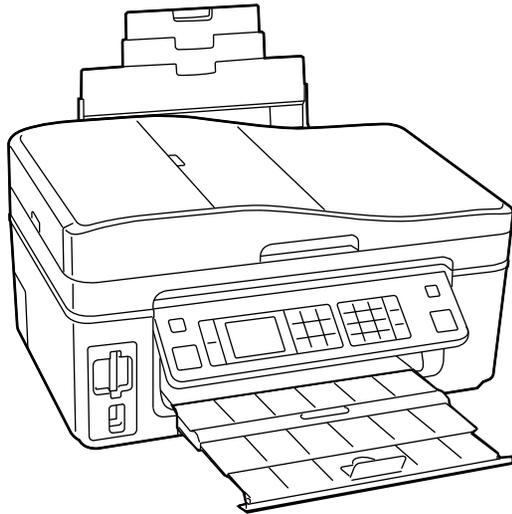


SERVICE MANUAL



Color Inkjet Printer

**EPSON WorkForce 600/
Stylus OFFICE TX600FW/
Stylus OFFICE BX600FW/
Stylus SX600FW/
ME OFFICE 700FW**

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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:

- Exploded Diagram
- Parts List

Symbols Used in this Manual

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



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



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



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



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



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	August 6, 2008	First Release

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CHAPTER

1

PRODUCT DESCRIPTION

1.1 Features

EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW is a color inkjet printer with the scanner and FAX functions equipped with a network interface.

□ Available Functions

- Printer
Printing from a computer or directly printing from a memory card
- Scanner
Scanning from a computer
- Copy
Stand alone copy using the scanning and printing functions
- Memory card slot
Available as memory card reader for PC
- FAX
Sending/receiving fax
- Color LCD
2.5-inch color TFD LCD
- ADF
Continuous scanning using an ADF
- Network
Available for printing, scanning, and memory card access via wired/wireless network

□ High speed & High quality

- Maximum print resolution: SMGA 5760 (H) x 1440 (V) dpi
- O6-chips Turbo II print head achieves higher print speed than ever.
(Black: 128 nozzles x 3, Color: 128 nozzles x 1 per color)
- Four independent ink cartridges is installed (Pigment inks)
- Borderless printing on specified EPSON brand paper is available.

□ Dimensions

- Dimensions: 461 mm (W) x 346 mm (D) x 236 mm (H)
(Paper support and stacker are closed. Rubber feet are included)
- Weight: 8.3 kg
(Except ink cartridges and cables such as the AC cable, etc.)

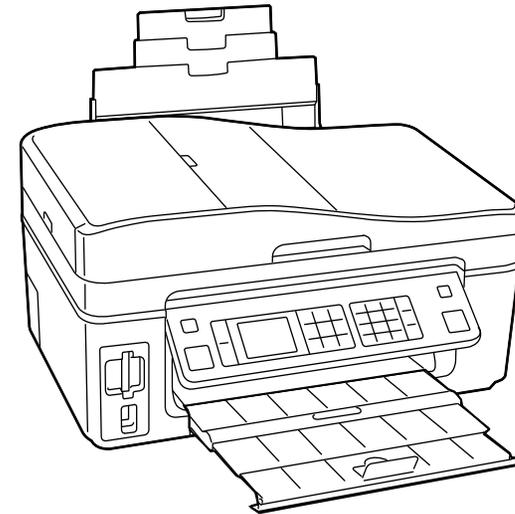


Figure 1-1. External View

1.2 Printing Specifications

1.2.1 Basic Specifications

Table 1-1. Printer Specifications

Item	Specification
Print method	On-demand ink jet
Nozzle configuration	Black: 128 nozzles x 3 Color: 128 nozzles x 3 (Cyan, Magenta, Yellow)
Print direction	Bi-directional minimum distance printing, Unidirectional printing
Print resolution	Horizontal x Vertical (dpi) <ul style="list-style-type: none"> • 360 x 120 • 720 x 720 • 360 x 360 • 1440 x 720 • 360 x 720 • SMGA 5760 x 1440 (1440 x 1440)
Control code	<ul style="list-style-type: none"> • ESC/P Raster command • ESC/P-R (RGB) command • EPSON Remote command
Input buffer size	64 Kbytes
Paper feed method	Friction feed, using the ASF (Auto Sheet Feeder)
Paper path	Top feed, front out
Paper feed rates (at 25.4mm feed)	95 ms (Draft 16 ips*), 113 ms (Default 12 ips*)
PF interval	Programmable in 0.01764 mm (1/1440 inch) steps

