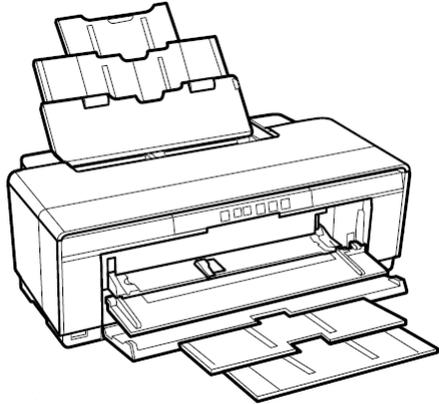
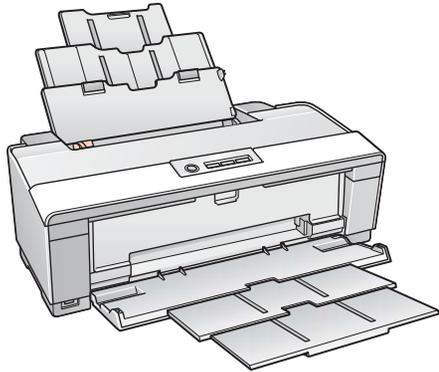


SERVICE MANUAL



Color Inkjet Printer

EPSON Stylus Photo R1900/R2880/R2000

EPSON
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SEIJ07010

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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 INJURIER 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.

APPENDIX Provides the following additional information for reference:

- Connector pin assignments

Stylus Photo R2000

Provides information of Stylus Photo R2000

Symbols Used in this Manual

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



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



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



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



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



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	Date of Issue	Description
A	October 20, 2007	First Release
B	February 29, 2008	Revised Contents <ul style="list-style-type: none"> ■ 4.4.4 Lower Housing / Printer Mechanism (p96) Disassembly procedure is revised. ■ 4.4.8 Waste Ink Pad / Waste Ink Tube Left/Right (p110) Description and figure are revised. ■ 6.1.2.2 Maintenance Request (p163) Description is revised.
C	April 25, 2008	Revised Contents Descriptions about Stylus Photo R2880 are added. <ul style="list-style-type: none"> <input type="checkbox"/> Chapter 1 <ul style="list-style-type: none"> ■ Descriptions have been added in 1.1.1 Features (p10). ■ Made changes in Table 1-1 "Printer Specifications" (p 11). ■ Made changes in Table 1-2 "Product No. of Ink Cartridges" (p 11). ■ Table 1-6 "Print Mode (Color)" (p 14) has been added. ■ Table 1-7 "Print Mode (Monochrome)" (p 15) has been added. ■ Made changes in Table 1-8 "Supported Paper" (p 16). ■ Made changes in Table 1-9 "Printing Area (Margins)" (p 20). ■ Table 1-10 "Printing Area (Margins)" (p 20) has been added. ■ Made changes in Table 1-12 "Device ID" (p 21). ■ Made changes in Table 1-13 "Primary Power Specifications" (p 21). ■ Made changes in Table 1-17 "Operation Button Functions" (p 24). ■ Figure 1-6, "Nozzle Check Pattern (Stylus Photo R2880)" (p 25) has been added. ■ Made changes in Table 1-18 "Indicators (LEDs) Function" (p 26). ■ Made changes in Table 1-19 "Errors & Remedies" (p 27). <input type="checkbox"/> Chapter 2 <ul style="list-style-type: none"> ■ Figure 2-3, "Nozzle Arrangement (Stylus Photo R2880)" (p 30) has been added. ■ Made changes in Table 2-3 "Nozzle Lines and the Corresponding Ink Color (Stylus Photo R2880)" (p 30).

Revision	Date of Issue	Description
C	April 25, 2008	<ul style="list-style-type: none"> <input type="checkbox"/> Chapter 3 <ul style="list-style-type: none"> ■ Made changes in Table 3-1"List of Error Messages"(p 34). ■ Table 3-10"Troubleshooting of Ink Color Error (Stylus Photo R2880 only)"(p 48) has been added. ■ Made changes in Table 3-13"Troubleshooting of Maintenance Request"(p 50). <input type="checkbox"/> Chapter 4 <ul style="list-style-type: none"> ■ CHECK POINT" has been added in Figure 4-6, "Disassembly Flowchart" (p 75). ■ 4.2.5 Panel Unit (p78) has been added. ■ "ADJUSTMENT REQUIRED" has been added in 4.2.7 Upper Housing / Printer Cover (p81) ■ "ADJUSTMENT REQUIRED" has been added in 4.3.3 High Voltage Module (p87) ■ Made changes in 4.4.4 Lower Housing / Printer Mechanism (p96). <input type="checkbox"/> Chapter 5 <ul style="list-style-type: none"> ■ Made changes in 5.1.1 Servicing Adjustment Item List (p138). ■ Made changes in 5.1.2 Replacement Part-Based Adjustment Priorities (p142). ■ Made changes in 5.1.3 Required Adjustment Tools (p143). ■ Made changes in 5.2.2 PG Adjustment (p145). ■ Made changes in 5.2.4 Colorimetric Calibration (p153). <input type="checkbox"/> Chapter 6 <ul style="list-style-type: none"> ■ Made changes in 6.1.2 Service Maintenance (p162). ■ Made changes in 6.1.3 Lubrication (p164).
D	December 18, 2009	<p>Revised Contents</p> <ul style="list-style-type: none"> <input type="checkbox"/> Chapter 1 <ul style="list-style-type: none"> ■ Made changes in Table 1-10"Printing Area (Margins)"(p 20). <input type="checkbox"/> Chapter 4 <ul style="list-style-type: none"> ■ Made changes in 4.4.6 ASF Assy (p106). <input type="checkbox"/> Chapter 5 <ul style="list-style-type: none"> ■ Made changes in 5.1.1 Servicing Adjustment Item List (p138). ■ Made changes in 5.1.2 Required Adjustments (p141). ■ 5.2.5 ASF Guide Roller LDs Position Adjustment (p159) has been added.
E	April 11, 2011	<p>Added Chapter</p> <ul style="list-style-type: none"> <input type="checkbox"/> Chapter 8

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CHAPTER

1

PRODUCT DESCRIPTION

1.1 Product Description

1.1.1 Features

EPSON Stylus Photo R1900/R2880/R2000 is a color ink-jet printer that supports A3+ size.

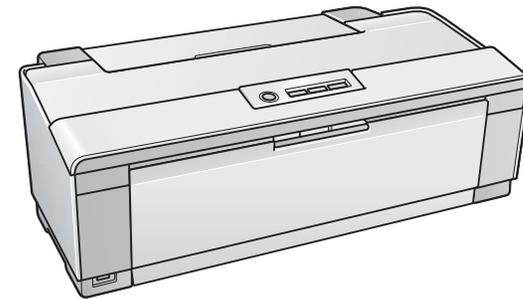
The main features are;

- High speed & High quality
 - Maximum print resolution: SMGA 5760 (H) x 1440 (V) dpi
 - F8 Mach print head are mounted.
 - Newly developed pigment ink cartridges enable high quality photo printing.
 - CD and DVD label printing are supported.
 - High-speed borderless printing is available.
- Direct printing (PictBridge)
- Two USB ports for PC connection
- New exterior design
- Control panel
Simple design with four buttons and three indicators (LED).
- Differences between Stylus Photo R1900 and Stylus Photo R2880

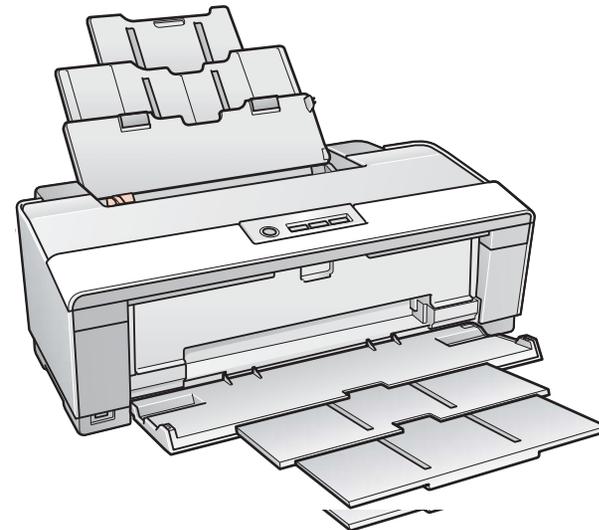
Stylus Photo R2880 is designed based on the Stylus Photo R1900 printer mechanism, however, there are some differences between them such as ink color configuration. The table below lists the major differences.

Item	Stylus Photo R1900	Stylus Photo R2880
Ink colors	Photo Black, Matte Black, Cyan, Magenta, Yellow, Red, Orange, Gloss Optimizer	Photo Black, Matte Black, Light Black, Light Light Black, Cyan, Light Cyan, Vivid Magenta, Vivid Light Magenta, Yellow
Simultaneous installation of Photo Black and Matte Black cartridges	Supported	Not supported
Board paper printing	Not supported	Supported
Print Mode	4 modes	5 modes

- Dimensions
 - Dimensions: 616 mm (W) x 322 mm (D) x 214 mm (H)
(Paper support and stacker are closed. Rubber feet are included)
 - Weight: 12.2 kg (Stylus Photo R1900)
12.3 kg (Stylus Photo R2880)
(without ink cartridges, CDR Tray, Roll paper holders and Single sheet guide)



Paper Support & Stacker are Closed



Paper Support & Stacker are Opened

Figure 1-1. External View

1.2 Printing Specifications

1.2.1 Basic Specifications

Table 1-1. Printer Specifications

Item	Specifications
Print method	On-demand ink jet
Nozzle configuration	<input type="checkbox"/> Stylus Photo R1900 Black: 180 nozzles x 2 (Photo Black, Matte Black) Color: 180 nozzles x 5 (Cyan, Magenta, Yellow, Red, Orange) Gross Optimizer: 180 nozzles x 1 <input type="checkbox"/> Stylus Photo R2880 Black*1: 180 nozzles x 1 (Photo Black, Matte Black) Gray: 180 nozzles x 2 (Light Black, Light Light Black) Color: 180 nozzles x 5 (Cyan, Light Cyan, Vivid Magenta, Vivid Light Magenta, Yellow)
Print direction	Bi-directional minimum distance printing, unidirectional printing
Print resolution	Horizontal x Vertical (dpi) • 360 x 180*2 • 1440 x 720 • 360 x 360 • SMGA 5760 x 1440 • 720 x 720 • 1440 x 1440 (Stylus Photo R2880 only)
Control code	<ul style="list-style-type: none"> • ESC/P Raster command • ESC/P-R (RGB) command • EPSON Remote command
Internal font	Character code: Alphanumeric with expanded graphics (PC437) ASCII, 20H to 7FH only Font: EPSON original font Alphanumeric font: Courier
Input buffer size	T.B.D. Kbytes
Paper feed method	Friction feed, using one ASF (Auto Sheet Feeder)
Paper path	2-way feed
Paper feed rates	170 msec (at 25.4 mm feed)
PF interval	Programmable in 0.01764 mm (1/1440 inch) steps

Note *1: Stylus Photo R2880 has only one slot for black ink cartridge. Switching between the Photo Black and Matte Black can be made by replacing the cartridge.

*2: Stylus Photo R2880 does not support the resolution.

1.2.2 Ink Cartridge

The product numbers of the EPSON ink cartridges for this printer are shown below.

Table 1-2. Product No. of Ink Cartridges

Color	Code	
	Stylus Photo R1900	Stylus Photo R2880
Photo Black	T0871	T0961
Matte Black	T0878	T0968
Light Black	--	T0967
Light Light Black	--	T0969
Cyan	T0872	T0962
Light Cyan	--	T0965
Magenta	T0873	--
Vivid Magenta	--	T0963
Vivid Light Magenta	--	T0966
Yellow	T0874	T0964
Orange	T0879	--
Red	T0877	--
Gloss Optimizer	T0870	--

- Shelf life
Two years from production date (if unopened), six months after opening package.
- Storage Temperature

Table 1-3. Storage Temperature

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

- Dimension
12.7 mm (W) x 68 mm (D) x 47 mm (H)



- The ink cartridge cannot be refilled.
- Do not use expired ink cartridges.
- The ink in the ink cartridge freezes at -16 °C (3.2 °F). It takes about three hours under 25 °C (77°F) until the ink thaws and becomes usable.

1.2.3 Print Mode

□ Stylus Photo R1900

Table 1-4. Print Mode (Color)

Media	Print Mode	Resolution (H x V) dpi	Dot Size (cps*)	Bi-d	Micro Weave
<ul style="list-style-type: none"> Plain paper Premium Bright White Paper (EAI) Bright White Inkjet Paper (others) 	Draft/Economy	360x360	Eco (240cps)	ON	OFF
	Fine	720x720	VSD1,2 (220cps)	ON	ON
<ul style="list-style-type: none"> Premium Photo Paper Glossy (EAI) Premium Glossy Photo Paper (others) Premium Photo Paper Semi-gloss (EAI) Premium Semigloss Photo Paper (others) 	Fine	720x720	VSD1,2 (220cps)	ON	ON
	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> Premium Luster Photo Paper 	Fine	720x720	VSD1,2 (220cps)	ON	ON
	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> Photo Paper Glossy (EAI) Glossy Photo Paper (others) 	Fine	720x720	VSD1,2 (220cps)	ON	ON
	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> Premium Presentation Paper Matte (EAI) Matte Paper Heavy-weight (others) 	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON

Table 1-4. Print Mode (Color)

Media	Print Mode	Resolution (H x V) dpi	Dot Size (cps*)	Bi-d	Micro Weave
<ul style="list-style-type: none"> Archival Matte Paper (EAI) Enhanced Matte Paper (others) 	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> Double-sided Matte Paper 	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> Presentation Paper Matte (EAI) Photo Quality Inkjet Paper (others) 	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> Watercolor Paper - Radiant White 	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> Velvet Fine Art Paper 	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> Ultra Smooth Fine Art Paper 	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> PremierArt Matte Scrapbook Photo Paper 	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> CD/DVD 	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> CD/DVD Premium Surface 	Super Photo	5760x1440	VSD3 (200cps)	ON	ON

Note : The default is indicated by boldface.

Note * : cps = character per second

Table 1-5. Print Mode (Monochrome)

Media	Print Mode	Resolution (H x V) dpi	Dot Size (cps*)	Bi-d	Micro Weave
<ul style="list-style-type: none"> • Plain paper • Premium Bright White Paper (EAI) • Bright White Inkjet Paper (others) 	Draft/Economy	360x180	Eco (240cps)	ON	OFF
	Fine	720x720	VSD1,2 (220cps)	ON	ON
<ul style="list-style-type: none"> • Premium Photo Paper Glossy (EAI) • Premium Glossy Photo Paper (others) • Premium Photo Paper Semi-gloss (EAI) • Premium Semigloss Photo Paper (others) 	Fine	720x720	VSD1,2 (220cps)	ON	ON
	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • Premium Luster Photo Paper 	Fine	720x720	VSD1,2 (220cps)	ON	ON
	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • Photo Paper Glossy (EAI) • Glossy Photo Paper (others) 	Fine	720x720	VSD1,2 (220cps)	ON	ON
	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • Premium Presentation Paper Matte (EAI) • Matte Paper Heavy-weight (others) 	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • Archival Matte Paper (EAI) • Enhanced Matte Paper (others) 	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON

Table 1-5. Print Mode (Monochrome)

Media	Print Mode	Resolution (H x V) dpi	Dot Size (cps*)	Bi-d	Micro Weave
<ul style="list-style-type: none"> • Double-sided Matte Paper 	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • Presentation Paper Matte (EAI) • Photo Quality Inkjet Paper (others) 	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • Watercolor Paper - Radiant White 	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • Velvet Fine Art Paper 	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • Ultra Smooth Fine Art Paper 	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • PremierArt Matte Scrapbook Photo Paper 	Photo	1440x720	VSD2 (200cps)	ON	ON
	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • CD/DVD 	Super Photo	5760x1440	VSD3 (200cps)	ON	ON
<ul style="list-style-type: none"> • CD/DVD Premium Surface 	Super Photo	5760x1440	VSD3 (200cps)	ON	ON

Note : The default is indicated by boldface.

Note * : cps = character per second

□ Stylus Photo R2880

Table 1-6. Print Mode (Color)

Media	Print Mode	Resolution (H x V) dpi	Dot Size (cps*)	Bi-d	Micro Weave
<ul style="list-style-type: none"> • Plain paper • Premium Bright White Paper (EAI) • Bright White Inkjet Paper (others) 	Draft/Economy	360x360	Economy (240cps)	ON	OFF
	Fine	720x720	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> • Ultra Premium Glossy Photo Paper 	Super Photo	5760x1440	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> • EPSON Glossy Photo Paper • Premium Semigloss Photo Paper 	Fine	720x720	VSD2 (220cps)	ON	ON
	Photo	1440x720	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> • Ultra Premium Photo Paper Luster • Glossy Photo Paper Photo Paper Glossy (EAI) 	Super Photo	5760x1440	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> • Matte Paper Heavyweight • Double-sided Matte Paper 	Photo	1440x720	VSD2 (220cps)	ON	ON
	Super Photo	5760x1440	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> • Photo Quality Inkjet Paper 	Photo	1440x720	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> • Watercolor Paper - Radiant White • Velvet Fine Art Paper • Ultra Smooth Fine Art Paper • Enhanced Matte Paper • Archival matte paper (EAI) • Matte Paper Heavyweight • Double-sided Matte Paper 	Photo	1440x720	VSD2 (220cps)	ON	ON
	Super Photo	5760x1440	VSD2 (220cps)	ON	ON

Table 1-6. Print Mode (Color)

Media	Print Mode	Resolution (H x V) dpi	Dot Size (cps*)	Bi-d	Micro Weave
<ul style="list-style-type: none"> • PremierArt Matte Scrapbook Photo Paper (EAI only) 	Photo	1440x720	VSD2 (220cps)	ON	ON
	Super Photo	5760x1440	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> • CD/DVD 	Super Photo	1440x1440	VSD3 (220cps)	ON	ON
<ul style="list-style-type: none"> • CD/DVD Premium Surface 	Super Photo	1440x1440	VSD3 (220cps)	ON	ON

Note : The default is indicated by boldface.

Note * : cps = character per second

Table 1-7. Print Mode (Monochrome)

Media	Print Mode	Resolution (H x V) dpi	Dot Size (cps*)	Bi-d	Micro Weave
<ul style="list-style-type: none"> Plain paper Premium Bright White Paper (EAI) Bright White Inkjet Paper (others) 	Draft/Economy	360x360	Economy (240cps)	ON	OFF
	Fine	720x720	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> Ultra Premium Glossy Photo Paper 	Super Photo	5760x1440	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> EPSON Glossy Photo Paper Premium Semigloss Photo Paper Ultra Premium Photo Paper Luster Glossy Photo Paper Photo Paper Glossy (EAI) 	Fine	720x720	VSD2 (220cps)	ON	ON
	Photo	1440x720	VSD2 (220cps)	ON	ON
	Super Photo	5760x1440	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> Matte Paper Heavyweight Double-sided Matte Paper 	Photo	1440x720	VSD2 (220cps)	ON	ON
	Super Photo	5760x1440	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> Photo Quality Inkjet Paper 	Photo	1440x720	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> Watercolor Paper - Radiant White Velvet Fine Art Paper Ultra Smooth Fine Art Paper Enhanced Matte Paper Archival matte paper (EAI) Matte Paper Heavyweight Double-sided Matte Paper 	Photo	1440x720	VSD2 (220cps)	ON	ON
	Super Photo	5760x1440	VSD2 (220cps)	ON	ON

Table 1-7. Print Mode (Monochrome)

Media	Print Mode	Resolution (H x V) dpi	Dot Size (cps*)	Bi-d	Micro Weave
<ul style="list-style-type: none"> PremierArt Matte Scrapbook Photo Paper (EAI only) 	Photo	1440x720	VSD2 (220cps)	ON	ON
	Super Photo	5760x1440	VSD2 (220cps)	ON	ON
<ul style="list-style-type: none"> CD/DVD 	Super Photo	1440x1440	VSD3 (220cps)	ON	ON
<ul style="list-style-type: none"> CD/DVD Premium Surface 	Super Photo	1440x1440	VSD3 (220cps)	ON	ON

Note : The default is indicated by boldface.

Note * : cps = character per second

1.2.4 Supported Paper

The table below lists the paper type and sizes supported by the printer. The Supported paper type and sizes vary depending on destinations (between EAI, EUR, and Asia).

Table 1-8. Supported Paper

Paper Name	Paper Size		Thickness	Weight		EAI		EUR		Asia	
			mm	g/m ²	lb.	P*1	B*2	P*1	B*2	P*1	B*2
Plain paper	A3	297 x 420 mm	0.08-0.11	64-90	17-24	Y	-	Y	-	Y	-
	US B	279.4 x 431.8 mm (11" x 17")				Y	-	-	-	-	-
	B4	257 x 364 mm				Y	-	Y	-	Y	-
	Legal	215.9 x 355.6 mm (8.5"x14")				Y	-	Y	-	Y	-
	Letter	215.9 x 279.4 mm (8.5"x11")				Y	-	Y	-	Y	-
	A4	210 x 297 mm (8.3"x11.7")				Y	-	Y	-	Y	-
	B5	182 x 257 mm (7.2"x10.1")				-	-	Y	-	Y	-
	A5	148 x 210 mm (5.8"x8.3")				-	-	Y	-	Y	-
	Half Letter	139.7 x 215.9 mm (5.5"x8.5")				Y	-	-	-	-	-
	A6	105 x 148 mm (4.1"x5.8")				Y	-	Y	-	Y	-
	User Defined	89 x 127- 329 x 1117.6 mm (3.56"x 5.08" - 13.16"x44.7")				Y	-	Y	-	Y	-
Premium Inkjet Plain Paper	A4	210 x 297 mm (8.3"x11.7")	0.11	80	21	-	-	Y	-	Y	-
Premium Bright White Paper	Letter	215.9 x 279.4 mm (8.5"x11")	0.11	90	24	Y	-	-	-	-	-
Bright White Inkjet Paper	A4	210 x 297 mm (8.3"x11.7")	0.13	92.5	25	-	-	Y	-	Y	-

Table 1-8. Supported Paper

Paper Name	Paper Size		Thickness	Weight		EAI		EUR		Asia	
			mm	g/m ²	lb.	P*1	B*2	P*1	B*2	P*1	B*2
Premium Photo Paper Glossy (EAI) Premium Glossy Photo Paper (others)	A3+/SuperA3	329 x 483 mm	0.27	255	68	Y	Y	Y	Y	Y	Y
	US B	279.4 x 431.8 mm (11" x 17")				Y	Y	-	-	-	-
	A3	297 x 420 mm				Y	Y	Y	Y	Y	Y
	11" x 14"	279.4 x 355.6 mm				Y	Y	-	-	-	-
	Letter	215.9 x 279.4 mm (8.5"x11")				Y	Y	-	-	-	-
	A4	210 x 297 mm (8.3"x11.7")				Y	Y	Y	Y	Y	Y
	8" x 10"	203.2 x 254 mm				Y	Y	-	-	-	-
	5" x 7"	127 x 178 mm				Y	Y	Y	Y	Y	Y
	4" x 6"	101.6 x 152.4 mm				Y	Y	Y	Y	Y	Y
	16:9 wide	102 x 181 mm (4"x7.11")				-	-	Y	Y	-	-
	Roll paper	329 x 1,000 mm				Y	Y	Y	Y	Y	Y
Photo Paper Glossy (EAI) Glossy Photo Paper (others)	A3+/SuperA3	329 x 483 mm	0.25	258	68	Y	Y	-	-	-	-
	US B	279.4 x 431.8 mm (11" x 17")				Y	Y	-	-	-	-
	Letter	215.9 x 279.4 mm (8.5"x11")				Y	Y	-	-	-	-
	A4	210 x 297 mm (8.3"x11.7")				Y	Y	Y	Y	Y	Y
	5" x 7"	127 x 178 mm				Y*3	Y*3	Y	Y	Y*3	Y*3
	4" x 6"	101.6 x 152.4 mm				Y	Y	Y	Y	Y	Y
Premium Photo Paper Semi-gloss (EAI) Premium Semigloss Photo Paper (others)	A3+/SuperA3	329 x 483 mm	0.27	250	66	Y	Y	Y	Y	Y	Y
	A3	297 x 420 mm				Y	Y	Y	Y	Y	Y
	Letter	215.9 x 279.4 mm (8.5"x11")				Y	Y	-	-	-	-
	A4	210 x 297 mm (8.3"x11.7")				-	-	Y	Y	Y	Y
	4" x 6"	101.6 x 152.4 mm				Y	Y	Y	Y	Y	Y
	Roll paper	329 x 1,000 mm				-	-	Y	Y	Y	Y

Table 1-8. Supported Paper

Paper Name	Paper Size		Thickness	Weight		EAI		EUR		Asia	
			mm	g/m ²	lb.	P*1	B*2	P*1	B*2	P*1	B*2
Ultra Premium Photo Paper Luster	A3+/SuperA3	329 x 483 mm	0.27	250	66	Y	Y	-	-	-	-
	A3	297 x 420 mm				Y	Y	-	-	-	-
	Letter	215.9 x 279.4 mm (8.5"x11")				Y	Y	-	-	-	-
	Roll paper	329 x 1,000 mm				Y	Y	-	-	-	-
Premium Luster Photo Paper	Roll paper	329 x 1,000 mm	0.27	250	66	Y*4	Y*4	-	-	-	-
	Roll paper	210 x 10,000 mm				Y*4	Y*4	-	-	-	-
Premium Presentation Paper Matte (EAI) Matte Paper Heavy-weight (others)	A3+/SuperA3	329 x 483 mm	0.23	167	44	Y	Y	Y	Y	Y	Y
	A3	297 x 420 mm				Y	Y	Y	Y	Y	Y
	11" x 14"	279.4 x 355.6 mm				Y	Y	-	-	-	-
	Letter	215.9 x 279.4 mm (8.5"x11")				Y	Y	-	-	-	-
	A4	210 x 297 mm (8.3"x11.7")				-	-	Y	Y	Y	Y
	8" x 10"	203.2 x 254 mm				Y	Y	-	-	-	-
Archival Matte Paper (EAI) Enhanced Matte Paper (others)	A3+/SuperA3	329 x 483 mm	0.26	192		Y	Y	Y	Y	Y	Y
	A3	297 x 420 mm				Y	Y	Y	Y	Y	Y
	Letter	215.9 x 279.4 mm (8.5"x11")				Y	Y	-	-	-	-
	A4	210 x 297 mm (8.3"x11.7")				-	-	Y	Y	Y	Y
Double-sided Matte Paper	Letter	215.9 x 279.4 mm (8.5"x11")	0.22	185	49	Y	-	-	-	-	-
	A4	210 x 297 mm (8.3"x11.7")				-	-	Y	-	Y	-
Presentation Paper Matte (EAI) Photo Quality Inkjet Paper (others)	A3+/SuperA3	329 x 483 mm	0.12	102	27	Y	-	Y	-	Y	-
	A3	297 x 420 mm				Y	-	Y	-	Y	-
	US B	279.4 x 431.8 mm (11" x 17")				Y	-	-	-	-	-
	Letter	215.9 x 279.4 mm (8.5"x11")				Y	-	-	-	-	-
	A4	210 x 297 mm (8.3"x11.7")				Y	-	Y	-	Y	-
Watercolor Paper - Radiant White	A3+/SuperA3	329 x 483 mm	0.29	190	51	Y	Y	Y	Y	Y	Y

Table 1-8. Supported Paper

Paper Name	Paper Size		Thickness	Weight		EAI		EUR		Asia	
			mm	g/m ²	lb.	P*1	B*2	P*1	B*2	P*1	B*2
Velvet Fine Art Paper	A3+/SuperA3	329 x 483 mm	0.48	260	69	Y	Y	Y	Y	-	-
	Letter	215.9 x 279.4 mm (8.5"x11")				Y	Y	-	-	-	-
Ultra Smooth Fine Art Paper	A3+/SuperA3	329 x 483 mm	0.46	325	86	Y	Y	-	-	-	-
PremierArt Matte Scrapbook Photo Paper	12" x 12"	305 x 305 mm	0.30	205	52	Y*5	Y*5	-	-	-	-
Photo Quality Self Adhesive Sheet	A4	210 x 297 mm (8.3"x11.7")	0.19	167	44	Y	-	Y	-	Y	-
CD/DVD CD/DVD Premium Surface	ø 12cm	ø 12cm	-	-	-	Y	-	Y	-	Y	-
	ø 8cm	ø 8cm	-	-	-	Y	-	Y	-	Y	-
Enhanced Matte Posterboard*6	A3+	329 x 483 mm	1.2	-	-	-	-	Y*5	-	-	-

Note *1: "Y" in the "P" column stands for "the paper type/size is Supported".

*2: "Y" in the "B" column stands for "Borderless printing is available".

*3: Stylus Photo R2880 only.

*4: Not supported by Stylus Photo R2880.

*5: Guaranteed under certain conditions.

*6: Only front manual feed is available.



- Make sure the paper is not wrinkled, fluffed, torn, or folded.
- The curve of paper must be 5 mm or below.
- When printing on an envelope, be sure the flap is folded neatly.
- Do not use the adhesive envelopes.
- Do not use double envelopes and cellophane window envelopes.

1.2.5 Printing Area

The printing area for this printer is shown below.

- Stylus Photo R1900

Table 1-9. Printing Area (Margins)

Print Mode	Paper Size	Margin			
		Left (LM)	Right (RM)	Top (TM)	Bottom (BM)
Standard print	Any size	3 mm	3 mm	3 mm	3 mm
	Roll paper	3 mm*	3 mm*	30 mm*	21 mm*
Borderless print	A3/A3+/SuperA3	3.5 mm*	3.5 mm*	3 mm*	4.52 mm*
	A4/Letter to 5" x 7"	2.5 mm*	2.5 mm*	3 mm*	4.02 mm*
	4" x 6"	2.54 mm*	2.54 mm*	1.34 mm*	2.54 mm*
	Roll paper	0 mm	0 mm	30 mm	21 mm

- Stylus Photo R2880

Table 1-10. Printing Area (Margins)

Print Mode	Paper Size	Margin			
		Left (LM)	Right (RM)	Top (TM)	Bottom (BM)
Standard print	Any size	3 mm	3 mm	3 mm	3 mm
	Roll paper	3 mm	3 mm	40 mm	21 mm
	Board paper	3 mm	3 mm	20 mm	20 mm
Borderless print	A3/A3+/SuperA3	3.5 mm*	3.5 mm*	3 mm*	4.52 mm*
	A4/Letter to 5" x 7"	2.5 mm*	2.5 mm*	1.34 mm*	2.54 mm*
	4" x 6"	2.54 mm*	2.54 mm*	1.34 mm*	2.54 mm*
	Roll paper	0 mm	0 mm	40 mm	21 mm

Note *: The margins for Borderless print are margins that bleed off the edges of paper.

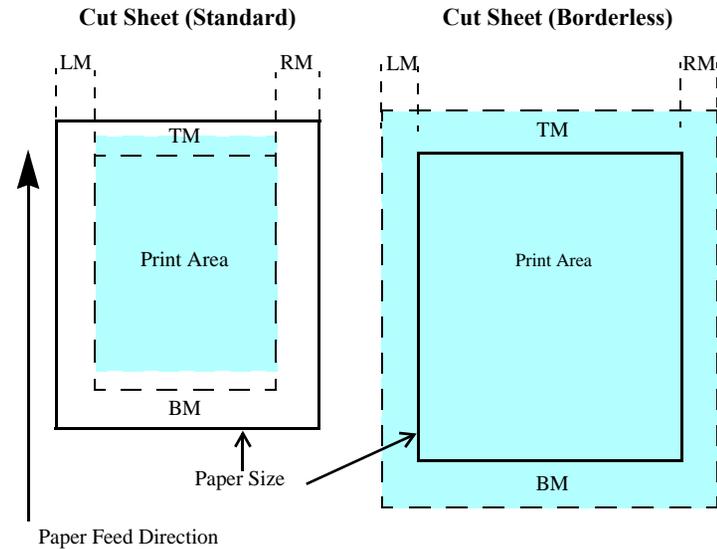


Figure 1-2. Printing Area

1.3 Interface

This printer has two USB device ports on the rear side to connect the printer with computers or the like, and one USB host port on the front side to connect an external device such as a DSC (digital still camera) with the printer. The table below describes the specifications of each USB port.

Table 1-11. USB Interface Specifications

Item	USB Device port	USB Host port*
Compatible standards	<ul style="list-style-type: none"> • Universal Serial Bus Specifications Revision 2.0 • Universal Serial Bus Device Class Definition for Printing Devices Version 1.1 	<ul style="list-style-type: none"> • Universal Serial Bus Specifications Revision 2.0
Transfer rate	480 Mbps (High Speed)	
Data format	NRZI	
Compatible connector	USB Series B	USB Series A
Max. cable length	2 [m] or less	1.8 [m] or less

Note * : External devices that can be connected to the USB device port are:
 DSC compliant with the USB Direct Print Protocol specification Rev 1.0
 DSC compliant with the CIPA DC-001-2003 (PictBridge) specifications

Table 1-12. Device ID

Product	When IEEE 1284.4 is Enabled	When IEEE 1284.4 is Disabled
Stylus Photo R1900	@EJL<SP>ID<CR><LF> MFG:EPSON; CMD:ESCPL2,BDC,D4,D4PX,ESCPR1; MDL:Stylus[SP]Photo[SP]R1900; CLS:PRINTER; DES:EPSON[SP]Stylus[SP]Photo [SP]R1900;	@EJL<SP>ID<CR><LF> MFG:EPSON; CMD:ESCPL2,BDC; MDL:Stylus[SP]Photo[SP]R1900; CLS:PRINTER; DES:EPSON[SP]Stylus[SP]Photo [SP]R1900;
Stylus Photo R2880	@EJL<SP>ID<CR><LF> MFG:EPSON; CMD:ESCPL2,BDC,D4,D4PX,ESCPR1; MDL:Stylus[SP]Photo[SP]R2880; CLS:PRINTER; DES:EPSON[SP]Stylus[SP]Photo [SP]R2880;	@EJL<SP>ID<CR><LF> MFG:EPSON; CMD:ESCPL2,BDC; MDL:Stylus[SP]Photo[SP]R2880; CLS:PRINTER; DES:EPSON[SP]Stylus[SP]Photo [SP]R2880;

1.4 General Specifications

1.4.1 Electrical Specifications

- Primary power input

Table 1-13. Primary Power Specifications

Item	Stylus Photo R1900		Stylus Photo R2880		
	100-120V	220-240V	100-120V	220-240V	
Rated power supply voltage	100 to 120 VAC	220 to 240 VAC	100 to 120 VAC	220 to 240 VAC	
Input voltage range	90 to 132 VAC	198 to 264 VAC	90 to 132 VAC	198 to 264 VAC	
Rated current	0.6 A (max. 1.0 A)	0.3 A (max. 0.5 A)	0.5 A (max. 1.0 A)	0.3 A (max. 0.5 A)	
Rated frequency	50 to 60 Hz		50 to 60 Hz		
Input frequency range	49.5 to 60.5 Hz		49.5 to 60.5 Hz		
Insulation resistance	AC1000Vrms (for one minute)		AC1000Vrms (for one minute)		
Energy conservation	International Energy Star Program compliant				
Power consumption	Printing	Approx. 20 W	Approx. 20 W	Approx. 20 W	Approx. 21 W
	Sleep mode	Approx. 3.1 W	Approx. 4.0 W	Approx. 4.0 W	Approx. 4.0 W
	Standby mode (power-off)	Approx. 0.2 W	Approx. 0.5 W	Approx. 0.2 W	Approx. 0.4 W

Note : If the printer is not operated for more than three minutes, the printer shifts into the standby mode and reduces the current to the motors to save power.

1.4.2 Environmental Conditions

Table 1-14. Environmental Conditions

Condition	Temperature*1	Humidity*1,2	Shock	Vibration
Operating	10 to 35°C (50 to 95°F)	20 to 80%	1G (1 msec or less)	0.15G, 10 to 55Hz
Storage*3 (unpacked)	-20 to 40°C*4 (-4°F to 104°F)	5 to 85%	2G (2 msec or less)	0.50G, 10 to 55Hz

Note *1: The combined Temperature and Humidity conditions must be within the blue-shaded range in *Figure 1-3*.

*2: No condensation

*3: Non-operating with unpacked.

*4: Must be less than 1 month under 40°C.

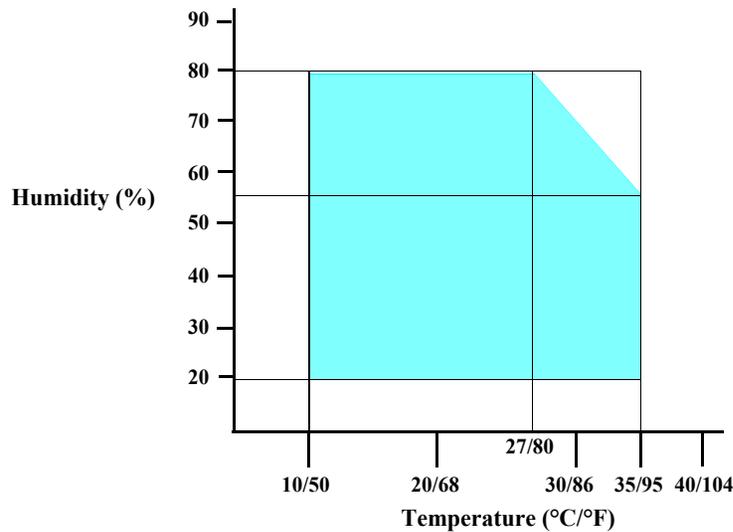


Figure 1-3. Temperature/Humidity Range



- When returning the repaired printer to the customer, make sure the Printhead is covered with the cap and the ink cartridge is installed.
- If the Printhead is not covered with the cap when the printer is off, turn on the printer with the ink cartridge installed, make sure the Printhead is covered with the cap, and then turn the printer off.

1.4.3 Durability

- Total print life: Black 16,000 pages (A4, 3.5% duty), Color 10,000 pages (A4, 5% duty), or five years which ever comes first
- Printhead: Six billions shots (per nozzle) or five years which ever comes first

1.4.4 Acoustic Noise

T.B.D. dB (when printing from PC, on Premium Glossy Photo Paper, in highest quality)

1.4.5 Safety Approvals (Safety standards/EMI)

USA	UL60950-1 FCC Part15 Subpart B Class B
Canada	CAN/CSA-C22.2 No.60950-1 CAN/CSA-CEI/IEC CISPR 22 Class B
Mexico	NOM-019-SCFI-1998
Taiwan	CNS13438 Class B CNS14336
EU	EN60950-1 EN55022 Class B EN61000-3-2, EN61000-3-3 EN55024
Germany	EN60950-1
Russia	GOST-R (IEC60950-1, CISPR 22)
Singapore	IEC60950-1
Korea	K60950-1 KN22 Class B KN61000-4-2/-3/-4/-5/-6/-11
China	GB4943 GB9254 Class B, GB17625.1
Argentina	IEC60950-1
Australia	AS/NZS CISPR22 Class B
Hong Kong	IEC60950-1

1.5 Operation Buttons & Indicators (LEDs)

1.5.1 Operation Buttons

The printer has the following four operation buttons.

Table 1-15. Operation Buttons

Button	Function
Power	Turns the power ON/OFF.
Paper	Feeds or ejects paper.
Ink	Runs a sequence of ink cartridge replacement or cleaning.
Roll Paper	Prints the cutting line on the roll paper or feeds the paper backwards out of the printer.

1.5.2 Indicators (LEDs)

Eleven indicators (LEDs) are provided to indicate settings or printer status.

Table 1-16. Indicators (LEDs)

LED	Function
Power LED (green)	Lights at power-on. Flashes during some sequence is in progress. Flashes at high speed during power-OFF sequence.
Ink LED (orange)* ¹	Lights or flashes when an ink-related error occurs.* ²
Paper LED (orange)* ¹	Lights or flashes when an paper- or CDR-related error occurs.* ²
Cartridge LED (red) x 8	Indicates an ink-related error of each ink cartridge.* ²

Note *1: The Ink LED and Paper LED stay OFF when printing from PC.

*2: See [Table 1-18 "Indicators \(LEDs\) Function"](#) for the LED status at error occurrence.

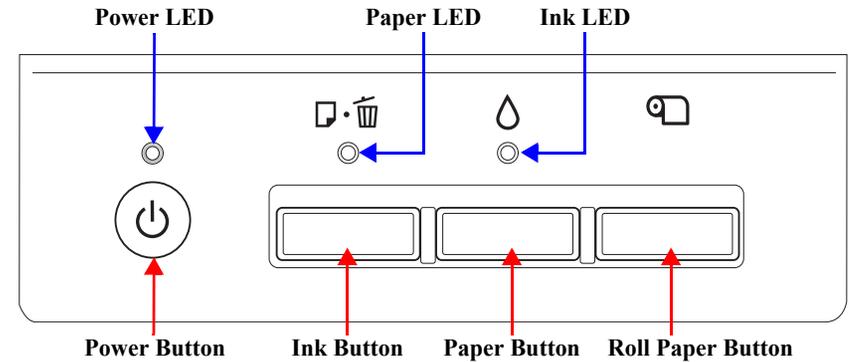


Figure 1-4. Buttons & LEDs

1.5.3 Operation Buttons & LEDs Functions

Detailed information on the buttons and LEDs functions are listed below.

Table 1-17. Operation Button Functions

Button	Printer Status	Function
Power	Off	• Turns the power on.
	On	• Turns the power off.
Ink	On	<ul style="list-style-type: none"> • Runs a sequence of ink cartridge replacement. The carriage moves to set the ink cartridge to the position for replacement. • When an ink cartridge has been set in the ink replacement position, moves the carriage to the home position.
Paper	On	<ul style="list-style-type: none"> • Feeds or ejects paper.*¹ • Recovers from a multi-feed error and feeds paper to restart the print job. • Feeds paper when paper is loaded after a no-paper error occurs. • Ejects a jammed paper when a paper jam error occurs. • Cancels the print job during printing. • Runs a sequence of ink cartridge replacement when an ink-out, or ink color error*² occurs. The carriage moves to set the ink cartridge to the position for replacement. • When an ink cartridge has been set in the ink replacement position, moves the carriage to the home position.
	During CDR printing	<ul style="list-style-type: none"> • Recovers from a paper jam error. • Cancels the print job during printing.
Ink (when held for three seconds or longer)	On	<ul style="list-style-type: none"> • Runs a head cleaning. • Runs a sequence of ink cartridge replacement when ink level low, ink out, no ink cartridge, or ink color error*² has occurred.
Roll Paper	On	<ul style="list-style-type: none"> • Feeds the roll paper to the cutting position and prints a cutting line. • Returns the cutting position. • When an ink cartridge has been set in the ink replacement position, moves the carriage to the home position.

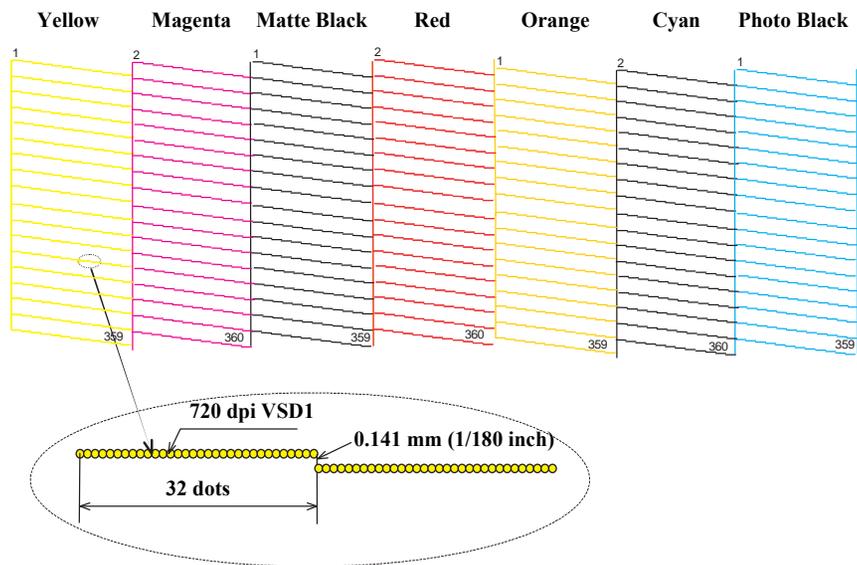
Table 1-17. Operation Button Functions

Button	Printer Status	Function
Roll Paper (when held for three seconds or longer)	On	<ul style="list-style-type: none"> • Ejects the paper backwards out of the printer. • When an ink cartridge has been set in the ink replacement position, moves the carriage to the home position.
Power + Ink * ² (combination)	At power on	• Turns the power on in rub reduction mode when connected to DSC (digital still camera).
Power + Ink * ² (combination) (Hold down the Ink button for 7 sec or longer)	On	• Forcefully turns the power off.
Power + Paper * ¹ (combination)	At power on	• Prints a nozzle check pattern* ² when not connected to the PC.* ³

Note 1: The paper cannot be fed or ejected if the CDR Tray Base is open.

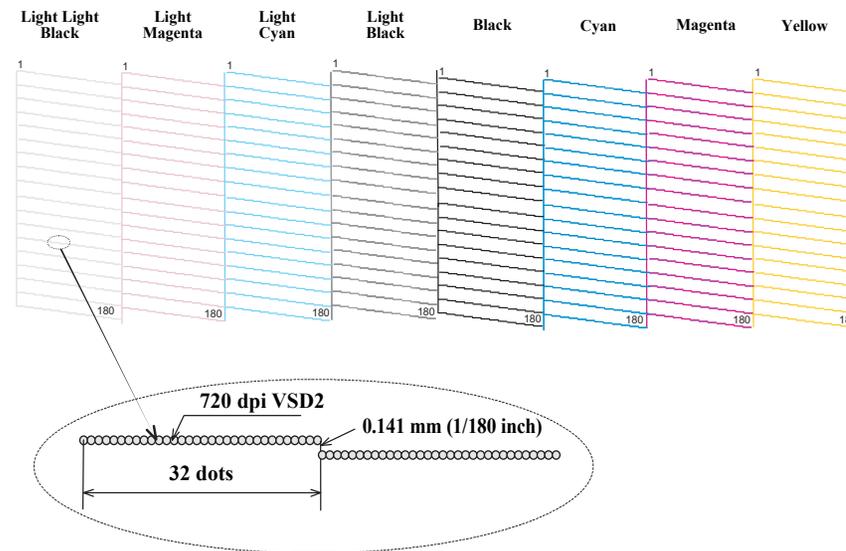
2: Stylus Photo R2880 only.

3: The nozzle check pattern printed by the printer is shown in [Figure 1-5](#) and [Figure 1-6](#).



Note : The numbers shown in the figure are nozzle numbers. The numbers and color names are not printed on an actual nozzle check pattern.

Figure 1-5. Nozzle Check Pattern (Stylus Photo R1900)



Note : The numbers shown in the figure are nozzle numbers. The numbers and color names are not printed on an actual nozzle check pattern.

Figure 1-6. Nozzle Check Pattern (Stylus Photo R2880)

Table 1-18. Indicators (LEDs) Function

Printer Status	Indicators (LEDs)			Priority*1
	Power	Paper	Ink	
Power OFF	Flashes at high speed	OFF	OFF	1
Fatal error	OFF	Flashes at high speed	Flashes at high speed	2
Maintenance request	OFF	Flashes alternately 1	Flashes alternately 2	3
CDR guide error	--	Flashes 2	Flashes at high speed	4
Paper path error	--	Flashes	--	5
Paper (CDR) jam	--	Flashes	--	
Cover open error	--	Flashes	--	
Multi-feed error	--	ON	--	6
No paper error	--	ON	--	
Ink cartridge replacement is in progress	Flashes	--	--	7
Ink sequence is in progress	Flashes	--	--	8
CSIC error	--	--	ON*2	9
No ink cartridge error or ink-out error	--	--	ON*2	
Ink Color error*4	--	--	Flashes at high speed*2	10
Data processing/Printing from camera	Flashes	--	--	11
Connected to non-supported external device	--	Flashes 2	Flashes 3	
Connected to USB hub	--	Flashes 4	Flashes	
Ink level low	--	--	Flashes*2	12
Connected to camera (with rubbing reduction)	Flashes 4	--	--	13
Connected to camera (without rubbing reduction)	Flashes 2	--	--	
Power ON	Flashes	--	--	
Reset request*3	ON	ON	ON	--

Note *1: When two or more errors occur at the same time, the one with higher priority will be indicated.

*2: The cartridge LED corresponding to each ink cartridge lights.

*3: The all LEDs light for 0.2 seconds when a reset request is received.

*4: Stylus Photo R2880 only.

Note : --: No change
Flash: Repeats turning On and Off every 1.25 seconds.
Flash 2: Repeats On for 0.5 seconds, Off for 0.5 seconds, On for 0.5 seconds, and Off for 1.0 second.
Flash 3: Repeats Off for 0.5 seconds, On for 0.5 seconds, Off for 0.5 seconds, and On for 1.0 second.
Flash 4: Repeats On for 2.0 seconds and Off for 0.5 seconds.
Flash at high speed: Repeats turning On and Off every 0.5 seconds.
Flashes alternately 1: Same as the "Flash"
Flashes alternately 2: Repeats turning Off and On every 1.25 seconds.

1.5.4 Errors & Remedies

Table 1-19. Errors & Remedies

Error	Error	Remedies
Fatal error	A mechanical error has occurred.	Turn the power Off and back it On.
Maintenance request	Waste ink pads need to be replaced.	Replace the waste ink pads and reset the counter.
CDR guide error	• The CDR Tray Base was open when receiving or printing a ASF print job.	Close the CDR Tray Base.
	• The CDR Tray Base was closed when receiving or printing a CDR print job.	Open the CDR Tray Base.
Paper jam	A paper jam has occurred.	<When printing on paper> Remove the jammed paper and press the Paper button.*1 <When printing on CDR> Remove the jammed CDR tray and press the Paper button.
No paper	Failed to feed paper.	Load paper correctly and press the Paper button.*1
Multi-feed	Multiple sheets of paper were fed at the same time.	Press the Paper button to eject the multiple sheets.*1
Ink-out	The cartridge has run out of ink.	Replace the cartridge with a new one.*2
No ink cartridge	Ink cartridge(s) was not detected.	Replace the cartridge with a new one.*2
Wrong ink cartridge	Incorrect ink cartridge(s) was detected.	Replace the cartridge with the correct one.*2
Paper path error	The paper was loaded in a different way from the specified one.	Eject the fed paper and press the Paper button after loading paper in the specified way.
Cover open error	Printing was executed with the Printer Cover open.	Close the Printer Cover.
Ink Color error*3	The black ink cartridge was replaced during printing.	Replace the cartridge with the one used before the error.
	Cleaning after black ink replacement cannot be performed.	Replace the black ink cartridge with the one used before the error, or the one that has sufficient amount of ink.

Note : For more information on the remedies, see "3.1.1 Troubleshooting according to Error Messages" (p.34).

Note *1: When the CDR Tray Base is opened, close the CDR Tray Base and press the Paper button.

*2: When the CDR tray has been inserted, remove the CDR tray and press the Ink button.

*3: Stylus Photo R2880 only.

CHAPTER

2

OPERATING PRINCIPLES

2.1 Overview

This chapter explains the operating principles of the mechanical sections and electrical circuits in this product. The main components of this product are as follows.

- Control circuit board : C698 MAIN
- Power supply circuit board : C698 PSB/PSE
- Control panel board : C698 PNL
- LED board : C698 PNL-B

2.2 Printer Mechanism

Like the conventional model, this product uses DC motors and stepping motors as power sources. The following table describes the motor types and their applications.

Table 2-1. Motors

Motor Name	Type	Applications/Functions
CR Motor	DC motor with brushes	Used for carriage driving. Makes little noise during driving. The CR linear scale and CR encoder sensor are used to control the motor.
PF Motor	DC motor with brushes	Drives the Paper loading rollers at the time of fixed-value paper loading or paper feed/eject operation. To grasp the paper feed pitch, the precision gear surface is fitted with the PF scale and the PF encoder sensor is used to control the motor.
APG Motor	DC motor with brushes	Drives the Carriage Unit at the time of PG setting. The two APG Sensors are driven vertically to control the motor.
ASF Motor	4-phase, 48-pole PM type stepping motor	Drives the paper feed operation of the ASF. Since this is a stepping motor, any scales or photo sensors to know the driving conditions are not required.
Pump Motor	4-phase, 48-pole PM type stepping motor	Drives the pump, wiper, etc. of the Ink System. Since this is a stepping motor, any scales or photo sensors to know the driving conditions are not required.

The basic mechanism is almost same as the Stylus Photo R1800. The schematic diagram below shows the printer mechanism.

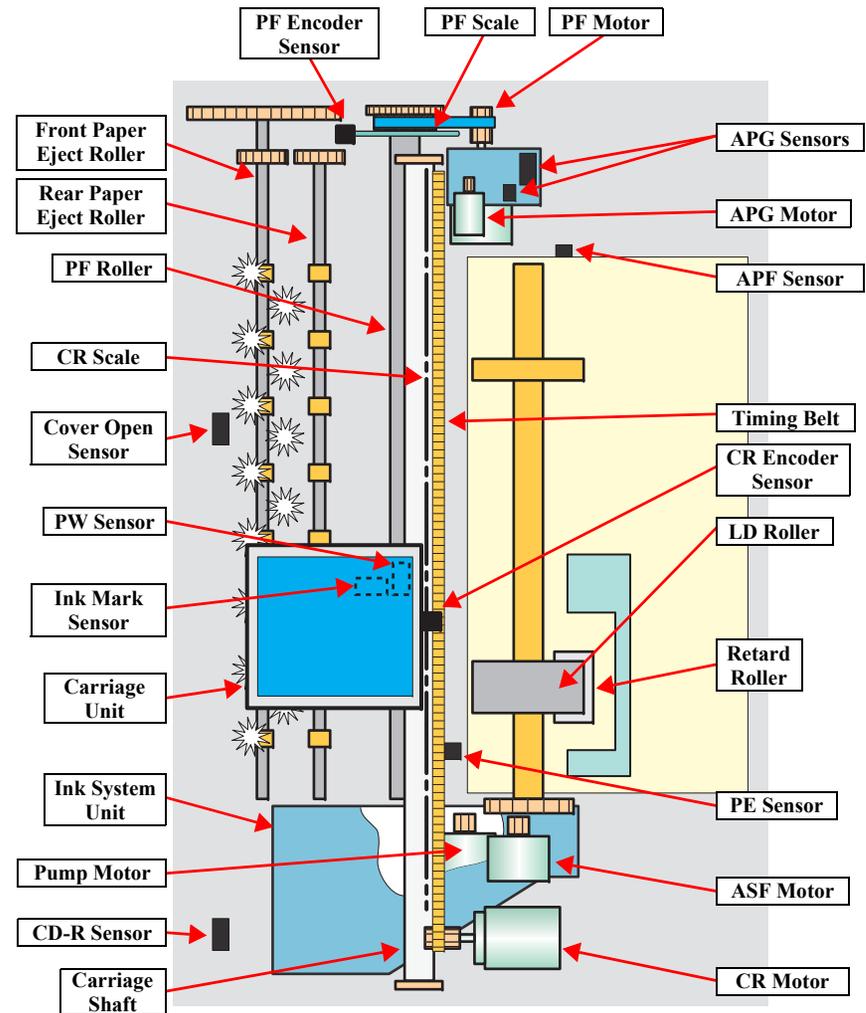


Figure 2-1. Printer Mechanism Outline

2.3 Printhead Specifications

The Printhead of this product is a F-Mach head.

The following shows the arrangement of the nozzles and the color arrangement of each nozzle line when viewed the Print Head from behind.

□ Stylus Photo R1900

□ Stylus Photo R2880

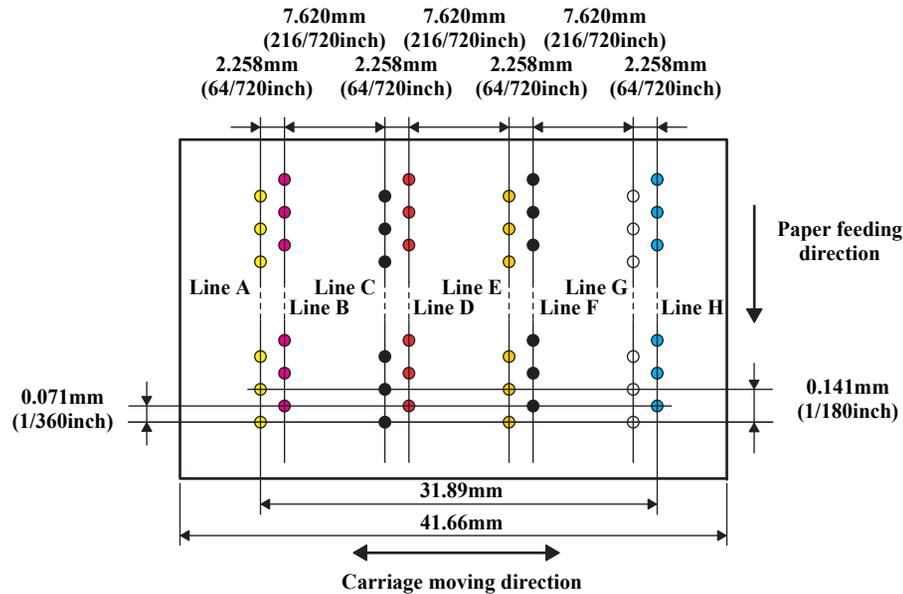


Figure 2-2. Nozzle Arrangement (Stylus Photo R1900)

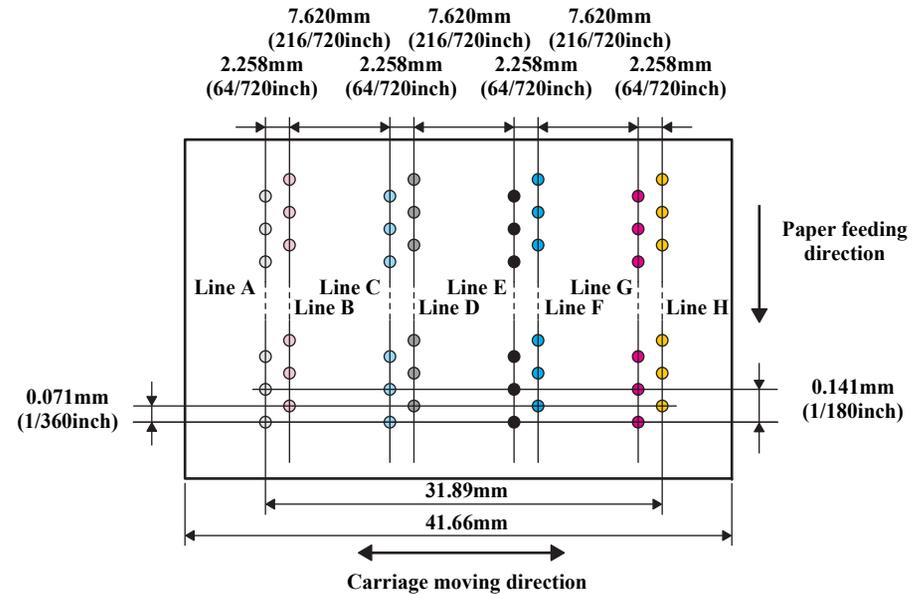


Figure 2-3. Nozzle Arrangement (Stylus Photo R2880)

Table 2-2. Nozzle Lines and the Corresponding Ink Color (Stylus Photo R1900)

Line	Ink
A	Yellow
B	Magenta
C	Matte Black
D	Red
E	Orange
F	Photo Black
G	Gloss Optimizer
H	Cyan

Table 2-3. Nozzle Lines and the Corresponding Ink Color (Stylus Photo R2880)

Line	Ink
A	Light Light Black
B	Vivid Light Magenta
C	Light Cyan
D	Light Black
E	Matte Black/Photo Black
F	Cyan
G	Vivid Magenta
H	Yellow

2.4 PG Setting

As this printer uses an Auto PG (APG), an appropriate PG position is set according to the used paper type.

The following table indicates the PG positions, the main applications of each position, and the relationships between the two sensors used with the APG.

Table 2-4.

Application	PG Position					
	PG (--)	PG (-)	PG (Typ)	PG (+)	PG (++)	Release
Printing	<ul style="list-style-type: none"> Photo paper (A4,Letter) 	<ul style="list-style-type: none"> Roll paper Photo Matte paper 	<ul style="list-style-type: none"> Plain paper Exclusive paper PG (-) rub avoidance 	<ul style="list-style-type: none"> Envelope PG (Typ) rub avoidance 	<ul style="list-style-type: none"> CD/DVD 	<ul style="list-style-type: none"> -
Non-printing	-	-	<ul style="list-style-type: none"> Standby position after power-on (When the CDR Tray Base is closed.) At power-off Ink Mark Sensor reading. (Auto Bi-D) 	<ul style="list-style-type: none"> Ink Mark Sensor reading. (Detection of dot missing) 	<ul style="list-style-type: none"> Initialization at power-on Cleaning (wiping) Ink Cartridge replacement 	<ul style="list-style-type: none"> Standby state for CD/DVD feeding Paper jam removal
PG value	1.05mm	1.20mm	1.70mm	2.10mm	4.50mm	-
Sensor	PG (--)	PG (-)	PG (Typ)	PG (+)	PG (++)	Release
APG Sensor 1*	Low	Low	Low	Low	Low	Low
APG Sensor 2	Low	Low	Low	Low	High	High

Note "*": The signal output is "High" while the PG positions are changed.

2.5 Motors & Sensors

☐ Motors

Table 2-5. List of Motors

Fig.	Name	Specific
A	PF Motor	Type: DC Motor Armature resistance: 21.2Ω ±10% Drive voltage: 42VDC±5%
B	APG Motor	Type: DC Motor Armature resistance: 64.7Ω ±15% Drive voltage: 42VDC±5%
C	ASF Motor	Type: 4-phase 48-pole PM type stepping motor Winding resistance: 7.0Ω ±10% (per phase at 25°C) Drive voltage: 42VDC±5%
D	CR Motor	Type: DC Motor Armature resistance: 23.6Ω ±10% Drive voltage: 42VDC±5%
E	Pump Motor	Type: 4-phase 48-pole PM type stepping motor Winding resistance: 10.3Ω ±10% (per phase at 25°C) Drive voltage: 42VDC±5%

☐ Sensors

Table 2-6. List of Sensors

Fig.	Name	Specific
1	PF Encoder sensor	Type: Rotary Encoder Drive voltage: 3.3VDC±5%
2	APG Sensor (1)	Type: Transmissive photo interrupter Sensor output: • High: In the domain of each PG position • Low: Between PG positions Drive voltage: 3.3VDC±5%
3	APG Sensor (2)	Type: Transmissive photo interrupter Sensor output: • High: In the domain of large PG • Low: In the domain of small PG Drive voltage: 3.3VDC±5%
4	ASF Sensor	Type: Transmissive photo interrupter Sensor output: • High: Home position • Low: Other than home position Drive voltage: 3.3VDC±5%
5	PE Sensor	Type: Transmissive photo interrupter Sensor output: • High (2.4V or more): No paper • Low (0.4V or less): Paper exists Drive voltage: 3.3VDC±5%
6	CR Encoder sensor	Type: Linear Encoder Drive voltage: 3.3VDC±5%
7	PW Sensor	Type: Reflective photo interrupter Sensor output: • High: No paper • Low: Paper exists Drive voltage: 3.3VDC±5%

Table 2-6. List of Sensors

Fig.	Name	Specific
8	Ink Mark Sensor	Type: Diffuse reflective photo interrupter Drive voltage: 3.3(5)VDC±5%
9	CDR Sensor	Type: Mechanical contact Sensor output: • High: CDR Tray Base open • Low: CDR Tray Base closed Drive voltage: 3.3VDC±5%
10	Cover Open Sensor	Type: Mechanical contact Sensor output: • High: Cover closed • Low: Cover open Drive voltage: 3.3VDC±5%

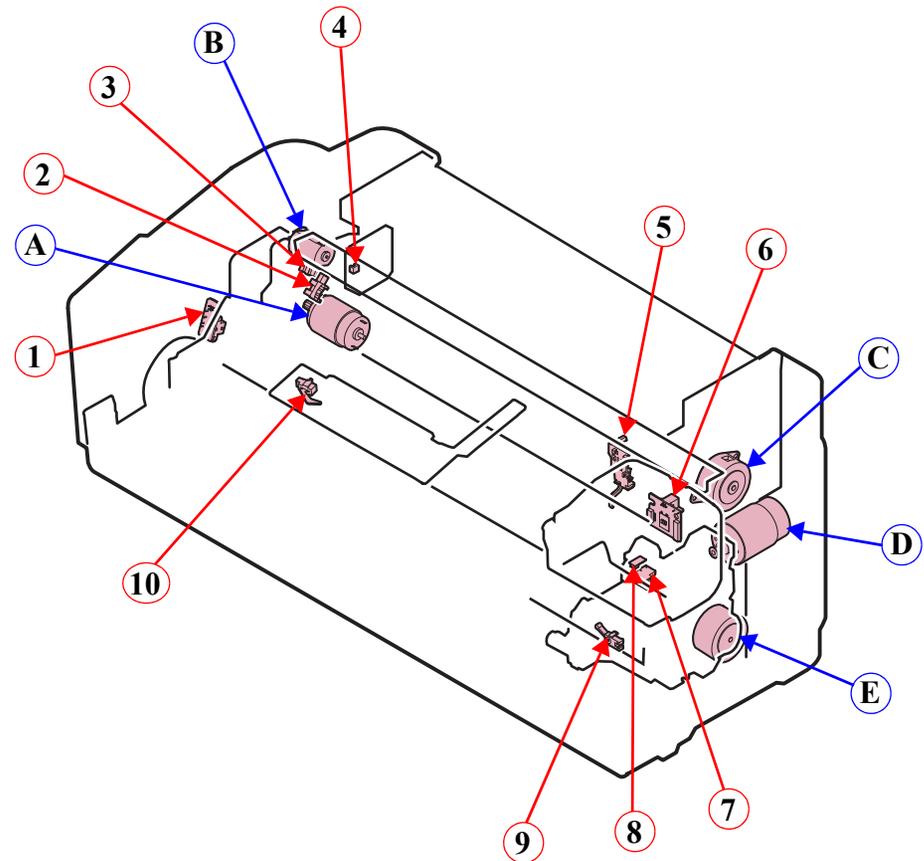


Figure 2-4. Motors and Sensors Layout

CHAPTER

3

TROUBLESHOOTING

3.1 Overview

This chapter describes unit-level troubleshooting.

3.1.1 Troubleshooting according to Error Messages

After checking the printer LED and STM3 error indications, you can grasp the fault location using the check list in this section. When you find the fault location, refer to Chapter 4 “Disassembly and Reassembly” and change the corresponding part and/or unit. The following table indicates the check point reference tables corresponding to the error states (LED and STM3).

Table 3-1. List of Error Messages

Error Status	LED Indications			STM3 Message	See the table for Troubleshooting
	Power	Paper	Ink		
Communication error	-	-	-	Communication error Check all connections and make sure all devices are on. If the power was turned off during printing, cancel the print job. If the error does not clear, see your printer documentation.	Refer to Table 3-2 "Troubleshooting of Communication Error" (P.37)
Model Difference	-	-	-	Different device from specified Attempting to connect to a different device from that specified in the driver. Check the driver settings and the device.	
Printer cover open error	-	Flash	-	Printer cover open Close the printer cover.	Refer to Table 3-3 "Troubleshooting of Printer Cover Open Error" (P.39)
CDR Guide error	-	Flash 2	Flashes at high speed	Front paper feed guide open Remove the CD/DVD tray, then close the front paper feed guide.	Refer to Table 3-4 "Troubleshooting of CDR Guide Error" (P.40)
Paper out error	-	Light	-	Media out or not loaded correctly For sheets of paper, reload the paper correctly, then press the Paper button on the printer. For roll paper or velvet paper, insert the end of the paper into the printer. For a CD or DVD, load the CD/DVD tray correctly, then press the Paper button on the printer.	Refer to Table 3-5 "Troubleshooting of Paper Out Error" (P.41)
Paper (CDR) jam	-	Flash	-	Paper jam or CD/DVD tray jam For sheets of paper, turn off the printer and then remove any jammed paper by hand. For a CD or DVD, remove the CD/DVD tray. Next, press the Paper button on the printer or click the Eject button if it appears on this screen.	Refer to Table 3-6 "Troubleshooting of Paper Jam Error" (P.45)

Table 3-1. List of Error Messages

Error Status	LED Indications			STM3 Message	See the table for Troubleshooting
	Power	Paper	Ink		
Paper Mismatch Error	-	Flash	-	<p>Paper Source setting not selected correctly</p> <p>For sheets of paper, remove the roll paper or velvet paper and print again.</p> <p>For roll paper, select Roll Paper as the Paper Source setting in the printer driver and print again.</p> <p>For velvet paper, select Velvet Fine Art Paper as the Paper Source setting in the printer driver and print again.</p>	Refer to Table 3-7 "Troubleshooting of Paper Mismatch Error" (P.46)
Multi-feed error	-	Light	-	<p>Page not printed or multi-page error</p> <p>A page has not been printed, multiple pages have been fed into the printer at once, or the wrong paper size has been fed into the printer. Remove and reload the paper. Press the Paper button if necessary.</p>	Refer to Table 3-8 "Troubleshooting of Multi-feed error" (P.48)
Ink low	-	-	Light*2	<p>Ink low</p> <p>Black: XXXX*2</p> <p>Color: XXXX</p> <p>.....</p> <p>You may continue printing, or click the How to button to change the ink cartridge now.</p>	Refer to Table 3-9 "Troubleshooting of Ink Low" (P.48)
Ink Color error*1	-	-	Flashes at high speed*2	<p>Ink cartridges cannot be replaced</p> <p>There are two possible causes.</p> <p>Because there is only a small amount of ink remaining, you cannot replace it with a different type of black ink cartridge. (However, you may be able to replace it with the same type of black ink cartridge.)</p> <p>Replace it with a new ink cartridge. We recommend using genuine Epson ink cartridges.</p> <p>Or, the currently installed black ink differs to the type of cartridge used when printing started.</p> <p>Replace the currently installed black ink cartridge with the same type of previously installed black ink cartridge.</p> <p>Once it is replaced, printing will resume automatically. If you do not want to replace the ink cartridge, click the Cancel button.</p>	Refer to Table 3-10 "Troubleshooting of Ink Color Error (Stylus Photo R2880 only)" (P.48)

Table 3-1. List of Error Messages

Error Status	LED Indications			STM3 Message	See the table for Troubleshooting
	Power	Paper	Ink		
Ink-out error	-	-	Light*2	Replace Cartridge Black: XXXX*2 Color: XXXX Epson recommends the genuine Epson cartridges listed above. Click the How to button for ink cartridge replacement instructions.	Refer to Table 3-12 "Troubleshooting of No Ink Cartridge/CSIC Error" (P.49)
No ink cartridge/CSIC error	-	-	Light*2	Ink cartridges cannot be recognized Black: XXXX*2 Color: XXXX Epson recommends the genuine Epson cartridges listed above. Click the How to button for ink cartridge installation instructions.	
Maintenance request	Off	Flashes alternately 1	Flashes alternately 2	Service required Parts inside your printer are at the end of their service life. See your printer documentation.	Refer to Table 3-13 "Troubleshooting of Maintenance Request" (P.50)
Fatal error	Off	Flashes at high speed	Flashes at high speed	General error Delete all print jobs and turn the printer off. Remove any foreign objects from inside the printer. After a few minutes, turn the printer back on.	Refer to Table 3-14 "Troubleshooting of Fatal Error" (P.51)

Note *1: Stylus Photo R2880 only.

