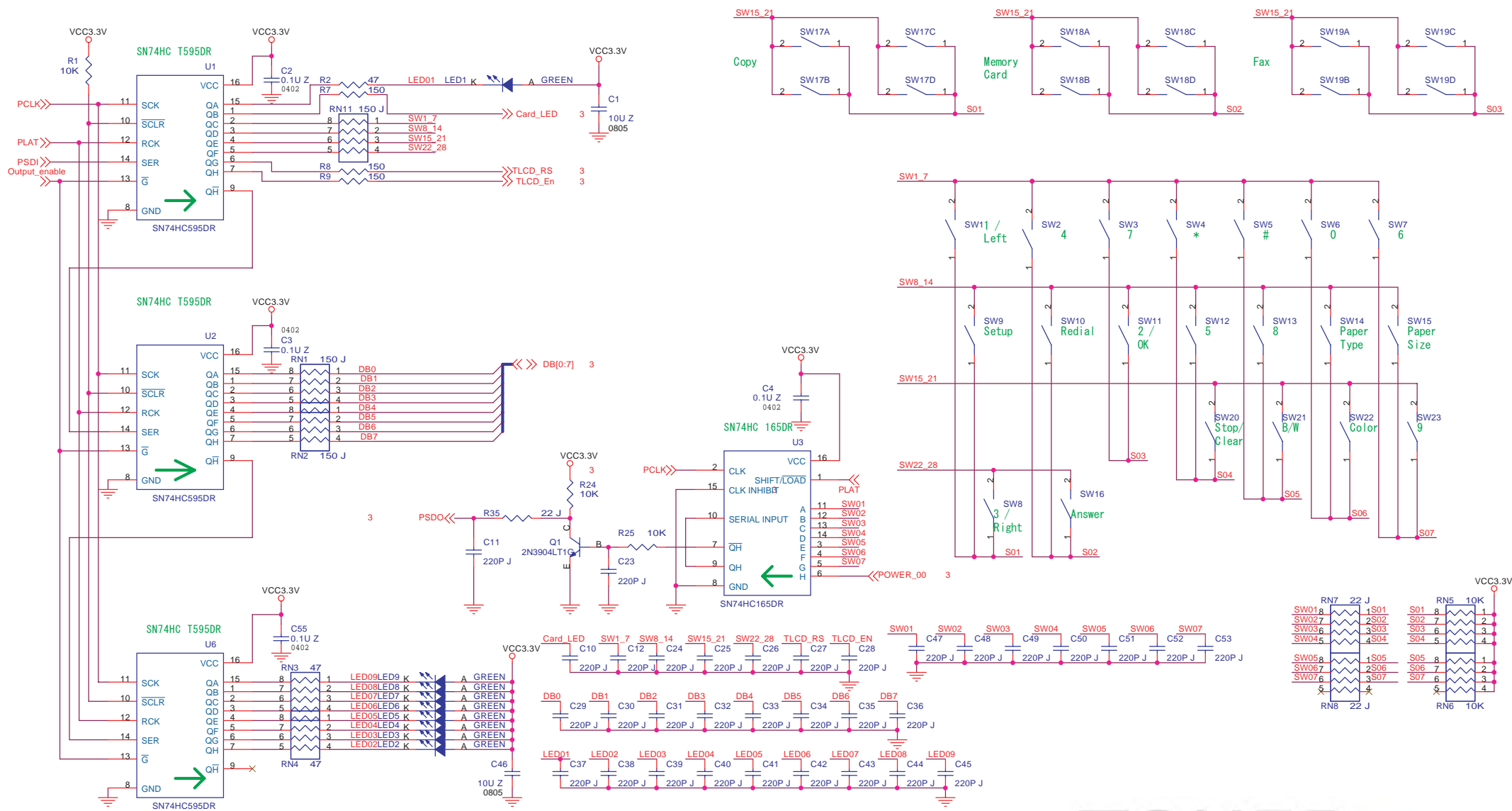
1. SWAP pin definition to match connector direction.



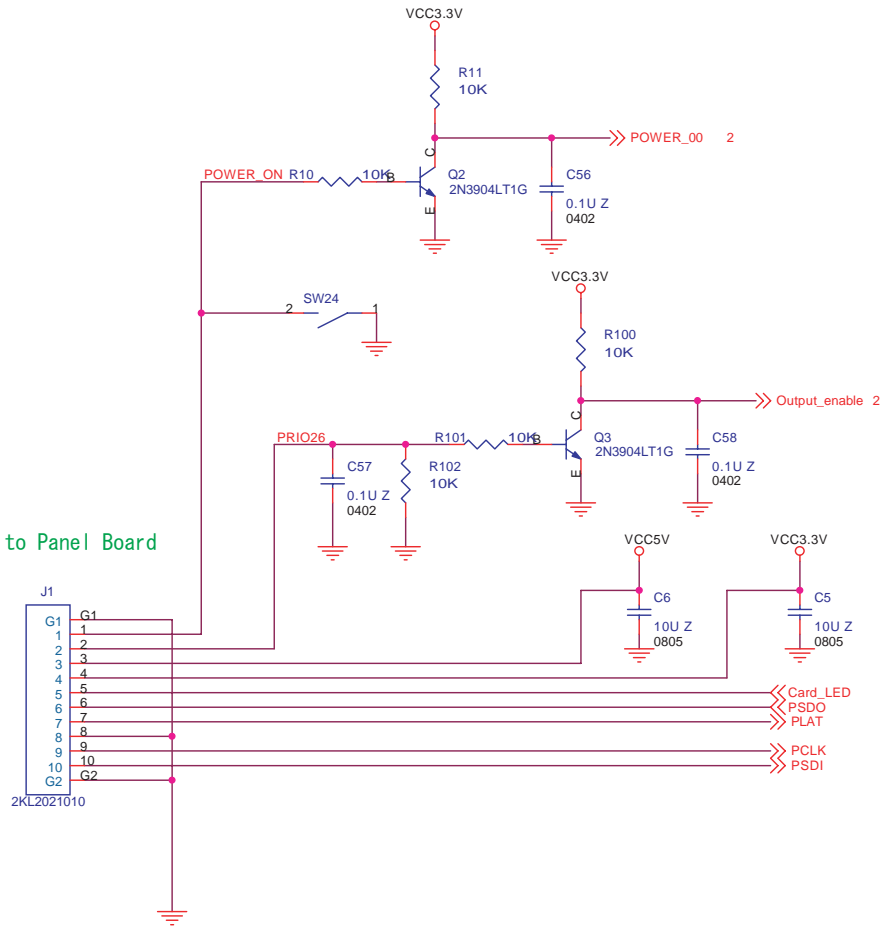
Model : Stylus CX5700F/CX5800F
Board : ASSY SP MAIN BOARD 8808
Rev. : A
Sheet : 12/12



Model : Stylus CX5700F/CX5800F
Board : ASSY SP POWER SUPPLY 8808
Rev. : A
Sheet : 1/1



Main board to Panel Board

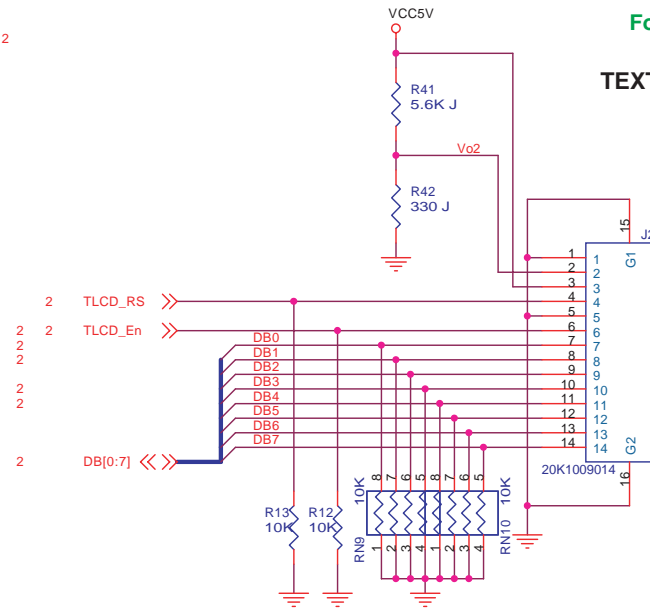


For TLCD Module FPType

TEXT MONO LCD I/F(For 16*1 line)

PIN DEFINITION

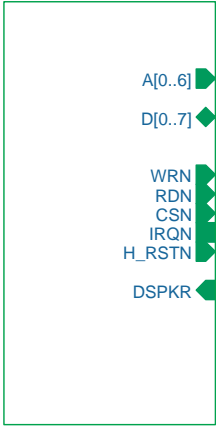
NO	Symbol	Function
1	Vss	GND
2	Vo	Contrast Adjustm ent
3	Vdd	Vdd 5V
4	RS	Register Select Sig nal
5	R/W	1:Read / 0:Wri te
6	E	Enable
7	DB0	Data Bus
8	DB1	Data Bus
9	DB2	Data Bus
10	DB3	Data Bus
11	DB4	Data Bus
12	DB5	Data Bus
13	DB6	Data Bus
14	DB7	Data Bus



PAGE 02 : PYTHON IC

PAGE 02 : PYTHON IC_3

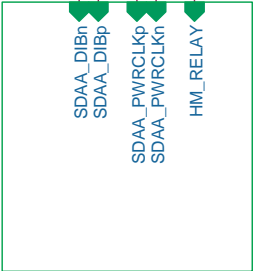
PAGE 03: HOST INTERFACE_3



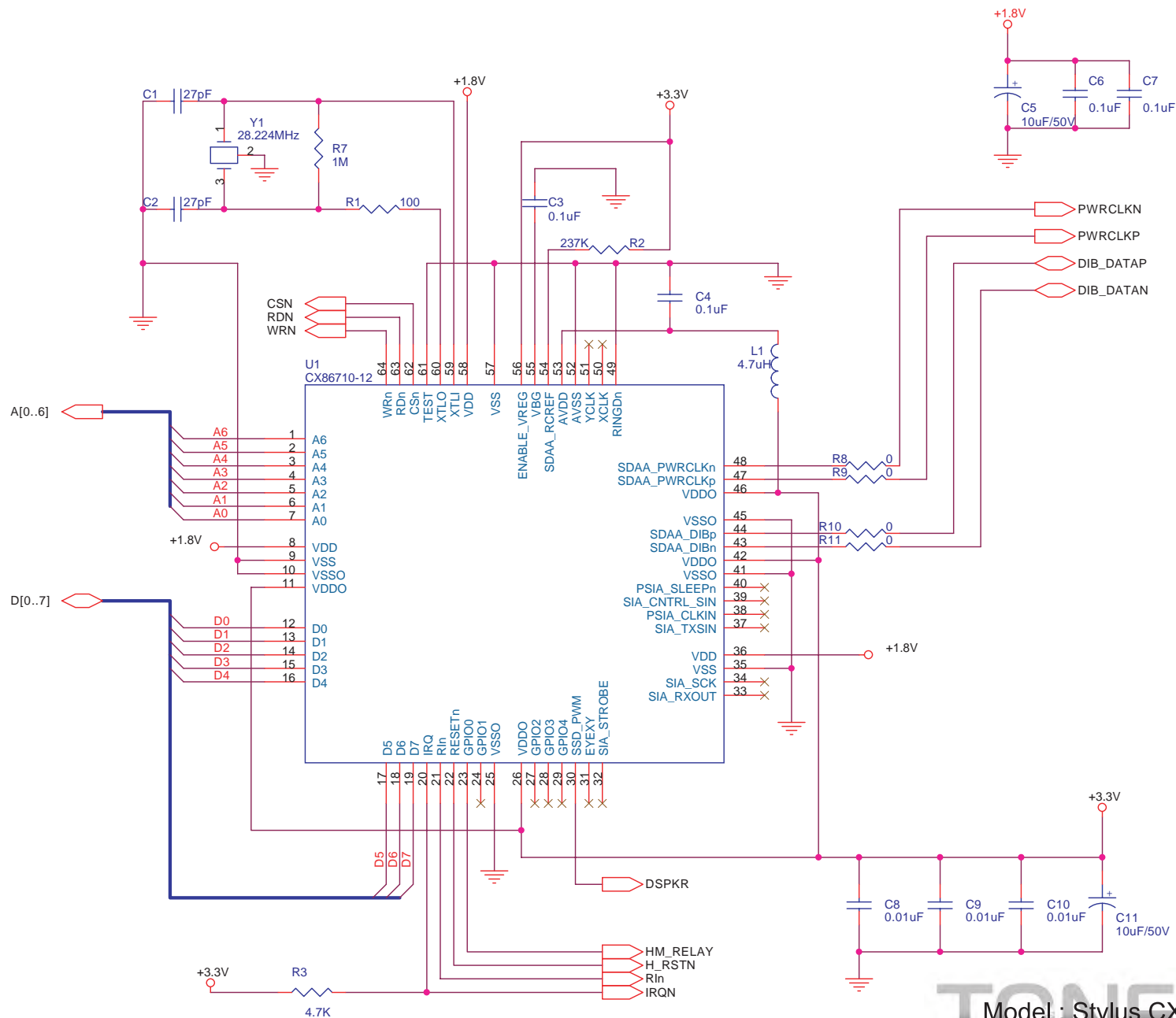
HOST



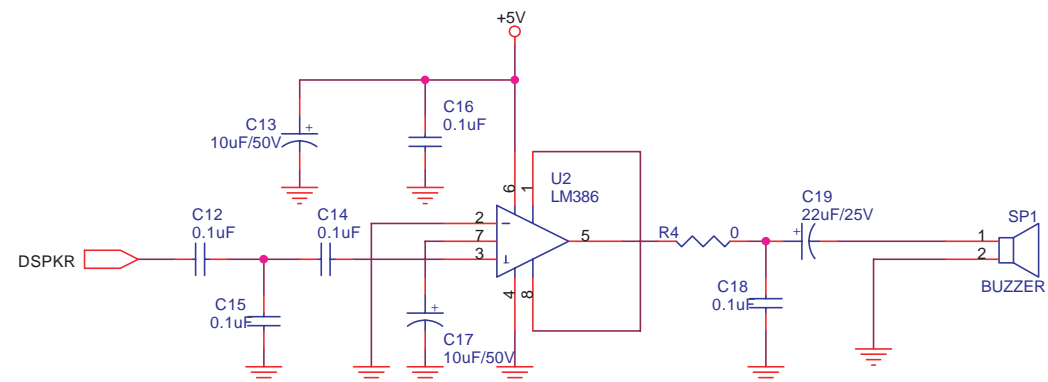
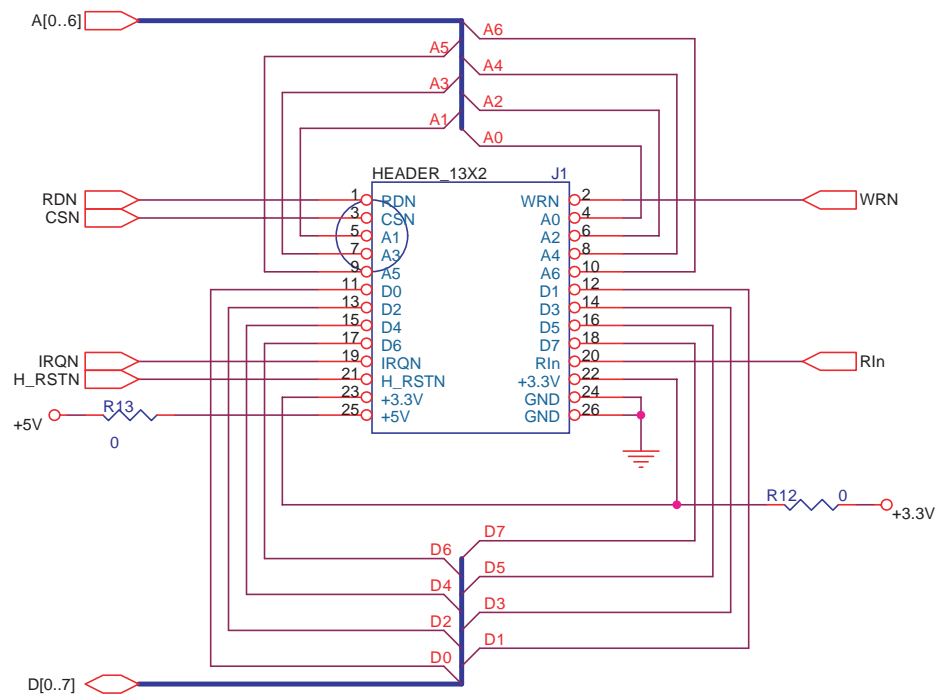
PAGE 04: Homer RD01-D590-051

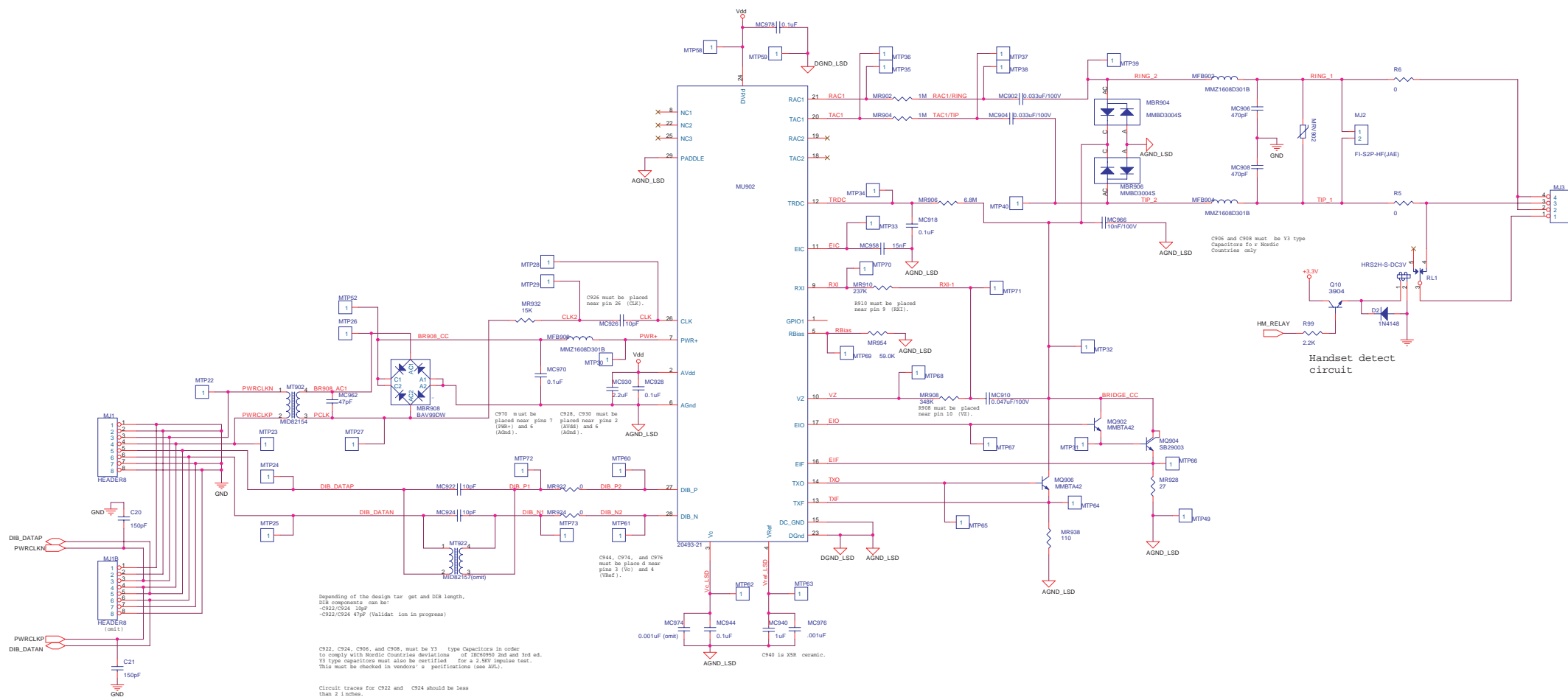


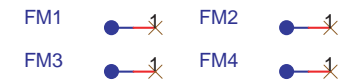
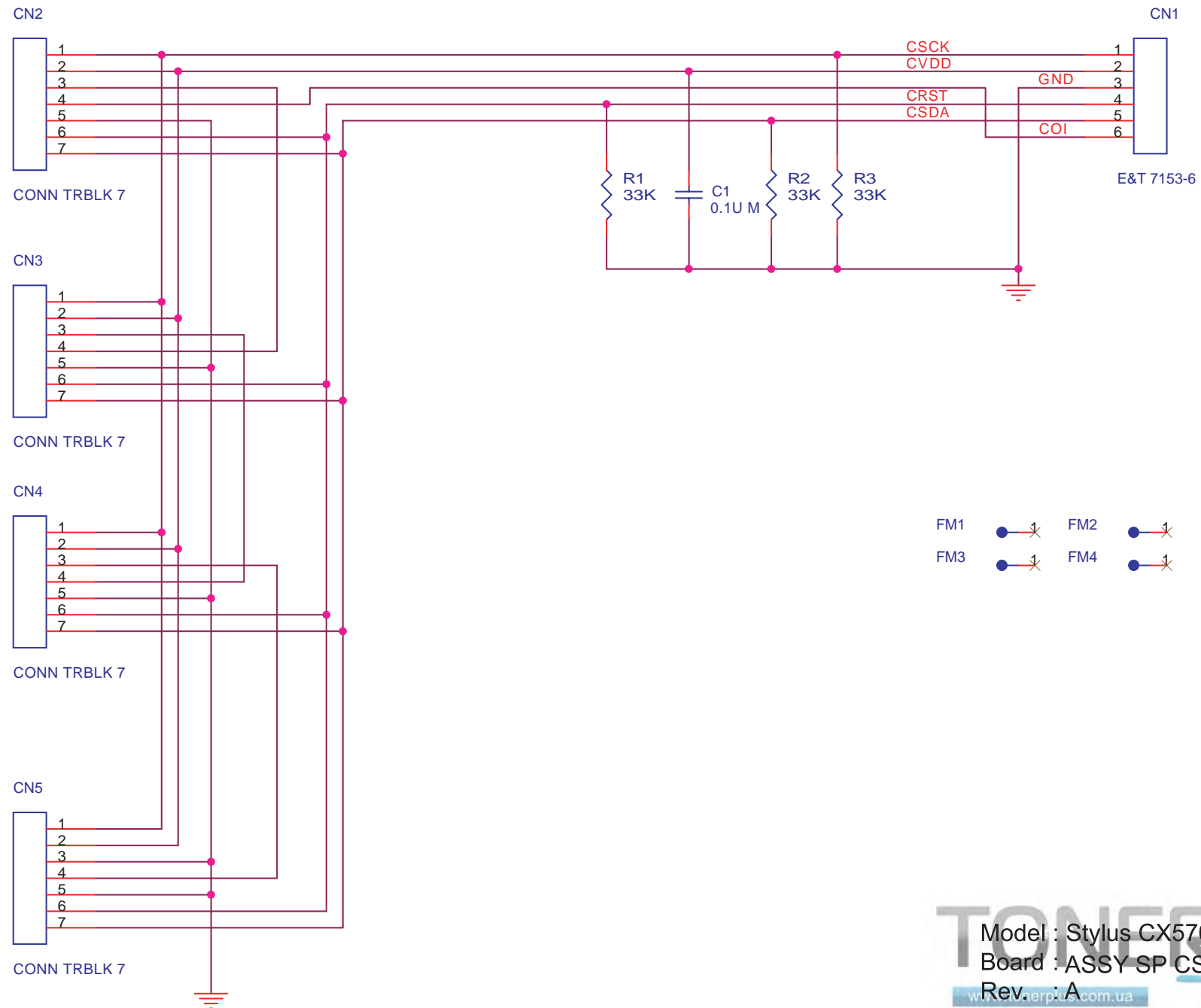
PAGE 04: Homer RD01-D590-051

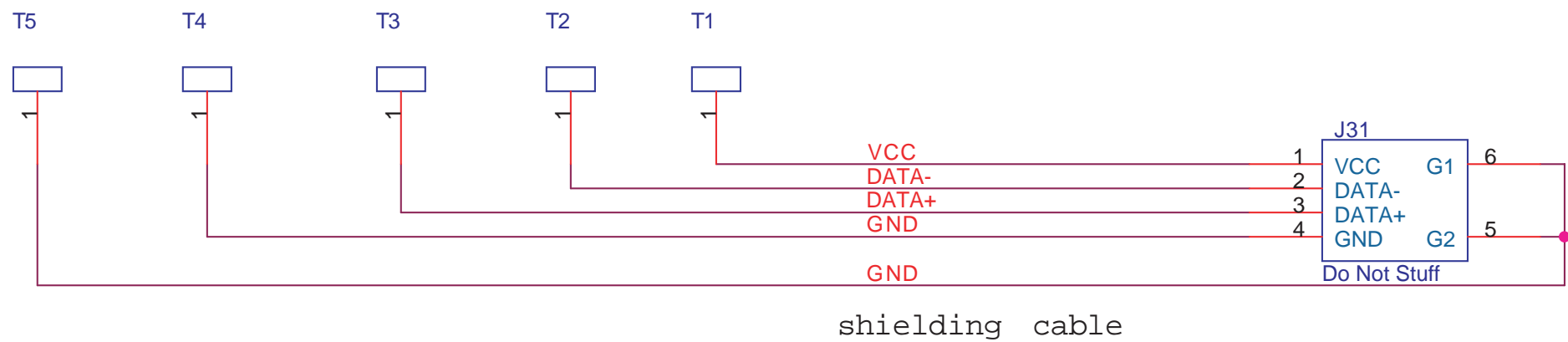


Model : Stylus CX5700F/CX5800F
Board : ASSY SP FAX BOARD 8808
Rev. : A
Sheet : 2/4









CHAPTER

8

STYLUS CX6900F/CX7000F/DX7000F

8.1 Overview

As Stylus CX6900F/CX7000F/DX7000F is a successor model of Stylus CX5700F/CX5800F, the main features and specifications are almost the same.

[This section describes features unique to Stylus CX6900F/CX7000F/DX7000F.](#)

This Chapter consists of the following six sections:

- **8.1 “Overview” (p.250)**
Describes the features unique to Stylus CX6900F/CX7000F/DX7000F.
- **8.2 “Specifications” (p.251)**
Describes the specifications unique to Stylus CX6900F/CX7000F/DX7000F.
- **8.3 “Troubleshooting” (p.254)**
Describes the troubleshooting unique to Stylus CX6900F/CX7000F/DX7000F.
- **8.4 “Disassembly/Assembly” (p.262)**
Describes the disassembly/assembly procedures unique to Stylus CX6900F/CX7000F/DX7000F.
- **8.5 “Adjustment” (p.283)**
Describes the adjustments unique to Stylus CX6900F/CX7000F/DX7000F.
- **8.6 “Appendix” (p.305)**
Describes miscellaneous information unique to Stylus CX6900F/CX7000F/DX7000F.

CHECK
POINT



Refer to Chapter 1 to Chapter 7 for common and detailed description on Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F.

8.1.1 Features

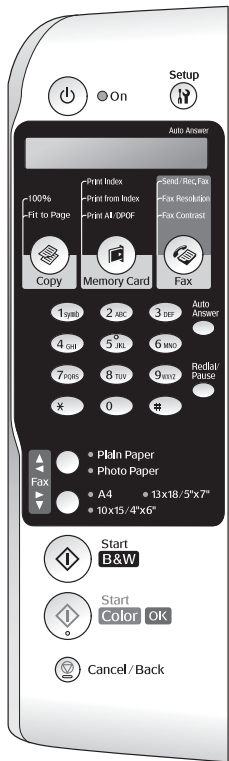
- Copy functions differences
 - According to its paper type, paper size can be selected from up to three sizes.

	Panel Paper type	Paper type	Paper size
EAI	Plain paper	Plain paper	Letter
		Premium Bright White Glossy	
	Photo Paper	Premium Photo Paper Glossy	Letter/5" x 7"/4" x 6"
		Premium Photo Paper Semi-Gloss	Letter/4" x 6"
		Photo Paper Glossy	Letter/4" x 6"
		Ultra Premium Photo Paper Glossy	Letter/5" x 7"/4" x 6"
Euro/Asia	Plain paper	Plain paper	A4
		Premium Ink Jet Plain Paper	
		Bright White Ink Jet Paper	
	Photo Paper	Premium Glossy Photo Paper	A4/13 x 18 ^{*2} /10 x 15 ^{*1}
		Premium Semigloss Photo Paper	A4/10 x 15 ^{*1}
		Glossy Photo Paper	A4/13 x 18 ^{*2} /10 x 15 ^{*1}
		Ultra Glossy Photo Paper	A4/13 x 18 ^{*2} /10 x 15 ^{*1}

Note *1: 10 x 15 has the size of 101.6 mm x 152.4 mm (4" x 6").

*2: 13 x 18 has the size of 127.0 mm x 177.8 mm (5" x 7").

- ☐ Control panel difference
- The Stylus CX6900F/CX7000F/DX7000F is equipped with the same 24 buttons, 10 LEDs and a LCD (1 line x 16 characters) as the Stylus CX5700F/CX5800F, but is different in its design.



8.2 Specifications

This section describes specifications unique to the Stylus CX6900F/CX7000F/DX7000F.

CHECK
POINT

Refer to [Chapter 1 “PRODUCT DESCRIPTION” \(p.9\)](#) for common and detailed description on Stylus CX5700F/CX5800F/CX6900F/CX7000F/DX7000F.