Note* : ips = inch per second

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	EAI	Latin	Euro	CISMEA/Asia	ECC
Black	T0971 (L2) T0681 (S) T0691 (2S)	T1031 (L1)	T1001 (L1) T0711H (S) T0711 (2S)	T1031 (L1) T0731HN (S) T0731N (2S)	T1031 (L1) T1191 (S) T1091 (2S)
Cyan	T0682 (2S) T0692 (3S)	T1032 (S)	T1002 (S) T0712 (3S)	T1032 (S) T0732N (3S)	T1092 (2S)
Magenta	T0683 (2S) T0693 (3S)	T1033 (S)	T1003 (S) T0713 (3S)	T1033 (S) T0733N (3S)	T1093 (2S)
Yellow	T0684 (2S) T0694 (3S)	T1034 (S)	T1004 (S) T0714 (3S)	T1034 (S) T0734N (3S)	T1094 (2S)

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)



- 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

Table 1-4. Print Mode (Color)

Media	Print Mode	Resolution (H x V dpi)	Dot Size (cps*1)	Bi-d	Micro Weave	Border-less
<ul style="list-style-type: none"> • Plain paper • Premium Bright White Paper (EAI) • Premium Bright White Inkjet Paper (others) 	Draft1	360x120	Eco (400cps)	ON	OFF	N/A
	Draft2	360x120	Eco (400cps)	ON	OFF	N/A
	Normal2	360x360	VSD1 (300cps)	ON	OFF	N/A
	Fine2	360x720	VSD2 (300cps)	ON	ON	N/A
	Photo1	720x720	VSD3 (285cps)	ON	ON	N/A
<ul style="list-style-type: none"> • Ultra Premium Glossy Photo Paper (EAI) • Ultra Glossy Photo Paper (others) 	Best Photo	1440x720	VSD3 (285cps)	ON	ON	OK
	Photo RPM	1440x1440	VSD3 (285cps)	ON	ON	OK
<ul style="list-style-type: none"> • Photo Paper Glossy (EAI) • Glossy Photo Paper (others) • Premium Photo Paper Glossy (EAI) • Premium Glossy Photo Paper (others) • Premium Photo Paper Semi-Gloss (EAI) • Premium Semigloss Photo Paper (other) 	Fine1	360x720	VSD1 (300cps)	ON	ON	OK
	Best Photo	1440x720	VSD3 (285cps)	ON	ON	OK
	Photo RPM	1440x1440	VSD3 (285cps)	ON	ON	OK
Photo Paper*2 (other)	Fine1	360x720	VSD1 (300cps)	ON	ON	OK
	Best Photo	1440x720	VSD3 (285cps)	ON	ON	OK

Table 1-4. Print Mode (Color)

Media	Print Mode	Resolution (H x V dpi)	Dot Size (cps*1)	Bi-d	Micro Weave	Border-less
<ul style="list-style-type: none"> • Premium Presentation Paper Matte (EAI) • Matte Paper - Heavyweight (others) 	Photo2	720x720	VSD2 (285cps)	ON	ON	OK
	Best Photo	1440x720	VSD3 (285cps)	ON	ON	OK
Photo Quality Inkjet Paper*2 (others)	Photo2	720x720	VSD2 (285cps)	ON	ON	OK
	Best Photo	1440x720	VSD3 (285cps)	ON	ON	OK
Envelope	Normal2	360x360	VSD1 (300cps)	OFF	OFF	N/A
	Fine2	360x720	VSD2 (300cps)	OFF	ON	N/A

Note *1: cps = character per second

*2: Not supported in EAI.

Table 1-5. Print Mode (Monochrome)

Media	Print Mode	Resolution (H x V dpi)	Dot Size (cps*1)	Bi-d	Micro Weave	Border-less
<ul style="list-style-type: none"> • Plain paper • Premium Bright White Paper (EAI) • Premium Bright White Inkjet Paper (others) 	Draft3	360x360	Eco (400cps)	ON	OFF	N/A
	Draft4	360x360	Eco (400cps)	ON	OFF	N/A
	Normal1	360x360	VSD1 (300cps)	ON	OFF	N/A
	Fine2	360x720	VSD2 (300cps)	ON	ON	N/A
	Photo1	720x720	VSD3 (285cps)	ON	ON	N/A
<ul style="list-style-type: none"> • Ultra Premium Glossy Photo Paper (EAI) • Ultra Glossy Photo Paper (others) 	Best Photo	1440x720	VSD3 (285cps)	ON	ON	OK
	Photo RPM	1440x1440	VSD3 (285cps)	ON	ON	OK
<ul style="list-style-type: none"> • Photo Paper Glossy (EAI) • Glossy Photo Paper (others) • Premium Photo Paper Glossy (EAI) • Premium Glossy Photo Paper (others) • Premium Photo Paper Semi-Gloss (EAI) • Premium Semigloss Photo Paper (other) 	Fine1	360x720	VSD1 (300cps)	ON	ON	OK
	Best Photo	1440x720	VSD3 (285cps)	ON	ON	OK
	Photo RPM	1440x1440	VSD3 (285cps)	ON	ON	OK
Photo Paper*2 (other)	Fine1	360x720	VSD1 (300cps)	ON	ON	OK
	Best Photo	1440x720	VSD3 (285cps)	ON	ON	OK