*2: The cartridge LED corresponding to each ink cartridge lights.

*3: The "XXXX" represents the part number of the Ink Cartridge.
[Refer to "1.2.2 Ink Cartridge" \(p11\).](#)

Note :

- : No change
- Flash: Repeats turning On and Off every 1.25 seconds.
- Flash 2: Repeats On for 0.5 seconds, Off for 0.5 seconds, On for 0.5 seconds, and Off for 1.0 second.
- Flash at high speed: Repeats turning On and Off every 0.5 seconds.
- Flashes alternately 1: Same as the "Flash"
- Flashes alternately 2: Repeats turning Off and On every 1.25 seconds.

Table 3-2. Troubleshooting of Communication Error

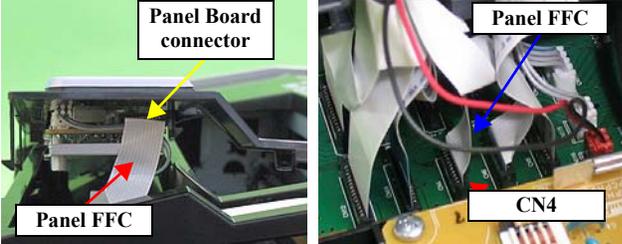
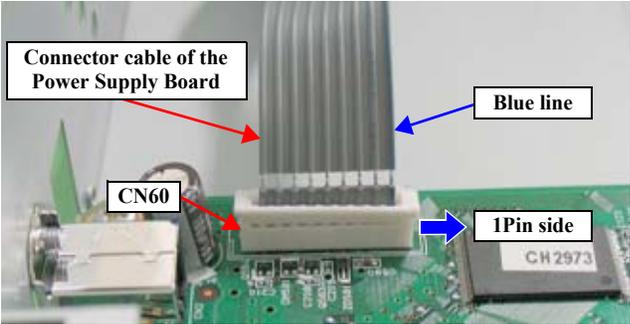
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	The printer does not operate at all.	Panel FFC	1. Check that the Panel FFC is connected to the Panel Board connector and Main Board connector. 	1. Connect the Panel FFC to the Panel Board and Main Board connectors.
			2. Check the Panel FFC for damages.	2. Replace the Panel FFC with a new one.
		Panel Board	1. Check the Panel Board for damages.	1. Replace the Panel Board with a new one.
		Power Supply Board	1. Check that the connector cable of the Power Supply Board is connected to the Main Board connector CN60. 	1. Connect the connector cable of the Power Supply Board to the Main Board connector CN60.
			2. Check that the blue colored pin of the Power Supply Board connector cable is inserted into the 1 Pin of the Main Board connector CN60 as shown in the above picture.	2. Reconnect the Power Supply Board connector cable so that the blue colored pin is inserted into the 1 Pin.

Table 3-2. Troubleshooting of Communication Error

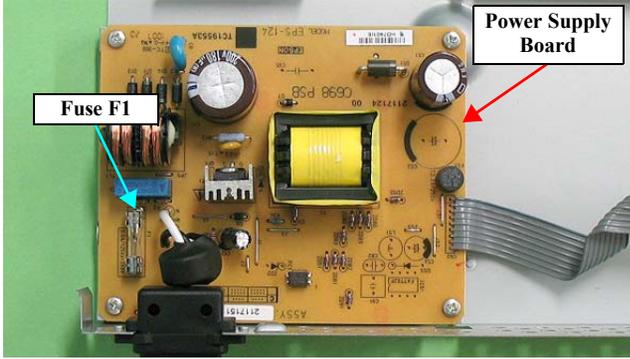
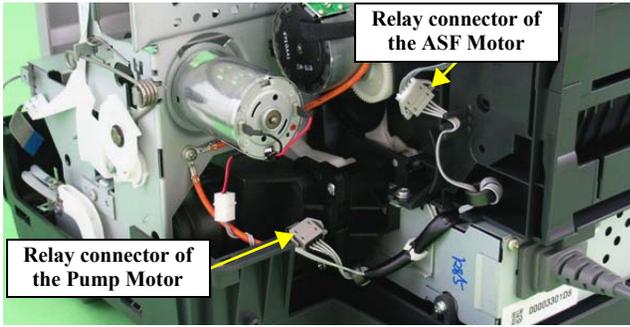
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	The printer does not operate at all.	Power Supply Board	3. Check that the Fuse F1 on the Power Supply Board has not blown. 	3. Replace the Power Supply Board with a new one.
	After the power-on sequence has started, the LED turns off and the printer does not operate.	Main Board	4. Check the components on the Power Supply Board for damage. 1. Check that the Relay connector of the ASF Motor and the Relay connector of the Pump Motor are not connected to the wrong connector causing a short circuit. 	4. Replace the Power Supply Board with a new one. 1. Connect the Relay connector of the ASF Motor and the Relay connector of the Pump Motor correctly, and replace the Main Board with a new one.
At operation	Operation at power-on is normal, but the error appears when the print job is sent to the printer.	Interface cable	1. Check that the Interface cable is connected between the PC and printer. 2. Check the Interface cable for breaking.	1. Connect the Interface cable to the PC and printer. 2. Replace the Interface cable with a new one.

Table 3-2. Troubleshooting of Communication Error

Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At operation	Operation at power-on is normal, but the error appears when the print job is sent to the printer.	USB	1. Check that the PC and printer are connected via the USB hub.	1. Configure the USB ID setting. Refer to Chapter 5 "Adjustment".
		Printer Driver	1. Check that the printer driver for Stylus Photo R1900 has already been installed.	1. Install the printer driver for Stylus Photo R1900.
			2. Check that the connected printer is Stylus Photo R1900.	2. Connect the Stylus Photo R1900 printer.
Main Board	1. Check that a wrong model name has not been input to the EEPROM on the Main Board.	1. Make the initial setting using the Adjustment Program. Refer to Chapter 5 "Adjustment".		

Table 3-3. Troubleshooting of Printer Cover Open Error

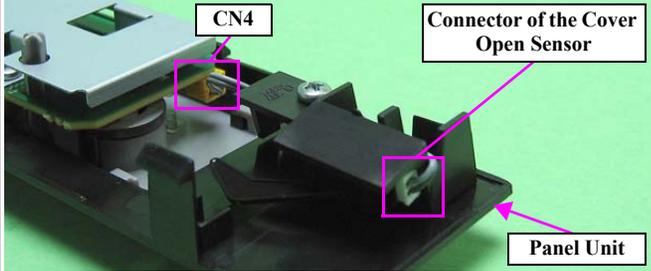
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
During printing	A Printer Cover Open Error is indicated during printing.	Cover Open Sensor	1. Check that the Printer Cover is not open.	1. Close the Printer Cover.
			2. Check that the connector cable of the Cover Open Sensor is connected to the Cover Open Sensor and connector CN4 on the Panel Board.	2. Connect the connector cable of the Cover Open Sensor to the Cover Open Sensor and connector CN4 on the Panel Board correctly.
				
			3. Using a tester, check that the Cover Open Sensor is normal. <ul style="list-style-type: none"> • Paper absent:0V • Paper present:3.3V 	4. Replace the Panel Unit with a new one.

Table 3-4. Troubleshooting of CDR Guide Error

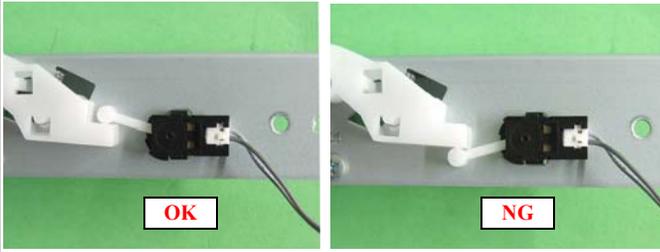
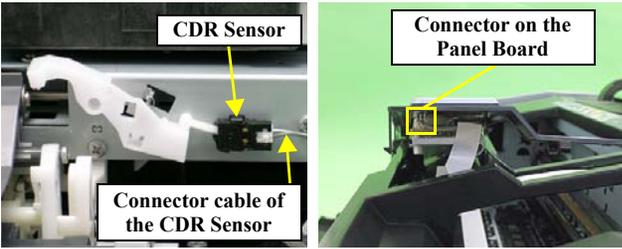
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At operation	CDR Guide Error is indicated on the LED and STM3 when CD/DVD printing is executed after the CDR Tray Base is opened and the CDR Tray is inserted.	CDR Sensor	1. Check that the CDR Sensor is installed correctly. 	1. Install the CDR Sensor correctly.
			2. Check that the connector cable of the CDR Sensor is connected to the CDR Sensor and the connector on the Panel Board. 	2. Connect the connector cable of the CDR Sensor to the CDR Sensor and the Panel Board.
			3. Using a tester, check that the CDR Sensor is normal. <ul style="list-style-type: none"> • CDR Tray Base open: 3.3V • CDR Tray Base closed: 0V 	3. Replace the CDR Sensor with a new one.
			4. Check the CDR Sensor or connector cable for damages.	4. Replace the CDR Sensor with a new one.

Table 3-5. Troubleshooting of Paper Out Error

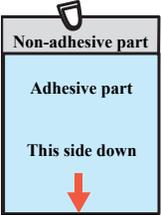
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At operation	When the Paper Switch is pressed, the LD Roller attempt to feed paper but the paper is not fed.	ASF Assy.	1. Check the LD Roller or Retard Roller of the ASF Assy for paper dust and foreign matter.	<p>1. Using a cleaning sheet, clean the LD Roller and Retard Roller. The procedure is as follows.</p> <ol style="list-style-type: none"> (1) Place the cleaning sheet upside down and put it into the ASF Assy. (2) Press the Paper Switch to start paper feed. (3) Repeat the above steps several times. <p>* To remove persistent contamination, staple an alcohol-dampened cloth to a postcard and clean the rollers in the following method.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Cleaning sheet</p>  </div> <div style="text-align: center;"> <p>Postcard used as mount</p>  </div> </div> <ol style="list-style-type: none"> (1) Place the alcohol-dampened cloth toward the LD Roller surface of the ASF Assy. (2) Hold the mount top end securely and press the Paper Switch. (3) Repeat the paper feed sequence several times to clean the LD Roller surface of the ASF Assy.

Table 3-5. Troubleshooting of Paper Out Error

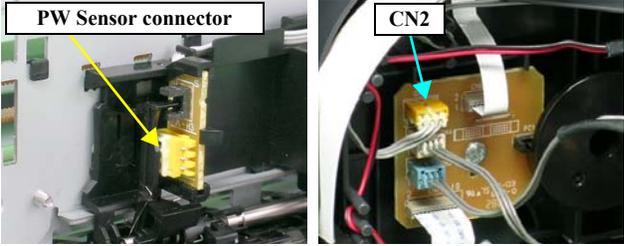
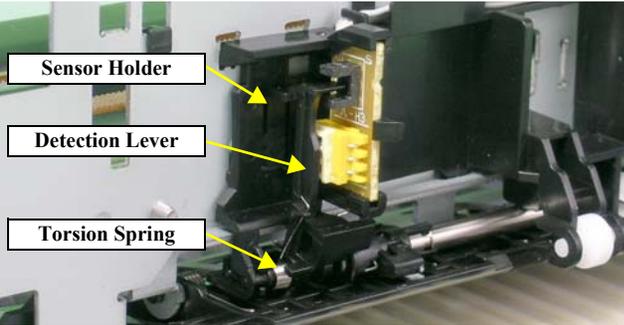
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At operation	Paper Mismatch Error is indicated even the paper path of the media to be printed is correct.	PE Sensor	1. Check that the connector cable of the PE Sensor is securely connected to the PE Sensor and Relay Board connector CN2.	1. Connect the connector cable of the PE Sensor to the PE Sensor and connector CN2 on the Relay Board correctly.
			 <p>The first photograph shows the PE Sensor connector with a yellow arrow pointing to it. The second photograph shows the CN2 connector on the relay board with a blue arrow pointing to it.</p>	
			2. Check that the Sensor Holder is mounted to the Mechanical frame correctly.	2. Install the Sensor Holder correctly.
			 <p>The photograph shows the sensor holder assembly. Labels with yellow arrows point to the Sensor Holder, Detection Lever, and Torsion Spring.</p>	
3. Move the Detection Lever manually as when the paper passes, and check that the Detection Lever returns to the original position automatically by the Torsion Spring when released. Refer to the above photo.	3. Replace the PE Sensor Holder Unit with a new one.			
4. Using a tester, check that the PE Sensor is normal. · Paper absent : 2.4V or more · Paper present : 0.4V or less	4. Replace the PE Sensor Holder Unit with a new one.			

Table 3-5. Troubleshooting of Paper Out Error

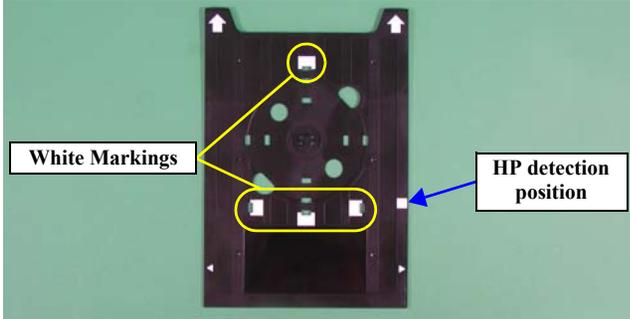
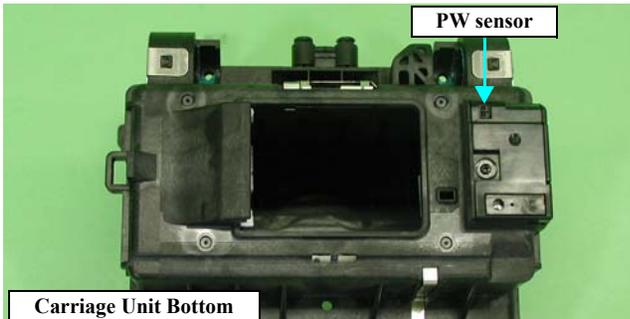
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
<p>The Paper Switch was pressed at the setting of the CDR Tray.</p>	<p>The CDR Tray HP detection sequence stops and the Tray is ejected.</p>	<p>CDR Tray</p>	<p>1. Check the HP detection position or white markings of the CDR Tray for paper dust and foreign matter.</p>  <p>The diagram shows the interior of a CDR tray. Two yellow circles highlight 'White Markings' on the tray's surface. A blue arrow points to the 'HP detection position' on the right side of the tray.</p>	<p>1. Remove paper dust and/or foreign matter from the detection position.</p>
			<p>2. Check the Driven Roller surface for contamination such as paper dust and CDR coating material.</p>	<p>2. Feed A4-size sheets of plain paper from the ASF Assy several times to remove the contamination.</p>
			<p>3. Check that the HP detection position or white markings of the CDR Tray are not chipped.</p>	<p>3. Replace the CDR Tray with a new one.</p>
<p>The Paper Switch was pressed at the setting of the CDR Tray.</p>	<p>Though the CDR Tray is fed toward the ASF Assy, but is ejected immediately.</p>	<p>PW sensor</p>	<p>1. Check the PW Sensor for paper dust, ink, etc.</p>  <p>The image shows the bottom of the carriage unit. A blue arrow points to the 'PW sensor' located on the right side. A label 'Carriage Unit Bottom' is at the bottom left of the image.</p> <p>2. Compare the EEPROM values in two places (50<H> and 51<H>) and check that they are not approximate to each other.</p>	<p>1. Clean the PW Sensor surface.</p> <p>2. Replace the PW Sensor with a new one.</p>

Table 3-5. Troubleshooting of Paper Out Error

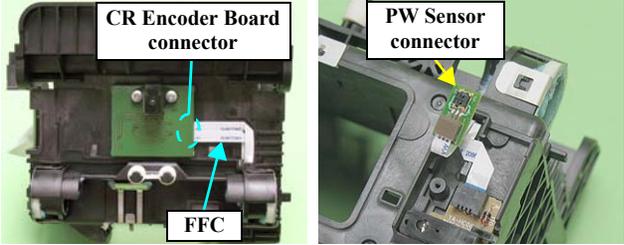
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
<p>The Paper Switch was pressed at the setting of the CDR Tray.</p>	<p>The CDR Tray moves toward the ASF and the posterior edge of it reaches to the Driven Roller on the Upper Paper Guide. Then the CDR Tray tries to go farther, but it is ejected.</p>	<p>PW sensor</p>	<p>1. Check that the PW Sensor FFC is placed in the specified routing positions and does not make contact with any parts.</p>	<p>1. Place the PW Sensor FFC in the specified routing positions correctly.</p>
				
			<p>2. Check that the PW Sensor FFC is connected to the CR Encoder Board and PW Sensor connectors. Refer to the above photo.</p>	<p>2. Connect the FFC to the CR Encoder Board and PW Sensor connectors correctly.</p>
<p>3. Check the PW Sensor or PW Sensor FFC for damages.</p>	<p>3. Replace the PW Sensor (or the PW Sensor FFC) with a new one.</p>			

Table 3-6. Troubleshooting of Paper Jam Error

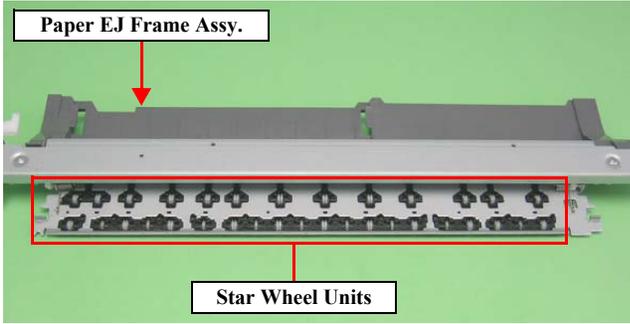
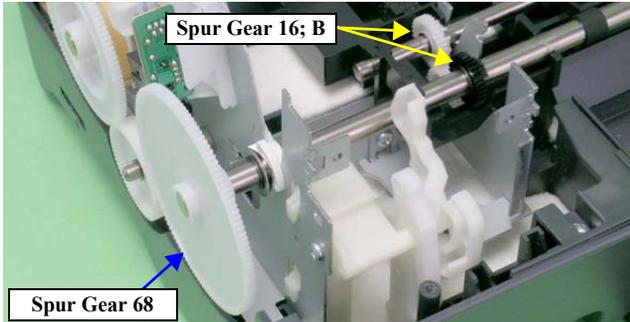
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At operation	At the time of paper ejection, the PF Roller advances the paper but cannot eject it completely.	-	1. Check that the size of the fed paper is not larger than that of the paper specified by the driver.	1. Tell the user that the paper size specified by the driver is not available for the printer.
	Paper is not ejected completely and causes a jam near the Paper Eject Frame.	ASF Assy.	1. Check that the paper is fed along the Right Edge Guide.	1. Feed the paper along the Right Edge Guide.
		Paper EJ Frame Assy.	1. Check that the Star Wheel Units have not come off the Paper EJ Frame Assy.  2. Check the Paper EJ Frame Assy for deformation or damages.	1. Securely install the Star Wheel Units to the Paper EJ Frame Assy.
	Spur Gear 68 Spur Gear 16; B Paper EJ Roller Assy.(front/rear)	1. Check the Spur Gear 68 or Spur Gear 16; B for damages. 	1. Replace the Front (or Rear) Paper EJ Roller Assy with a new one.	

Table 3-7. Troubleshooting of Paper Mismatch Error

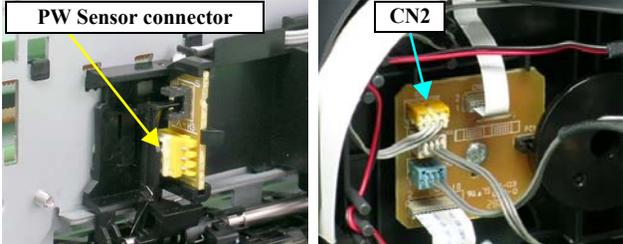
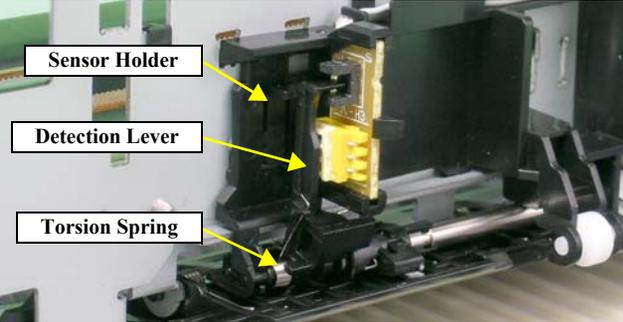
Occurrence Timing	Phenomenon Detail	Faulty Part/Part Name	Check Point	Remedy
<p>During printing</p>	<p>Paper Mismatch Error is indicated even the paper path of the media to be printed is correct.</p>	<p>PE Sensor</p>	<p>1. Check that the connector cable of the PE Sensor is securely connected to the PE Sensor and Relay Board connector CN2.</p> 	<p>1. Connect the connector cable of the PE Sensor to the PE Sensor and connector CN2 on the Relay Board correctly.</p>
			<p>2. Check that the Sensor Holder is mounted to the Mechanical frame correctly.</p> 	<p>2. Install the Sensor Holder correctly.</p>
			<p>3. Move the Detection Lever manually as when the paper passes, and check that the Detection Lever returns to the original position automatically by the Torsion Spring when released. Refer to the above photo.</p>	<p>3. Replace the PE Sensor Holder Unit with a new one.</p>
			<p>4. Using a tester, check that the PE Sensor is normal.</p> <ul style="list-style-type: none"> · Paper absent : 2.4V or more · Paper present : 0.4V or less 	<p>4. Replace the PE Sensor Holder Unit with a new one.</p>

Table 3-7. Troubleshooting of Paper Mismatch Error

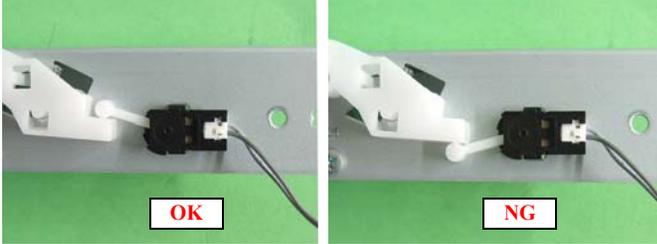
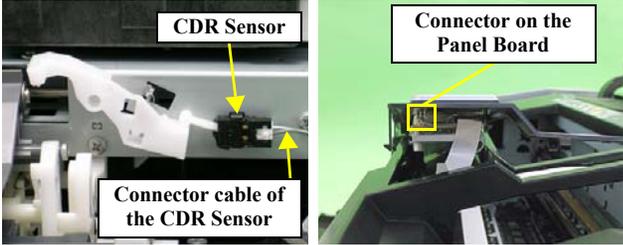
Occurrence Timing	Phenomenon Detail	Faulty Part/Part Name	Check Point	Remedy
<p>During printing</p>	<p>Paper Mismatch Error is indicated even the paper path of the media to be printed is correct.</p>	<p>CDR Sensor</p>	<p>1. Check that the CDR Sensor is installed correctly.</p> 	<p>1. Install the CDR Sensor correctly.</p>
			<p>2. Check that the connector cable of the CDR Sensor is connected to the CDR Sensor and the connector on the Panel Board.</p> 	<p>2. Connect the connector cable of the CDR Sensor to the CDR Sensor and the Panel Board.</p>
			<p>3. Using a tester, check that the CDR Sensor is normal.</p> <ul style="list-style-type: none"> • CDR Tray Base open: 3.3V • CDR Tray Base closed: 0V 	<p>3. Replace the CDR Sensor with a new one.</p>
			<p>4. Check the CDR Sensor or connector cable for damages.</p>	<p>4. Replace the CDR Sensor with a new one.</p>

Table 3-8. Troubleshooting of Multi-feed error

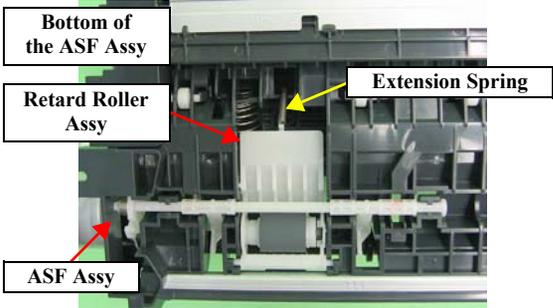
Occurrence Timing	Phenomenon Detail	Faulty Part/Part Name	Check Point	Remedy
Any time	During manual double-sided printing, multiple sheets are fed at a time.	ASF Assy	1. Check that the Retard Roller Assy is moving properly during the feeding operation.	1. Attach the Extension Spring on the back side of the Retard Roller Assy correctly.
			 <p>The diagram shows a cross-section of the ASF Assy. A red arrow points to the Retard Roller Assy, another red arrow points to the ASF Assy, and a yellow arrow points to the Extension Spring. Labels with boxes identify 'Bottom of the ASF Assy', 'Retard Roller Assy', 'ASF Assy', and 'Extension Spring'.</p>	
			2. Check that the position of the ASF Guide Roller LDs has been adjusted correctly.	2. Adjust the position of the ASF Guide Roller LDs. Refer to Chapter 4 ASF Assy (P.106).

Table 3-9. Troubleshooting of Ink Low

Occurrence Timing	Phenomenon Detail	Faulty Part/Part Name	Check Point	Remedy
At operation or during printing	A message is displayed on the LED and STM3 during printing.	Ink Cartridge	1. Look at the remaining ink indication of the STM3 to check the amount of the ink remaining in the Ink Cartridge.	1. Prepare a new Ink Cartridge.

Table 3-10. Troubleshooting of Ink Color Error (Stylus Photo R2880 only)

Occurrence Timing	Phenomenon Detail	Faulty Part/Part Name	Check Point	Remedy
During printing	A message is displayed on the LED and STM3 after replacing ink cartridge.	Ink Cartridge	1. Check if the installed black ink cartridge is different in color (photo or matte) from the previous one. 2. Check if the installed cartridge is nearly empty by checking the ink level displayed on the STM3.	1. Install the same type of black ink cartridge as the one previously used. 2. Prepare a new Ink Cartridge.

Table 3-11. Troubleshooting of Ink Out Error

Occurrence Timing	Phenomenon Detail	Faulty Part/Part Name	Check Point	Remedy
During printing	After the Carriage has detected the HP, an error is displayed on the LED and STM3.	Ink Cartridge	1. Look at the remaining ink indication of the STM3 to check whether the ink remains in the Ink Cartridge.	1. Replace the Ink Cartridge with a new one.

Table 3-12. Troubleshooting of No Ink Cartridge/CSIC Error

Occurrence Timing	Phenomenon Detail	Faulty Part/Part Name	Check Point	Remedy
At power-on	After the Carriage has detected the HP, an error is displayed on the LED and STM3.	Ink Cartridge	1. Check that the Ink Cartridge is installed correctly.	1. Install the Ink Cartridge correctly.
			2. Check that the tab of the Ink Cartridge is not broken.	2. Replace the Ink Cartridge with a new one.
				3. Replace the Ink Cartridge with a new one.
3. Check that the Memory Chip is not disconnected or not damaged.		3. Replace the Ink Cartridge with a new one.		

Table 3-12. Troubleshooting of No Ink Cartridge/CSIC Error

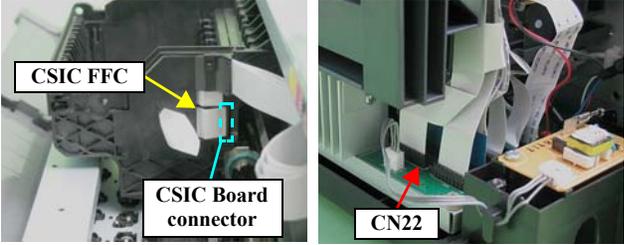
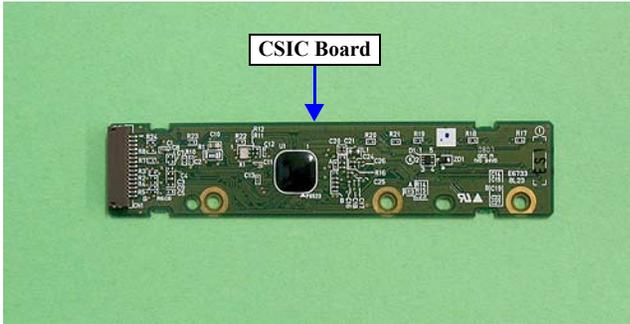
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	After the Carriage has detected the HP, an error is displayed on the LED and STM3.	CSIC FFC	1. Check that the CSIC FFC is connected to the CSIC Board connector and Main Board connector CN22. 	1. Connect the CSIC FFC to the CSIC Board connector and Main Board connector CN22.
			2. Check the CSIC FFC for damage.	2. Replace the CSIC FFC with a new one.
		CSIC Board	1. Check the CSIC Board for damage. 	1. Replace the CSIC Board with a new one.

Table 3-13. Troubleshooting of Maintenance Request

Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	At power-on, the printer does not operate at all.	Waste Ink Pads	1. Using the Adjustment Program, check if the values of the Protection Counter A and B have exceeded the values shown below. <ul style="list-style-type: none"> Protection Counter A : 21,500 (Stylus Photo R1900) : 22,500 (Stylus Photo R2880) Protection Counter B : 7,030 	1. Replace the Waste Ink Pads and reset the Protection Counter A and B value with the Adjustment Program.

Table 3-14. Troubleshooting of Fatal Error

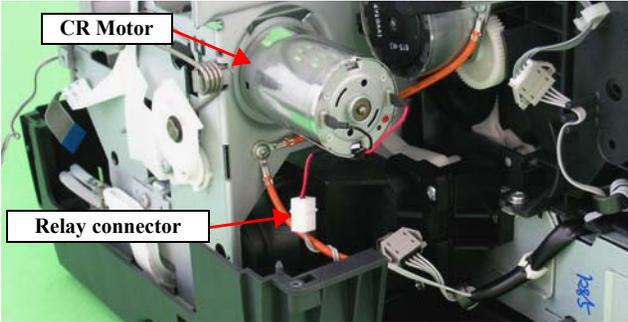
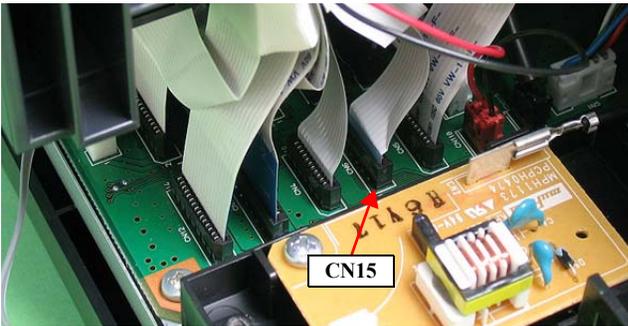
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	At power-on, the CR Motor does not operate at all.	CR Motor	1. Check that the CR Motor connector cable is connected to the Relay connector. 	1. Connect the CR Motor connector to the Relay connector.
			2. Check the CR Motor connector cable for damages.	2. Replace the CR Motor with a new one.
			3. Check if the CR Motor operates normally.	3. Replace the CR Motor with a new one.
		Relay connector cables (for the CR Motor)	1. Check that the Relay connector cable is connected to the Main Board connector CN15. 	1. Connect the Relay connector cable to the Main Board connector CN15.
			2. Check the Relay connector cable for damages.	2. Replace the Relay connector cable with a new one.

Table 3-14. Troubleshooting of Fatal Error

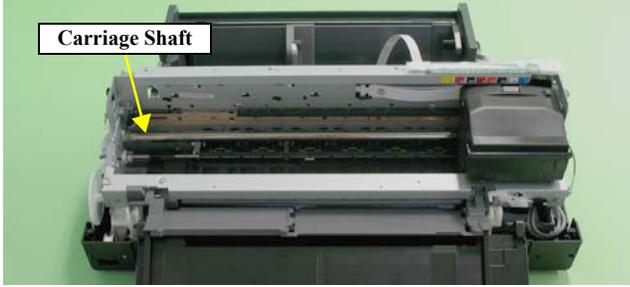
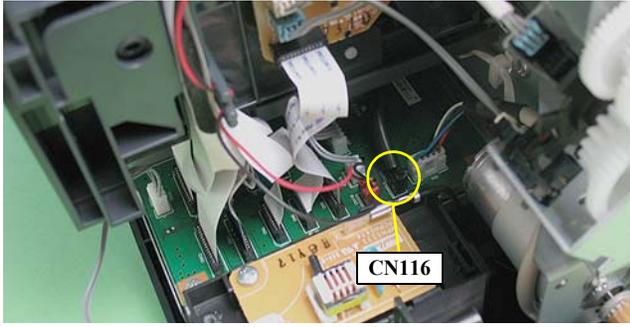
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	The power-on sequence is executed but Fatal error is displayed.	CR drive mechanism	1. Check that the Carriage Shaft is lubricated with grease. 	1. Wipe the surface of the Carriage Shaft with a dry, soft cloth, and lubricate the Carriage Shaft with grease G-71. Refer to Chapter 6 "Maintenance".
	At power-on, the PF Motor does not operate at all.	PF Motor	1. Check that the connector cable of the PF Motor is connected to the Main Board connector CN116. 	1. Connect the PF Motor connector cable to the Main Board connector CN116.
			2. Check the PF Motor connector cable for damages.	2. Replace the PF Motor with a new one.
			3. Check if the PF Motor operates normally.	3. Replace the PF Motor with a new one.

Table 3-14. Troubleshooting of Fatal Error

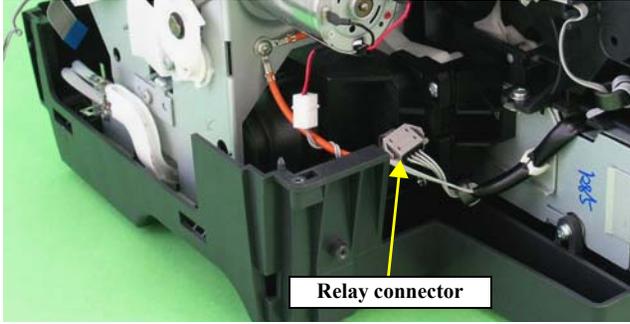
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	At power-on, the APG Motor does not operate at all.	APG Motor	1. Check that the connector cable of the APG Motor is connected to the Main Board connector CN118.	1. Connect the APG Motor connector cable to the Main Board connector CN118.
				
			2. Check the APG Motor connector cable for damage.	
3. Check if the APG Motor operates normally.	3. Replace the APG Motor with a new one.			
At power-on	At power-on, the Pump Motor does not operate at all.	Pump Motor	1. Check that the Pump Motor connector cable is connected to the Relay connector.	1. Connect the Pump Motor connector cable to the Relay connector.
				
			2. Using a tester, check the resistance value of the Pump Motor. Value of resistance: $10.3\Omega \pm 10\%$	
3. Check the Pump Motor connector cable for damages.	3. Replace the Ink System Unit with a new one.			

Table 3-14. Troubleshooting of Fatal Error

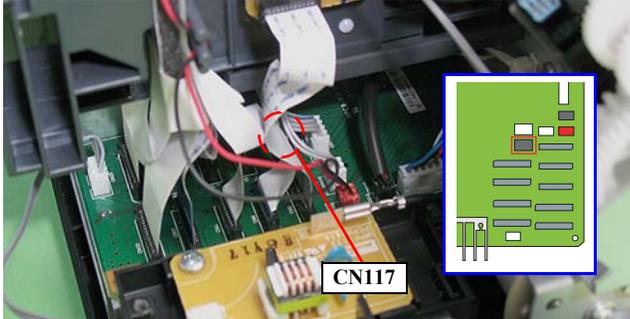
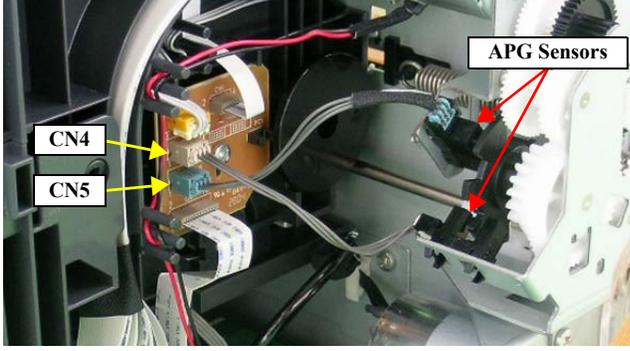
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	At power-on, the Pump Motor does not operate at all.	Relay connector cables (for Pump Motor)	1. Check that the Relay connector cable is connected to the Main Board connector CN117.	1. Connect the Relay connector cable to the Main Board connector CN117. 2. Replace the Relay connector cable with a new one.
			 <p data-bbox="1171 608 1255 635">CN117</p>	
	While the power-on sequence is being executed, Fatal error is displayed.	APG Sensor	1. Check that the APG Sensor connector cables are connected to the APG Sensors and Relay Board connector CN4 and CN5.	1. Connect the APG Sensor connector cables to the APG Sensors and Relay Board connector CN4 and CN5. 2. Replace the APG Sensors with new ones.
			 <p data-bbox="1325 874 1465 901">APG Sensors</p> <p data-bbox="884 959 947 986">CN4</p> <p data-bbox="884 1007 947 1034">CN5</p>	

Table 3-14. Troubleshooting of Fatal Error

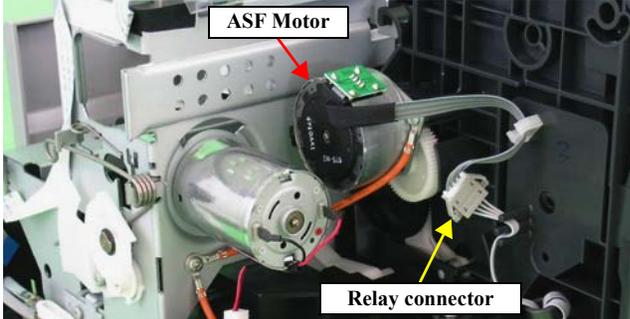
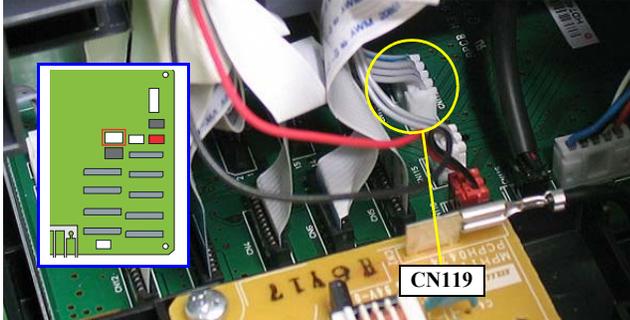
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	While the power-on sequence is being executed, Fatal error is displayed.	ASF Motor	1. Check that the connector cable of the ASF Motor is connected to the Relay connector. 	1. Connect the connector cable of the ASF Motor to the Relay connector.
		2. Using a tester, check the resistance value of the ASF Motor. Value of resistance: $7.0\Omega \pm 10\%$	2. If the resistance value is abnormal, replace the ASF Motor with a new one.	
		3. Check the ASF Motor connector cable for damages.	3. Replace the ASF Motor with a new one.	
		Relay connector cable (for the ASF Motor)	1. Check that the Relay connector cable is connected to the Main Board connector CN119. 	1. Connect the Relay connector cable to the Main Board connector CN119.
		2. Check the Relay connector cable for damages.	2. Replace the Relay connector cable with a new one.	

Table 3-14. Troubleshooting of Fatal Error

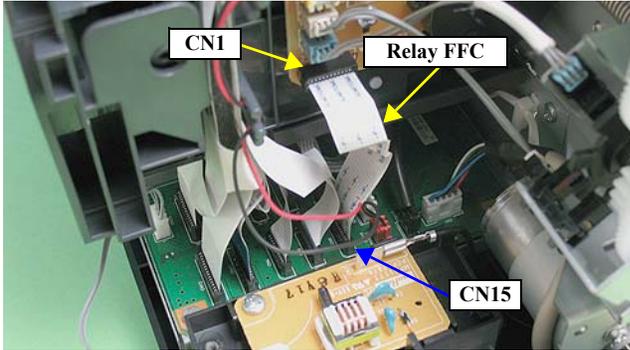
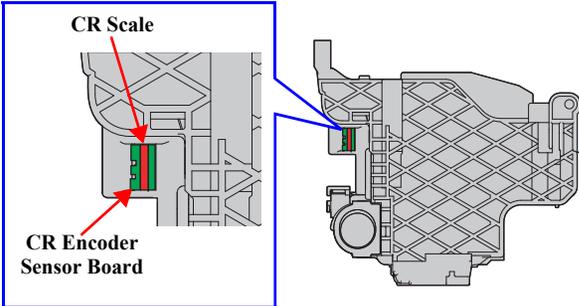
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	While the power-on sequence is being executed, Fatal error is displayed.	Relay FFC	1. Check that the Relay FFC is connected to the Relay Board connector CN1 and Main Board connector CN15. 	1. Connect the Relay FFC to the Relay Board connector CN1 and Main Board connector CN15.
			2. Check the Relay FFC for damages.	2. Replace the Relay FFC cable with a new one.
At power-on, the Carriage Unit moves away from the home position and bumps against the right of the Frame, then hits the left of the Frame.		CR Scale	1. Check that the CR Scale is inserted in the slit of the CR Encoder Sensor. 	1. Insert the CR Scale into the slit of the CR Encoder Sensor.
		CR Encoder Sensor Board	1. Check the CR Encoder Sensor for paper dust, etc. 2. Check the CR Encoder Sensor Board for damages.	1. Remove the paper dust, etc. from the CR Encoder Sensor. 2. Replace the CR Encoder Sensor Board with a new one.
		2. Check the CR Scale for damages and dirt.	2. Wipe off the dirt completely or replace the CR Scale with a new one.	

Table 3-14. Troubleshooting of Fatal Error

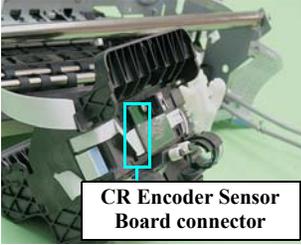
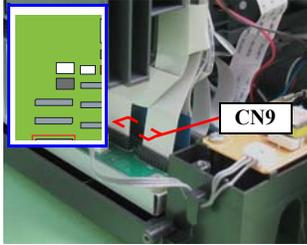
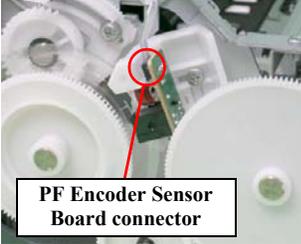
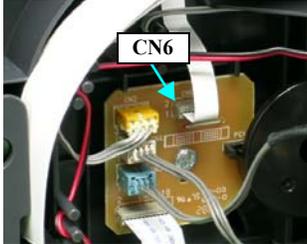
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	At power-on, the Carriage Unit moves away from the home position and bumps against the right of the Frame, then hits the left of the Frame.	Sensor FFC	1. Check that the Sensor FFC is connected to the CR Encoder Sensor Board connector and Main Board connector CN9. <div style="display: flex; justify-content: space-around; margin-top: 10px;">   </div>	1. Connect the Sensor FFC to the CR Encoder Sensor Board connector and Main Board connector CN9.
			2. Check the Sensor FFC for damages.	2. Replace the Sensor FFC with a new one.
At power-on, the PF Roller rotates fast about a half turn.	At power-on, the PF Roller rotates fast about a half turn.	PF Encoder Sensor Holder	1. Check that the PF Encoder Sensor Holder is mounted correctly.	1. Install the PF Encoder Sensor Holder correctly.
			2. Check that the FFC of the PF Encoder Sensor is securely connected to the PF Encoder Sensor Board connector and Relay Board connector CN6. <div style="display: flex; justify-content: space-around; margin-top: 10px;">   </div>	2. Connect the PF Encoder Sensor FFC to the PF Encoder Sensor Board and Relay Board connector CN6.
			3. Check the PF Encoder Sensor for paper dust, etc.	3. Remove the paper dust, etc. from the PF Encoder Sensor.
			4. Check if the PF Encoder or the FFC is damaged.	4. Replace the PF Encoder with a new one.

Table 3-14. Troubleshooting of Fatal Error

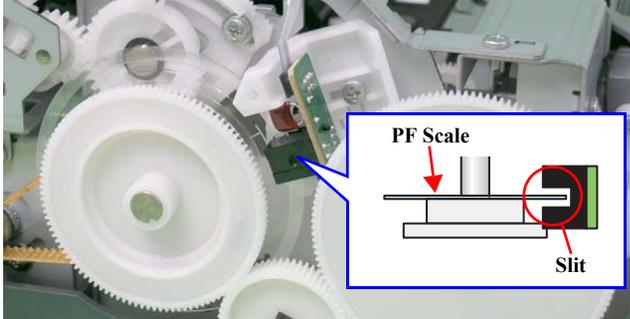
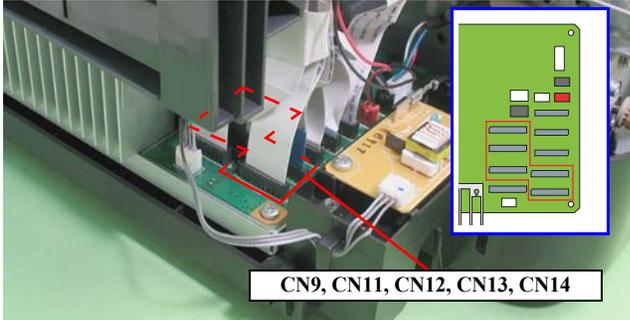
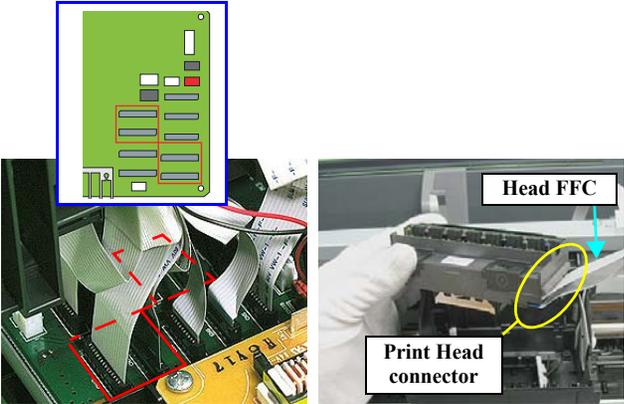
Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
At power-on	At power-on, the PF Roller rotates fast about a half turn.	PF Scale	1. Check that the PF Scale is inserted in the slit of the PF Encoder Sensor. 	1. Install the PF Scale in the slit of the PF Encoder Sensor correctly.
			2. Check the PF Scale for damages and dirt.	2. Replace the PF Scale with a new one.
During printing	After receiving a print data, or while performing the CDR Tray home position detection sequence, an error is displayed on the LED and STM3.	Head FFC Sensor FFC	1. Check that the Head FFC and the Sensor FFC are securely connected to the Main Board connectors CN9, CN11, CN12, CN13, and CN14. 	1. Connect the Head FFC and the Sensor FFC to the Main Board connectors CN9, CN11, CN12, CN13, and CN14.

Table 3-14. Troubleshooting of Fatal Error

Occurrence Timing	Phenomenon Detail	Faulty Part/ Part Name	Check Point	Remedy
During printing	After starting to print, ink is not ejected and paper stops midway.	Head FFC	1. Check that the Head FFC is securely connected to the Print Head connector and Main Board connectors CN11, CN12, CN13, and CN14. 	1. Connect the Head FFC to the Print Head connector and Main Board connectors CN11, CN12, CN13, and CN14.
	Ink is not ejected from most nozzles.	Print Head	1. Check for occurrence of Head Hot.	2. Replace the Head FFC with a new one. 1. Replace the Print Head with a new one.

3.1.2 Troubleshooting based on Observed Faults

This section provides troubleshooting procedures based on observed faults such as print quality troubles and abnormal noise.

Table 3-15. Print Quality Troubles

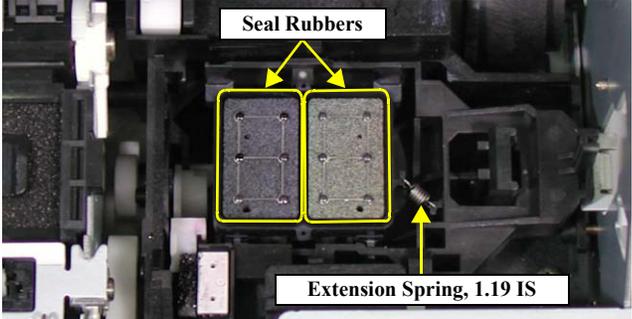
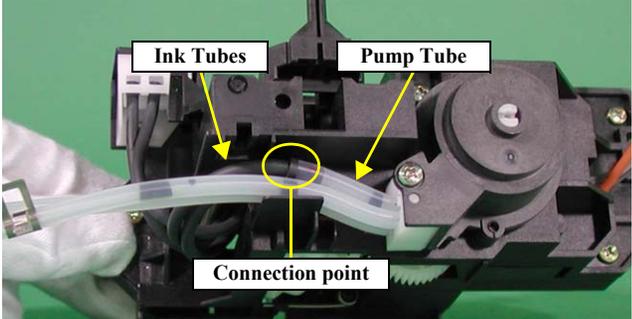
Observed Faults	Details of the Fault	Faulty Part/ Part Name	Check Point	Remedy
Dot missing and mixed colors	Inks are not ejected from the Print Head to the Cap.	Ink System Unit (Cap)	1. Check for foreign matter around the Seal Rubber on the Cap Unit. 	1. Remove the foreign matter around the Seal Rubber completely.
			2. Check that the Ink Tube is connected to the Pump Tube. 	2. Connect the Ink Tube to the Pump Tube securely.
			3. Check that the Extension Spring 1.19 IS is correctly installed to the Cap Unit.	3. Replace the Ink System Unit with a new one.

Table 3-15. Print Quality Troubles

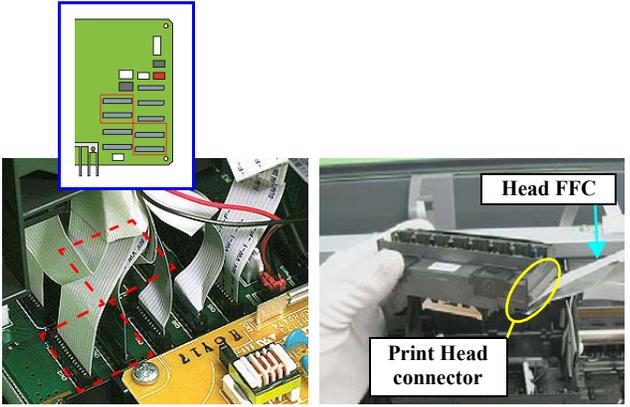
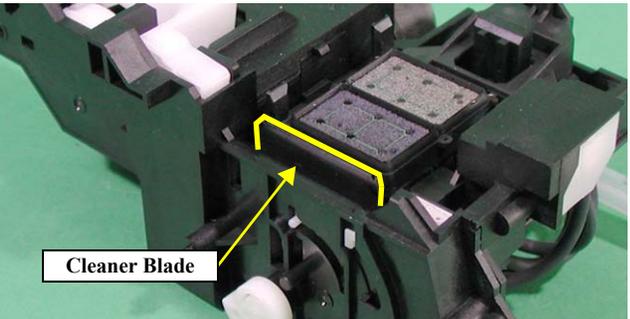
Observed Faults	Details of the Fault	Faulty Part/ Part Name	Check Point	Remedy
<p>Dot missing and mixed colors</p>	<p>Although inks are ejected from the Print Head to the Cap, the trouble still occurs after executing a cleaning cycle or replacing the Ink Cartridges.</p>	<p>Print Head</p>	<p>1. Run a Nozzle Check, and check the printed pattern if it has broken lines or missing segments.</p>	<p>1. After running a Head Cleaning, check the Nozzle Check Pattern again.</p>
			<p>2. Check that the Head FFC is securely connected to the Print Head connector and Main Board connectors CN11, CN12, CN13, and CN14.</p>  <p>The diagram shows a green ribbon cable (Head FFC) with multiple colored lines (red, blue, yellow, black) connecting to a main board. Below the diagram are two photographs: one showing the FFC being inserted into a connector on a green PCB, and another showing the FFC being inserted into a connector on the printer's main board. Labels 'Head FFC' and 'Print Head connector' are present in the photos.</p>	<p>2. Connect the Head FFC to the Print Head connector and Main Board connectors CN11, CN12, CN13, and CN14.</p>
			<p>3. Check if the Head FFC is not damaged.</p>	<p>3. Replace the Head FFC with a new one. If the trouble still occurs after replacing it, replace the Print Head with a new one.</p>
		<p>Ink System Unit Cleaner Blade</p>	<p>1. Check if the Cleaner Blade is covered with paper dust or is bent.</p>  <p>The photo shows the internal ink system unit with a yellow arrow pointing to a small, rectangular blade. A label 'Cleaner Blade' is placed below the arrow.</p>	<p>1. Replace the Ink System Unit with a new one.</p>
		<p>Main Board</p>	<p>1. Check the Main Board for damages.</p>	<p>1. Replace the Main Board with a new one.</p>

Table 3-15. Print Quality Troubles

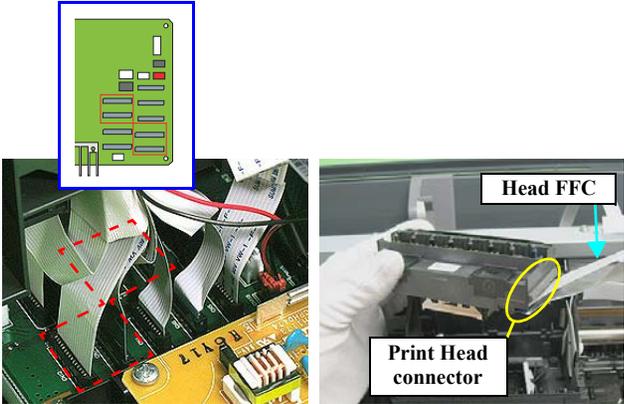
Observed Faults	Details of the Fault	Faulty Part/ Part Name	Check Point	Remedy
Horizontal or vertical banding / Getting smeared	Although inks are ejected from the Print Head to the Cap, almost nothing is printed or the print gets smeared with excessive ink after executing a cleaning cycle or replacing the Ink Cartridges.	Head FFC	1. Check that the Head FFC is securely connected to the Print Head connector and Main Board connectors CN10, CN12, CN13, and CN14. 	1. Connect the Head FFC to the Print Head connector and Main Board connectors CN10, CN12, CN13, and CN14.
		Print Head	1. Check if the print quality recovers after running a cleaning or replacing the Ink Cartridges.	1. Run the cleaning and replace the Ink Cartridges several times. If the trouble still occurs, replace the Print Head with a new one.
		Main Board	2. Check the Main Board for damages.	2. Replace the Main Board with a new one.

Table 3-15. Print Quality Troubles

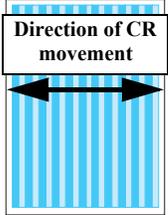
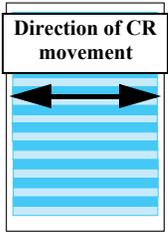
Observed Faults	Details of the Fault	Faulty Part/ Part Name	Check Point	Remedy
Vertical or horizontal banding / Color shading	The printout has banding vertical to the CR moving direction and is not evenly colored.  * If the trouble still occurs after doing all measures described in the right-hand columns, replace the CR Motor with a new one.	Adjustment	1. For printing in the Bi-D mode, check that the Bi-D Adjustment has been performed properly.	1. Perform Bi-D Adjustment to eliminate displacements between the upper and lower lines. Refer to Chapter 5 "Adjustment".
	* If the trouble still occurs after doing all measures described in the right-hand columns, replace the CR Motor with a new one.	Print Head	1. Run a Nozzle Check, and check the printed pattern if it has broken lines or missing segments.	1. Perform the Head Cleaning, then check the Nozzle Check Pattern. Refer to Chapter 5 "Adjustment". If the trouble still occurs, replace the Print Head with a new one.
		Carriage Shaft	1. Check the surfaces of the Carriage Shaft for foreign matter.	1. Remove foreign matter from the Carriage Shaft.
			2. Check that the Carriage Shaft is fully lubricated with grease.	2. Wipe the grease applied to the Carriage Shaft with a dry, soft cloth, and then apply G-71 grease. Refer to Chapter 6 "Maintenance".
		3. Check that the Carriage Shaft is mounted horizontally.	3. Reassemble the Carriage Shaft correctly.	
	4. Check the Carriage Shaft for damages.	4. Replace the Carriage Shaft with a new one.		
	Narrow stripes of the same width appear horizontally to the CR moving direction.  * If the trouble still occurs after doing all measures described in the right-hand columns, replace the PF Motor with a new one.	Printer Driver and the Paper	1. Check if appropriate paper is used in accordance with the Printer Driver settings.	1. Use the appropriate type of paper in accordance with the Printer Driver.
	* If the trouble still occurs after doing all measures described in the right-hand columns, replace the PF Motor with a new one.	Print Head	1. Run a Nozzle Check, and check the printed pattern if it has broken lines or missing segments.	1. Perform the Head Cleaning, then check the Nozzle Check Pattern. Refer to Chapter 5 "Adjustment". If the trouble still occurs, replace the Print Head with a new one.
PF Roller Shaft		1. Check the surface of the PF Roller Shaft for foreign matter.	1. Clean the PF Roller surface carefully.	
	2. Check the PF Roller Shaft for damages.	2. Replace the PF Roller with a new one.		

Table 3-15. Print Quality Troubles

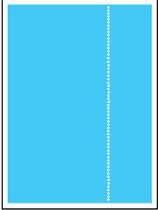
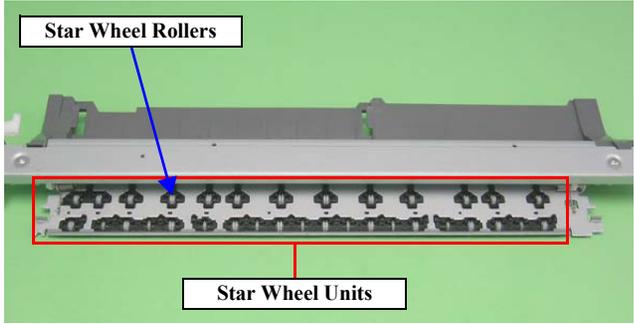
Observed Faults	Details of the Fault	Faulty Part/ Part Name	Check Point	Remedy
Vertical or horizontal banding / Color shading	When printing at 360 dpi, horizontal banding and color unevenness appears at a constant frequency.	Adjustment	1. Check that PF Adjustment has executed properly. 2. Check for Dot missing.	1. Perform PF Adjustment properly. Refer to Chapter 5 "Adjustment". 2. Replace the Ink System Unit with a new one.
	Star Wheel Rollers traces appear in the CR moving direction. 	Paper EJ Frame Assy.	1. Check that the Star Wheel Units have not come off or the Star Wheel Rollers turns normally. 	1. Install the Star Wheel Units to the Paper EJ Frame Assy correctly.
	Printout is faint or blurry.	Printer Driver and the Paper Print Head	1. Check that adequate paper is used according to the setting of the Printer Driver. 1. Using the Adjustment Program, check that the correct Head ID has been written to the EEPROM.	1. Use the appropriate type of paper in accordance with the Printer Driver. 1. Using the Adjustment Program, enter the 29-digit code of the Head ID to the EEPROM. Refer to Chapter 5 "Adjustment".
The bottom of the printout is not evenly colored.	Adjustment	1. Check if the Positioning Adjustment of PF Roller Shaft Retainer has been performed properly.	1. Make adjustments according to the specified adjustment priority. Refer to Chapter 5 "Adjustment".	
Paper EJ Roller traces appear on the printout.	Traces of the Paper EJ Roller appear on the printed paper or CDR.	Printer Driver and the Paper	1. Check if appropriate paper is used in accordance with the Printer Driver settings.	1. Use the appropriate type of paper in accordance with the Printer Driver.
		Front and Rear Paper EJ Roller Assys.	1. Check if the Paper EJ Roller is clean or not.	1. Clean the Paper EJ Roller with a soft cloth.

Table 3-15. Print Quality Troubles

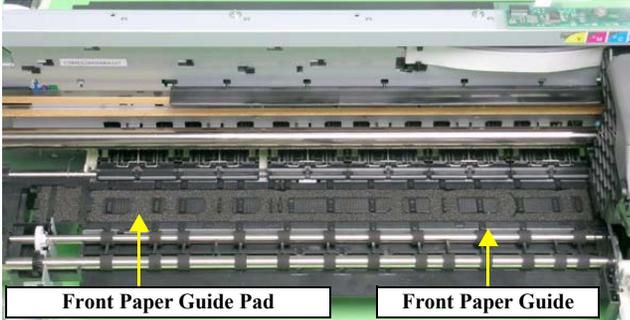
Observed Faults	Details of the Fault	Faulty Part/ Part Name	Check Point	Remedy
<p>The printout is stained with ink.</p>	<p>The non-printed side or the bottom of the printout is dirty with ink.</p>	<p>Front Paper Guide Pad</p>	<p>1. Check that heaps of ink are not formed on the Front Paper Guide Pad and that the Front Paper Guide Pad is installed securely and evenly in the setting position.</p> 	<p>1. If heaps of ink are formed, replace the Front Paper Guide. If it has been confirmed that the Ink pads have risen, reinstall the Front Paper Guide Pad correctly.</p>
	<p>When the paper size in the sent print data is larger than the size of the fed paper, data are printed on the Front Paper Guide, extending off the paper.</p>	<p>PW sensor</p>	<p>1. Check that the PW Sensor FFC is connected. 2. Check that the PW Sensor is not faulty.</p>	<p>1. Connect the PW Sensor FFC. 2. Replace the PW Sensor with a new one.</p>
	<p>Ink smudges appear on the blank area of the printout.</p>	<p>Paper EJ Frame Assy.</p>	<p>1. Check the Star Wheel Rollers for ink stain.</p>	<p>1. Clean the Star Wheel Rollers with a soft cloth.</p>
<p>Front Paper Guide</p>		<p>1. Check the Front Paper Guide for ink stain.</p>	<p>1. Clean the Front Paper Guide with a soft cloth.</p>	
<p>Front Paper Guide Pad</p>		<p>1. Check if ink heaps are formed on the Front Paper Guide Pad.</p>	<p>1. Replace the Front Paper Guide with a new one.</p>	

Table 3-15. Print Quality Troubles

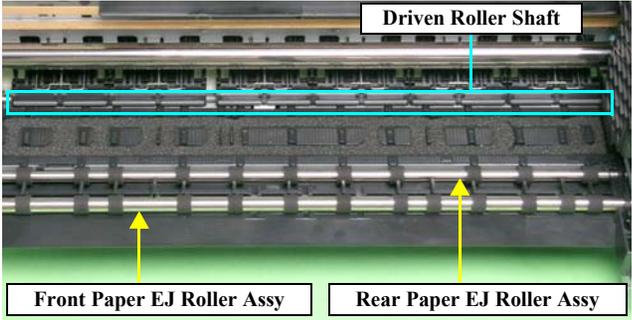
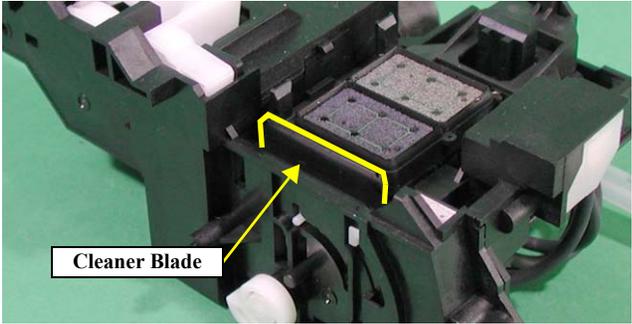
Observed Faults	Details of the Fault	Faulty Part/ Part Name	Check Point	Remedy
<p>The printout is stained with ink.</p>	<p>Ink smudges appear on the blank area of the printout.</p>	<p>Front and Rear Paper EJ Roller Assys</p>	<p>1. Check the Front and Rear Paper EJ Roller Assys for ink stain.</p> 	<p>1. Clean the Front and Rear Paper EJ Roller Assys with a soft cloth.</p>
		<p>Driven Roller Shaft</p>	<p>1. Check the Driven Roller Shaft for ink stain.</p>	<p>1. Clean the Driven Roller Shaft with a soft cloth.</p>
		<p>Ink System Unit</p>	<p>1. Check that wiping operation was performed properly.</p> 	<p>1. Install the Cleaner blade correctly or replace it with a new one.</p>

Table 3-15. Print Quality Troubles

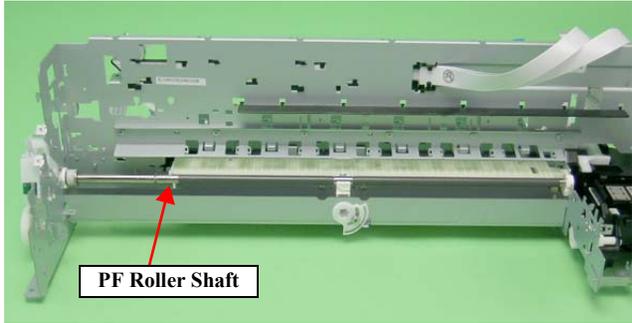
Observed Faults	Details of the Fault	Faulty Part/ Part Name	Check Point	Remedy
The printout is stained with ink.	Ink smudges appear on the blank area of the printout.	PF Roller Shaft	1. Check the PF Roller Shaft for ink stain. 	1. Clean the PF Roller Shaft with a soft cloth.
The printout is grainy.	Images are printed grainy in all print modes. Or the image looks rough.	Adjustment Main Board Print Head	1. Check that PG, Bi-D and Head Angular Adjustments have been made properly.	1. Make the adjustments according to the specified adjustment priority. Refer to Chapter 5 "Adjustment".
	When printed at 5760 dpi, the printed images are poor or grainy.	Adjustment Main Board Print Head	2. Print the adjustment check patterns and check if they are grainy.	2. If the images look still grainy after adjustment, replace the Main Board with a new one.
Regarding hue of images	The whole image is reddish.	Adjustment Print Head	1. Check if the PG has been adjusted properly.	1. Make the adjustment according to the specified adjustment priority. Refer to Chapter 5 "Adjustment".
			2. Check that Bi-D and Head Angular Adjustments have been made properly.	2. Make the adjustments according to the specified adjustment priority. Refer to Chapter 5 "Adjustment".
			3. Print the adjustment check patterns and check the image color.	3. If the image color does not change after adjustment, replace the Print Head with a new one.

Table 3-15. Print Quality Troubles

Observed Faults	Details of the Fault	Faulty Part/ Part Name	Check Point	Remedy
Borderless Printing	Cannot make a borderless printing (The printer prints with margins despite the borderless setting).	PW sensor	1. Check if the paper dust or scrap of the paper is attached to the Front Paper Guide.	1. Remove the paper dust or scrap of the paper.
			2. Check that the PW Sensor is operating normally. Print the adjustment check patterns with the Adjustment Program, and check that the clip function is executed normally. (The clip function is executed normally if an about 5mm margin is provided on the left of the first gray band pattern in the patterns.)	2. If it is judged that the clip function is not executed normally, replace the PW sensor with a new one. Refer to Chapter 5 " Adjustment ".

Table 3-16. Abnormal Noise

Occurrence Timing	Details of the Fault	Faulty Part/ Part Name	Check Point	Remedy
–	Printing operation is performed normally but abnormal noise is produced at power-on or during operations.	Adjustment	1. Check that PF Belt Tension Adjustment has been executed properly.	1. Make the adjustment according to the specified adjustment priority. Refer to Chapter 5 " Adjustment ".
		Carriage Shaft	1. Check that the Carriage Shaft is fully lubricated with grease.	1. Wipe the grease applied to the Carriage Shaft with a dry, soft cloth, and then apply grease (G-71). Refer to Chapter 6 " Maintenance ".

CHAPTER

4

DISASSEMBLY AND ASSEMBLY

4.1 Overview

This chapter describes procedures for disassembling and assembling this product. Unless otherwise specified, the disassembled units or main components can be reassembled by reversing the disassembling procedure.

- WARNINGS must be followed to avoid personal injury or death.
- CAUTIONS must be followed to avoid damaging the printer or test equipment.
- ADJUSTMENT REQUIRED indicates that specific mandatory adjustments must be carried out to complete the repair.
- CHECK POINTS emphasize a particularly important process or procedure.
- REASSEMBLY notes provide helpful tips on reassembly procedures, especially when correct reassembly differs from simple reverse-assembly.

When you need to disassemble any units or parts that are not described in this chapter, refer to the exploded diagrams in the Appendix.

Before starting your work, always read the precautions described in the next section.

4.1.1 Precautions

Before starting the disassembling/reassembling work of this product, always read the following "WARNING" and "CAUTION" carefully.



- **Before starting the disassembling/reassembling work of this product, always disconnect the power cable. When the power supply cable must be connected for voltage measurement or like, be extremely careful not to get an electric shock and follow the procedures in this manual to do your work.**
- **Wear protective goggles to protect your eyes from ink. If ink gets in your eyes, wash your eyes with clean water and see a doctor.**
- **To prevent injury from sharp metal edges, always wear gloves for disassembly and reassembly.**
- **If ink has adhered to your skin, wash it with soap and water. If it has caused skin irritation, see a doctor.**
- **To protect the microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps when accessing the internal components.**



- **Use only the recommended tools for disassembly, reassembly and adjustment. Refer to [Table 4-1 "List of Tools"](#).**
- **Tighten screws to the specified torques.**
- **Use the specified lubricants and adhesives. Refer to Chapter 6 "Maintenance".**
- **Make the necessary adjustments under the instructions given for disassembling. Refer to Chapter 5 "Adjustment".**
- **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

The following table indicates the tools recommended for use for disassembly, reassembly and adjustment.

Table 4-1. List of Tools

Tool Name	Code
Phillips Screw Driver, No.1	1080530
Phillips Screw Driver, No.2	-
Flathead Screwdriver	-
Tweezers	-
Needle nose pliers	-
Nipper	-
Acetate Tape	-
PF Tension Measuring Tool	1294120
Penlight	-

Note : All of the tools listed above are commercially available. EPSON provides the tools listed with EPSON tool code.

4.1.3 Screws

The following table lists the screws used in this product. When disassembling and reassembling the printer, refer to the following table and use the specified screws in the specified positions.