8.2.1 Physical Specifications

- ☐ Dimension (W x D x H)
- 463 mm x 344 mm x 178 mm (TBD)
- ☐ Weight
- 5.1 kg

8.2.2 Supported Papers

Paper Type	Paper Size	EAI	EUR	ASIA	Borderless		
					EAI	EUR	ASIA
Plain Paper	Legal	O	O	O	---	---	---
	Letter	O	O	O	---	---	---
	A4	O	O	O	---	---	---
	B5	---	O	O	---	---	---
	A5	---	O	O	---	---	---
	Half Letter	O	---	---	---	---	---
	A6	O	O	O	---	---	---
	User Defined	O	O	O	---	---	---
Premium Ink Jet Plain Paper	A4	---	O	O	---	---	---
Premium Bright White Paper	Letter	O	---	---	---	---	---
Bright White Ink Jet Paper	A4	---	O	O	---	---	---



Paper Type	Paper Size	EAI	EUR	ASIA	Borderless		
					EAI	EUR	ASIA
■ Ultra Premium Photo Paper Glossy (EAI) ■ Ultra Glossy Photo Paper (Other)	Letter	O	---	---	O	---	---
	A4	---	O	O	---	O	O
	8" x 10"	O	---	---	O	---	---
	5" x 7"	O	O	---	O	O	---
	4" x 6"	O	O	O	O	O	O
■ Premium Photo Paper Glossy (EAI) ■ Premium Glossy Photo Paper (Other)	Letter	O	---	---	O	---	---
	A4	O	O	O	O	O	O
	8" x 10"	O	---	---	O	---	---
	5" x 7"	O	O	O	O	O	O
	HV	O	O	---	O	O	---
	4" x 6"	O	O	O	O	O	O
■ Photo Paper Glossy (EAI) ■ Glossy Photo Paper (Other)	Letter	O	---	---	O	---	---
	A4	O	O	O	O	O	O
	5" x 7"	---	O	---	---	O	---
	4" x 6"	O	O	O	O	O	O
■ Premium Photo Paper Semi-Gloss (EAI) ■ Premium Semigloss Photo Paper (Other)	Letter	O	---	---	O	---	---
	A4	---	O	O	---	O	O
	4" x 6"	O	O	O	O	O	O
■ Premium Presentation Paper Matte (EAI) ■ Matte Paper Heavy-weight (Other)	Letter	O	---	---	O	---	---
	A4	---	O	O	---	O	O
	8" x 10"	O	---	---	O	---	---
■ Presentation Paper Matte (EAI) ■ Photo Quality Ink Jet Paper (Other)	A4	---	O	O	---	---	---
Envelopes	#10	O	O	O	---	---	---
	#DL	---	O	O	---	---	---
	#C6	---	O	O	---	---	---

8.2.3 Ink Cartridge Specifications

□ Specifications: Four individually replaceable ink cartridges (Black, Cyan, Magenta, and Yellow)

□ Cartridge-Tcode

		Market						
		Europe	Inter/ Russia	ASIA/ Pacific	Latin		US	
Black	Size	SS	SS	SS	S	SS	S	SS
	Code	T0711	T0731	T0731	T0731H	T0731	T0681	T0691
Cyan	Size	SS	SS	SS	SS		SS	
	Code	T0712	T0732	T0732	T0732		T0692	
Yellow	Size	SS	SS	SS	SS		SS	
	Code	T0713	T0733	T0733	T0733		T0693	
Magenta	Size	SS	SS	SS	SS		SS	
	Code	T0714	T0734	T0734	T0734		T0694	



8.2.4 Scanner Specifications

- ❑ Scanning resolution: 50 to 2400 dpi (selectable in 1-dpi steps), 7200 dpi, 9600 dpi
- ❑ Scanning Speed (A4, 600 dpi, PC Scanning)
 - Full Color: Approx. 15 msec/line
 - Gray scale: Approx. 15 msec/line
 - Monochrome: Approx. 5 msec/line

8.2.5 Power-On Sequence

The printer operations from when the power is turned on to when the printer goes into standby mode are described below:

1. The firmware checks the waste ink counter. If it reaches the limit, Maintenance request error is displayed. (If it nears the limit, a warning is displayed.)
2. The carriage moves leftward from the carriage lock position to the origin position.
3. Carriage home position is determined.
(See “2.2.3.2 Carriage Home Position Detection (p.64)”)
4. The carriage travels between the home position and the left end twice in order to ensure proper lubrication of grease if the printer is under either of the following conditions;
 - The ambient temperature is under 5 °C.
 - Current date and time is not set.
5. The carriage travels between the home position and the left end twice in order to perform CR measurement.
6. The carriage moves to four prescribed points so that the PW sensor located on the carriage can obtain threshold value for judging paper presence/absence.
7. The PF Roller is rotated by the PF Motor for prescribed steps to perform PF measurement.
8. The carriage moves for a prescribed distance toward 80-digit side, and the ink cartridge detection sequence is started.
9. After the ink cartridge detection sequence, the carriage moves to the regular flushing position on home side. Cleaning is performed at this time depending on the printer condition.
10. The carriage is returned to the home position and locked, and the printer goes into standby mode.



8.3 Troubleshooting

This section describes troubleshooting unique to the Stylus CX6900F/CX7000F/DX7000F.

- ❑ Table 8-1 Check Point for the No Ink Cartridge/Ink Cartridge Error/Read Error/Write Error according to Each Phenomenon (p.254)
- ❑ Table 8-2 Check Point for the Poor Printing Quality (p.256)



Refer to **Chapter 3 “TROUBLESHOOTING” (p.89)** for troubleshooting other than the ones described in this section.

Table 8-1. Check Point for the No Ink Cartridge/Ink Cartridge Error/Read Error/Write Error according to Each Phenomenon

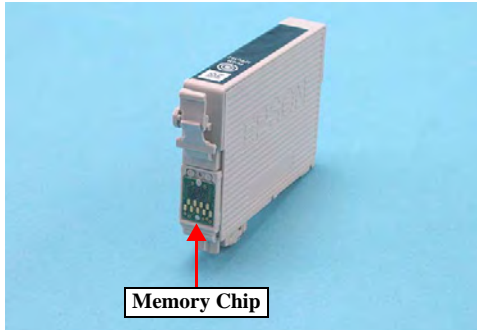
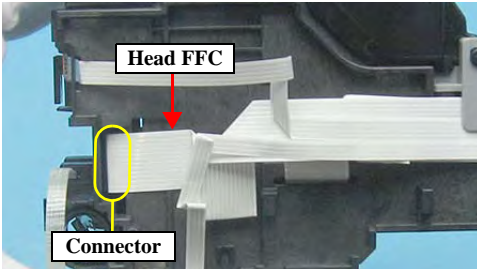
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> • Power on • Inside HP 	After the Carriage has detected the HP, an error is displayed.	Ink Cartridge	1. Check if Ink Cartridge is properly installed. 2. Check if the Memory Chip is not disconnected or not chipped. 	1. Install the Ink Cartridge properly. 2. Replace the Ink Cartridge with a new one.
		C654 Head Board	1. Check if the Head FFC is connected to connector on the C654 Head Board.  2. Check if the C654 Head Board is not damaged.	1. Connect the Head FFC to connector on the C654 Head Board. 2. Replace the C654 Head Board with a new one.

Table 8-1. Check Point for the No Ink Cartridge/Ink Cartridge Error/Read Error/Write Error according to Each Phenomenon

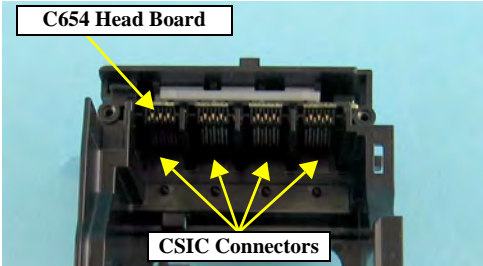
Occurrence timing CR position	Detailed phenomenon	Possible cause	Check point	Remedy
<div><div>• Power on</div><div>• Inside HP</div></div>	After the Carriage has detected the HP, an error is displayed.	CSIC Connector	<div>1. Check if the CSIC Connector is not damaged.</div> <div></div>	<div>1. Replace the C654 Head Board with a new one.</div>



Table 8-2. Check Point for the Poor Printing Quality

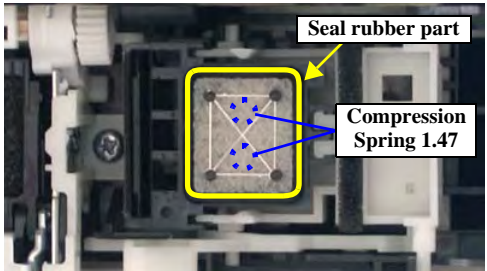
Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
• Dot missing and mixed colors	Ink is scarcely ejected to the Cap from the Printhead.	Ink System Unit (Cap Unit)	1. Check if there is not any foreign material/damage around the seal rubber part on the Cap Unit. 	1. Remove the foreign material around the seal rubber parts carefully.
			2. Check if the Compression Spring 1.47 is correctly mounted on the Cap Unit.	2. Replace the Ink System Unit with a new one.
	Ink is ejected to the Cap from the Printhead, but the SPC does not recover from the error after cleaning or ink change.	Printhead	1. Check if it returns to normal by performing CL operation or replacing the Ink Cartridge.	1. Perform CL operation and the Ink Cartridge replacement specified times. If it doesn't work, change the Printhead with a new one.
			2. Check if the Printhead is not damaged.	2. Replace the Printhead with a new one.
		Cleaner Blade	1. Check if the Cleaner Blade does not have paper dust or bending.	1. Replace Ink System Unit with a new one.
		Main Board	1. Check if the Main Board is not damaged.	1. Replace the Main Board with a new one.

Table 8-2. Check Point for the Poor Printing Quality

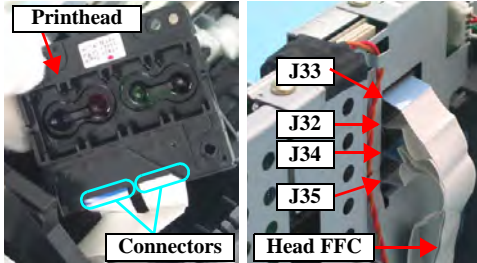
Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> White streak / abnormal discharge 	Ink is ejected to the Cap from the Printhead, but printing is not done at all after cleaning or ink change, or abnormal discharge occurs.	Head FFC	1. Check if the Head FFC is securely connected to the Printhead Connectors and the Main Board Connectors (J32, J33, J34, J35). 	1. Connect the Head FFC to the Printhead and the Main Board Connectors.
			2. Check if the Head FFC is not damaged.	2. Replace the Head FFC with a new one.
		Printhead	1. Check if it returns to normal by performing CL operation or replacing the Ink Cartridge.	1. Perform CL operation and the Ink Cartridge replacement specified times. If it doesn't work, change the Printhead with a new one.
		Main Board Unit	1. Check if the Main Board is not damaged.	1. Replace the Main Board Unit with a new one.

Table 8-2. Check Point for the Poor Printing Quality

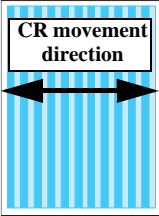


Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> White streak/ color unevenness occurrence 	<p>Vertical banding appears against the CR movement direction. And, it looks like uneven printing.</p>  <p>[Note] If the problem is not solved, replace the CR Motor with a new one.</p>	Adjustment	1. For printing in the Bi-D mode, check if Bi-D Adjustment has been performed properly.	1. Perform Bi-D Adjustment to eliminate displacements between the upper and lower rules. (Refer to “8.5 Adjustment (p.283)”.)
		Printhead	1. Check if each segment is printed correctly in the Nozzle Check Pattern.	1. Perform Head Cleaning and check the Nozzle Check Pattern. (Refer to “8.5 Adjustment (p.283)”.) If the problem is not solved, replace the Printhead with a new one.
		Carriage Unit / Carriage Guide Shaft	1. Check if there is not any foreign material on the surface of the Carriage Guide Shaft.	1. Remove foreign objects from surface of the Carriage Guide Shaft.
			2. Check if the Carriage Guide Shaft is properly secured to Main Frame by the CR Guide Shaft Torsion Spring and the CR Guide Shaft Pressing Spring.	2. Reassemble the Carriage Guide Shaft correctly.
			 	
			3. Check if the grease is enough on the surface of the Carriage Guide Shaft.	3. After wiping the grease on the Carriage Guide Shaft and the Carriage with a dry, soft cloth, coat it with grease (G-71 Grease). (Refer to “6.1.3 Lubrication (p.215)”.)
			4. Check if any damage is not observed on the surface of the Carriage Guide Shaft.	4. Replace the Carriage Guide Shaft with a new one.
		Front Frame	1. Check if there is not any foreign material on the surface of the Front Frame.	1. Remove foreign matter from the Front Frame.
			2. Check if the Front Frame is lubricated with enough grease.	2. After wiping the grease on the Front Frame with a dry, soft cloth, coat it with grease (G-71 Grease). (Refer to “6.1.3 Lubrication (p.215)”.)
			3. Check if the Front Frame has not been deformed.	3. Replace the Front Frame with a new one.

Table 8-2. Check Point for the Poor Printing Quality

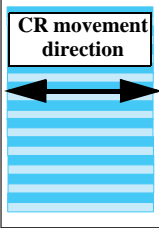
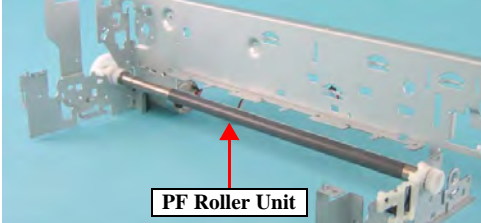
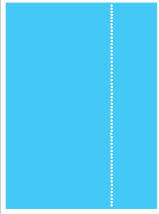
Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
<ul style="list-style-type: none"> White streak/ color unevenness occurrence 	Micro banding appears horizontally along the CR movement direction and it appears with the same width.  [Note] If the problem is not solved, replace the PF Motor with a new one.	Printer driver & exclusive paper	1. Check if the suitable paper is used according to the printer driver setting.	1. Use the suitable paper according to the printer driver setting.
		Printhead	1. Check if each segment is printed correctly in the Nozzle Check Pattern.	1. Perform the Head Cleaning and check the Nozzle Check Pattern. (Refer to “8.5 Adjustment (p.283)”.) If the problem is not solved, replace the Printhead with a new one.
		PF Roller Unit	1. Check if there is not any foreign material on the surface of the PF Roller Unit. 	1. Clean the surface of the PF Roller Unit carefully with the soft cloth.
	The Star wheel mark against the CR movement direction. 	EJ Frame Unit	2. Check if the PF Roller Unit is not damaged.	2. Replace the PF Roller Unit with a new one.
			1. Check if the Star Wheel Holder does not come off. 2. Check if the surface of the EJ Frame Unit is flat.	1. Reassemble the Star Wheel Holder correctly. 2. Replace the EJ Frame Unit with a new one.
	Printing is blurred.	Printer driver & exclusive paper	1. Check if the suitable paper is used according to the printer driver setting.	1. Use the suitable paper according to the printer driver setting.
		Printhead	1. Check if the correct Head ID is stored into the EEPROM by using the Adjustment Program.	1. Input 20 digits code of the Head ID into the EEPROM by using the Adjustment Program.

Table 8-2. Check Point for the Poor Printing Quality

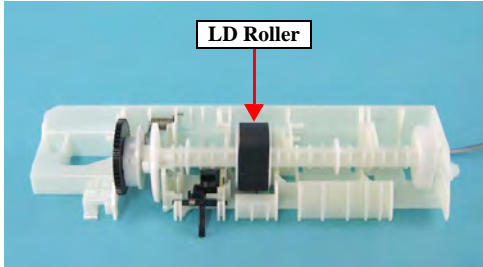
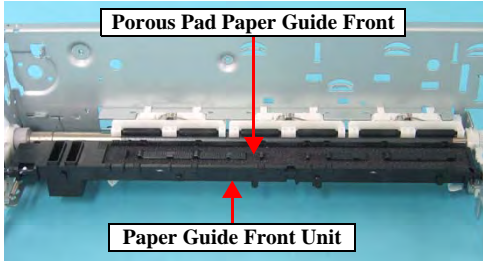
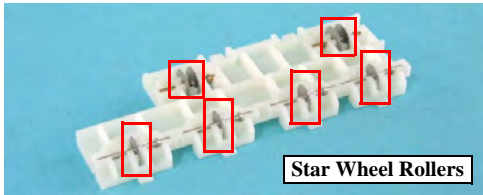
Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
• Print start position slip	The printing operation is correctly performed. But, the top margin is insufficient than usual one.	Holder Shaft Unit	1. Check if any paper dust is not adhered to the surface of the LD Roller. 	1. Set a cleaning sheet in the ASF, adhesive face-up. Then holding the top edge, send a 1-page job from the printer driver. The micro pearl on the LD Roller surface is removed. To remove severe smear, staple a cloth moistened with alcohol to a post card and clean the roller in the same manner. As for the cleaning sheet, refer to "Remedy of the Paper out error" (p.97). * If the problem is not solved, replace the Holder Shaft Unit with a new one.
• Ink stain of paper	Ink stain occurs at the back, top end or bottom end of the print paper.	Paper Guide Front Unit	1. Check if the Paper Guide Front Unit does not have the ink stain. 	1. Clean the Paper Guide Front Unit with a soft cloth.
			2. Check if heaps of ink are not formed on Porous Pad Paper Guide Front.	2. Replace the Paper Guide Front Unit with a new one.
		EJ Frame Unit	1. Check if the EJ Roller Unit does not have the ink stain.	1. Clean the EJ Roller Unit with a soft cloth.
		PF Roller Unit	1. Check if the PF Roller Unit does not have the ink stain.	1. Clean the PF Roller Unit with a soft cloth.

Table 8-2. Check Point for the Poor Printing Quality

Print Quality State	Detailed phenomenon	Possible cause	Check point	Remedy
• Ink stain of paper	Ink sticks to other than the print area of the paper, resulting in contamination	Printhead	1. Check if the Printhead Cover does not have the ink drop.	1. Clean the Printhead Cover carefully with a soft cloth.
		Paper Guide Upper Unit	1. Check if the Paper Guide Upper Unit does not have the ink stain.	1. Clean the Paper Guide Upper Unit with a soft cloth.
		EJ Frame Unit	1. Check if the Star Wheel Rollers does not have the ink stain. 	1. Clean the Star Wheel Rollers with a soft cloth.

8.4 Disassembly/Assembly

This section describes disassembly procedures unique to the Stylus CX6900F/CX7000F/DX7000F.



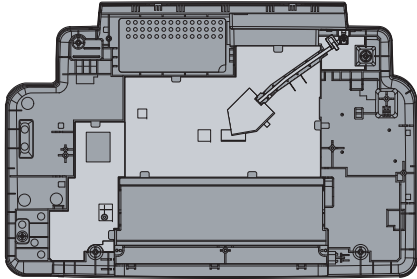
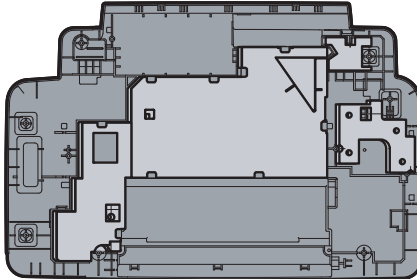
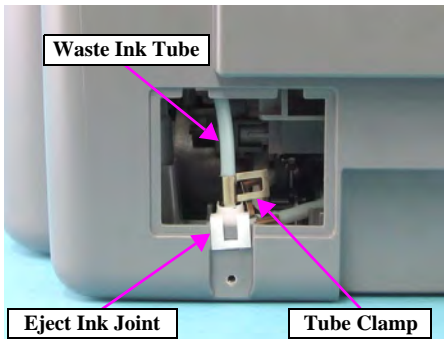
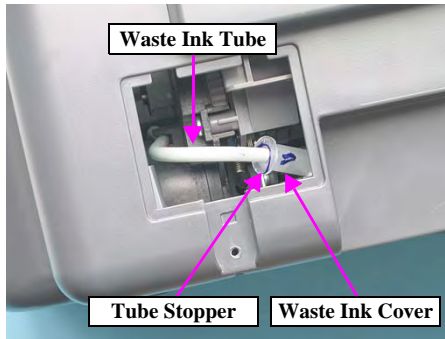
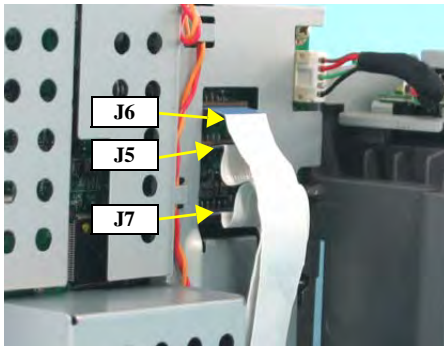
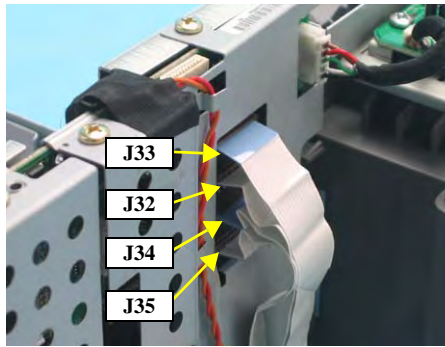
Refer to **Chapter 4 “DISASSEMBLY/ASSEMBLY” (p.135)** for disassembly procedures other than the ones described in this section.

8.4.1 Procedural Differences between the Models

Table 8-3. Differences between Models

Item	Description	Stylus CX5700F/CX5800F	Stylus CX6900F/CX7000F/DX7000F	Reference
Housing, Upper	Screw types <ul style="list-style-type: none"> □ Stylus CX5700F/CX5800F <ul style="list-style-type: none"> ■ C.B.S. 3 x 6 F/Zn (x2) □ Stylus CX6900F/CX7000F/DX7000F <ul style="list-style-type: none"> ■ C.B.S. 3 x 12 F/Zn (x2) 			<p>For Stylus CX5700F/CX5800F, see “4.4.7 Housing, Upper (p.145)”.</p> <p>For Stylus CX6900F/CX7000F/DX7000F, see “8.4.3.1 Housing, Upper (p.265)”.</p>
Carriage Unit	Shape of the Carriage Unit <ul style="list-style-type: none"> □ Stylus CX6900F/CX7000F/DX7000F <ul style="list-style-type: none"> ■ CSIC Board has graded up to Head Board, causing change in disassembly/assembly procedure. ■ To remove the Cartridge Cover, the Cartridge Cover Hinge has to be broken. 			<p>For Stylus CX5700F/CX5800F, see “4.4.8 Printhead (p.146)” and “4.4.20 Carriage Unit/CR Encoder Board/ PW Sensor Board/Head FFC (p.167)”.</p> <p>For Stylus CX6900F/CX7000F/DX7000F, see “8.4.3.2 Printhead (p.266)” and “8.4.3.8 Carriage Unit/CR Encoder Board/PW Sensor Board/Head FFC (p.280)”.</p>
Housing, Lower	Shape of the Housing, Lower			<p>For Stylus CX5700F/CX5800F, see “4.4.9 Printer Mechanism (p.148)”.</p> <p>For Stylus CX6900F/CX7000F/DX7000F, see “8.4.3.4 Printer Mechanism/Housing, Lower (p.269)”.</p>

Table 8-4. Differences between Models

Item	Description	Stylus CX5700F/CX5800F	Stylus CX6900F/CX7000F/DX7000F	Reference
Waste Ink Pads	<p>Number of Waste Ink Pads</p> <ul style="list-style-type: none"> □ Stylus CX5700F/CX5800F <ul style="list-style-type: none"> ■ Eight pieces □ Stylus CX6900F/CX7000F/DX7000F <ul style="list-style-type: none"> ■ Six pieces 			<p>For Stylus CX5700F/CX5800F, see “4.4.11 Waste Ink Pads/Stacker Lock/PG Lever/Rubber Feet (p.152)”.</p> <p>For Stylus CX6900F/CX7000F/DX7000F, see “8.4.3.5 Waste Ink Pads/Stacker Lock/PG Lever/Rubber Feet (p.272)”.</p>
Waste Ink Tube	For waste ink leakage measure, the shape of Waste Ink Cover has changed, and the Tube Stopper has been added to Stylus CX6900F/CX7000F/DX7000F.			<p>For Stylus CX5700F/CX5800F, see “4.4.9 Printer Mechanism (p.148)”.</p> <p>For Stylus CX6900F/CX7000F/DX7000F, see “8.4.3.4 Printer Mechanism/Housing, Lower (p.269)”</p>
Main Board Unit	Due to change of the CSIC Board, a Head FFC that directly connects the Main Board and the Head Board has been added to Stylus CX6900F/CX7000F/DX7000F.			<p>For Stylus CX5700F/CX5800F, see “4.4.12 Main Board Unit/Card Slot Unit/Fax Board (p.155)” and “4.4.17 CR Guide Frame (p.164)”.</p> <p>For Stylus CX6900F/CX7000F/DX7000F, see “8.4.3.6 Main Board Unit/Card Slot Unit/Fax Board (p.275)” and “8.4.3.7 CR Guide Frame (p.279)”.</p>

8.4.2 Disassembly Procedures

The flowchart below shows step-by-step disassembly procedures. When disassembling each unit, refer to the page number shown in the figure.

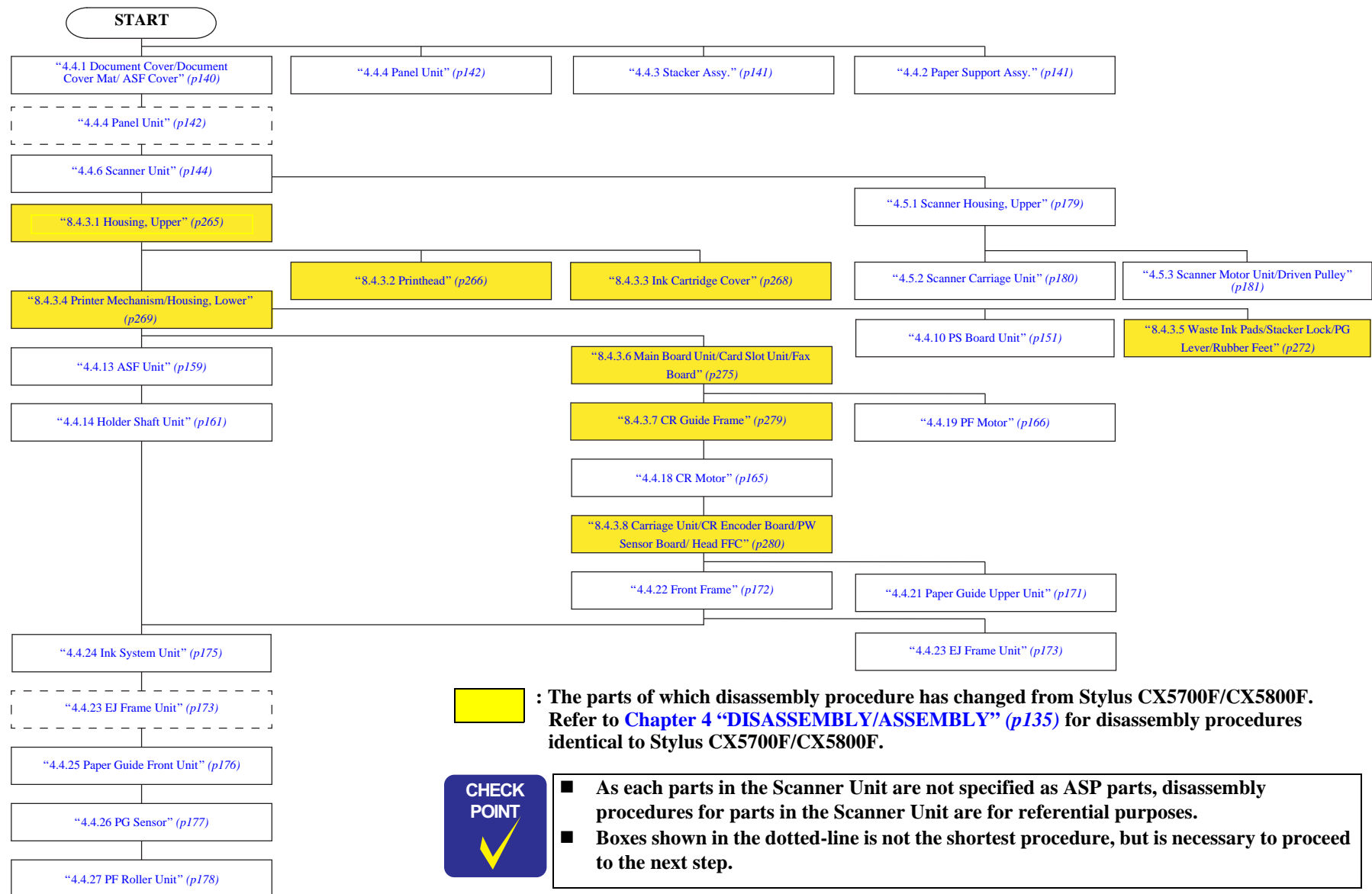


Figure 8-2. Disassembling Flowchart

8.4.3 Printer Section

8.4.3.1 Housing, Upper

□ External view

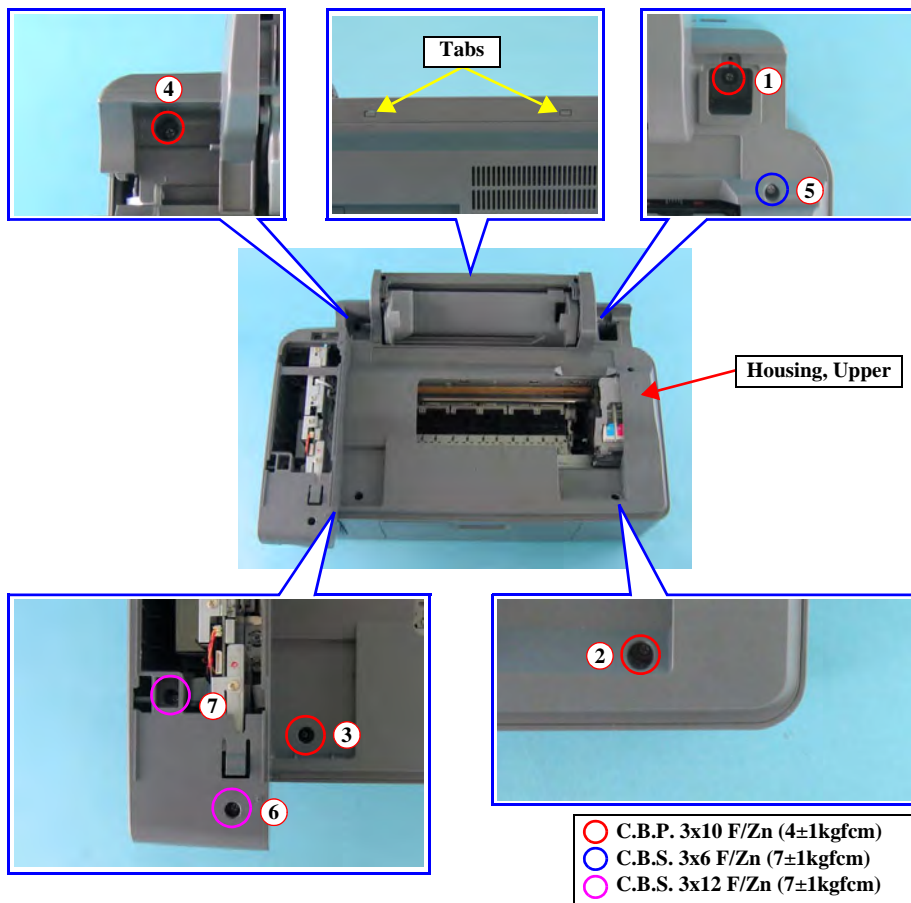


Figure 8-3. Removing Housing, Upper

- **Part/Unit that should be removed before removing Housing, Upper**
Document Cover / Panel Unit / Scanner Unit

□ Removal procedure

1. Remove the screws (x7, ● ● ●) that secure the Housing, Upper.
2. Release the tabs (x2) that secure the Housing, Upper with a flathead screwdriver or a similar tool, and lift up to remove the Housing, Upper.



Tighten the screws in the order shown in the figure.

8.4.3.2 Printhead

□ External view

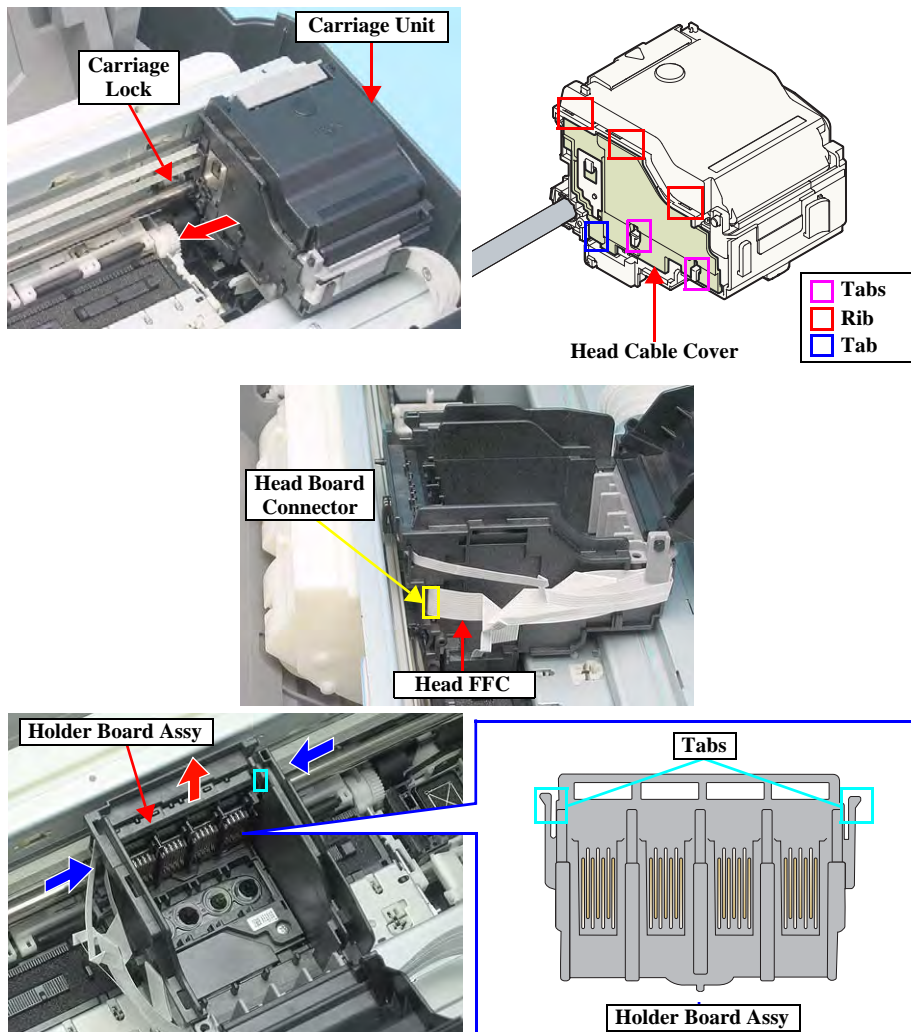


Figure 8-4. Removing Printhead (1)

□ Part/Unit that should be removed before removing Printhead

Document Cover / Panel Unit / Scanner Unit / Housing, Upper

□ Removal procedure

1. Release the Carriage Lock with a flathead screwdriver or a similar tool, and move the Carriage Unit to the center of the printer.
2. Remove all the Ink Cartridges from the Carriage Unit.

CAUTION



When performing the following work, be careful not to bend the tabs (□) of the Carriage Unit.

3. Release the tab (x1, □) on the downside of the Head Cable Cover with a precision screwdriver (-), slide the Cover downward, and remove the Head Cable Cover.
4. Open the cartridge cover.
5. Disconnect the Head FFCs (x2) that are connected to the Head Board and the CR Encoder Board.
6. Release the tabs (x2, □) that secure the Holder Board Assy, and remove the Holder Board Assy upward.

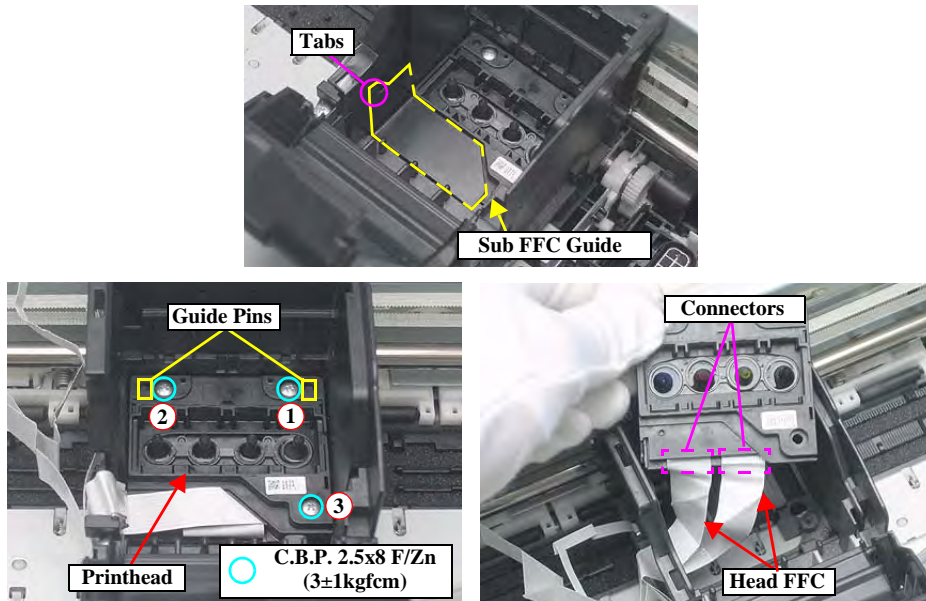




Figure 8-5. Removing Printhead (2)


7. Release the tab (x1, ) that secure the Sub FFC Guide with a precision screwdriver (-), and remove the Sub FFC Guide.

CAUTION

Do not touch or damage the nozzles or the ink supply needles of the Printhead.

8. Remove the screws (x3, ) that secure the Printhead, and lift up to remove the Printhead with a longnose pliers.
9. Disconnect the Head FFCs (x2) from the connectors (x2) of the Printhead, and remove the Printhead.

REASSEMBLY

- When installing the Printhead to the Carriage Unit, match the guide pins (x2, ) of the Carriage Unit with the positioning holes (x2) of the Printhead.
- Tighten the screws in the order as shown in the figure.
- When installing the Sub FFC Guide, insert the rib of the Sub FFC Guide to the notch of the Carriage Unit as shown below.

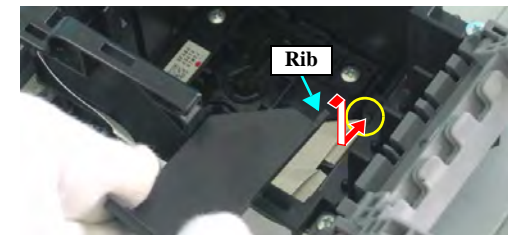


Figure 8-6. Installing Sub FFC Guide

- When installing the Holder Board Assy, insert it vertically, making sure that it does not strand onto the rib of the Printhead.

**ADJUSTMENT
REQUIRED**

After removing/replacing the Printhead, perform the adjustment referring to “8.5 Adjustment (p.283)”.

8.4.3.3 Ink Cartridge Cover

□ External view

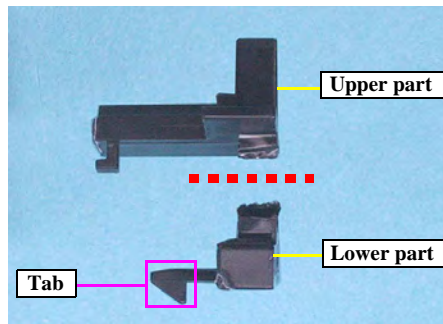
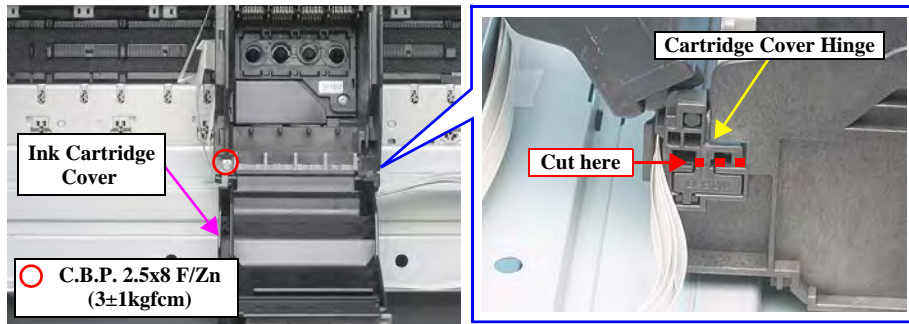
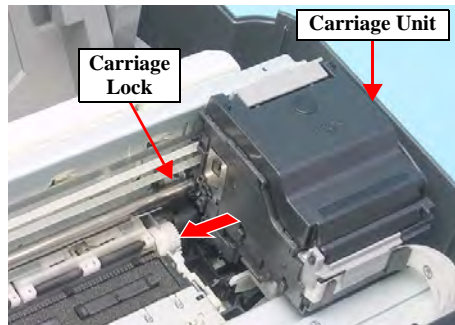



Figure 8-7. Removing Ink Cartridge Cover

□ Part/Unit that should be removed before removing Printhead

Document Cover / Panel Unit / Scanner Unit / Housing, Upper

□ Removal procedure

1. Release the Carriage Lock with a flathead screwdriver or a similar tool, and move the Carriage Unit to the center of the printer.
2. Remove all the Ink Cartridges from the Carriage Unit.
3. Open the Ink Cartridge Cover.
4. Remove the screw (x1, ) that secures the Ink Cartridge Cover.
5. Follow the steps below to remove the Cartridge Cover Hinge.
 - 5-1. Cut off the part of the Cartridge Cover Hinge with a nipper as indicated in the figure.
 - 5-2. Remove the upper part of the Cartridge Cover Hinge.
 - 5-3. Release the tab and remove the lower part of the Cartridge Cover Hinge.



The cut Cartridge Cover Hinge cannot be reused.

6. Remove the Ink Cartridge Cover.



If you perform ink discharge operation by using the Ink Supply Tool in your refurbishment, you have to remove the Ink Cartridge Cover after attaching the tool.

8.4.3.4 Printer Mechanism/Housing, Lower

□ External view (1)

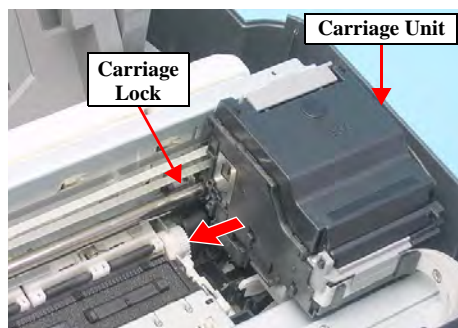
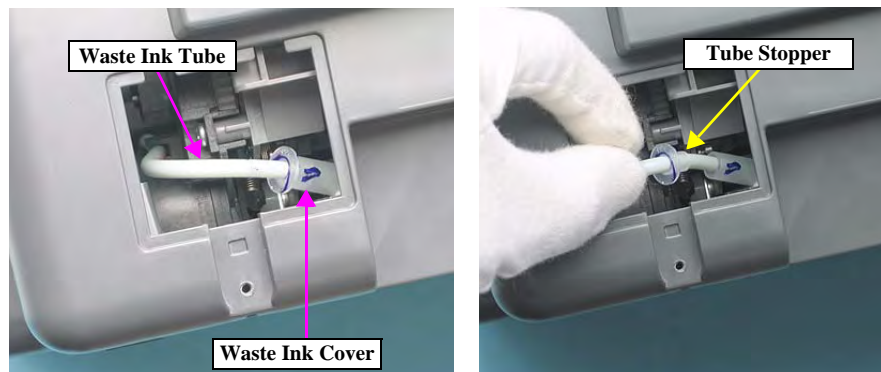
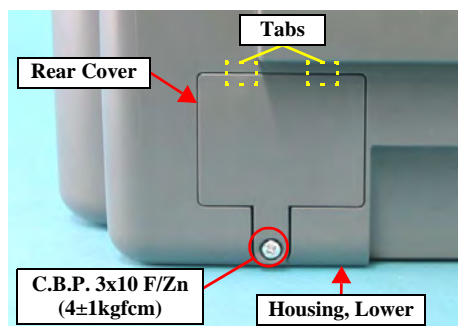



Figure 8-8. Removing Printer Mechanism (1)

- Part/Unit that should be removed before removing Printer Mechanism
Document Cover / Panel Unit / Scanner Unit / Housing, Upper/ Stacker Assy.

□ Removal procedure

1. Remove the screw (x1, ) that secures the Rear Cover, and remove the Rear Cover.

CAUTION



Ink may leak from the Waste Ink Tube. Prepare cleaning rags beforehand, and be careful not spread ink onto surrounding area.

2. Pull out the Waste Ink Tube from the Waste Ink Cover together with the Tube Stopper.
3. Release the Carriage Lock with a flathead screwdriver, and move the Carriage Unit to the center of the printer.

External view (2)

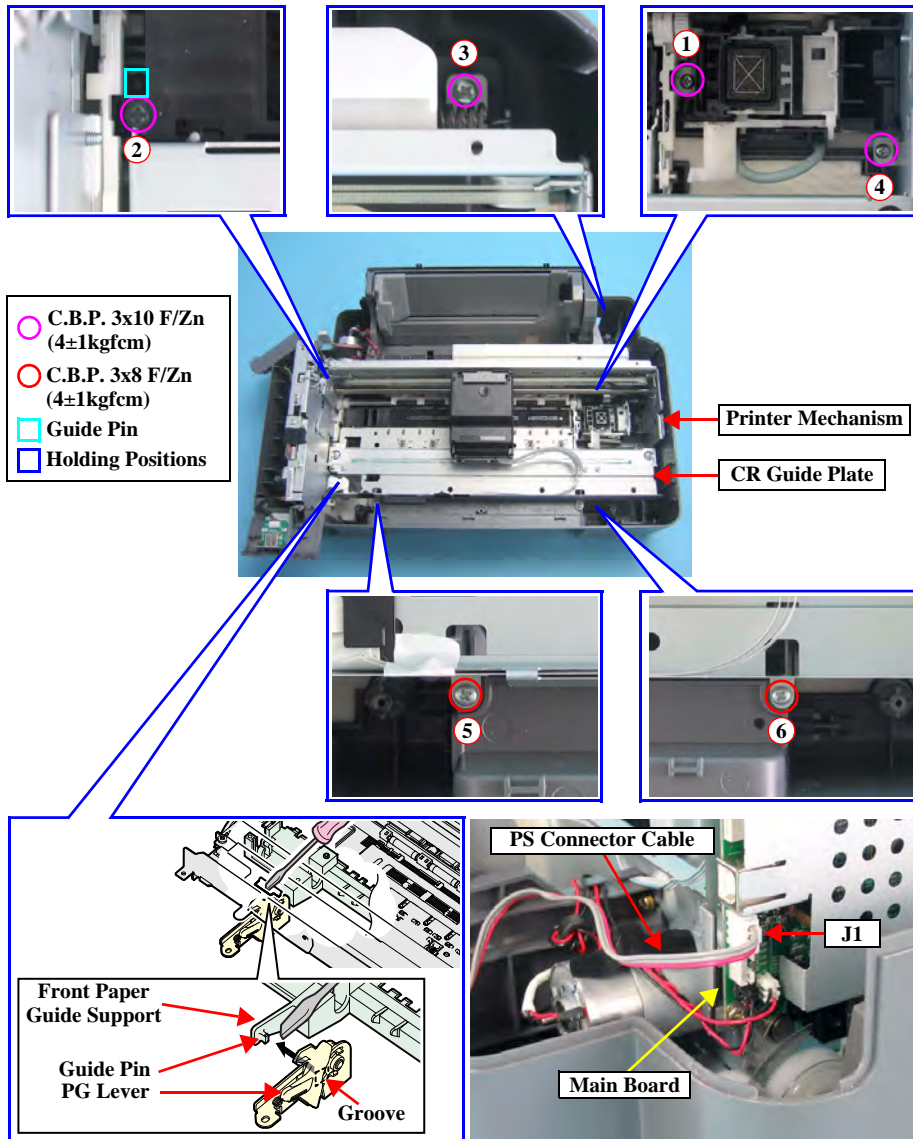



Figure 8-9. Removing Printer Mechanism (2)

4. Remove the screws (x6, ) that secure the Printer Mechanism.
5. Disconnect the PS Connector Cable from the connector (J1) of the Main Board.

CAUTION



Hold the designated position and lift the Printer Mechanism upward when performing the following step in order to prevent warping of the Main Frame.


6. Hold up the left side of the Printer Mechanism while releasing the guide pin of the Front Paper Guide Support from the groove of the PG Lever with a precision screwdriver (-), and remove the whole Printer Mechanism from the Housing, Lower.

WARNING



When installing the Printer Mechanism to the Housing, Lower, insert the Waste Ink Tube to the Waste Ink Cover and securely fasten the Waste Ink Tube with the Tube Stopper, or ink may leak from the Tube.



- Tighten the screws in the order as shown in the figure.
- When installing the Rear Cover, match the tabs (x2, ) of the Rear Cover with the notches (x2) of the Housing, Lower.
- When installing the Waste Ink Tube, insert the tube 54 ± 1 mm into the Waste Ink Cover as shown below.

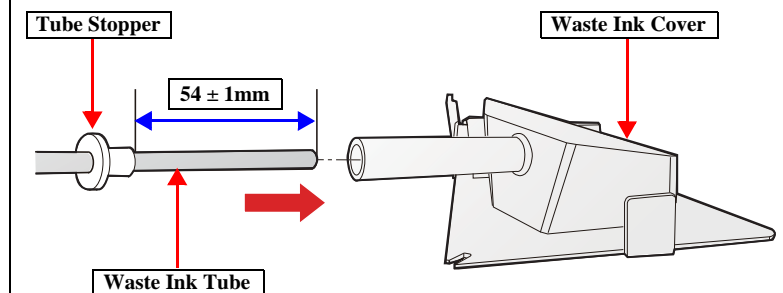


Figure 8-10. Installing Waste Ink Tube



The assembled accuracy of each part composed of Printer Mechanism is based on Housing, Lower.

To ensure the assembled accuracy, you have to control the assembled standard position of main frame against X/Y/Z-axis direction as the following figure.

- [X-axis direction]
Confirm that Printer Mechanism is properly placed in the channel of Housing, Lower and that there is no gap.
- [Y-axis direction]
Confirm that Printer Mechanism is properly placed in the channel of Housing, Lower and that there is no gap.
- [Z-axis direction]
Align the positioning hole (x1) of Printer Mechanism with the guide pin (x1) of Housing, Lower, and confirm that there is no gap

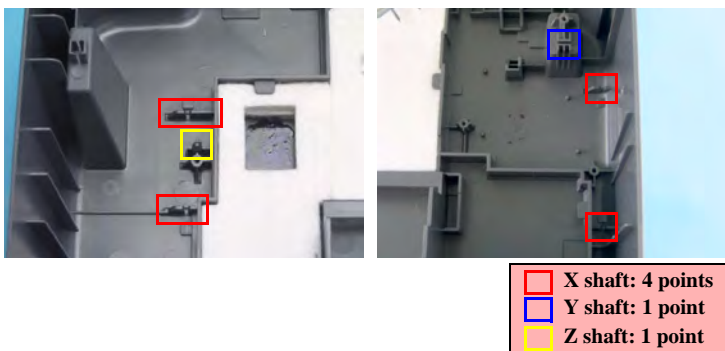


Figure 8-11. Assembled Standard Position of Main Unit

8.4.3.5 Waste Ink Pads/Stacker Lock/PG Lever/Rubber Feet

□ External view (1)

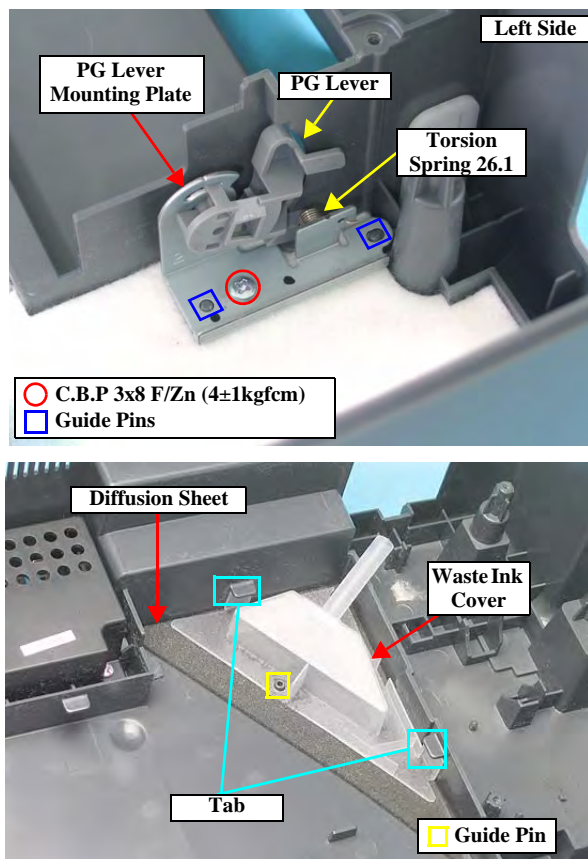


Figure 8-12. Removing Waste Ink Pads

□ Part/Unit that should be removed before removing Waste Ink Pads/Stacker Lock/PG Lever/Rubber Feet

Document Cover / Panel Unit / Scanner Unit / Housing, Upper / Stacker Assy. / Printer Mechanism

□ Removal procedure

■ Waste Ink Pads Removal

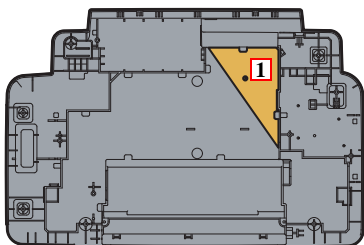
1. Remove the screw (x1, ○) that secures the PG Lever Mounting Plate, and remove the PG Lever, PG Lever Mounting Plate and Torsion Spring 26.1 all together from the Housing, Lower.
2. Remove 6 pieces of the Waste Ink Pads from the Housing, Lower.
3. Release the tabs (x2, □) that secure the Waste Ink Cover, and remove it from the Housing, Lower.
4. Remove the Diffusion Sheet.

REASSEMBLY

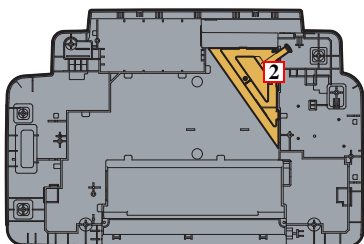


- When installing the Waste Ink Pads, Waste Ink Cover and the Diffusion Sheet, be sure to follow the steps below.

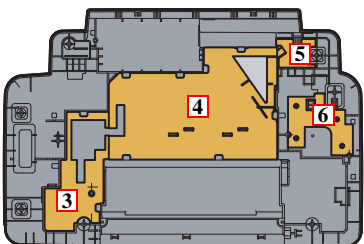
Step 1



Step 2



Step 3



Step 4

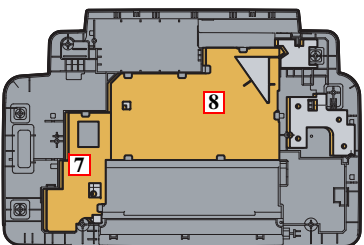


Figure 8-13. Installing Waste Ink Pads

REASSEMBLY



- When installing the Waste Ink Cover to the Housing, Lower, match the guide pin (x1, □) of the Housing, Lower with the positioning hole (x1) of the Waste Ink Cover.
- When installing the PG Lever Mounting Plate to the Housing, Lower, match the guide pins (x2, □) of the Housing, Lower with the positioning holes (x2) of the PG Lever Mounting Plate.

ADJUSTMENT
REQUIRED

After removing/replacing the Waste Ink Pads, perform the adjustment referring to “8.5 Adjustment (p.283)”.

□ External view (2)

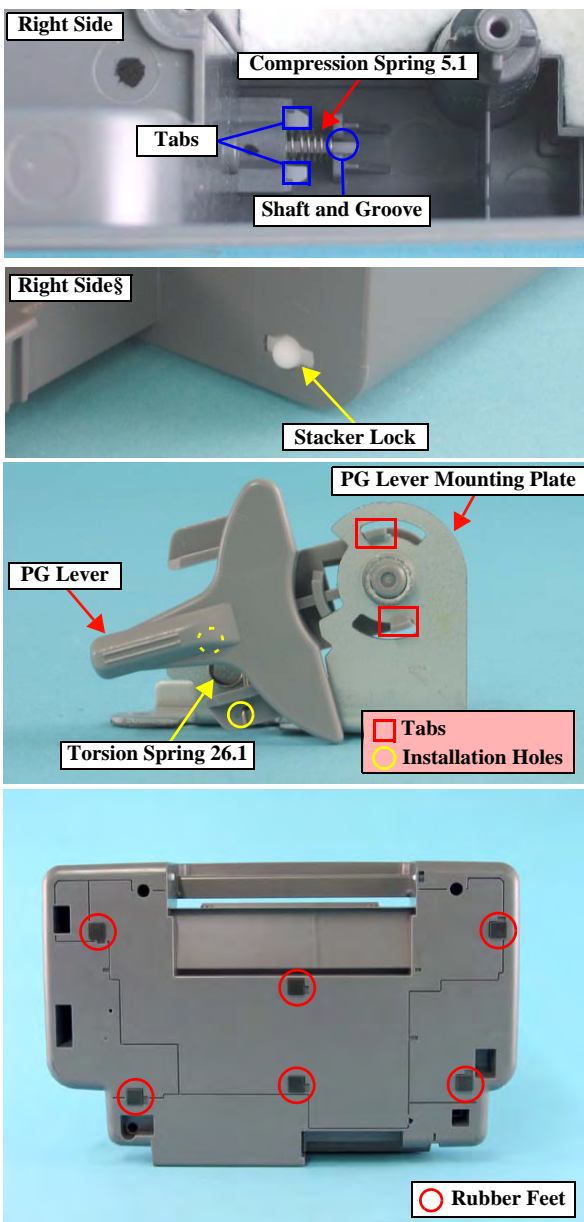



Figure 8-14. Removing Stacker Lock/PG Lever/Rubber Feet



■ Stacker Lock Removal

1. Remove the tabs (x2, ) that secure the Stacker Lock, and remove the Stacker Lock and Compression Spring 5.1 from the Housing, Lower.



Pass the shaft of the Stacker Lock through the groove of the Housing, Lower.

■ PG Lever Removal

1. Release the tabs (x2, ) that secure the PG Lever to the PG Lever Mounting Plate.
2. Remove Torsion Spring 26.1 from the installation holes (x2, ) of the PG Lever and the PG Lever Mounting Plate, and remove the PG Lever.