Table 4-2. List of Screw Types

No. Name	No. Name
1) C.B.P. M3x10	2) C.B.S. M3x6
3) C.B.S. (P2) M3x10	4) C.B.P. M3x8
5) C.B.S. M3x8	6) C.B.S. (P4) M3x8
7) C.B.P. M2.6x8	8) C.B.S. (P4) M3x6
9) C.B.P. M3x6	10) C.B.S. M3x10
11) C.C. M3x4	12) C.P.B. (P1) M1.7x5
13) C.B.P. M2.6x5	14) C.B.P. M2.6x5

4.1.4 Making a Special Tool for CSIC Board

If using the special tool below, the CSIC Assy (refer to p.94) can be easily removed. The method for making the tool is described below.

1. Prepare a handle part of a clip, or a similar metal wire piece.

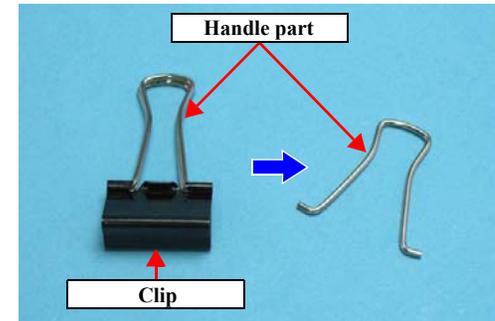


Figure 4-1. Making the Special Tool for CSIC Board (1)

2. Bend the metal wire as shown below.

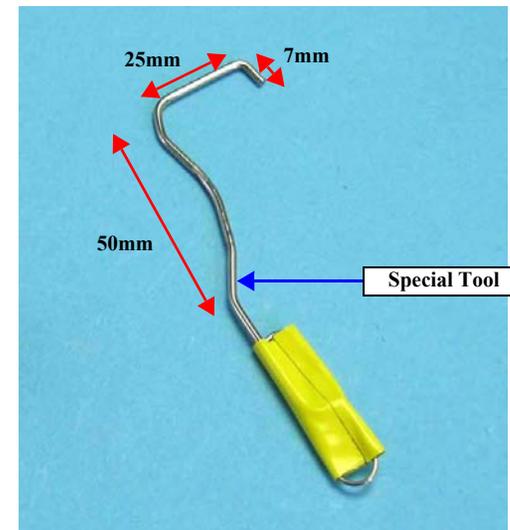


Figure 4-2. Making the Special Tool for CSIC Board (2)

4.1.5 Work Completion Checklist

Whenever the printer is serviced, use the checklist shown below to confirm all work is completed properly and the printer is ready to be returned to the user.

Table 4-3. Work Completion Check

Classification	Item	Check Point	Check Field
Main Unit	Self-test	Is the operation normal?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
	On-line Test	Is the printing attempt successful?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
	Printhead	Is ink discharged normally from all the nozzles?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
	Carriage Mechanism	Does it move smoothly?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
		Are there any abnormal noises during its operation?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
		Are there any dirt or foreign objects on the CR Shaft?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
		Is the CR Motor at the correct temperature? (Not too hot to touch?)	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
	Paper Feeding Mechanism	Is paper advanced smoothly?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
		No paper jamming?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
		No paper skew?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
		No multiple-sheet feeding?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
		Is the PF Motor at correct temperature? (Not too hot to touch?)	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
		No abnormal noises?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
		Is the paper path free of obstructions?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
Adjustment	Specified Adjustment	Are all the adjustments correctly completed?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
Lubrication	Specified Lubrication	Has lubrication been applied at the specified points?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
		Is the amount of lubrication correct?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
Function	ROM Version	Version: _____	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
Packing	Ink Cartridge	Have the ink cartridges been installed correctly?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
	Protective Materials	Have all relevant protective materials been attached to the printer?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
Others	CDR Tray	Is the operation normal?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary
	Accessories	Have all the accessories sent by the user been included in the package?	<input type="checkbox"/> Checked / <input type="checkbox"/> Not necessary

4.1.5.1 Protection for Transportation (Securing the Carriage) (T.B.D)

Before packing the printer to be returned to the user, attach several pieces of strong tape to the carriage to prevent damage during transportation.

1. Attach one side of the 40mm-length portion of the tape without folded end to the left side of the carriage aligning the tape's corner with the carriage's ribs as shown below.
2. Move the carriage to the right until it hits the Carriage Lock and hold it as it is, then attach the folded side of the tape to the housing.

T.B.D

Figure 4-3. Securing the Carriage

4.1.6 Locking/Unlocking the Carriage and Opening/Closing the CDR Tray Base

Locking/releasing the Carriage and opening/closing the CDR Tray Base are mutually related. The CDR Tray Base cannot be opened when the Carriage Lock is released. Lock the Carriage in the following procedure, when opening the CDR Tray Base.

1. Remove the Decoration Plate Right. *(Refer to 4.2.6 Decoration Plate Left/Right (p.80))*
2. Insert a phillips screwdriver into the hole on the right side of the frame, and rotate the white shaft of the Ink System Unit.

Table 4-4. Relationship between Carriage Lock/Release and CDR Tray Base

Direction of Rotation	Carriage	CDR Tray Base
Clockwise (CW)	Locked	Can be opened/closed.
Counterclockwise (CCW)	Unlocked	Locked

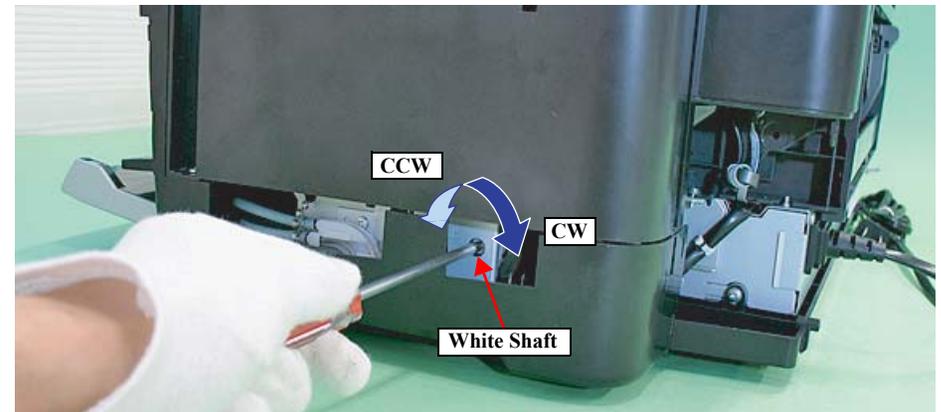


Figure 4-4. Unlock the Carriage



The CDR Tray Base and the Front Cover are opened/closed together.

CAUTION

When moving the Carriage Unit with the Front Cover and CD- R Tray Base opened, turn the PG CAM (Right) beforehand so that PG++ points downwards to release the PG in order to prevent interference between the Paper EJ Frame Assy and Carriage Unit.

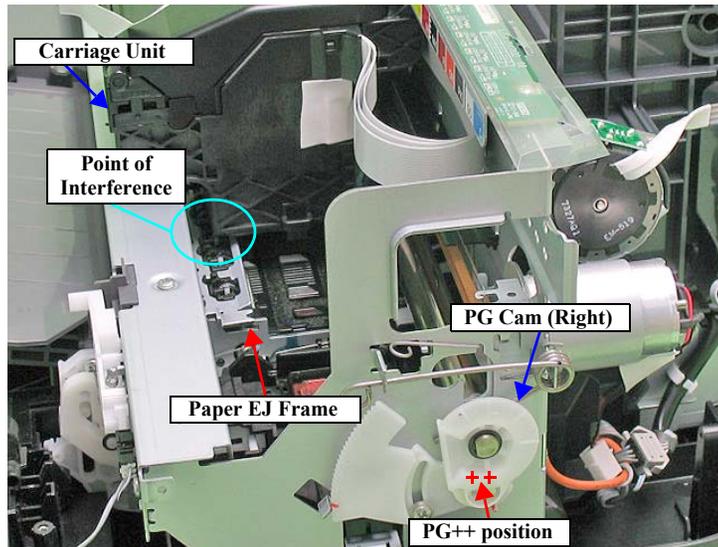


Figure 4-5. Interference between the Frame and Carriage Unit

4.1.7 Disassembly

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

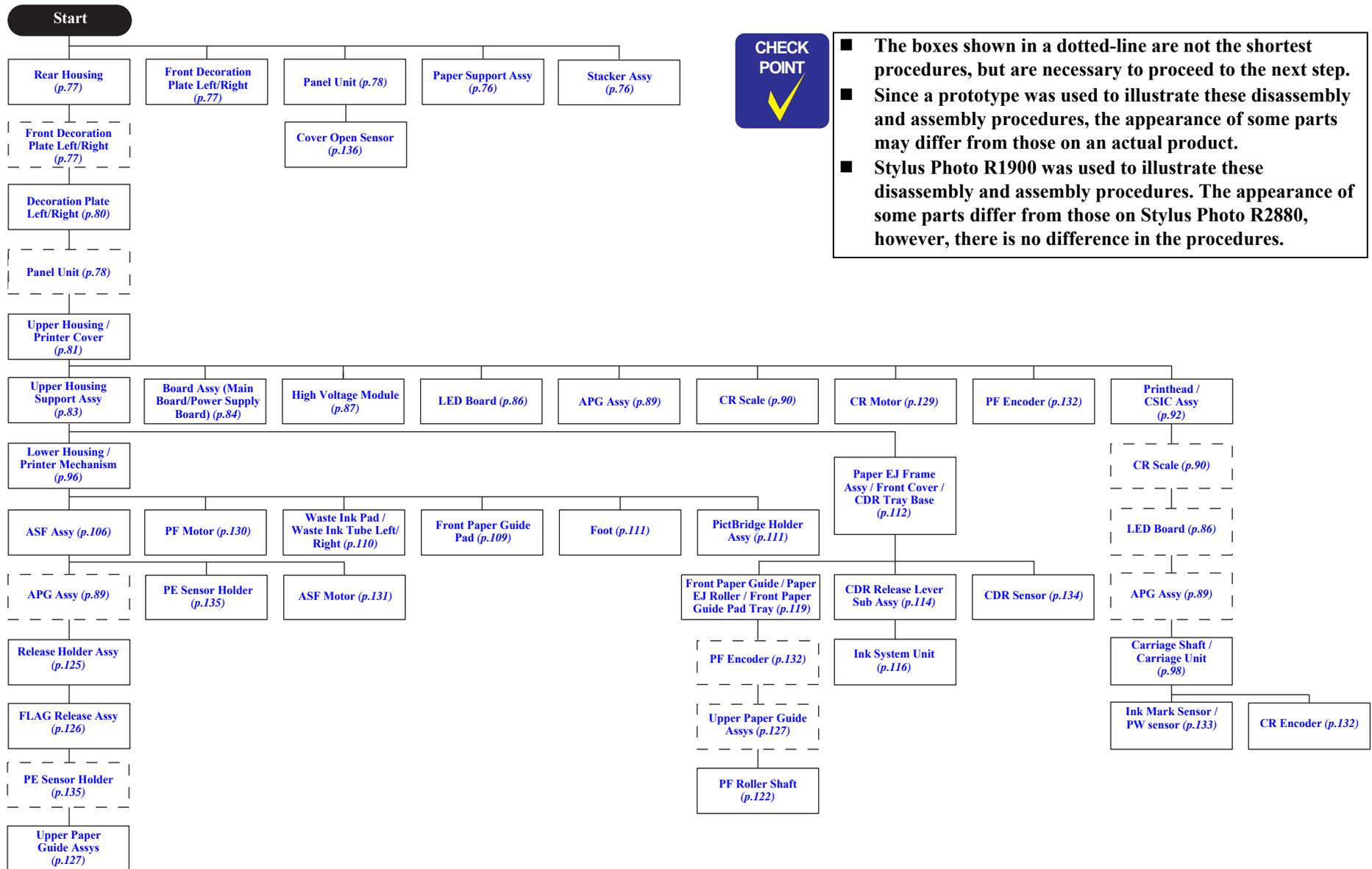


Figure 4-6. Disassembly Flowchart

4.2 Removing the Housings

4.2.1 Paper Support Assy

1. While pulling out the left and right guide pins of the Paper Support Assy, remove the Paper Support Assy.

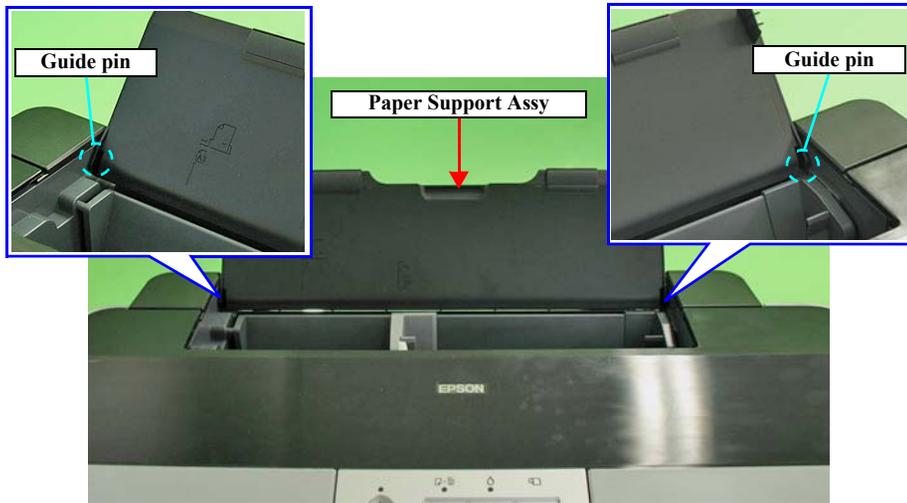


Figure 4-7. Removing the Paper Support Assy

4.2.2 Stacker Assy

1. To disengage the guide pin on the right of the Stacker Assy, push the Stopper in the direction of the arrow with a flathead screwdriver or similar tool.
2. Pull out the left guide pin of the Stacker Assy, and remove the Stacker Assy.

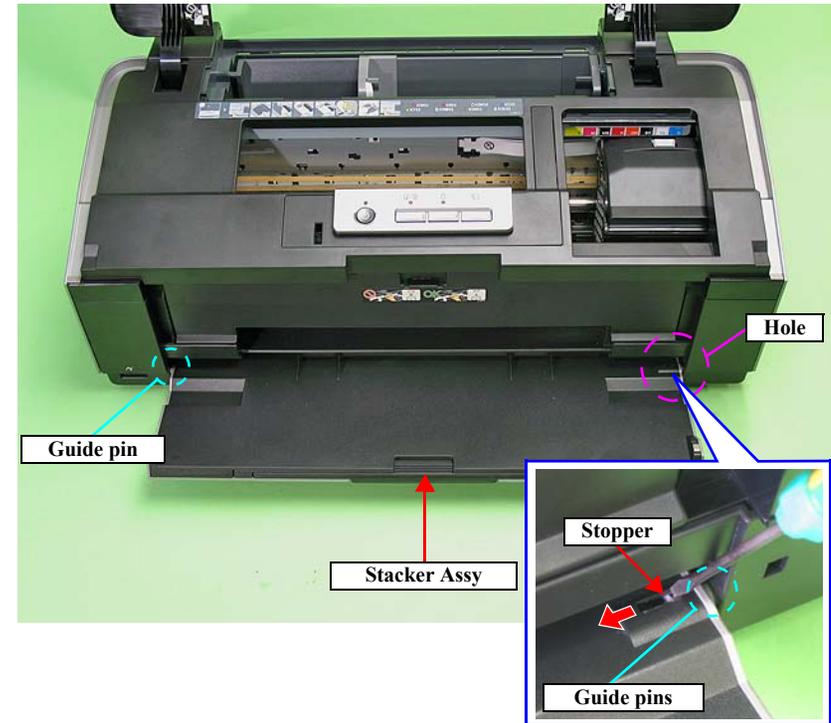


Figure 4-8. Removing Stacker Assy

4.2.3 Front Decoration Plate Left/Right

1. Open the Stacker Assy.
2. While releasing the hook on the Front Decoration Plate Left, open the plate in the direction of the arrow, and remove it.
3. In the same way, remove the Front Decoration Plate Right.

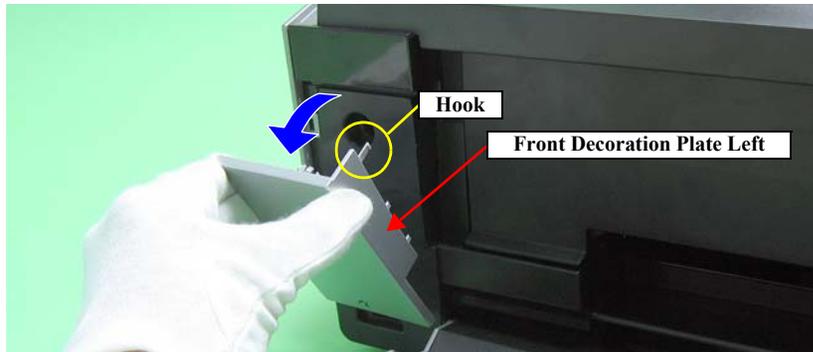


Figure 4-9. Removing the Front Decoration Plate Left/Right



When installing the Front Decoration Plate L/R, insert the two hooks at the bottom of them into the holes of the Lower housing, then secure the Front Decoration Plate L/R with the other hooks.

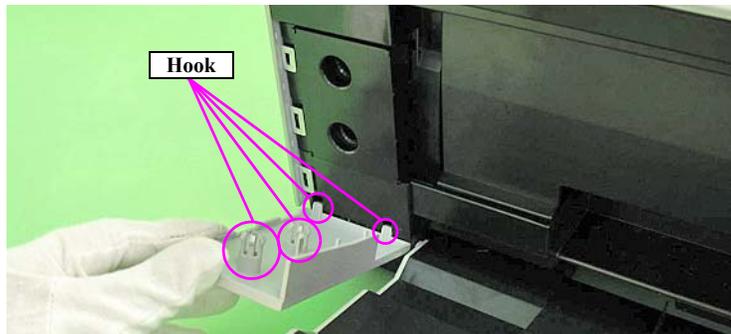


Figure 4-10. Reinstalling the Front Decoration Plate Left/Right

4.2.4 Rear Housing

1. Remove the two C.B.P. M3 x 10 screws and the C.B.S. M3 x 6 screw that secure the Rear Housing.
2. Disengage the two tabs from the Upper Housing and remove the Rear Housing.

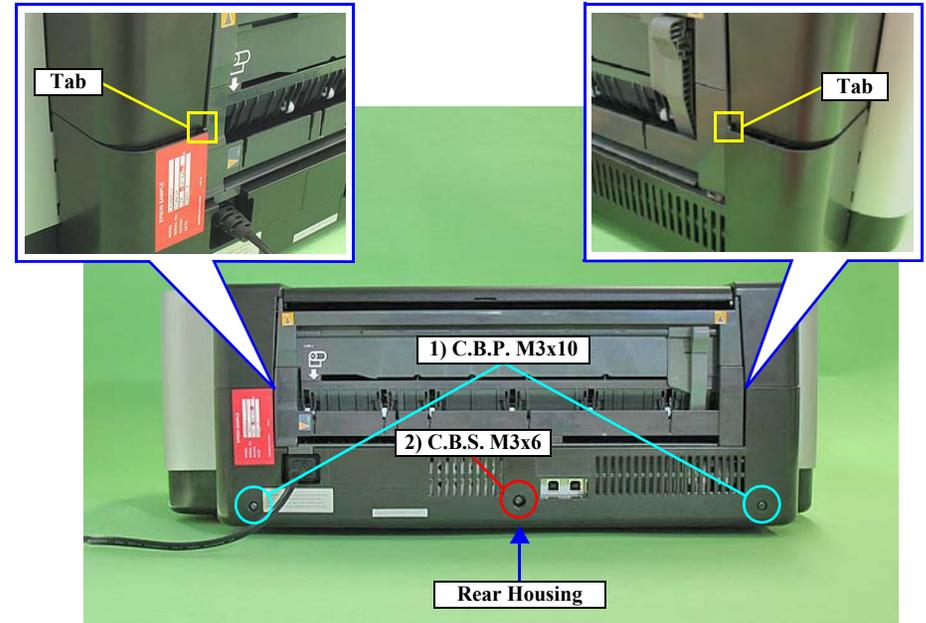


Figure 4-11. Removing the Rear Housing



- Align the positioning tabs (one each on the left/right) with the positioning holes (one each on the left/right) on the Upper Housing.
- Align the positioning tabs (three each on the left/right) with the positioning holes (three each on the left/right) on the Decoration Plate Left/Right and the Lower Housing.

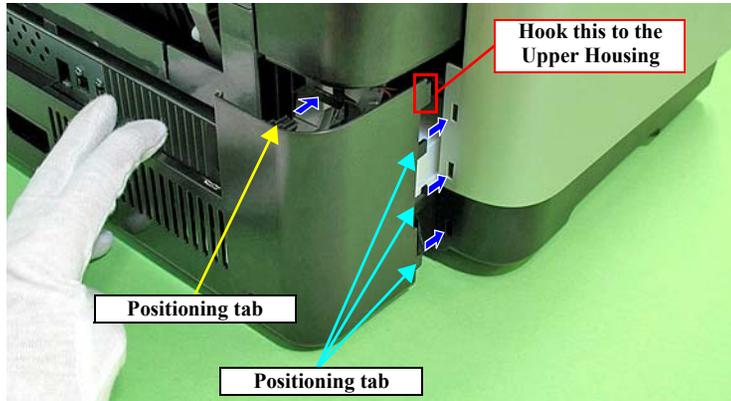


Figure 4-12. Reinstalling the Rear Housing

4.2.5 Panel Unit

1. Open the Printer Cover.



Before opening the Front Cover and CDR Tray Base, unlock the Carriage. (Refer to "4.1.6 Locking/Unlocking the Carriage and Opening/Closing the CDR Tray Base (p73)")

2. Open the Front Cover and CDR Tray Base.



Figure 4-13. Removing the Panel Unit (1)

3. Disengage the nine hooks on the bottom of the Panel Unit, and remove the Panel Unit while pulling out its tab.
4. Remove the Panel FFC from the Panel Unit. Refer to Figure 4-15.
5. Disconnect the Panel FFC and CDR Sensor cable from the Panel Board connectors and remove the Panel Unit.

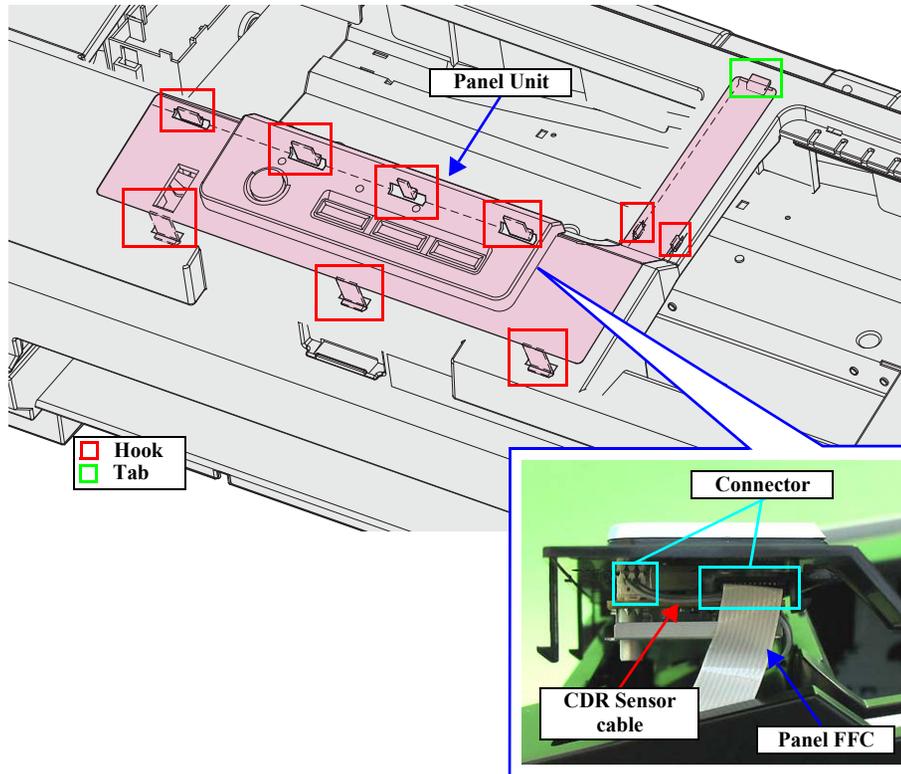


Figure 4-14. Removing the Panel Unit (2)



- Be careful not to get the Panel FFC caught underneath the hooks on the Panel Unit.
- Secure the Panel FFC with double-sided Tape on the Panel Unit.
- Route the CDR Sensor cable as shown in the following figure.

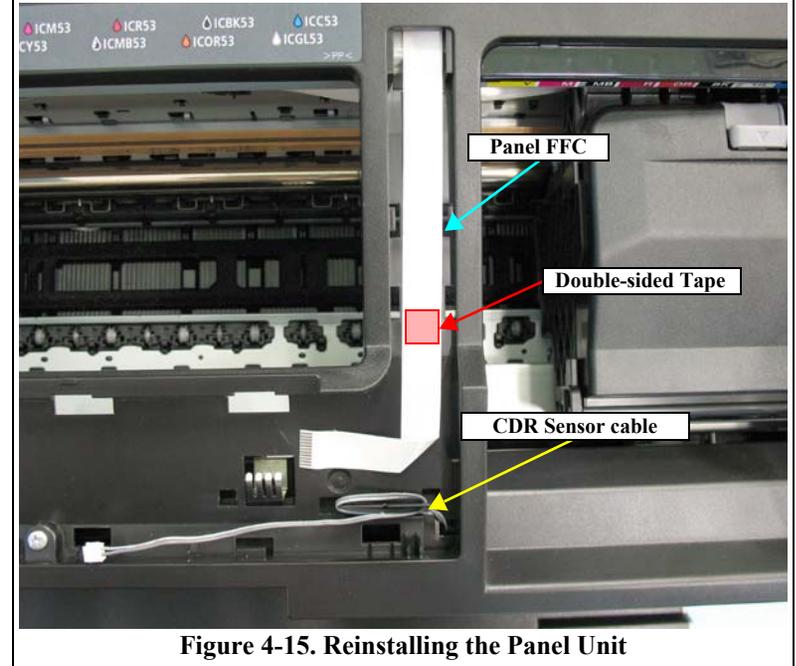


Figure 4-15. Reinstalling the Panel Unit

4.2.6 Decoration Plate Left/Right

1. [Remove the Rear Housing.](#) (p.77)
2. [Remove the Front Decoration Plate Left/Right.](#) (p.77)
3. Release the three hooks on the front of the Decoration Plate Right and lift the plate a little to release the tab and the four guide pins on the upper side, then remove the Decoration Plate Right.
4. In the same way, remove the Decoration Plate Left.

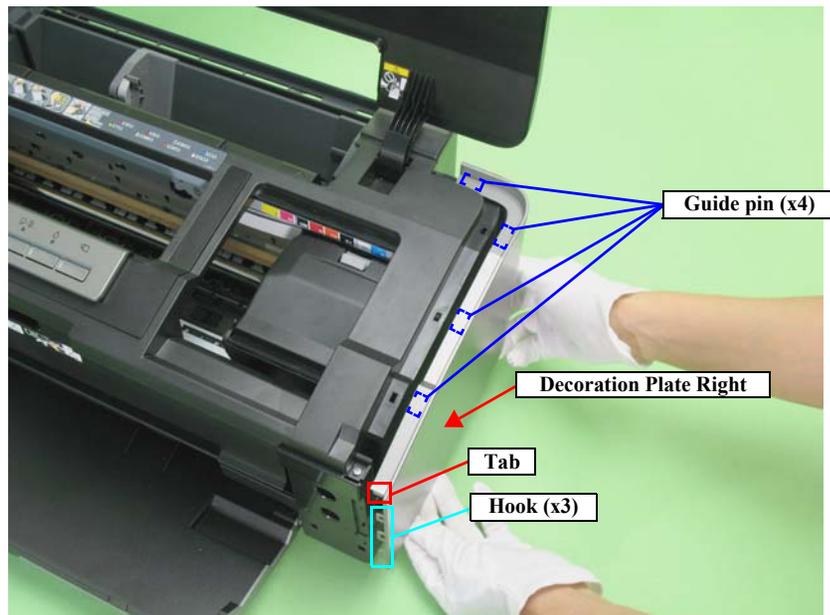


Figure 4-16. Removing the Decoration Plate Left/Right



When installing the Decoration Plate L/R, first align the hooks of the Decoration Plate L/R (two each) with the ribs of the Lower Housing (two each on the left/right), and then align the tab inside the Decorative Plate L/R (one each) with the positioning hole on the Upper Housing (one each on the left/right).

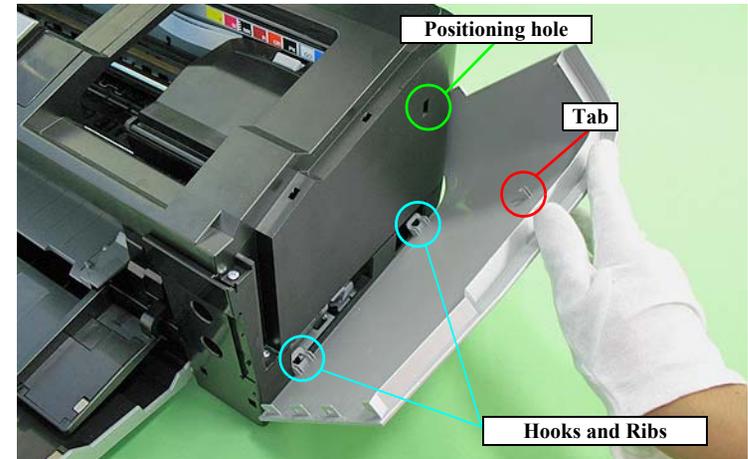


Figure 4-17. Reinstalling the Decoration Plate Left/Right

4.2.7 Upper Housing / Printer Cover

1. Remove the Decoration Plate Left/Right. (p.80)
2. Remove the Panel Unit. (p.78)
3. Open the Front Cover and CDR Tray Base. (Refer to 4.1.6 Locking/Unlocking the Carriage and Opening/Closing the CDR Tray Base (p.73))
4. Remove the seven C.B.P. M3 x 10 screws that secure the Upper Housing.
5. Remove the Upper Housing while pulling out the CDR Sensor cable and the Panel FFC through the cutout of the Upper Housing.

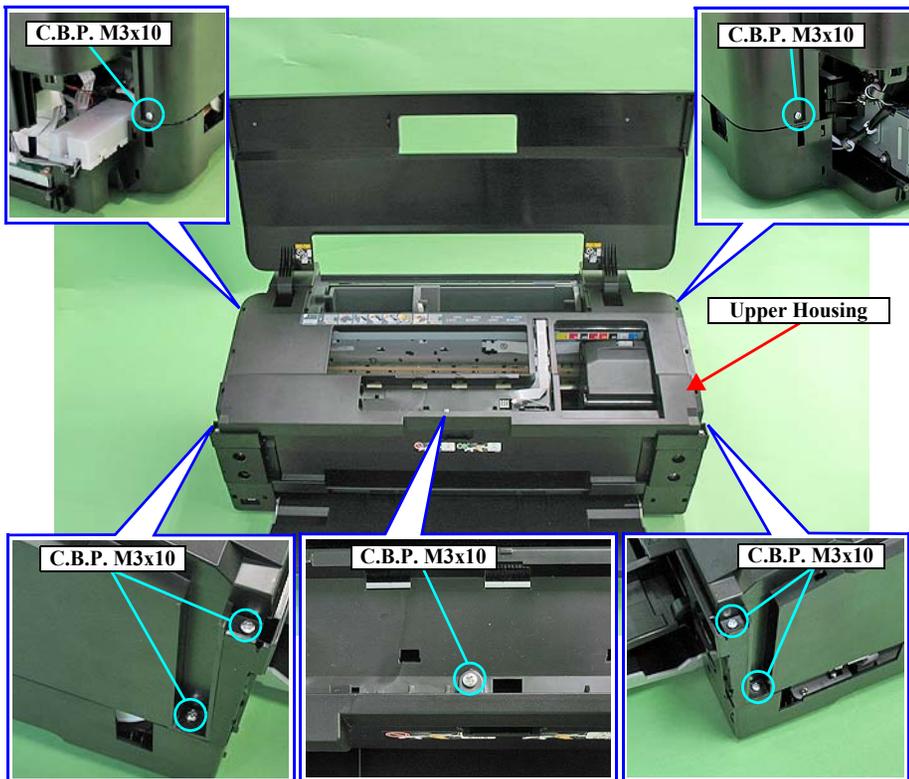


Figure 4-18. Remove the Upper Housing



- Route the Panel FFC and CDR Sensor cable correctly as shown in the following Figure.
- Install the Upper Housing so that the Grounding Plate properly protrudes through the cutout of the Upper Housing.

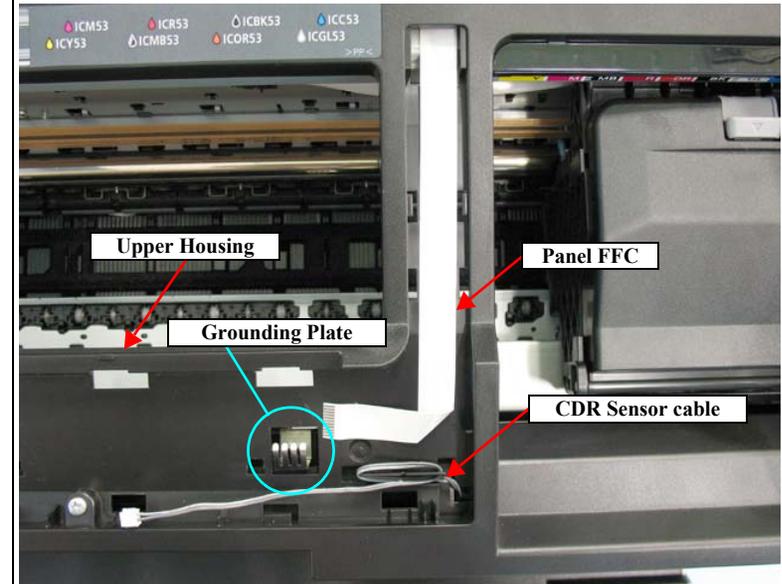


Figure 4-19. Routing Panel FFC and CDR Sensor Cable

- Tighten the screws in the order shown in Figure 4-18.

REMOVING THE PRINTER COVER

1. Remove the Upper Housing / Printer Cover. (p.81)
2. Remove the two C.B.P. M3 x 10 screws that secure Printer Cover Holder Left/Right.

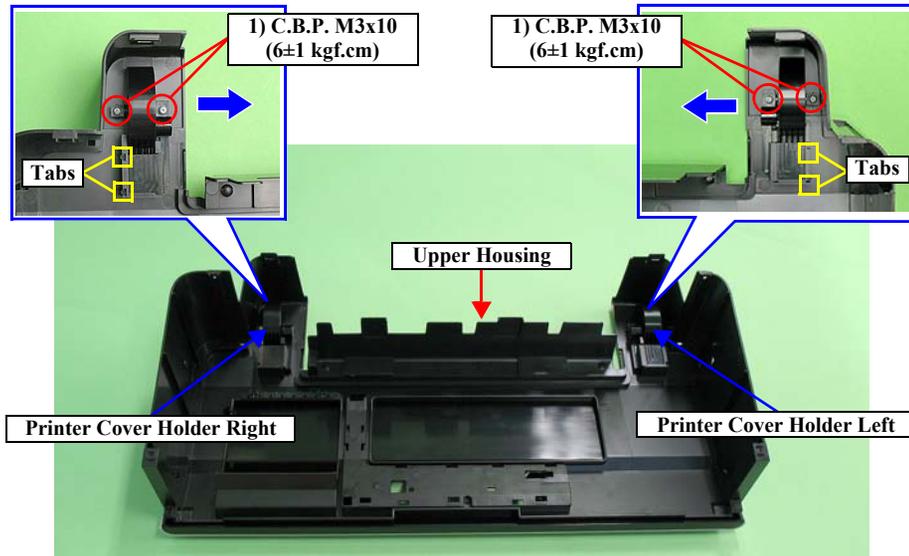


Figure 4-20. Removing the Printer Cover Holder Left/Right



Insert the tabs (two each on the left/right) shown in Figure 4-20 into the holes on the Upper Housing.



Be careful not to damage the surface in step 3 and later.

3. Remove the Printer Cover Holder Right following the steps below.
 - 3-1. Open the Printer Cover and place the Upper Housing with its backside down.
 - 3-2. Pull the Printer Cover in the direction of the red arrow so as to prevent the parts of the Printer Cover Holder Right and Upper Housing shown below from interfering.

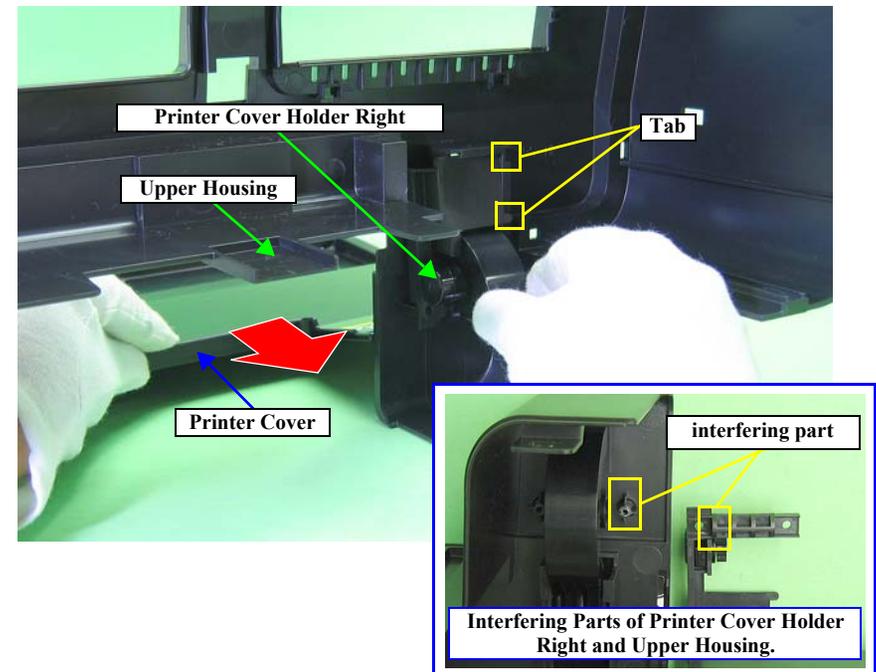


Figure 4-21. Removing the Printer Cover (1)



When performing the following steps, be careful not to damage the tabs of the Printer Cover Holder Right.

- 3-3. Slide the Printer Cover Holder Right in the direction of the arrow while pushing the part A, and pull out the Printer Cover Holder Right from the bearing of the Printer Cover.

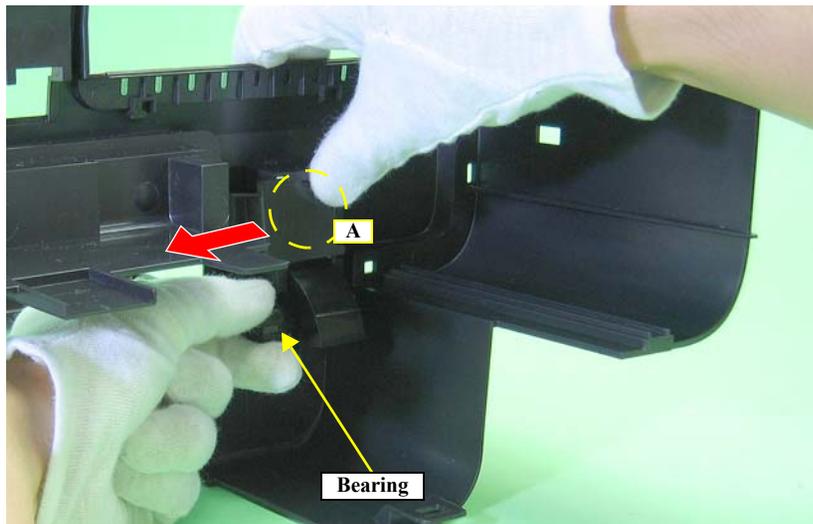


Figure 4-22. Removing the Printer Cover (2)

4. In the same way, remove the Printer Cover Holder Left and remove the Printer Cover from the Upper Housing.



If the Printer Cover creaks when opening/closing it, make sure to lubricate the Printer Cover Holder Left/Right.
 •“Chapter 6 Maintenance (p.161)”

4.2.8 Upper Housing Support Assy

1. Remove the Upper Housing / Printer Cover. (p.81)
2. Remove the two C.B.S. M3 x 8 screws and two C.B.P. M3 x 8 screws that secure the Upper Housing Support Assy, and remove the Upper Housing Support Assy.

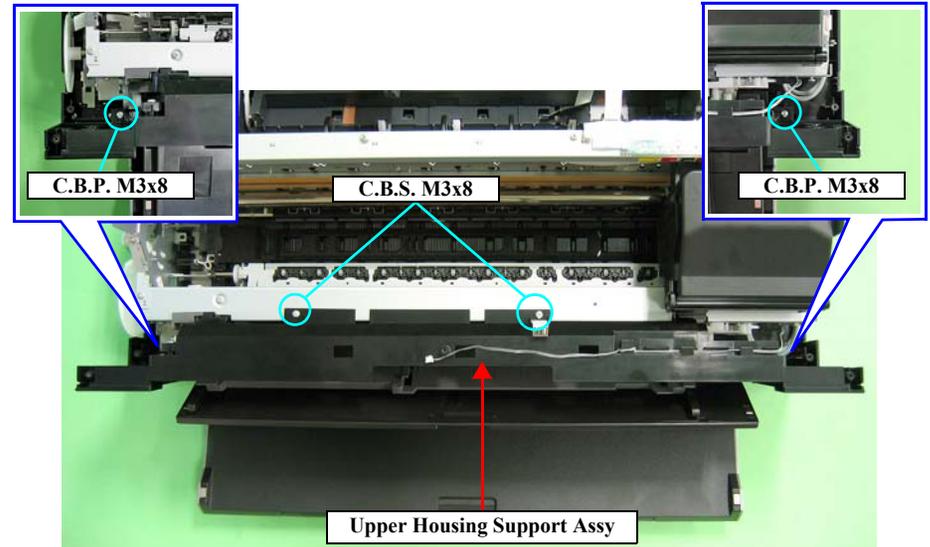


Figure 4-23. Removing the Upper Housing Support Assy



- Secure the Grounding Plate with one of the C.B.S. M3 x 8 screws together with the Upper Housing as shown below.
- Route the CDR Sensor cable as shown in the figure below.

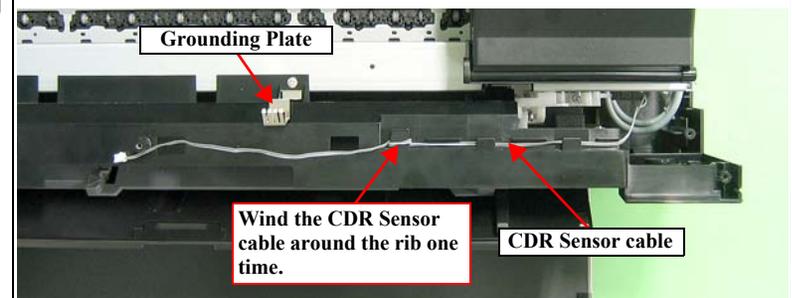


Figure 4-24. Routing the CDR Sensor Cable

4.3 Removing the Boards

4.3.1 Board Assy (Main Board/Power Supply Board)

1. Remove the Upper Housing / Printer Cover. (p.81)
2. Remove the seven screws (four C.B.S. M3 x 6, two C.B.S. (P2) M3 x 10, and one C.B.S. M3 x 10) that secure the Board Assy.

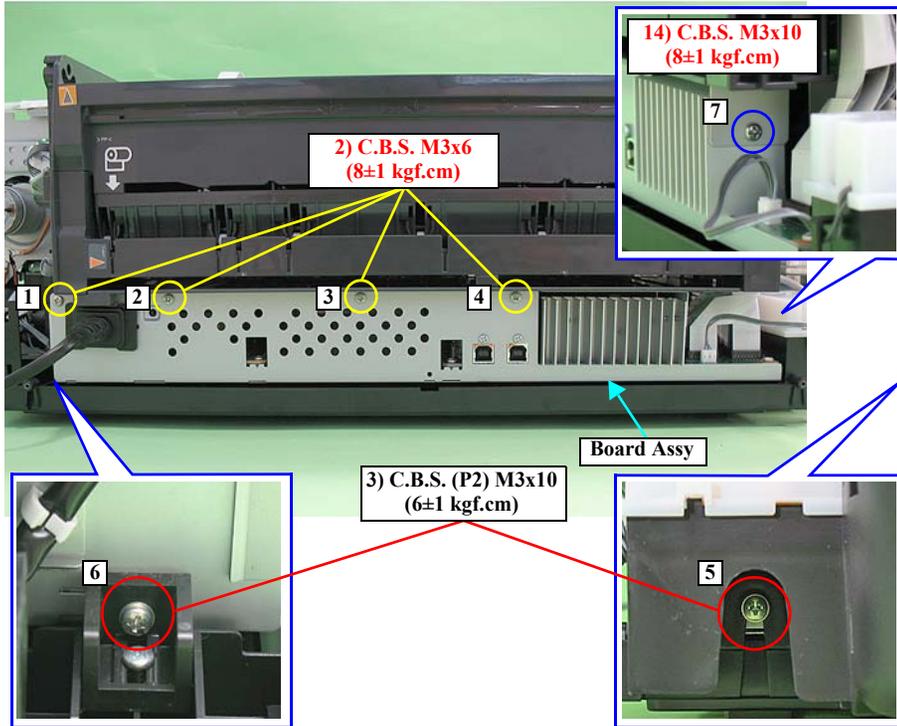


Figure 4-25. Removing the Board Assy (1)



Tighten the screws in the order shown in Figure 4-25.



When performing the following procedure, prevent the FFC and the cables from being scratched. If having trouble disassembling, remove the High Voltage Module Cover to make the work easier. (refer to 4.3.3 High Voltage Module Step2 (p87) .)

3. Disconnect all the cables and FFCs connected on the Main Board from the near side one by one.

No.	Connector	No.	Connector
CN1	PictBridge	CN14	Head FFC
CN4	Panel Bard, CDR Sensor, Cover Open Sensor	CN22	CSIC
CN5	Relay FFC (for sensor)	CN25	High Voltage Module
CN6	LED Board	CN115	CR Motor
CN9	Ink Mark Sensor, CR Encoder Sensor, PW Sensor	CN116	PF Motor
CN11	Head FFC	CN117	Pump Motor
CN12	Head FFC	CN118	APG Motor
CN13	Head FFC	CN119	ASF Motor

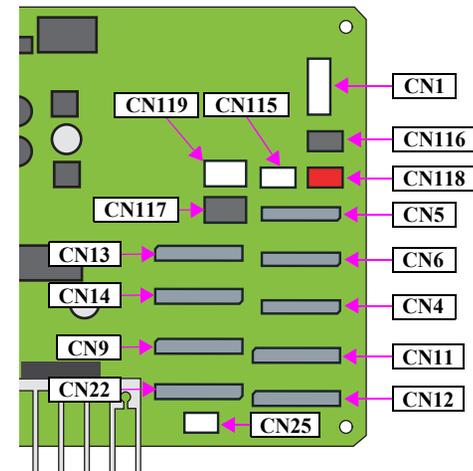


Figure 4-26. Connector Layout of the Main Board (130 Digit Side)

4. Pull out the Board Assy from the Printer.

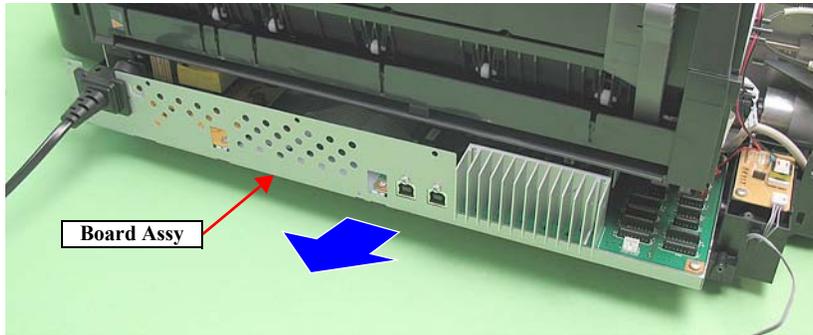


Figure 4-27. Removing the Board Assy (2)



- Confirm that the FFCs do not cross each other first, then connect the FFCs and the cables to the Main Board while paying attention to the edge of the Shield Plate.
- Take care not to place the Board Assy onto the three Ground Plates.

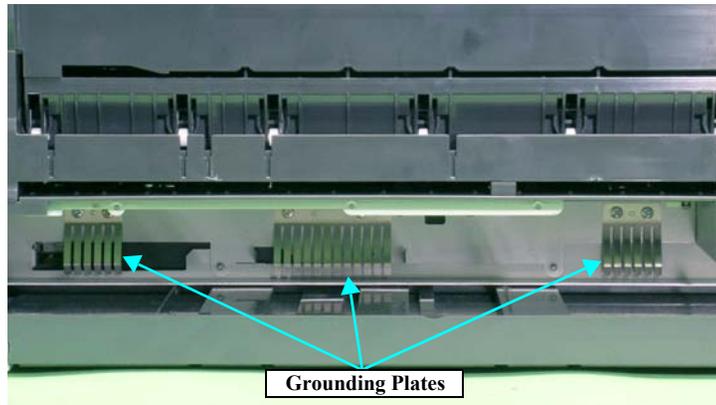


Figure 4-28. Reinstalling the Board Assy

REMOVING THE MAIN BOARD

1. Remove the Board Assy (Main Board/Power Supply Board). (p.84)



When disconnecting the Power Board cable, be sure to unlock CN60 on the Main Board.

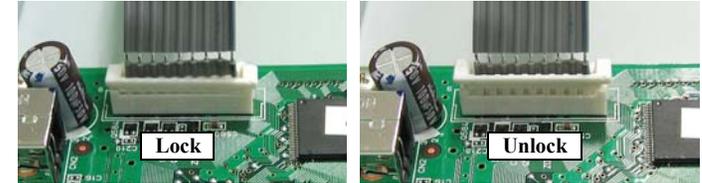


Figure 4-29. Handling the Power Board cable (CN60)

2. Disconnect the Power Board cable from connector CN60 on the Main Board.
3. Remove the four C.B.S. M3 x 6 screws and two C.B.P. M2.6 x 5 screws that secure the Main Board and remove the Main Board from the Board Assy.

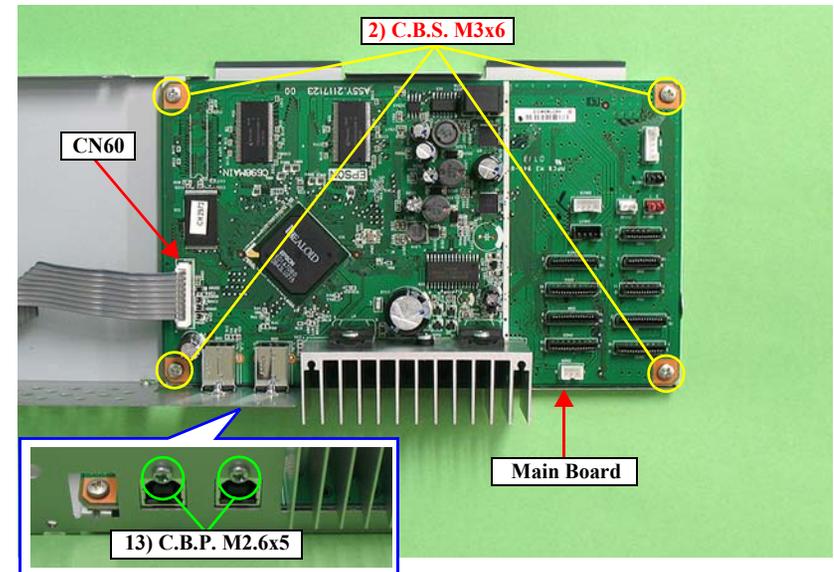


Figure 4-30. Removing the Main Board

REMOVING THE POWER BOARD

1. Remove the Board Assy (Main Board/Power Supply Board). (p.84)



When disconnecting the Power Board cable, be sure to unlock CN60 on the Main Board.

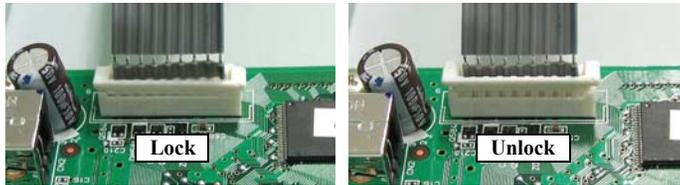


Figure 4-31. Handling the Power Board cable (CN60)

2. Disconnect the Power Board cable from connector CN60 on the Main Board. (p.85)
3. Remove the four C.B.S. M3 x 6 screws that secure the Power Board and remove the Power Board from the Board Assy.

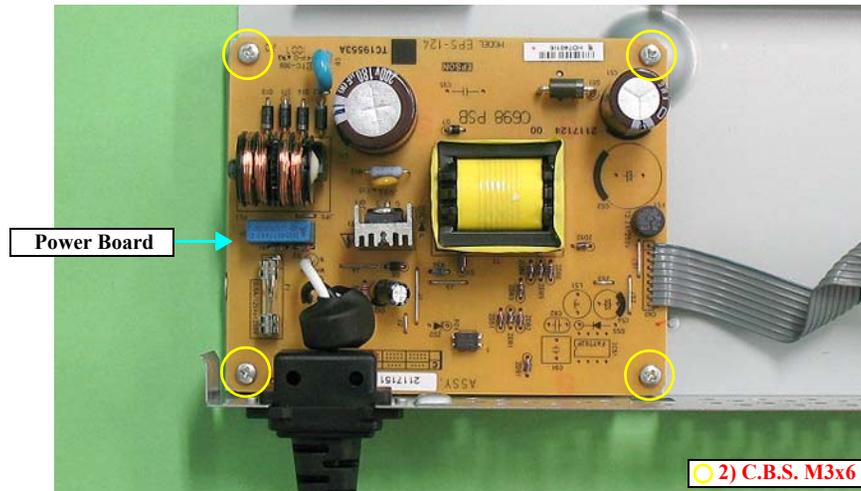


Figure 4-32. Removing the Power Board



After replacing or removing the Main Board and the Power Board, always make the required adjustments referring to the following.

- “Chapter 5 Adjustment (p.137)”

4.3.2 LED Board

1. Remove the Upper Housing / Printer Cover. (p.81)
2. Peel off the piece of acetate tape from the LED Sheet.

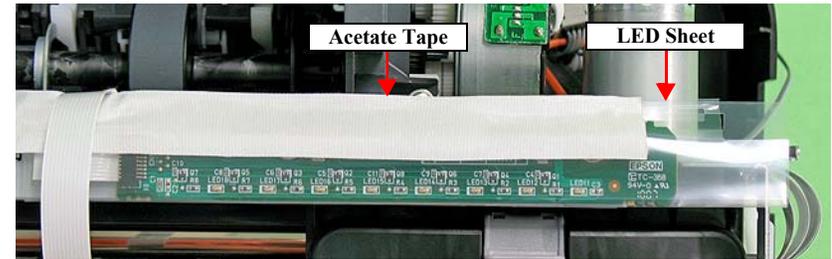


Figure 4-33. Removing the LED Board (1)

3. Release the three tabs from the LED sheet, and open the LED sheet.
4. Disconnect the LED FFC from the connector on the LED Board.

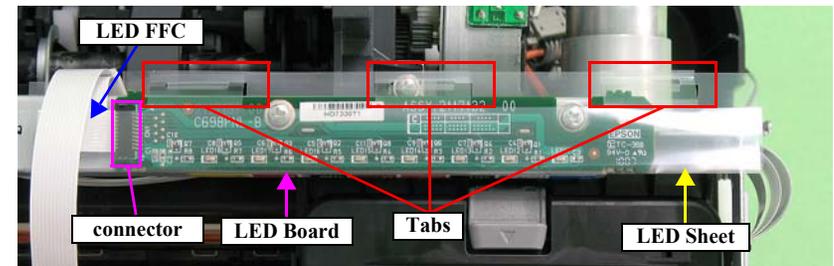


Figure 4-34. Removing the LED Board (2)

- Remove the C.B.S. (P4) M3 x 8 screw that secures the LED Board, and remove the LED Board.

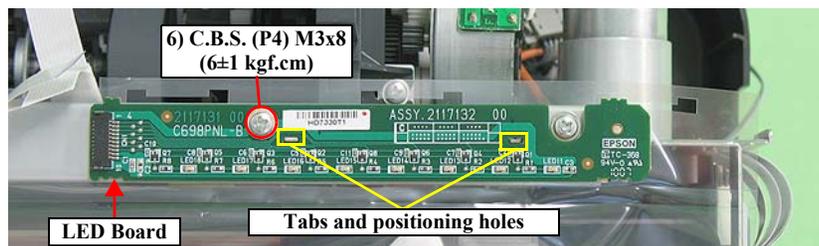


Figure 4-35. Removing the LED Board (3)



- Align the two tabs on the Upper Housing with the positioning holes on the LED Board. (Refer to Figure 4-35.)
- Attach acetate tape as shown in the figure below.

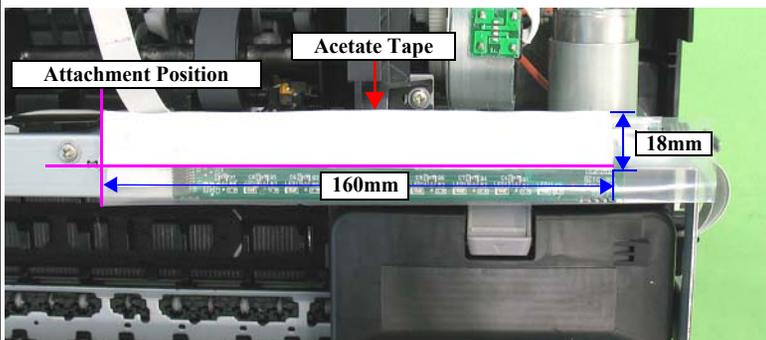


Figure 4-36. Reinstalling the LED Board

4.3.3 High Voltage Module



High voltage is applied in the High Voltage Module. The following must be strictly observed when you handle the High Voltage Module.

- Do not turn the power on with the Upper Housing removed.
- To avoid electrical shock, do not make or leave the High Voltage Module Board uncovered when applying a voltage.

- Remove the Upper Housing / Printer Cover. (p.81)
- Remove the C.B.P. M3 x 8 screw and remove the High Voltage Module Cover.

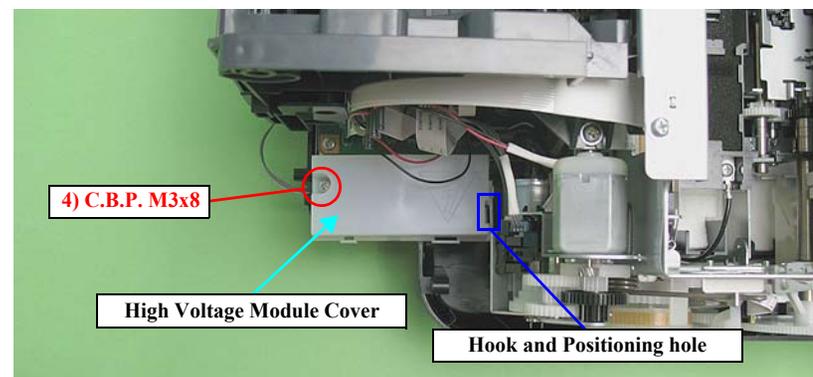


Figure 4-37. Removing the High Voltage Module Board (1)



- Before tightening the screw, make sure to engage the hook of the High Voltage Module Cover with the positioning hole on the Lower Housing.
- When installing the High Voltage Module Cover, be careful not to trap any of the cables underneath the cover.

3. Pull off the connector of the electrode cable from its terminal on the High Voltage Module Board with long-nose pliers or the like.
4. Disconnect the High Voltage Module cable from connector CN1 on the High Voltage Module Board.
5. Remove the **C.B.P. M3 x 8** screw and remove the High Voltage Module Board.



After replacing the High Voltage Module, always make the required adjustments referring to the following.

- “Chapter 5 Adjustment (p.137)”

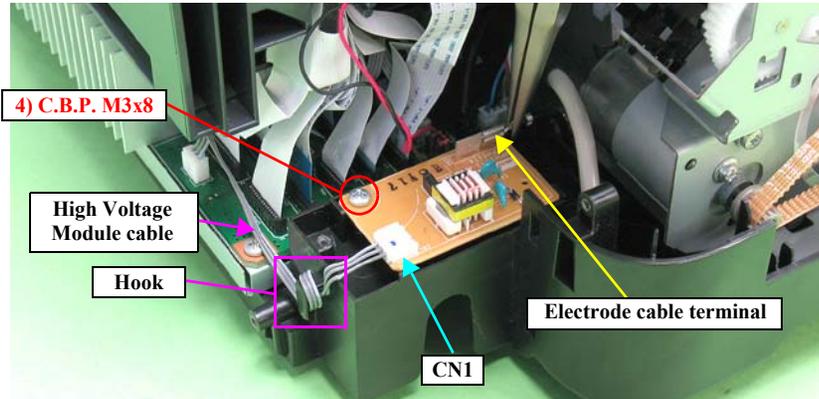


Figure 4-38. Removing the High Voltage Module Board (2)



- Wind the High Voltage Module cable on the hook one time as shown in [Figure 4-38](#).
- Route the electrode cable as shown in the figure below.

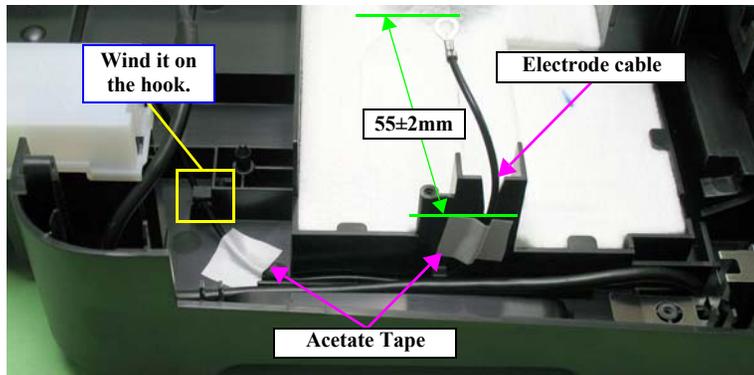


Figure 4-39. Routing the Electrode Cable

4.4 Disassembling the Printer Mechanism

4.4.1 APG Assy

1. Remove the Upper Housing / Printer Cover. (p.81)
2. Disconnect the APG Motor connector cable from connector CN18 (red) on the Main Board, and Remove the cable from the ASF Assy.
3. Disconnect the cables from the two APG Sensor connectors.

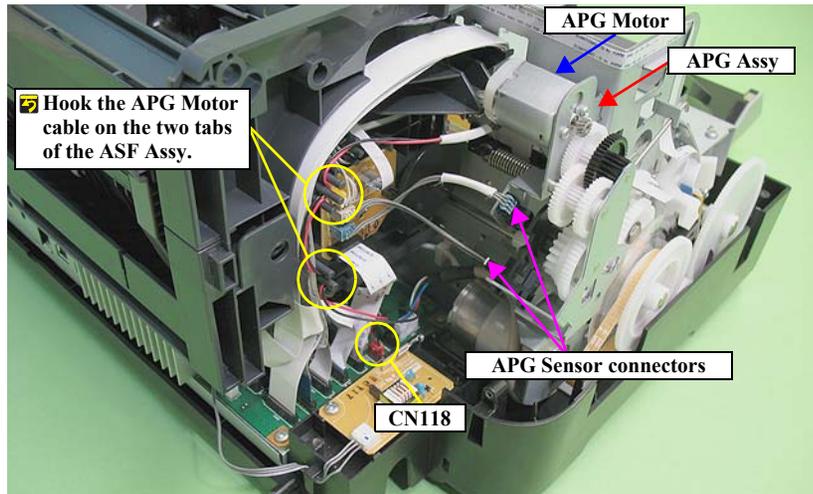


Figure 4-40. Disconnecting the Cables

REASSEMBLY



Referring to [Figure 4-40](#), correctly route the APG connector cable.

4. Remove the three C.B.S. M3 x 6 screws that secure the APG Assy, and remove the APG Assy from the Main Frame.

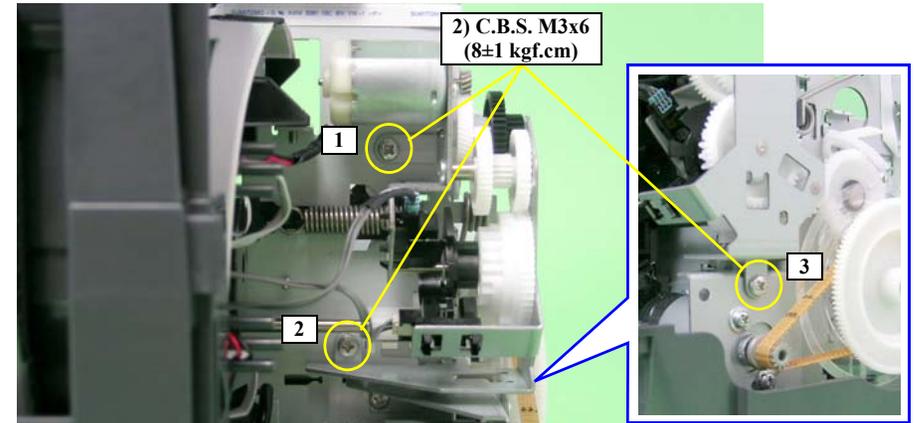
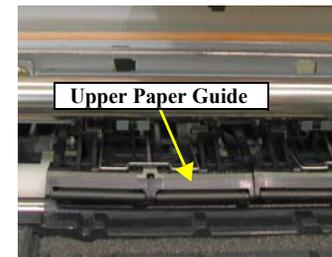


Figure 4-41. Removing the APG Assy

REASSEMBLY



- When installing the APG Assy, confirm the FLAG Release Assy is not in the released state (with the Upper Paper Guide up).

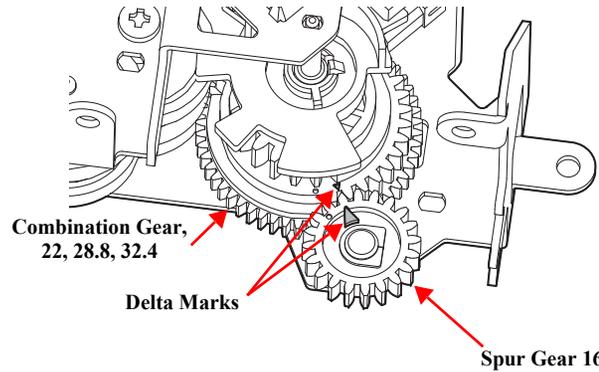


Released Not Released

Figure 4-42. Reinstalling the APG Assy



- Match the phase of the APG Assy in the following procedure.
 - Match the delta marks of Spur Gear 16 and Combination Gear 22, 28.8, 32.4.



- At the position where the tab can be identified through the notch of the PG Frame, match the delta marks of Spur Gear 16 and PG Cam (Left).

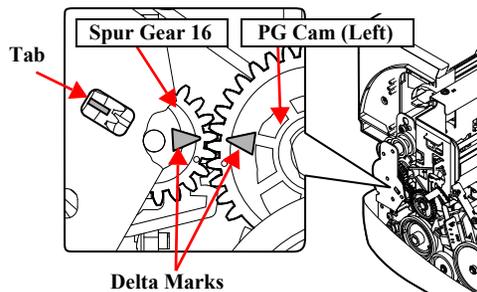


Figure 4-43. Phase Matching

- Tighten the screws in the order shown in [Figure 4-41](#)

4.4.2 CR Scale

- Remove the Upper Housing / Printer Cover. (p.81)
- Release the Carriage Lock, and move the Carriage Unit to the center. (Refer to 4.1.6 Locking/Unlocking the Carriage and Opening/Closing the CDR Tray Base (p.73))



When performing the following procedure, take care to prevent both ends of the CR Scale from being broken.

- Pull the right end of the CR Scale in the direction of the arrow, and remove the CR Scale from the tab on the Right CR Shaft Mounting Plate.
- Pull out the right end of the CR Scale towards the left direction from the rear of the Carriage Unit.

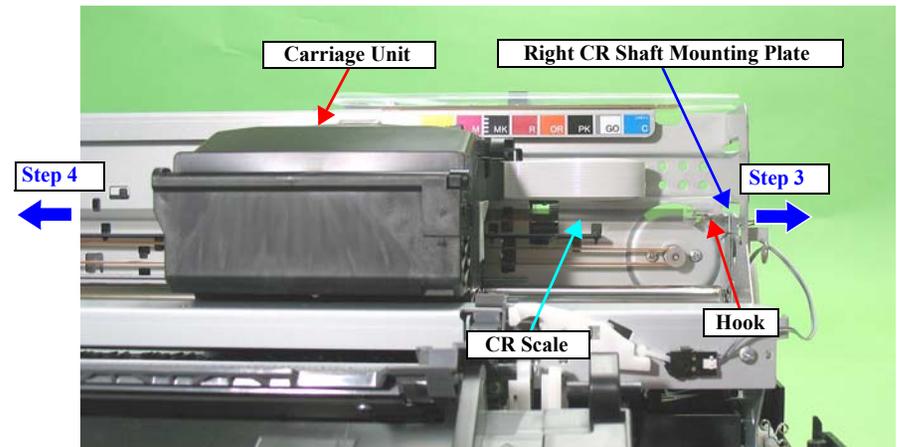


Figure 4-44. Pulling out the CR Scale

5. Remove the coil section of Torsion Spring 24.7 from the tab on the Left CR Shaft Mounting Plate with tweezers.

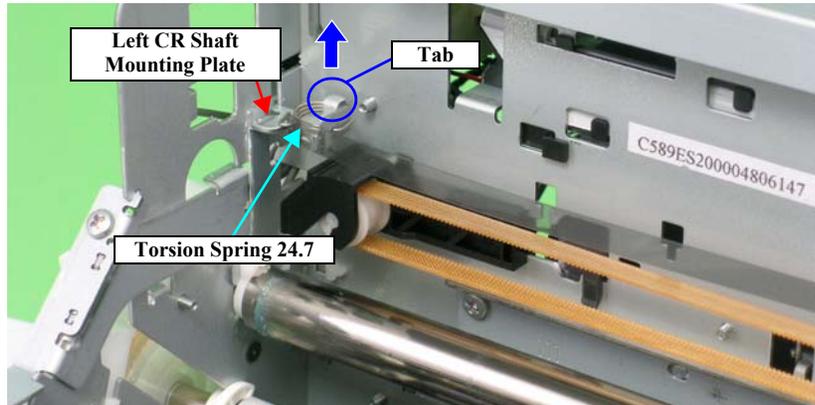


Figure 4-45. Removing the Torsion Spring 24.7 (1)

6. Remove Torsion Spring 24.7 from the CR Scale by the following procedure:
 - 6-1. Stand the coil section.
 - 6-2. Lower the coil section downwards to remove Foot 1 from the notch on the Left CR Shaft Mounting Plate.
 - 6-3. Turn the coil section counterclockwise.
 - 6-4. Remove Torsion Spring 24.7 from the hole on the CR Scale.