■ Rubber Feet Removal

1. Remove the rubber feet (x6) from the Housing, Lower.

8.4.3.6 Main Board Unit/Card Slot Unit/Fax Board

□ External view (1)

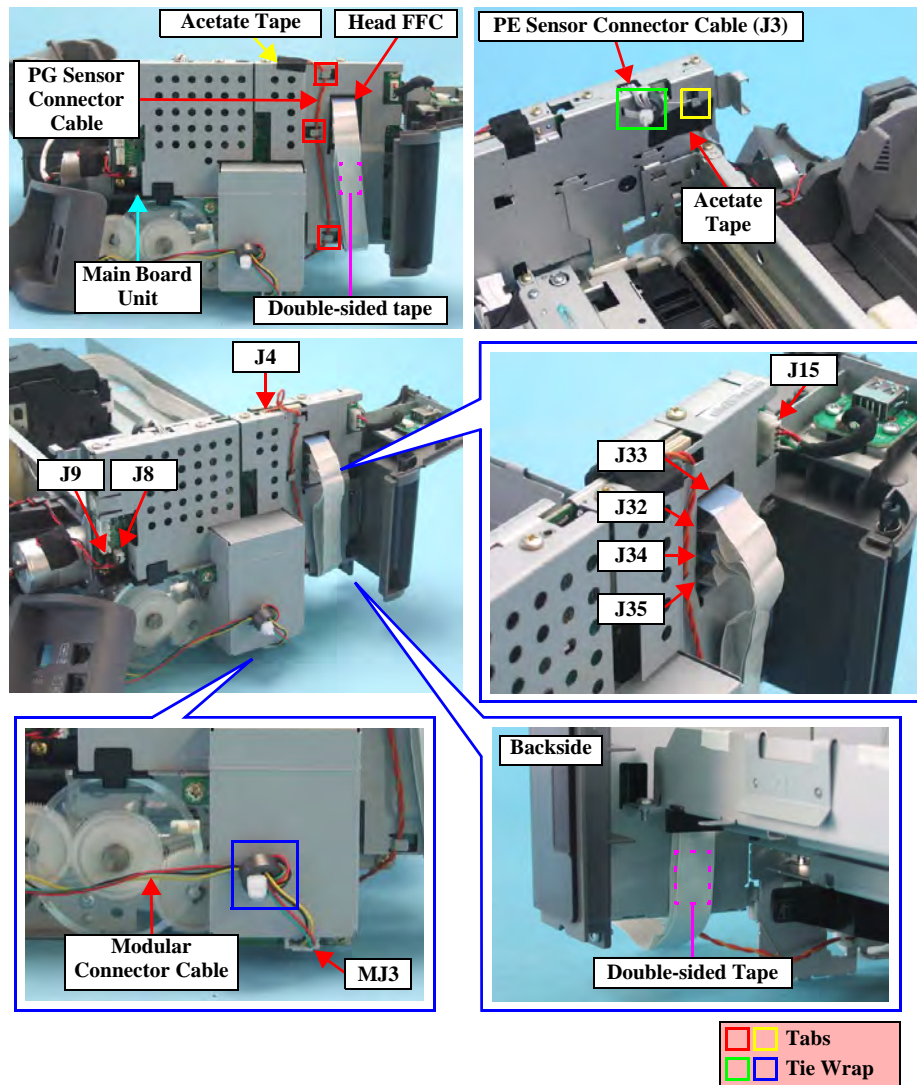


Figure 8-15. Removing Main Board Unit (1)

□ Part/Unit that should be removed before removing Main Board Unit/Card Slot Unit/Fax Board

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
Housing, Upper / Housing, Lower

□ Removal procedure

■ Main Board Removal

1. Peel off the acetate tape (x1) that secures the PG Sensor Connector Cable.
2. Release the PG Sensor Connector Cable from the tabs (x3,) of the Main Board Unit.
3. Peel off the acetate tape (x1) that secures the PE Sensor Connector Cable, and release the PE Sensor Connector Cable from the tabs (x1,) of the Main Board Unit.



Be careful not to cut the Cables secured by the Tie Wrap when cutting the Tie Wrap.

4. Cut the Tie Wrap (x1,) that secure the PE Sensor Connector Cable to the Main Board Unit with a pair of scissors.
5. Disconnect the following connector cables and FFCs from the connectors on the Main Board.
 - J3: PE Sensor Connector Cable
 - J4: PG Sensor Connector Cable
 - J32: Head FFC
 - J33: Head FFC
 - J34: Head FFC
 - J8: CR Motor Connector Cable
 - J9: PF Motor Connector Cable
 - J15: USB Host Cable
 - J35: Head FFC
6. Disconnect the following cable from the connector on the Fax Board.
 - MJ3: Modular Connector Cable
7. Cut the Tie Wrap (x1,) that secure the Modular Connector Cable to the Main Board Unit with a pair of scissors.
8. Peel off the double-sided tapes (x2) that secure the Head FFC to the Main Board Unit, and remove the Head FFC.

□ External view (2)

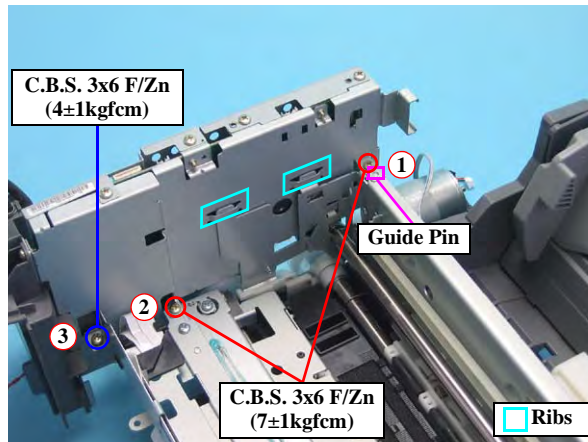


Figure 8-16. Removing Main Board Unit (2)

9. Remove the screws (x3, ● ●) that secure the Main Board Unit, and remove the Main Board Unit from the Printer Mechanism.



- Insert the PF Scale into the slit of the PF Encoder Sensor.

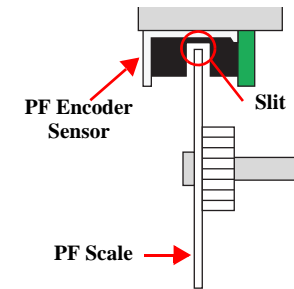


Figure 8-17. Installing PF Scale

- PF Scale position control

Use the following procedure to confirm that the PF Scale is positioned in the center of the PF Encoder Sensor.

1. Do a trial assembly of the Main Board Unit, and check if the PF Scale is positioned in the center of the PF Encoder Sensor.
2. If the PF Scale is positioned in the center of the PF Encoder Sensor, adjustment is complete.

- Insert the ribs (x3, □) of the Main Frame into the tabs (x3) of the Main Board Unit.

- Match the positioning hole (x1) of the Main Board Unit with the guide pin (x1, □) of the Main Frame.

- Tighten the screws in the order as shown in the figure.

- When installing the Tie Wrap to the frame of the Main Board Unit, insert it through the hole on the frame of the Main Board Unit and the Ferrite Core as shown below.

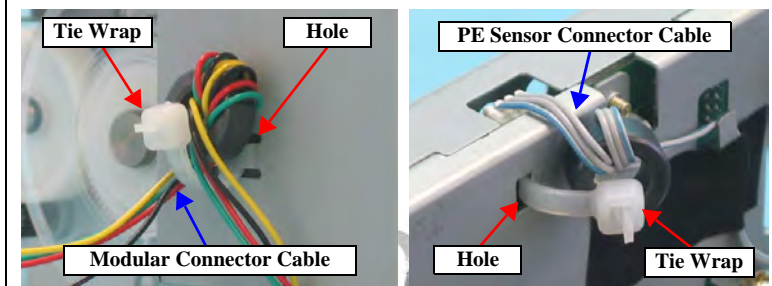


Figure 8-18. Installing the Tie Wrap

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□ External view (3)

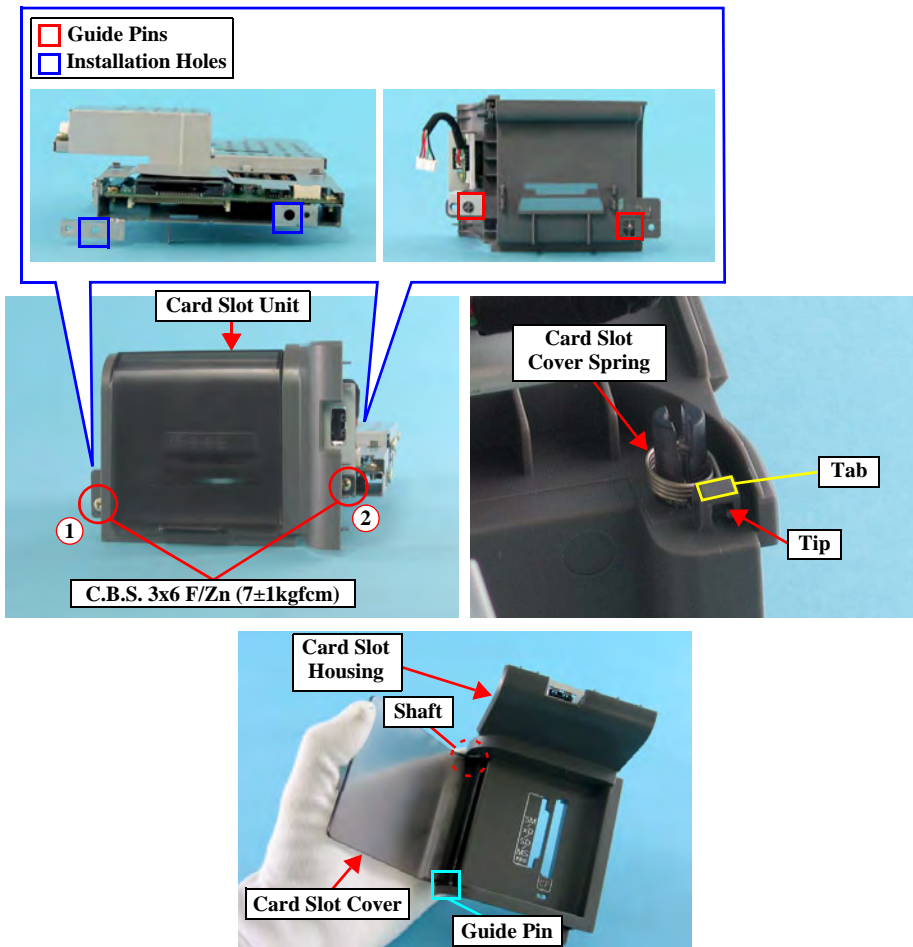





Figure 8-19. Removing Main Board Unit (2)

■ Card Slot Unit Removal

1. Remove the screws (x2, ) that secure the Card Slot Unit, and remove the Card Slot Unit from the Main Board Unit.
2. Release the tip of the Card Slot Spring from the tab (x1, ) of the Card Slot Housing, and remove the Card Slot Spring.
3. Release the guide pin (x1, ) of the Card Slot Cover from the Card Slot Housing, and remove the Card Slot Cover.



- Set the shaft of the Card Slot Cover into the Card Slot Housing and align the guide pin.
- Install the Card Slot Spring as shown below.

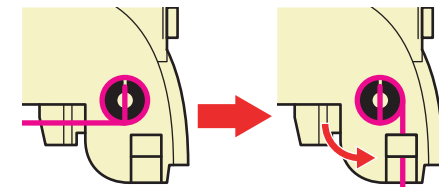




Figure 8-20. Installing Card Slot Spring

- Tighten the screws in the order shown in the figure.
- Match the guide pins (x2, ) of the Card Slot Housing with the positioning holes (x2, ) of the Main Board Unit.

External view (4)

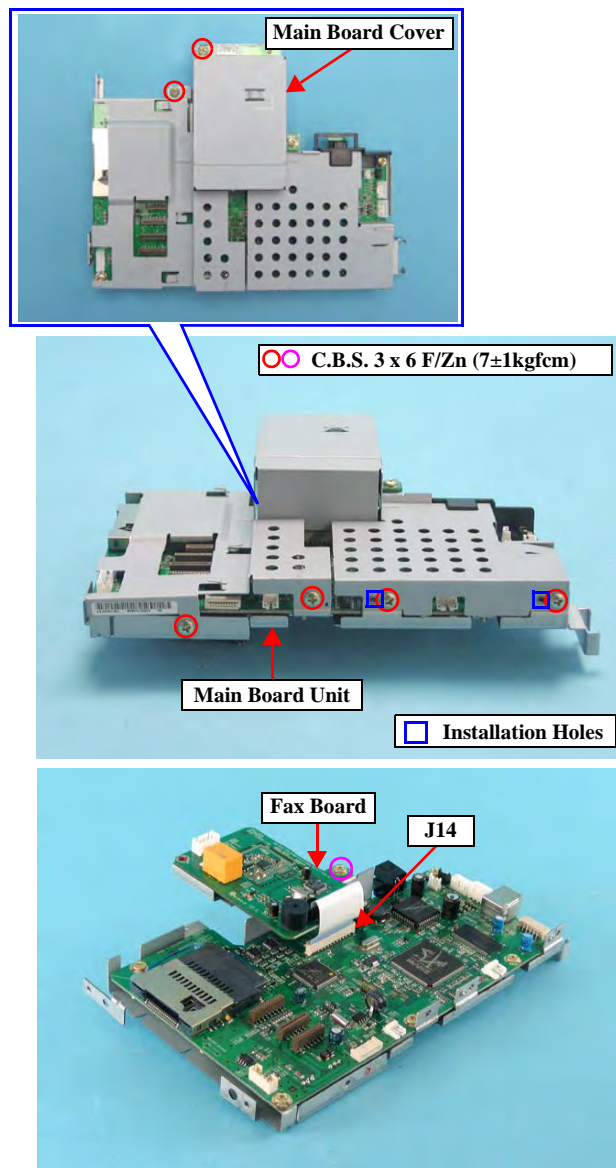




Figure 8-21. Removing Fax Board Unit

Fax Board Removal

1. Remove the screws (x6, ) that secure the Main Board Cover, and remove the Main Board Cover from the Main Board Unit.
2. Disconnect the following connector cable from the connector on the Main Board.
 - J14: Fax Board Connector Cable
3. Remove the screw (x1, ) that secures the Fax Board, and remove the Fax Board from the Main Board Unit.



When installing the Main Board Cover to the Main Board Unit, match the guide pins (x2, ) of the Main Board Unit with the Main Board Cover (x2).



After removing/replacing the Main Board Unit, perform the adjustment referring to “8.5 Adjustment (p.283)”.

8.4.3.7 CR Guide Frame

□ External view

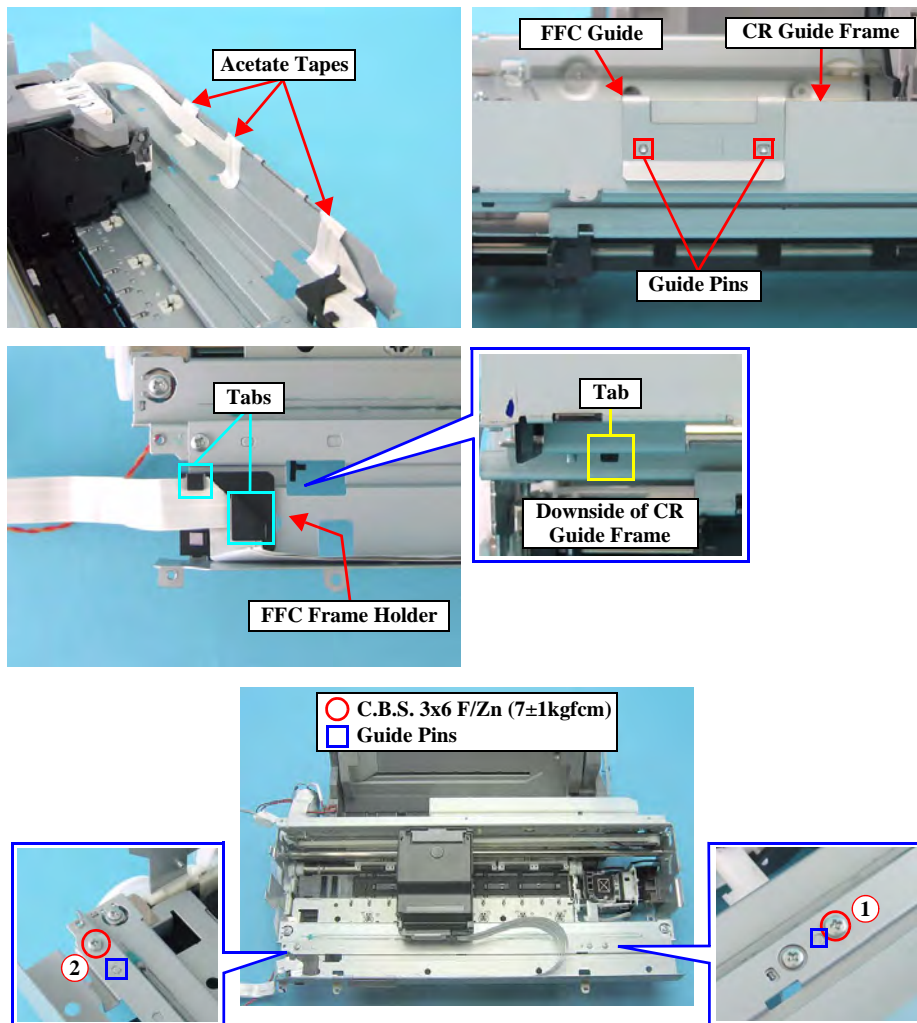


Figure 8-22. Removing CR Guide Frame

□ Part/Unit that should be removed before removing CR Guide Frame

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit /
Housing, Upper / Housing, Lower / Main Board Unit

□ Removal procedure

1. Peel off the acetate tape (x3) that secure the Head FFCs (x4).
2. Release the guide pins (x2, □) that secure the FFC Guide, and remove the FFC Guide from the CR Guide Frame.
3. Release the tab (x1, □) on the bottom of the CR Guide Frame that secures the FFC Frame Holder, and remove the FFC Frame Holder together with the Head FFC.
4. Release the Head FFC from the tabs (x2, □) of the FFC Frame Holder.
5. Release the Head FFCs (x4) secured with the double-sided tape (x1) from the CR Guide Frame.
6. Remove the screws (x2, ○) that secure the CR Guide Frame, and remove the CR Guide Frame from the Printer Mechanism.



- Match the guide pins (x2, □) of the Front Frame with the positioning holes (x2) of the CR Guide Frame.
- Tighten the screws in the order as shown in the figure.
- Attach the Head FFCs (x4) with double-sided tape against the mark-off line on the CR Guide Frame.

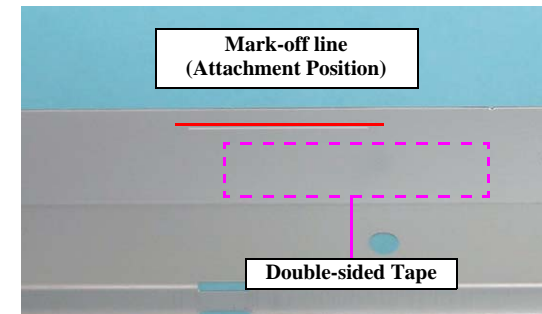


Figure 8-23. Attaching Head FFC

8.4.3.8 Carriage Unit/CR Encoder Board/PW Sensor Board/Head FFC

□ External view (1)

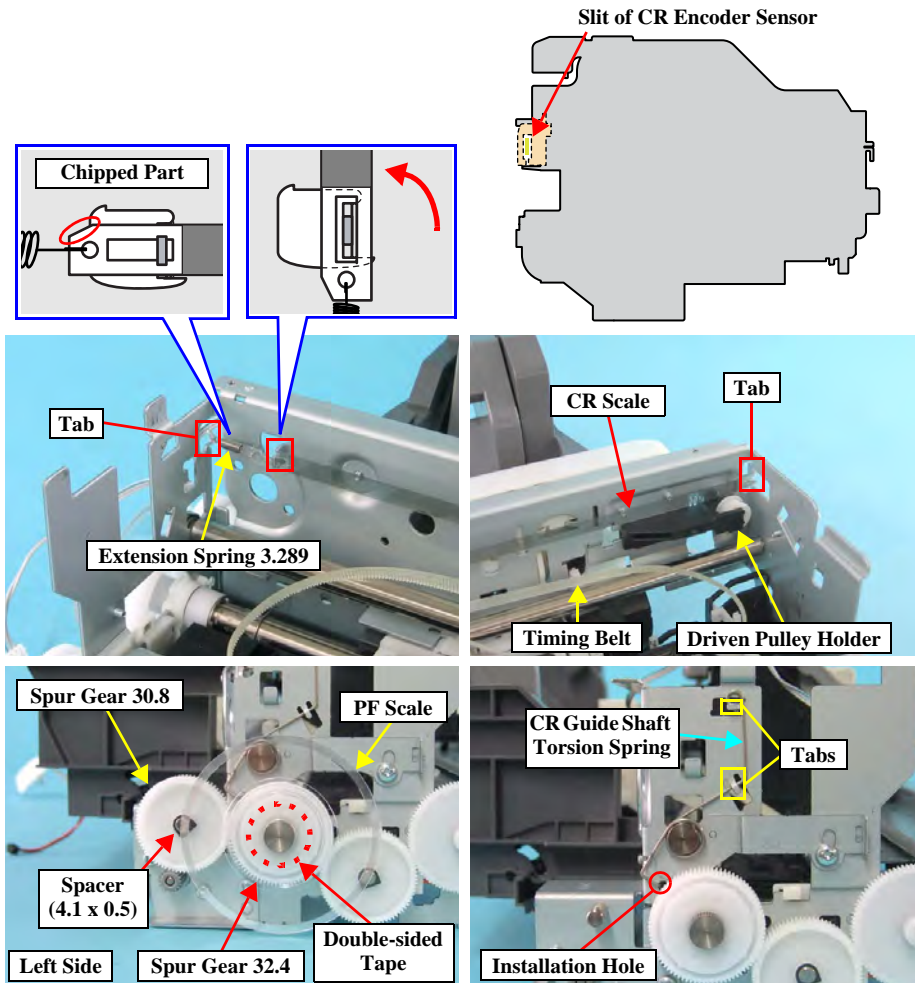


Figure 8-24. Removing Carriage Unit (1)

□ Part/Unit that should be removed before removing Carriage Unit

Document Cover / Paper Support Assy. / Panel Unit / Scanner Unit / Housing, Upper / Housing, Lower / Main Board Unit / CR Guide Frame / CR Motor

□ Removal procedure

1. Release the Timing Belt from the Driven Pulley Holder.

CAUTION



Pay attention to the following instructions:

- Do not touch the CR Scale with bare hands.
- Do not damage the CR Scale.
- Handle the Extension Spring 3.289 in a way that does not extend it.


2. Remove the CR Scale from the Main Frame.

CAUTION



Be cautious of the following points.

- Do not touch the PF Scale with bare hands.
- Do not damage the PF Scale.

3. Remove the PF Scale that is secured to Spur Gear 32.4 with the double-sided tape (x1).
4. Remove the Spacer (4.1 x 0.5) that secures Spur Gear 30.8, and remove Spur Gear 30.8 from the Main Frame.
5. Release CR Guide Shaft Torsion Spring from the tabs (x2, ) of the Main Frame, and remove CR Guide Shaft Torsion Spring from the Main Frame.

□ External view (2)

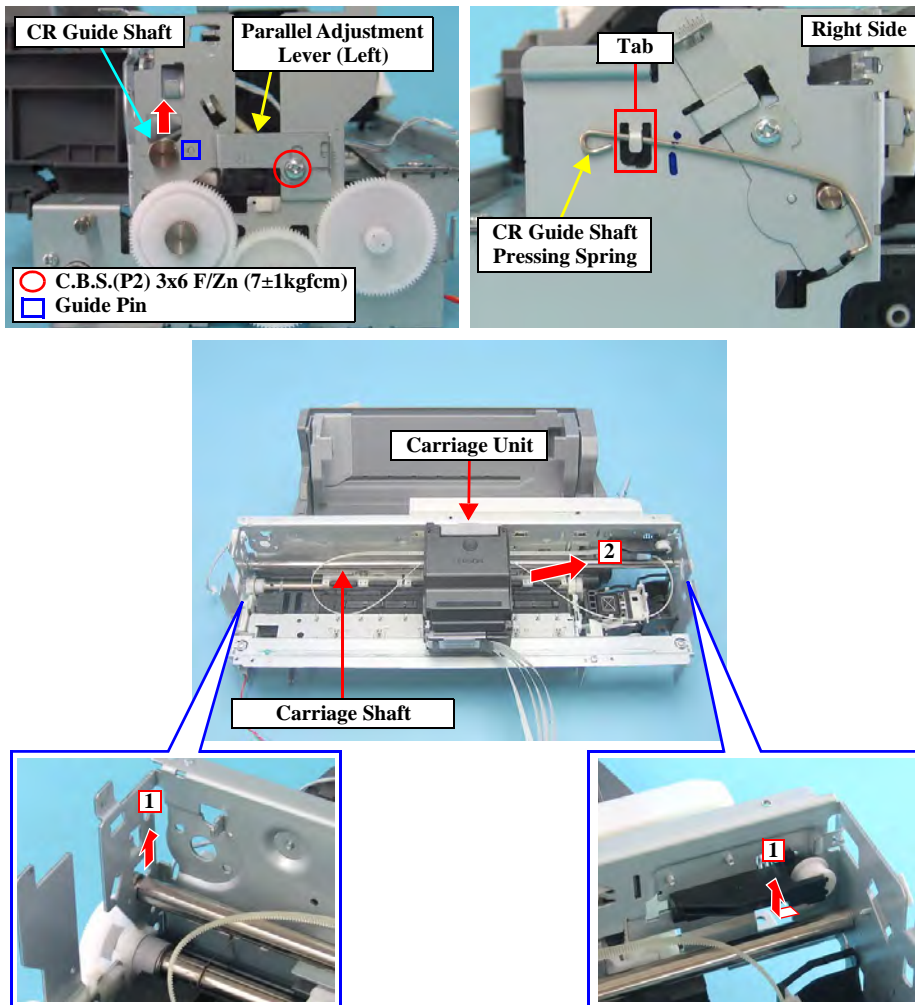




Figure 8-25. Removing Carriage Unit (2)


6. Remove the screw (x1, ) that secures the Parallel Adjustment Lever (Left), and remove the Parallel Adjustment Lever (Left) from Main Frame while lifting left end of the Carriage Guide Shaft upward.
7. Release the CR Guide Shaft Pressing Spring from the tab (x1, ) of the Main Frame, and remove the CR Guide Shaft Pressing Spring from the Main Frame.
8. Remove the Carriage Unit and the Carriage Guide Shaft from Printer Mechanism as follows.
 1. Lift up the left end of the Carriage Guide Shaft and shift in left direction until releasing right end of the Carriage Guide Shaft from the notch of the Main Frame.
 2. Remove the Carriage Guide Shaft along with the Carriage Unit from the Main Frame.



- Do not damage the Carriage Guide Shaft.
- Do not stain the Timing Belt with the grease (G-71 Grease).

9. Pull out the Carriage Guide Shaft from the Carriage Unit.



- When installing the Parallel Adjustment Lever to the Main Frame, match the guide pin (x1, ) of the Main Frame with the positioning hole (x1) of the Parallel Adjustment Lever (left).
- When installing the CR Scale, pay attention to the following instructions.
 - Pass the CR Scale into the slit of the CR Encoder Sensor.
 - Chipped portion of the CR Scale should be facing upward.
 - Making sure that Extension Spring 3.289 is not twisted, hitch one side of Extension Spring 3.289 to the hook of the Main Frame.



- After replacing the Carriage Unit with a new one, always apply G-71 grease to the specified parts.
 - Refer to Chapter 6: [Figure 6-7 \(p216\)](#) for details.
- After replacing the Carriage Unit / the Carriage Guide Shaft, perform the adjustment referring to “[8.5 Adjustment \(p.283\)](#)”.

□ External view (3)

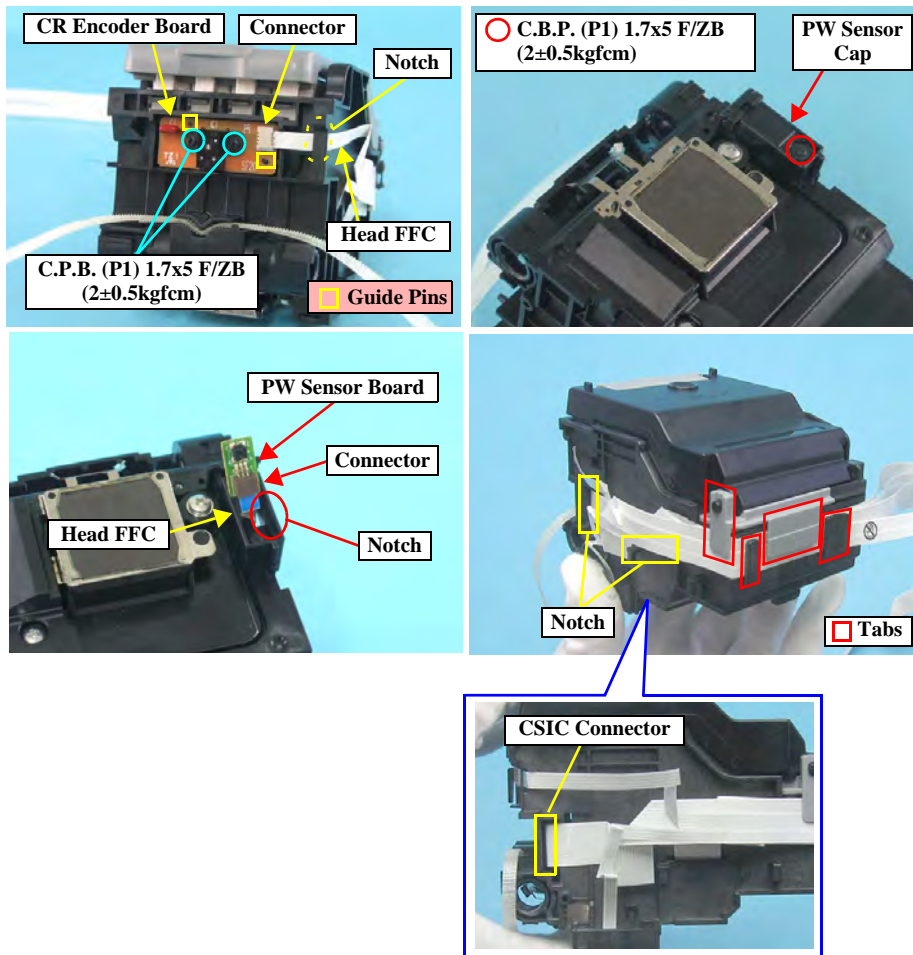



Figure 8-26. Removing Carriage Unit (3)


■ CR Encoder Removal

1. Disconnect the Head FFC from the connector of the CR Encoder Board, and pull out the Head FFC from the notch of the Carriage.
2. Remove the screws (x2, ) that secure the CR Encoder Board, and remove the CR Encoder Board.