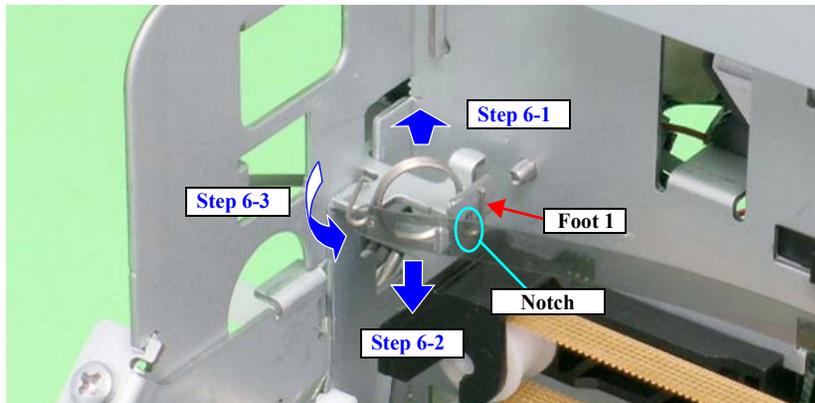


Figure 4-46. Removing the Torsion Spring 24.7 (2)

7. Turn the CR Scale 90°, and remove it from the tab on the Left CR Shaft Mounting Plate.

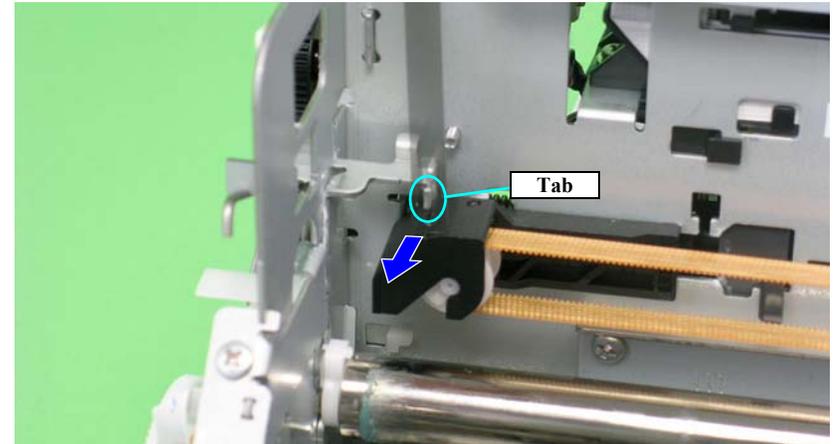


Figure 4-47. Removing the CR Scale



- Pass the CR Scale through the slot on the CR Encoder.

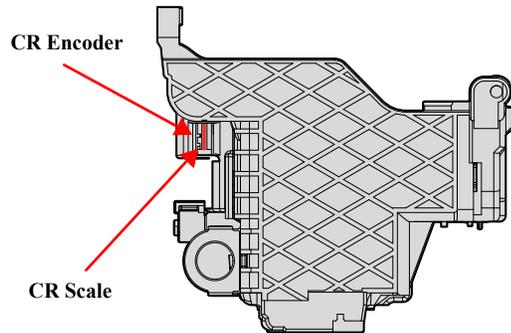


Figure 4-48. Reinstalling the CR Scale (1)

- Set the left end of the CR Scale with the black mark facing upwards.

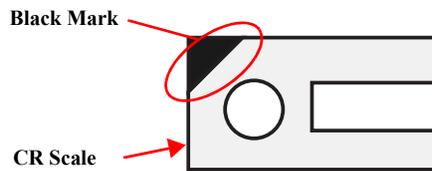


Figure 4-49. Reinstalling the CR Scale (2)

- Place the right end of the CR Scale correctly so that it is not hooked onto the Right CR Shaft Mounting Plate.

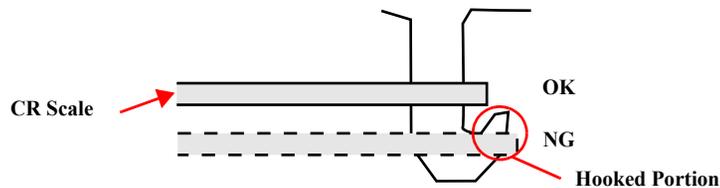


Figure 4-50. Reinstalling the CR Scale (3)

4.4.3 Printhead / CSIC Assy



So as not to damage the FFC, do not use any tools with the sharp ends when removing the Cable Holder.

1. Remove the Upper Housing / Printer Cover. (p.81)
2. Release the Carriage Lock, and move the Carriage Unit to the center. (Refer to 4.1.6 Locking/Unlocking the Carriage and Opening/Closing the CDR Tray Base (p.73))
3. Open the Ink Cartridge Cover.
4. Cut the Hinge, Cover Cartridge with a nipper or a similar tool and remove the upper part of the Hinge, Cover Cartridge.
5. Remove the Ink Cartridge Cover from the Carriage Unit.
6. Disengage the hook from the lower part of the Hinge, Cover Cartridge using a pair of Tweezers and remove the lower part of the Hinge, Cover Cartridge.

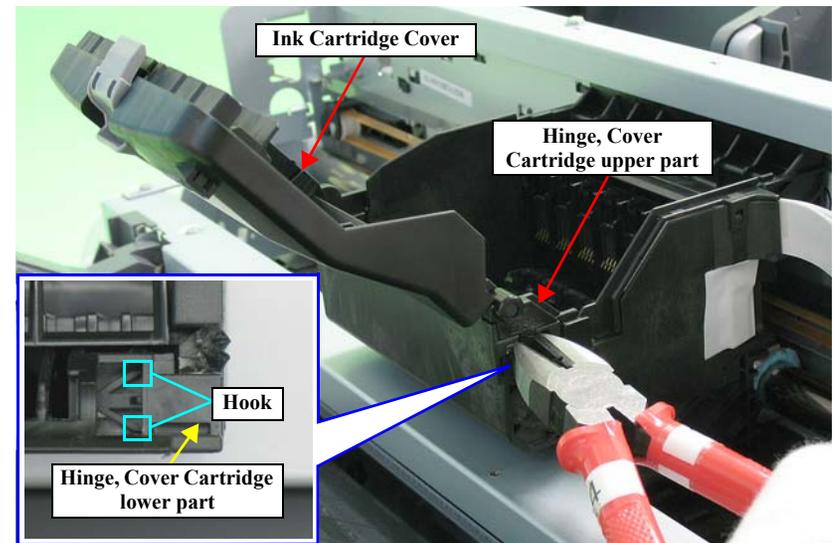


Figure 4-51. Removing the Hinge, Cover Cartridge



The Hinge, Cover Cartridge can not be removed without damaging it. Whenever replacing the Printhead, the Hinge, Cover Cartridge must be also replaced with a new one.

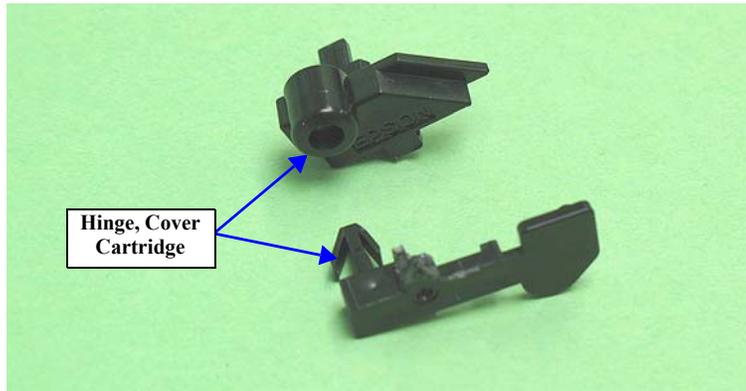


Figure 4-52. Hinge, Cover Cartridge

7. Disengage the two hooks that secure the Ink Guide and remove the Ink Guide from the Cartridge Unit.

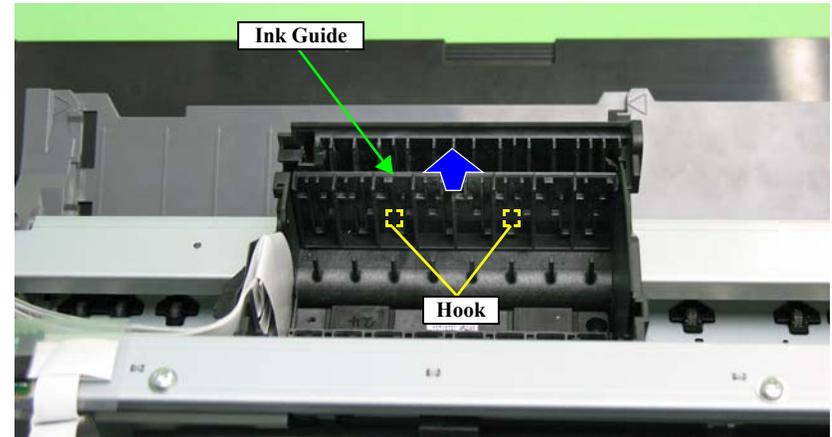


Figure 4-54. Removing the Ink Guide



Engage the two dowels of the Ink Cartridge Cover with the installation holes on the Carriage Unit and Hinge, Cover Cartridge (one each).

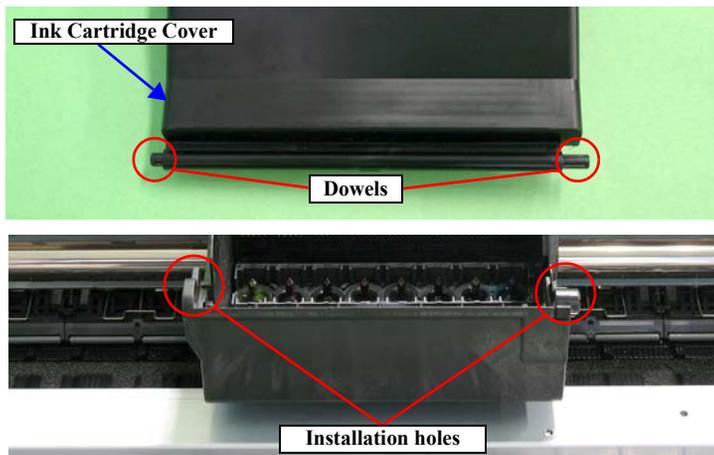


Figure 4-53. Reinstalling the Ink Cartridge Cover

8. Peel off a piece of acetate tape and disconnect the CSIC FFC from the connector on the CSIC Board.
9. Disengage the Cable Holder from the hook and remove it.

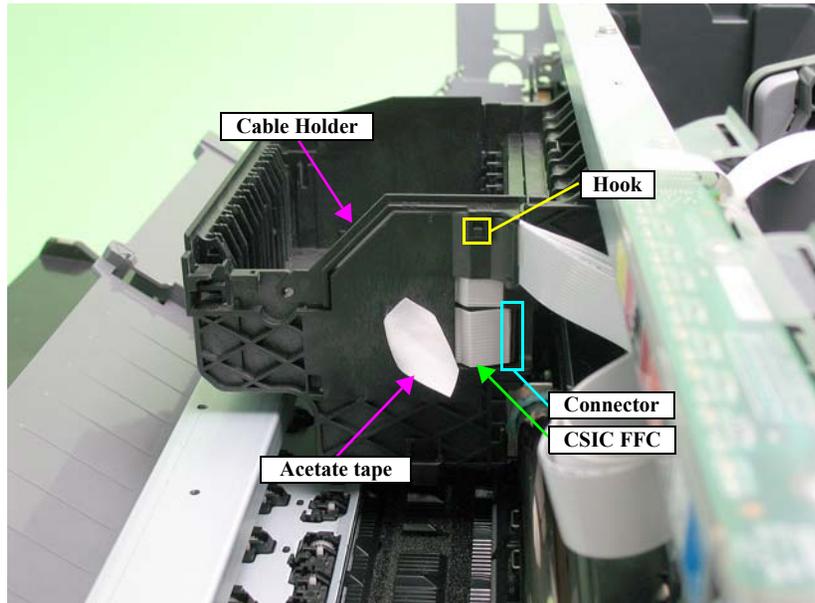


Figure 4-55. Removing the CSIC Assy (1)

CAUTION ! Before performing the following procedure, be sure to disconnect the CSIC FFC from the connector on the CSIC board. If not, the CSIC Assy can not be removed, and the CSIC FFC may be damaged.

10. Using the special tool (see p.71) disengage the two hooks of the CSIC Assy on the right and left on the rear of the Carriage Unit and remove the CSIC Assy upward.

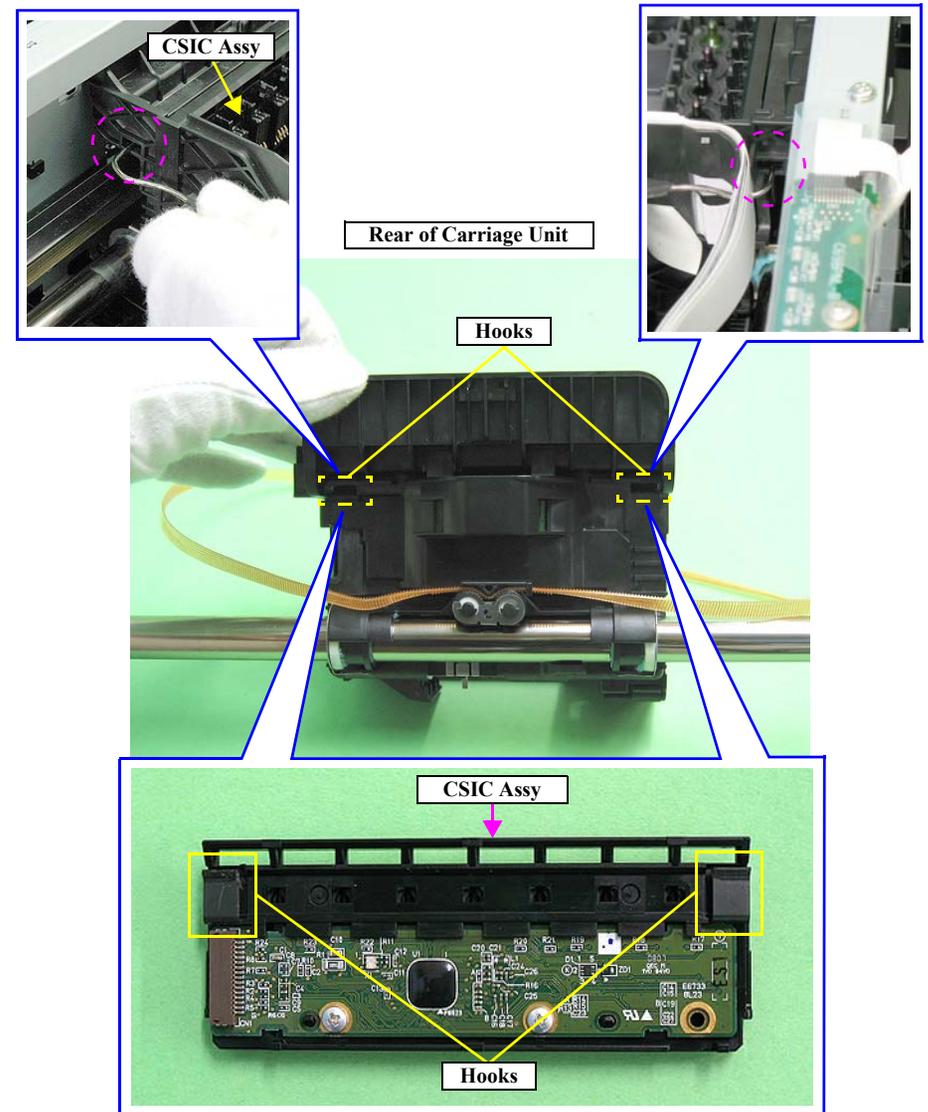


Figure 4-56. Removing the CSIC Assy (2)

- Remove the three C.B.P. M2.6 x 8 that secure the Printhead using the Phillips Screw Driver, No.1, and vertically lift the Printhead to remove it.

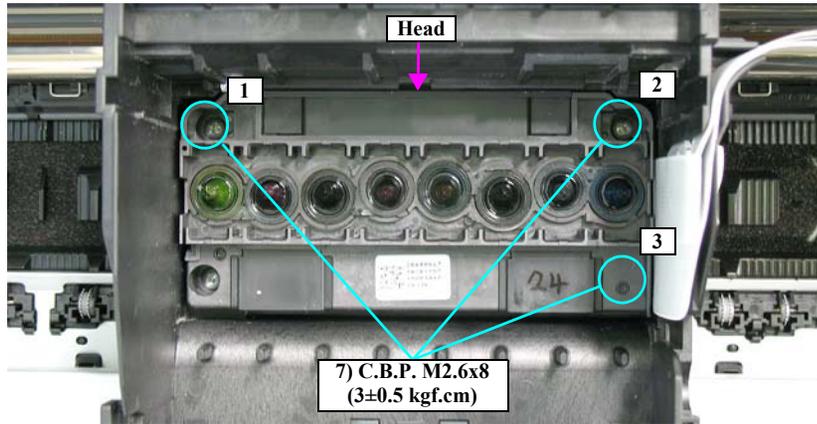


Figure 4-57. Removing the Printhead

- Remove the two Head FFCs from the Printhead.

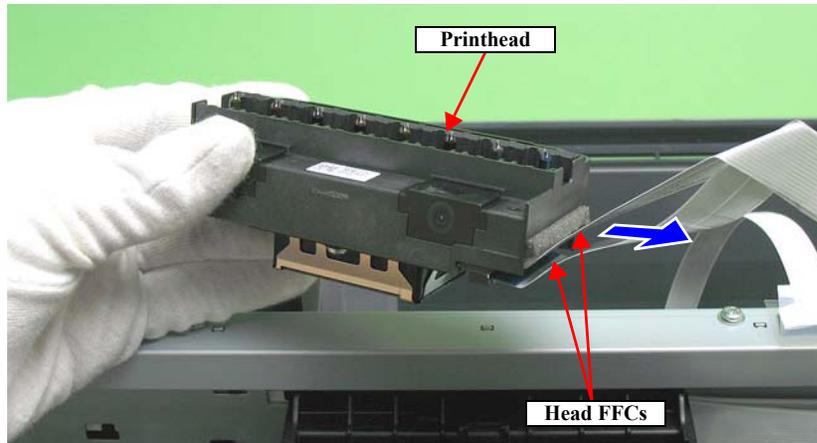


Figure 4-58. Remove the Head FFC



- Confirm that the pad is attached at the position in [Figure 4-59](#).

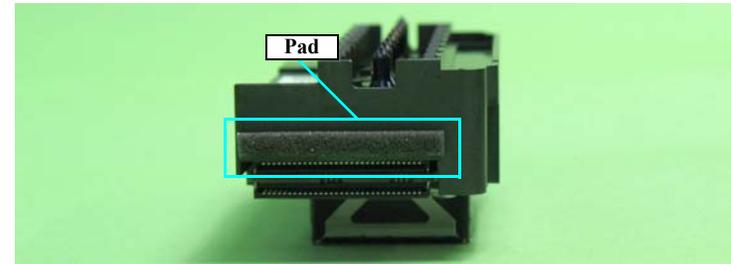


Figure 4-59. Attaching the Pad

- The Printhead must be installed with its positioning holes aligned with the guide pins of the Carriage Unit.

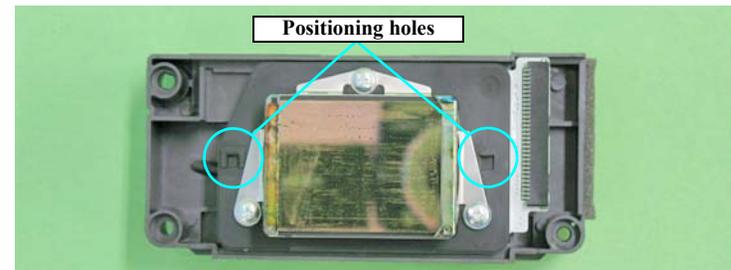
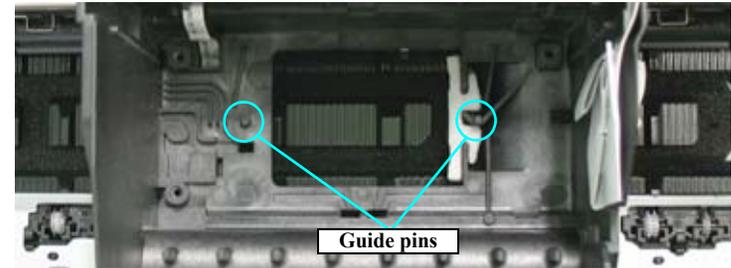


Figure 4-60. Reinstalling the Printhead (1)



After replacing or removing the Printhead, always make the required adjustments referring to the following.

- “Chapter 5 [Adjustment \(p.137\)](#)”

4.4.4 Lower Housing / Printer Mechanism

1. Remove the Upper Housing / Printer Cover. (p.81)



following steps, be extremely careful not to If having trouble disassembling, Module Cover to make the work easier. (refer to 4.3.3 High Voltage Module Step2 (p87) .)

2. Disconnect the PictBridge cable from connector CN1 on the Main Board.
3. Disconnect the High Voltage Module cable from connector CN25 on the Main Board.

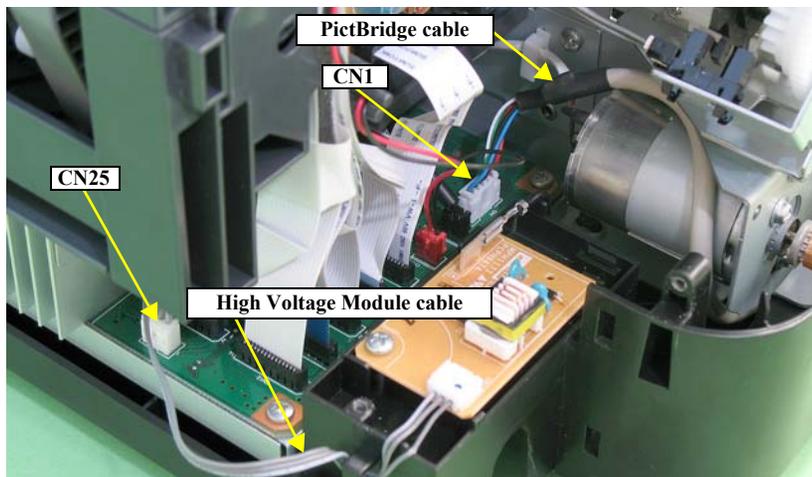


Figure 4-61. Removing the Lower Housing and Printer Mechanism

4. Grip both ends of the two Ink Tube Fasteners with your fingers, slide them in the direction of the arrows, and pull out the Waste Ink Tubes from the two Ink Tubes.
5. Remove the C.B.P. M3 x 8 screw that secures the electrode cable on the Front Paper Guide and remove the electrode cable.
6. Remove the C.B.P. M3 x 10 screw and the C.B.S. (P2) M3 x 10 screw that secure the Shield Plate Holder, and remove the Shield Plate Holder.
7. Remove the five screws and one washer that secure the Printer Mechanism. (four C.B.P. M3 x 10 screws, one P.W., 4.3 x 0.8 x 8 washer attached with one of the C.B.P. screws, and one C.B.S. (P2) M3 x 10 screw)

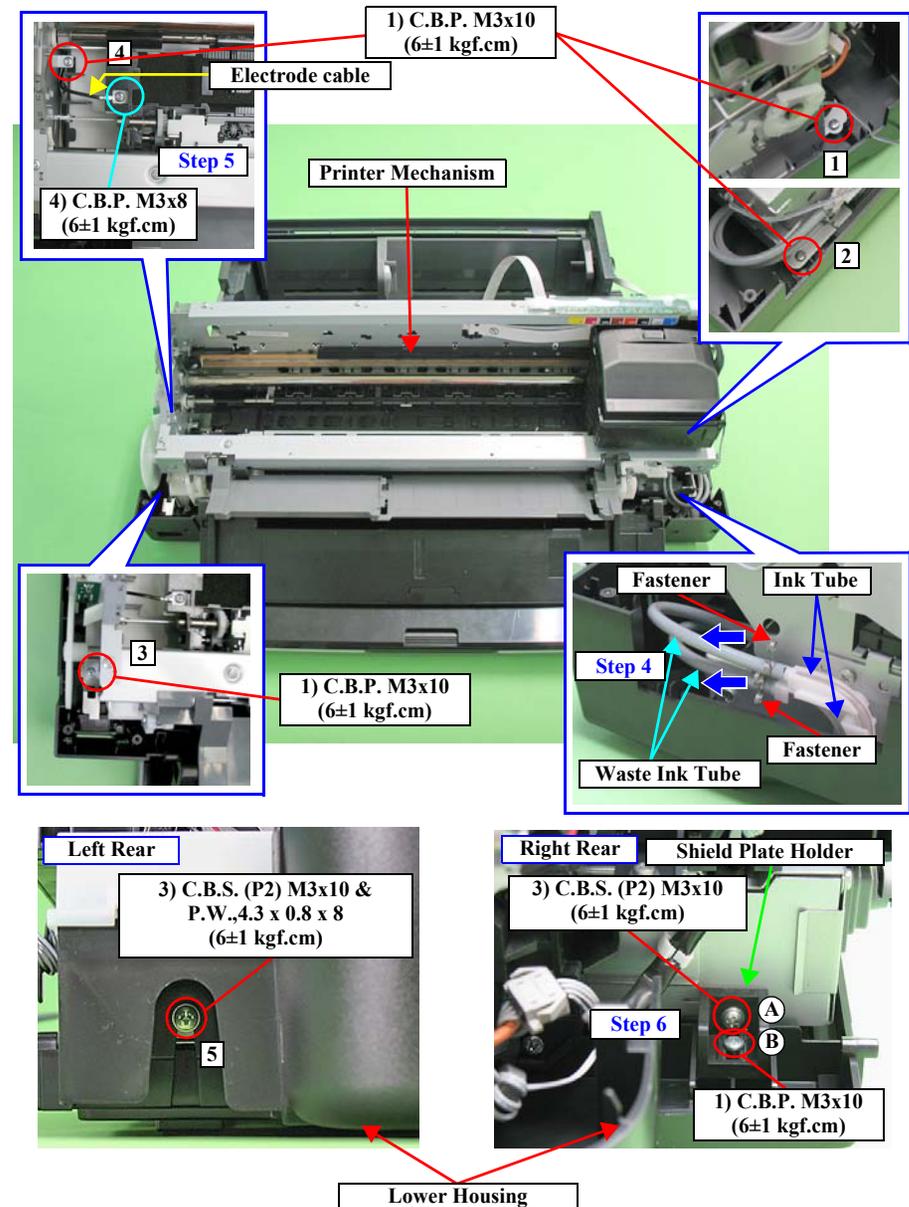


Figure 4-62. Screws that Secure the Printer Mechanism



When performing the following step, make sure to grasp the Printer Mechanism by the specified positions shown below. Otherwise, the frames may become deformed.

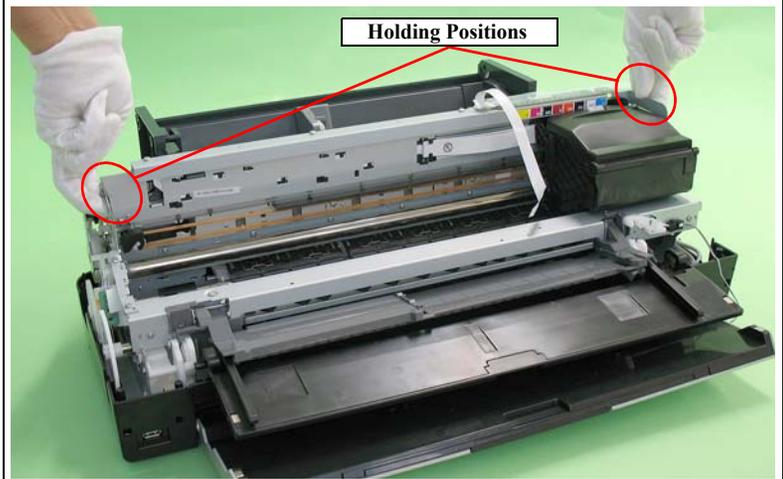


Figure 4-63. Handling the Printer Mechanism

8. Lift the Printer Mechanism grasping it by the holding positions with your hands, and remove it from the Lower Housing.



■ Insert the Waste Ink Tube as shown in the figure below, and secure it firmly with the Fastener. (refer to Figure 4-62 & Figure 4-64)

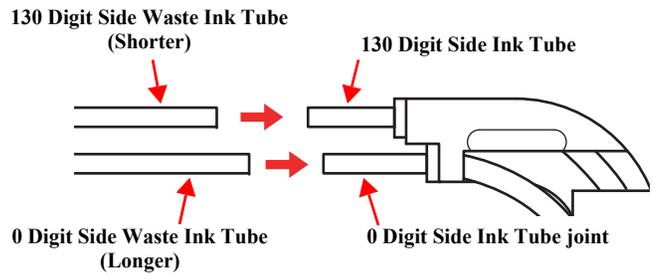


Figure 4-64. Installing the Ink Tubes

■ Confirm that the PictBridge cable and the Waste Ink Tube do not get caught in the Printer Mechanism.



■ Install the Printer Mechanism to the Lower Housing as follows. (refer to Figure 4-62)

1. Align the guide pins (x2) with the positioning holes as shown below.

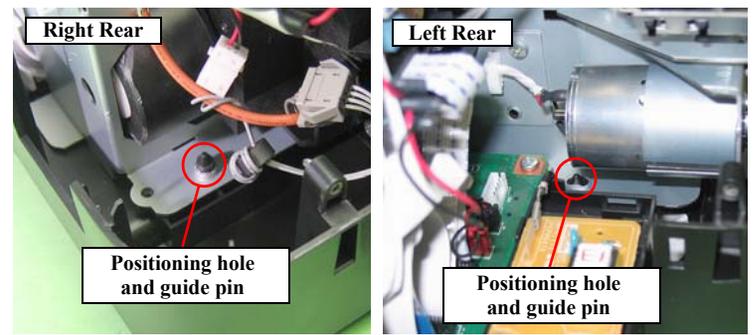


Figure 4-65. Reinstalling the Printer Mechanism

2. Place the Printer Mechanism on the Lower Housing and secure the Shield Plate Holder and the Printer Mechanism with the screw (A).
3. Verify the Printer Mechanism and Lower Housing are tightly engaged (no rattling), and then secure the Shield Plate Holder to the Lower Housing.
4. Secure the Printer Mechanism and Lower Housing with screws (x5). (Tighten the screws in the order shown in Figure 4-62)
5. Secure the electrode cable to the Front Paper Guide with the screw.

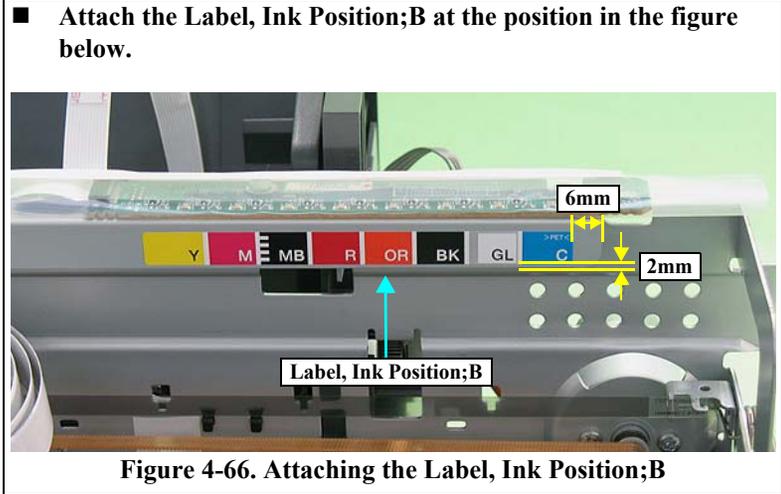


Figure 4-66. Attaching the Label, Ink Position;B



After replacing the Printer Mechanism, always make the required adjustments referring to the following.

- “Chapter 5 Adjustment (p.137)”

4.4.5 Carriage Shaft / Carriage Unit

1. Remove the Printhead / CSIC Assy. (p.92)
2. Remove the CR Scale. (p.90)
3. Remove the LED Board. (p.86)
4. Remove the APG Assy. (p.89)
5. Rotate the PG Cam (Right) to adjust its positions other than PG++ downside.

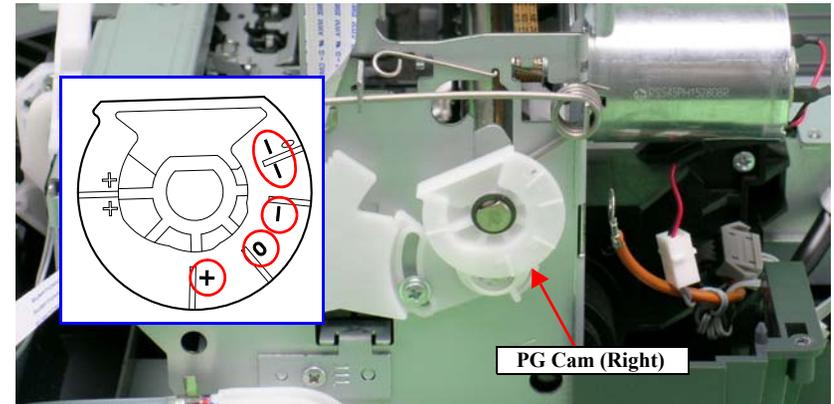


Figure 4-67. Adjusting the PG Cam

6. Remove the two C.B.S. M3 x 6 screws that secure the Frame Support Plate (Left), and remove it.

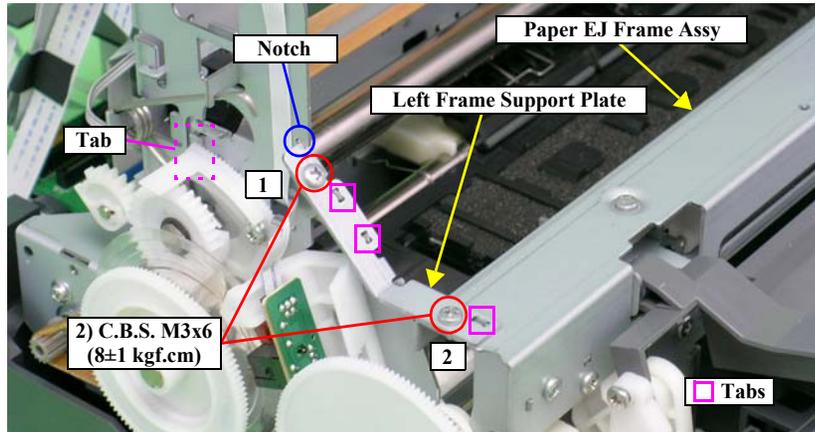


Figure 4-68. Removing the Left Frame Support Plate

REASSEMBLY



- Insert the Left Frame Support Plate into the notch on the Main Frame. See Figure 4-68.
- Align the two tabs on the Main Frame and the tab on the Paper EJ Frame Assy with the three positioning holes on the Frame Support Plate (Left). See Figure 4-68.
- Align the tab (rear side) of the Left Frame Support Plate with the outside of the Left CR Shaft Mounting Plate. See Figure 4-68.
- Tighten the screws in the order shown in Figure 4-68

7. Remove the foot of Left PG Torsion Spring from tab A, and remove the coil section from tab B to remove Left PG Torsion Spring from the Main Frame.

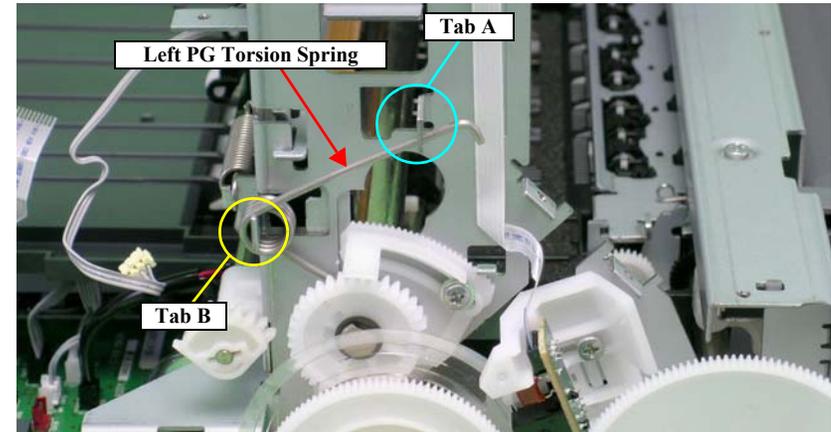


Figure 4-69. Removing the Left PG Torsion Spring

8. Remove the foot of Right PG Torsion Spring from tab A, and remove the coil section from tab B to remove the Right PG Torsion Spring from the Main Frame.

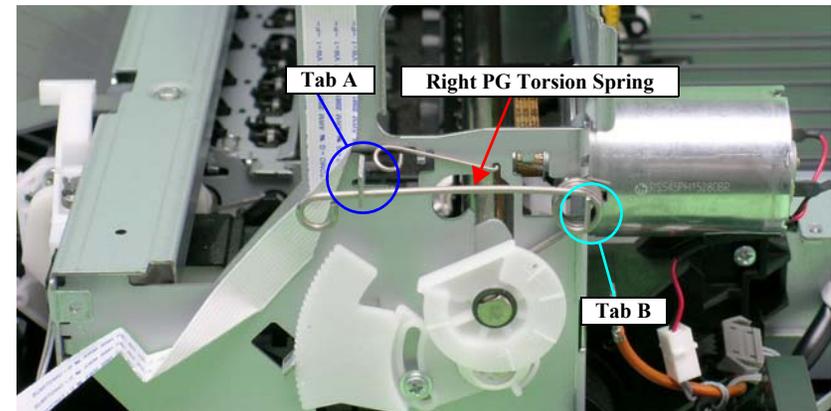


Figure 4-70. Removing the Right PG Torsion Spring

REASSEMBLY



Place the feet of Left PG Torsion Spring and Right PG Torsion Spring on the Carriage Shaft.

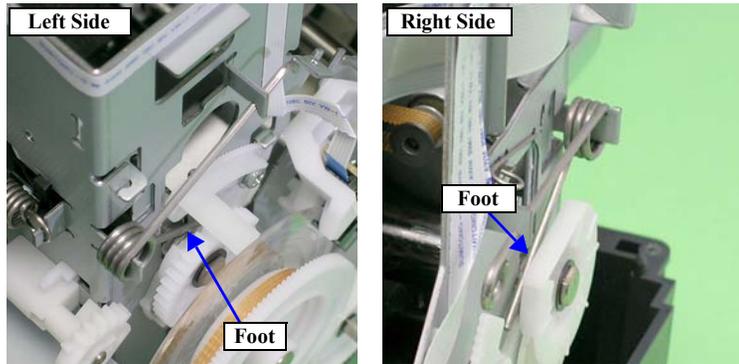


Figure 4-71. Reinstalling PG Torsion Springs

- Remove CR Shaft Mounting Plate Fixed Spring from the tab and notch on the Main Frame, and pull out the spring in the direction of the arrow.

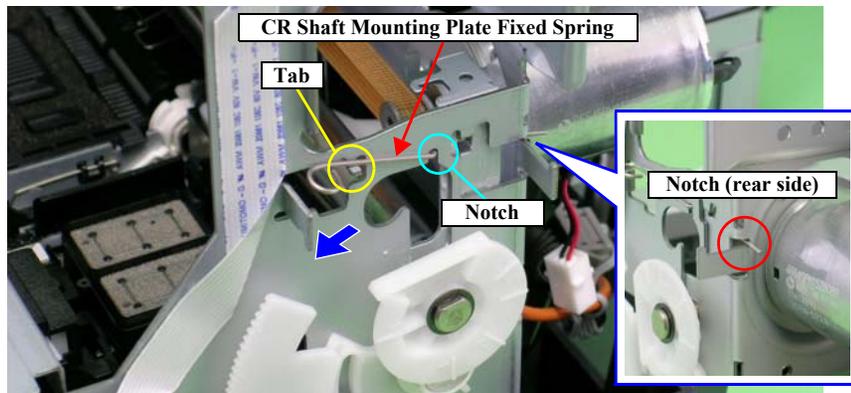


Figure 4-72. Removing CR Shaft Mounting Plate Fixed Spring

REASSEMBLY



Insert the foot of CR Shaft Mounting Plate Fixed Spring into the notch on the Main Frame (rear side). (See Figure 4-72.)

- Remove the extension spring for the Driven Pulley Holder from the Main Frame and the tab on the Drive Pulley Holder with needle-nose pliers.

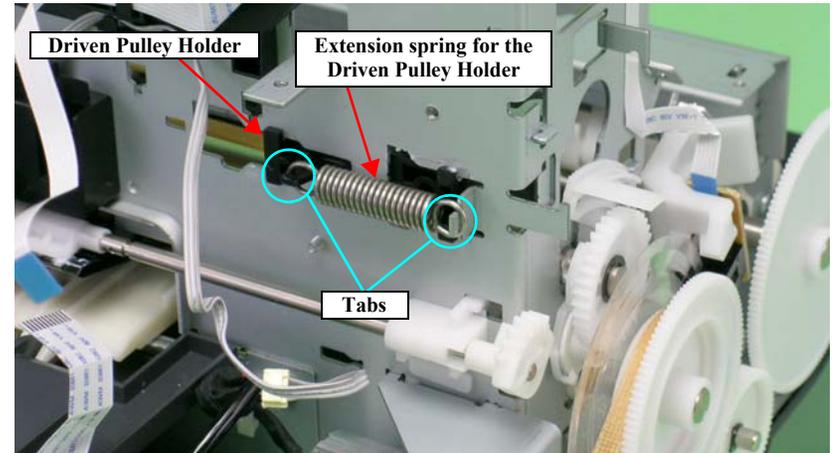


Figure 4-73. Removing the Extension Spring for the Driven Pulley Holder

- Slide Driven Pulley Holder to the right end of the notch on the Main Frame, and Remove the Driven Pulley Holder toward you.

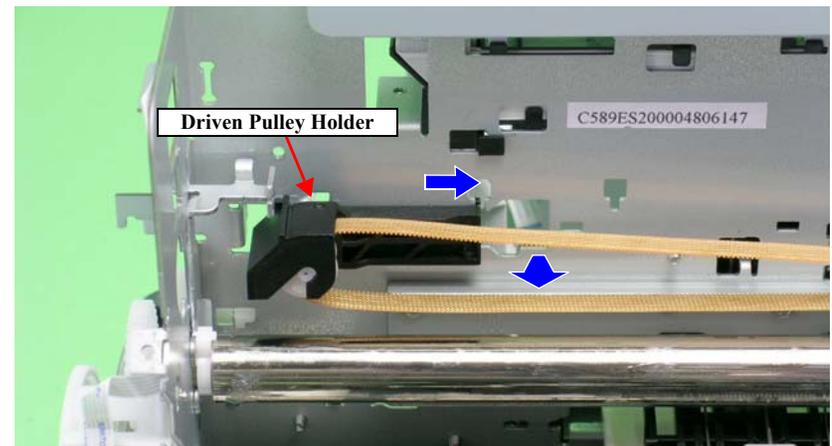


Figure 4-74. Removing the Driven Pulley Holder

12. Remove the CR Drive Belt from the CR Motor Pinion Gear.

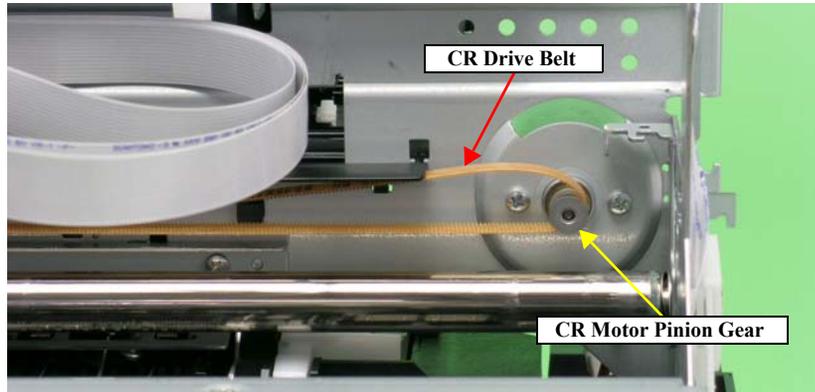


Figure 4-75. Removing the CR Drive Belt

13. Remove the four C.B.S. (P4) M3 x 6 screws that secure the CR Guide Plate, and remove it from the Main Frame.

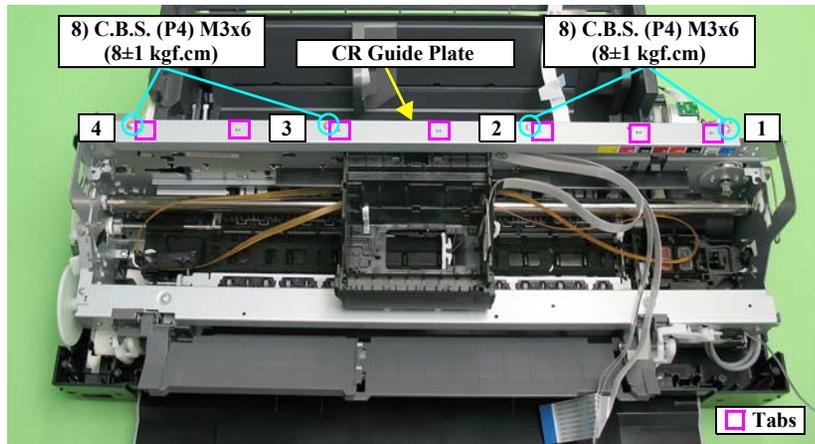


Figure 4-76. Removing the CR Guide Plate



- Align the positioning holes on the CR Guide Plate with the seven tabs on the Main Frame. See Figure 4-76.
- Tighten the screws in the order shown in Figure 4-76.

14. Loosen the C.B.S. (P4) M3 x 8 screw that secures the Left Parallelism Adjust Bushing, and rotate the Bushing toward the front of the Printer Mechanism to prevent interference between the Flag of the Parallelism Adjust Bushing and the Left PG Cam.

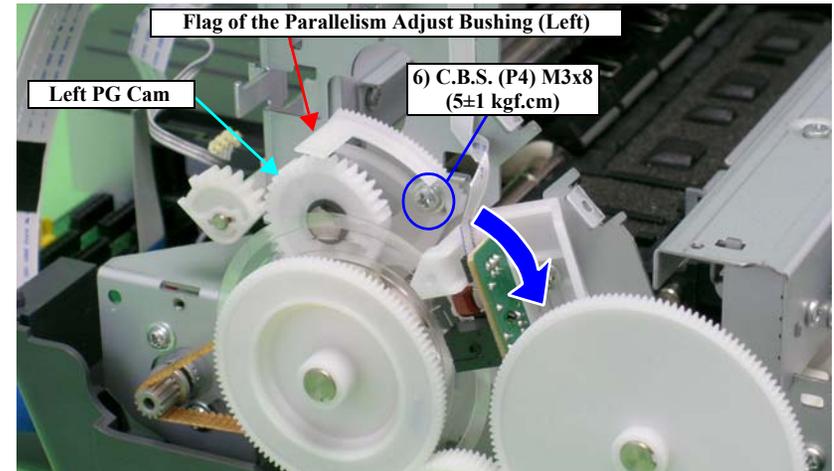


Figure 4-77. Rotating the Left Parallelism Adjust Bushing

15. Slide the Left CR Shaft Mounting Plate upwards, and release the tab on the Left CR Shaft Mounting Plate from the notch on the Main Frame to rotate the Mounting Plate toward you.

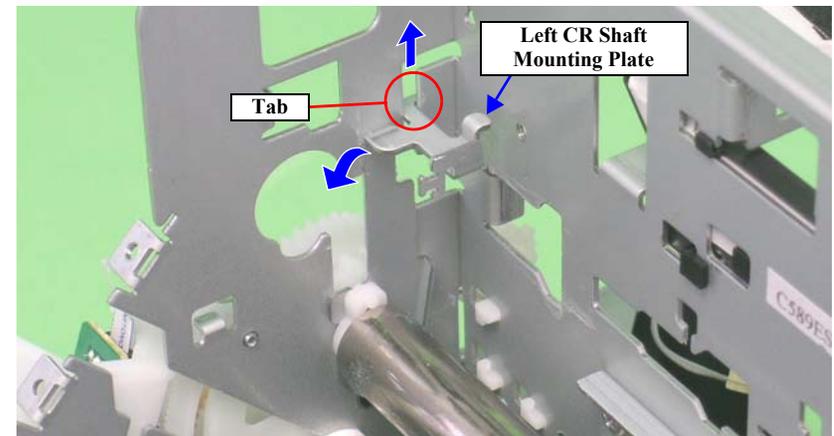


Figure 4-78. Rotating the Left CR Shaft Mounting Plate

16. Lift the Carriage Shaft upwards, and remove the Carriage Shaft Spacer from the Carriage Shaft with tweezers.

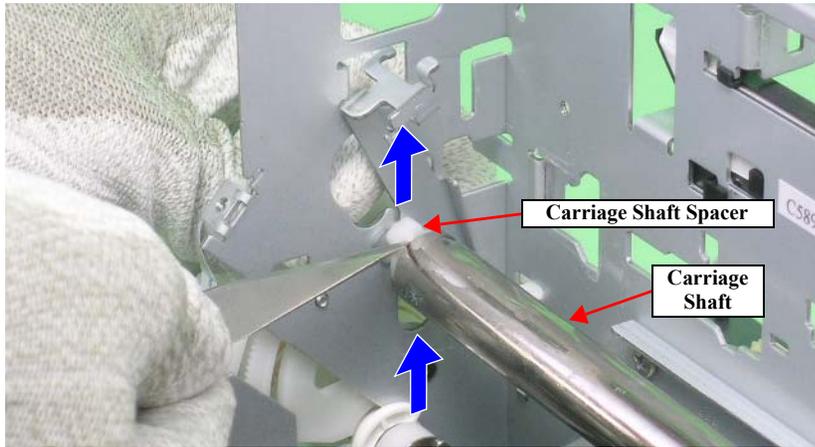


Figure 4-79. Removing the Carriage Shaft Spacer

18. Lift the Carriage Shaft within the hole on the Main Frame, and remove the Spacer and Left PG Cam from the Carriage Shaft.

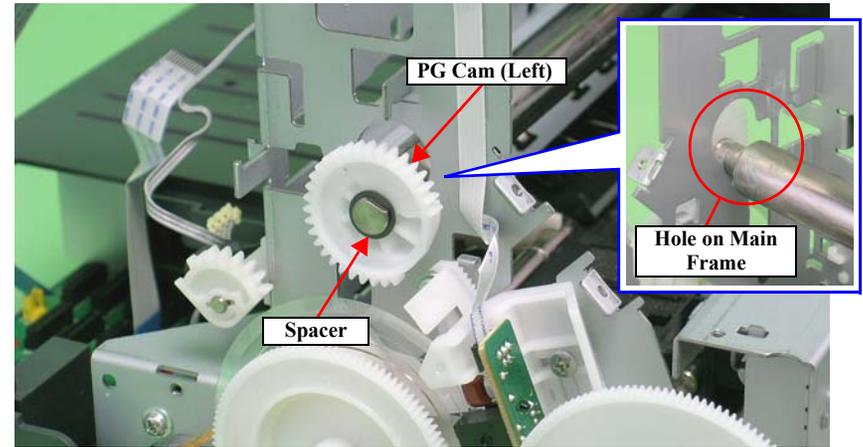


Figure 4-81. Removing Left PG Cam

17. Rotate the Left CR Shaft Mounting Plate toward you to remove the Bushing on the Left CR Shaft Mounting Plate from the Carriage Shaft.

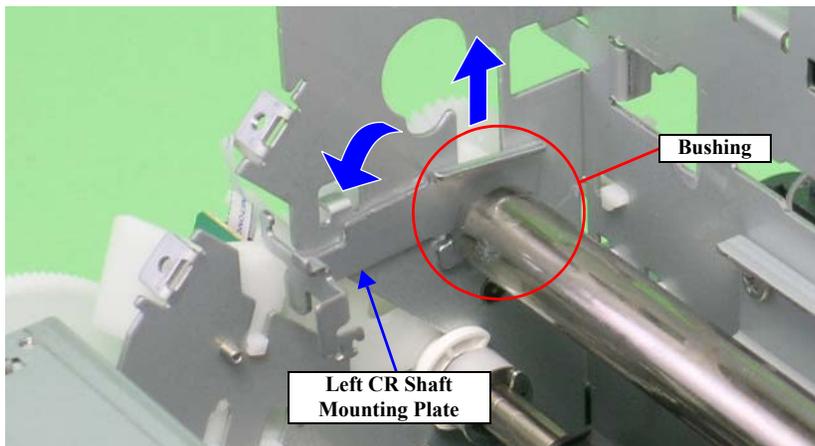


Figure 4-80. Removing the Left CR Shaft Mounting Plate

19. Remove the Spacer and Right PG Cam from the Carriage Shaft.

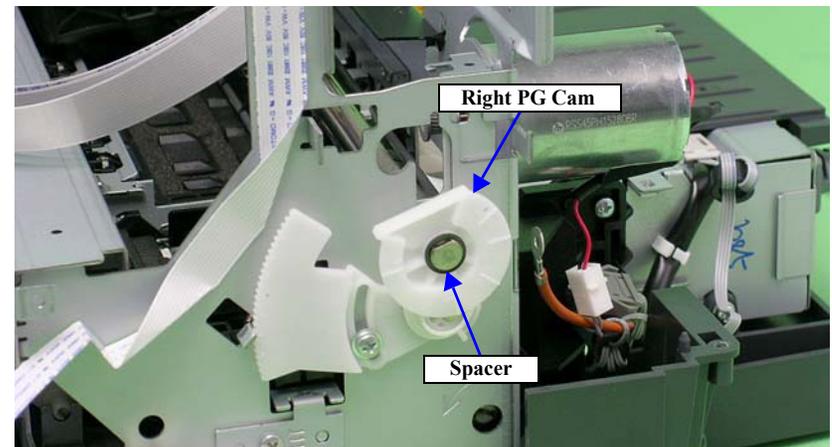


Figure 4-82. Removing Right PG Cam



Install the Right PG Cam so that one of these positions marked "0", "+" or "++" faces downward.

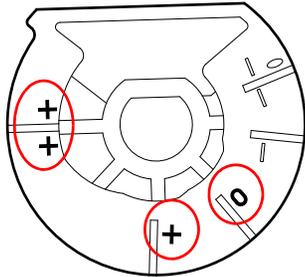


Figure 4-83. Right PG Cam Installation Direction

20. Pull the Right CR Shaft Mounting Plate away from the tab on the Main Frame and rotate toward you.

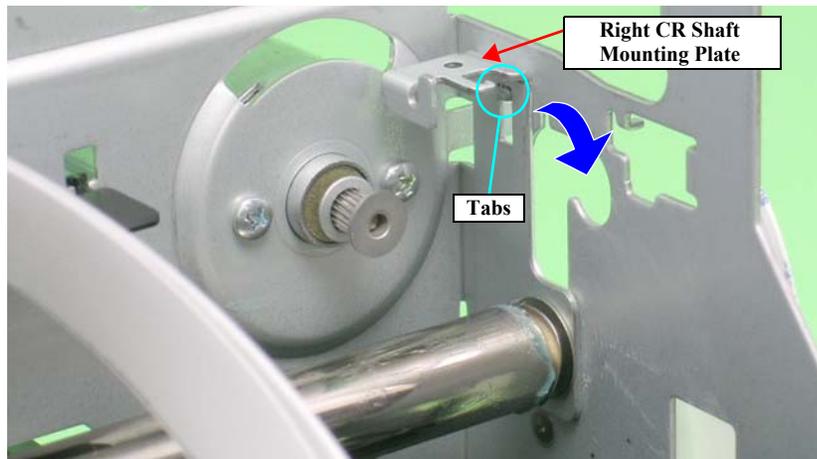


Figure 4-84. Rotating the Right CR Shaft Mounting Plate



When performing the following procedure, take care not to scratch the Carriage Shaft.

21. Slide the Carriage Unit to the left side to prevent the CR Scale Cover from interfering with the rear of the Carriage Unit, slide the Carriage Shaft to the left side and pull out its right end from the Main Frame, and pull out the Carriage Shaft from the Main Frame and Carriage Unit.

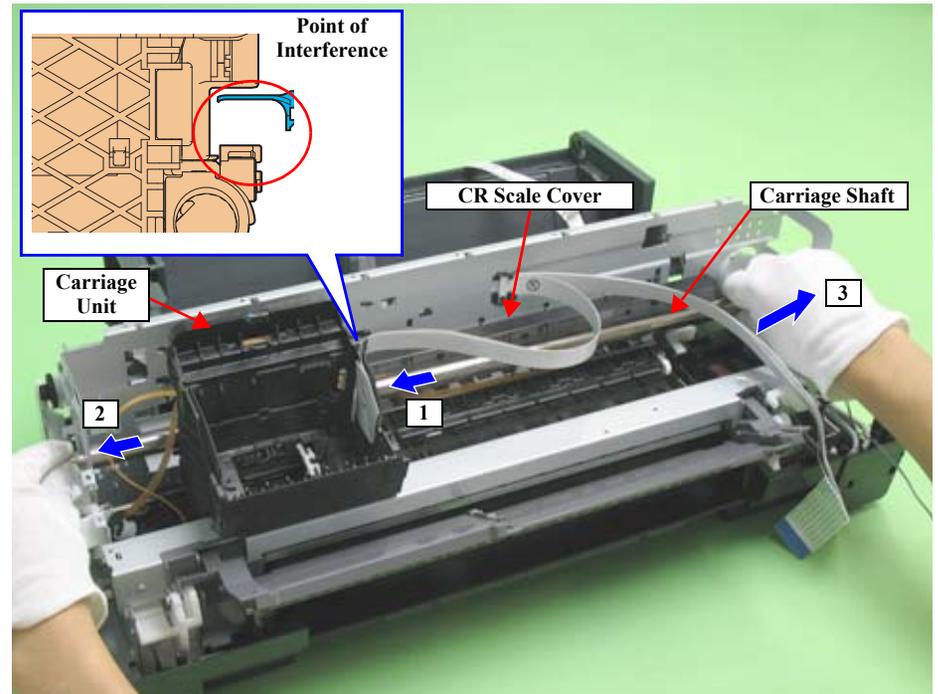


Figure 4-85. Removing the Carriage Shaft



- Set the longer end of the Carriage Shaft to the left side.
- When the Carriage Shaft is removed, the Plain Spring and Leaf Spring that are attached to the right end of the Carriage Shaft may drop off. In such case, be sure to attach them in the order as shown in the figure below.

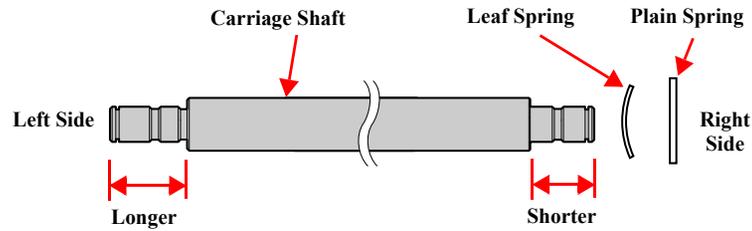


Figure 4-86. Reinstalling the Carriage Shaft

22. Turn the Belt Holder Mounting Plate in the direction of the arrow, and remove it from the Carriage Unit.

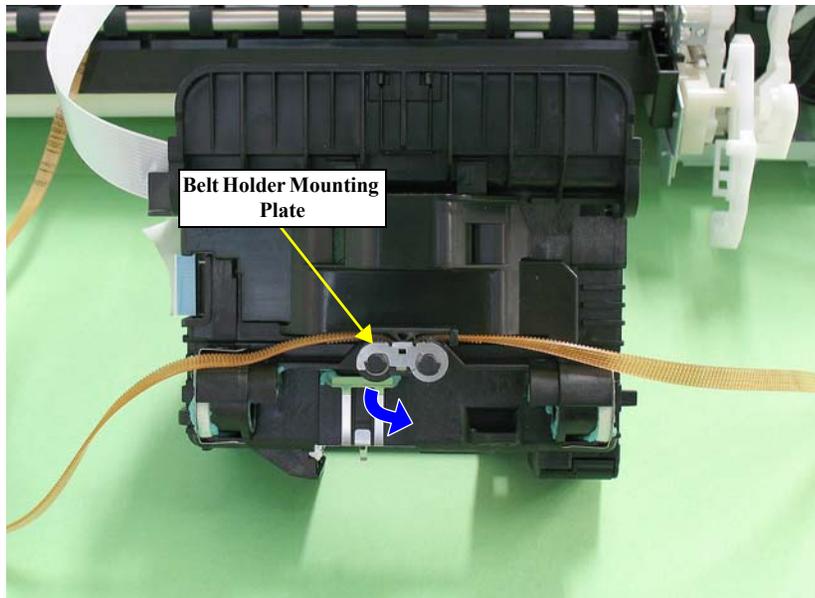


Figure 4-87. Removing the Belt Holder Mounting Plate

23. Remove the Belt Holder from the Carriage unit.

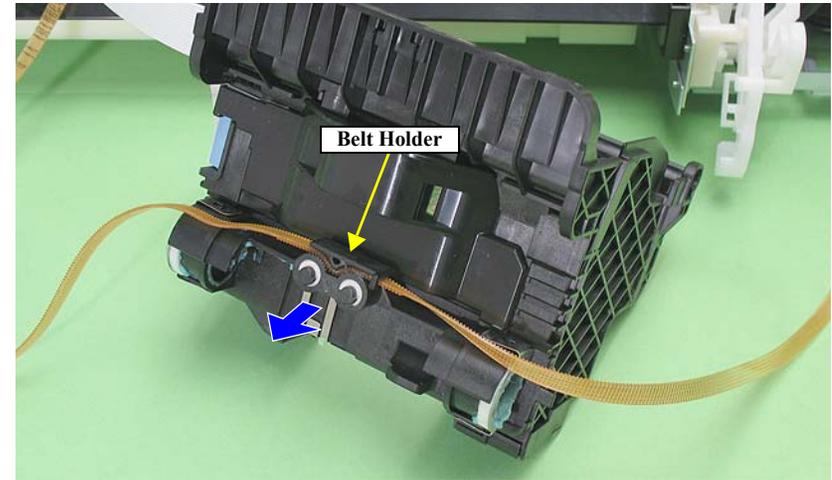


Figure 4-88. Removing the Belt Holder

24. Release the CR Encoder Board Holder from the three Tabs to remove it from the Carriage Unit.

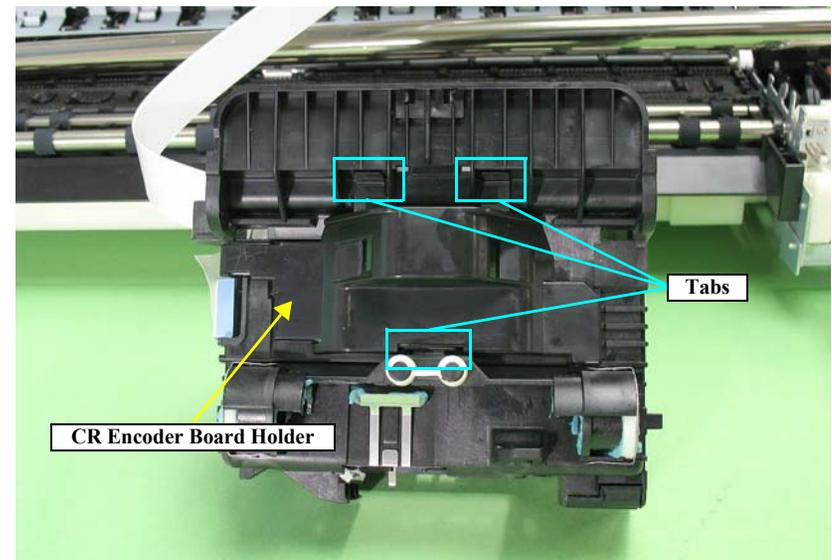


Figure 4-89. Removing the Belt Holder

25. Disconnect the Sensor FFC from the connector on the CR Encoder Board, pull out the Sensor FFC from the Carriage Unit, and remove the Carriage Unit.

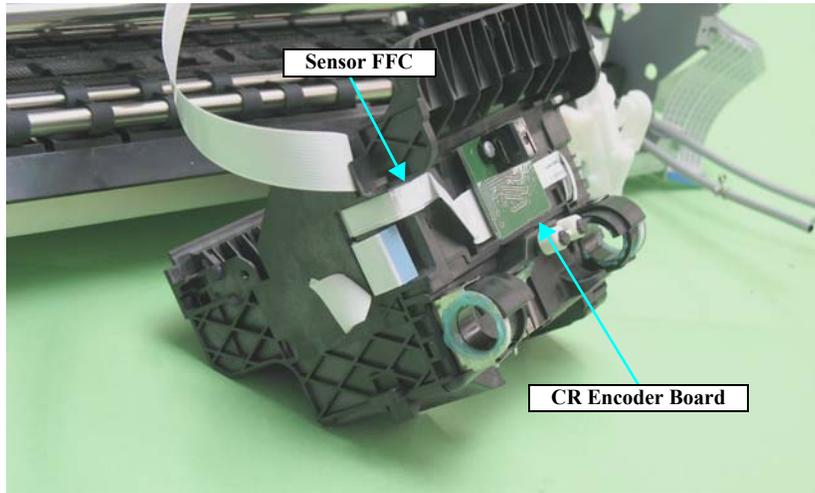


Figure 4-90. Removing the Carriage Unit



After replacing or removing the Carriage Shaft and Carriage Unit, always make the required adjustments referring to the following.

- “Chapter 5 [Adjustment \(p.137\)](#)”



- When the Carriage Unit is removed from the Printer Mechanism, the CR Pad may drop off. In such case, correctly install it referring to the figure below.

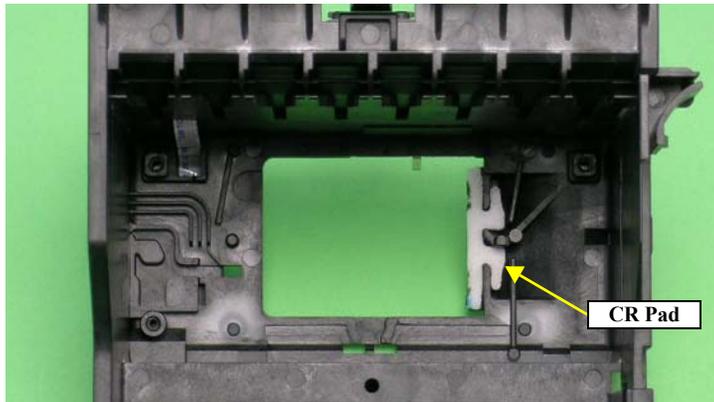


Figure 4-91. Reinstalling the CR Pad

4.4.6 ASF Assy

1. Remove the Printer Mechanism. (Refer to 4.4.4 Lower Housing / Printer Mechanism (p.96))
2. Remove the C.B.S. M3 x 8 screw that secures the Earth cables on the right rear side of the printer, and remove the Earth cables.
3. Disconnect the ASF Motor connector from the Relay connector.
4. Disconnect the Relay connector cable from the ASF Assy.

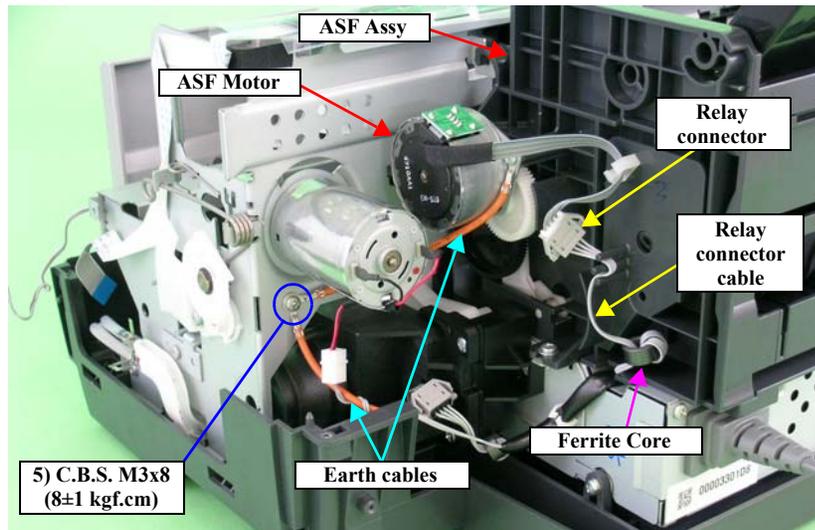


Figure 4-92. Releasing the Cables (1)



- Secure the two Earth cables together with the screw.
- Referring to [Figure 4-92](#), correctly route the Relay connector cable.

5. Disconnect all the cables and the FFCs from the connectors on the Relay Board.
 - CN1 : Relay FFC
 - CN2 : PE Sensor cable
 - CN4 : APG Sensor cable (lower side)
 - CN5 : APG Sensor cable (upper side)
 - CN6 : PF Encoder Sensor FFC



When performing the following steps, be extremely careful not to damage the cables. If having trouble disassembling, remove the High Voltage Module Cover to make the work easier. (refer to 4.3.3 High Voltage Module Step2 (p87) .)

6. Disconnect the FFC bundled by the acetate tape from the CN6 to CN22 on the Main Board, and release it from the groove on the ASF Assy.
7. Disconnect the APG Motor cable and PE Sensor cable from the ASF Assy.
8. Peel off the PF Encoder FFC secured by two pieces of double-sided adhesive tape from the ASF Assy.

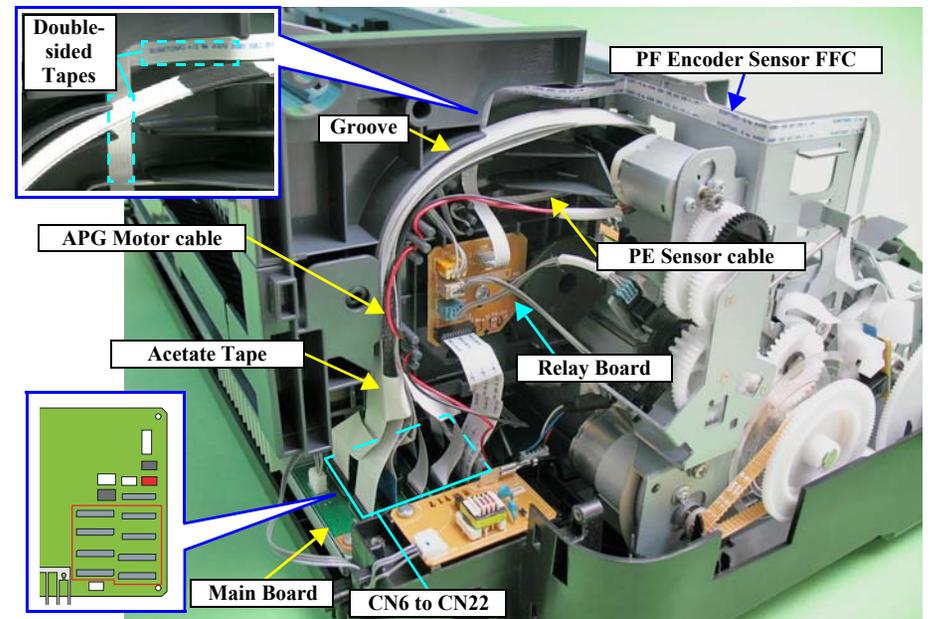


Figure 4-93. Releasing the Cables (2)



Referring to [Figure 4-93](#), correctly route each of the cables and FFCs.