Match the guide pins of the Carriage (x2, ) with the positioning hole (x2) of the CR Encoder Board.


■ PW Sensor Board Removal

1. Remove the screw (x1, ) that secures the PW Sensor Cap, and remove the PW Sensor Cap.
2. Disconnect the Head FFC from the connector of the PW Sensor Board, pull out the Head FFC from the notch of the Carriage, and remove the PW Sensor Board.



After removing/replacing the PW Sensor Board, perform the adjustment referring to “8.5 Adjustment (p.283)”.

■ Head FFC Removal

1. Remove the Printhead from the Carriage Unit.
2. Pull out the Head FFC from the notch of the Carriage.
3. Disconnect the Head FFC from the connector of the Head board.
4. Release the Head FFC from the tabs (x4, ) that secure the Head FFC.

8.5 Adjustment

This section is to explain how to use new Adjustment Program for CX6900F/CX7000F/DX7000F. UI / Operation procedure of this program is changed to improve the operability than Stylus CX5700F/CX5800F. (U/I / Operation procedure of new adjustment program is almost the same as that of EPSON products.)

8.5.1 System requirements

- ☐ OS: Windows 2000/XP
- ☐ I/F: USB



You can use this adjustment program without installing printer driver and twain for Stylus CX6900F/CX7000F/DX7000F.

8.5.2 Details of adjustment program

EXPLANATION OF EACH FUNCTION IN ADJUSTMENT PROGRAM

You should use this program for adjustment & maintenance of the captioned models. Following is the items of each function.

Table 8-5. Explanation of each function in adjustment program

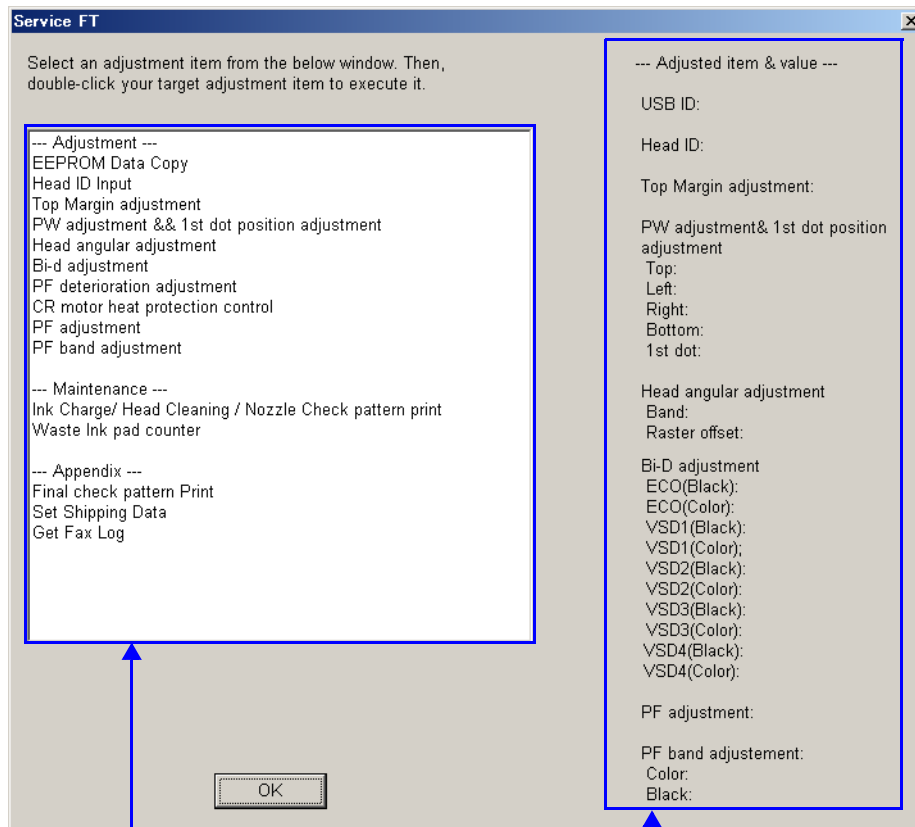
Category	Item	Function	Purpose	Reference page
Adjustment	EEPROM Data Copy	Backup	This is to backup all of EEPROM from defective M/B.	p.289
		Restore	This is to restore the backup data into new M/B.	
	Head ID Input	Input	This is to input Head ID (18-digit).	p.290
		Read	This is to read out current Head ID.	
	Top Margin adjustment	Print	This is to print TOF check pattern.	p.292
		Input	This is to input adjustment value.	
		Read	This is to read out current adjustment value.	
	PW adjustment & 1st dot position adjustment	Print	This is to print PW & 1st dot position check pattern.	p.293
		Input	This is to input adjustment value.	
		Read	This is to read out current adjustment value.	
	Head angular adjustment	Print	This is to print Head angular check pattern.	p.295
		Input	This is to input adjustment value.	
		Read	This is to read out current adjustment value.	

Table 8-5. Explanation of each function in adjustment program

Category	Item	Function	Purpose	Reference page
Adjustment	Bi-d adjustment	Print	This is to print Bi-d check pattern.	p.296
		Input	This is to input adjustment value.	
		Read	This is to read out current adjustment value.	
	PF deterioration adjustment	Initialization	This is to reset current value to “0”.	p.298
		Input	This is to input maximum value.	
	CR motor heat protection control	Perform	This is to input the proper CR variation.	p.298
		Reperform	This is to input maximum value.	
	PF adjustment	Print	This is to print PF check pattern.	p.299
		Input	This is to input adjustment value.	
		Read	This is to read out current adjustment value.	
	PF band adjustment	Print	This is to print PF band check pattern.	p.300
		Input	This is to input adjustment value.	
		Read	This is to read out current adjustment value.	
Maintenance	Ink charge	Charge	This is to perform initial ink charge.	p.302
		Print	This is to print nozzle check pattern.	
	Waste ink pad counter	Initialization	This is to reset current waste ink pad counter to “0”.	p.302
		Read	This is to read out current waste ink pad counter.	
Appendix	Final check pattern print	Print	This is to print final check pattern.	p.303
	Set Shipping Data	Set	This is to set shipping data (factory setting) (You can use to delete user’s registered information / transmission record regarding Fax.).	p.303
	Get Fax Log	Get Fax Log	This is to read out fax log for investigation.	p.304
		Save Log to File	This is to save read-out fax log.	
		Clear	This is to clear read-out fax log.	

EXPLANATION ABOUT SCREEN IN ADJUSTMENT PROGRAM

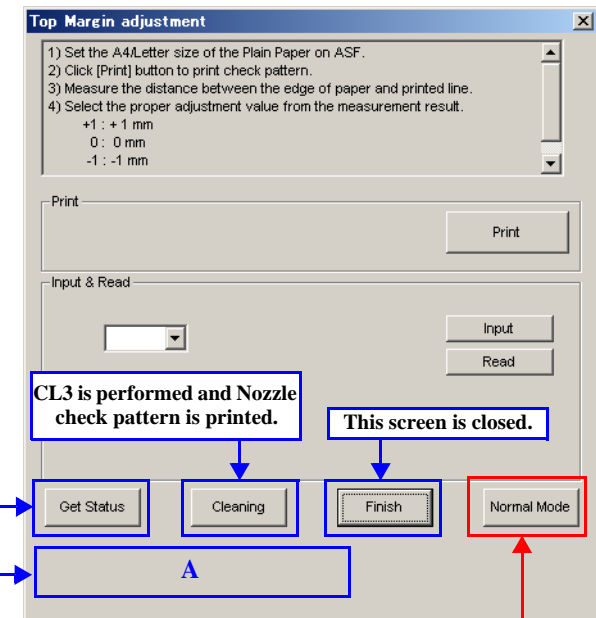
Main Screen



Item for Adjustment/Maintenance/Appendix

Input adjustment value is shown in this window.

Adjustment screen

Double click
"Top Margin
adjustment".CL3 is performed and Nozzle
check pattern is printed.

This screen is closed.

Printer status & ink consumption
amount are shown in the position "A".

Product is automatically set to FT mode before print operation of adjustment program, and set to Normal mode after that. If error happens in FT mode, product may not move from FT mode to Normal mode. This time, you should click "Normal Mode" button to set Normal mode. (You don't need to click this button every time you perform adjustment.)

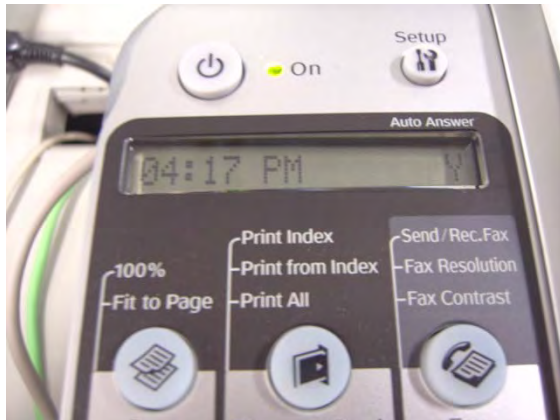
CHECK
POINT

"Get Status" button / "Cleaning" button / "Finish" button / "Normal Mode" button are common.

CAUTION

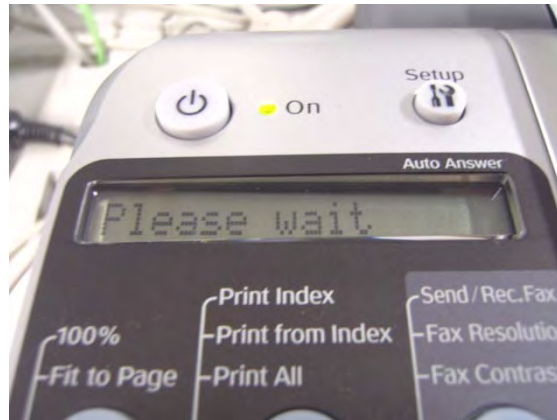
You can distinguish a difference between normal mode and FT mode by seeing the LCD display, as follows.

Display in Normal Mode



When product is in Normal Mode, current time is displayed on LCD display.

Display in FT Mode



When product is in FT Mode, "Please wait" message is displayed on LCD display.

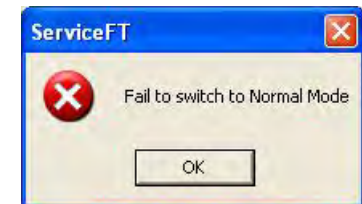


When product is in FT Mode, "FT Mode" message is displayed on LCD display.

When product is in FT Mode, product does not work correctly. This time, click "Normal Mode" button in adjustment screen.



Product is set to Normal Mode correctly.



Product is not set to Normal Mode correctly. Click "Normal Mode" button again after clicking "OK" button in the above screen. If product is not still set to Normal Mode, replace main board with new one and click "Normal Mode" button again.

8.5.3 Required adjustment

Table 8-6. Required Adjustment

Priority		1	2	3	4	5	6	7	8	9	10	11	12
Replaced Part	Adjustment Item	Head ID input	Waste ink pad counter ^{*1}	Initialize PF deterioration offset ^{*1}	Disable PF deterioration offset ^{*1}	Ink charge	Top margin adjustment	Head angular adjustment	Bi-d adjustment	1st dot adjustment / PW sensor adjustment ^{*2}	PF adjustment	PF band adjustment	CR motor heat protection control ^{*1}
ASF unit	Removal	---	---	---	---	---	O	---	---	O	O	O	---
	Replacement	---	---	---	---	---	O	---	---	O	O	O	---
CR motor	Removal	---	---	---	---	---	---	---	O	O	---	---	---
	Replacement	---	---	---	---	---	---	---	O	O	---	---	O
Paper guide upper	Removal	---	---	---	---	---	O	---	---	---	O	O	---
	Replacement	---	---	---	---	---	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	(Pad replacement)	---	O	---	O	O	O	O	O	O	O
Holder shaft unit	Removal	---	---	---	---	---	O	---	---	O	---	---	---
	Replacement	---	---	---	---	---	O	---	---	O	---	---	---
EJ roller assy	Removal	---	---	---	---	---	---	---	---	---	O	O	---
	Replacement	---	---	---	---	---	---	---	---	---	O	O	---
PS board	Removal	---	---	---	---	---	---	---	---	---	---	---	---
	Replacement	---	---	---	---	---	---	---	---	---	---	---	O
Paper guide front	Removal	---	---	---	---	---	O	O	O	O	O	O	---
	Replacement	---	---	---	---	---	O	O	O	O	O	O	---
PF motor	Removal	---	---	---	---	---	O	---	---	---	O	O	---
	Replacement	---	---	---	---	---	O	---	---	---	O	O	---

Table 8-6. Required Adjustment

Priority		1	2	3	4	5	6	7	8	9	10	11	12
Replaced Part	Adjustment Item	Head ID input	Waste ink pad counter ^{*1}	Initialize PF deterioration offset ^{*1}	Disable PF deterioration offset ^{*1}	Ink charge	Top margin adjustment	Head angular adjustment	Bi-d adjustment	1st dot adjustment / PW sensor adjustment ^{*2}	PF adjustment	PF band adjustment	CR motor heat protection control ^{*1}
Waste ink pad	Removal	---	---	---	---	---	---	---	---	---	---	---	---
	Replacement	---	O	---	---	---	---	---	---	---	---	---	---
PW sensor	Removal	---	---	---	---	---	---	---	---	O	---	---	---
	Replacement	---	---	---	---	---	---	---	---	O	---	---	---
CR unit	Removal	---	---	---	---	---	O	O	O	O	O	O	---
	Replacement	---	---	---	---	---	O	O	O	O	O	O	O
CR guide shaft	Removal	---	---	---	---	---	---	---	O	O	---	---	---
	Replacement	---	---	---	---	---	---	---	O	O	---	---	O
EJ frame unit	Removal	---	---	---	---	---	---	---	---	---	O	O	---
	Replacement	---	---	---	---	---	---	---	---	---	O	O	---
PF roller assy	Removal	---	---	---	O	---	O	---	---	O	O	O	---
	Replacement	---	---	O	---	---	O	---	---	O	O	O	---
Printer mechanism	Removal	---	---	---	---	---	---	---	---	---	---	---	---
	Replacement	---	---	O	---	---	---	---	---	---	---	---	---

Note *1: This is function exclusively for service.

*2: This adjustment can be performed simultaneously in PW adjustment.

8.5.4 Detailed adjustment procedure

Following shows the concrete procedure from primary setup to the end of actual adjustment.

1. Download “Service FT v.0.2.0.8.zip” file and unzip this file.
2. Turn on the power of CX6900F/CX7000F/DX7000F.
3. Connect PC and CX6900F/CX7000F/DX7000F with USB cable.
4. Open the adjustment program. (Service FT.exe : latest program ver. 0.2.0.8)

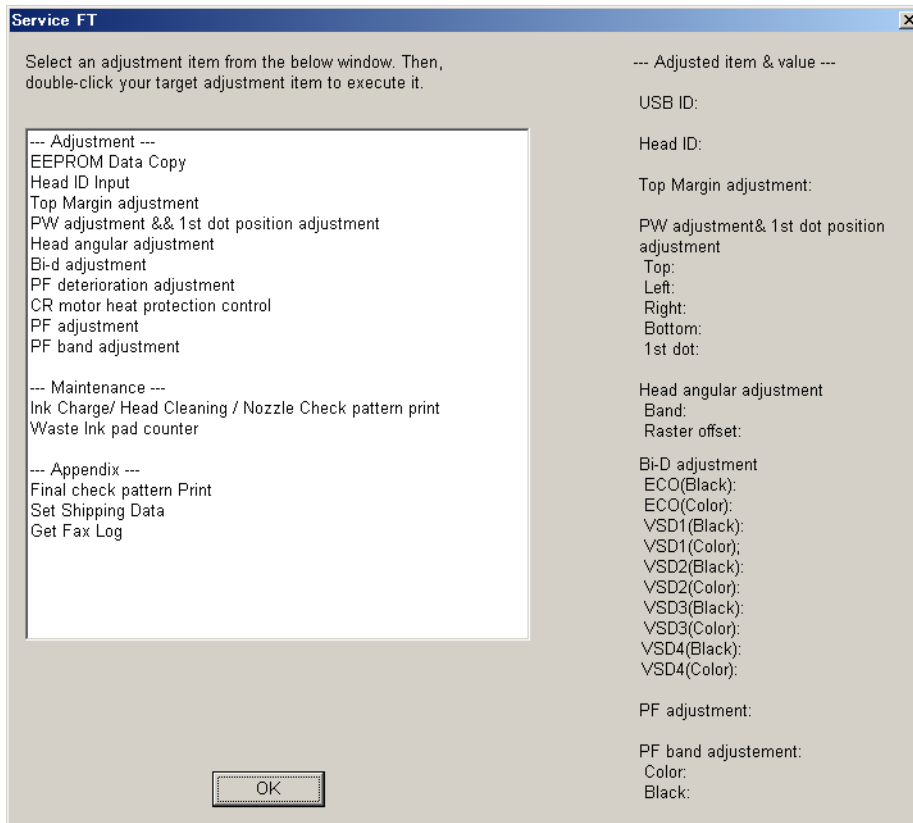


Figure 8-27. Main screen

5. Double click the proper adjustment item according to replacement parts removal parts. (Refer to “8.5.4 Detailed adjustment procedure (p.289)”.)

8.5.4.1 EEPROM Data Copy

1. Double click “EEPROM Data Copy” on main screen.
2. Click “Backup” button to save all of EEPROM from defective M/B.

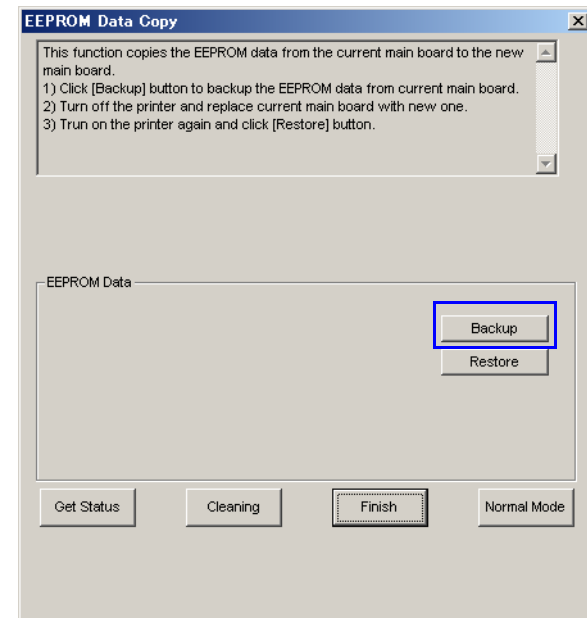


Figure 8-28. EEPROM Data Copy (1)

3. Turn off the power, and disconnect USB cable & AC cable.
4. Replace defective main board with new one.
5. Connect AC cable & USB cable.

- Turn on the power again, and click “Restore” button to restore the backup data into new M/B.

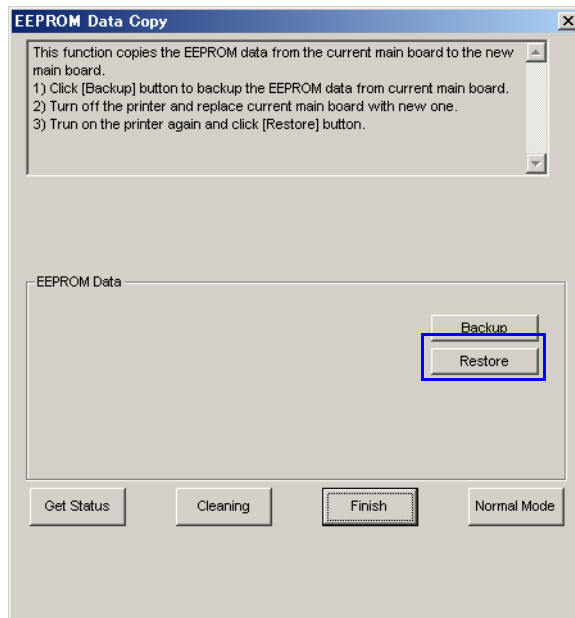


Figure 8-29. EEPROM Data Copy (2)

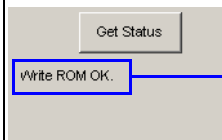
- Click “OK” button to finish restore function.



Figure 8-30. EEPROM Data Copy (3)

CHECK
POINT

Program status is displayed in bottom-left corner according to each function as follows with all adjustment items.



“Write ROM OK” message is displayed after clicking “OK” button in Step 7.

8.5.4.2 Head ID Input

- Double click “Head ID Input” on main screen.
- Input Head ID on edit box, and click “Input” to register it into EEPROM.

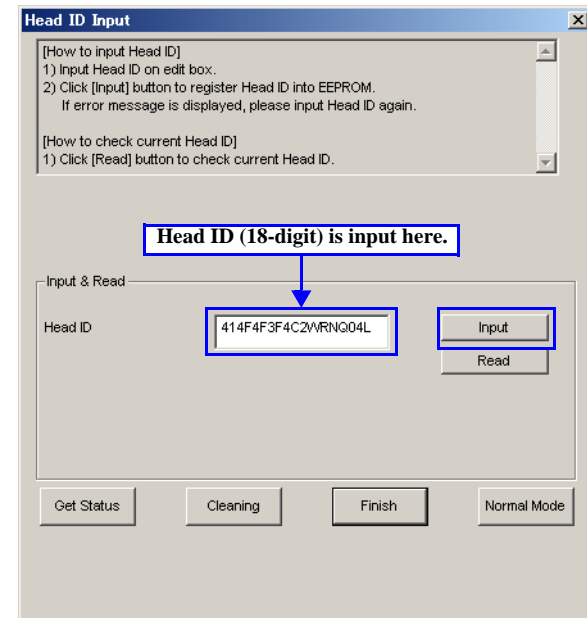


Figure 8-31. Head ID Input (1)

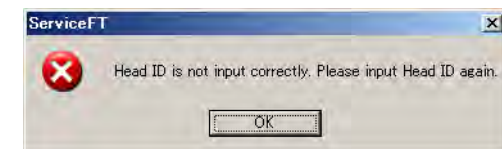
- Click “OK” button to finish input function.



Figure 8-32. Head ID Input (2)

CHECK
POINT

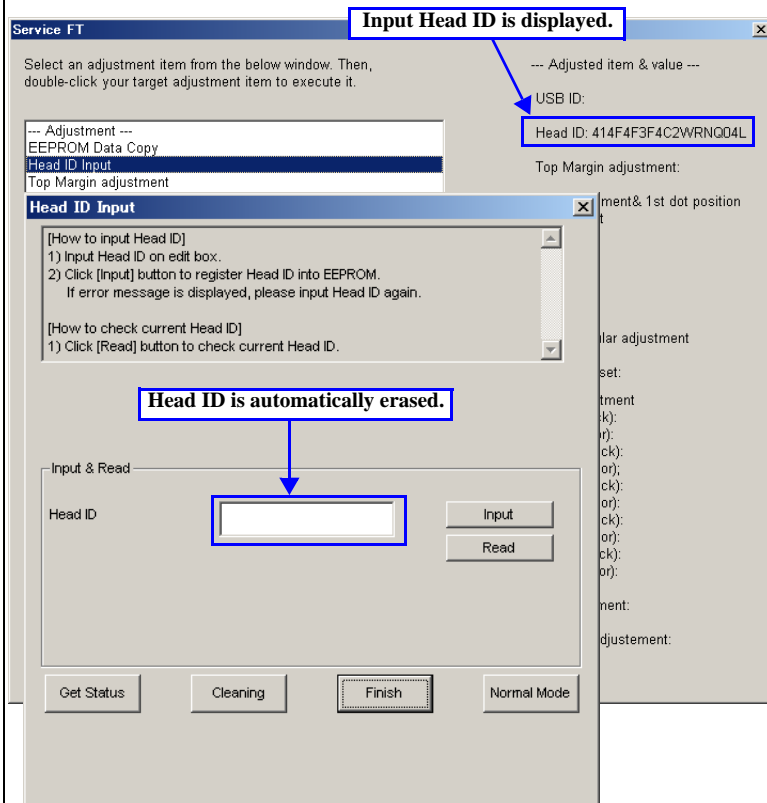
- When incorrect Head ID is input, error message is displayed. In this case, re-input correct Head ID after clicking “OK” button.



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**CHECK
POINT**

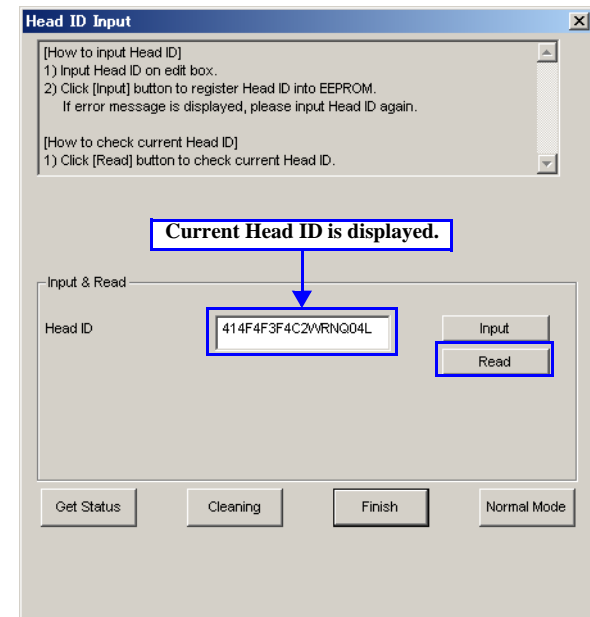
- When “OK” button is clicked, input Head ID on edit box is automatically erased. And then, input Head ID is displayed on main screen.



- When inputting Head ID into the edit box, read 18-digit characters on the QR code label from top left to bottom right in due order.

**CHECK
POINT**

- When “Read” button is clicked, current Head ID is displayed on edit box.



8.5.4.3 Top Margin adjustment

- 1. Double click “Top Margin adjustment” on main screen.
- 2. Click “Print” button to print the check pattern.

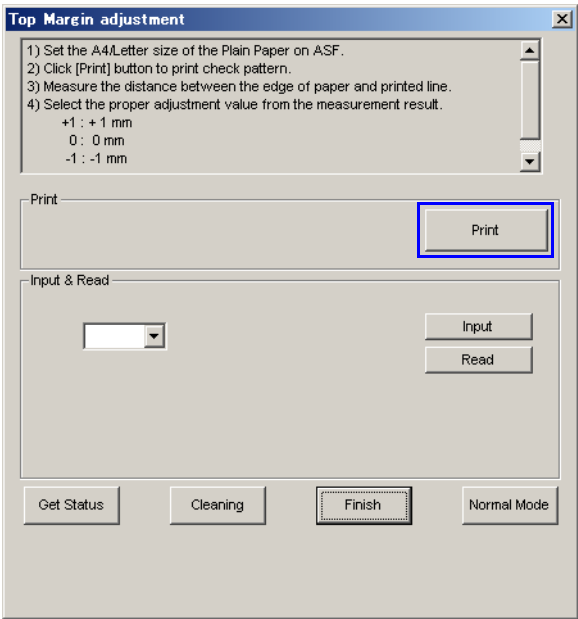


Figure 8-33. Top Margin adjustment (1)

- 3. Measure the distance between printed line and paper top edge.

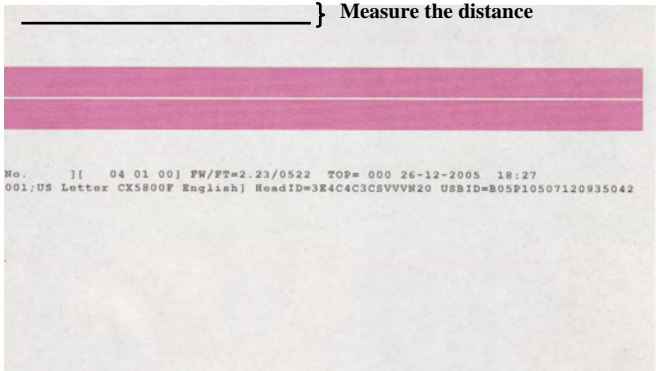


Figure 8-34. Top Margin adjustment (2)

- 4. Select adjustment value (+1, 0, -1) on edit box based on measurement result, and click “Input” button.

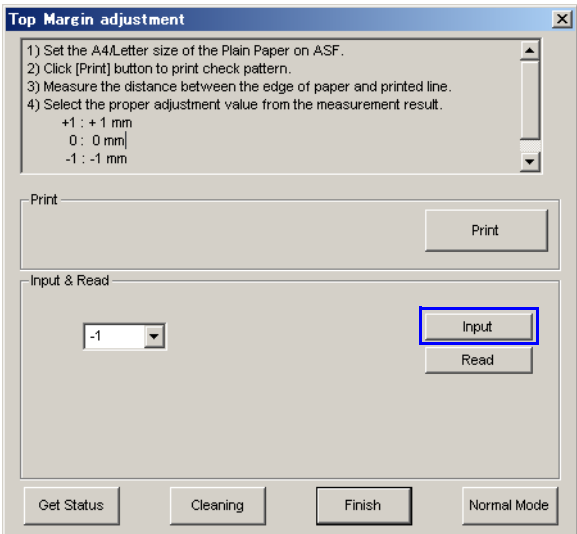
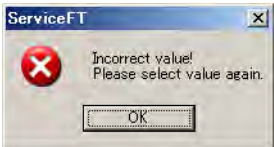


Figure 8-35. Top Margin adjustment (3)

Distance between Printed line and paper top edge	Selected value
~ 2.0 mm	+1
2.0 ~ 4.0 mm	0
4.0 mm ~	-1



- When adjustment value is manually input on edit box, error message is displayed. In this case, select the value on edit box after clicking “OK” button.
- When “OK” button is clicked, selected adjustment value on edit box is automatically erased. And then, the value is displayed on main screen.
- When “Read” button is clicked, current adjustment value is displayed on edit box.
- Selected adjustment value is added to current value every time this adjustment is repeated. Therefore, you should perform this adjustment until you find the proper adjustment value.



	Current value	Selected value	Adjustment value registered into EEPROM
E.g.1	+1	0	+1
E.g.2	+1	-1	0
E.g.3	0	+1	+1

8.5.4.4 PW adjustment & 1st dot position adjustment

1. Double click “PW adjustment & 1st dot position adjustment” on main screen.
2. Click “Print” button to print the check pattern.

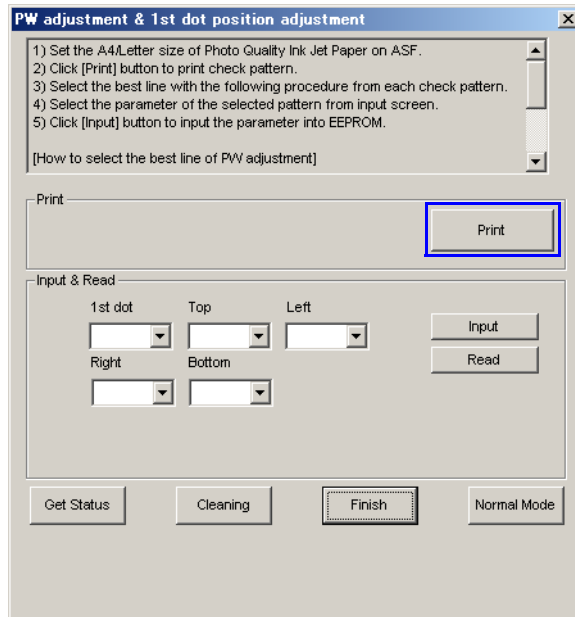


Figure 8-36. PW adjustment & 1st dot position adjustment (1)

3. Measure the distance between printed line and each paper edge (top / bottom, right / left)

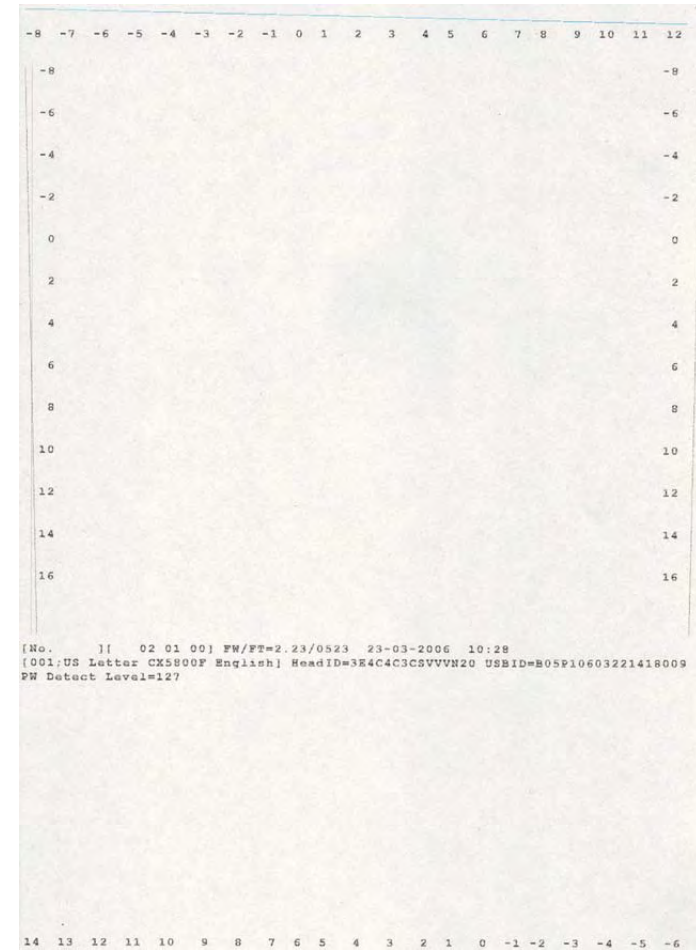
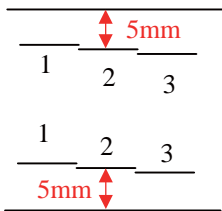


Figure 8-37. PW adjustment & 1st dot position adjustment (2)

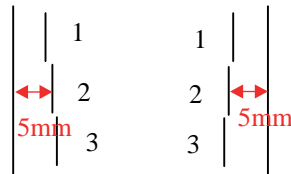
- Select line number on 5mm from each paper edge for PW adjustment. Then, select number of overlapped portion between red line and black line (left side) and click “OK” button.

PW adjustment

Top side & Bottom side

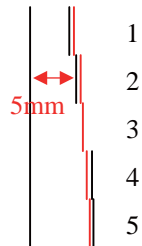


Left side & Right side



In this case, you have to select “2” in all edges.

1st dot adjustment



Black line: line for PW adjustment
Red line: line for 1st dot adjustment

For PW adjustment, you have to select “2”.
For 1st dot adjustment, you have to select “3”.

Figure 8-38. PW adjustment & 1st dot position adjustment (3)

- Select adjustment value on edit box based on measurement result, and click “Input” button.

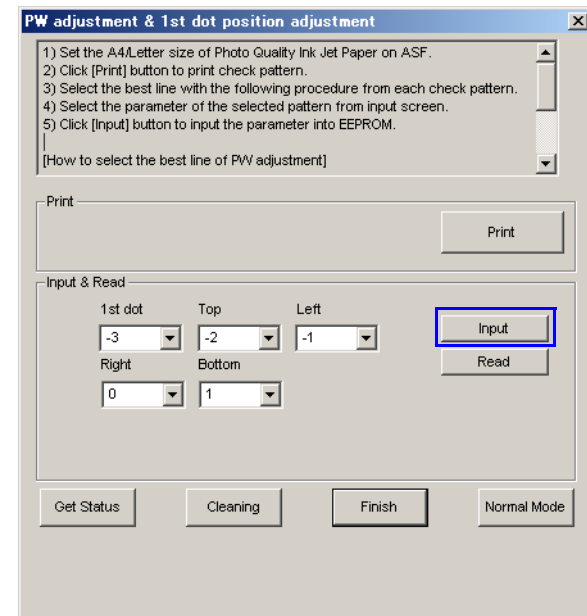


Figure 8-39. PW adjustment & 1st dot position adjustment (3)

CHECK POINT



- When adjustment value is manually input on edit box, error message is displayed as “Top Margin adjustment”. In this case, select the value on edit box after clicking “OK” button.
- When “OK” button is clicked, selected adjustment value on edit box is automatically erased. And then, the value is displayed on main screen.
- When “Read” button is clicked, current adjustment value is displayed on edit box.
- Selected adjustment value is not added to current value even if this adjustment is repeated. Therefore, you should perform this adjustment just one time.
- You cannot input only adjustment value of the specific item (1st dot / Top / Left / Right / bottom) individually. therefore, you should select adjustment value on all edit boxes surely. This time, if current adjustment value is not need to change, you should select current value on edit box.

8.5.4.5 Head Angular adjustment

1. Double click “Head Angular adjustment” on main screen.
2. Click “Print” button to print the check pattern.

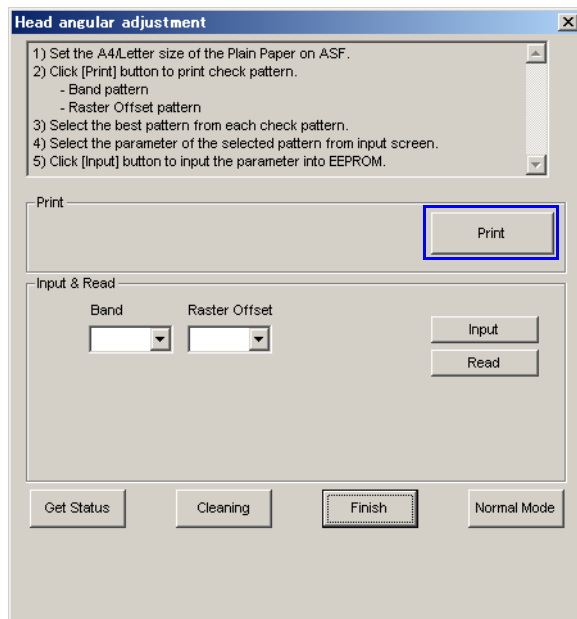
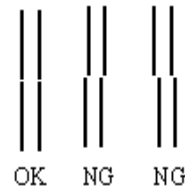


Figure 8-40. Head Angular adjustment (1)

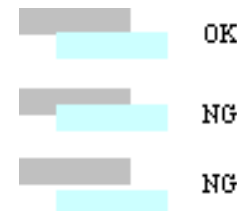
3. Select adjustment value (number of OK pattern) from check pattern, and click “Input” button.

-HeadIncline (Band)



OK means non-gap line between Top side and bottom side.

-HeadIncline (M/W)



OK means non-gap/non-overlap pattern between gray bar and cyan bar.

Figure 8-41. Head Angular adjustment (2)

4. Select adjustment value on edit box, and click “Input” button.

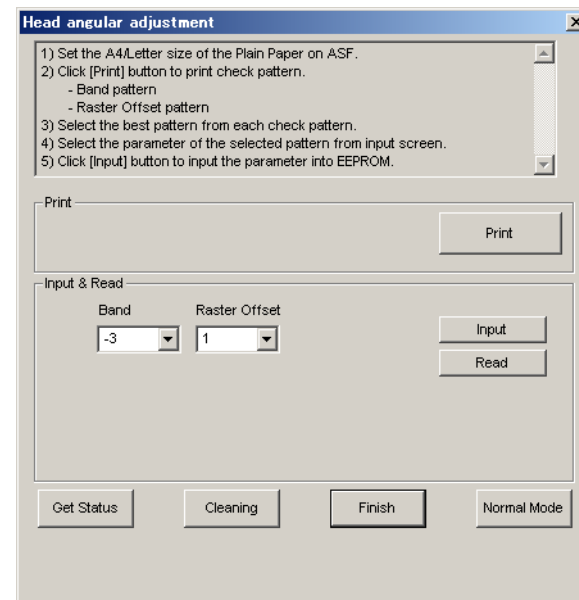


Figure 8-42. Head Angular adjustment (3)

CHECK
POINT

- When adjustment value is manually input on edit box, error message is displayed as **“Top Margin adjustment”**. In this case, select the value on edit box after clicking **“OK”** button.
- When **“OK”** button is clicked, selected adjustment value on edit box is automatically erased. And then, the value is displayed on main screen.
- When **“Read”** button is clicked, current adjustment value is displayed on edit box.
- Selected adjustment value is not added to current value even if this adjustment is repeated. Therefore, you should perform this adjustment just one time.
- You cannot input only adjustment value of the specific item (Band / Raster Offset) individually. therefore, you should select adjustment value on all edit boxes surely. This time, if current adjustment value is not need to change, you should select current value on edit box.

8.5.4.6 Bi-d adjustment

1. Double click **“Bi-d adjustment”** on main screen.
2. Click **“Print”** button to print the check pattern. (all dot size pattern is printed.)

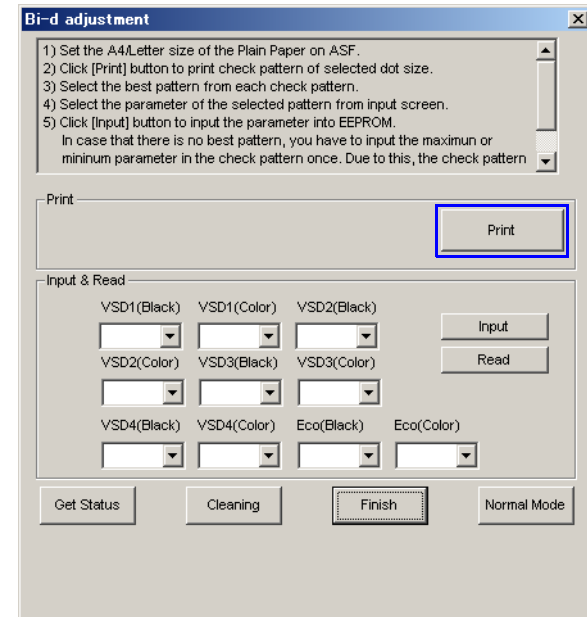
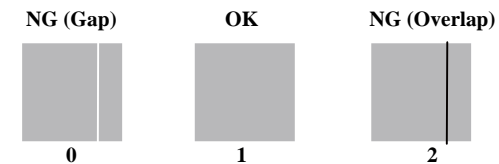


Figure 8-43. Bi-d adjustment (1)

3. Select adjustment value (number of OK pattern) from check pattern, and click **“Input”** button.



OK means non-gap/non-overlap pattern.
In this case, you have to select **“1”** from check pattern.

Figure 8-44. Bi-d adjustment (2)



4. Select adjustment value on edit box, and click “Input” button.

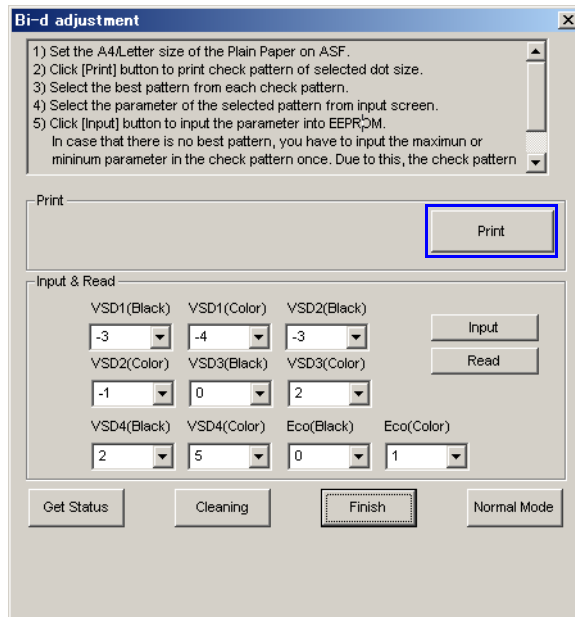


Figure 8-45. Bi-d adjustment (3)



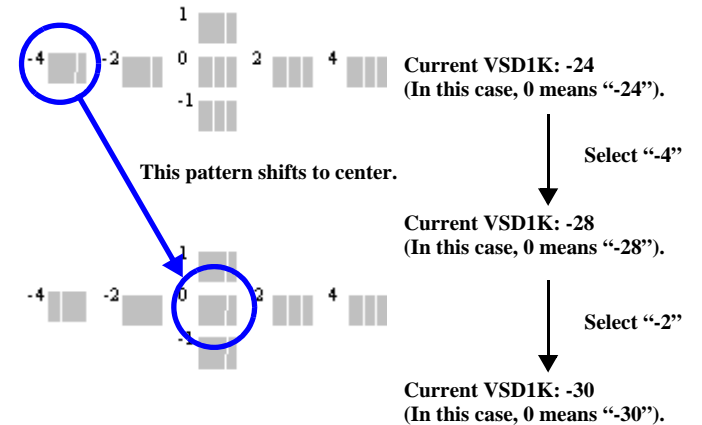
CHECK
POINT

- When adjustment value is manually input on edit box, error message is displayed as “**Top Margin adjustment**”. In this case, select the value on edit box after clicking “OK” button.
- When “OK” button is clicked, selected adjustment value on edit box is automatically erased. And then, the value is displayed on main screen.
- When “Read” button is clicked, current adjustment value is displayed on edit box.
- Selected adjustment value is added to current value every time this adjustment is repeated. Therefore, you should perform this adjustment until you find the proper adjustment value.

(Example 1)



(Example 2)



- Please note that the numbers shown next to the Bi-d patterns are adjustment values only. After you input the selected value (i.e. -4), the corresponding pattern will move to pattern “0” the next time you print the Bi-d adjustment page. On the other hand, in the printer's memory this value will be added to the actual stored data. In this example, -4 will be added to -24 and therefore will become -28.
- You cannot input only adjustment value of the specific item (VSD1 / VSD2 / VSD3 / VSD4 / ECO) individually. therefore, you should select adjustment value on all edit boxes surely even if additional adjustment is not needed. This time, if current adjustment value is not need to change, you should select “0” on edit box.

Current value	Selected value	Adjustment value registered into EEPROM
+1	0	+1

Current value is kept.



8.5.4.7 PF deterioration adjustment

1. Double click “PF deterioration adjustment” on main screen.
2. Click “Initialization” button or “Input” button according to replacement parts.

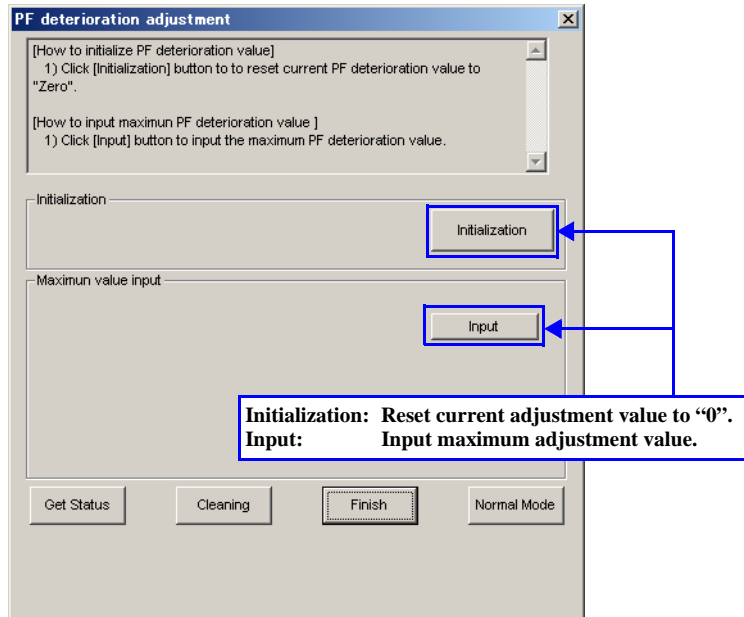


Figure 8-46. PF deterioration adjustment

8.5.4.8 CR motor heat protection control

1. Double click “CR motor heat protection control” on main screen.
2. Select replacement parts, and click “Perform” button to input the proper adjustment value.

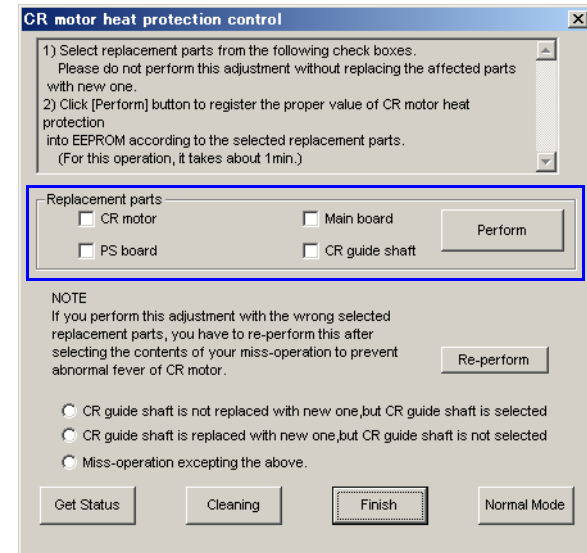


Figure 8-47. CR motor heat protection control

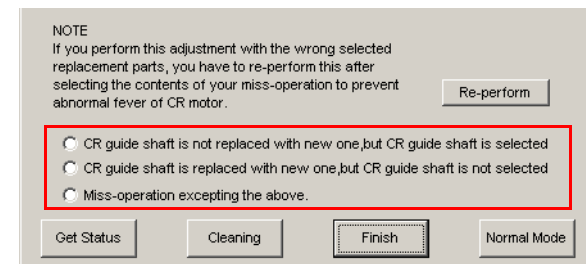
CAUTION



If you select the wrong replacement parts and click “Perform” button, abnormal fever of CR motor may possibly be caused during continuous print operation.

To prevent this, you have to perform this adjustment with the following step.

1. Select the incorrect operation contents from 3 options.
2. Click “Re-perform” to perform this adjustment again.



8.5.4.9 PF adjustment

1. Double click “PF adjustment” on main screen.
2. Click “Print” button to print the check pattern.

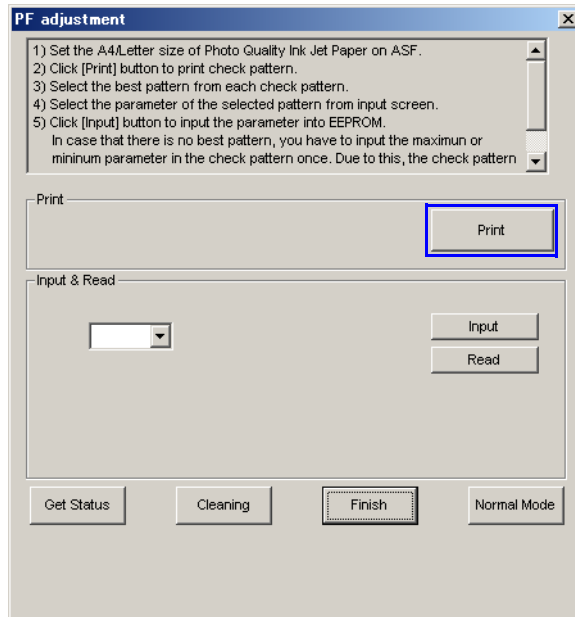
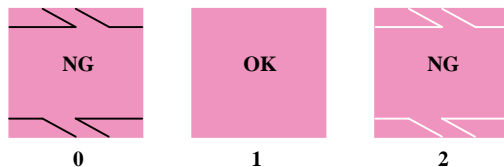


Figure 8-48. PF adjustment (1)

3. Select adjustment value (number of OK pattern) from check pattern, and click “Input” button.



OK means non-gap/non-overlap pattern.
In this case, you have to select “1” from check pattern.

Figure 8-49. PF adjustment (2)

4. Select adjustment value on edit box, and click “Input” button.

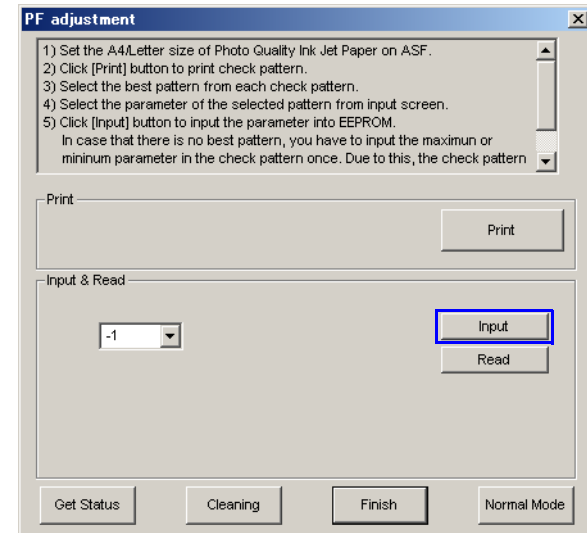
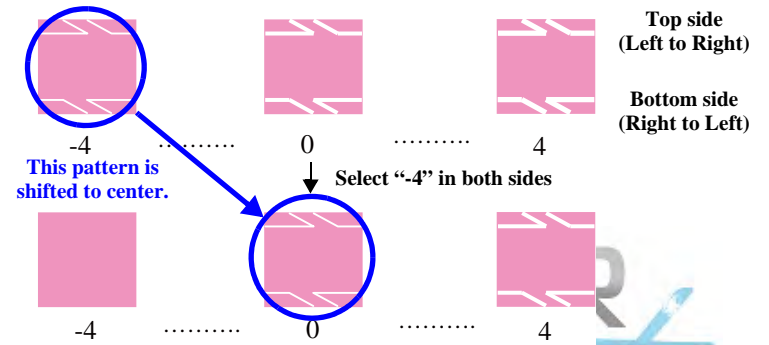


Figure 8-50. PF adjustment (3)



- When adjustment value is manually input on edit box, error message is displayed as “Top Margin adjustment”. In this case, select the value on edit box after clicking “OK” button.
- When “OK” button is clicked, selected adjustment value on edit box is automatically erased. And then, the value is displayed on main screen.
- When “Read” button is clicked, current adjustment value is displayed on edit box.
- Selected adjustment value is added to current value every time this adjustment is repeated. Therefore, you should perform this adjustment until you find the proper adjustment value. (Adjustment value is added like “Bi-d adjustment”.)



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■ You cannot input only adjustment value of the specific item (Black / Color) individually. therefore, you should select adjustment value on all edit boxes surely even if additional adjustment is not needed.
This time, if current adjustment value is not need to change, you should select “0” on edit box.

Current value	Selected value	Adjustment value registered into EEPROM
+1	0	+1

↓
Current value is kept.

8.5.4.10 PF band adjustment

- 1. Double click “PF band adjustment” on main screen.
- 2. Click “Print” button to print the check pattern.

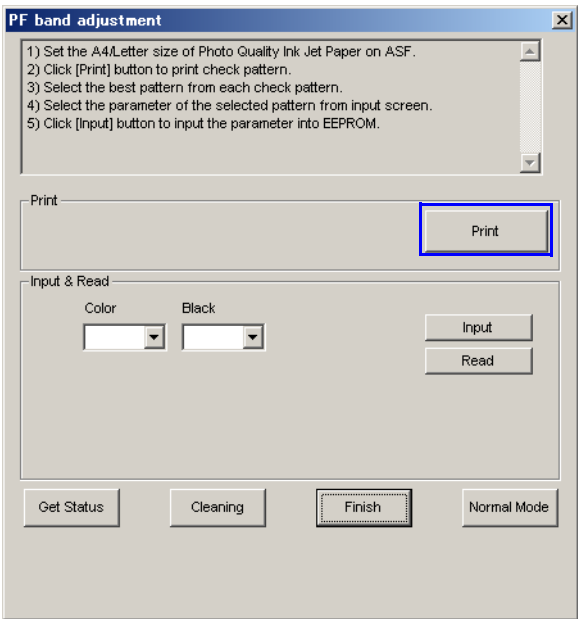


Figure 8-51. PF band adjustment (1)

- 3. Select adjustment value (number of OK pattern) from check pattern, and click “Input” button.

NG (overlap)

0

OK

1

NG (gap)

2

OK means non-gap/non-overlap pattern.
In this case, you have to select “1” from check pattern.

Figure 8-52. PF band adjustment (2)



4. Select adjustment value on edit box, and click “Input” button.

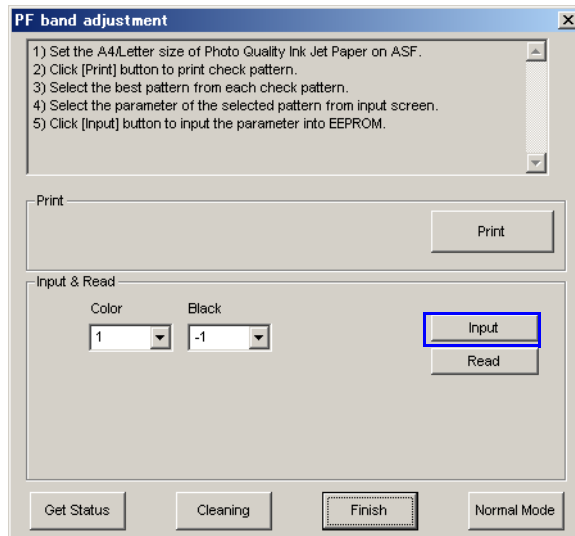


Figure 8-53. PF band adjustment (3)



- You cannot input only adjustment value of the specific item (Black / Color) individually. therefore, you should select adjustment value on all edit boxes surely even if additional adjustment is not needed.

This time, if current adjustment value is not need to change, you should select “0” on edit box.

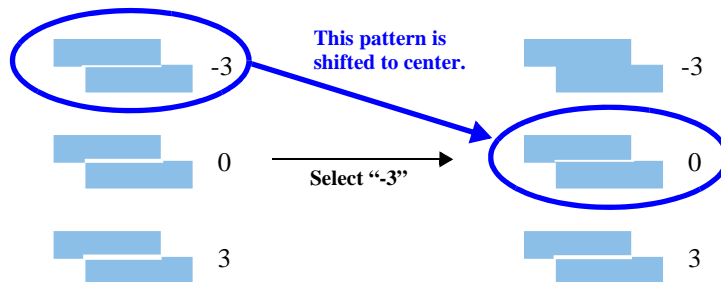
Current value	Selected value	Adjustment value registered into EEPROM
+1	0	+1

↓
Current value is kept.