When only removing the ASF Assy, you do not need to perform "5.2.5 ASF Guide Roller LDs Position Adjustment (p159)". In that case, mark the installing positions of the Guide Roller LDs before removing them, and make sure to align the markings when installing the Guide Roller LDs.

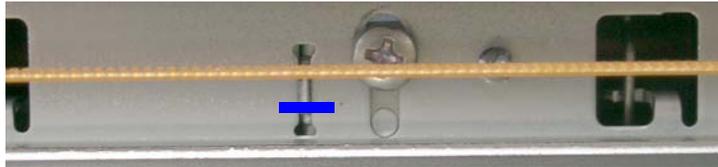


Figure 4-94. Marking Position

9. Remove the two C.B.S. M3 x 6 screws that secure the two Guide Roller LDs.
10. Gently pull the LD Roller Shaft to the rear of the printer, and remove the Guide Roller LDs.

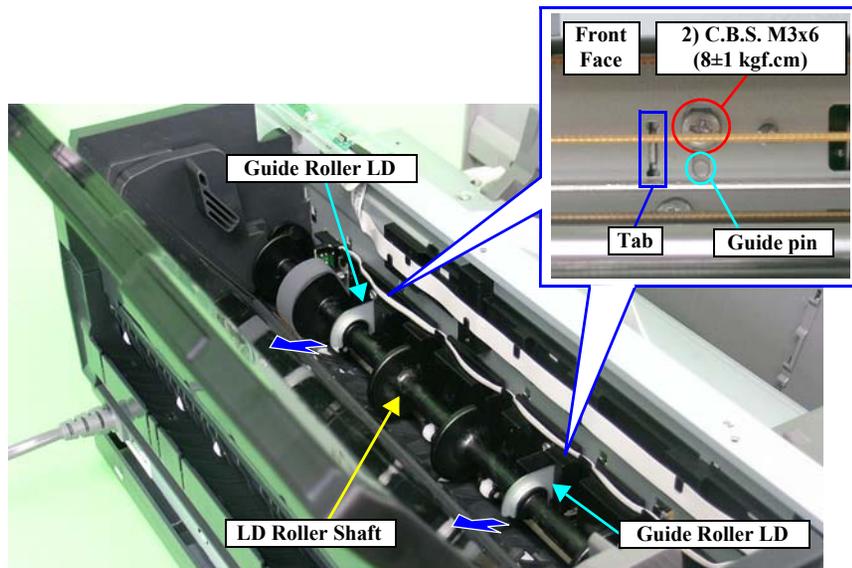


Figure 4-95. Removing the Guide Roller LD



Align the guide pins and tabs on the Guide Roller LDs with the positioning holes on the Main Frame. (Refer to [Figure 4-95](#).)

11. Remove the three C.B.S. (P4) M3 x 8 screws that secure the ASF Assy, and remove the ASF Assy from the Printer Mechanism.

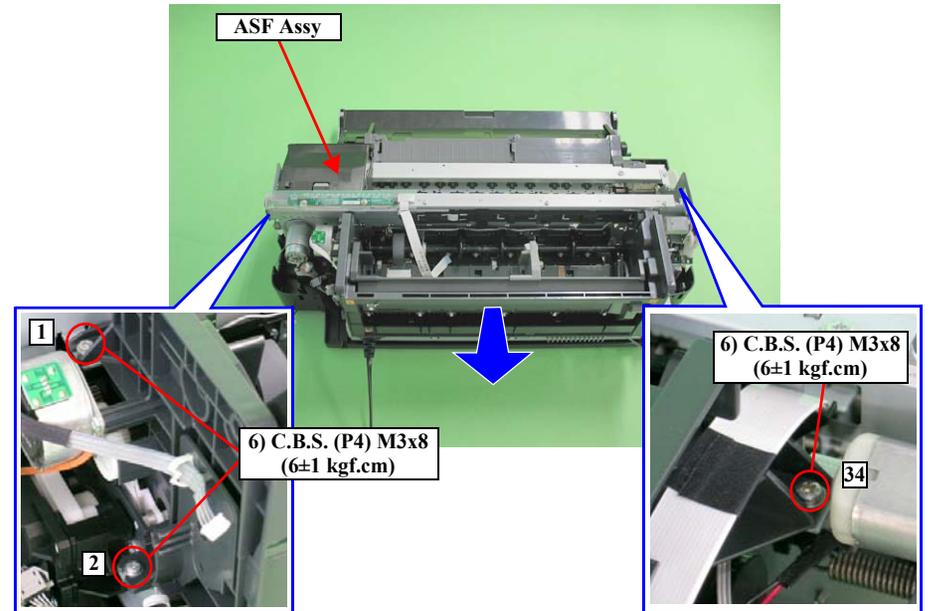


Figure 4-96. Removing the ASF Assy



- Align the guide pin and four Tabs on the ASF Assy with the positioning holes on the Main Frame so that there is no gap between the ASF Assy and the Main Frame.

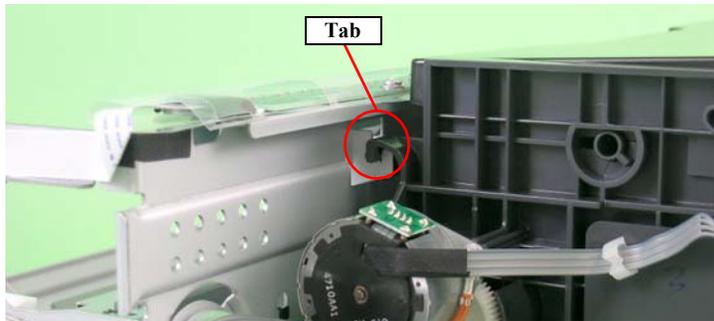


Figure 4-97. Reinstalling the ASF Assy

- Tighten the screws in the order shown in [Figure 4-96](#).



After replacing or removing the ASF Assy, always make the required adjustments referring to the following.

- “Chapter 5 [Adjustment \(p.137\)](#)”

4.4.7 Front Paper Guide Pad

1. Remove the Printer Mechanism. (Refer to 4.4.4 Lower Housing / Printer Mechanism (p.96))
2. Remove the Front Paper Guide Pads and Front Paper Guide Pad Protection from the Front Paper Guide with tweezers.

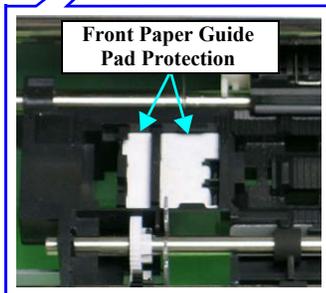
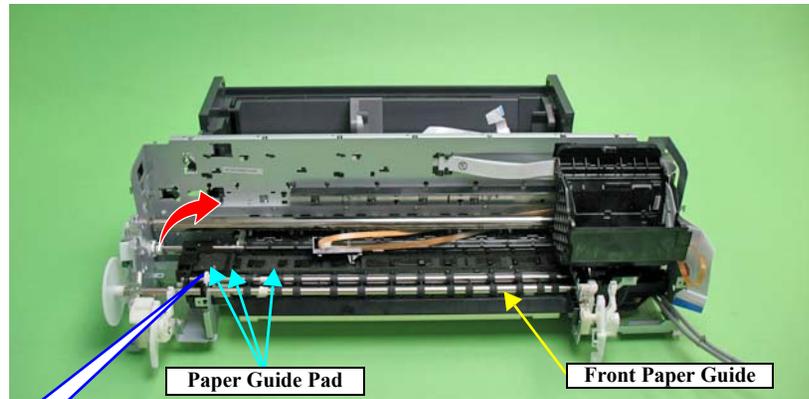


Figure 4-98. Removing the Front Paper Guide Pads and the Front Paper Guide Pad Protection



Take care to prevent the grease contained on the Front Paper Guide Pads and Front Paper Guide Pad Protection from sticking to other parts.



After installing the Front Paper Guide Pads and Front Paper Guide Pad Protection, lift the Printer Mechanism, and check the following points.

1. Make sure that the tabs on the Pads are not cut midway.
2. Make sure that all tabs are in place on the Front Paper Guide, and that they are facing down (towards the Waste Ink Pads) without any folds.
3. Make sure that the tab foldbacks are protruding completely from the Front Paper Guide.

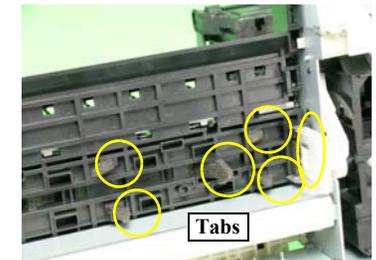
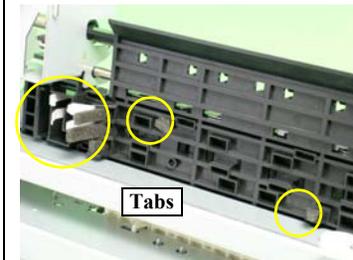


Figure 4-99. Reinstalling the Front Paper Guide Pad (1)

4. Make sure that the pad is placed under a tab of the Front Paper Guide.

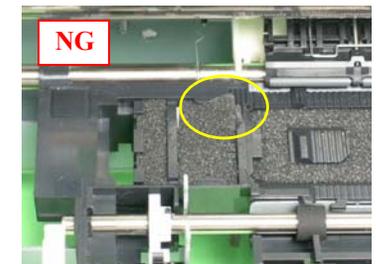
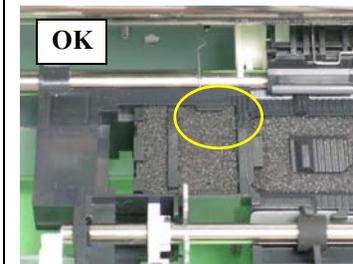


Figure 4-100. Reinstalling the Front Paper Guide Pad (2)

5. Make sure that all the tabs on the pads are fitted into the securing section under the Front Paper Guide.

4.4.8 Waste Ink Pad / Waste Ink Tube Left/Right

1. Remove the Printer Mechanism. (Refer to 4.4.4 Lower Housing / Printer Mechanism (p.96))
2. Remove the C.B.P. M3 x 8 screw that secures the Ink Tube Holder, and remove the Ink Tube Holder.
3. Remove the 12 Waste Ink Pads from the Lower Housing.
4. Remove the Waste Ink Tube Left/Right from the Lower Housing.

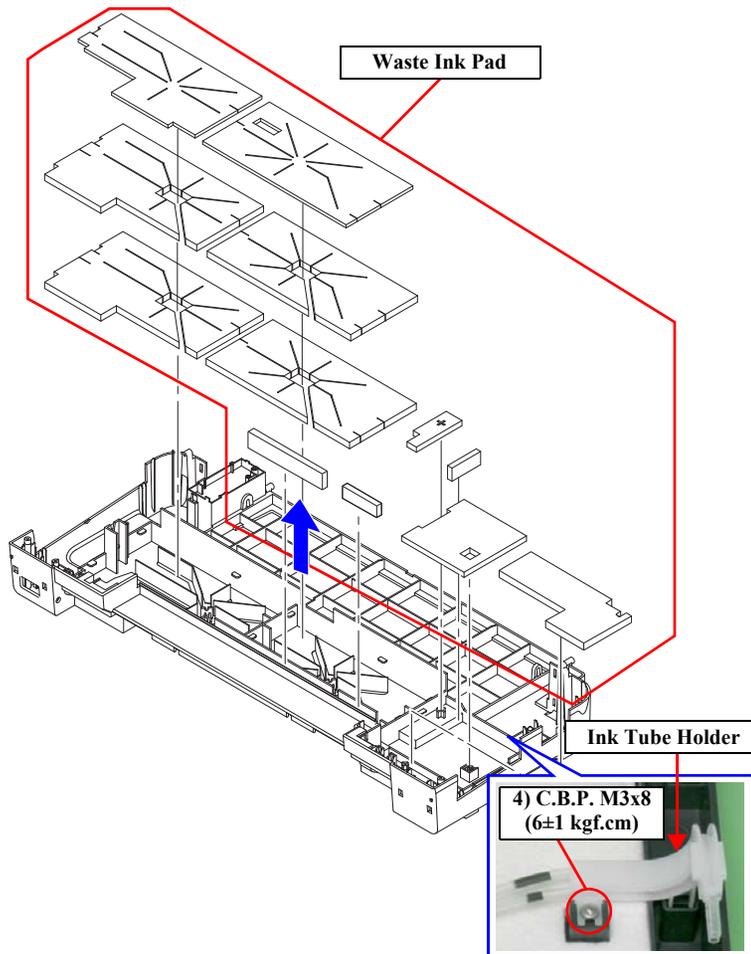


Figure 4-101. Removing the Waste Ink Pad



- Check the positions and the routing of the upper and lower Waste Ink Tubes.
 0 digit side : Lower side
 130 digit side : Upper side

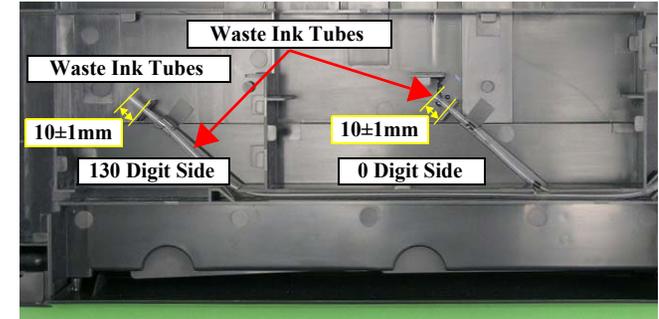


Figure 4-102. Positions of Waste Ink Tubes



- After replacing or removing the Waste Ink Pads, always make the required adjustments referring to the following.
 - “Chapter 5 Adjustment (p.137)”

4.4.9 Foot

1. Remove the Printer Mechanism. (*Refer to 4.4.4 Lower Housing / Printer Mechanism (p.96)*)
2. Remove the six foot at the backside of the Lower Housing.

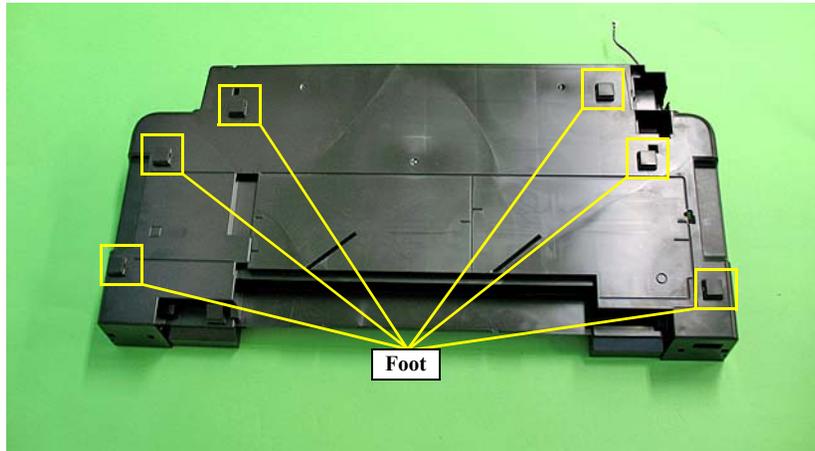


Figure 4-103. Removing the Foot

4.4.10 PictBridge Holder Assy

1. Remove the Printer Mechanism. (*Refer to 4.4.4 Lower Housing / Printer Mechanism (p.96)*)
2. Remove the two C.B.P. M3 x 8 screws that secure the PictBridge Holder Assy and remove the PictBridge Holder Assy.

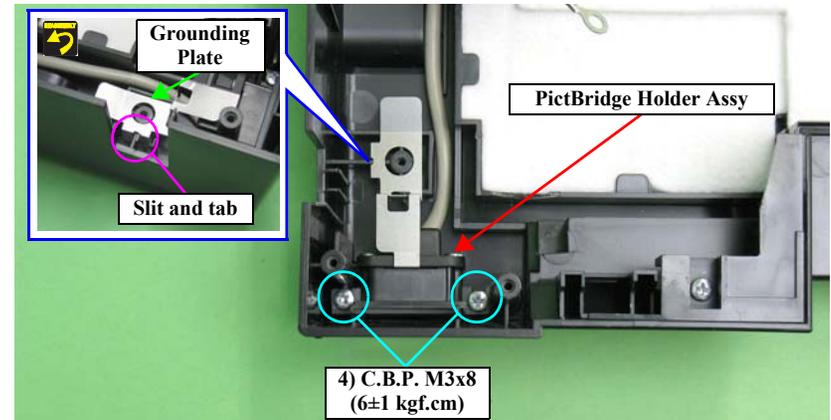


Figure 4-104. Removing the PictBridge Holder Assy



- Match the positioning slit of the Grounding Plate with the tab of the Lower Housing as shown in [Figure 4-104](#)
- Route the PictBridge cable through the groove of the Lower Housing as shown below.

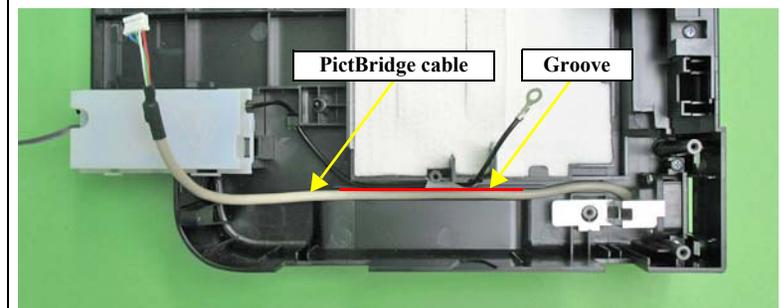


Figure 4-105. Routing the PictBridge Cable

4.4.11 Paper EJ Frame Assy / Front Cover / CDR Tray Base

1. Remove the Upper Housing Support Assy. (p.83)
2. Release the Front Cover from the two guide pins of the CDR Tray Base.
3. Release the Front Cover from the groove of the Lower Housing, and remove the Front Cover.
4. Remove the Left Frame Support Plate. (refer to 4.4.5 Carriage Shaft / Carriage Unit Step5 (p98), Step6(p99).)
5. Return the rotation position of the Right PG Cam.
6. Remove the four C.B.S. M3 x 6 screws and two C.B.P. M3 x 8 screws that secure the Paper EJ Frame Assy.

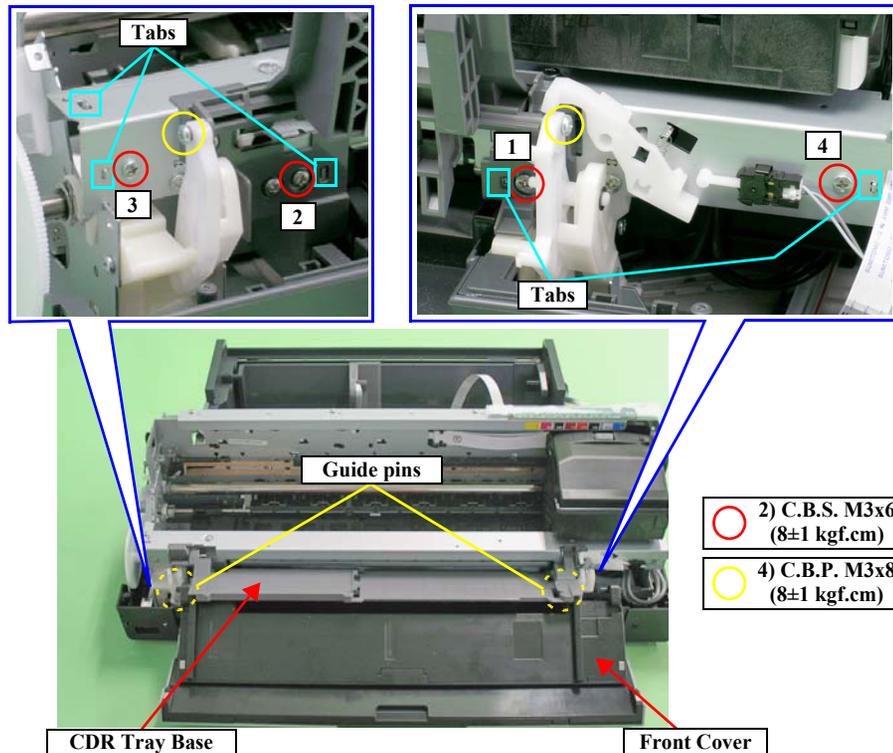


Figure 4-106. Screws that Secure the Paper EJ Frame Assy



When performing the following procedure, take care not to scratch the Star Wheel.

7. Remove the two guide pins on the CDR Tray Base from the Left and Right CDR Release Lever Sub Assy.
8. Pull the Star Wheel Roller toward you, and remove the CDR Tray Base and the Paper EJ Frame Assy from the Printer Mechanism keeping the Assy from coming in contact with the Right CDR Release Lever Sub Assy and the tab on the Right CDR Cover.

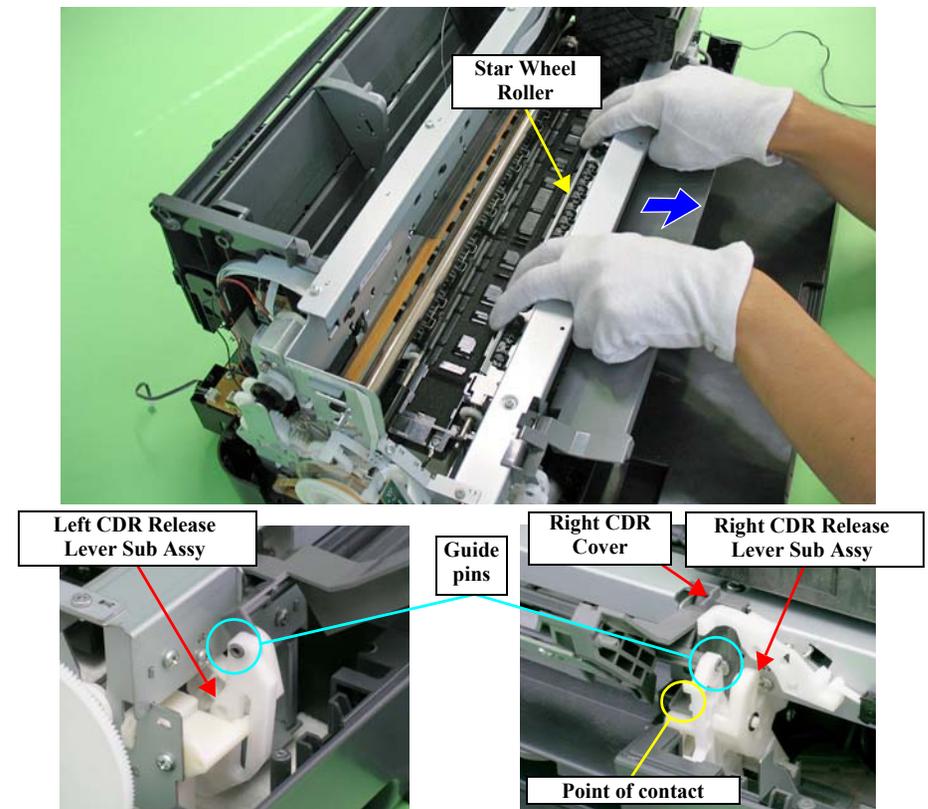


Figure 4-107. Removing the Paper EJ Frame Assy

- Remove the C.B.S. M3 x 6 screw that secures the Right CDR Tray Base Support, and remove the Right CDR Tray Base Support.

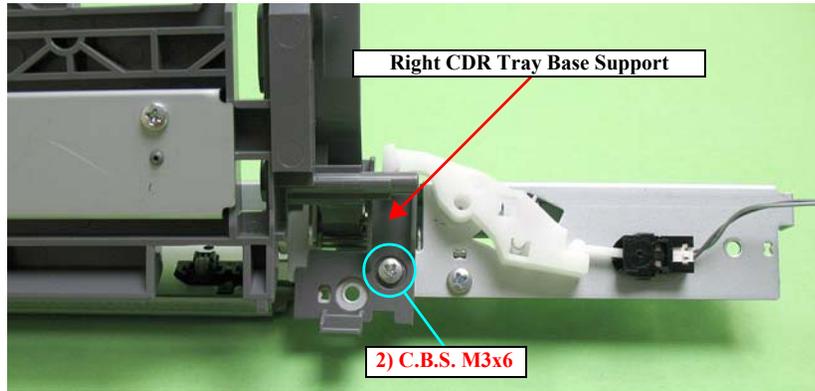


Figure 4-108. Remove the CDR Tray Base Support

- Remove the E Ring that secures the CDR Tray Base and remove the CDR Tray Base in the direction of the arrow.

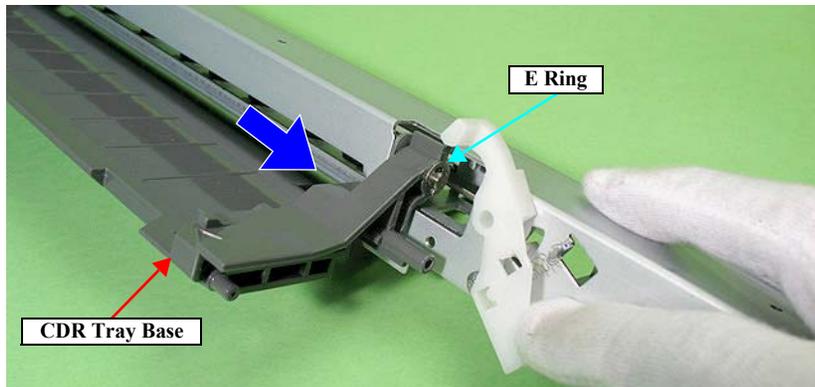


Figure 4-109. Remove the CDR Tray Base



- Hook both rear ends of the Paper EJ Frame Assy onto the tabs on the Main Frame.
- Align the bearing of the CDR Release Level Sub Assy with the Paper EJ Release Shaft.

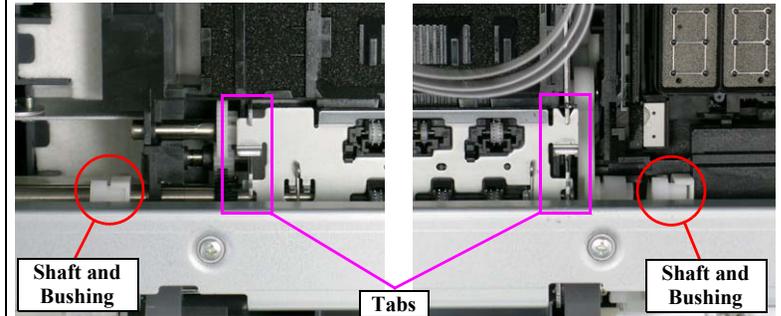


Figure 4-110. Reinstalling the Paper EJ Frame Assy

- Attach the LABEL,CAUTION,CDR;B (parts code:1470311) at the position as shown below.

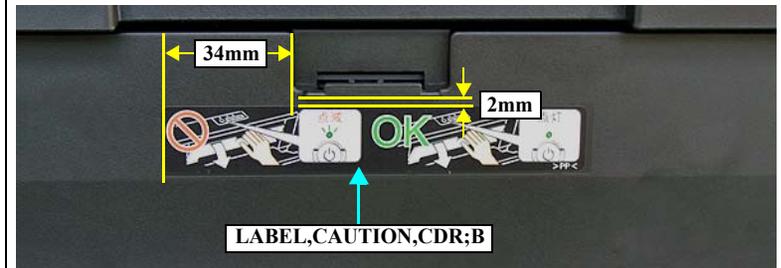


Figure 4-111. Attaching Position of the CDR Caution Label

- Match the tabs with the five positioning holes. See Figure 4-106.
- Tighten the screws in the order shown in Figure 4-107



- After replacing or removing the Paper EJ Frame Assy, always make the required adjustments referring to the following.
- “Chapter 5 Adjustment (p.137)”

4.4.12 CDR Release Lever Sub Assy

1. Remove the Paper EJ Frame Assy / Front Cover / CDR Tray Base. (p.112)
2. Remove the Shaft on the Right CDR Release Base from the bushing on the CDR Release Lever.

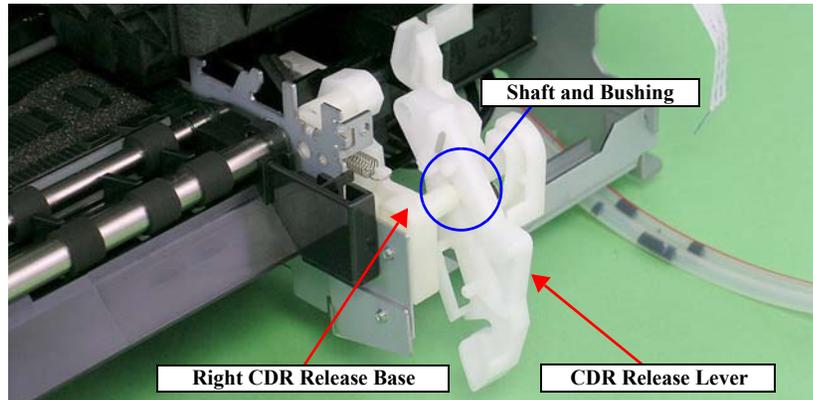


Figure 4-112. Removing the Right CDR Release Lever Sub Assy (1)

3. Remove the C.B.S. M3 x 6 screw that secures the Right CDR Release Lever Sub Assy.

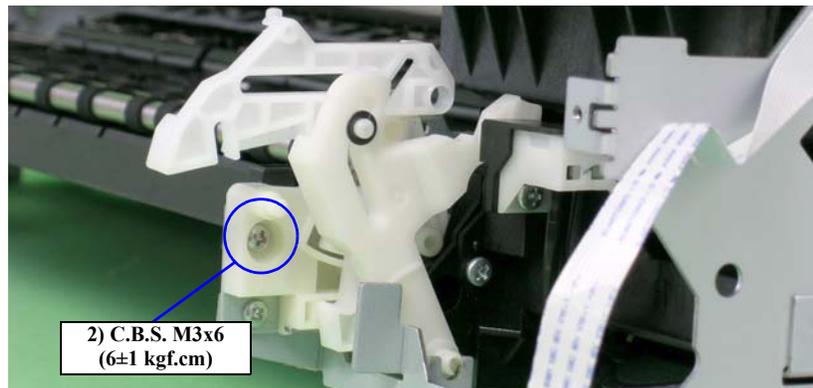


Figure 4-113. Removing the Right CDR Release Lever Sub Assy (2)

4. To prevent parts from dropping, refit the shaft on the Right CDR Release Base into the CDR Release Lever.
5. Press the guide pin that secures the Right CDR Release Lever Sub Assy with tweezers, and remove it upwards from the Main Frame.

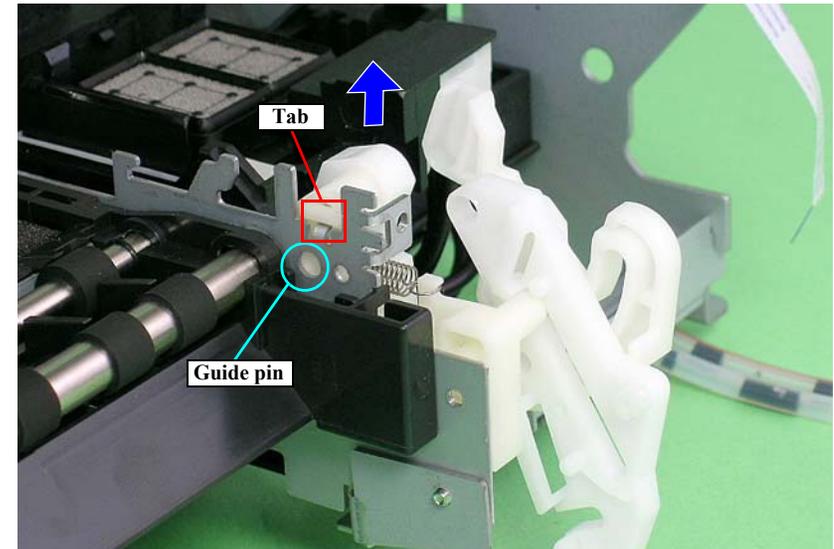


Figure 4-114. Removing the Right CDR Release Lever Sub Assy (3)

6. Remove the Spur Gear 68 from the Paper EJ Roller Shaft.

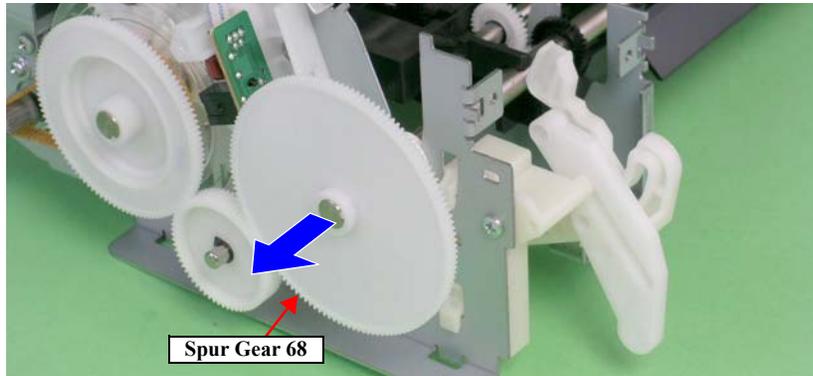


Figure 4-115. Removing the Spur Gear 68

7. Remove the C.B.P. M3 x 6 screw that secures the Left CDR Release Lever Sub Assy.
8. Press the small tab of the Left CDR Release Lever Sub Assy with a flathead screwdriver, and remove the Left CDR Release Lever Sub Assy upward from the Main Frame.

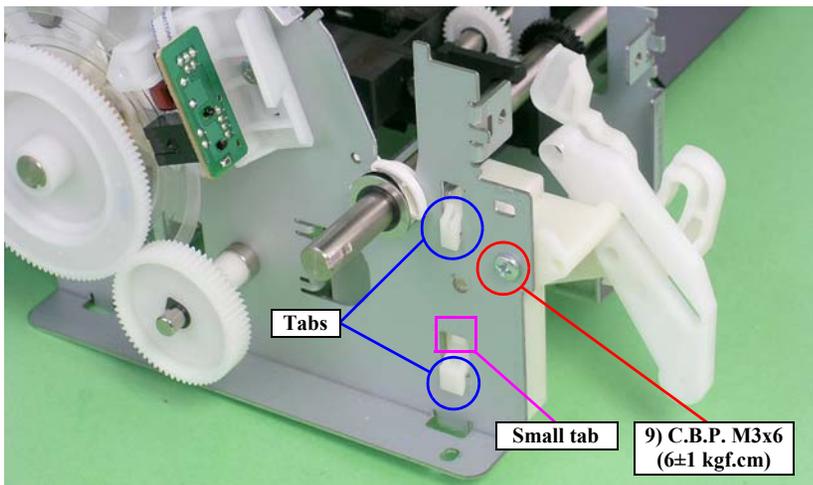


Figure 4-116. Removing the Left CDR Release Lever Sub Assy



- Make sure that the Left CDR Release Lever Sub Assy is correctly assembled as shown in the figure below.

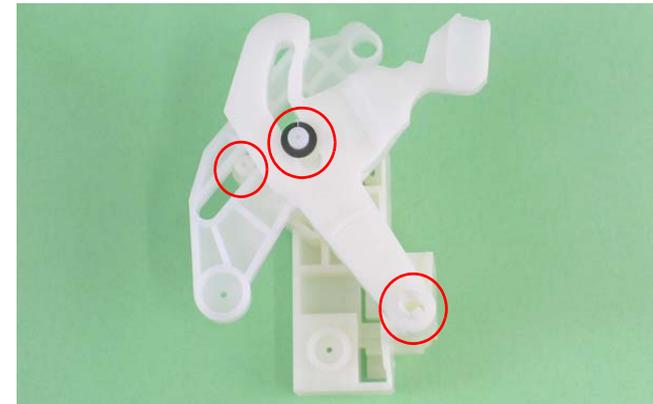


Figure 4-117. Reinstalling the Left CDR Release Lever Sub Assy (1)

- Align the Shaft and Bushing.



Figure 4-118. Reinstalling the Left CDR Release Lever Sub Assy (2)

- Align the two tabs on the Left CDR Release Lever Sub Assy with the positioning holes on the Main Frame. (See Figure 4-116.)

4.4.13 Ink System Unit

1. Remove the Right CDR Release Lever Sub Assy. (Refer to 4.4.12 CDR Release Lever Sub Assy (p.114))
2. Release the Carriage Lock, and move the Carriage Unit to the center. (Refer to 4.1.6 Locking/Unlocking the Carriage and Opening/Closing the CDR Tray Base (p.73))
3. Remove the C.B.S. M3 x 8 screw that secures the Earth cable to remove the Earth cables, and untie the Earth cable from the Relay connector cable.
4. Disconnect the Pump Motor connector from the Relay connector.

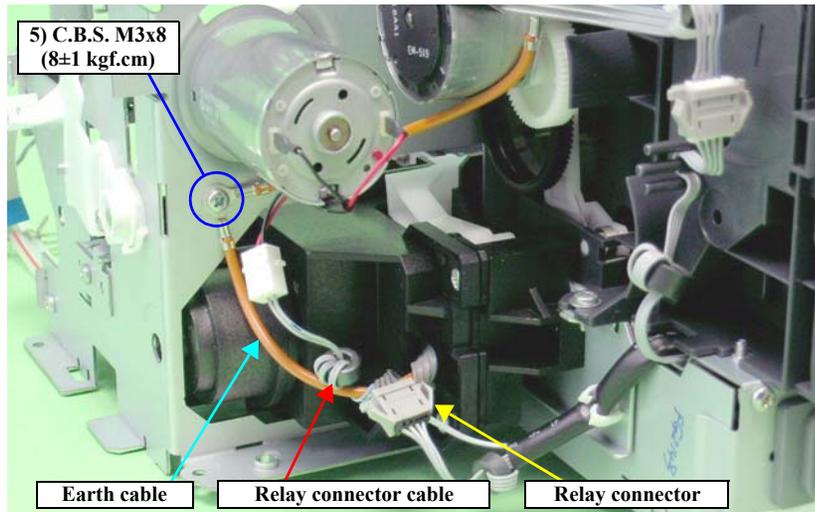


Figure 4-119. Disconnecting the Pump Motor Connector



- Be sure to screw the two Earth cables together.
- Referring to Figure 4-119, correctly route the Relay connector cable.

5. Remove the two C.B.S. M3 x 4 screws that secure the Ink System Guide Plate, and remove it.

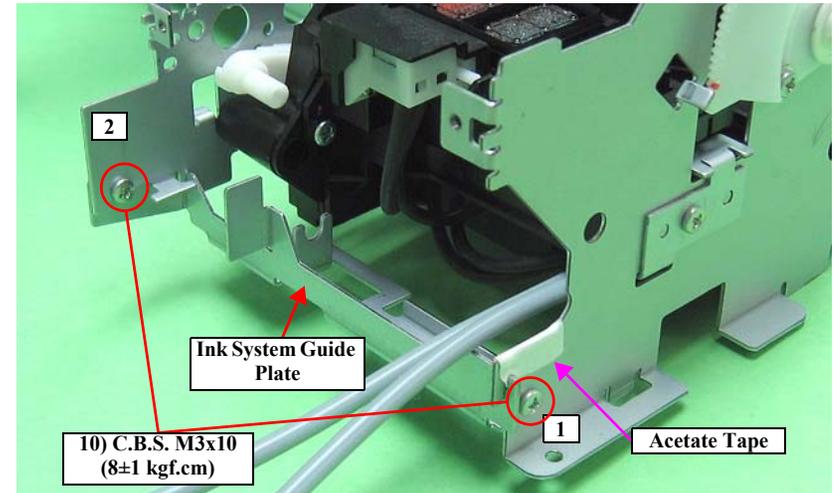


Figure 4-120. Removing the Ink System Guide Plate



- Align the notch on the Ink System Guide Plate with the notch on the Main Frame.
- Referring to Figure 4-120 and Figure 4-121, attach the acetate tape.

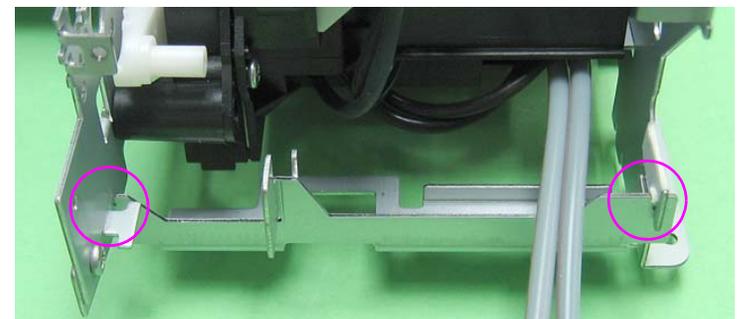


Figure 4-121. Reinstalling the Ink System Guide Plate

- Tighten the screws in the order shown in Figure 4-120

- Remove the two C.B.S. M3 x 6 screws that secure the Ink System Unit.

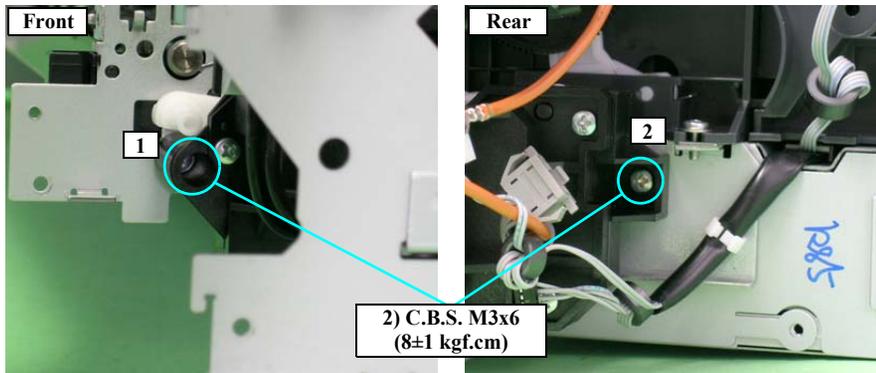


Figure 4-122. Screws that Secure the Ink System Unit



Tighten the screws in the order shown in [Figure 4-122](#)

- Remove the two C.B.S. M3 x 6 screws that secure the Right Support Frame, and remove the Right Support Frame from the Main Frame.

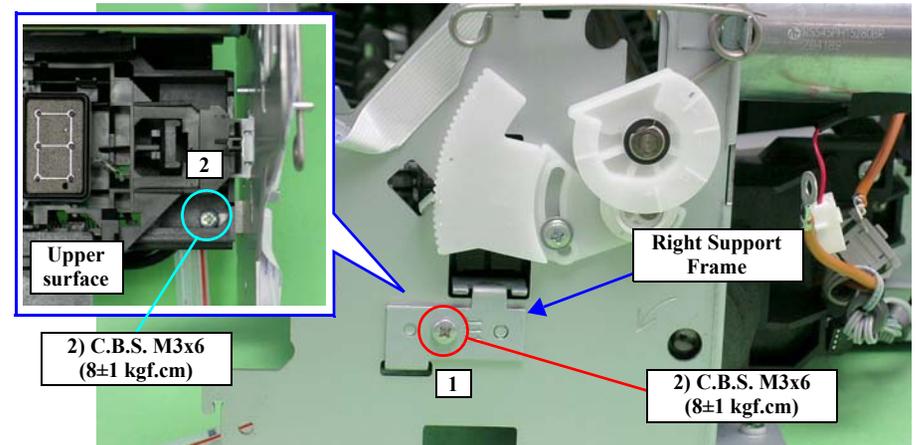


Figure 4-123. Removing the Right Support Frame



- Align the positioning holes on the Right Support Frame with the guide pins on the Main Frame.
-
- Figure 4-124. Installing the Right Support Frame
- Tighten the screws in the order shown in [Figure 4-123](#)

8. Remove the Ink System Unit downwards from the Main Frame keeping the Unit from coming in contact with the Paper EJ Transmission Lock Lever.

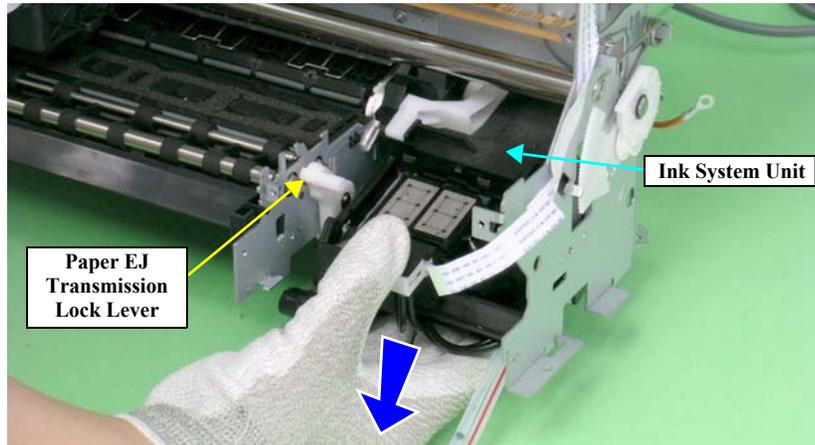


Figure 4-125. Removing the Ink System Unit



- When the Ink System Unit is removed from the Printer Mechanism, the Paper EJ Lock Release Cam may drop off. In such case, correctly install it referring to the figure below.

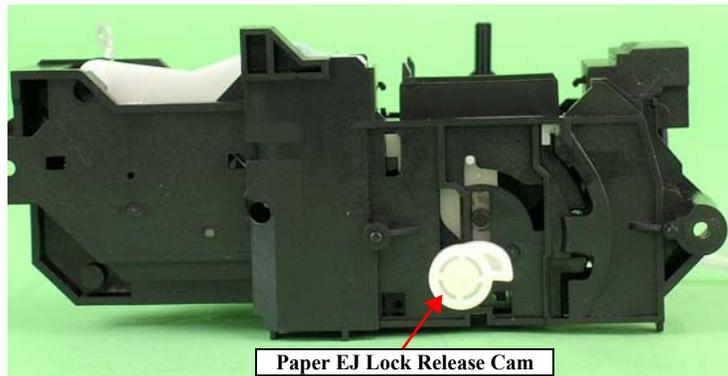


Figure 4-126. Installing the Paper EJ Lock Release Cam



- Place the Paper EJ Lock Release Cam on the rear side of the Paper EJ Transmission Lock Lever.

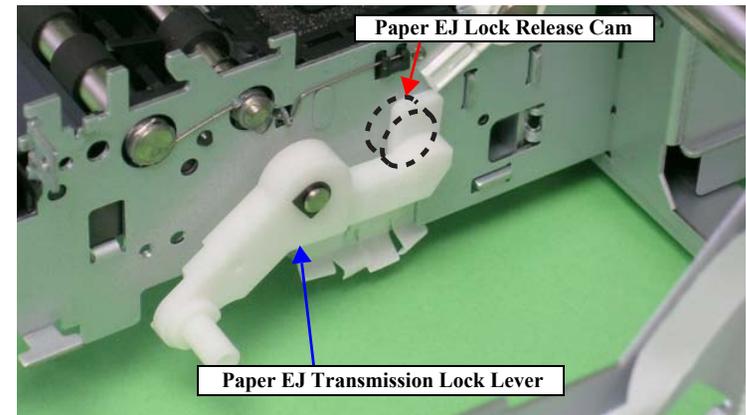


Figure 4-127. Reinstalling the Ink System Unit (1)

- Align the positioning hole on the Main Frame with the guide pin on the Ink System Unit.

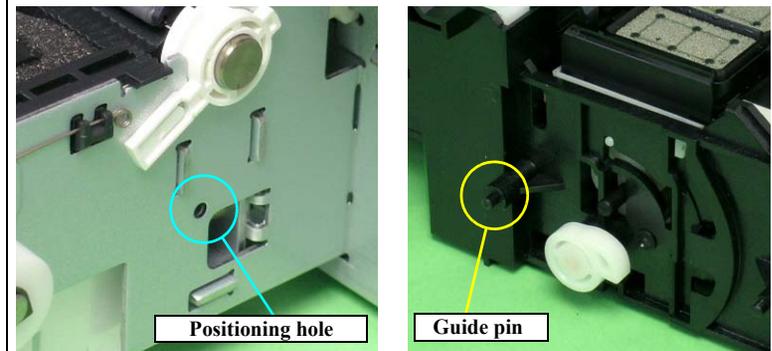


Figure 4-128. Reinstalling the Ink System Unit (2)

4.4.14 Front Paper Guide / Paper EJ Roller / Front Paper Guide Pad Tray

1. Remove the Paper EJ Frame Assy / Front Cover / CDR Tray Base. (p.112)
2. Release the Carriage Lock, and move the Carriage Unit to the center. (Refer to 4.1.6 Locking/Unlocking the Carriage and Opening/Closing the CDR Tray Base (p.73))
3. Remove the EJ Grounding Spring from the Main Frame with tweezers.

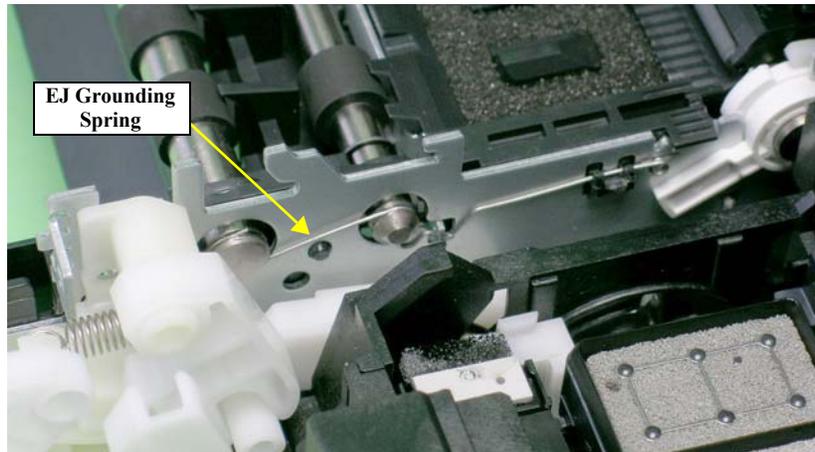


Figure 4-129. Removing the EJ Grounding Spring



Referring to [Figure 4-130](#), correctly install the EJ Grounding Spring.

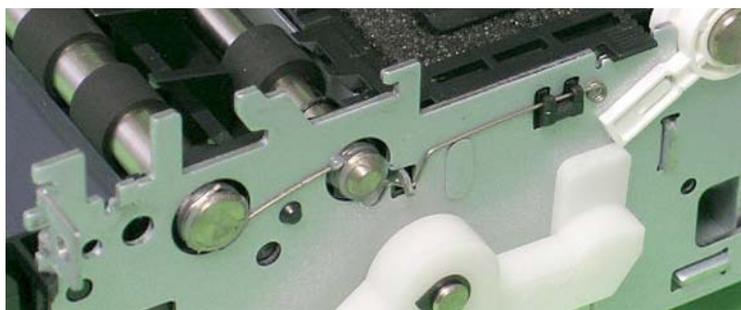


Figure 4-130. Reinstalling the EJ Grounding Spring

4. Remove the Spacer from the EJ Roller Shaft.
5. Remove the guide pins on Left Bushing 8 from the Main Frame using tweezers, and turn Left Bushing 8 toward you to align with the notches on the Main Frame.

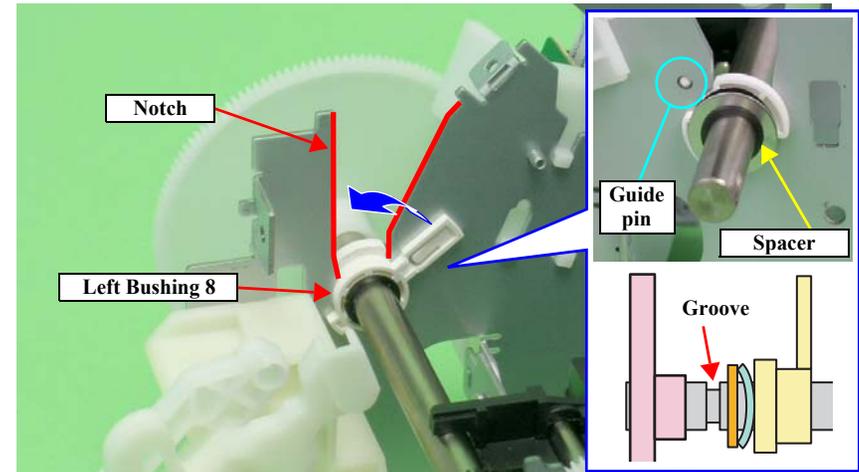


Figure 4-131. Removing the Spacer and Rotating the Left Bushing 8



Insert the spacer into the groove on the Front Paper EJ Roller.

6. Slide the Front Paper EJ Roller to the left, and remove the Left Bushing 8 from the Main Frame.

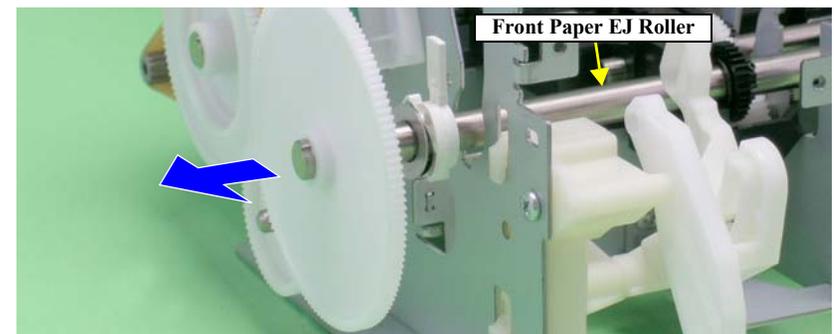


Figure 4-132. Removing the Left Bushing 8

7. Return the Carriage Unit to its home position.
8. Remove the C.B.S. M3 x 6 screw that secure the Left Front Frame.
9. Release the tab that secures the Front Paper Guide from the Main Frame and slide the Front Paper Guide to the left, and turn it until the front side faces up to remove the Front Paper Guide together with the Paper EJ Roller.

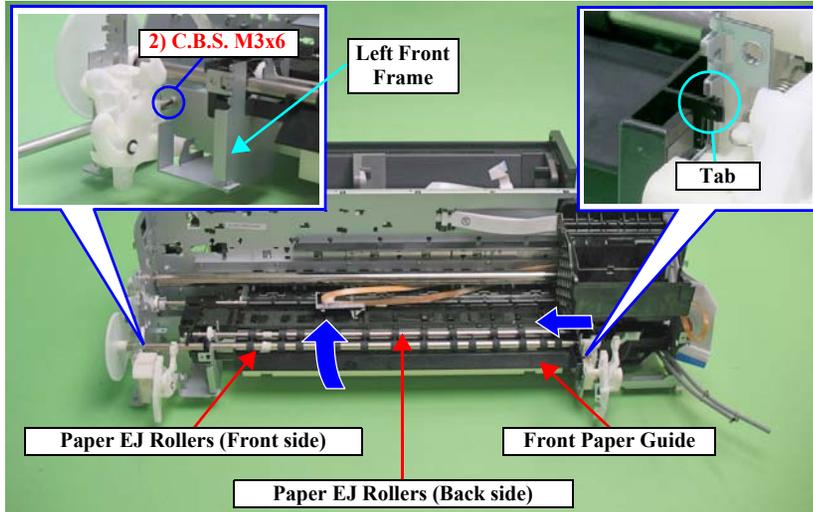


Figure 4-133. Removing the Front Paper Guide and Paper EJ Rollers

10. Pull out the Shaft of the Left Front Frame from the bushing of the Front Paper Guide and remove the Left Front Frame.

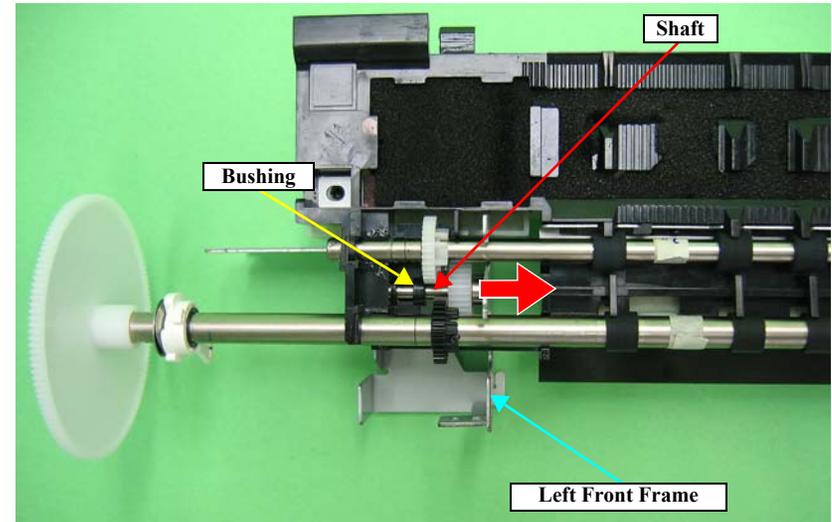


Figure 4-134. Removing the Front Paper Guide/Paper EJ Rollers (2)

11. Remove the Front Paper Guide Pad Tray in the direction of the arrow.

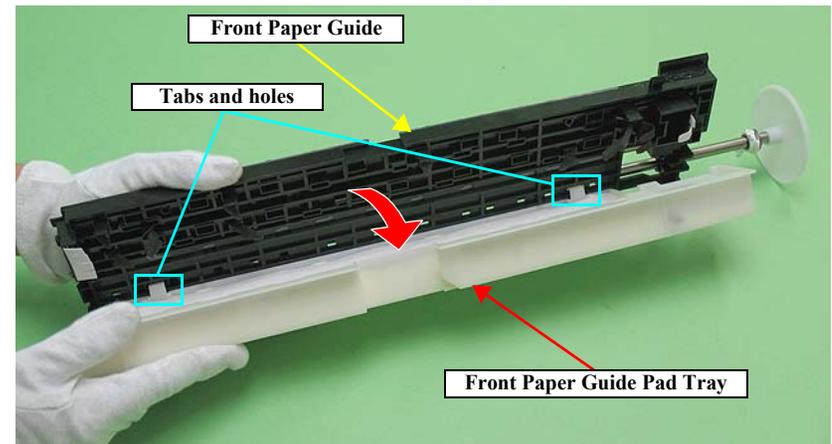


Figure 4-135. Removing the Front Paper Guide Pad Tray

DISASSEMBLING THE FRONT PAPER GUIDE PAD TRAY

1. Remove the Front Paper Guide Pad Tray in the direction of the arrow. (p.120)
2. Remove the three Waste Ink Pads from the Front Paper Guide Pad Tray.

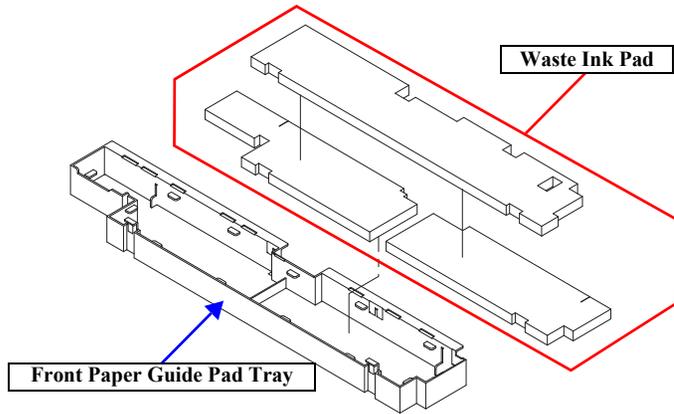


Figure 4-136. Removing the Waste Ink Pad



Engage the two tabs of the Front Paper Guide Pad Tray with the holes of the Front Paper Guide as shown in Figure 4-135.



- Align the bushing of the Front Paper Guide with the PF Roller Shaft.

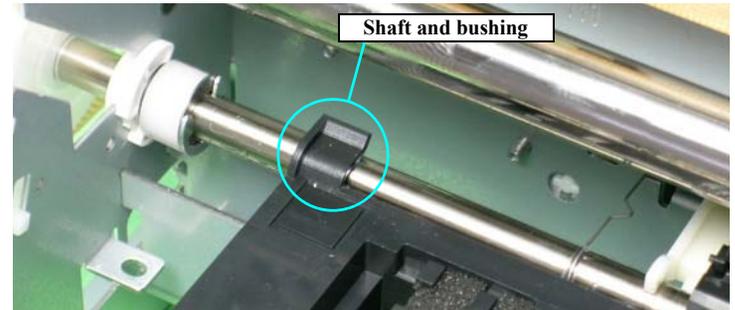


Figure 4-137. The PF Roller Shaft and the bushing of the Front Paper Guide

- Align the positioning holes on the Main Frame with the guide pins on the Front Paper Guide.

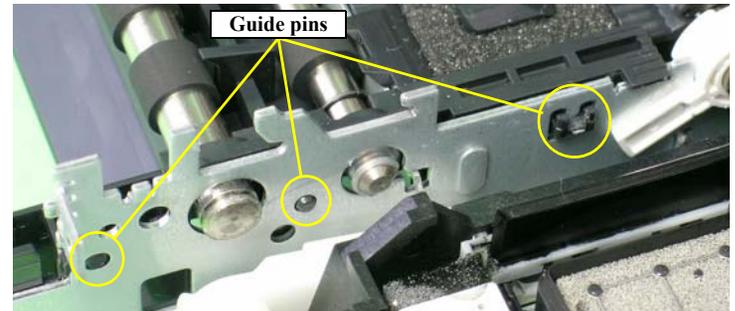


Figure 4-138. Reinstalling the Front Paper Guide

REASSEMBLY

After installing the Front Paper Guide, lift the Printer Mechanism to check the following points.

1. Make sure that the tabs on the Paper Guide Pad are not cut midway.
2. Make sure that all the tabs are facing down (toward the Waste Ink Pads) without any folds.
3. Make sure that the tab foldbacks are protruding completely from the Front Paper Guide.

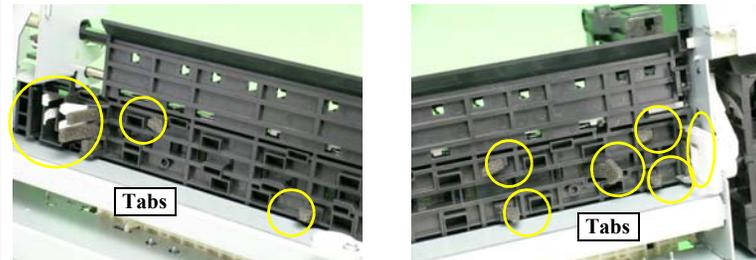


Figure 4-139. Checking the Front Paper Guide Pad

**ADJUSTMENT
REQUIRED**

After replacing the following parts, be sure to apply G-45 grease to the area specified for each part.

- EJ Grounding Spring: See Figure 6-10 on page 166.
- Front Paper Guide and Paper EJ Roller: See Figure 6-11 on page 166.

**ADJUSTMENT
REQUIRED**

After replacing or removing the Front Paper Guide and Paper EJ Roller, always make the required adjustments referring to the following.

- “Chapter 5 Adjustment (p.137)”

4.4.15 PF Roller Shaft

1. Remove the PF Encoder. (p.132)
2. Remove the Upper Paper Guide Assys. (p.127)
3. Loosen the two C.C. M3 x 4 screws that secure the PF Motor, and remove the PF Drive Belt from the PF Motor Pinion Gear.
4. Remove the spacer that secures Spur Gear 31.5, and remove Spur Gear 31.5 from the Printer Mechanism.

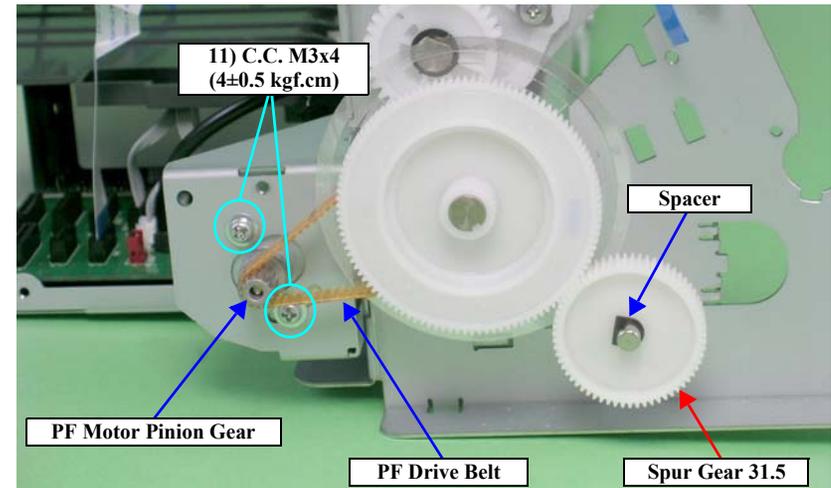


Figure 4-140. Removing the PF Drive Belt and Spur Gear 31.5

- Remove the PG Grounding Spring from the notch on the Main Frame, and remove the PF Grounding Spring from the groove on the PF Roller Shaft.

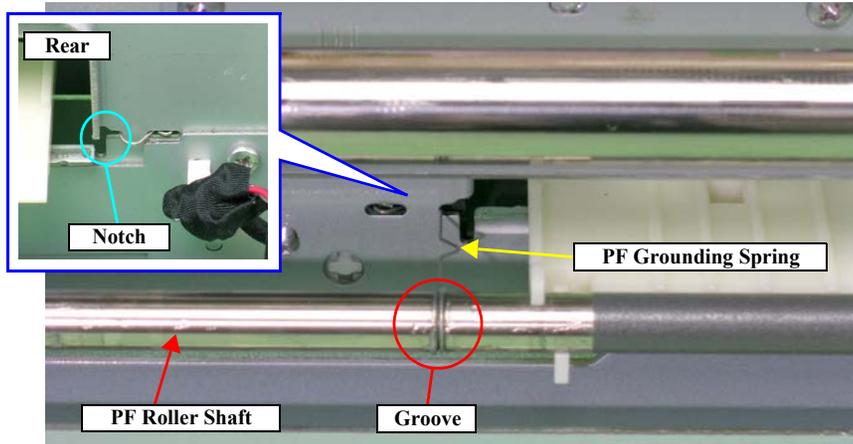


Figure 4-141. Removing the PF Grounding Spring

- Make sure that the Left Parallelism Adjust Bushing is not protruding from the notch on the Main Frame. If it is protruding, loosen the C.B.S. (P4) M3 x 8 screw that secures the Left Parallelism Adjust Bushing, and slide it to prevent the Left Parallelism Adjust Bushing from becoming hooked on the notch.

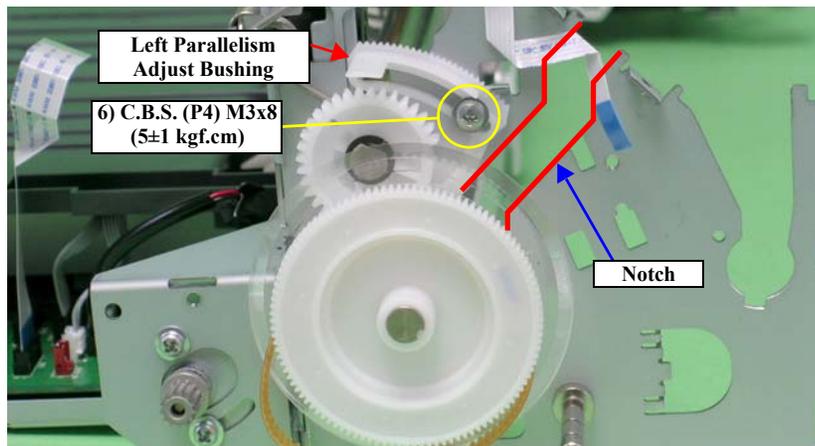


Figure 4-142. Rotating the Left Parallelism Adjust Bushing

- Remove the guide pin of Left Bushing 8 from the Main Frame using tweezers, and rotate the Bushing upwards to align with the notch on the Main Frame.

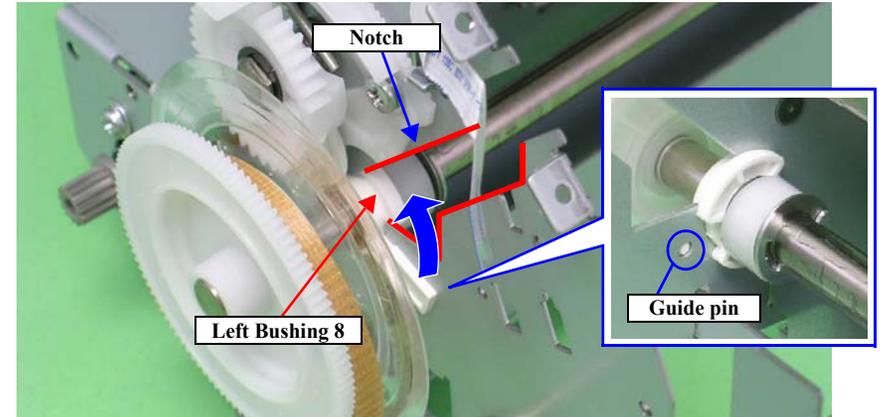


Figure 4-143. Rotating the Left Bushing 8

CAUTION 	<p>When performing the following procedure, take care not to lose the E-ring.</p>
---	---

- Remove the E-ring from the PF Roller Shaft with a flathead screwdriver, and slide Left Bushing 8 to the inside of the Printer Mechanism.

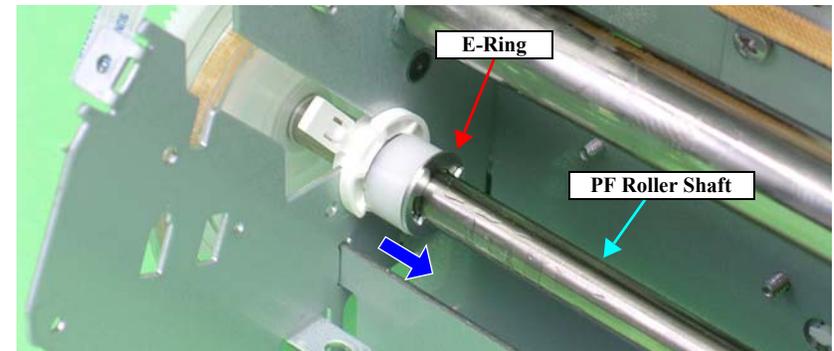


Figure 4-144. Removing the Left Bushing 8



When performing the following procedure, pay attention to the following points.

- Prevent the coated surface of the PF Roller Shaft from being scratched.
- Do not touch the coated surface of the PF Roller Shaft with bare hands.

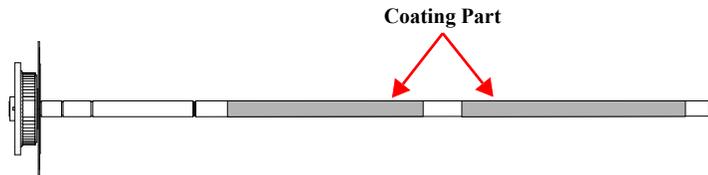


Figure 4-145. Handling the PF Roller Shaft

9. Remove the PF Roller Shaft from the Bushings on the Rear Paper Guide and the Center Support, slide the PF Roller Shaft to the left to remove it from Right Bushing 8, and remove the PF Roller Shaft along the notch of the Main Frame.

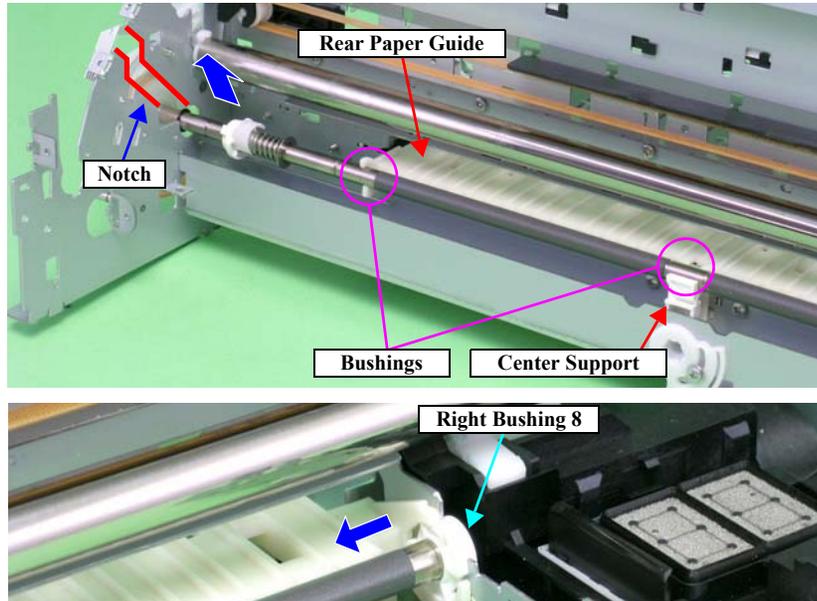


Figure 4-146. Removing the PF Roller Shaft



Be careful not to move Compression Spring 4 and the Leaf Spring on the left side of the PF Roller Shaft to the coated section on the Shaft after removing the PF Roller Shaft.

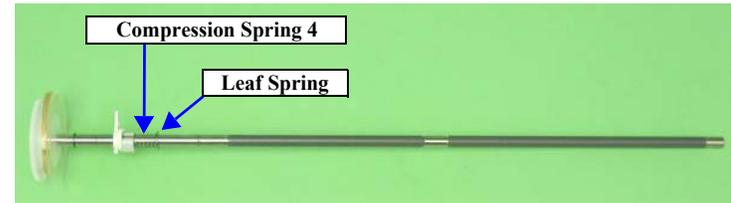


Figure 4-147. Handling the PF Roller Shaft



After replacing the PF Roller Shaft, always make the required adjustments referring to the following.

- “Chapter 5 [Adjustment \(p.137\)](#)”

4.4.16 Release Holder Assy

1. Remove the APG Assy. (p.89)
2. Release the PE Sensor connector cable from the five tabs on the Release Holder Assy.
3. Remove the three C.B.S. M3 x 6 screws that secure the Release Holder Assy.
4. Remove the three lower tabs of the Release Holder Assy from the Main Frame with a flathead screwdriver, and remove the Release Holder Assy upwards.

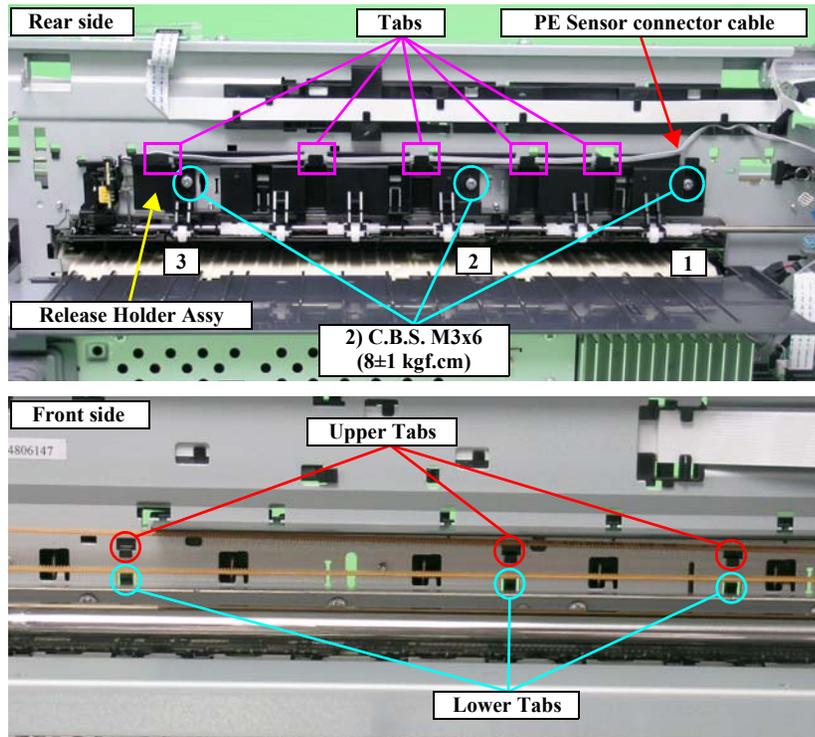


Figure 4-148. Removing the Release Holder Assy



- Align the three upper tabs on the Release Holder Assy with the positioning holes on the Main Frame. See Figure 4-148.
- Fit the FLAG Release Shaft by the bushings on the Release Holder Assy.

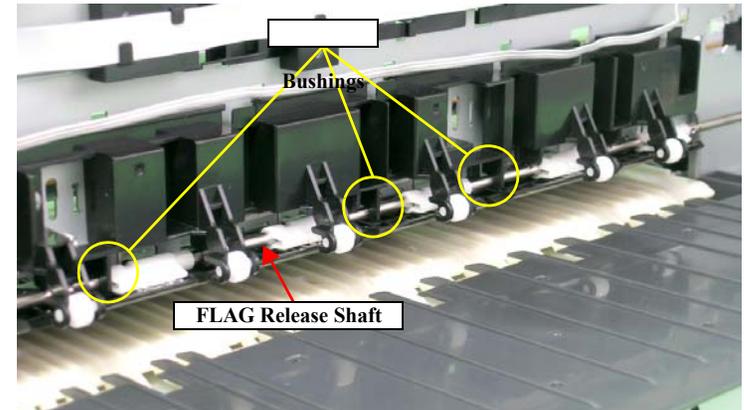


Figure 4-149. Reinstalling the Release Holder Assy

- Tighten the screws in the order shown in Figure 4-148

4.4.17 FLAG Release Assy

1. *Remove the APG Assy. (p.89).*
2. *Remove the Release Holder Assy. (p.125)*
3. Remove the guide pin on the Driven Release Holder from the Main Frame using tweezers, and slide the Driven Release Holder to the left as viewed from the front of the Printer Mechanism.



In the following procedure, Parallel Pin 1.5 may drop off when the Driven Release Holder is slid. Be careful not to lose it.

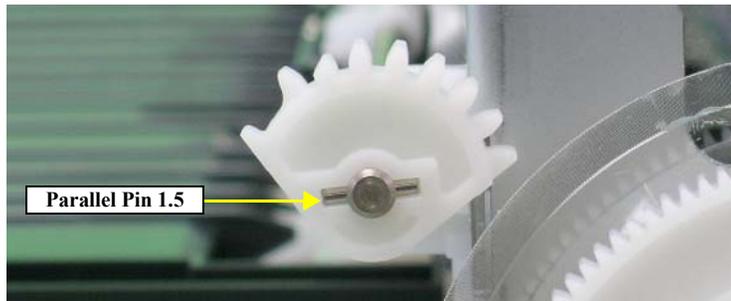


Figure 4-150. Parallel Pin 1.5

4. Release the three tabs on the Driven Release Holder from the Main Frame, and remove the FLAG Release Assy.

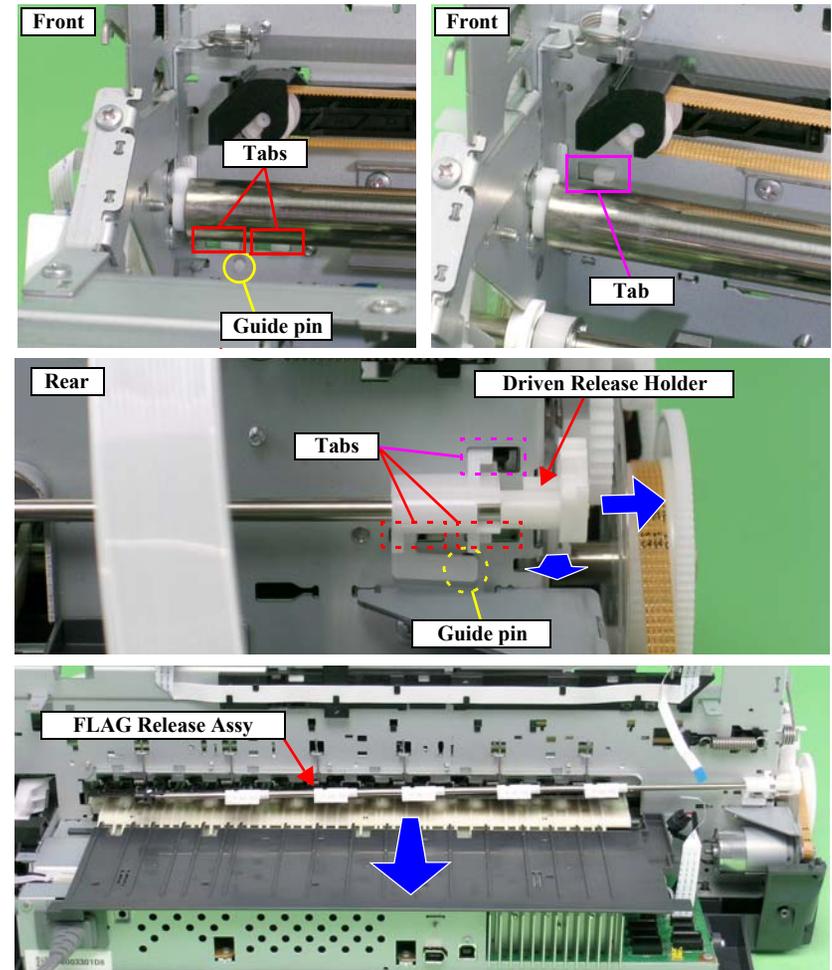


Figure 4-151. Removing the FLAG Release Assy

REASSEMBLY

Attach the five Perforated Sheets and the LD Cover Sheet to the six locations shown in the figure below to prevent ink from sticking to the LD Rollers.

- Remove the five Paper Guide Torsion Springs from the tabs, insert the notches of the Perforated Sheets into the tabs to attach them to the Main Frame, and then hook the Paper Guide Torsion Springs onto the tabs again.
- Insert the LD Cover Sheet in between the frame so that the tabs on the upper side of the LD Cover Sheet are visible from the notches on the Main Frame, and attach the LD Cover Sheet.

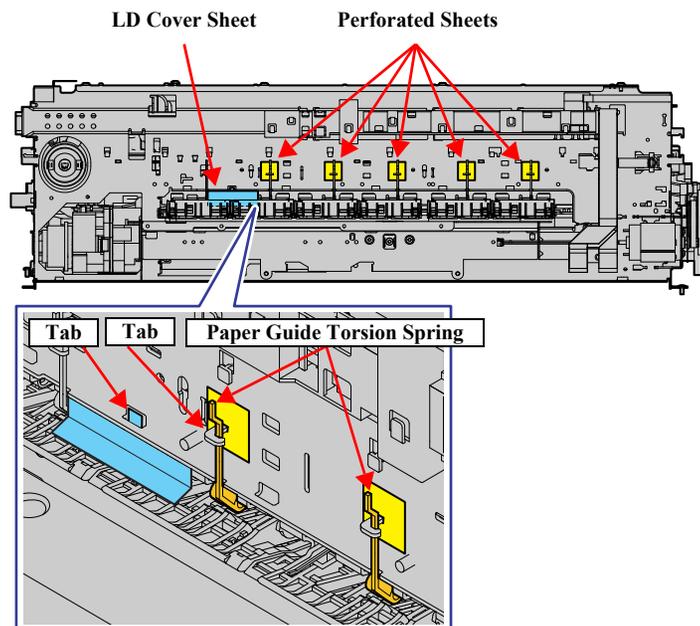


Figure 4-152. Attaching the Perforated Sheets and the LD Cover Sheet

4.4.18 Upper Paper Guide Assys

1. *FLAG Release Assy* (p.126)
2. *Remove the PE Sensor Holder.* (p.135)
3. Pass a sheet of A3 size paper into the gap between the Upper Paper Guide Assy and the Rear Paper Guide.

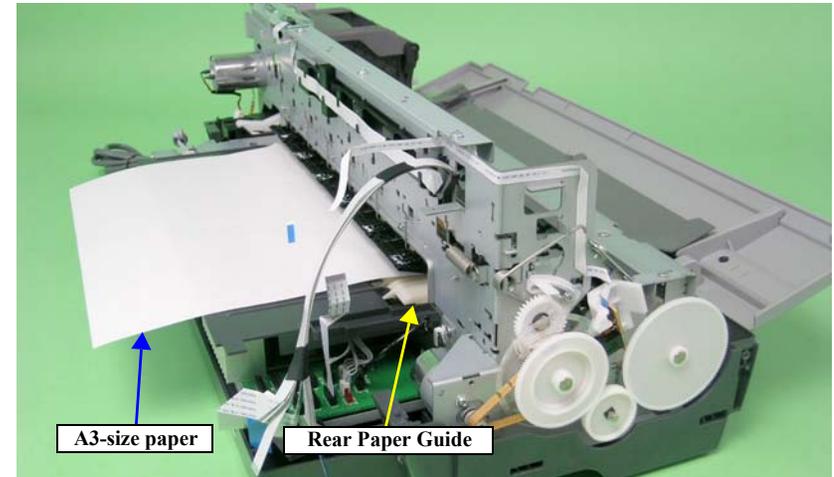


Figure 4-153. Setting the Paper

- Remove the six Upper Paper Guide Torsion Springs from the tabs on the Main Frame, and pull out the Upper Paper Guide Torsion Springs from the six Upper Paper Guide Assys.

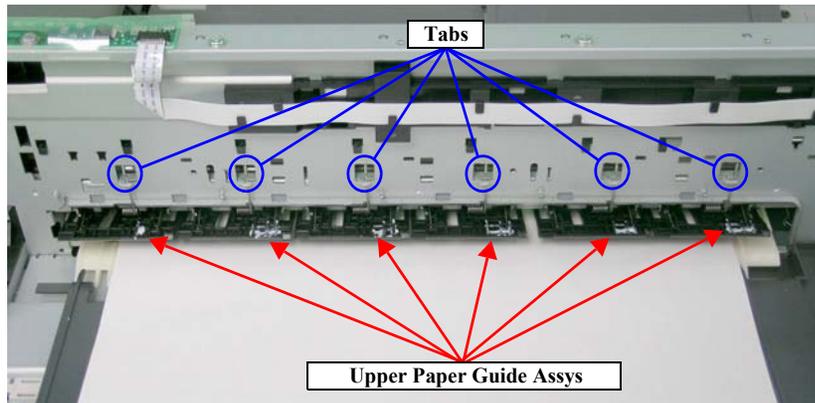
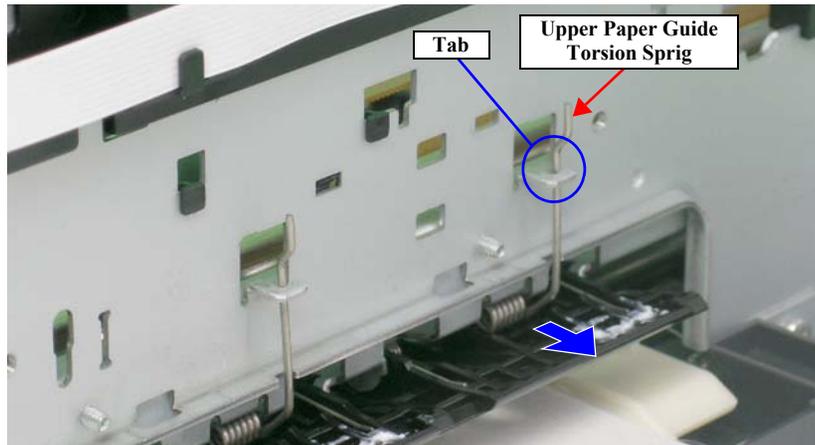


Figure 4-154. Removing the Upper Paper Guide Torsion Spring



Make sure that the leading end of the Upper Paper Guide Torsion Spring can be seen through the hole of the Upper Paper Guide Assy.

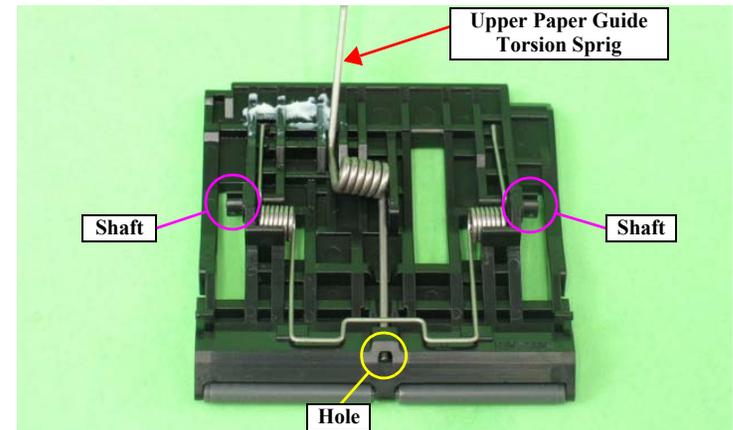


Figure 4-155. Reinstalling the Upper Paper Guide Torsion Spring

- Lift the six Upper Paper Guide Assys from the Main Frame to release the shaft referring to Figure 4-155, and remove the Upper Paper Guide Assys to the rear.

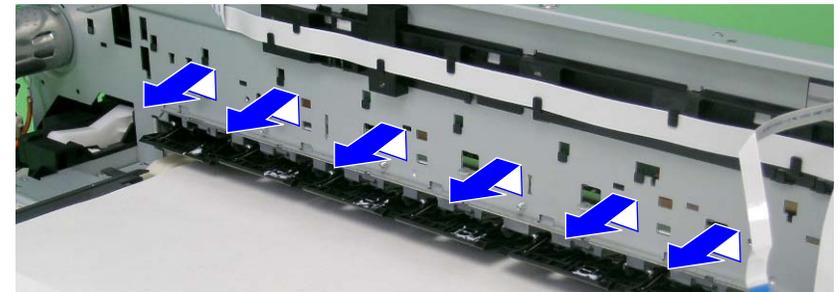


Figure 4-156. Removing the Upper Paper Guide Assy



After replacing the following part, be sure to apply G-26 grease to the specified area.

- Upper Paper Guide Assy: See Figure 6-9 on page 166.

4.5 Removing the Motors

4.5.1 CR Motor

1. Remove the Upper Housing / Printer Cover. (p.81)
2. Release the Carriage Lock, and move the Carriage Unit to the center. (Refer to 4.1.6 Locking/Unlocking the Carriage and Opening/Closing the CDR Tray Base (p.73))
3. Disconnect the CR Motor connector cable from the Relay connector.

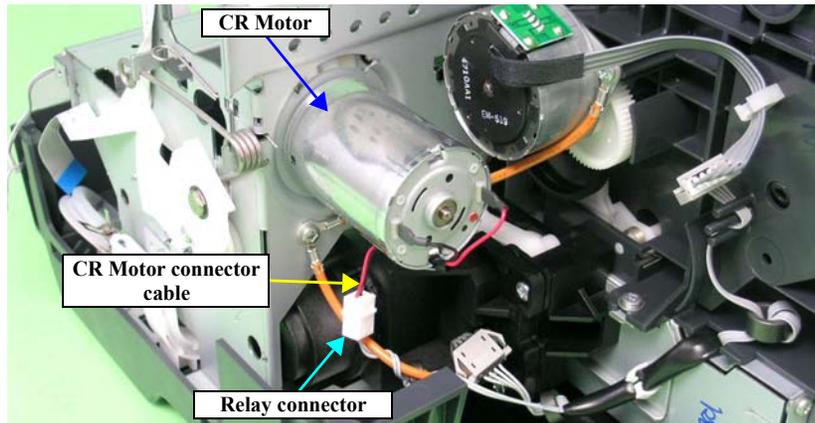


Figure 4-157. Removing the CR Motor Connector Cable

4. Press the Driven Pulley toward the center to loosen the CR Drive Belt, and remove the CR Drive Belt from the CR Motor Pinion Gear.

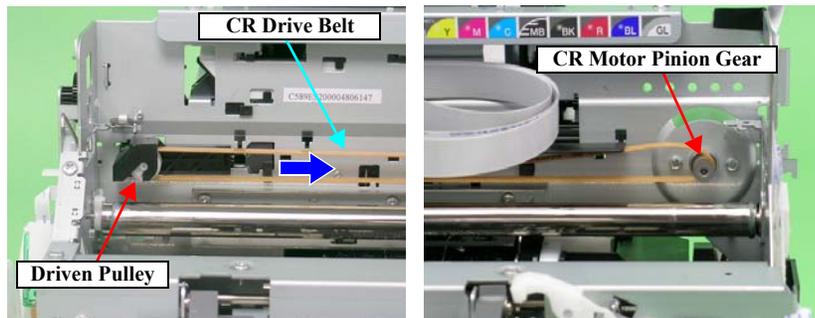


Figure 4-158. Removing the CR Motor

5. Remove the two C.B.S. M3 x 4 screws that secure the CR Motor, and remove the CR Motor from the Main Frame.

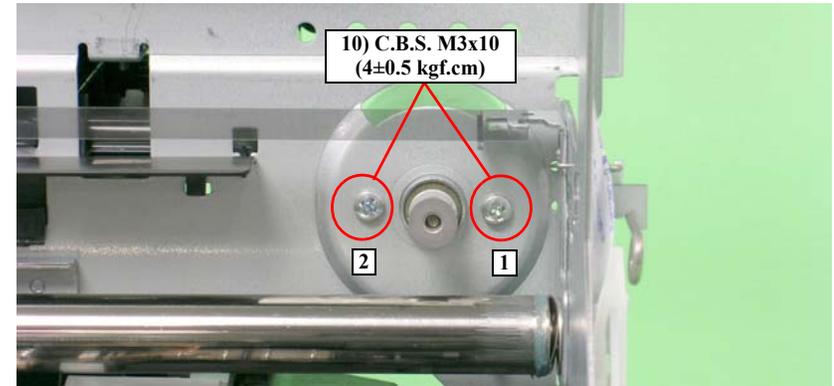


Figure 4-159. Removing the CR Motor



- Make the Lot No. printed surface on the CR Motor face the direction shown in the figure below.

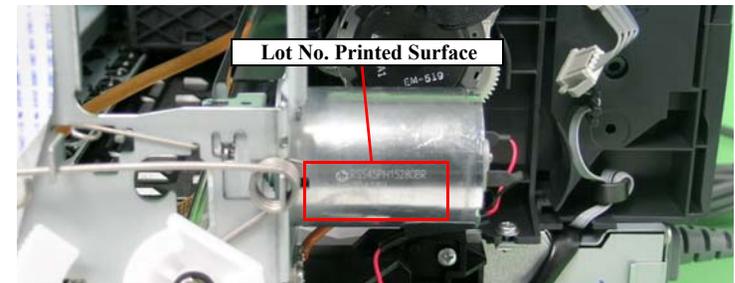


Figure 4-160. Reinstalling the CR Motor

- Tighten the screws in the order shown in [Figure 4-159](#)



After replacing the CR Motor, always make the required adjustments referring to the following.

- “Chapter 5 [Adjustment \(p.137\)](#)”

4.5.2 PF Motor

1. Remove the Printer Mechanism. (Refer to 4.4.4 Lower Housing / Printer Mechanism (p.96))
2. Disconnect the PF Motor connector cable from connector CN116 (black) on the Main Board, and remove it from the Clamp on the Main Frame.
3. Remove the two C.C. M3 x 4 screws that secure the PF Motor.
4. Remove the PF Drive Belt from the PF Motor Pinion Gear, and remove the PF Motor from the Printer Mechanism.

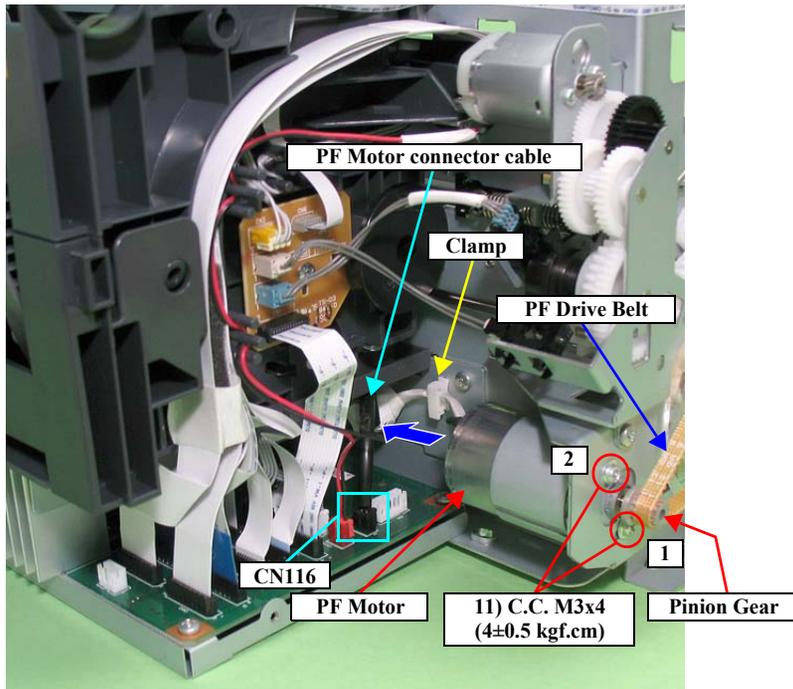


Figure 4-161. Removing the PF Motor



- Make the slit on the PF Motor face the direction shown in the figure below.

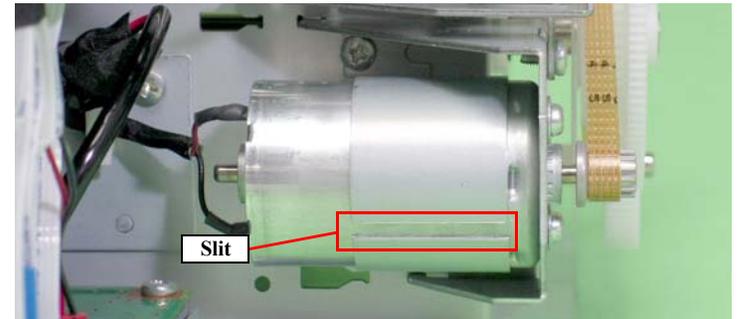


Figure 4-162. Reinstalling the PF Motor

- Tighten the screws in the order shown in Figure 4-161



- After replacing or removing the PF Motor, always make the required adjustments referring to the following.
- “Chapter 5 Adjustment (p.137)”

4.5.3 ASF Motor

1. *Remove the ASF Assy. (p.106)*
2. Release the ASF Motor cable from the cable hook and disconnect the relay connector.
3. Remove the two C.B.P. M3 x 8 screws that secure the ASF Motor and remove the ASF Motor.

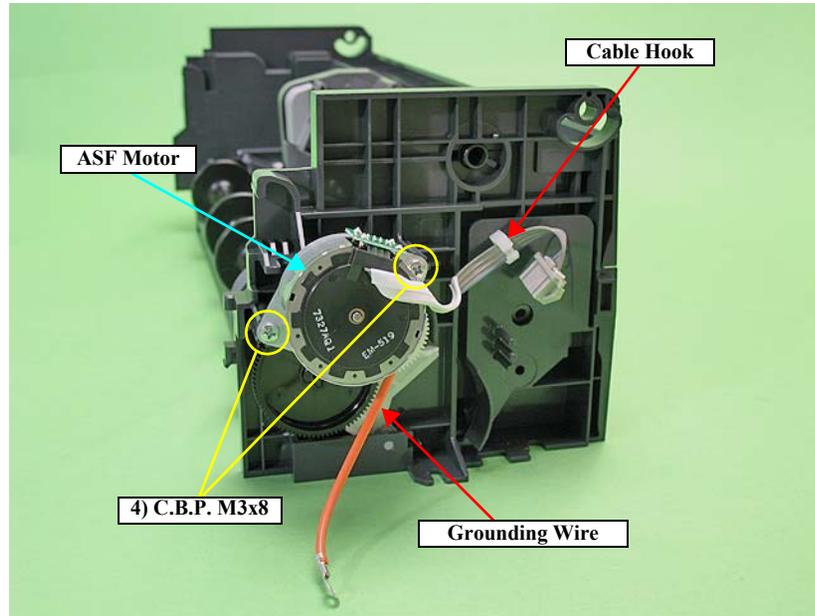


Figure 4-163. Removing the ASF Motor

REASSEMBLY

Secure the grounding wire and the ASF Motor together with the screw in the middle of the printer.

4.6 Removing the Sensors

4.6.1 CR Encoder

1. *Remove the Carriage Shaft / Carriage Unit. (p.98)*
2. Remove the two C.B.P. M2.6 x 5 screws that secure the CR Encoder Sensor Board.
3. Disconnect the FFC of the PW Sensor and Ink Mark Sensor from the connector on the CR Encoder Sensor Board, and remove the CR Encoder Sensor Board.

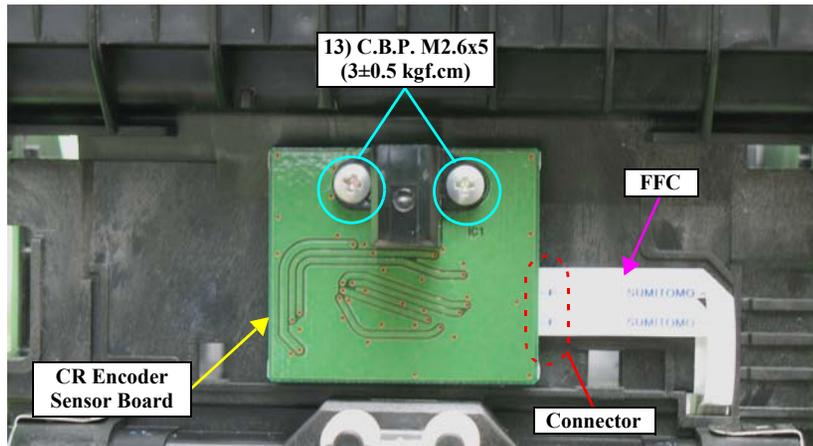


Figure 4-164. Removing the CR Encoder Sensor Board

4.6.2 PF Encoder

1. *Remove the Upper Housing / Printer Cover. (p.81)*
2. Disconnect the FFC from the PF Encoder Sensor Board.
3. Remove the C.B.S. M3 x 8 screw that secures the PF Encoder Sensor Holder.

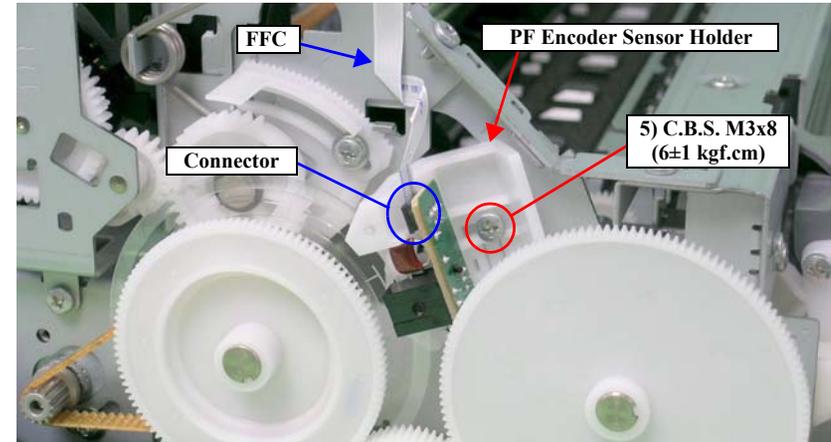


Figure 4-165. Removing the FFC and the Screw that Secures the PF Encoder Sensor Holder

4. While pressing the guide pin on the PF Encoder Sensor Holder using tweezers, slide the holder upwards to release the three tabs, and remove the PF Encoder Sensor Holder.

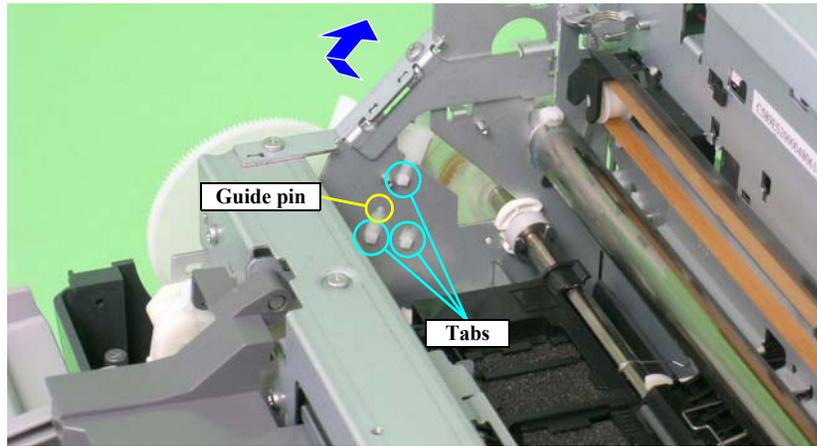


Figure 4-166. Removing the PF Encoder Sensor Holder



Make sure that the PF Scale is in the slit on the PF Encoder Sensor.

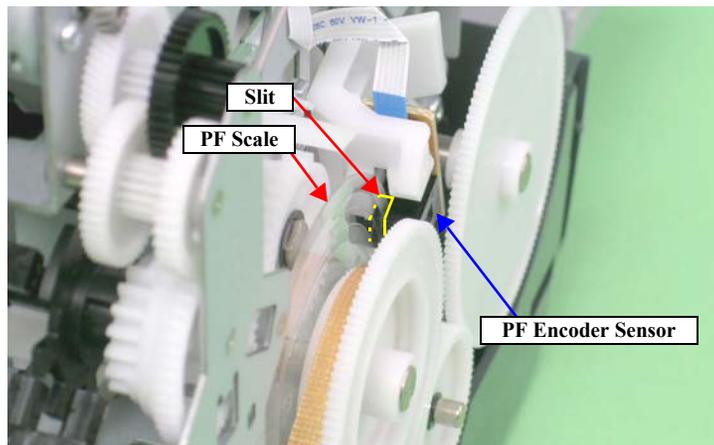


Figure 4-167. Reinstalling the PF Encoder Sensor Holder

4.6.3 Ink Mark Sensor / PW sensor

1. Remove the Carriage Shaft / Carriage Unit. (p.98)
2. Remove the C.P.B. (P1) M1.7 x 5 screw that secures the PW Sensor Holder, and remove the PW Sensor Holder from the Carriage Unit.

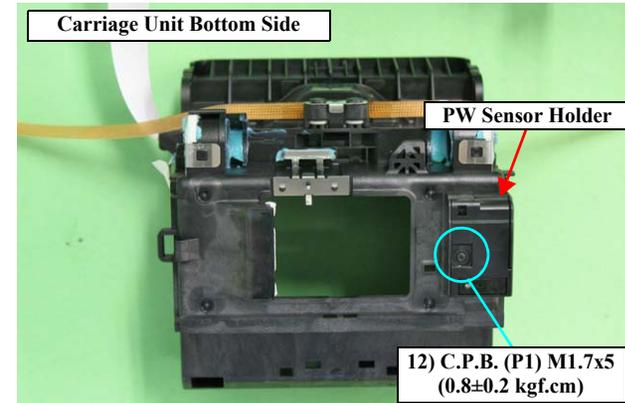


Figure 4-168. Removing the PW Sensor Holder

3. Disconnect the FFC from the Ink Mark Sensor and the PW Sensor connector, and remove the Ink Mark Sensor and PW Sensor.

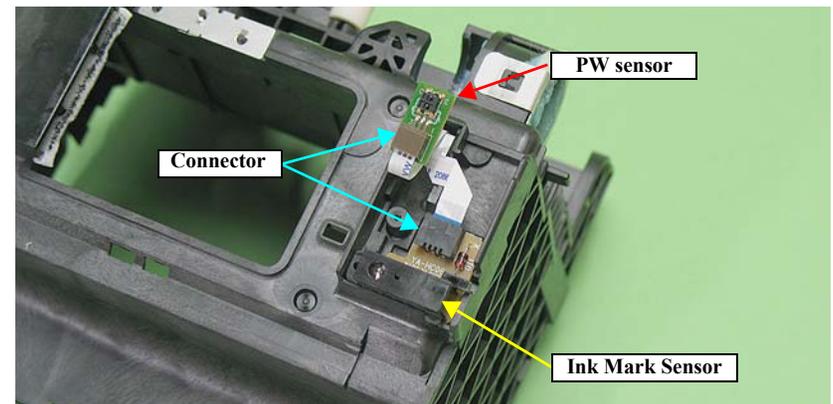


Figure 4-169. Removing the Ink Mark Sensor and PW Sensor

REASSEMBLY

Make sure that the FFC is routed as shown in [Figure 4-169](#)

**ADJUSTMENT
REQUIRED**

After replacing or removing the Ink Mark Sensor and the PW Sensor, always make the required adjustments referring to the following.

- “Chapter 5 [Adjustment \(p.137\)](#)”

4.6.4 CDR Sensor

1. *Remove the Paper EJ Frame Assy / Front Cover / CDR Tray Base. (p.112)*
2. Disengage the two hooks that secure the CDR Sensor and remove the CDR Sensor.

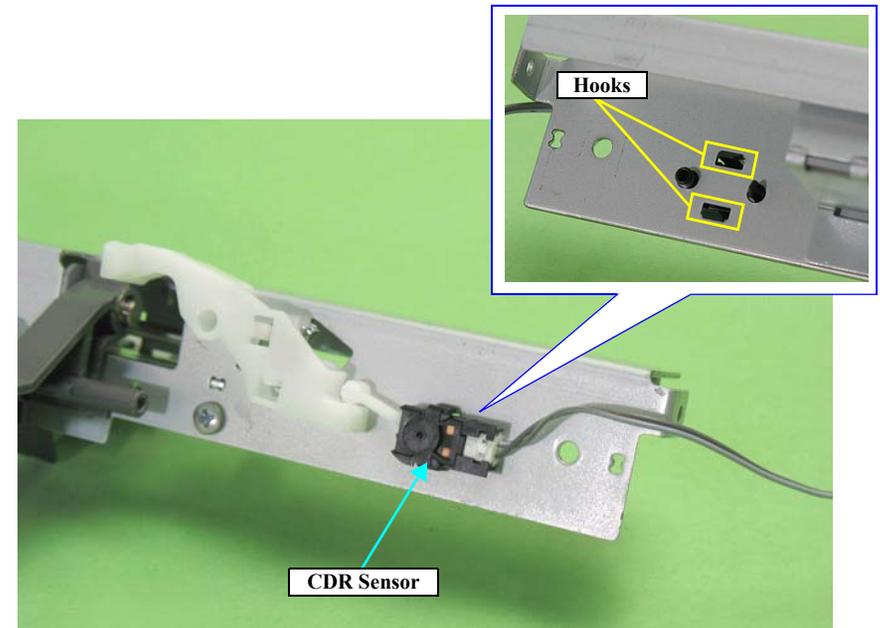


Figure 4-170. Removing the CDR Sensor

4.6.5 PE Sensor Holder

1. Remove the APG Assy. (p.89)
2. Remove the PE Sensor connector cable from the five tabs on the Release Holder Assy and the two tabs on the Head Cable Cover.

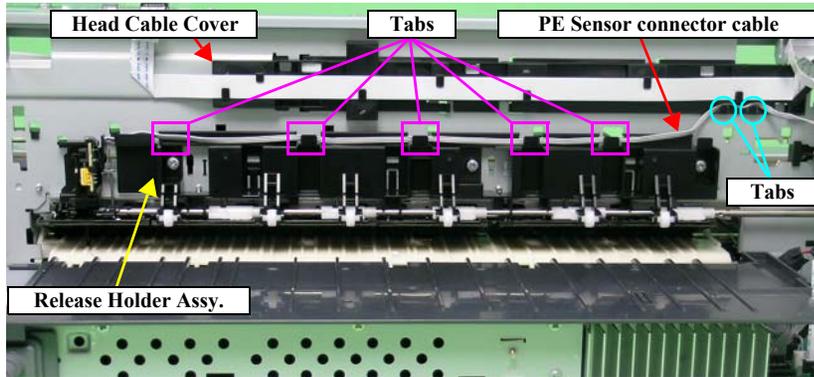


Figure 4-171. Releasing the Cables

3. Release the tabs that secure the PE Sensor Holder from the notch on the Main Frame with a flathead screwdriver, and slide the PE Sensor Holder upwards and then remove it toward you.

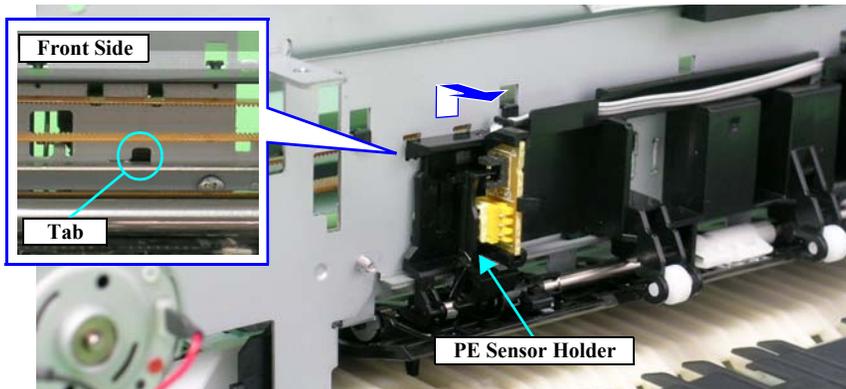


Figure 4-172. Removing the PE Sensor Holder



Align the four tabs and guide pin on the PE Sensor Holder with the positioning holes on the Main Frame correctly so that there is no gap between the PE Sensor Holder and the Main Frame.

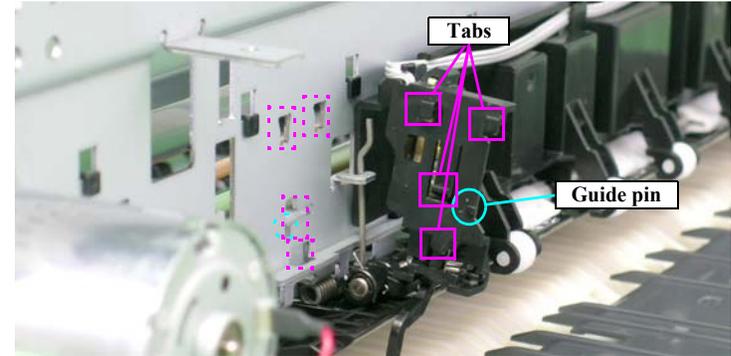


Figure 4-173. Reinstalling the PE Sensor

4.6.6 Cover Open Sensor

1. *Remove the Panel Unit. (p.78)*
2. Remove the **C.B.P. M3 x 8** screw that secures the Cover Open Sensor and remove the Cover Open Sensor.

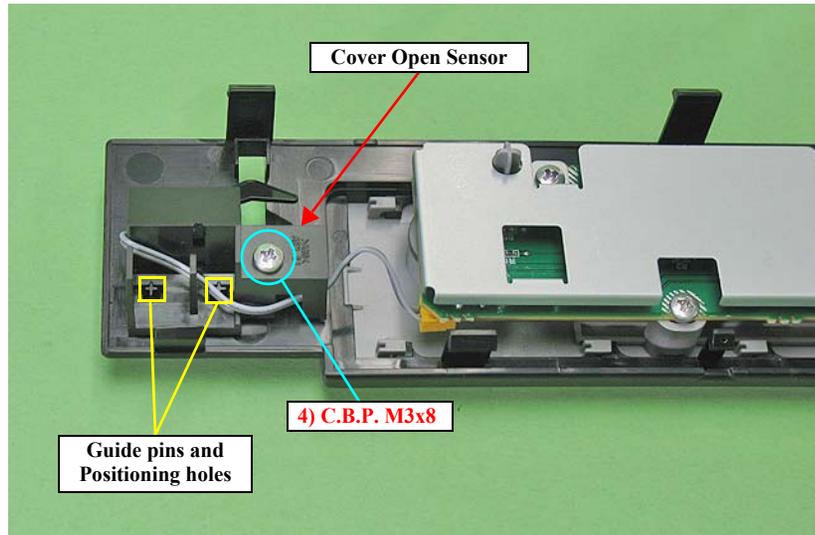


Figure 4-174. Removing the Cover Open Sensor



Align the guide pins with the positioning holes shown in [Figure 4-174](#).

CHAPTER

5

ADJUSTMENT

5.1 Adjustment Items and Overview

This chapter describes adjustments to be made after the disassembly/reassembly of this product.

5.1.1 Servicing Adjustment Item List

The items, purposes and outlines of the Adjustment Program are given in the following table.

Table 5-1. Adjustment Items

Adjustment	Purpose	Method Outline
PF Belt Tension Adjustment	This adjustment is made to reduce the load on the PF motor and to ensure paper feed accuracy.	See "5.2.1 PF Belt Tension Adjustment" (p.144).
PF Roller Shaft Center Support Position Adjustment	This adjustment is made to compensate the deflection amount on the PF Roller Shaft and to maintain the appropriate paper feed amount.	See "5.2.3 PF Roller Shaft Center Support Position Adjustment" (p.149).
ASF Guide Roller LDs Position Adjustment	This adjustment is made to optimize the positions of the LD Roller Shaft and Retard Roller in order to maintain the paper feed accuracy.	See "5.2.5 ASF Guide Roller LDs Position Adjustment" (p.159).
PG Adjustment	This adjustment is made to ensure the correct distance between the head surface and the Front Paper Guide, and to adjust the parallelism between the 0 digit side and the 130 digit side to ensure consistent print quality.	See "5.2.2 PG Adjustment" (p.145).
EEPROM Data Copy	This adjustment is made to read out the necessary information from the EEPROM using the D4 function. If this copy is completed successfully, all the other adjustments required after replacing the main board are no longer necessary.	<ol style="list-style-type: none"> 1. Select this function in the Adjustment Program. 2. Read out the data from the defective board. 3. After replacing the board with a new one, write the read data to the new board.
Initial Setting	After replacing the Main Board, information common to Main Boards is written by market setting.	<ol style="list-style-type: none"> 1. Select and execute this function in the Adjustment Program. 2. Write the initial settings to the EEPROM.
USB ID Input	A USB ID is given to each printer to identify a specific printer when using multiple printers of same model.	<ol style="list-style-type: none"> 1. Select this function in the Adjustment Program and enter the serial number of the printer. 2. The correction value is saved to the specific EEPROM address of the Main Board.
Head ID Input	When replacing the Print Head, this adjustment is made to reduce head manufacturing variations, which may cause individual differences in print quality.	<ol style="list-style-type: none"> 1. Enter the ID of the Head QR Code Label (Stylus Photo R1900: 29 digits, Stylus Photo R2880: 17 digits), which is applied to the Print Head, into the program. 2. The ID is stored in the EEPROM of the Main Board. Supplement: Read the QR code label from left to right on the top row and from top to bottom in due order.)
Head angular adjustment	This adjustment is made to correct the error in the Print Head mounting position (Head angle) to make the nozzle line straight with respect to the paper feeding direction. Angular displacement is also checked for.	<ol style="list-style-type: none"> 1. Select this function in the Adjustment Program and print the adjustment pattern. 2. After checking the displacement amount of the pattern, enter the pattern number which has the smallest amount of displacement.

Table 5-1. Adjustment Items

Adjustment	Purpose	Method Outline
Multi Sensor Adjustment (Ink Mark Sensor Adjustment)	This adjustment is made to correct a detection position error, which is caused by the displacement of the Ink Mark Sensor mounting position, on a software basis.	<ol style="list-style-type: none"> 1. Select and execute this function in the Adjustment Program. 2. Pattern printing and adjustment are automatically executed. Supplement: Be sure to confirm that there are no dots missing before executing this adjustment.
Bi-D adjustment	This adjustment is made to correct the print timing in the go and return paths in bi-directional printing.	<ol style="list-style-type: none"> 1. Select and execute this function in the Adjustment Program. 2. Pattern printing and adjustment are automatically executed. Supplement: Be sure to confirm that there are no dots missing before executing this adjustment.
First dot position adjustment	This function adjusts the print starting position in the CR main scanning direction.	<ol style="list-style-type: none"> 1. Select this function in the Adjustment Program and print the adjustment pattern. 2. Select a pattern number 5mm away from each edge, and enter that number in the program. 3. The correction value is saved to the specific EEPROM address of the Main Board.
PW adjustment	This adjustment is made to correct the PW Sensor mounting position on a software basis to improve a paper detection error caused by the variation of the mounting position.	<ol style="list-style-type: none"> 1. Select this function in the Adjustment Program and print the adjustment pattern. 2. Select a pattern number 5mm away from each edge, and enter that number in the program. 3. The correction value is saved to the specific EEPROM address of the Main Board.
Initialize PF deterioration offset	The deterioration amount of the PF Roller Shaft is reflected to the paper feed correction amount. Every time a sheet of paper is fed, the deterioration amount is counted on the basis of the original counter value setting. When the PF Roller Shaft or Printer Mechanism has been replaced during repair, the PF deterioration counter must be reset.	<ol style="list-style-type: none"> 1. Select and execute this function in the Adjustment Program. 2. Reset the PF deterioration counter.
Disenable PF deterioration offset	The PF deterioration compensation counter can be reset only when the PF Roller Shaft is new. To reduce the ancillary work in servicing, enter the maximum value (value for which deterioration compensation is not made) if the PF Roller Shaft has not been replaced.	<ol style="list-style-type: none"> 1. Select and execute this function in the Adjustment Program. 2. Reset the PF deterioration counter.
PF adjustment	This correction is made when the actual paper feed amount differs greatly from the theoretical value due to paper slip, PF roller tolerances, etc. during paper feed for printing.	<ol style="list-style-type: none"> 1. Select this function in the Adjustment Program and print the adjustment pattern. 2. Select or measure the adjustment value, and write it to the specific EEPROM address on the Main Board.
PF adjustment (Bottom Margin)	This correction is made when the actual paper feed amount while printing on the bottom of paper differs greatly from the theoretical value due to paper slip, exit roller tolerances, etc.	<ol style="list-style-type: none"> 1. Select this function in the Adjustment Program and print the adjustment pattern. 2. Select or measure the adjustment value, and write it to the specific EEPROM address on the Main Board.
Colorimetric calibration	This adjustment is made to adjust the ink discharge amount.	See "5.2.4 Colorimetric Calibration" (p.153).

Table 5-1. Adjustment Items

Adjustment	Purpose	Method Outline
CR motor heat protection control	This adjustment is made to measure the manufacturing variations of the CR Motor and PS Board to make the most of the motor capabilities for motor heat generation control.	<ol style="list-style-type: none"> 1. Select/execute this function in the Adjustment Program. 2. After execution, the variations are automatically measured and the measurement values are written to the EEPROM on the Main Board.
CR motor heat protection control (Maximum value)	CR Dispersion Measurement can be performed only when the Carriage Shaft is new. To reduce the ancillary work in servicing, enter the worst value (on which heat generation limit is easily imposed) if the Carriage Shaft has not been replaced.	<ol style="list-style-type: none"> 1. Select/execute this function in the Adjustment Program. 2. After execution, the dispersions are automatically measured and the worst value is written to the EEPROM on the Main Board.

Table 5-2. Maintenance Functions

Function Item	Purpose	Method Outline
Ink charge	This function is used for Print Head replacement to drain Shipping Liquid of the after-sales service part in the head flow path and simultaneously fill ink in the head flow path to make all nozzles printable and stabilize the ink in the Print Head.	<ol style="list-style-type: none"> 1. Select this function in the Adjustment Program. 2. Transfer the factory-set command (CL execution command (Initial Ink Charge) is used as the command) to the printer to make the printer perform Initial Ink Charge operation.
Head cleaning	This function is used to execute cleaning 3 (CL3) when ink is not delivered from the Print Head properly, e.g. dot missing or skewed injection.	<ol style="list-style-type: none"> 1. Select this function in the Adjustment Program. 2. Execute CL3.
Waste ink pad counter	This function is used to read and reset the Waste Ink Counters.	<ol style="list-style-type: none"> 1. In the Adjustment Program, select data read or reset from this function. Before executing this function, replace the Waste Ink Pads on both the 0 digit and 130 digit side.
High Voltage Module inspection	This function is used to confirm the supply voltage from the module falls within the specified range correctly.	<ol style="list-style-type: none"> 1. Select this function in the Adjustment Program, set the High Voltage Module to On. 2. Using the tester, measure the voltage between the frame (near 130 digit side) and the screw securing the electrode cable to confirm the measured voltage falls within the range of 240V to 500V. (For the location of the screw securing the electrode cable, see Figure 4-62. (p96).)

Table 5-3. Additional Functions

Function Item	Purpose	Method Outline					
Final check pattern print	<table border="1"> <tr> <td>A4 size</td> <td rowspan="2">Use this to check if the all adjustments have been properly made.</td> </tr> <tr> <td>US Letter size</td> </tr> </table>	A4 size	Use this to check if the all adjustments have been properly made.	US Letter size	The all adjustment patterns are printed automatically.		
A4 size	Use this to check if the all adjustments have been properly made.						
US Letter size							
EEPROM dump	Use this to read out the EEPROM data for analysis.	The all EEPROM data is automatically read out and stored as a file.					
Printer information check	<table border="1"> <tr> <td>Manual CL counter</td> <td rowspan="4">Use this to read out information on the printer operations.</td> </tr> <tr> <td>I/C exchange CL counter</td> </tr> <tr> <td>Timer CL counter</td> </tr> <tr> <td>Print path counter</td> </tr> </table>	Manual CL counter	Use this to read out information on the printer operations.	I/C exchange CL counter	Timer CL counter	Print path counter	The printer information is automatically read out.
Manual CL counter	Use this to read out information on the printer operations.						
I/C exchange CL counter							
Timer CL counter							
Print path counter							

5.1.2 Required Adjustments

The table below lists the required adjustments depending upon the parts being repaired or replaced. Find the part(s) you removed or replaced, and check which adjustment(s) must be carried out.

Table 5-4. Required Adjustment List

Priority		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Part Name	Adjustment Item	PF Belt tension adjustment	PF Roller Shaft Center Support Position adjustment	ASF Guide Roller LDs Position Adjustment	PG Adjustment	High Voltage Module inspection	EEPROM Data Copy	Initial setting/USB ID Input	Head ID input	Consumables maintenance counter	Ink charge	Initialize PF deterioration offset	Disable PF deterioration offset	First dot position adjustment	PW adjustment	Head angular adjustment	Multi Sensor Adjustment (Ink Mark Sensor Adjustment)	Bi-D adjustment	PF adjustment	CR motor heat protection control	Colorimetric calibration	Final check pattern print	
	ASF Assy	Remove	---	---	*1	---	---	---	---	---	---	---	---	---	0	---	---	---	---	---	---	---	0
Replace		---	---	0	---	---	---	---	---	---	---	---	---	0	---	---	---	---	---	---	---	---	0
CR Motor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
Printhead	Remove	---	---	---	0	---	---	---	---	---	---	---	---	0	0	0	---	0	---	---	---	---	0
	Replace	---	---	---	0	---	---	---	0	---	0	---	---	0	0	0	---	0	---	---	---	0	0
Main Board	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace (Read OK)	---	---	---	---	---	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	0
	Replace (Read NG)	---	---	---	---	---	---	0	0	*2	---	---	0	0	0	0	0	0	0	0	0	0	0
PS Board	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	0	0	0
High Voltage Module	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace	---	---	---	---	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
Front Paper Guide/ Paper Eject Roller	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	0	---	---	---	0
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	0	---	---	---	0
PF Roller Shaft	Remove	0	0	---	0	---	---	---	---	---	---	---	---	---	0	---	---	---	0	---	---	---	0
	Replace	0	0	---	0	---	---	---	---	---	---	---	---	---	0	---	---	---	0	---	---	---	0
PF Motor	Remove	0	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	0
	Replace	0	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	0	---	0

Table 5-4. Required Adjustment List

Priority		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Adjustment Item		PF Belt tension adjustment	PF Roller Shaft Center Support Position adjustment	ASF Guide Roller LDs Position Adjustment	PG Adjustment	High Voltage Module inspection	EEPROM Data Copy	Initial setting/USB ID Input	Head ID input	Consumables maintenance counter	Ink charge	Initialize PF deterioration offset	Disable PF deterioration offset	First dot position adjustment	PW adjustment	Head angular adjustment	Multi Sensor Adjustment (Ink Mark Sensor Adjustment)	Bi-D adjustment	PF adjustment	CR motor heat protection control	Colorimetric calibration	Final check pattern print	
Part Name																							
Waste Ink Pad/ Front Paper Guide Pad	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Replace	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	O
Carriage shaft	Remove	---	---	---	*3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Replace	---	---	---	O	---	---	---	---	---	---	---	---	O	O	O	---	O	---	---	---	---	O
Carriage Unit	Remove	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Replace	---	---	---	O	---	---	---	---	---	---	---	---	O	O	O	---	O	---	---	---	---	O
Paper EJ Frame Assy	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	O	---	---	---	O
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	O	---	---	---	O
Printer Mechanism	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Replace	O	---	O	O	---	---	---	---	---	---	O	---	O	O	O	O	O	O	O	O	---	O
PW Sensor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	---	O
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	---	O
Ink Mark Sensor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	O	---	---	---	---	---	O
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	O	---	---	---	---	---	O



- When the EEPROM Data Copy cannot be made for the main board that needs to be replaced, the Waste Ink Tray Assy must be replaced after replacing the main board with a new one.
- After all required adjustments are completed, use the “Final check pattern print” function to print all adjustment patterns for final check. If you find a problem with the printout patterns, carry out the adjustment again.
- When using a new main board for replacing the Printer Mechanism, the Initial setting must have been made to the main board.

Note : “O” indicates that the adjustment must be carried out. “---” indicates that the adjustment is not required. If you have removed or replaced multiple parts, make sure to check the required adjustments for the all parts. And when multiple adjustments must be carried out, be sure to carry out them in the order given in the “Priority” row.

Note “*1” :When only removing the ASF Assy, you do not need to perform the adjustment. In that case, mark the installing positions before removing them, and make sure to align the markings when installing. See “4.4.6 ASF Assy” (p106).

“*2” :Replacing the Waste Ink Tray Assy is necessary when resetting waste ink pad counter.

“*3” :When only removing the Carriage Shaft, you do not need to perform the adjustment. In that case, mark on the Parallelism Adjust Bushing (Left/Right) before removing them, and make sure to align the markings when installing. See “4.4.5 Carriage Shaft / Carriage Unit” (p98).

5.1.3 Required Adjustment Tools

The following table lists the adjustment tools required for adjustment of this product.

Table 5-5. List of Tools

No.	Name	Part Code	Category	Overview
1	Adjustment Program	-	Software	This adjustment program is designed to display the required adjustment items in the appropriate order when a replacement part is selected, and provides workers with the accurate adjustment order.
2	G-26	1080614	Grease	For the Parallelism Adjust Bushing, Lower Paper Guide, Driven Release Shaft, etc.
3	G-45	1033657	Grease	For the PF Roller, Front Paper Guide, Rear Paper Guide and etc.
4	G-71	1304682	Grease	For the Carriage Unit and Carriage Shaft.
5	PG Adjustment Gauge	1276333	Gauge	A gauge exclusively used to make PG Adjustment. Check the correction value by energizing it in the same way as for Stylus Photo R1800.
6	PF Tension Measuring Tool	1294120	Measuring tool	Used to check whether or not the tension of the PF Drive Belt is within the specified value. If load is greater than the specified value, the PF Motor may generate heat, burning off the coil. Reverseely, if load is less than the specified value, the paper feed position may shift.
7	PF Roller Shaft Position Adjustment Jig	1304993	Adjusting jig	Used to check whether or not the deflection amount of the PF Roller Shaft is within the specified value. Adjustment values are confirmed in a pair with the level block.

Table 5-5. List of Tools

No.	Name	Part Code	Category	Overview
8	Level Block	1304994	Adjusting jig	Used to check whether or not deflection amount of the PF Roller Shaft is within the specified value. Adjustment values are confirmed in a pair with the PF Roller Shaft Position Adjustment Jig.
9	Spanner (M3)	Commercially available	Tool	Used to loosen the screw that secures the Center Support Bushing when performing PF Roller Shaft Center Support Position Adjustment.
10	Tester	Commercially available	Measuring tool	Used to confirm the output voltage from the High Voltage Module falls within the specified range.

Note : For tools required for the Colorimetric Calibration, see [P153](#).

5.2 Adjustment

This section explains the adjustments that do not use the Adjustment Program.

5.2.1 PF Belt Tension Adjustment

When either of the following parts has been removed or replaced, this adjustment must be performed to reduce load on the PF Motor and to secure paper feed accuracy.

- PF Motor
- PF Roller Shaft

The PF Tension Measuring Tool is used for this adjustment.



Figure 5-1. PF Tension Measuring Tool

5.2.1.1 PF Belt Tension Adjustment Method

CAUTION



Proper measurement may be interrupted by sounds picked up from around. Make measurement in silent environment.

1. Secure the PF Motor to the Printer Mechanism, and install the Drive Belt on the Gear of the PF Scale and the Pinion Gear of the PF Motor.
2. Press the [POWER] button. The LCD of the Measuring Tool displays No. 0 and No. 1.
3. From among No. 0 to No. 9, select the channel you want to store its setting by pressing the [SELECT] button. The initial value may be selected as the channel.)
4. Press the [WEIGHT] button. The initial value will be displayed. Type the ten-key pad so that “1.2g/m” is displayed.
5. Press the [WIDTH] button. The initial value will be displayed. Enter “5.0 mm” with the ten-keypad.
6. Press the [SPAN] button. The initial value will be displayed. Enter “48mm” with the ten-keypad.
7. Bring the Microphone as close as possible to the center of the Timing Belt.

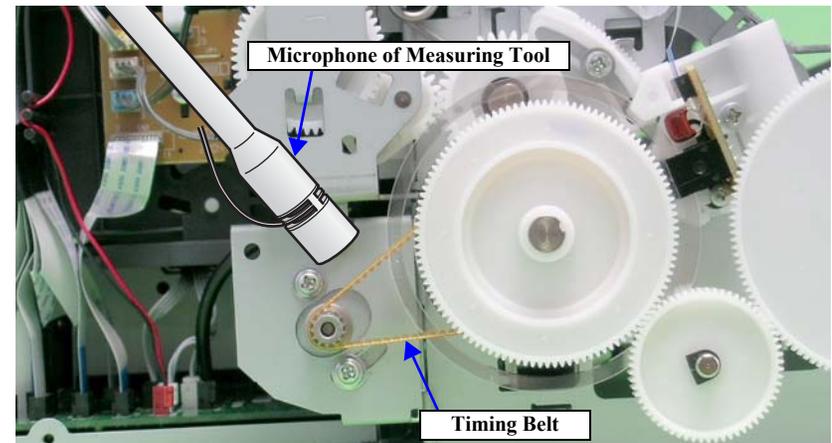


Figure 5-2. Microphone Position

CAUTION  As the Drive Belt is flipped with the tip of tweezers in the following steps, carefully choose the flipping position so that the Belt will not make contact with the Microphone by reaction of flipping.

8. Press the [MEASURE] button. (“----” is displayed on the LCD screen.)
9. Put the tip of the tweezers on the Drive Belt, and flip it downward in that position. The “----” displayed on the LCD will become wave pattern during the measurement. When it has finished, the measurement result will be displayed by “N” (Newton) after the beep. This jig can pick up and measure sounds accurately, regardless of the flipping force.
10. Repeating 8 and 9, delicately shift the variable part of the PF Motor mounting position to adjust the tension until the tension falls within the allowable standard value.

ADJUSTMENT REQUIRED  **Standard Value: 10.5 ± 2N (8.5 ~ 12.5N)**

CAUTION 

- Even if the Timing Belt is flipped, the LCD screen may not change at all. In this case, flip the Timing Belt again after a few seconds have passed.
- If measurement results differ greatly from each other, acoustic sounds may not be picked up properly in any of the measurements. Therefore, flip the Timing Belt again with the tweezers, and record the value at which two measurement results are approximate. Displaying errors in the range 1/100 to 5/100, the Measuring Tool has high reliability.

5.2.2 PG Adjustment

CHECK POINT 

- Some pictures used in this section are Stylus Photo R1800. The adjustment method for Stylus Photo R1900/Stylus Photo R2880 is the same as the one for Stylus Photo R1800.
- To change the PG position, turn the cam each on the left and right side of the carriage shaft simultaneously.

When any of the following parts has been removed or replaced, this adjustment must be performed to secure the specified clearance between the print surface of the Print Head and paper.

- Print Head
- Carriage Unit
- Carriage Shaft
- Parallelism Adjust Bushing (Including the case when just moved it)

In this adjustment, use the same Adjustment Gauge on the left and right sides.

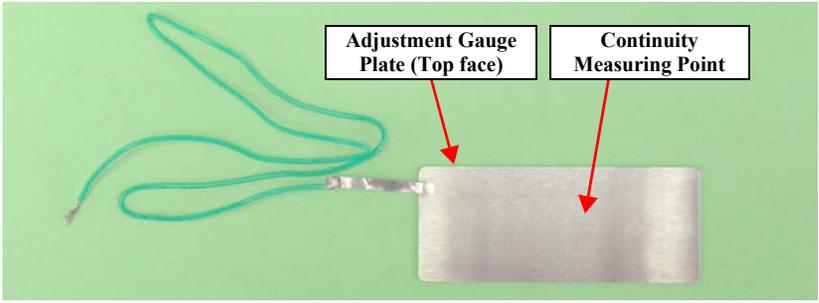


Figure 5-3. Adjustment Gauge

CAUTION 

- Do not touch the Adjustment Gauge Plate surface with bare hands.
- If the Adjustment Gauge Plate surface is stained by ink or, etc. wipe it with a soft cloth.

5.2.2.1 PG Adjustment Method



- Before starting PG adjustment, completely wipe drops of ink around the Print Head. Remaining drops of ink will stick to the continuity measurement portion of the Adjustment Gauge, and generate continuity before the continuity measurement portion makes contact with the metal frame around the Print Head, interrupting accurate PG Adjustment.
- As the ink in the Print Head may stick fast and damage the Print Head during PG Adjustment, make the continuity time detected with a tester as short as possible. (Maximum 3 minutes)

1. Install the printer on a level base.



Place the printer on a level, warp-free table. Normal PG Adjustment cannot be performed on a warped table.

2. Connect the Tester to the printer frame and Adjustment Gauge.

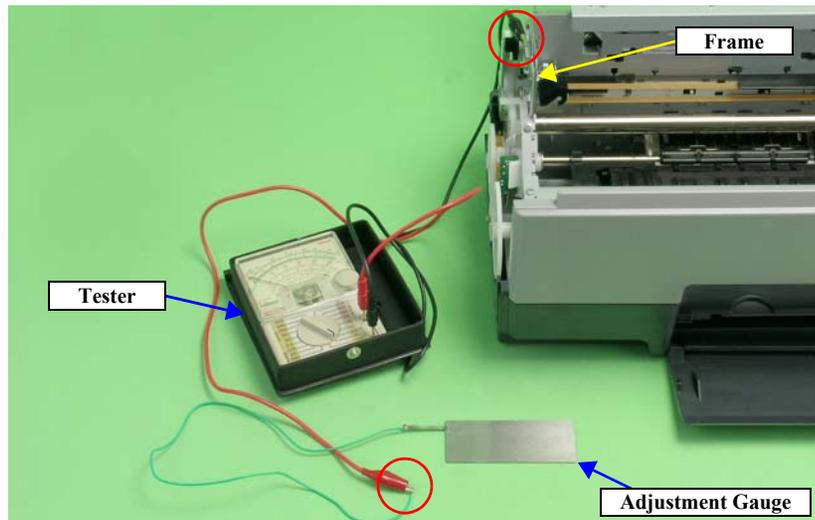


Figure 5-4. Connecting the Tester

3. Load unused Ink Cartridges of all colors into the Carriage Unit.
4. Loosen the screw that secures the Parallelism Adjust Bushing.
5. Turn the Parallelism Adjust Bushing upward to match the frame edge and the bottom of the Parallelism Adjust Bushing gear.



When the Parallelism Adjust Bushing is turned upwards, the frame rises up and PG narrows. Make sure that the frame does not come into contact with the Print Head when performing the following procedure.

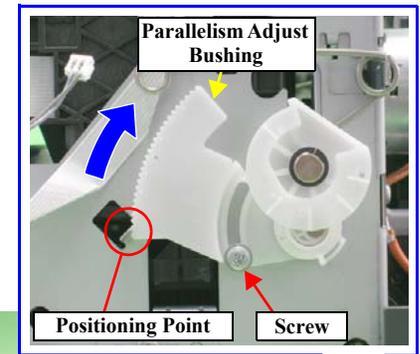
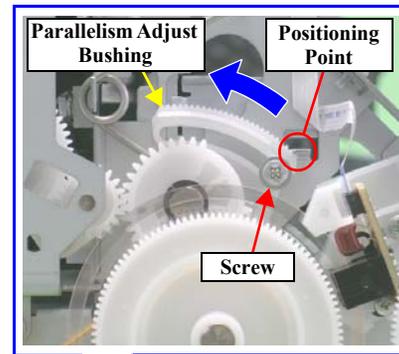


Figure 5-5. Setting the Parallelism Adjust Bushing

6. With its conductor connection portion up, set the Adjustment Gauge in the specified position (on the left side of the Front Paper Guide).
 - Setting Position
 - Rear direction: Match the rear end of the Gauge with the Driven Roller Shaft of the Upper Paper Guide.
 - Left direction: Release the left end of the Gauge from the Tab on the Front Paper Guide in *Figure 5-6*.