CHECK
POINT



- When adjustment value is manually input on edit box, error message is displayed as “Top Margin adjustment”. In this case, select the value on edit box after clicking “OK” button.
- When “OK” button is clicked, selected adjustment value on edit box is automatically erased. And then, the value is displayed on main screen.
- When “Read” button is clicked, current adjustment value is displayed on edit box.
- Selected adjustment value is added to current value every time this adjustment is repeated. Therefore, you should perform this adjustment until you find the proper adjustment value. (Adjustment value is added like “Bi-d adjustment”.)



However, adjustable range is -5 to 5.

8.5.4.11 Ink charge

1. Double click “Ink charge” on main screen.
2. Click “Charge” button to perform ink charge.

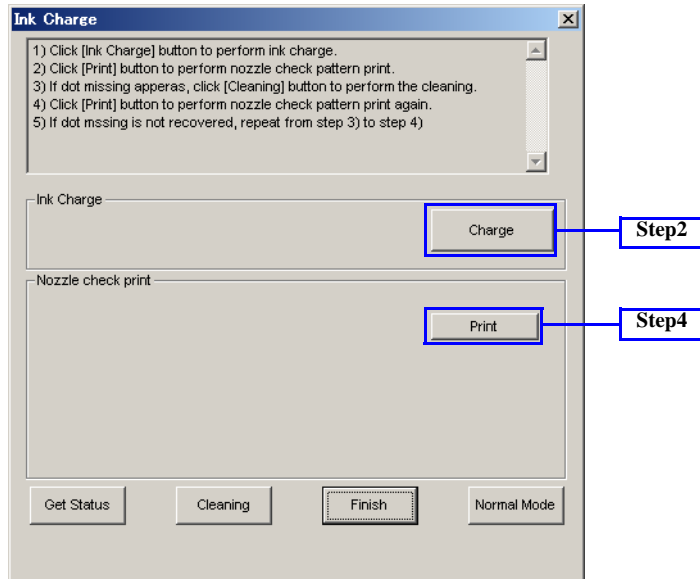


Figure 8-54. Ink charge (1)

And then, move CR unit to ink cartridge replacement position automatically.

- If you use ink cartridge for this operation, do nothing.
 - If you use ink supply tool for this operation, replace installed ink cartridge with the tool before going ahead next step.
3. Click “Yes” button or “No” button according to used tool.
 - If case of ink cartridge, click “Yes” button.
 - If case of ink supply tool, click “No” button.



Figure 8-55. Ink charge (2)

4. Click “Print” button to print nozzle check pattern (See Figure 8-54).

8.5.4.12 Waste ink pad counter

1. Double click “Waste ink pad counter” on main screen.
2. Click “Initialization” button to reset current waste ink pad counter to “0”.

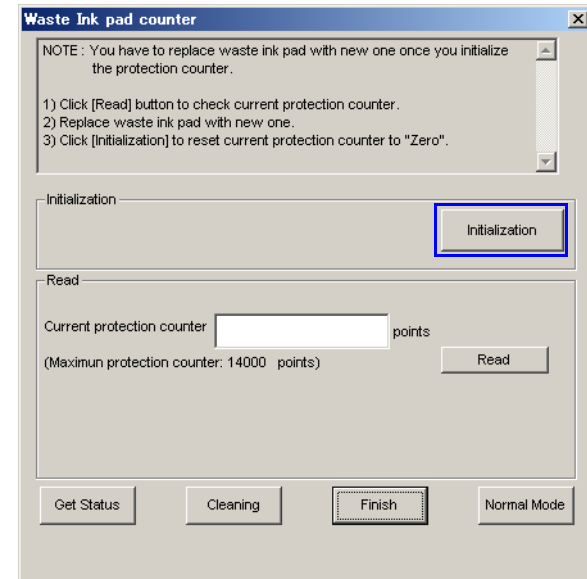


Figure 8-56. Waste ink pad counter



When “Read” button is clicked, current waste ink pad counter is displayed on edit box.

8.5.4.13 Final Check Pattern Print

1. Double click “Final Check Pattern Print” on main screen.
2. Select paper type, and click “Print” button to print final check pattern.

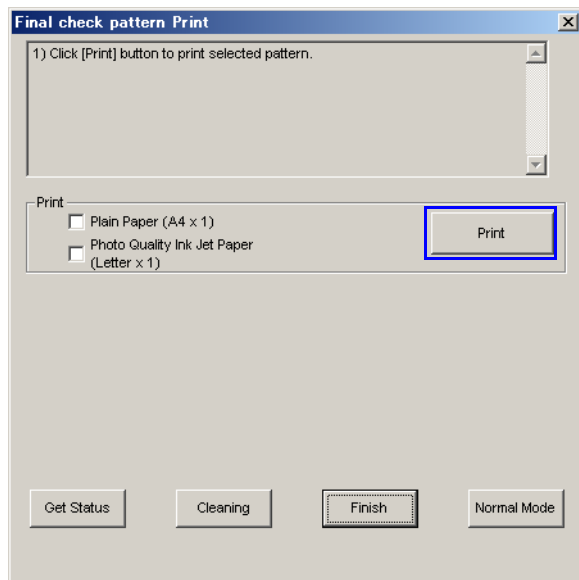


Figure 8-57. Final Check Pattern Print

8.5.4.14 Set Shipping Data

1. Double click “Set Shipping Data” on main screen.
2. Click “Set” button to set shipping data (factory setting).

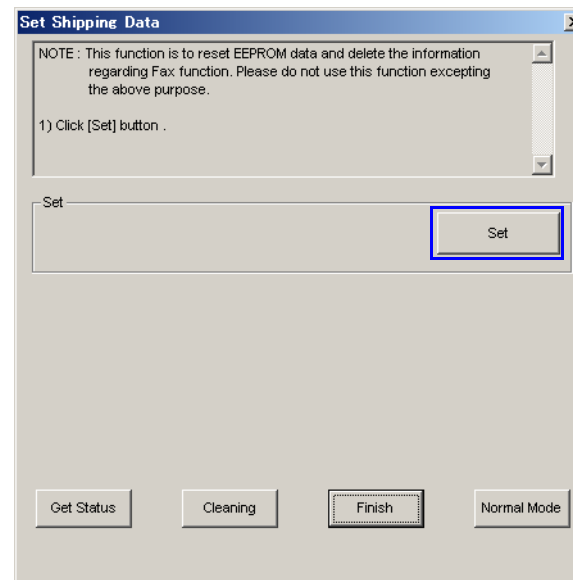


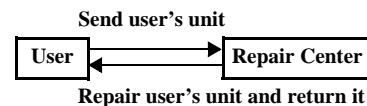
Figure 8-58. Set Shipping Data

CHECK POINT

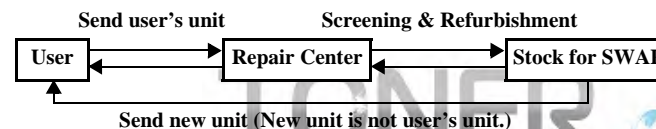


This is to set shipping data (factory setting). Due to this, you can use to delete user's registered information / transmission record regarding Fax. If the returned units are refurbished for SWAP (Case2), you have to clear them at this time.

Case 1



Case 2



8.5.4.15 Get Fax Log

1. Double click “Get Fax Log” on main screen.
2. Click “Get Fax Log” button to read out the latest fax log.

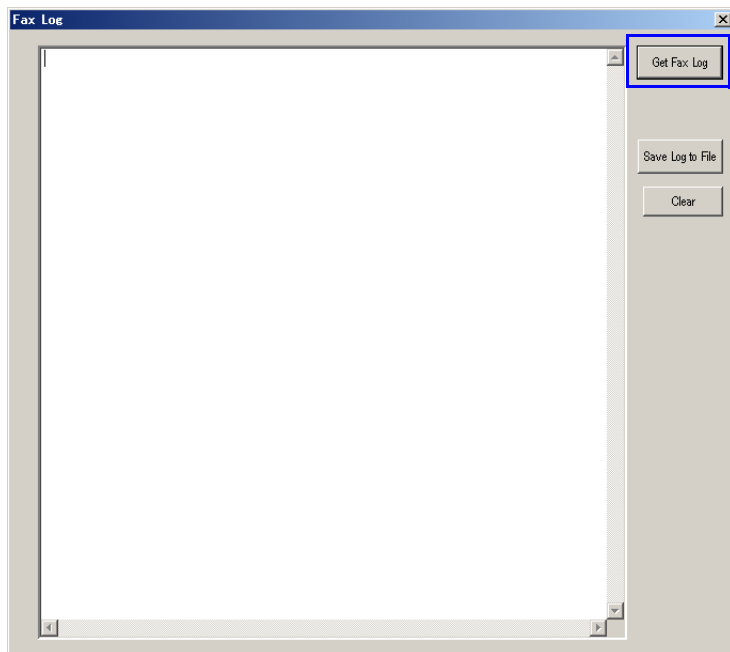


Figure 8-59. Get Fax Log (1)

And then, click “OK” button to display read-out fax log.



Figure 8-60. Get Fax Log (2)

3. Click “Save Log to File” button to save read-out fax log.

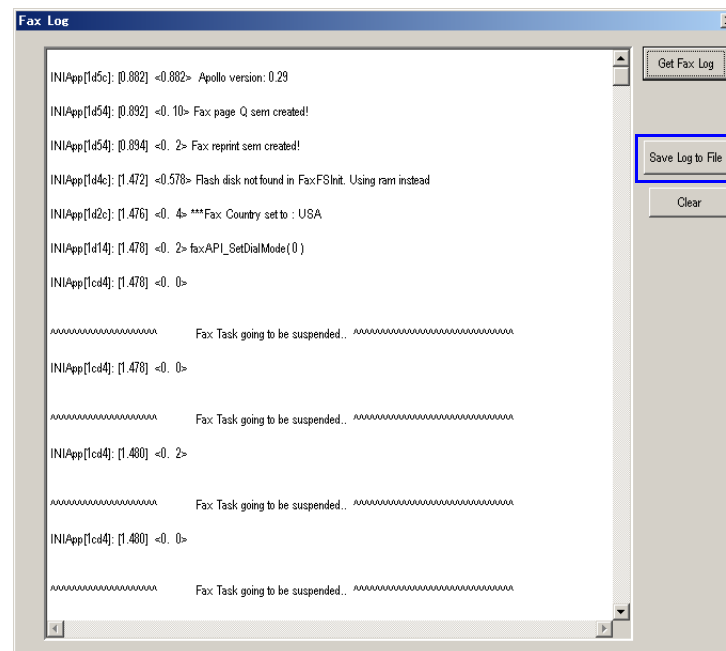


Figure 8-61. Get Fax Log (3)

4. Click “Clear” button to clear read-out fax log from screen.

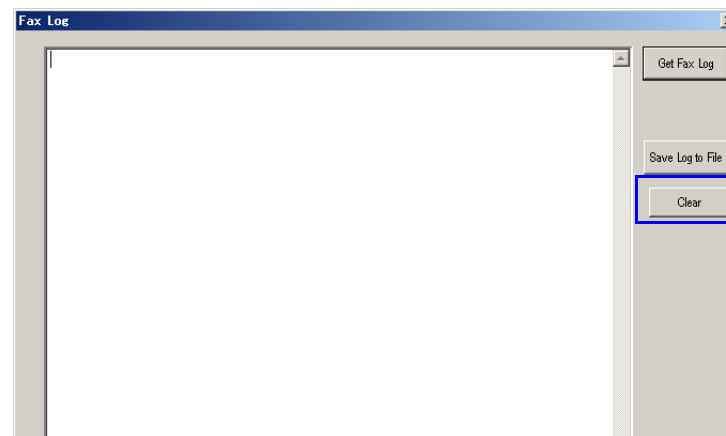


Figure 8-62. Get Fax Log (3)

8.6 Appendix

This section describes miscellaneous information unique to Stylus CX6900F/CX7000F/DX7000F.

8.6.1 Exploded Diagram/Service Parts List

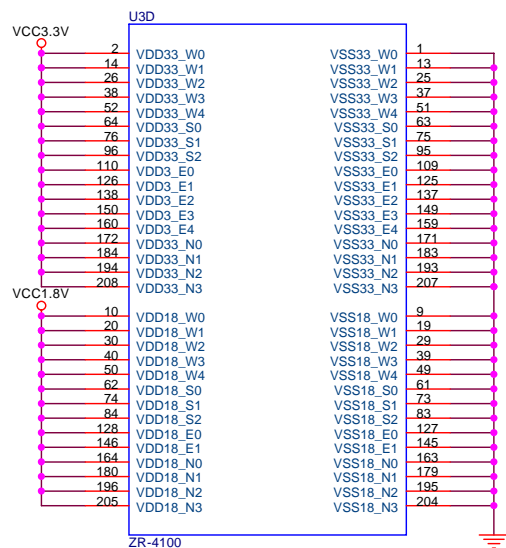
This manual does not provide the exploded diagrams and the parts list for Stylus CX6900F/CX7000F/DX7000F.

See SPI (Service Parts Information) for details.

8.6.2 Electrical Circuits

The electric circuit diagrams are shown on the pages that follow:

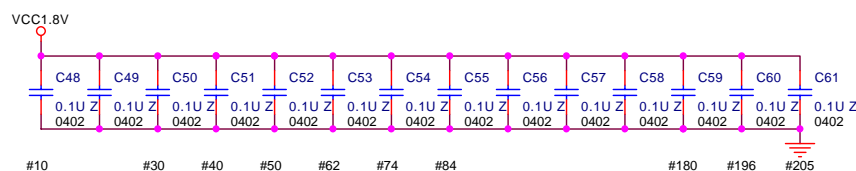
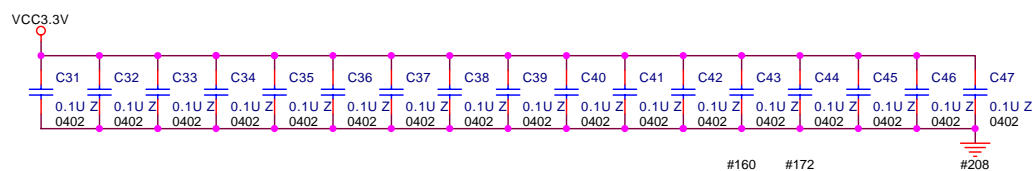




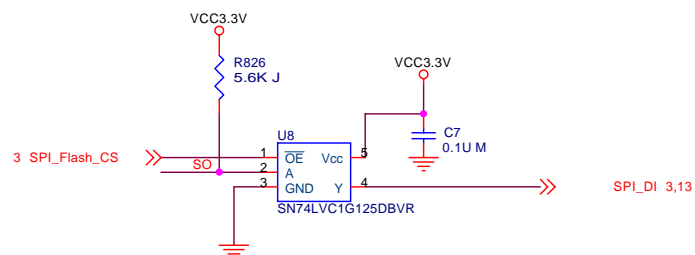
Distribute bulk and bypass capacitors evenly throughout planes.

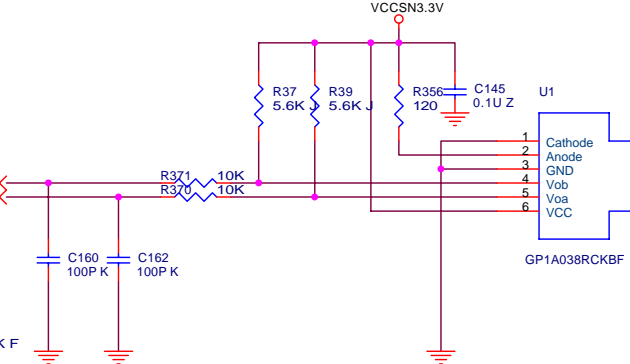
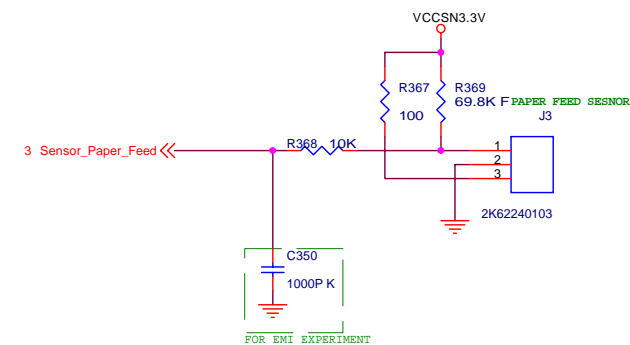
Make sure that all the planes have correct bypassing and at least one bypass cap close to VCC pins of each chip!!

Placed near ZR4100

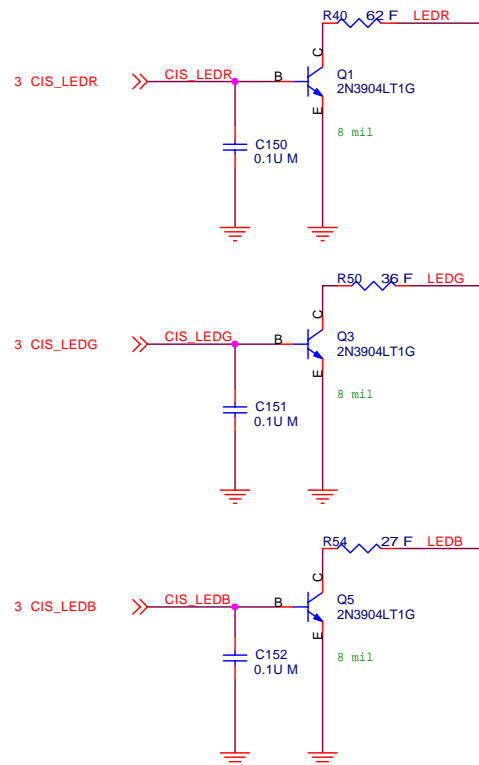


Model : Stylus CX6900F/CX7000F/DX7000F
Board : ASSY MAIN BOARD
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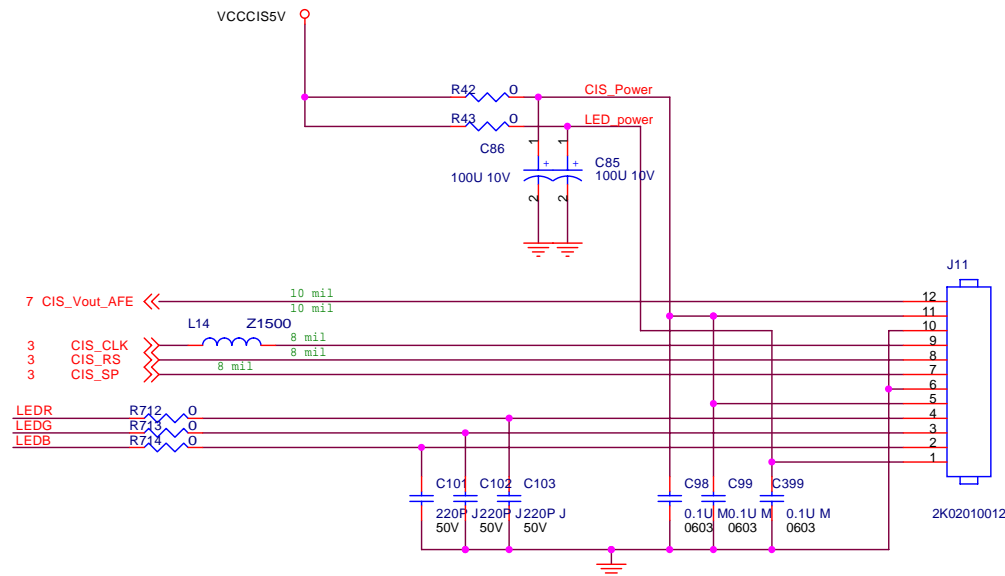




Model : Stylus CX6900F/CX7000F/DX7000F
Board : ASSY MAIN BOARD
Rev. www.terplus.com.ua
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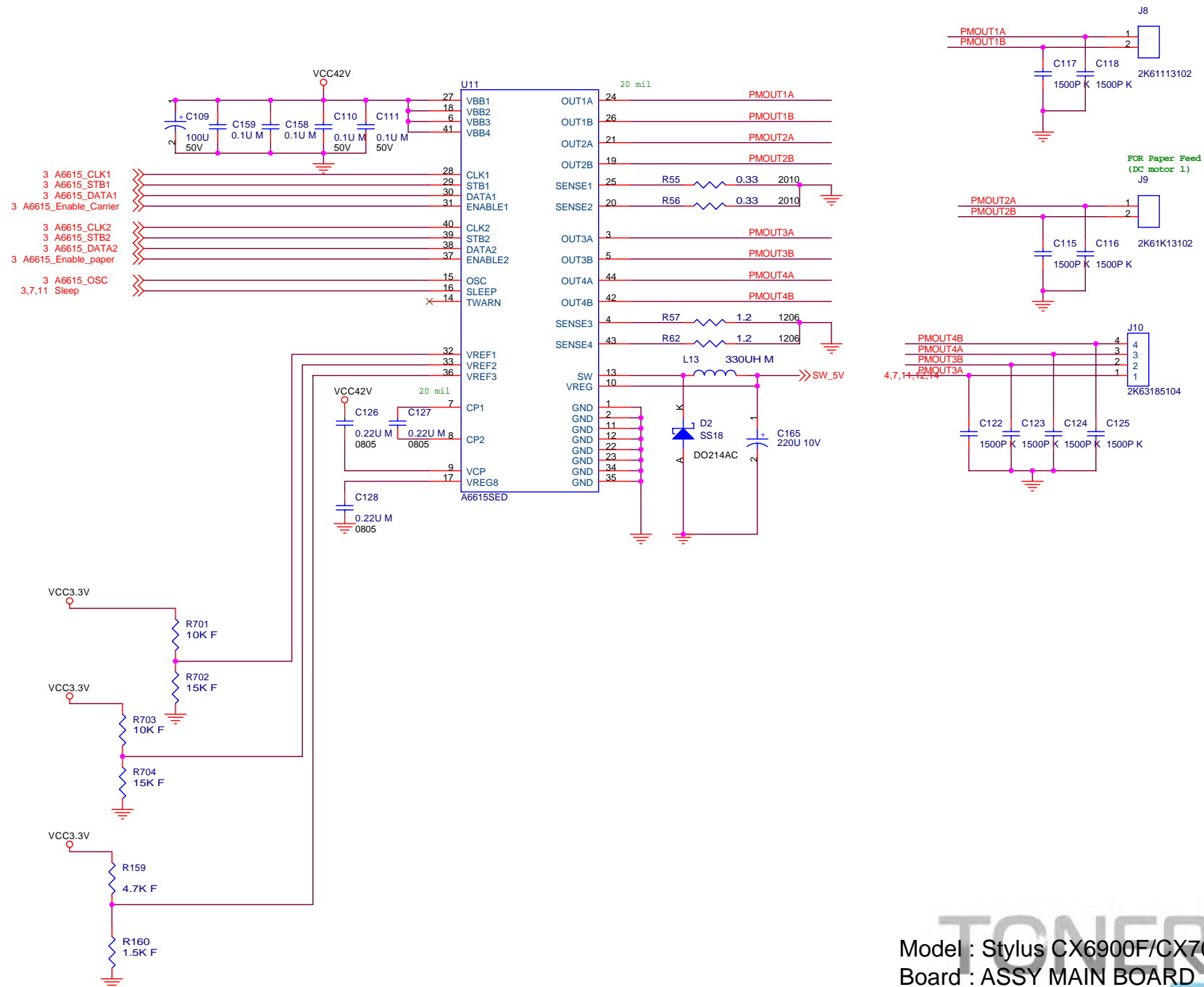


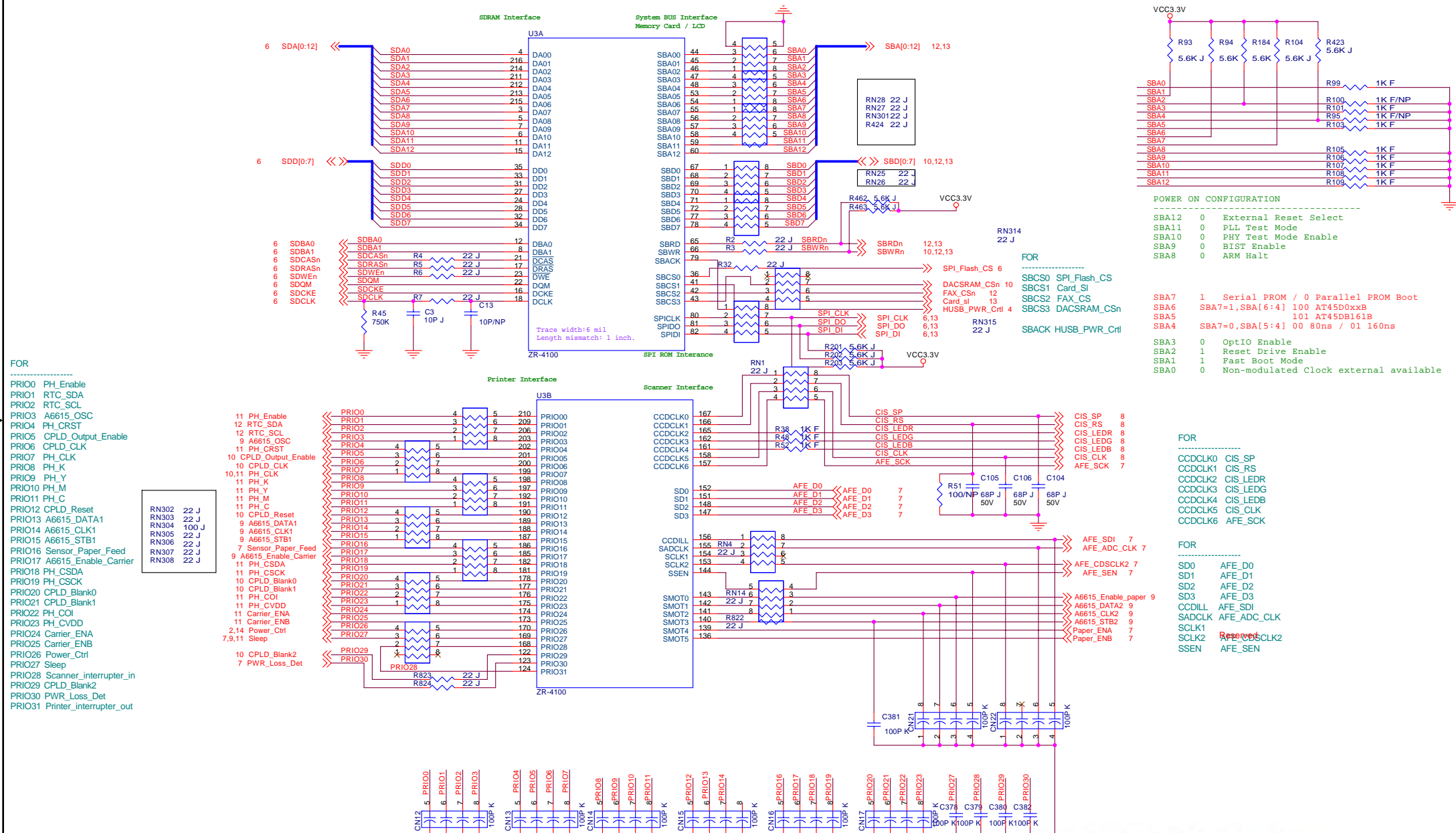
Need to chekc the voltage with LED output then change R40, R50 and R54.