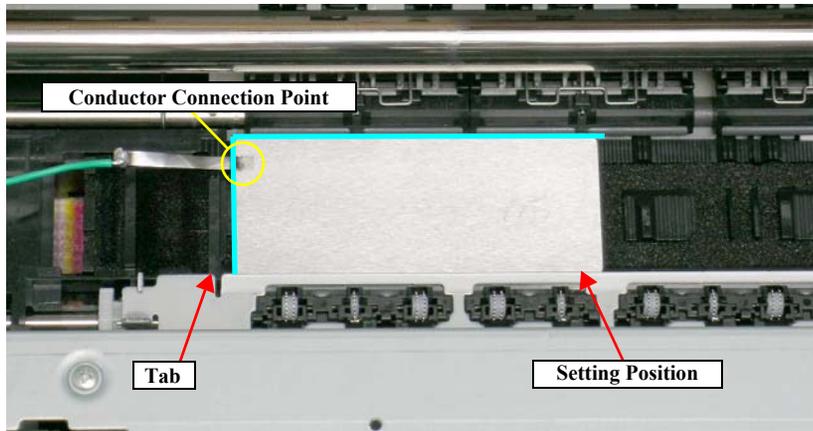


Figure 5-6. Setting the Adjustment Gauge

7. Move the Carriage Unit onto the Adjustment Gauge.
 - Moving position
 - Match the left end of the Gauge with the left end of the Carriage Unit.

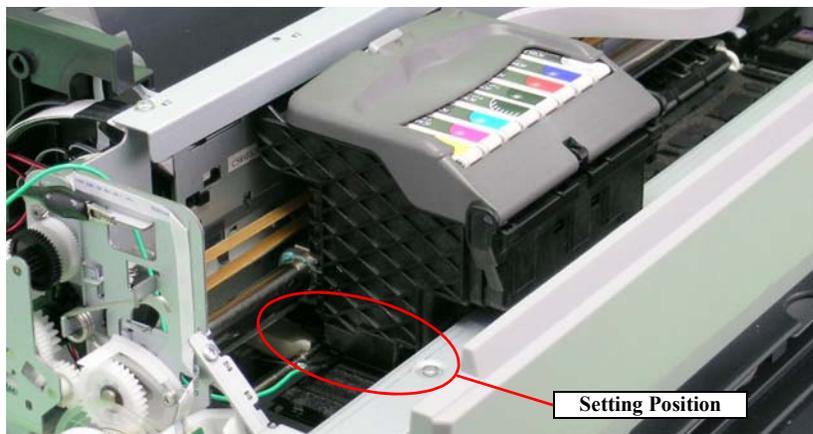


Figure 5-7. Moving the Carriage Unit

8. To set the PG position to the "--" position, turn the PG Cam on the right end of the Carriage Shaft clockwise so that the point marked "--" faces down.

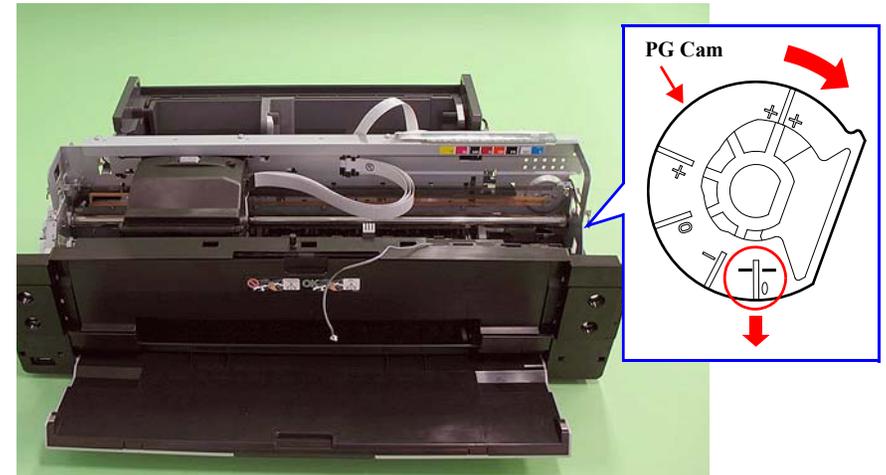


Figure 5-8. Markings of the PG Cam



- PG Standard Value
 - PG -- (Minus Minus) :1.05mm~1.25mm
 - PG - (Minus) :1.2mm~1.4mm
- Adjustment Resolution :0.06mm

9. Lower the Gear of the Parallelism Adjust Bushing on the left side of the frame stepwise, and confirm continuity. When continuity is confirmed, define the position where the Gear was raised one step up from the continuity position (where continuity is lost) as the left side PG position. Move the Parallelism Adjust Bushing at least twice to confirm that the continuity position and the non-continuity position are the same.

CHECK
POINT

The following figure shows the states of the Adjust Parallel Bushing of the left side of the frame and the PG. This also applies to the Adjust Parallel Bushing on the right side of the frame.)

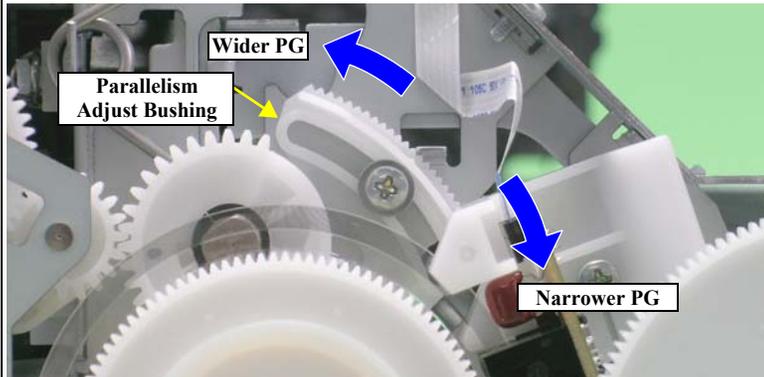


Figure 5-9. Relationship between Parallelism Adjust Bushing and PG

10. To set the PG position to “0” or more, turn the PG Cams on right ends of the Carriage Shaft CCW so that the point marked “0” (or “+” or “++”) faces down.

11. With its conductor connection portion up, set the Adjustment Gauge in the specified position (on the right side of the Front Paper Guide).

■ Setting Position

Rear direction: Match the rear end of the Gauge with the Driven Roller Shaft of the Upper Paper Guide.

Right direction: Release the right end of the Gauge from the Tab on the Front Paper Guide in Figure 5-10.

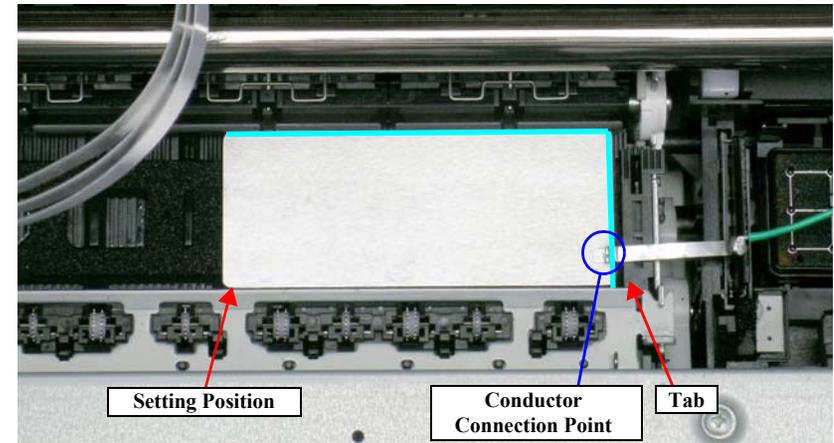


Figure 5-10. Setting the Adjustment Gauge

12. Move the Carriage Unit onto the Adjustment Gauge.

- Moving position

Match the right end of the Gauge with the right end of the Carriage Unit.



Figure 5-11. Moving the Carriage Unit

13. Return the PG position to "--".

14. As in step 9, move the Parallelism Adjust Bushing on the right side of the frame to set the right side PG position.

15. Set the PG position to 0 or more.

16. Set the Adjustment Gauge on the left side of the Front Paper Guide.

17. Move the Carriage Unit onto the left side Adjustment Gauge.

18. Return the PG position to "--".

19. Check continuity again at the PG position on the left side. If the PG position is not out of position, tighten the Parallelism Adjust Bushing with the screws to end the adjustment. If it is out of position, repeat the adjustment procedure from step 9.

5.2.3 PF Roller Shaft Center Support Position Adjustment

This adjustment must be performed to compensate the deflection amount on the PF Roller Shaft and to maintain an appropriate paper feed amount when the following parts are removed and replaced.

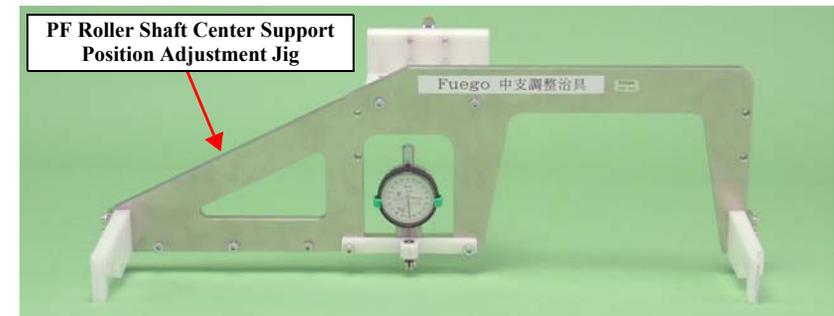
- PF Motor
- PF Roller Shaft

The PF Roller Shaft Position Adjustment Jig and Level block are used for this adjustment.

CHECK
POINT



- A substitute level block can be used if its surface accuracy is within 50 μ .
- Use a Spanner (M3) to loosen the screw that secures the Center Support Bushing.



Level Block

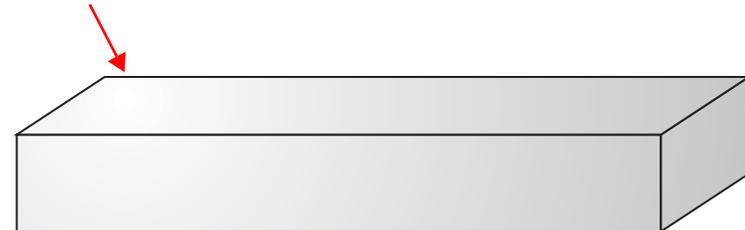


Figure 5-12. PF Roller Shaft Center Support Position Adjustment Jig and Level Block

5.2.3.1 How to Adjust the PF Roller Shaft Center Support Position

1. Before performing this adjustment, remove the following parts:
 - Lower Housing (Refer to 4.4.4 Lower Housing / Printer Mechanism (p96))
 - ASF Assy (Refer to 4.4.6 ASF Assy (p106))
 - Board Assy (Refer to 4.3.1 Board Assy (Main Board/Power Supply Board) (p84))
 - Carriage Unit (Refer to 4.4.5 Carriage Shaft / Carriage Unit (p98))
2. Install the printer on a level base.

CAUTION

Place the printer on a level, warp-free table. This adjustment cannot be performed correctly if it is performed on a warped table.

3. Set the PF Roller Shaft Position Adjustment Jig in place on the Level block, and perform zero adjustment.
 - Long hand position: Turn the dial to adjust the “0” position on the scale to the long hand position with the jig set in place on the Level block.
 - Short hand position: Check it.

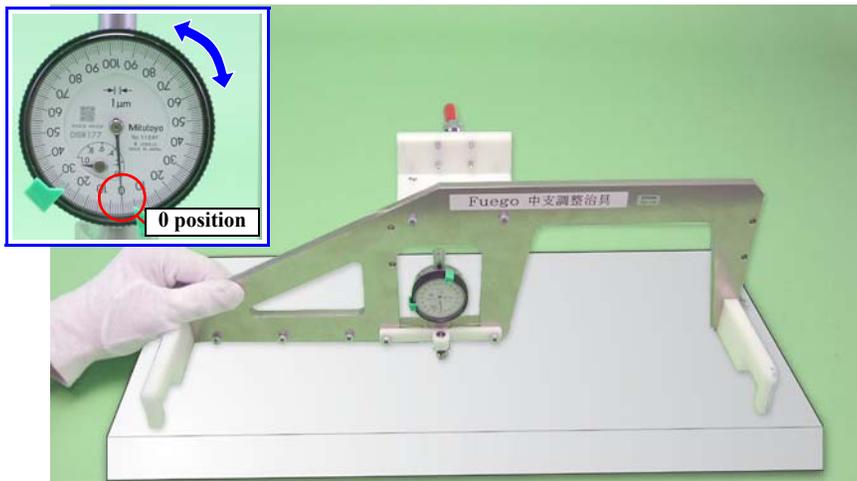


Figure 5-13. Setting the PF Roller Shaft Position Adjustment Jig (1)

4. Tilt the Printer Mechanism at about 45 degrees, and loosen the screws that secure the Center Support Bushing Cam and the Center Support Bush.

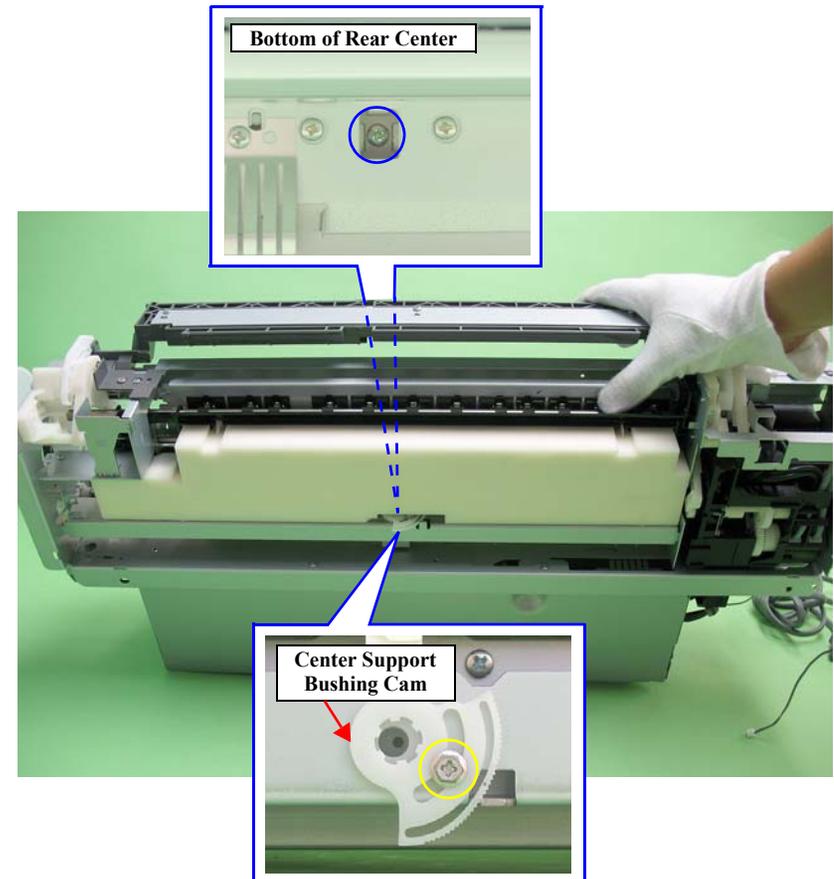


Figure 5-14. Center Support Bushing Cam and the Screw

CAUTION



Check for any dirt on the PF Roller Shaft when performing the following procedure.

5. Set the jig in place on the PF Roller Shaft as shown in the figure below.
 - Left side: Inside of PF Roller left end (E-ring)
 - Right side: Clearance between PF Roller right end (Right Bushing 8) and left end of Upper Paper Guide
 - Center: Clearance between the 2nd Upper Paper Guide and 3rd one from the left

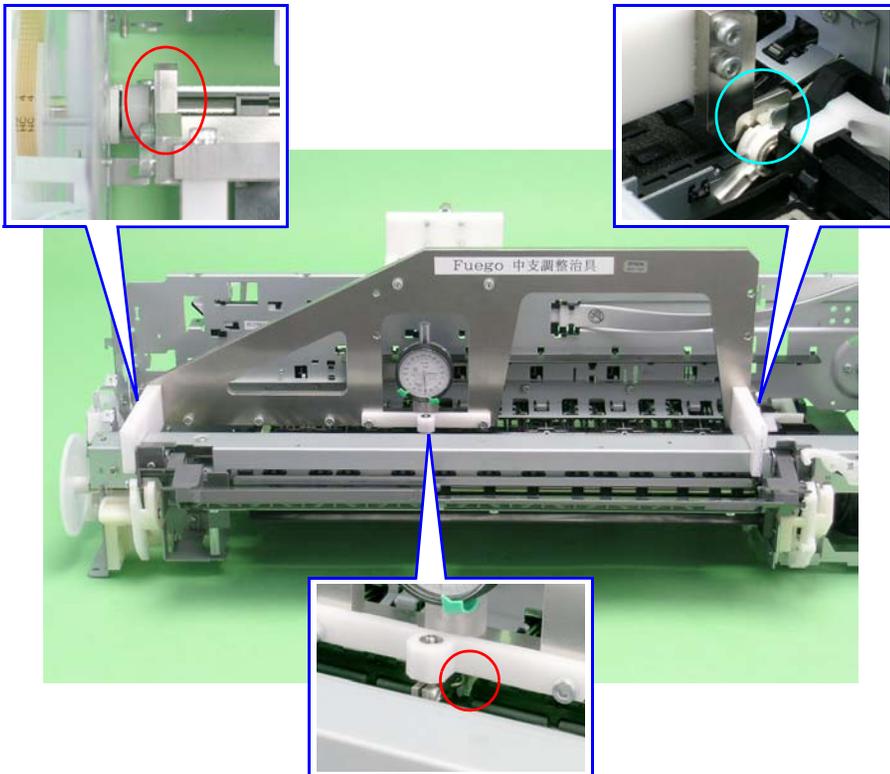


Figure 5-15. Setting the PF Roller Shaft Position Adjustment Jig (2)

6. Turn the Center Support Bushing Cam so that the long hand position is +30 μ from the "0" adjustment position.

ADJUSTMENT REQUIRED



- Standard Value: 30 \pm 50 μ
- Adjustment Resolution: 50 μ

CAUTION



- +30 μ must be set to compensate for the thickness of the coating on the PF Roller Shaft.
- Make sure that the position of the short hand is the same as at "0" adjustment.

CHECK POINT



The figure below shows the positional relationship between the Center Support Bushing Cam and the Dial Gage.

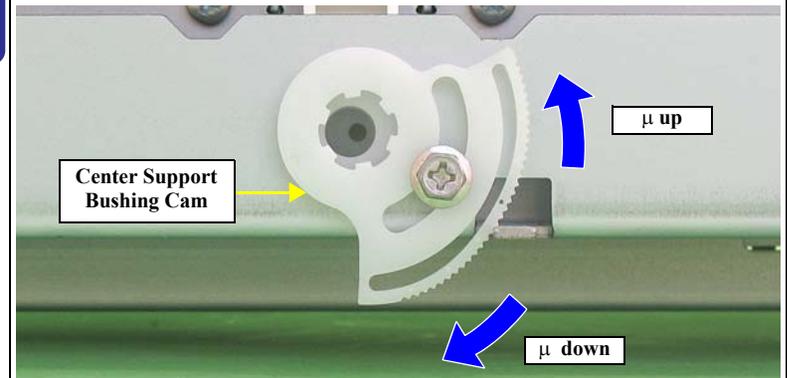


Figure 5-16. Positional Relationship between Center Support Bushing Cam and the Dial Gage

7. Tighten the Center Support Bushing Cam and the Center Support Bushing with the screws.

CAUTION



Check the adjustment value again as it deviates slightly when the screw is tightened.

The following page shows print samples when adjustment of the PF Roller Shaft Center Support Positions are inside and outside the specified value range.



Figure 5-17. Outside the Specified Value Range

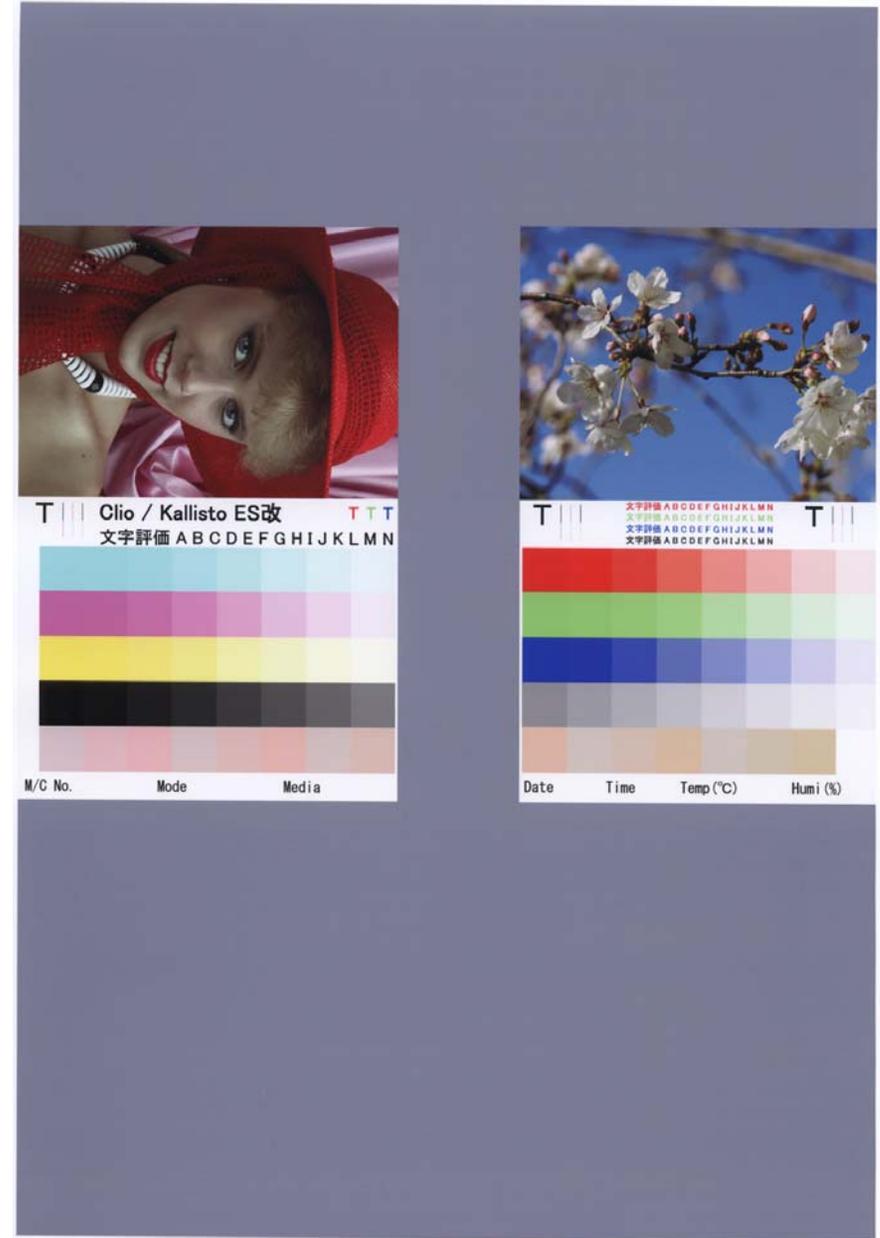


Figure 5-18. Inside the Specified Value Range

5.2.4 Colorimetric Calibration

This calibration is performed to compensate the ink discharge amount when the following parts are replaced:

- Print Head
- Main Board
- PS Board

The following tools are used for this adjustment:

- Archival Matte Paper/Enhanced Matte Paper (A4 or letter-size): 1 sheet (for printing Calibration Chart)
- Plain paper (A4 or letter-size): 1 sheet (for checking the nozzles)
- PC (OS: Windows XP/Me/2000/98)

The following drivers must be installed on the PC:

- Printer Driver for the model to be adjusted
- USB Driver for the Calibrator
- Calibrator (GretagMacbeth Eye-One with a UV filter)
 - Scanning ruler (supplied with the Calibrator)
 - Calibration plate that contains a white reference tile (Calibrator accessory)
- Colorimetric Calibration Tool (program)
- Black paper (A4 size or larger) (A paper printed in solid black can also be used.)

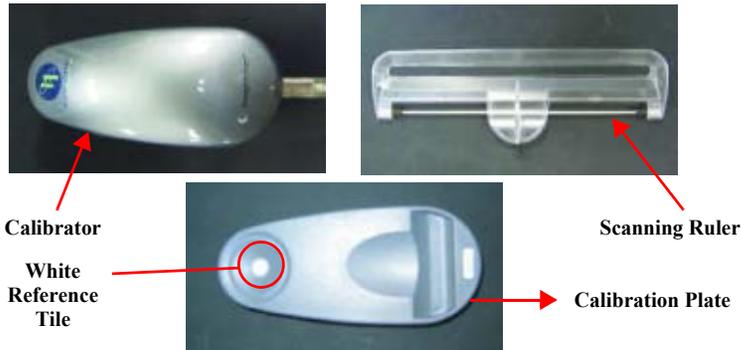


Figure 5-19. The Calibrator and the Accessories

5.2.4.1 Overview of the Colorimetric Calibration

□ Purpose

Measuring the color of the ink discharge amount information and registering/controlling this information improves calibration accuracy and ensures consistent color quality.

CHECK POINT



As color measurement is performed with the fully assembled product, the electrical characteristics which are unique to each Main/Power Board are also compensated in addition to the Print Head.

- To reduce unit-to-unit and mode-to-mode variations in color.
- To improve the accuracy of the Ink Counter.
The Color ID can improve the Ink Counter accuracy, which reduces the running cost of ink.

□ Colorimetric Calibration Technology

■ The Principle

The ink discharge amount characteristic of a printer is measured by measuring color difference ($L^*a^*b^*$) of a printed chart with a calibrator. Created Color ID information based on the obtained $L^*a^*b^*$ values is stored on the printer. When printing, the printer sends the Color ID to the printer driver to compensate the number of ink droplets (dot generation rate) for each of nine¹ different sized droplets of each color. This method allows mass-produced printers to provide consistent print quality reducing unit-to-unit variation.

Example: Compensation of Ink Amount Ejected from a Print Head (dot generation rate)

- When the standard printer generates ten dots.
If the ink discharge amount is insufficient by 10%, this is compensated by generating 11 dots.

Note 1: Three different sized droplets (small, medium, large) for each of three waveforms (VSD1, 2, 3)

■ Head ID

In the conventional color calibration with a Head ID, the print head characteristics (weight of discharged ink) are measured and compensated. The following shows the correlation between conventional Head ID adjustment and Colorimetric Calibration.

Table 5-6. The Difference in Calibration Method between Head ID and Colorimetric Calibration.

Conventional Head ID adjustment	Colorimetric Calibration
In the print head manufacturing process, ink discharge amount of each head is actually measured to get individual characteristic information. The information is stored on the printer as Head ID to control the print head.	By printing and measuring a color chart, a variation from the standard machine is obtained and registered as the correction value (Color ID) to control the amount of ink droplets.



Before performing Colorimetric Calibration, the conventional Head ID must be pre-registered. This is because the Head ID contains information to create a waveform to drive the head, which is also required for the Colorimetric Calibration.



If you do not perform Colorimetric Calibration after performing Head ID adjustment, the printer will be controlled only by the Head ID, which affects the following.

- **Ink Counter**
The ink consumption counter table switches from the table for Color ID to the one for Head ID. This change causes an ink out error to occur 2 to 5 percent earlier than when using the table for Color ID.
- **Color Quality**
Color quality will be at the same level as that of printers adjusted by the conventional Head ID, and the same color quality as mass-produced printers cannot be maintained.

- Supplement: Regarding remaining ink amount
When the Ink Counter detects ink out, a certain amount (safety margin) of ink is still remaining in the cartridge to prevent the print head from damages caused by printing without ink. This safety margin is important especially for a printer that discharges larger amount of ink.

The figure below illustrates the concept of this safety margin.

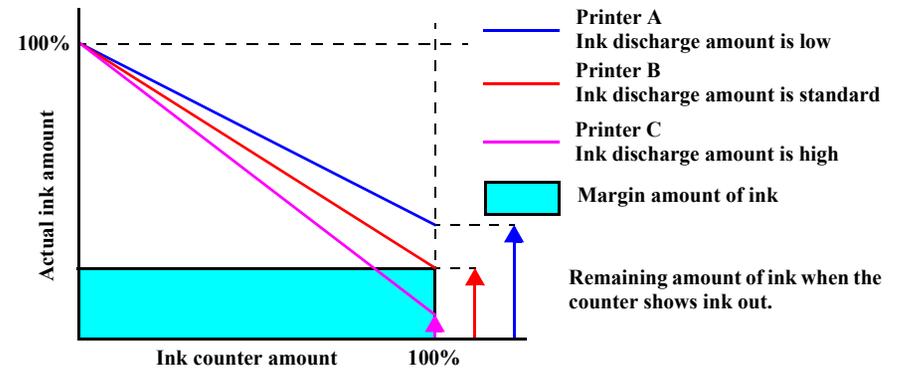


Figure 5-20. Concept of Remaining Ink Amount

5.2.4.2 Adjusting Method of the Colorimetric Calibration

CHECK POINT  The Color ID Calibration Chart is designed to be printed in a completely non-compensated state. Therefore, there is no need to delete an existing Color ID from EEPROM when printing out a Calibration Chart.

The following illustrates the overall workflow.

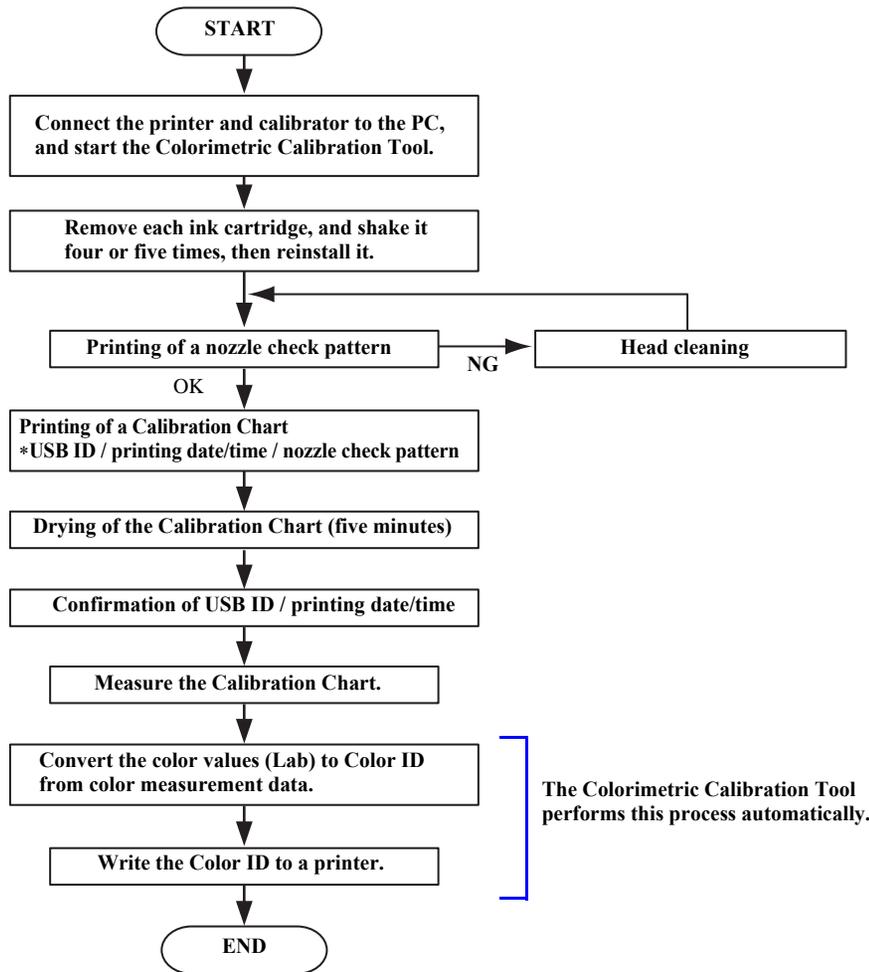


Figure 5-21. Overall Workflow

CHECK POINT 

- Install the printer driver for Stylus Photo R1900/Stylus Photo R2880 and USB driver for the calibrator to the PC in advance.
- To prevent inks from settling down at the bottom, remove the ink cartridges, and shake them four or five times, then reinstall them to the printer before starting.

1. Connect the printer and the calibrator with the PC to which the Colorimetric Calibration Tool for the printer is installed using USB cables. Then turn the printer on.
2. Start up the Colorimetric Calibration Tool.
3. Load one sheet of A4 or letter-size plain paper, and click “Next” to print a nozzle check pattern.
4. Check the printed nozzle check pattern.
 - When there are broken lines or missing segments
Run a head cleaning from the printer driver, then reprint a nozzle check pattern and check it.
 - When there are no broken lines or missing segments
Click “Next” to go to the Calibration Chart print screen.

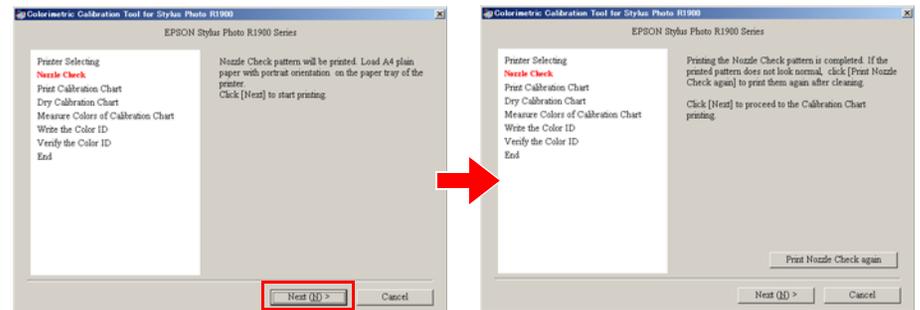


Figure 5-22. Printing and checking a nozzle check pattern

CHECK POINT 

If there are broken lines or missing segments, repeat the head cleaning until they are eliminated.

- Load one sheet of A4 or letter-size Archival Matte Paper/Enhanced Matte paper to print the Calibration Chart.

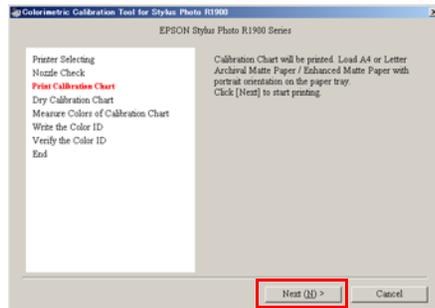
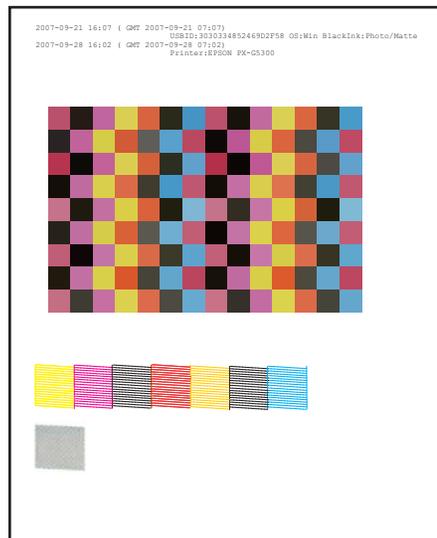


Figure 5-23. Printing a Calibration Chart



Print Time
 USB ID (18 alphanumeric digits) + OS + Black ink type
Color measurement limit time
 (7 days after the print time) Product name (R1900/R2880)

126 calibration patches

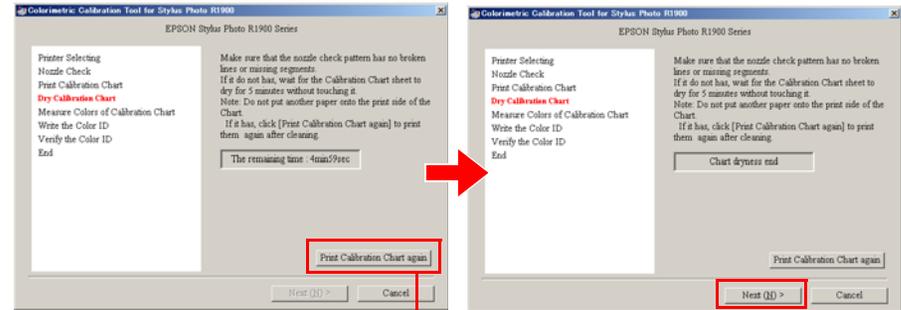
Nozzle check pattern

Figure 5-24. Illustration of Calibration Chart



The recommended air temperature range for printing a Calibration Chart is 15°C to 28°C.

- After the Calibration Chart is printed, allow it to dry for five minutes. During this time, check the nozzle check pattern on the chart. If there are broken lines or missing segments, click [Print Calibration Chart again], and return to Step 5. If there are no broken lines or missing segments, click [Next].



When there are broken lines or missing segments

Figure 5-25. Drying the Chart



If there are broken lines or missing segments observed in the nozzle check pattern for the Gross Optimizer, there's no need to reprint the check pattern.

- Connect the Calibrator to the PC and click [Color Measuring]. The color measurement procedure screen operated by the Calibrator control plug-in (DLL) is displayed on screen overlapping the Colorimetric Calibration Tool.

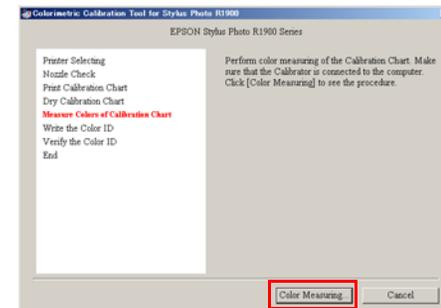


Figure 5-26. Color Measurement

8. Place the Calibrator on the calibration plate, and click [Calibrate]

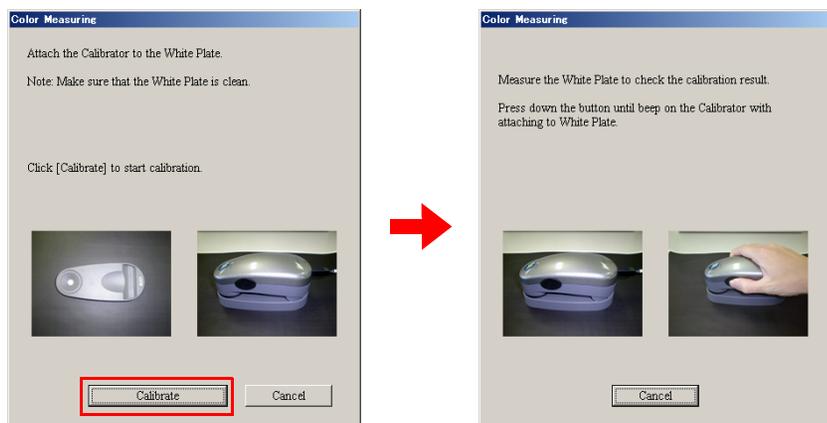


Figure 5-27. Preparing the Calibrator



- The white reference tile on the calibration plate should be clean. Clean off any dirt with alcohol or other organic solvent.
- The calibration plate and the Calibrator are used as a pair. Do not use a calibration plate supplied with an another Calibrator.

9. After confirming that you are within the color measurement time limit, place the Calibration Chart sheet on a black paper, put the scanning ruler on the Chart sheet, then click [OK].

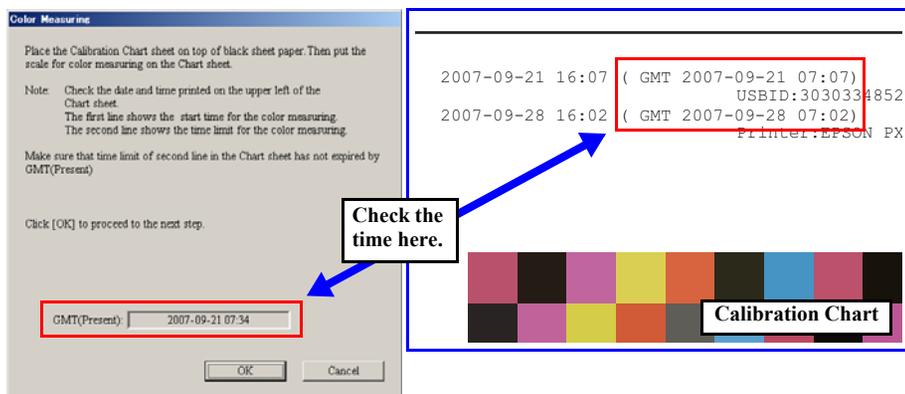
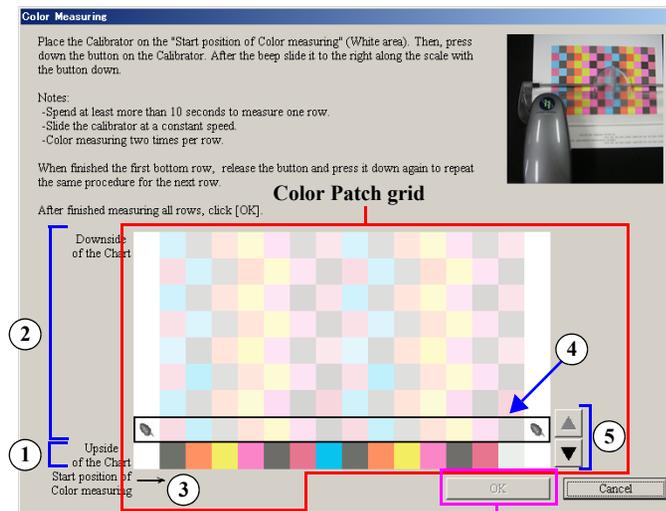


Figure 5-28. Preparing the Calibration Chart

10. Follow the on-screen messages to measure the Chart. After the color measurement is finished, click [OK].



This button is enabled after color measurement is completed.

- ① Color measurement “completed” rows Patches in the completed rows are displayed in colors created according to the measurement result.
- ② Color measurement “not completed” rows Rows that have not been measured are displayed in pale color.
- ③ Arrow Indicates the start position of color measuring.
- ④ Cursor Automatically moves up when color measurement of a row is completed.
- ⑤ Scroll buttons Scroll the cursor up or down. (These buttons are available for already measured rows or the row currently being measured.)

Figure 5-29. Starting the Color Measurement

CAUTION



- Be sure to start the measurement from the top side of the chart.
- Be sure to measure colors at each row two times.
- During color measurement, do not allow the Calibrator to rub against unmeasured patches on the chart.
- Prevent the ruler and Calibrator from coming off the chart sheet during color measurement. Doing so will cause incorrect color measurement.
- During color measurement, measure only the patches on the chart sheet. Do not measure other parts such as the USB ID text string.
- When there is an error possibility in measuring color, a warning mark (⚠) appears at the patch in question. In such case, make sure to measure the row that includes the patch with a warning mark again.
- If the number of scanned patches does not match the number of patches on a single row, the cursor stops at that row, the error mark (⊗) appears on all of the patches on that row, and the following error message is displayed:
 - “Color measuring by Eye-One calibrator has failed. Measure colors of the failed row again.”

12. When the following screen is displayed, click [End], and turn the printer OFF then back ON again to end the adjustment. This action reflects the color measurement values on the printer.

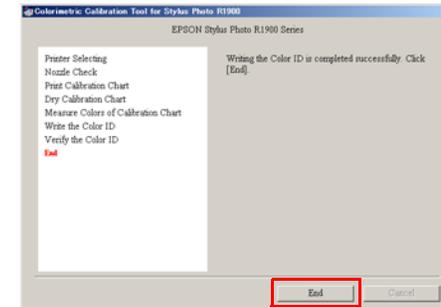


Figure 5-31. END

11. Click [Next], and write the Color ID to the printer. After the writing has finished, the Colorimetric Calibration Tool automatically checks the Color ID.

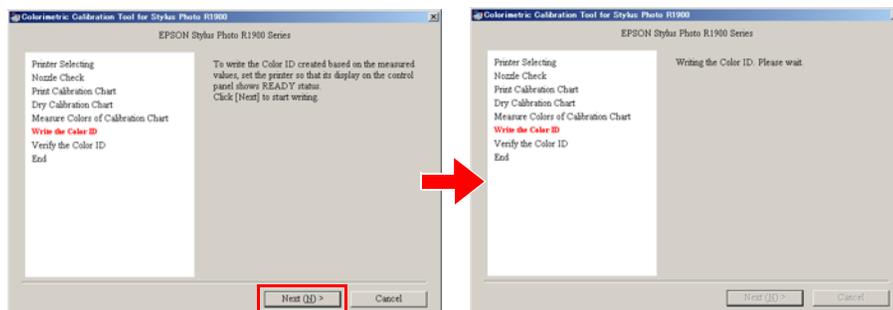


Figure 5-30. Writing of Color ID

5.2.5 ASF Guide Roller LDs Position Adjustment

When installing the Guide Roller LDs, the position of the Guide Roller LDs must be adjusted so that the positions of the LD Roller Shaft and Retard Roller are optimized in order to maintain the paper feed accuracy.

5.2.5.1 Adjusting the Position of the ASF Guide Roller LDs



When only removing the ASF Assy, you do not need to perform this adjustment. In that case, mark the installing positions of the Guide Roller LDs before removing them, and make sure to align the markings when installing the Guide Roller LDs. (Refer to 4.4.6 ASF Assy (p106))

1. After installing the "4.4.6 ASF Assy" (p106), loosen the two C.B.S. M3x6 screws that secure the Guide Roller LD.

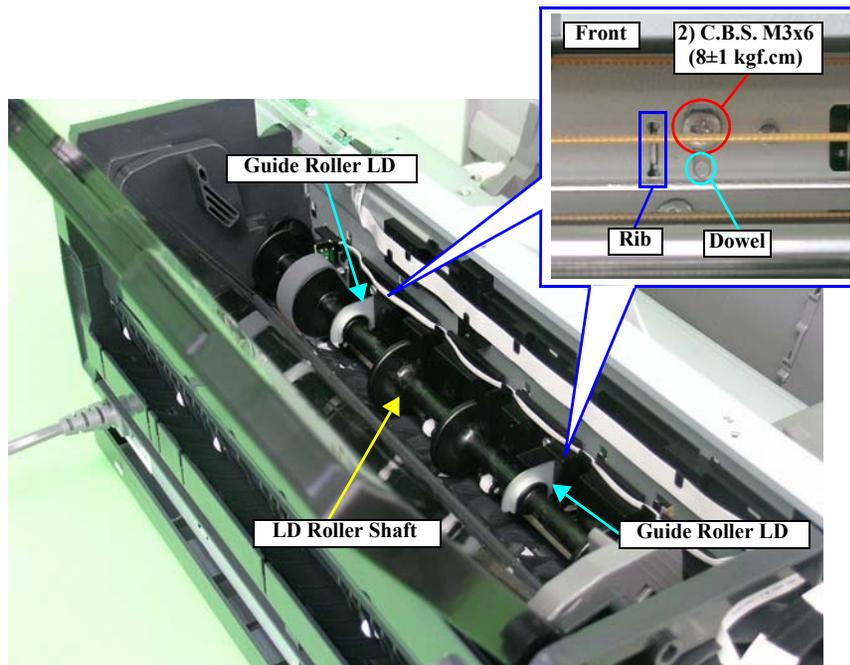


Figure 5-32. Guide Roller LD

2. Turn Combination Gear 29.11 on the right side of the ASF Assy CCW to raise the Hopper to the upper limit position (until the Hopper Pad contacts the LD Roller).

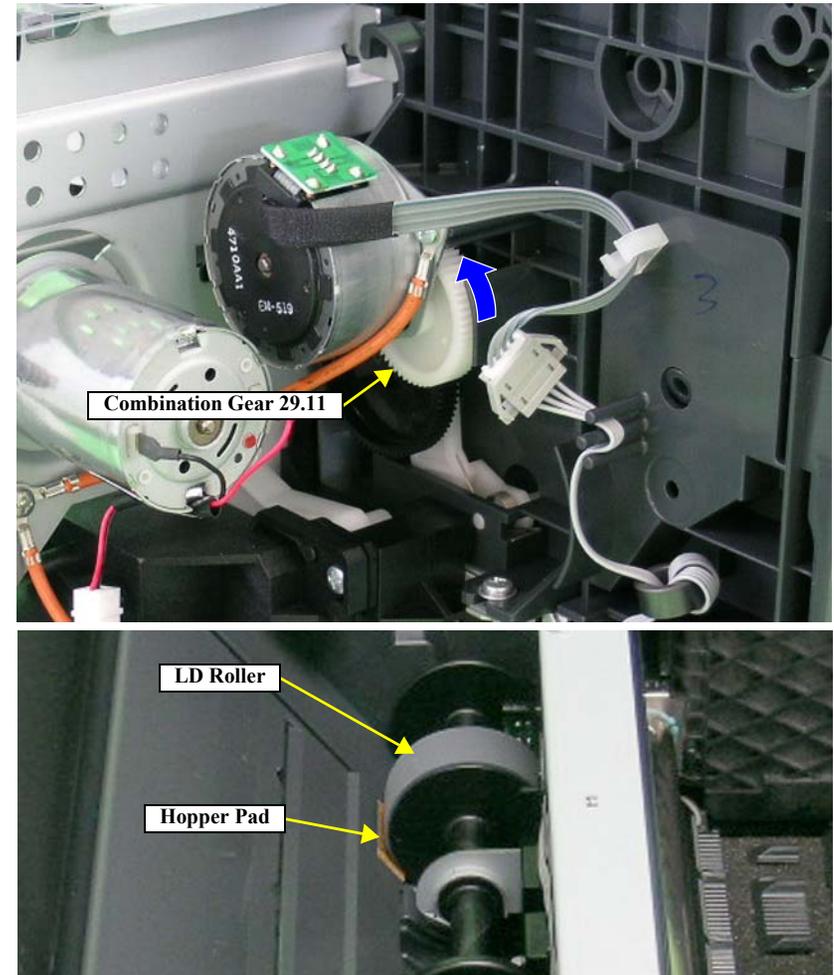


Figure 5-33. Raising the Hopper

- Light the printer's inside through a gap between the Roll Paper Frame and the ASF Assy with a penlight, and look the tab on the Retard Roller Holder at the back of the two reference tabs on the ASF Assy through the notch. After making sure that the two reference tabs are aligned when viewed edge-on, adjust the position of the Retard Roller Holder Tab by pressing the Guide Roller LD (0 digit side) so that it is placed within the range as shown in the simplified diagram in Figure 5-34.

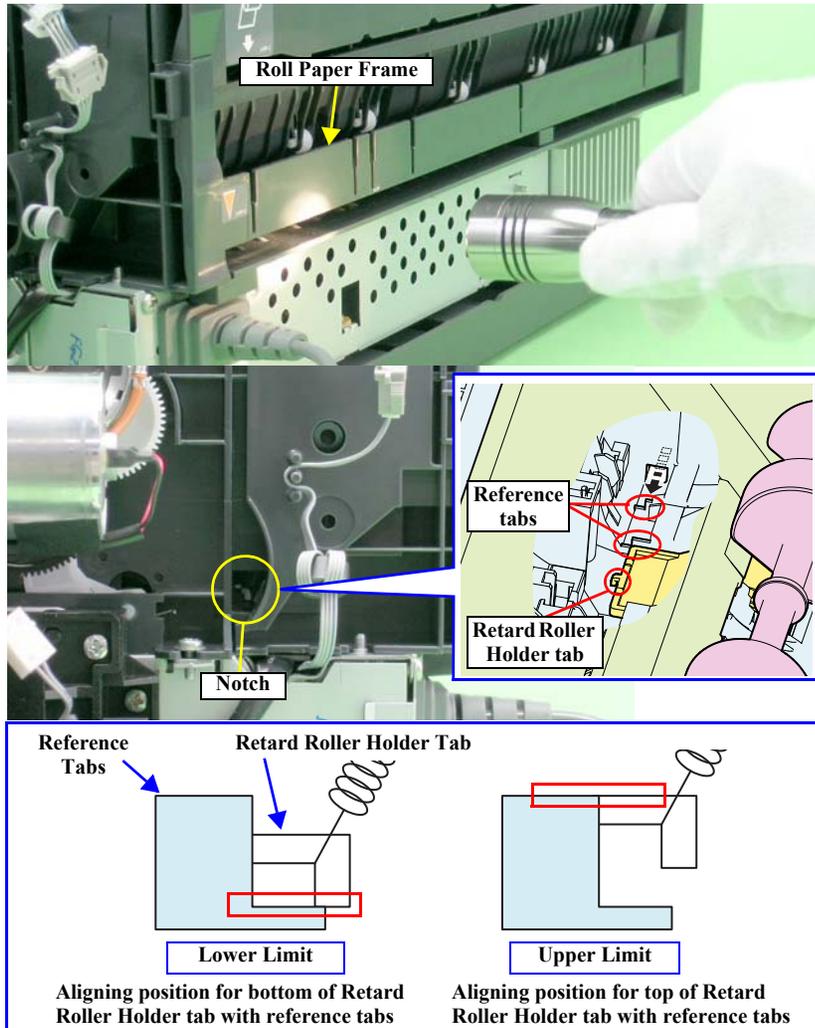


Figure 5-34. Aligning the Position of the Guide Roller LD (0 Digit Side)

- Align the guide pin and tab on the 0 Digit Side Guide Roller LD with the positioning holes on the Main Frame, and tighten the Guide Roller LD (0 Digit Side) with the screws. (See Fig.5-35.)
- Check the position of the Retard Roller Holder Tab again through the notch. If it is not inside the range, remove the screws on the Guide Roller LD (0 Digit Side), and repeat steps 2 to 4 to set the tab within the range.
- Check the clearance in both ends of the positioning hole that the Guide Roller LD Tab is inserted. And align Guide Roller LD (130 Digit Side) to the same height, and tighten with the screws.

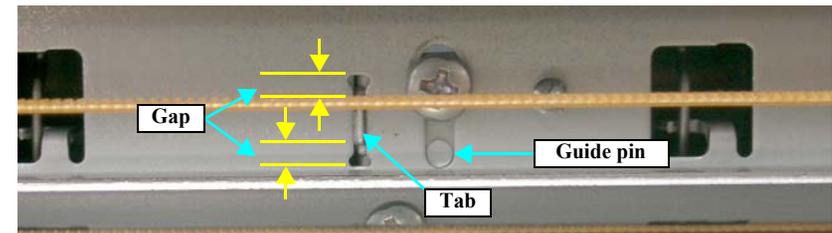


Figure 5-35. Checking the Position of Tab on the Guide Roller LD



The following are the possible troubles for misadjustment.

Tab Position	Trouble
Above upper limit	<ul style="list-style-type: none"> Paper feed mistakes caused by non-feed Skewing of business cards
Below lower limit	<ul style="list-style-type: none"> Multiple-sheet feeding

CHAPTER

6

MAINTENANCE

6.1 Overview

This section provides information to maintain the printer in its optimum condition.

6.1.1 Cleaning

This printer has no mechanical components which require regular cleaning. Therefore, when returning the printer to the user, check the following parts and perform appropriate cleaning if stain is noticeable.



- Never use chemical solvents, such as thinner, benzine, and acetone, to clean the exterior parts of the printer like the housing. These chemicals may degrade or deteriorate the quality of this product.
- Be careful not to damage any components when you clean inside the printer.
- Do not scratch the surface of the PF Roller assembly. Use a soft brush to wipe off dust.
- Use a soft cloth moistened with dilute alcohol to remove ink stain.
- Do not use the supplied cleaning sheet for normal usage. It may damage the coated surface of the PF Roller. If the adhesive surface of the cleaning sheet is set to the ASF LD Roller side and used to clean the ASF 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.

- Housing
Use a clean soft cloth moistened with water and wipe off any dirt. If the Housings are stained with ink, use a cloth moistened with neutral detergent to wipe it off.
- Inside the printer
Use a vacuum cleaner to remove any paper dust.

6.1.2 Service Maintenance

If print irregularity (missing dot, white line, etc.) has occurred or the printer indicates “Maintenance Error”, take the following actions to clear the error.

6.1.2.1 Head Cleaning

The printer has a built-in head cleaning function, which is activated by operating the control panel. The procedure is given below.

1. Confirm that the printer is in stand-by state.
Check that the Power LED is not flashing.
2. Hold down the Ink Switch on the control panel for more than 3 seconds.
The Power LED flashes during the cleaning sequence.



For Head Cleaning, it is recommended to run the nozzle check and the cleaning alternately to minimize ink consumption.

6.1.2.2 Maintenance Request

Waste ink is discharged to Waste Ink Pads via the Cap Unit. The printer has counter function that counts how much waste ink is held in the Waste Ink Pads and stores the value in the EEPROM as "Protection Counter A" and "Protection Counter B" (home and non-home side). When the counter reaches the predetermined upper limit, the printer causes the Maintenance Request error to indicate that the Waste Ink Pads is nearly saturated.

- Protection Counters Upper Limit

Waste Ink Counter	Limits
Protection Counter A	21,500 (Stylus Photo R1900) 22,500 (Stylus Photo R2880)
Protection Counter B	7,030

- Timing for Replacing the Waste Ink Pads
 - When the Protection Counter reaches the value shown above, a Maintenance Request is indicated.
 - When servicing the printer, always check the Protection Counter using the Adjustment Program regardless of whether the Maintenance Request error has been indicated or not. If the counter is close to its upper limit shown above, replace the Waste Ink Pads and reset the counter to "0" with receiving prior approval from the user. This prevents the printer from causing the Maintenance Request error soon after it is returned to the user.

- Waste Ink Pads to be replaced

Table 6-1. List of Waste Ink Pads to be replaced

Parts name	Qty.	Reference Pages
POROUS PAD, INK EJ, LEFT, LOWER	1	4.4.8 Waste Ink Pad / Waste Ink Tube Left/ Right (p110)
POROUS PAD, INK EJ, LEFT, UPPER	1	
POROUS PAD, INK EJ, RIGHT, LOWER	2	
POROUS PAD, INK EJ, RIGHT, UPPER	1	
POROUS PAD, INK EJECT, IS, LEFT	1	
POROUS PAD, INK EJECT, IS, LOWER; FB	1	
POROUS PAD, INK EJECT, IS, LOWER, LEFT	1	
POROUS PAD, INK EJECT, TUBE; FA	1	
POROUS PAD, INK EJECT, TUBE; FB	1	
POROUS PAD, INK EJECT, THIS SIDE	1	
POROUS PAD, PAPER GUIDE, INK EJECT, UPPER	1	4.4.14 Front Paper Guide / Paper EJ Roller / Front Paper Guide Pad Tray (p119)
POROUS PAD, PAPER GUIDE, INK EJECT, LEFT	1	
POROUS PAD, PAPER GUIDE, INK EJECT, RIGHT	1	

- After the Replacement
 - Reset the Protection Counter (Refer to Chapter 5 [Adjustment \(p.137\)](#))

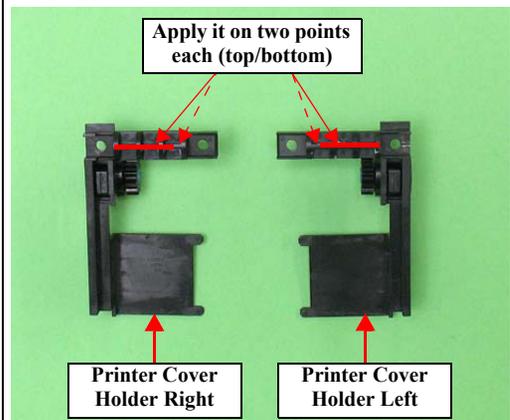
6.1.3 Lubrication

The lubrication used for the components of the printer has been decided on based on evaluation carried out by Epson. Therefore, the specified amount and places of lubrication given in this section should be strictly observed.

CAUTION 	<p>■ Never use oil or grease other than those specified in this manual. Use of different types of oil or grease may damage the components or affect the printer functions.</p>
	<p>■ Never apply a larger amount of oil or grease than specified in this manual.</p>

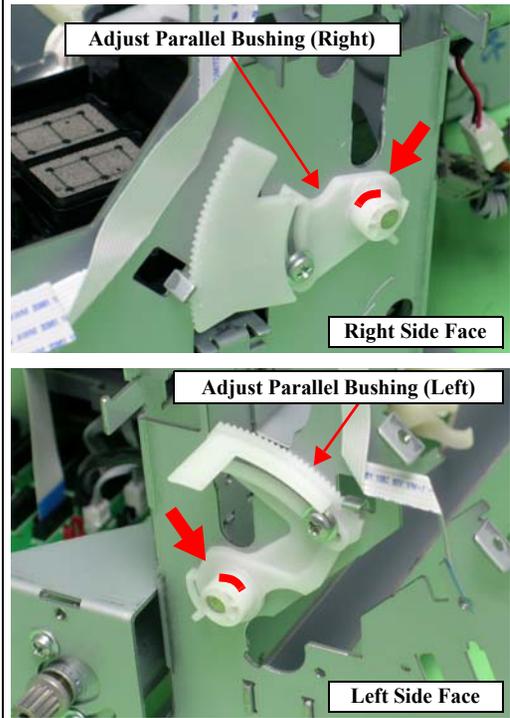
Table 6-2. Grease Applied to the EPSON Stylus Photo R1900/R2880/R2000

Type	Name	EPSON CODE	Supplier
Grease	G-26	1080614	EPSON
Grease	G-45	1033657	EPSON
Grease	G-71	1304682	EPSON



	<Lubrication Point> Shaft of Printer Cover Holder Left/ Right (two points each)
	<Lubrication Type> G-26
	<Lubrication Amount> φ1mm x 20mm x 2 ponits
	<Remarks> <ul style="list-style-type: none"> • Apply with a syringe. (Pin Head: φ1mm) • Clean them with alcohol before lubrication.

Figure 6-1. Lubrication (1)



	<Lubrication Point> Left and Right Adjust Parallel Bushings (outer circumference)
	<Lubrication Type> G-26
	<Lubrication Amount> φ1mm x 2mm
	<Remarks> <ul style="list-style-type: none"> • Apply with a syringe. (Pin Head: φ1mm) • After lubrication, install and turn the PG Cam Bush to spread the grease evenly.

Figure 6-2. Lubrication (2)

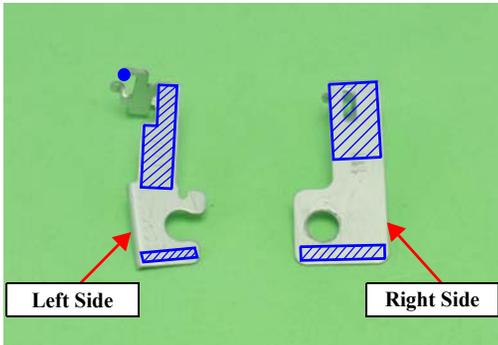
	<Lubrication Point> Contact point of the CR Scale Mounting Plate (Left/Right) and the Main Frame
	<Lubrication Type> G-26
	<Lubrication Amount> Apply evenly.
	<Remarks> Apply with a brush.

Figure 6-3. Lubrication (3)

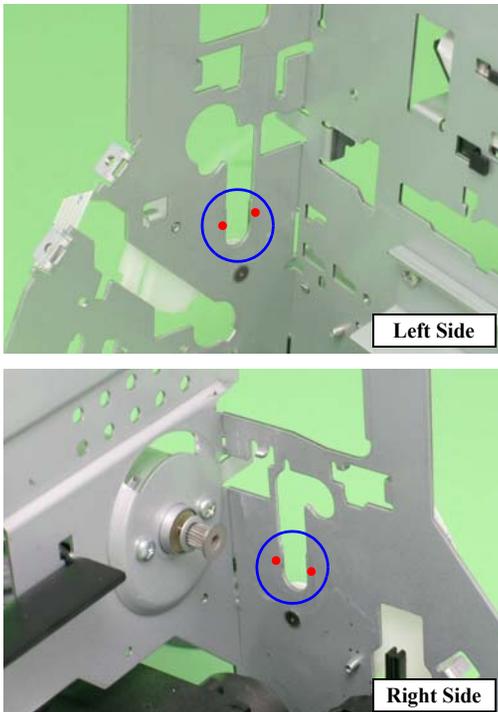
	<Lubrication Point> Contact point of the Main Frame and the CR the Scale Mounting Plate (Left/Right)
	<Lubrication Type> G-26
	<Lubrication Amount> A little at 4 points
	<Remarks> Apply with a brush.

Figure 6-4. Lubrication (4)

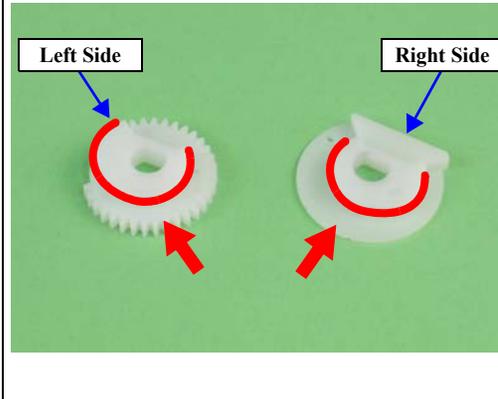
	<Lubrication Point> Bushings of the Left and Right PG Cams (inner circumference)
	<Lubrication Type> G-26
	<Lubrication Amount> 1mm diameter of the inner circumference
	<Remarks> <ul style="list-style-type: none"> Apply with a brush. Be careful not to attach the grease to the PF scale.

Figure 6-5. Lubrication (5)

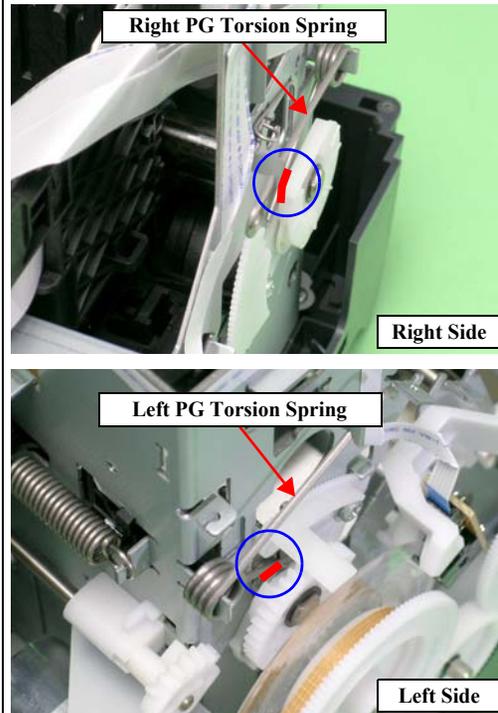
	<Lubrication Point> Contact point of the Left and Right PG Torsion Springs and the Carriage Shaft.
	<Lubrication Type> G-26
	<Lubrication Amount> φ1mm x 2mm x 2 points
	<Remarks> Apply with a syringe. (Pin Head: φ1mm)

Figure 6-6. Lubrication (6)

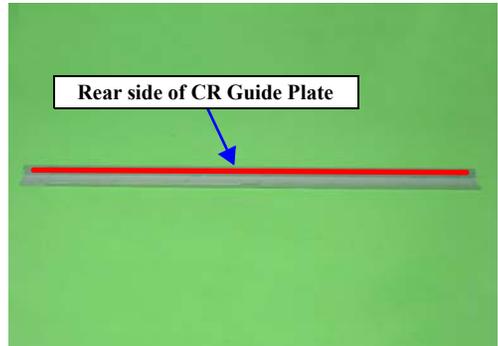
 <p>Rear side of CR Guide Plate</p>	<Lubrication Point> Contact point of the rear side of CR Guide Plate and the slider of the Carriage Unit
	<Lubrication Type> G-71
	<Lubrication Amount> 150 ± 50mg
	<Remarks> Apply with a brush.

Figure 6-7. Lubrication (7)

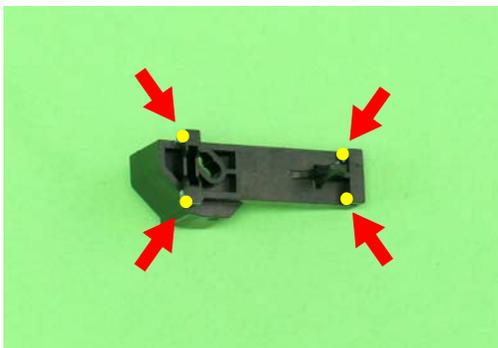
	<Lubrication Point> The Driven Pulley Holder
	<Lubrication Type> G-26
	<Lubrication Amount> φ1mm x 2mm x 4 points
	<Remarks> Apply with a syringe. (Pin Head: φ1mm)

Figure 6-8. Lubrication (8)

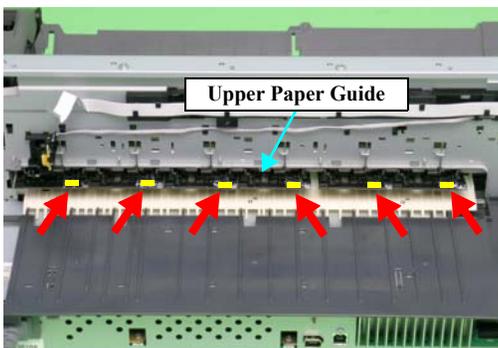
 <p>Upper Paper Guide</p>	<Lubrication Point> Contact point of the Driven Release FLAG and the Upper Paper Guide
	<Lubrication Type> G-26
	<Lubrication Amount> φ1mm x 5mm x 6 points
	<Remarks> Apply with a syringe. (Pin Head: φ1mm)

Figure 6-9. Lubrication (9)

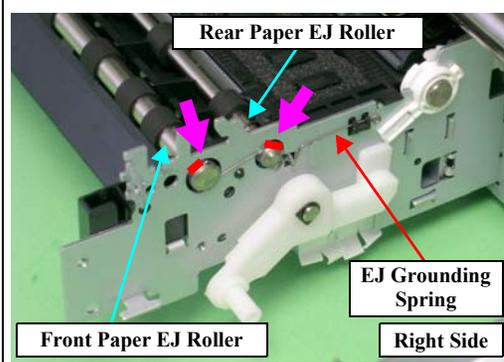
 <p>Rear Paper EJ Roller</p> <p>Front Paper EJ Roller</p> <p>EJ Grounding Spring</p> <p>Right Side</p>	<Lubrication Point> Contact point of the EJ Grounding Spring and Front and Rear Paper EJ Rollers
	<Lubrication Type> G-45
	<Lubrication Amount> φ1mm x 2mm x 2 points
	<Remarks> Apply with a syringe. (Pin Head: φ1mm)

Figure 6-10. Lubrication (10)

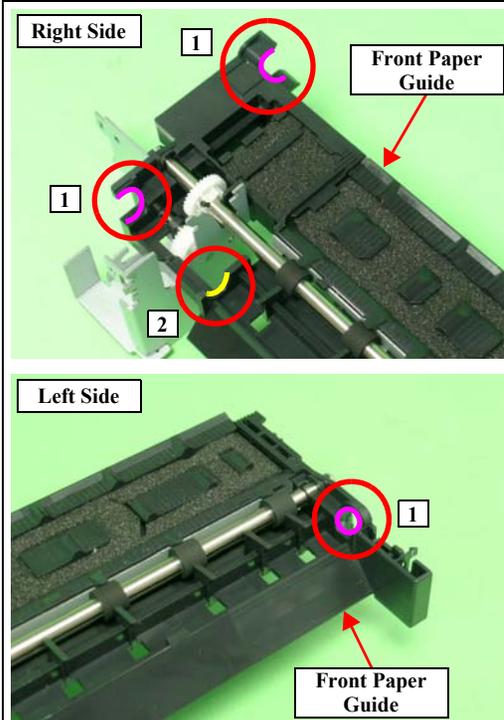
 <p>Right Side</p> <p>1</p> <p>Front Paper Guide</p> <p>1</p> <p>2</p> <p>Left Side</p> <p>1</p> <p>Front Paper Guide</p>	<Lubrication Point> The bushing of the Front Paper Guide
	<Lubrication Type> G-45
	<Lubrication Amount> 1. Apply evenly. 2. φ1mm x 2mm
	<Remarks> Apply with a brush.

Figure 6-11. Lubrication (11)

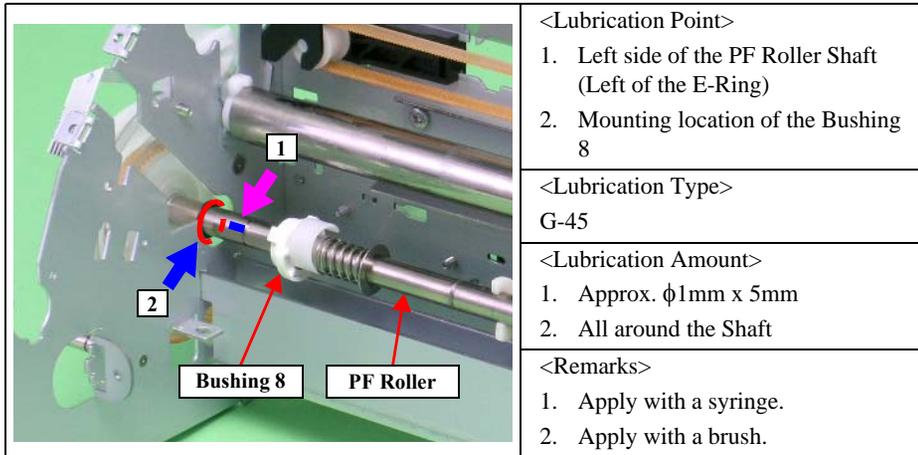


Figure 6-12. Lubrication (12)

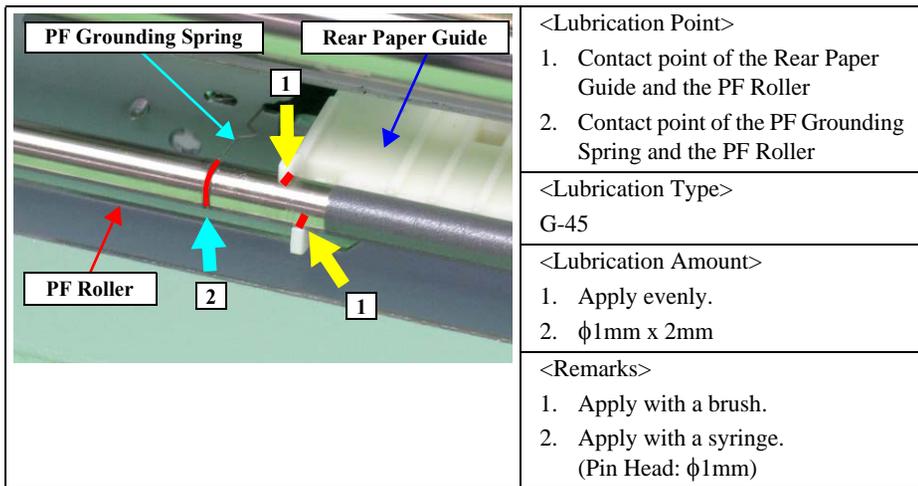


Figure 6-13. Lubrication (13)

6.1.3.1 Lubrication of Carriage Shaft

1. Fit the Carriage Unit onto the Carriage Shaft, and move it to the center of the Shaft.



In the following step, do not bring the needle of a syringe into contact with the Carriage Shaft.

2. Using a syringe, lubricate the holes (2 places) at both ends of the Carriage Unit rear side with grease.

Lubrication Type	Lubrication Amount
G-71	280mg x 2 points

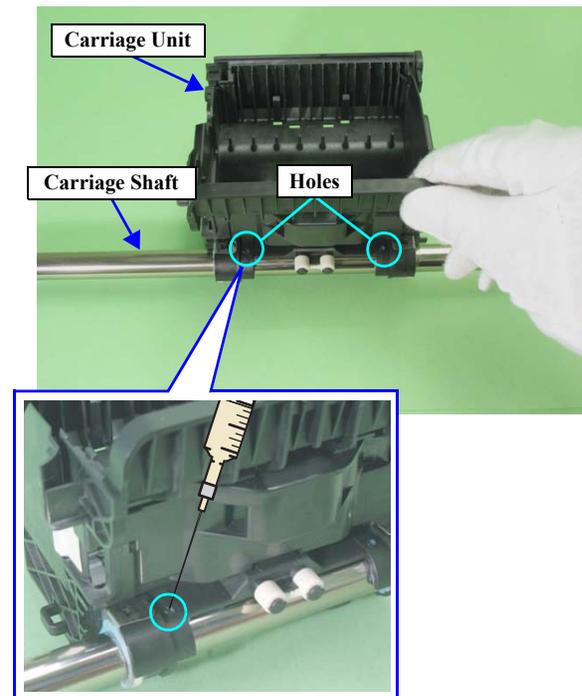


Figure 6-14. Lubricating the Carriage Shaft (1)

3. Hold the Carriage Unit, and while turning the Carriage Shaft clockwise and counterclockwise, move the Carriage Unit to spread the grease evenly.

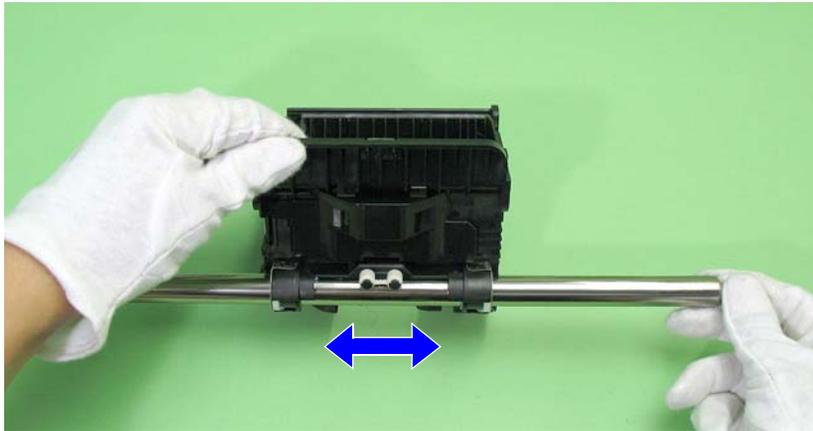


Figure 6-15. Lubricating the Carriage Shaft (2)

4. Move the Carriage Unit to the right end of the Carriage Shaft viewing the Unit from the rear, and lubricate grease with the syringe at the point shown in *Figure 6-16*.

Lubrication Type	Lubrication Amount
G-71	140mg

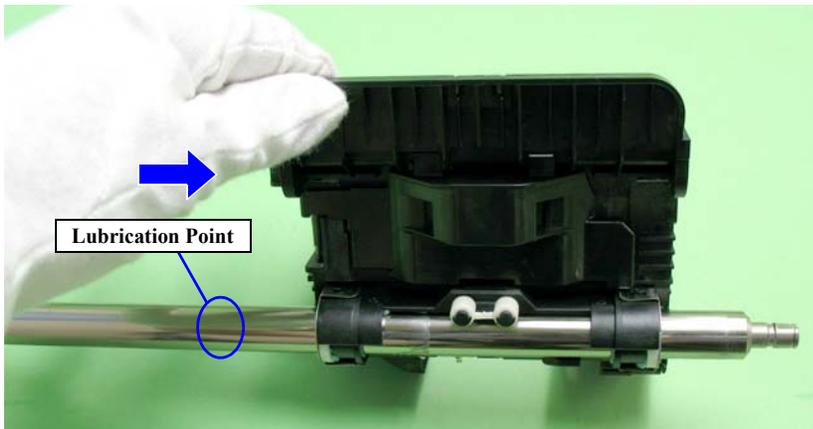


Figure 6-16. Lubricating the Carriage Shaft (3)

5. Hold the Carriage Unit, and while turning the Carriage Shaft, move the Carriage Unit to the left end of the Carriage Shaft to lubricate the grease evenly.
6. Lubricate grease with the syringe at the point shown in *Figure 6-17*.

Lubrication Type	Lubrication Amount
G-71	140mg



Figure 6-17. Lubricating the Carriage Shaft (4)

7. Hold the Carriage Unit, and while turning the Carriage Shaft, move the Carriage Unit to the right end of the Carriage Shaft to lubricate the grease evenly.

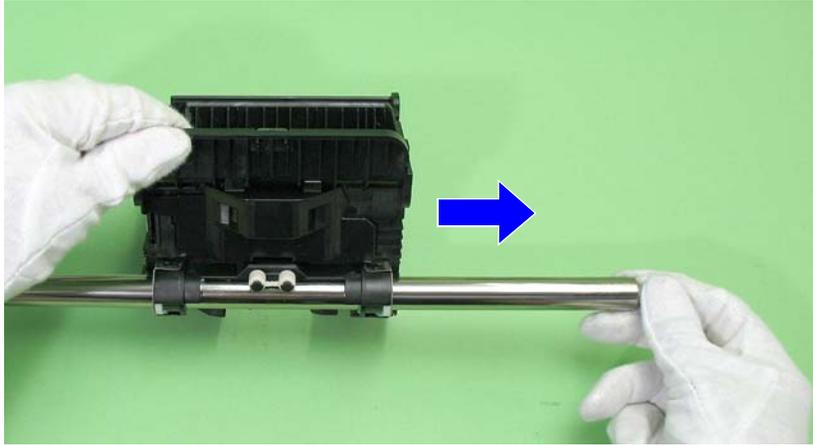


Figure 6-18. Lubricating the Carriage Shaft (5)

8. Repeat [Step 4 ~ 7](#).

CHAPTER

7

APPENDIX

7.1 Connector Summary

This section shows the connections between the main components of the printer.

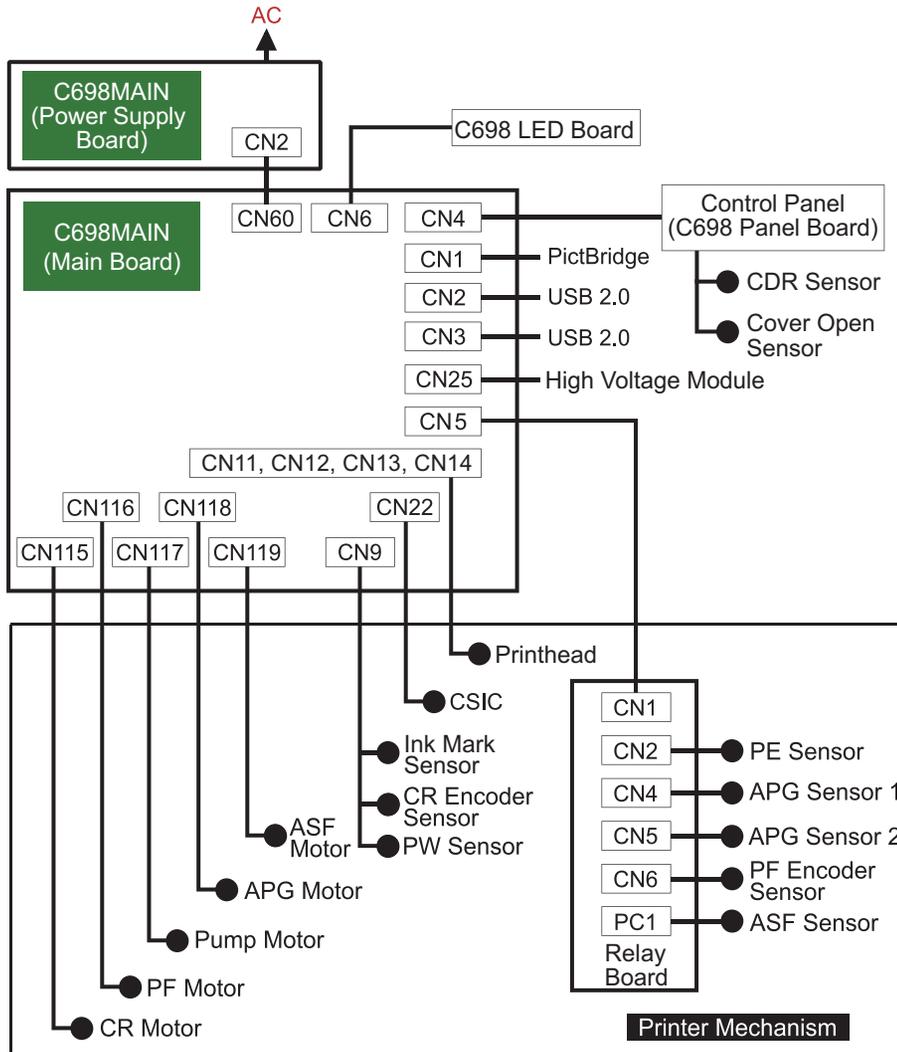


Table 7-1. Connection of the Major Components

7.2 Exploded Diagram / Parts List

This manual does not provide exploded diagrams or parts list.

For the information, see SPI (Service Parts Information).

CHAPTER

8

STYLUS PHOTO R2000

8.1 Product Description

The Stylus Photo R2000 is inkjet color printer, and it was made based on the mechanism of the Stylus Phoro R1900. Therefore, this chapter describes the specification and the functions that are unique to the Stylus Photo R2000.

About other information, please refer to Chapter 1 to Chapter 7 for the information on the Stylus Photo R1900. This chapter includes :

- Features

Describes the features that are unique to the Stylus Photo R2000.
(Case specifications, Network interface, Ink cartridge,
Nozzle configuration, Ink scrambling sequence,
Operation buttons & indicators)

- Disassembly

Describes the parts that are unique to the Stylus Photo R2000.
(Housing, Panel unit, Wireless LAN board)

- Adjustment

Describes the Adjustment items that are unique to the Stylus Photo R2000.

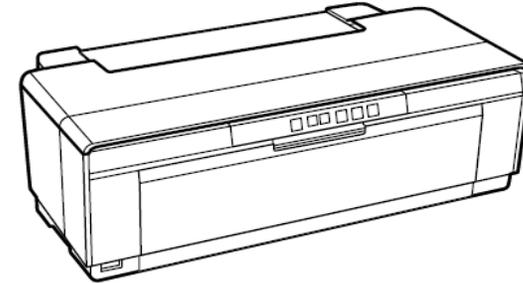
(MAC address, PF motor heat protection control,
Initialize front tray print counter, Disable front tray print counter,
Mist recovery check, Colorimetric Calibration,
Multi Sensor Adjustment (Ink Mark sensor adjustment))

8.2 Features

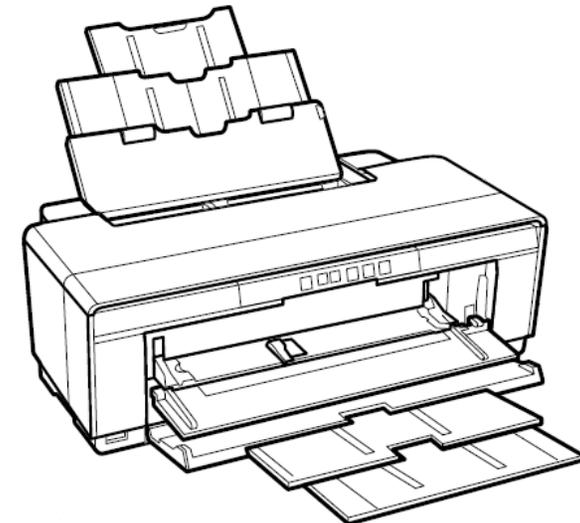
- Casing specifications
- Network interface
- Ink cartridge
- Nozzle configuration
- Ink scrambling sequence
- Operation buttons & indicators

8.2.1 Casing specifications

- Dimensions :622.1 mm (W) x 324.0 mm (D) x 219.0 mm (H)
(Peper support and stacker are closed. Rubber feet are included.)
- Weight :12.3 kg
(Without ink cartridges, CDR Tray, Roll paper holders)



Paper Support & Stacker are closed



Paper Support & Stacker are opened

Figure 8-1. External View

8.2.2 NetWork Interface

Stylus Photo R2000 can be connected to the network via Wired LAN or Wireless LAN connection. (They can not be used simultaneously.) The following describes each Interface.

Wired LAN

The following interface is equipped for the Wired LAN connection. The communication mode can be selected from auto setting or fixed setting.

Table 8-1. Wired LAN

Item	Content
Connector	RJ-45 receptacle*: 1 port
Communication Speed	For either 10Base-T or 100Base-TX, the Full Duplex or Half Duplex can be selected.

Note *: 10Base-T/100Base-TX Ethernet is supported. MDI/MDI-X is selected automatically.

Table 8-2. Combination of the Wired LAN communication mode settings

Setting of this printer	Setting of the connected device
Auto Setting	Auto Setting (AUTO)
	100BASE-TX Half Duplex
	10BASE-T Half Duplex
100BASE-TX Full Duplex	100BASE-TX Full Duplex
100BASE-TX Half Duplex	Auto Setting (AUTO)
	100BASE-TX Half Duplex
10BASE-T Full Duplex	10BASE-T Full Duplex
10BASE-T Half Duplex	Auto Setting (AUTO)
	10BASE-T Half Duplex

Wireless LAN

The following interface is equipped for the Wireless LAN connection.

Table 8-3. Wireless LAN

Item	Content	
Applied Standard (2.4GHz spectrum band wireless network standards)	Conforms to IEEE802.11b, IEEE802.11g, IEEE802.11n	
Wireless Operation Mode	IEEE802.11b	DS-SS (Half Duplex)
	IEEE802.11g	OFDM (Half Duplex)
	IEEE802.11n	OFDM (Half Duplex)
Communication Mode	Ad-hoc (IBSS) or Infrastructure (ESS)	
Roaming Function	Not Supported	
Output Signal Intensity	10mW	
Antenna	Built-in antenna (Diversity function is not supported)	

Table 8-4. Available Channels and Standard

Frequency Band (GHz)	Channel	IEEE Standard	Communication Speed (bps)*
2.400 - 2.4835	1 - 13	802.11b	11/5.5/2/1M
2.400 - 2.4835	1 - 13	802.11g	54/48/36/24/18/ 12/9/6M
2.400 - 2.4835	1 - 13	802.11n	Refer to Table 8-5
2.471 - 2.497	14	802.11b	11/ 5.5/2/1M

Note "*": The communication speed will be changed automatically, depending on radio wave strength. bps = bit per second.

Table 8-5. Communication Speed for 802.11n*1 *2

MCS Index	Bandwidth = 20MHz		Bandwidth= 40MHz	
	GI = 800ns	GI = 400ns	GI = 800ns	GI = 400ns
0	6.5	7 (7.2)	13.5	15
1	13	14 (14.4)	27	30
2	19.5	21.5 (21.7)	40.5	45
3	26	28.5 (28.9)	54	60
4	39	43 (43.3)	81	90
5	52	57.5 (57.8)	108	120
6	58.5	65	121.5	135
7	65	72 (72.2)	135	150

MCS : Modulation and Coding Scheme GI : Guard Interval

Note *1: After the decimal point is displayed by the 0.5Mbps.Number in parentheses is defined value of 802.11n standard.

*2: For regulation of Radio Law, if Bandwidth is fixed to 20MHz by exporting area, maximum of Communication Speed is restricted to upper limit of 20MHz.

□ Switching Wired/Wireless LAN

This printer can connect to the network via either Wired LAN or Wireless LAN connection only.

Enabling/disabling the Wireless LAN can be made from the Control Panel. When the Wireless LAN is enabled, it gets priority over the Wired Lan regardless of whether the LAN Cable is connected. The default Wireless LAN setting is "Disabled".

Table 8-6. Wireless LAN Setting from the Control Panel

Setting from Control Panel		LAN Cable Connection State	
		Connected	Disconnected
Wireless LAN	Disabled (Default)	Wired LAN	---*
	Enabled	Wireless LAN	Wireless LAN

Note * : No service via network is available without connecting the LAN Cable (because network communication is not established.) except printing a status sheet or the like.

8.2.3 Ink Cartridge

Describes the specification of the ink cartridge.

- Product numbers of the EPSON ink cartridges

Table 8-7. Product No. of Ink Cartridges

Color	Code
Photo Black	T1591
Matte Black	T1598
Light Black	---
Light Light Black	---
Cyan	T1592
Light Cyan	---
Magenta	T1593
Vivid Magenta	---
Vivid Light Magenta	---
Yellow	T1594
Orange	T1599
Red	T1597
Gloss Optimizer	T1590

- Shelf life
Two years from production date (if unopened), six months after opening package.
- Storage Temperature

Table 8-8. Storage Temperature

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

- Dimension
12.7 mm (W) x 68 mm (D) x 57 mm (H)
- Equipped with the plate of scrambling
For the purpose, please refer to Section.

- Color of the ink cartridge
EPSON COOL WHITE



For Stylus Photo R1900/R2880

For Stylus Photo R2000

CAUTION

- The ink cartridge cannot be refilled.
- Do not use expired ink cartridges.
- The ink in the ink cartridge freezes at -16 °C (3.2 °F). It takes about three hours under 25 °C (77°F) until the ink thaws and becomes usable.

8.2.4 Nozzle Configuration

Table 8-9. Nozzle Configuration

Item	Specification
Nozzle Configuration	Black : 180 nozzles x 2 (Photo Black, Matte Black) Color : 180 nozzles x 6 (Red, Orange, Cyan, Magenta, Yellow, Gloss Optimizer)

8.2.5 Ink Scrambling Sequence

Purpose

To prevent the inks from settling at the bottom, and to reduce variations of color for printing, Ink Scrambling Sequence is executed. The Scrambling Board of the ink cartridges are operated by CR moving.

Timing of Ink Scrambling

- Ink charge
- Ink cartridge replacement
- Power on
- User Selects the Ink Scrambling (Printer Driver)

Count of CR Reciprocating

Table 8-10. Count of CR Reciprocating

Timing	Color	Days*1	Count*2
Ink charge	All	---	60
Ink cartridge replacement	Cyan	0 ? 365	60
		366 ? 730	60
		731 ? 1095	270
		1096?	270
	Yellow, Magenta, Matte Black, Red, Orange, Photo Black	0 ? 365	30
		366 ? 730	30
		731 ? 1095	270
		1096?	270
Gloss Optimizer	---	0	
Power On	All	0 ? 30	0
		31 ? 183	60
		184?	60
User selects the Ink Scrambling	All	---	60

Note *1: Days of "Ink cartridge replacement" means Days after production of Ink cartridges.
 Days of "Power On" means Days after the previous Ink Scrambling.

*2: 0.45sec / 1 reciprocation

8.2.6 Operation Buttons & Indicators (LEDs)

□ Operation Buttons

This printer has the following six operation buttons.

Table 8-11. Operation Buttons

Button	Function
Power	Turns the power ON/OFF.
Paper	Feeds or ejects paper.
Ink	Runs a sequence of ink cartridge replacement or cleaning.
Roll Paper	Prints the cutting line on the roll paper or feeds the paper backwards out of the printer.
Network status sheet	Prints the network status sheet.
Wi-Fi	Adjust setting for connection to wireless LANs.

□ Indicators (LEDs)

Thirteen indicators (LEDs) are provided to indicate settings or printer status.

Table 8-12. Indicators (LEDs)

LED	Function
Power LED (Green)	Lights at power-on. Flashes during some sequence is in progress. Flashes at high speed during power-OFF sequence.
Ink LED (Red)	Lights or flashes when an ink-related error occurs.*
Paper LED (Red)	Lights or flashes when an paper- or CDR-related error occurs.*
Cartridge LED (red) x 8	Indicates an ink-related error of each ink cartridge.*
Network LED (Green / Yellow)	Lights or flashes during network sequence.

Note "*": See "8-14 Indicators (LEDs) Function" (p.181) for the LED status at error occurrence.

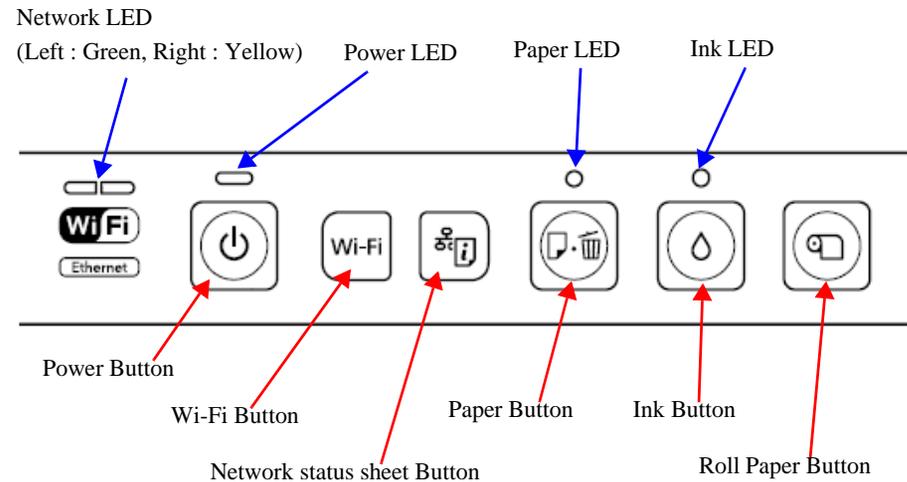


Figure 8-2. Button & Indicators (LEDs)

□ Operation Buttons & LEDs Functions

Table 8-13. Operation Button Functions

Button	Printer Status	Function
Power	Off	• Turns the power on.
	On	• Turns the power off.
Ink	On	<ul style="list-style-type: none"> • Runs a sequence of ink cartridge replacement. The carriage moves to set the ink cartridge to the position for replacement. • When an ink cartridge has been set in the ink replacement position, moves the carriage to the home position.
Paper	On	<ul style="list-style-type: none"> • Feeds or ejects paper.* • Recovers from a multi-feed error and feeds paper to restart the print job. • Feeds paper when paper is loaded after a no-paper error occurs. • Ejects a jammed paper when a paper jam error occurs. • Cancels the print job during printing. • Runs a sequence of ink cartridge replacement when an ink-out, or ink color error occurs. The carriage moves to set the ink cartridge to the position for replacement. • When an ink cartridge has been set in the ink replacement position, moves the carriage to the home position.
	During CDR printing	<ul style="list-style-type: none"> • Recovers from a paper jam error. • Cancels the print job during printing.
Ink (when held for three seconds or longer)	On	<ul style="list-style-type: none"> • Runs a head cleaning. • Runs a sequence of ink cartridge replacement when ink level low, ink out, no ink cartridge, or ink color error*2 has occurred.
Roll Paper	On	<ul style="list-style-type: none"> • Feeds the roll paper to the cutting position and prints a cutting line. • Returns the cutting position. • When an ink cartridge has been set in the ink replacement position, moves the carriage to the home position.

Table 8-13. Operation Button Functions

Button	Printer Status	Function
Roll Paper (when held for three seconds or longer)	On	<ul style="list-style-type: none"> • Ejects the paper backwards out of the printer. • When an ink cartridge has been set in the ink replacement position, moves the carriage to the home position.
Networkstatusheet (when held for three seconds or longer)	On	• Prints the network status sheet.
Wi-Fi	On	• Recovers from a error for Wireless easy setting
Wi-Fi (when held for three second or longer)	On	<ul style="list-style-type: none"> • Starts Wireless easy setting • Sets WPS-PBC (Automatically)
Network status sheet + Wi-Fi (combination)	On	• Sets WPS-PIN
Power + Ink (combination)	At power on	• Turns the power on in rub reduction mode when connected to DSC (digital still camera).
Power + Ink (combination) (Hold down the Ink button for seven seconds or longer)	On	• Forcefully turns the power off.
Power + Paper * (combination)	At power on	• Prints a nozzle check pattern when not connected to the PC.
Power + Network status sheet (combination)	At power on	• Returns the network settings to factory default setting

Note "*": The paper cannot be fed or ejected if the CDR Tray Base is open.

Table 8-14. Indicators (LEDs) Function

Printer Status	Indicators (LEDs)					Priority *1
	Power	Paper	Ink	NW sheet	Wi-Fi	
Power OFF	Flashes at high speed	OFF	OFF	--	--	1
Fatal Error	OFF	Flashes at high speed	Flashes at high speed	--	--	2
Maintenance request	OFF	Flashes alternately 1	Flashes alternately 2	--	--	3
CDR guide error	--	Flashes 2	Flashes at high speed	--	--	4
Paper path error	--	Flashes	--	--	--	5
Paper (CDR) jam	--	Flashes	--	--	--	
Cover open error	--	Flashes	--	--	--	6
Multi-feed error	--	ON	--	--	--	
No paper error	--	ON	--	--	--	
CDR tray error	--	ON	--	--	--	7
During Ink scrambling sequence	Flashes 3	--	--	--	--	
Ink cartridge replacement is in progress	Flashes	--	--	--	--	8
Ink sequence is in progress	Flashes	--	--	--	--	9
CSIC error	--	--	ON *2	--	--	10
No ink cartridge or ink-out error	--	--	ON *2	--	--	
Ink Color error	--	--	Flashes at high speed *2	--	--	11

Note *1: When two or more errors occur at the same time, the one with higher priority will be indicated.

*2: The cartridge LED corresponding to each ink cartridge lights.

*3: NW sheet LED and Wi-Fi LED don't depend on the priority of other LEDs.

*4: After the setting succeeds, LED is turned on for 5 minutes, and turned off.
(Conformed to Display specification of WPS formula)

Note : -- : No change
 Flash: Repeats turning On and Off every 1.25 seconds.
 Flash 2: Repeats On for 0.5 seconds, Off for 0.5 seconds, On for 0.5 seconds, and Off for 1.0 second.
 Flash 3: Repeats Off for 0.5 seconds, On for 0.5 seconds, Off for 0.5 seconds, and On for 1.0 second.
 Flash 4: Repeats On for 2.0 seconds and Off for 0.5 seconds.
 Flash at high speed: Repeats turning On and Off every 0.5 seconds.
 Flashes alternately 1: Same as the "Flash"
 Flashes alternately 2: Repeats turning Off and On every 1.25 seconds.

Table 8-14. Indicators (LEDs) Function

Printer Status	Indicators (LEDs)					Priority *1
	Power	Paper	Ink	NW sheet	Wi-Fi	
Data processing / Printing from camera	Flashes	--	--	--	--	12*3
Access point setting error (Security key exchange)	--	--	--	--	Flashes at high speed	
Access point setting error (General)	--	--	--	--	Flashes	
Access point setting error (Registration)	--	--	--	--	Flashes	
Access point setting error (PINCODE authentication)	--	--	--	--	Flashes	
Success Wireless LAN setting	--	--	--	--	ON *4	
Cannot set Wireless LAN	--	--	--	--	Flashes	
During push-button setting	--	--	--	Flashes alternately 2	Flashes alternately 1	
During PINCODE setting	--	--	--	Flashes simultaneously	Flashes simultaneously	
During receiving data	Flashes	--	--	Flashes	--	
Network initialization start (LED ON)	--	--	--	ON	ON	
Network initialization start (LED OFF)	--	--	--	OFF	OFF	
State of initialization start	--	--	--	Flashes alternately 2	Flashes alternately 1	
Non connection	--	--	--	OFF	--	13
During Wireless LAN connection (having IP)	--	--	--	ON	--	
During Wired LAN connection (having IP)	--	--	--	OFF	ON	14
Non support device connection	--	Flashes 2	Flashes 3			
non compliant Hub	--	Flashes 4	Flashes			15
Ink low	--	--	Flashes*2			
During camera connection (Head rubbing reduction ON)	Flashes 4	--	--			16
During camera connection (Head rubbing reduction OFF)	Flashes 2	--	--			
During Power ON sequence	Flashes	--	--			

❑ Errors & Remedies

Error	Contents	Remedies
Fatal error	A mechanical error has occurred.	Turn the power Off and back it On.
Maintenance request	Waste ink pads need to be replaced.	Replace the waste ink pads and reset the counter.
CDR guide error	The CDR Tray Base was opened when receiving or printing a ASF print job.	Close the CDR Tray Base.
	The CDR Tray Base was closed when receiving or printing a CDR print job.	Open the CDR Tray Base.
Paper jam	A paper jam has occurred.	<When printing on paper> Remove the jammed paper and press the Paper button.* ¹ <When printing on CDR> Remove the jammed CDR tray and press the Paper button.
No paper	Failed to feed paper	Load paper correctly and press the Paper button.* ¹
Multi-feed	Multiple sheets of paper were fed at the same time.	Press the Paper button to eject the multiple sheets.* ¹
Ink-out	The cartridge has run out of ink.	Replace the cartridge with a new one.* ²
No ink cartridge	Ink cartridge(s) was not detected.	Replace the cartridge with a new one.* ²
Wrong ink cartridge	Incorrect ink cartridge(s) was detected.	Replace the cartridge with the correct one.* ²
Paper path error	The paper was loaded in a different way from the specified one.	Eject the fed paper and press the Paper button after loading paper in the specified way.
Cover open error	Printing was executed with the Printer Cover open.	Close the Printer Cover.
Ink Color error* ³	Cleaning after black ink replacement cannot be performed.	Replace the black ink cartridge with the one used before the error, or the one that has sufficient amount of ink.

Error	Contents	Remedies
Access point setting error (Security key exchange)	Error has occurred by exchanging security key to access point.	Executes access point setting again.
Access point setting error (General)	Error has occurred during setting Wireless LAN to access point.	Executes access point setting again.
Access point setting error (Registration)	Registration error has occurred by registering to access point.	Executes access point setting again.
Access point setting error (PINCODE authentication)	Error has occurred by failure of PINCODE authentication during setting Wireless LAN to access point.	Executes access point setting again.
Cannot set Wireless LAN	When sets Wireless LAN, Wired LAN is connected.	Disconnects Wired LAN, and executes access point setting again.

Note : For detail of remedy, please refer to [Troubleshooting according to Error Messages \(p.34\)](#).

Note *1: When the CDR Tray Base is opened, close the CDR Tray Base and press the Paper button.

*2: When the CDR tray has been inserted, remove the CDR tray and press the Ink button.

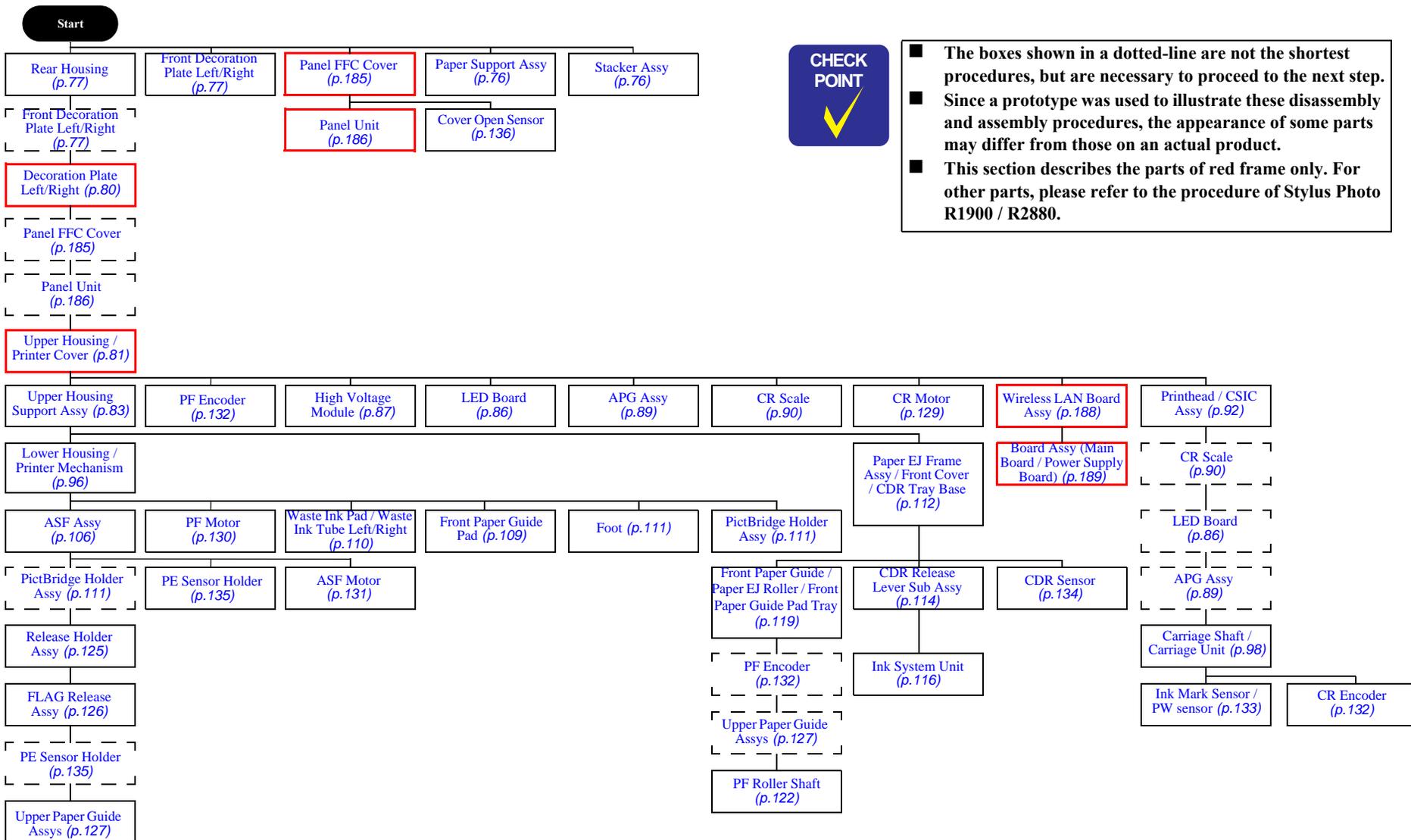
8.3 Disassembly

8.3.1 Summary

This section describes changed parts & new parts for Stylus Photo R2000 only. For assembling of other parts, please refer to the information of Stylus Photo R1900/R2880. ("[4.1.7 Disassembly](#)" (p.75)) In addition, the caution points are same as Stylus Photo R1900 / R2880.

8.3.2 Procedure of Disassembly

The flowchart below lists the step-by-step disassembly procedures.



□ Panel FFC Cover

1. Open the Printer Cover.



Before opening the Front Cover and the CDR Tray Base, unlock the Carriage. (Refer to "4.1.6 Locking/Unlocking the Carriage and Opening/Closing the CDR Tray Base (p73)")

2. Open the Front Cover and the CDR Tray Base



Figure 8-3. Removing the Panel FFC Cover (1)

3. Remove the screw (C.B.P 3x10) (x1) of the part for fixing the Panel FFC Cover, and remove the part.

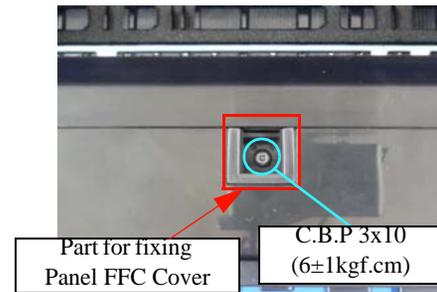


Figure 8-4. Removing the Panel FFC Cover (2)

4. Disengage the hooks (x11) of rear-side of the Panel FFC Cover, and pull out the rib (x1), remove the Panel FFC Cover.

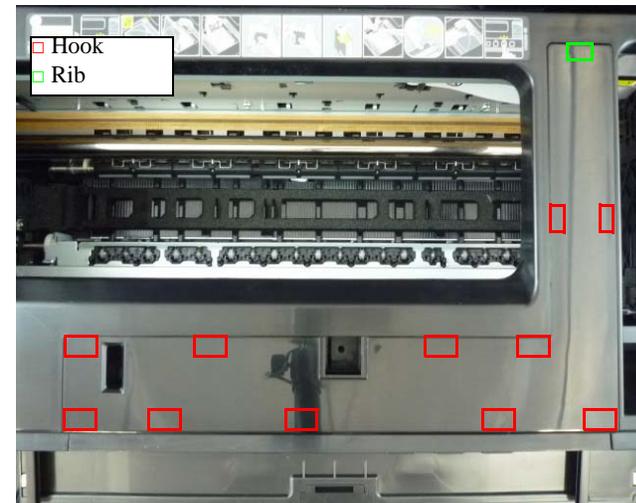


Figure 8-5. Removing the Panel FFC Cover (3)



- Be careful not to get the Panel FFC caught underneath the hooks on the Panel FFC Cover
- Secure the Panel FFC with double-sided tape as follows.

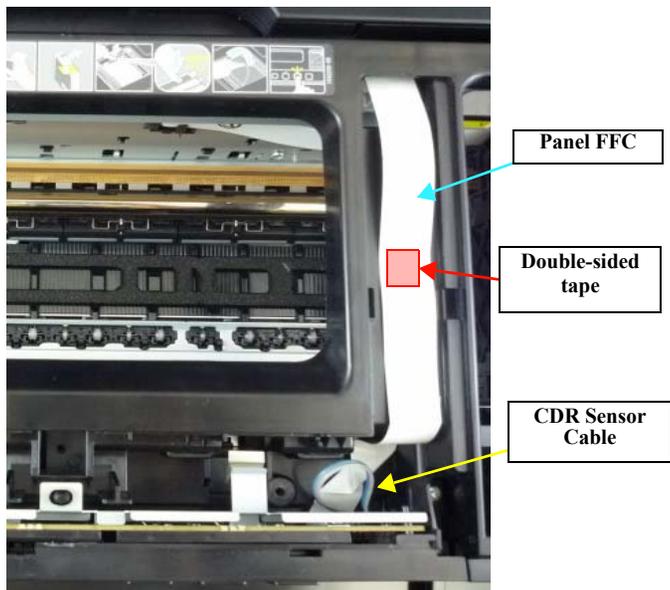


Figure 8-6. Panel FFC

□ Panel Unit

1. Remove the screws (C.B.P 3x10) (x2) that secure the Panel Unit.

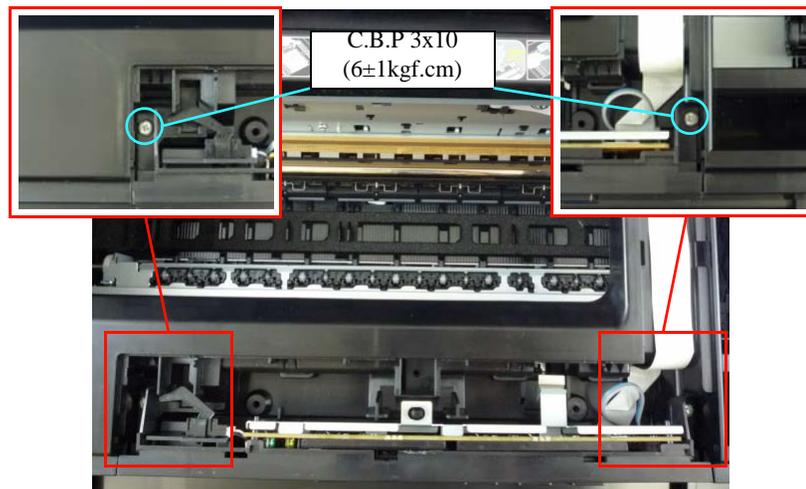


Figure 8-7. Remove the Panel Unit (1)

2. Disconnect the Panel FFC and CDR Sensor cable from the Panel Board.

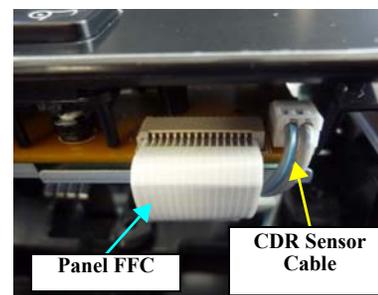


Figure 8-8. Remove the Panel Unit (2)

□ Decoration Plate Left/Right

1. For Decoration Plate Right, Disengage front of the hook (x1) , and lift the Decoration Plate Right while disengaging bottom of the hooks (x2).
2. In the same way, remove the Decoration Plate Left.

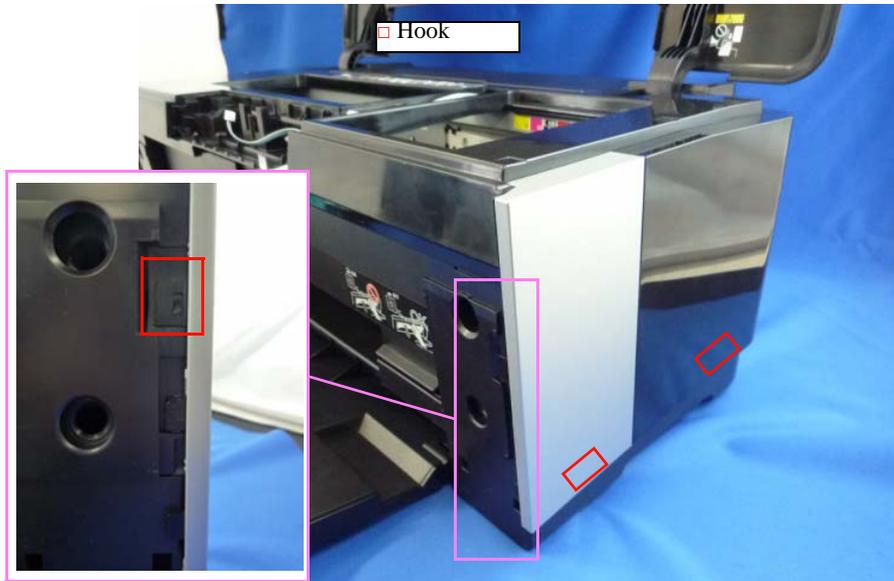


Figure 8-9. Remove the Decoration Plate Left/Right



Attach the tabs (x6) to the tab holes (x5) and the positioning hole (x1) from the upper-side of the printer.

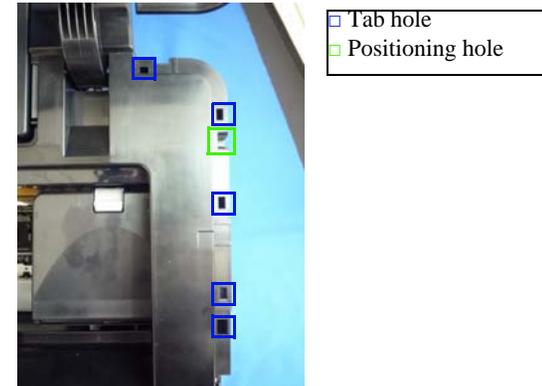


Figure 8-10. Attach the Decoration Plate Left/Right

□ Upper Housing / Printer Cover

1. Remove the screws (C.B.P 3x10) (x6) that secure the Upper Housing, and lift the Upper Housing/Printer Cover.

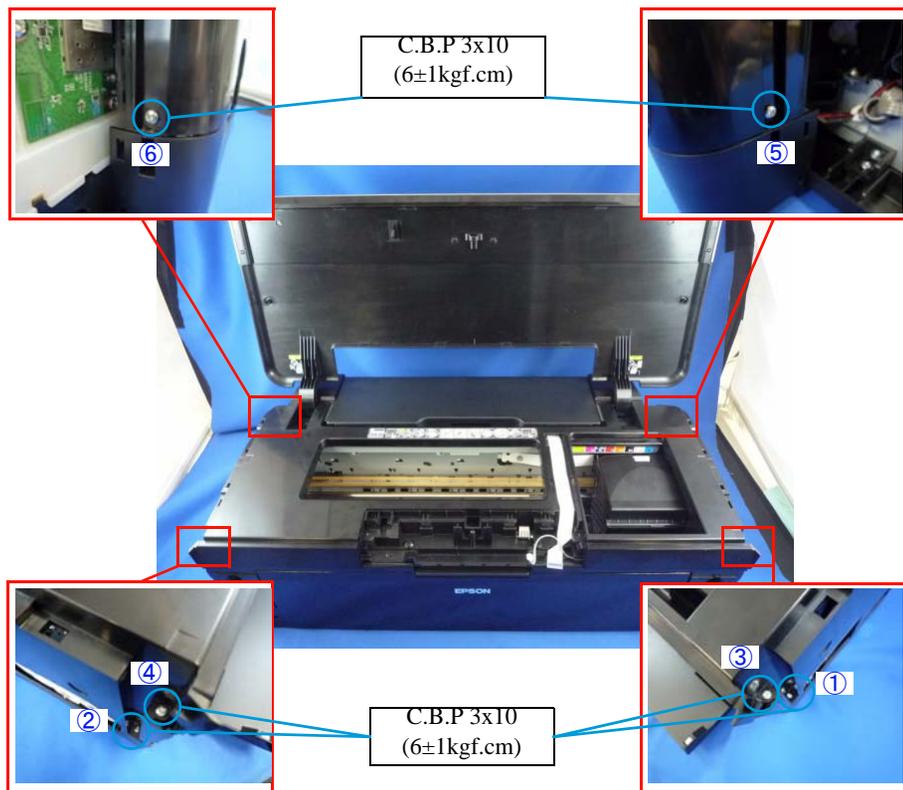


Figure 8-11. Remove the Upper Housing / Printer Cover



Tighten the screws in the order show in Figure 8-11.

□ Wireless LAN Board Assy

1. Remove the screw (C.B.P 3x8) (x1) that secure the earth cable, and remove the screw (C.B.P 3x8) (x1) that secure the Wireless LAN Board Assy.

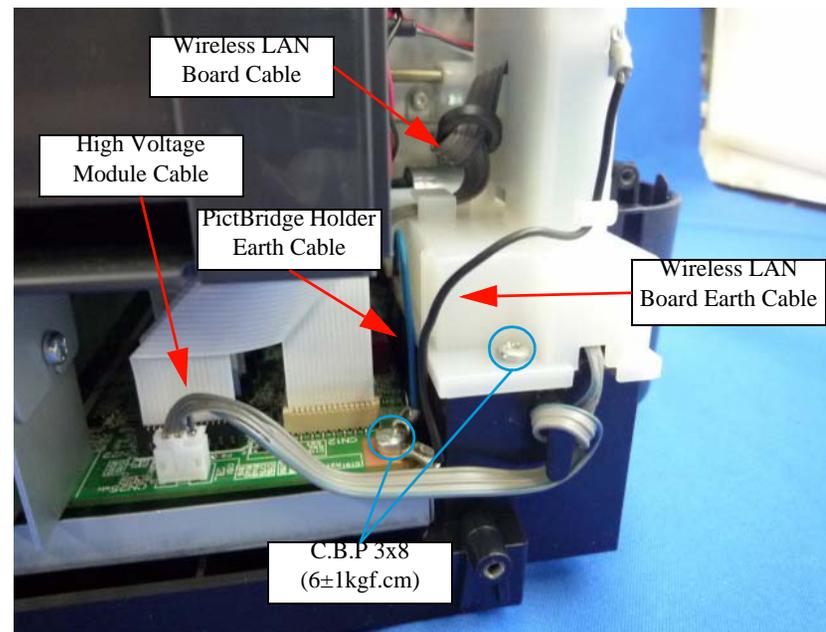


Figure 8-12. Remove the Wireless LAN Board Assy (1)

2. Disengage the hook (x1).

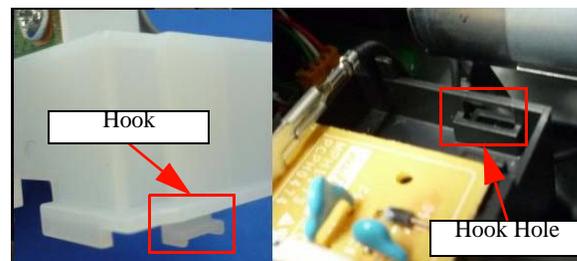


Figure 8-13. Remove the Wireless LAN Board Assy (2)

3. Disconnect the Wireless LAN Board cable, and remove the Wireless LAN Board Assy.

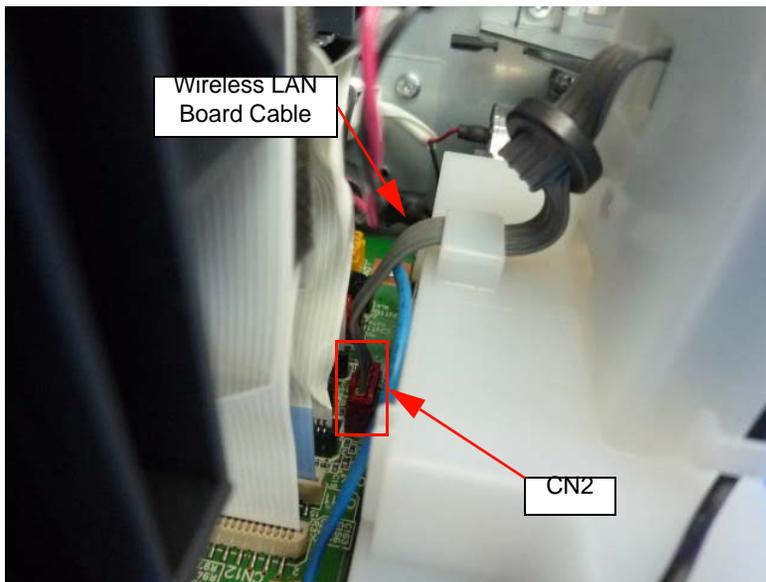


Figure 8-14. Remove the Wireless LAN Board Assy (3)

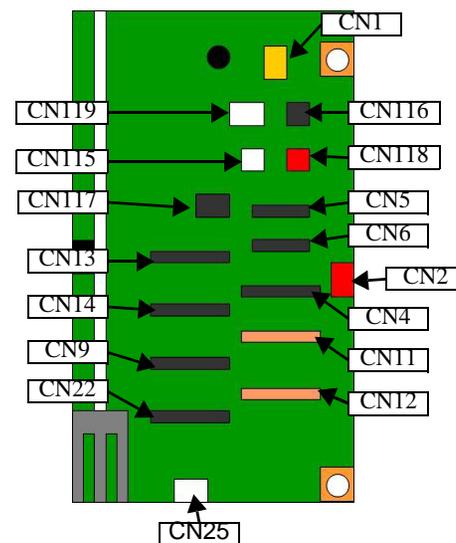


- Refer to [Figure 8-12](#) for routing the cables.
- Don't forget to secure the earth cable of the PictBridge Holder while securing the earth cable of the Wireless LAN Board.

- Board Assy (Main Board / Power Supply Board)
 - For disassembling the Board Assy, please refer to "[4.3.1 Board Assy \(Main Board/Power Supply Board\) \(p84\)](#)".
 - Describes the Connector Layout of the Main Board to the following.

Table 8-15. Main Board Connector

No.	Connector	No.	Connector
CN1	PictBridge	CN14	Head FFC
CN4	Panel Board, CDR Sensor, Cover Open Sensor	CN22	CSIC
CN5	Relay FFC (for sensor)	CN25	High Voltage Module
CN6	LED Board	CN115	CR Motor
CN9	Ink Mark Sensor, CR Encoder Sensor, PW Sensor	CN116	PF Motor
CN11	Head FFC	CN117	Pump Motor
CN12	Head FFC	CN118	APG Motor
CN13	Head FFC	CN119	ASF Motor
CN2	Wireless LAN Board	---	---



8.4 Adjustment

8.4.1 Summary

This section describes new adjustment items & changed adjustment items for Stylus Photo R2000 only. For other adjustment items, please refer to the information of Stylus Photo R1900/R2880. ("[5.1.1 Servicing Adjustment Item List](#)" (p.138))

8.4.2 Servicing Adjustment Item List (For Stylus Photo R2000)

The items, purposes and outlines of the Adjustment Program are given in the following table.

Table 8-16. Adjustment Items (For Stylus Photo R2000)

Adjustment	Purpose	Method Outline
MAC address setting (in the Initial setting)	Perform MAC address setting if necessary.	For the procedure of MAC address setting, refer to Mac address setting(p.193)
PF motor heat protection control	This is used to correct variations of motors characteristics.	The program will automatically enter a proper correction value onto the printer.
Initialize front tray print counter	This counter is added by using the front tray printing. When this counter is added, PF Roller feeds more area of the paper than default. When exchange the PF Roller, please initialize this counter for preventing more than enough paper feeding. If you can't read the data, please enter the maximum front tray print counter.	The program will automatically enter a initial value onto the printer.
Disable front tray print counter		The program will automatically enter a maximum value onto the printer.
Mist Recovery check	To prevent the dirt inside the printer, the mist is induced to the direction of the Lower Paper Guide by electricity.The adjustment name was changed from High Voltage Module inspection.	The procedure of the Mist Recovery check is same as High Voltage Module inspection. refer to High Voltage Module inspection(p.140)

8.4.3 Required Adjustments

The table below lists the required adjustments depending upon the parts being repaired or replaced. Find the part(s) you removed or replaced, and check which adjustment(s) must be carried out. About the First dot position adjustment, it's included in the PW adjustment.

Table 8-17. Required Adjustment List

Priority		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Part Name	Adjustment Item	PF Belt tension adjustment	PF Roller Shaft Center Support position adjustment	ASF Guide Roller LDs Position adjustment	PG adjustment	Mist Recovery check	EEPROM Data Copy	Initial setting / USB ID Input	Head ID Input	Consumables maintenance counter	Ink charge	Initialize PF deterioration offset	Disenable PF deterioration offset	Initialize front tray print counter	Disable front tray print counter	PW adjustment	Head angular adjustment	Multi Sensor Adjustment (Ink Mark Sensor adjustment)	Bi-D adjustment	PF adjustment	CR motor heat protection control	PF motor heat protection control	Colorimetric calibration	Final check pattern print	
	ASF Assy	Remove	---	---	*1	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	---	---	---	---	0
Replace		---	---	0	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	---	---	---	---	---	0
CR Motor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	0
Printhead	Remove	---	---	---	0	---	---	---	---	---	---	---	---	---	---	0	0	---	0	---	---	---	---	---	0
	Replace	---	---	---	0	---	---	---	0	---	0	---	---	---	---	0	0	---	0	---	---	---	0	0	0
Main Board	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace (Read OK)	---	---	---	---	---	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	0
	Replace (Read NG)	---	---	---	---	---	---	0	0	*1	---	---	0	---	0	0	0	0	0	0	0	0	0	0	0
PS Board	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	0	0	0	0
High Voltage Module	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace	---	---	---	---	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
Front Paper Guide/ Paper Eject Roller	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	0	---	---	---	---	0
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	0	---	---	---	---	0
PF Roller Shaft	Remove	0	0	---	0	---	---	---	---	---	---	---	---	---	---	0	---	---	---	0	---	---	---	---	0
	Replace	0	0	---	0	---	---	---	---	---	---	---	---	0	---	0	---	---	---	0	---	---	---	---	0
PF Motor	Remove	0	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	---	0
	Replace	0	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	0	---	---	0
Waste Ink Pad/ Front Paper Guide Pad	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace	---	---	---	---	---	---	---	---	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0

Table 8-17. Required Adjustment List

Priority		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Part Name	Adjustment Item	PF Belt tension adjustment	PF Roller Shaft Center Support position adjustment	ASF Guide Roller LDS Position adjustment	PG adjustment	Mist Recovery check	EEPROM Data Copy	Initial setting / USB ID Input	Head ID Input	Consumables maintenance counter	Ink charge	Initialize PF deterioration offset	Disable PF deterioration offset	Initialize front tray print counter	Disable front tray print counter	PW adjustment	Head angular adjustment	Multi Sensor Adjustment (Ink Mark Sensor adjustment)	Bi-D adjustment	PF adjustment	CR motor heat protection control	PF motor heat protection control	Colorimetric calibration	Final check pattern print
	Carriage shaft	Remove	---	---	---	*3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Replace		---	---	---	0	---	---	---	---	---	---	---	---	---	---	0	0	---	0	---	---	---	---	0
Carriage Unit	Remove	---	---	---	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace	---	---	---	0	---	---	---	---	---	---	---	---	---	---	0	0	---	0	---	---	---	---	0
Paper EJ Frame Assy	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	0	---	---	---	0
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	0	---	---	---	0
Printer Mechanism	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0
	Replace	0	---	0	0	---	---	---	---	---	---	0	---	0	---	0	0	0	0	0	0	0	---	0
PW Sensor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	---	---	---	---	0
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	---	---	---	---	---	---	0
Ink Mark Sensor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	0	---	---	---	---	---	0
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---	0	---	---	---	---	---	0

CAUTION



- When the EEPROM Data Copy cannot be made for the main board that needs to be replaced, the Waste Ink Tray Assy must be replaced after replacing the main board with a new one.
- After all required adjustments are completed, use the “Final check pattern print” function to print all adjustment patterns for final check. If you find a problem with the printout patterns, carry out the adjustment again.
- When using a new main board for replacing the Printer Mechanism, the Initial setting must have been made to the main board.

Note : “O” indicates that the adjustment must be carried out. “---” indicates that the adjustment is not required. If you have removed or replaced multiple parts, make sure to check the required adjustments for the all parts. And when multiple adjustments must be carried out, be sure to carry out them in the order given in the “Priority” row.

Note “*1” :When only removing the ASF Assy, you do not need to perform the adjustment. In that case, mark the installing positions before removing them, and make sure to align the markings when installing. See "4.4.6 ASF Assy" (p.106).

“*2” :Replacing the Waste Ink Tray Assy is necessary when resetting waste ink pad counter.

“*3” : When only removing the Carriage Shaft, you do not need to perform the adjustment. In that case, mark on the Parallelism Adjust Bushing (Left/Right) before removing them, and make sure to align the markings when installing. See "4.4.5 Carriage Shaft / Carriage Unit" (p.98).

8.4.4 Adjustment Procedure

- Mac address setting

<Overview>

This printer have a network function and stores there MAC address (Media Access Control Address) in the EEPROM on the Network Board. The Network Board supplied as an ASP does not come with the MAC address written on it, therefore, you are required to set the MAC address to the new Network Board after replacement. The following explains the procedure.

CAUTION

- To avoid a conflict of MAC address on a network, make sure to correctly follow the MAC address setting flowchart given on the right.
- The MAC Address is written correctly, The IP Address will be initialized also.
- The user should be notified of the change of MAC address because of the following reasons.
 - If the user has set the printer’s MAC address on a router, the repaired printer with a new MAC address cannot be connected to the network.
 - The default printer name on a network consists of “EPSON” and the last six digits of the MAC address. Therefore, the printer name becomes different from the previous one.

<Preparation>

When replacing the Network Board, make sure to note down the MAC address written on a label on the Upper M/B Shield Plate.

CHECK POINT

You are required to enter the last six digits of the MAC address (xx:yy:zz) on the adjustment program.
 MAC address example: 00:00:48:xx:yy:zz
 (“xx, yy, zz” represents a value unique to each printer)

<Setting flowchart>

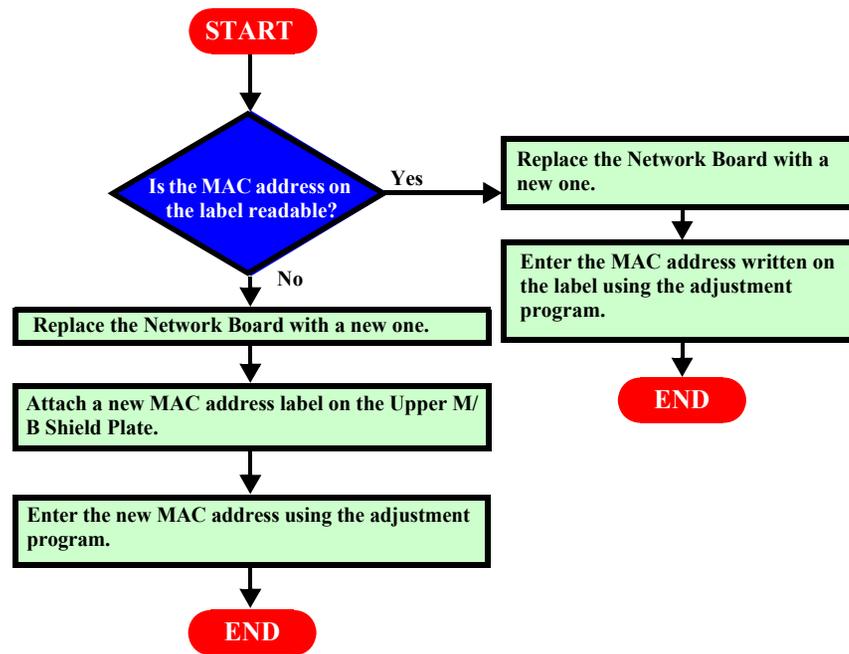


Figure 8-15. MAC Address Setting Flowchart

<Setting procedure>

CAUTION

- The MAC address required on the adjustment program is written on the MAC address label on the Upper M/B Shield Plate. Make sure that the address written on the MAC address label matches the MAC address settings in the EEPROM.

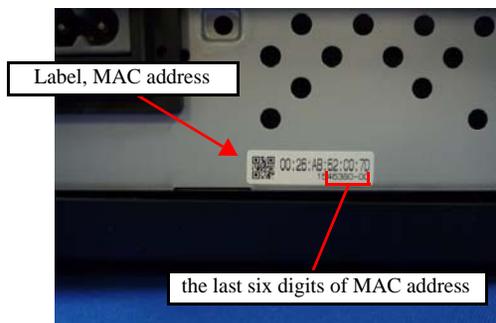


Figure 8-16. MAC Address Label

- Do not use the MAC address of the label attached to the Wireless LAN Board since the address is not used for this product.

1. Start the adjustment program.
2. Select the “Initial Setting” from the menu. The initial setting screen appears.
3. Enter the last six digits of MAC address into the MAC address entry field, and click the MAC Address input button. (Enter the address again into the second entry field to confirm it.)
4. Select the network status sheet print menu on the printer’s control panel, and print the sheet. Check the MAC address printed on the sheet to see if it is correct.

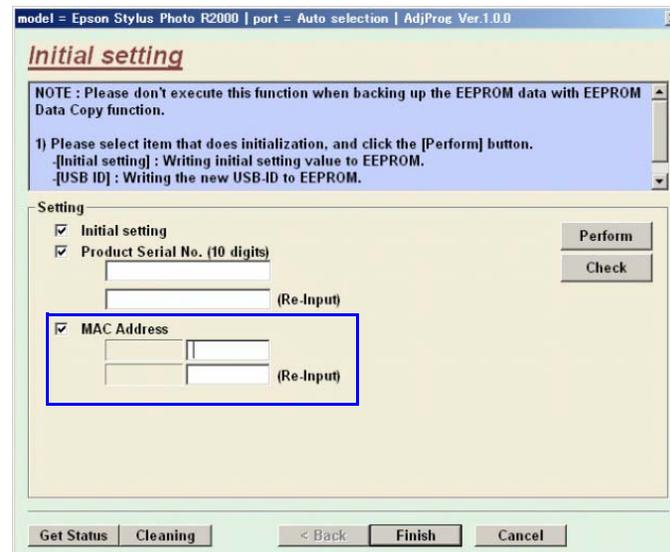


Figure 8-17. MAC Address Setting Screen

Colorimetric Calibration

The procedure of this adjustment is same as Stylus Photo R1900 / R2880. Refer to "[5.2.4 Colorimetric Calibration](#)" (p.153). But, support paper for Calibration Chart is different from the previous models.

Table 8-18. Support Paper for Colorimetric Calibration

Purpose	Paper
Nozzle Check Pattern	Plain Paper
Calibration Chart	Premium Presentation Paper Matte Matte Paper Heavy-weight (Epson Matte)

Multi Sensor Adjustment (Ink Mark Sensor Adjustment)

1. Print the Nozzle Check Pattern to check not to appear dot missing.
2. Click the "Adjustment" Button. The program automatically adjust the Ink Mark Sensor. (Program prints the pattern for adjustment. It's not for checking.)
3. Print the check pattern by clicking the "Check" Button.
4. The upper side of the pattern don't have a dot missing. The lower side of the pattern have eight dot missings on purpose. Confirm the dot-missing counts of these patterns.

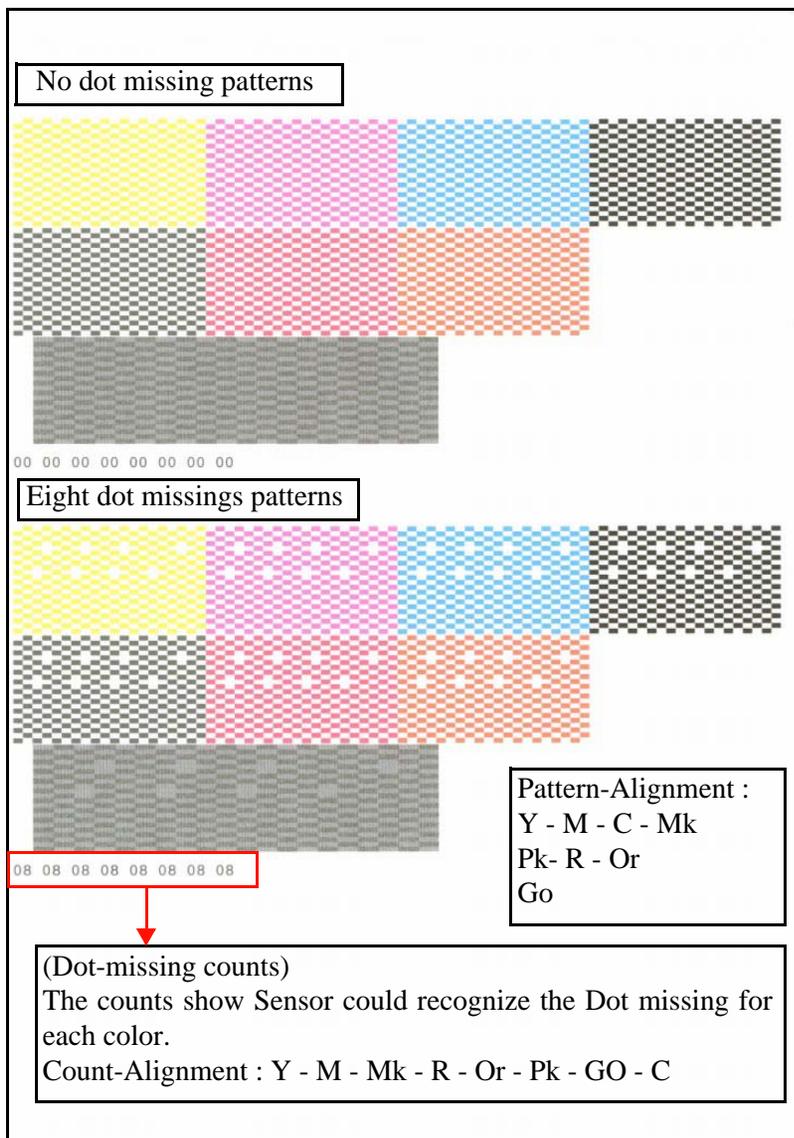


Figure 8-18. Pattern for Multi Sensor Adjustment (Ink Mark Sensor adjustment)