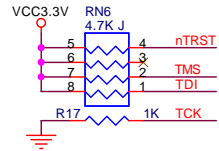
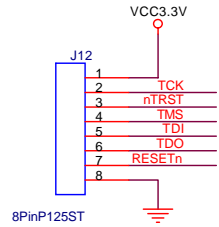
CIS pin definition		
No.	Symbol	Function
(1)	LEDA	LED Common Anode
(2)	LEDB	LED Pulse Blue
(3)	LEDG	LED Pulse Green
(4)	LEDR	LED Pulse Red
(5)	VDD	Digital Power 5V
(6)	GND	Ground
(7)	TR	Start Pulse
(8)	RS	Reset Pulse
(9)	M	Master Clock
(10)	GND	Ground
(11)	VAD	Analog Power 5V
(12)	Vout	Signal OUT

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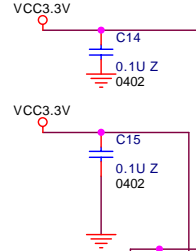
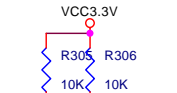
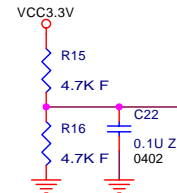
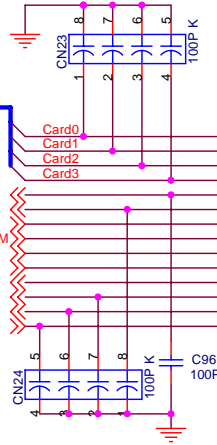




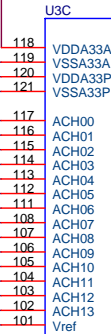
JTAG I/F
pull-high/low



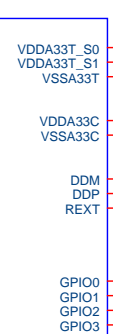
13 Card[0:3] <<>
13 Card_Sel0
13 Card_Sel1
11 Sensor_PH_THM
11 Sensor_Paper_Width
12 FAX_IRQ
14 Panel_SDO
14 Panel_LAT
14 Panel_CLK
14 Panel_SDI



ADC Interface



USB Interface

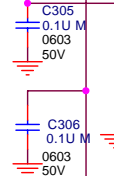


USB DP,DM
Trace width:7.5mil
Trace spacing:7.5mil between D+,D-, 20mil with others.
Trace length mismatch: 150mil
Max Trace length: 3 inch
Route trace with the same shape

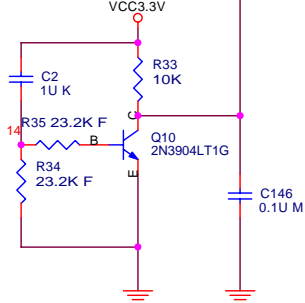
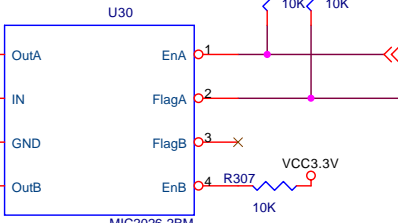
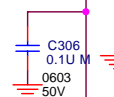
Model : Stylus CX6900F/CX7000F/DX7000F
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7,9,11,12,14

SW_5V



Close to U30



HDM_host

HDP_host

7.5 mil

R152

R153

27

27

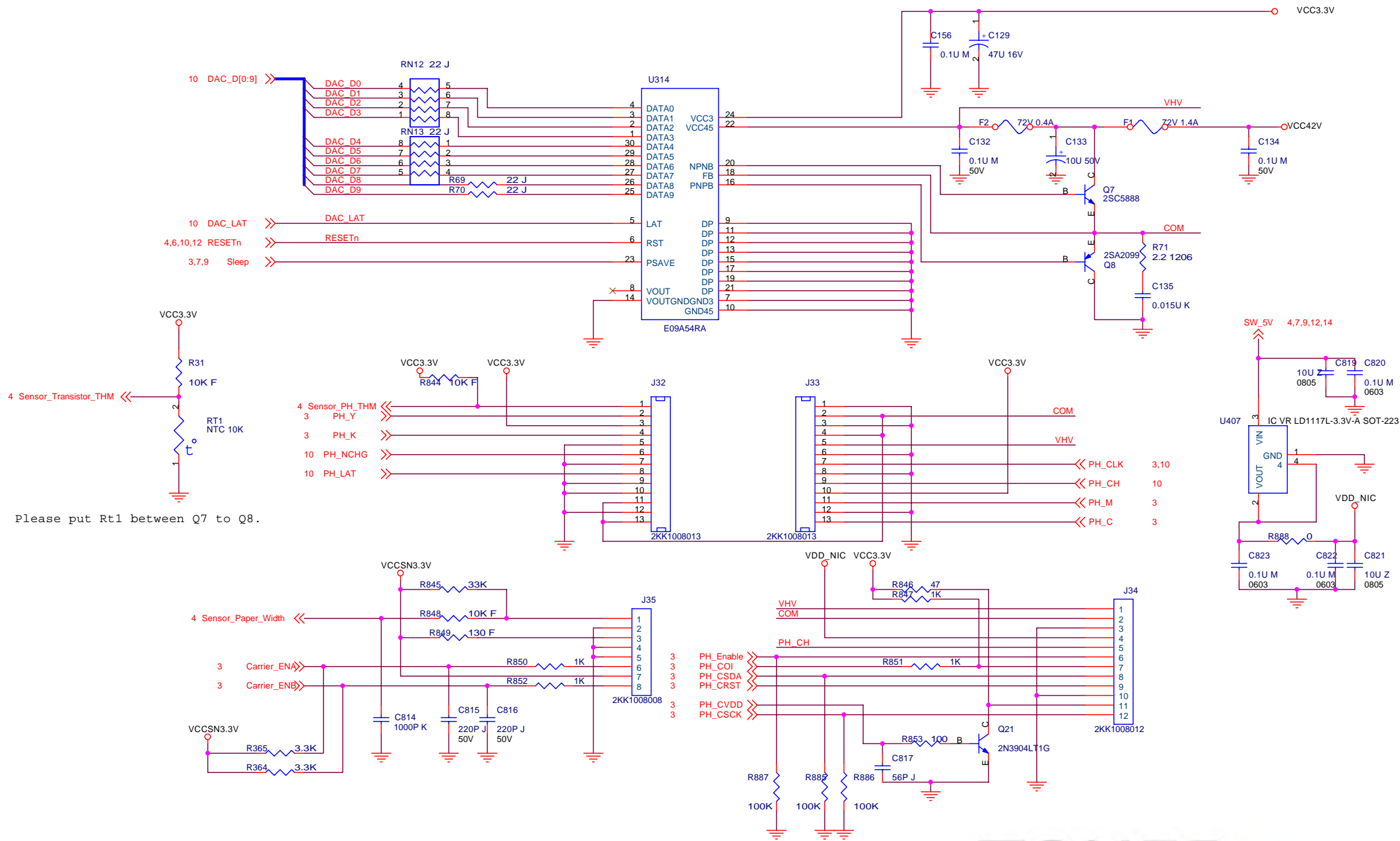
To USB1.x Host

13

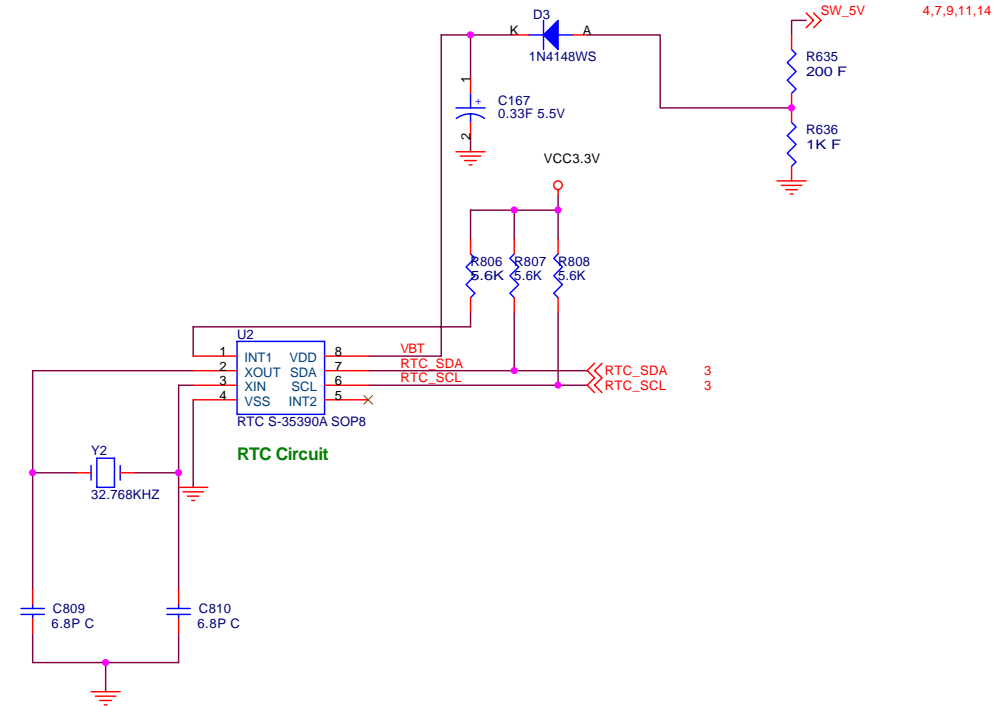
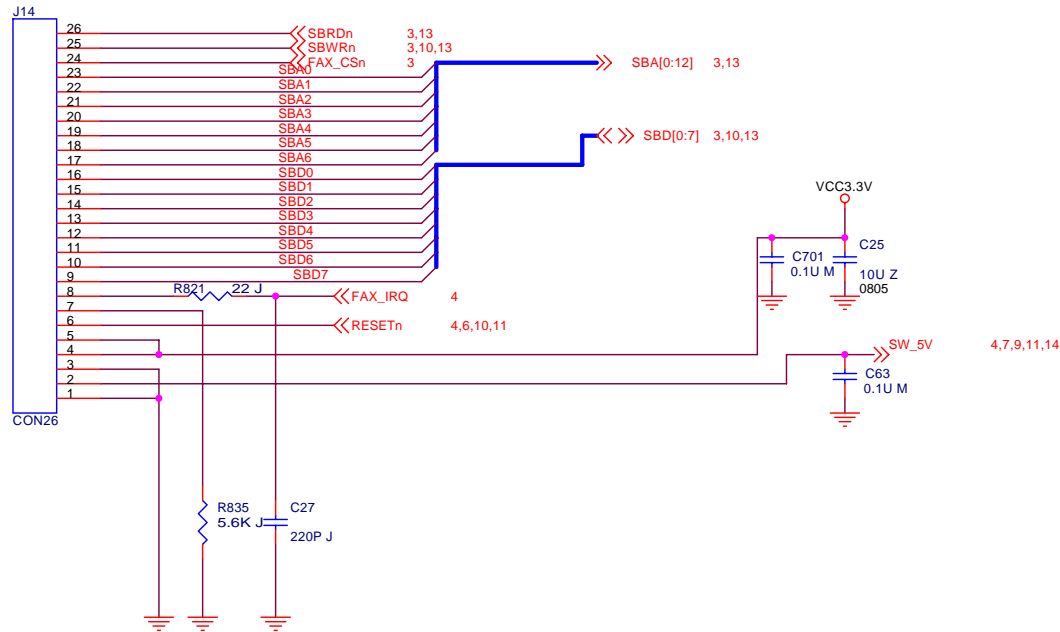
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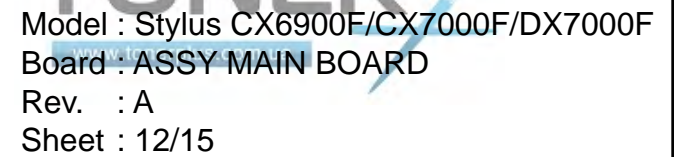
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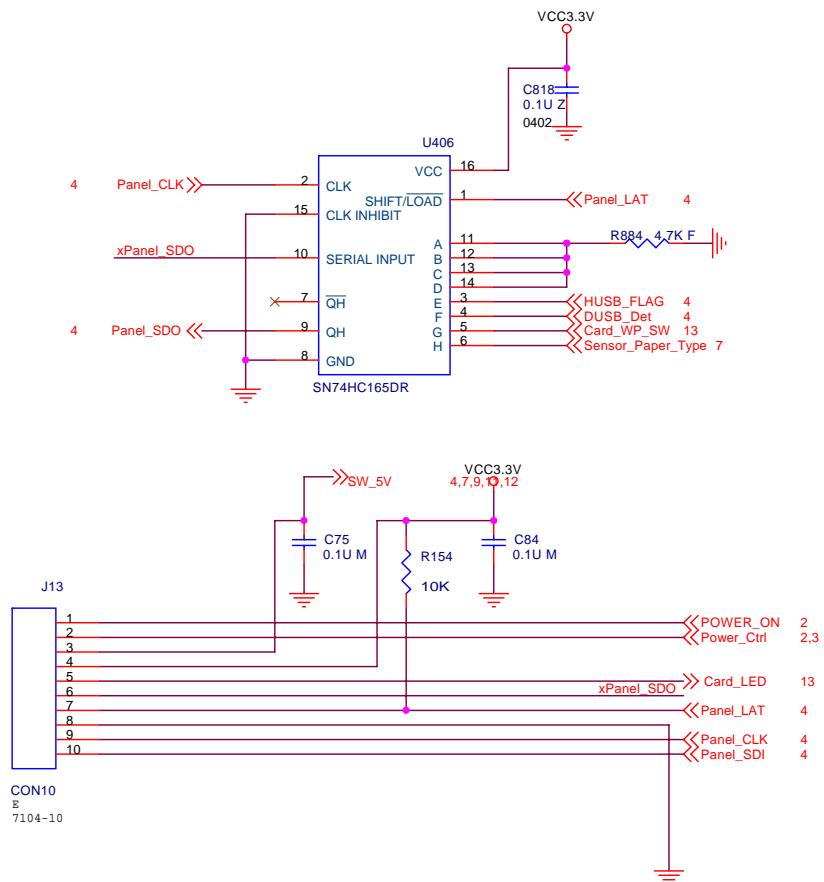


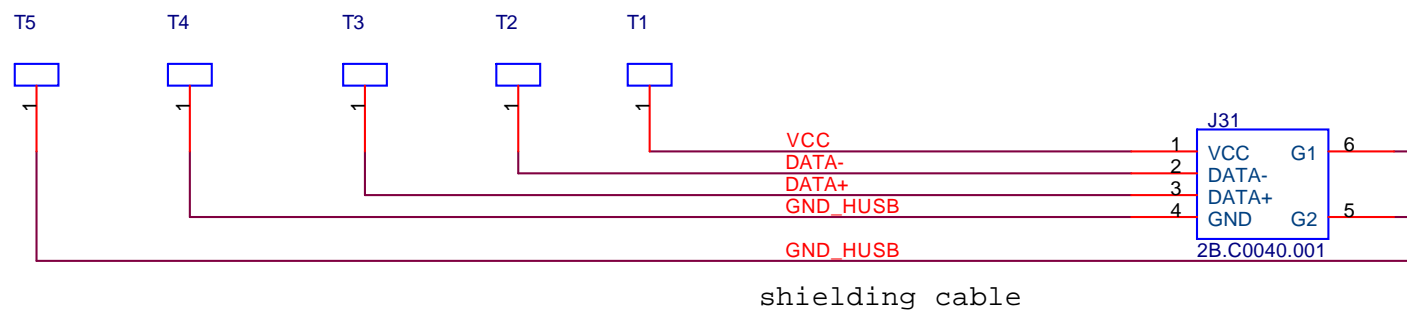


1.SWAP pin definition to match connetor direction.
Form Panel Board









FOR

SBCS0 SPI_Flash_CS
SBCS1 Card_SI
SBCS2 FAX_CS
SBCS3 DACSRAM_CSn

SBACK HUSB_PWR_Ctrl

FOR

CCDCLK0 CIS_SP
CCDCLK1 CIS_RS
CCDCLK2 CIS_LEDR
CCDCLK3 CIS_LEDG
CCDCLK4 CIS_LEDB
CCDCLK5 CIS_CLK
CCDCLK6 AFE_SCK

FOR

SD0 AFE_D0
SD1 AFE_D1
SD2 AFE_D2
SD3 AFE_D3
CCDILL AFE_SDI
SADCLK AFE_ADC_CLK
SCLK1
SCLK2 AFE_CDSCLK2
SSEN AFE_SEN

FOR

SMOT0 A6615_Enable_Paper
SMOT1 A6615_DATA2
SMOT2 A6615_CLK2
SMOT3 A6615_STB2
SMOT4 Paper_ENA
SMOT5 Paper_ENB

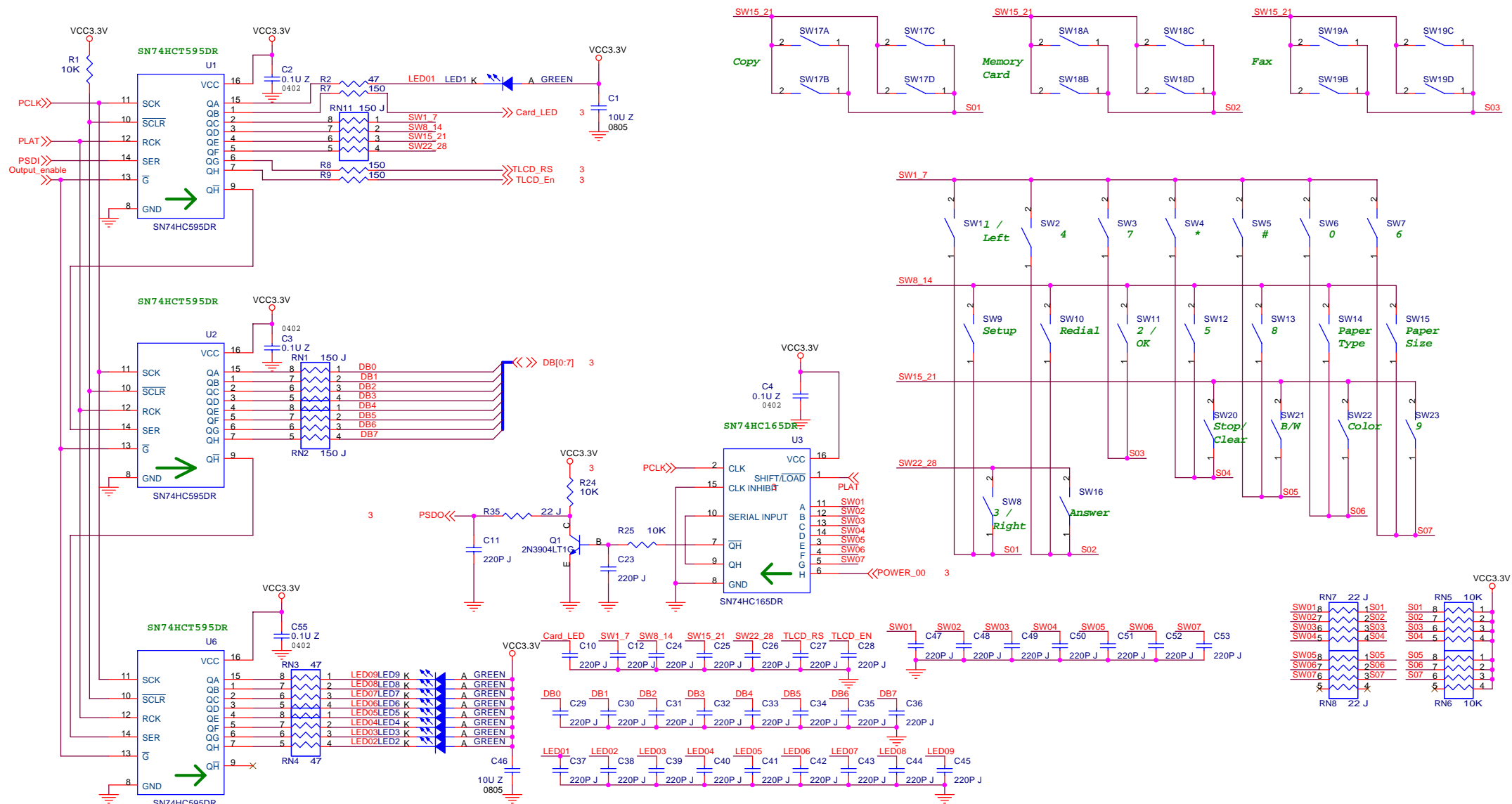
FOR

PRIO0 PH_Enable
PRIO1 RTC_SDA
PRIO2 RTC_SCL
PRIO3 A6615_OSC
PRIO4 PH_CRST
PRIO5 CPLD_Output_Enable
PRIO6 CPLD_CLK
PRIO7 PH_CLK
PRIO8 PH_K
PRIO9 PH_Y
PRIO10 PH_M
PRIO11 PH_C
PRIO12 CPLD_Reset
PRIO13 A6615_DATA1
PRIO14 A6615_CLK1
PRIO15 A6615_STB1
PRIO16 Sensor_Paper_Feed
PRIO17 A6615_Enable_Carrier
PRIO18 PH_CSDA
PRIO19 PH_CSCK
PRIO20 CPLD_Blank0
PRIO21 CPLD_Blank1
PRIO22 PH_COI
PRIO23 PH_CVDD
PRIO24 Carrier_ENA
PRIO25 Carrier_ENB
PRIO26 Power_Ctrl
PRIO27 Sleep
PRIO28 Scanner_interrupter_in
PRIO29 CPLD_Blank2
PRIO30 PWR_Loss_Det
PRIO31 Printer_interrupter_out

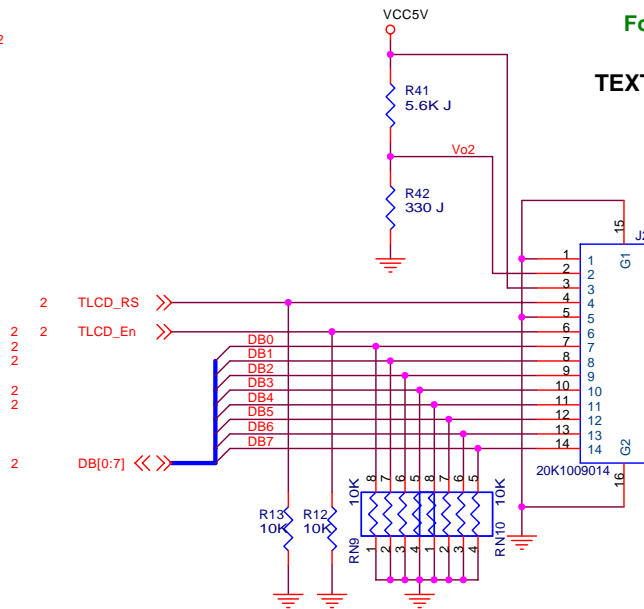
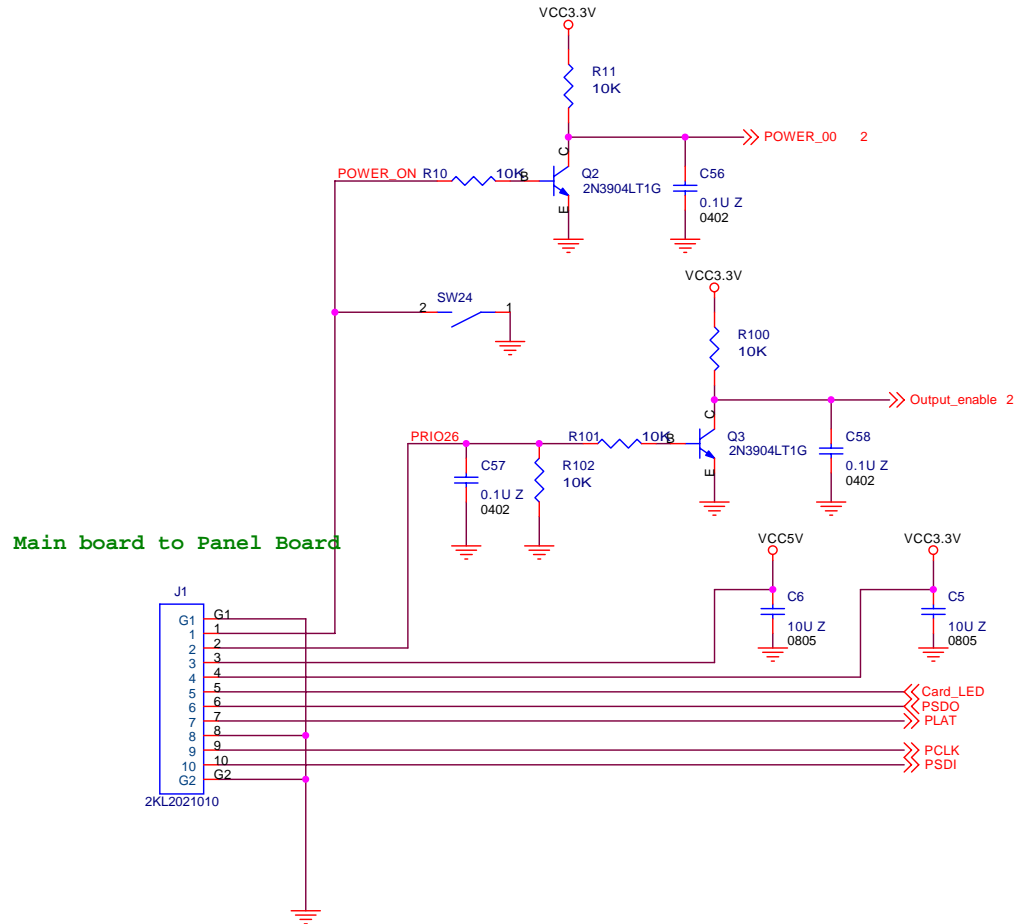
FOR

ACH0 Card_0
ACH1 Card_1
ACH2 Card_2
ACH3 Card_3
ACH4 Card_Sel0
ACH5 Card_Sel1
ACH6 Sensor_PH_THM (A)
ACH7 Sensor_Transistor_THM (A)
ACH8 Sensor_Paper_Width (A)
ACH9 FAX_IRQ
ACH10 Panel_SDO
ACH11 Panel_LAT
ACH12 Panel_CLK
ACH13 Panel_SDI

[Note]
FAX_IRQ must be applied on GPIO0~3

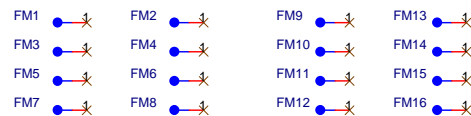


Model : Stylus CX6900F/CX7000F/DX7000F
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PIN DEFINITION

NO	Symbol	Function
1	Vss	GND
2	Vo	Contrast Adjustment
3	Vdd	Vdd 5V
4	RS	Register Select Signal
5	R/W	1:Read / 0:Write
6	E	Enable
7	DB0	Data Bus
8	DB1	Data Bus
9	DB2	Data Bus
10	DB3	Data Bus
11	DB4	Data Bus
12	DB5	Data Bus
13	DB6	Data Bus
14	DB7	Data Bus

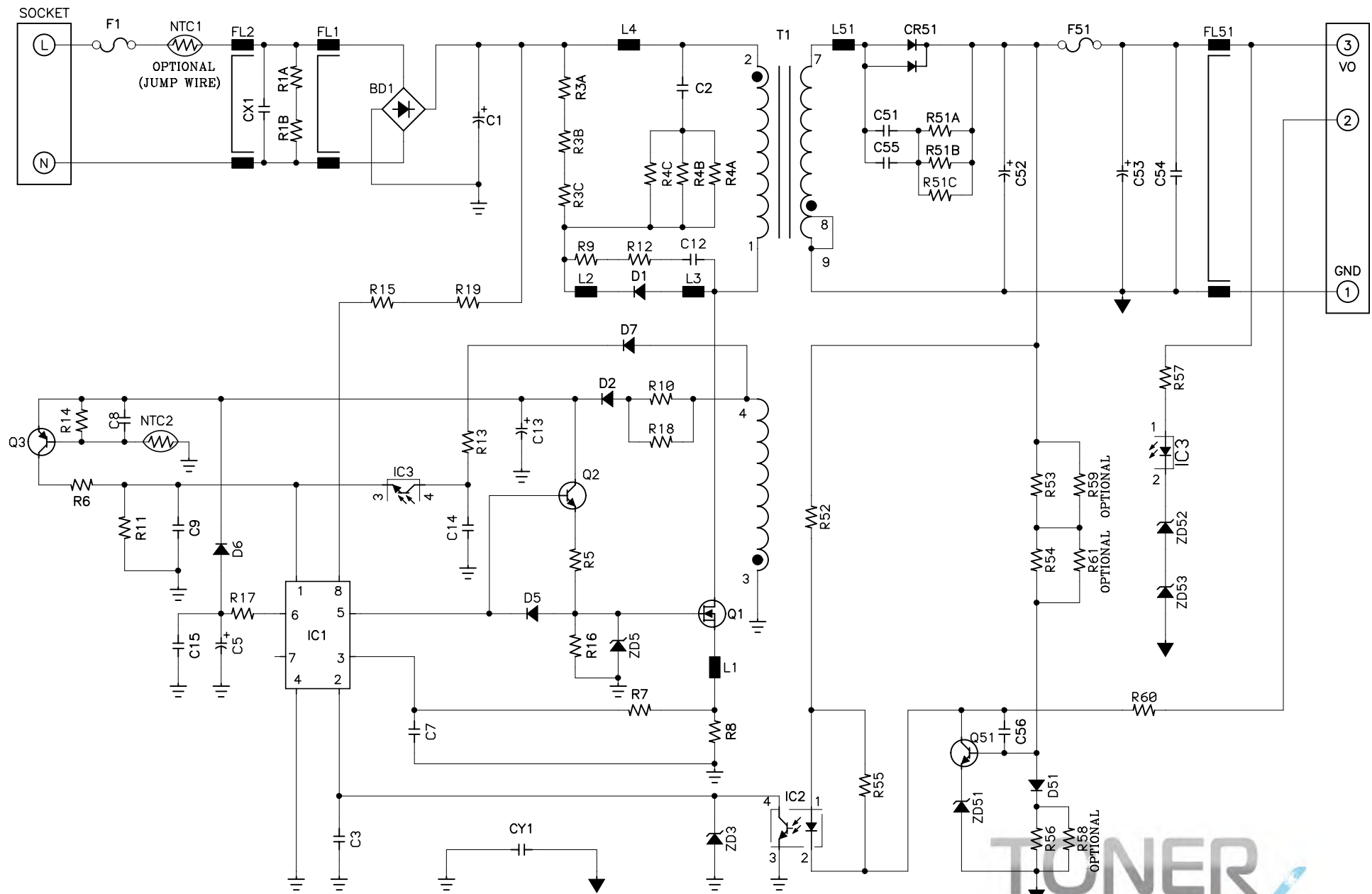


Model : Stylus CX6900F/CX7000F/DX7000F

Board : ASSY SP PANEL BOARD

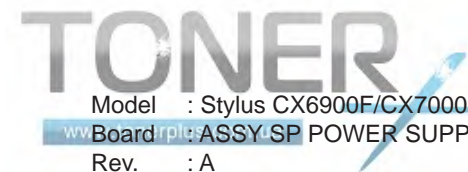
Rev. : A

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TUNER

Model : Stylus CX6900F/CX7000F/DX7000F
 Board : ASSY SP POWER SUPPLY 8808(100V)
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Model : Stylus CX6900F/CX7000F/DX7000F
Board : ASSY.SP POWER SUPPLY 8808(200V)
Rev. : A
Sheet : 1/1