Table 1-5. Print Mode (Monochrome)

Media	Print Mode	Resolution (H x V dpi)	Dot Size (cps*1)	Bi-d	Micro Weave	Border-less
<ul style="list-style-type: none"> • Premium Presentation Paper Matte (EAI) • Matte Paper - Heavyweight (others) 	Photo2	720x720	VSD2 (285cps)	ON	ON	OK
	Best Photo	1440x720	VSD3 (285cps)	ON	ON	OK
Photo Quality Inkjet Paper*2 (others)	Photo2	720x720	VSD2 (285cps)	ON	ON	OK
	Best Photo	1440x720	VSD3 (285cps)	ON	ON	OK
Envelope	Normal1	360x360	VSD1 (300cps)	OFF	OFF	N/A
	Fine2	360x720	VSD2 (300cps)	OFF	ON	N/A

Note *1: cps = character per second

*2: Not supported in EAI.

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 1-6. Supported Paper

Paper Name	Paper Size		Thickness (mm)	Weight	EAI		EUR		Asia	
					P*1	B*2	P*1	B*2	P*1	B*2
Plain paper	Legal	215.9 x 355.6 mm (8.5" x 14")	0.08-0.11	64-90 g/m ² (17-24 lb.)	Y	-	Y	-	Y	-
	Letter	215.9 x 279.4 mm (8.5" x 11")			Y	-	Y	-	Y	-
	A4	210 x 297 mm (8.3" x 11.7")			Y	-	Y	-	Y	-
	B5	182 x 257 mm (7.2" x 10.1")			-	-	Y	-	Y	-
	A5	148 x 210 mm (5.8" x 8.3")			-	-	Y	-	Y	-
	Half Letter	139.7 x 215.9 mm (5.5" x 8.5")			Y	-	-	-	-	-
	A6	105 x 148 mm (4.2" x 5.8")			Y	-	Y	-	Y	-
	User Defined	89 x 127- 215.9 x 1117.6 mm (3.5" x 5" - 8.5" x 44")			Y	-	Y	-	Y	-
Premium Inkjet Plain Paper	A4	210 x 297 mm (8.3" x 11.7")	0.11	80 g/m ² (21 lb.)	-	-	Y	-	Y	-
Premium Bright White Paper (EAI)	Letter	215.9 x 279.4 mm (8.5" x 11")	0.11	90 g/m ² (24 lb.)	Y	-	-	-	-	-
Bright White Inkjet Paper (Euro, Asia)	A4	210 x 297 mm (8.3" x 11.7")	0.13	92.5 g/m ² (25 lb.)	-	-	Y	-	Y	-
Ultra Premium Glossy Photo Paper (EAI) Ultra Glossy Photo Paper (Euro, Asia)	Letter	215.9 x 279.4 mm (8.5" x 11")	0.30	290 g/m ² (77 lb.)	Y	Y	-	-	-	-
	A4	210 x 297 mm (8.3" x 11.7")			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	-	-
	4" x 6"	101.6 x 152.4 mm			Y	Y	Y	Y	Y	Y
Premium Photo Paper Glossy (EAI) Premium Glossy Photo Paper (Euro, Asia)	Letter	215.9 x 279.4 mm (8.5" x 11")	0.27	255 g/m ² (68 lb.)	Y	Y	-	-	-	-
	A4	210 x 297 mm (8.3" x 11.7")			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	101.6 x 180.6 mm			Y	Y	Y	Y	Y	Y

Table 1-6. Supported Paper

Paper Name	Paper Size		Thickness (mm)	Weight	EAI		EUR		Asia	
					P*1	B*2	P*1	B*2	P*1	B*2
Photo Paper Glossy (EAI) Glossy Photo Paper (Euro, Asia)	Letter	215.9 x 279.4 mm (8.5" x 11")	0.25	258 g/m ² (68 lb.)	Y	Y	-	-	-	-
	A4	210 x 297 mm (8.3" x 11.7")			Y	Y	Y	Y	Y	Y
	5" x 7"	127 x 178 mm			-	-	Y	Y	-	-
	4" x 6"	101.6 x 152.4 mm			Y	Y	Y	Y	Y	Y
Photo Paper (Euro, Asia)	A4	210 x 297 mm (8.3" x 11.7")	0.24	190 g/m ² (51 lb.)	-	-	Y	Y	Y	Y
	5" x 7"	127 x 178 mm			-	-	Y	Y	-	-
	4" x 6"	101.6 x 152.4 mm			-	-	Y	Y	Y	Y
Premium Photo Paper Semi-Gloss (EAI) Premium Semigloss Photo Paper (Euro, Asia)	Letter	215.9 x 279.4 mm (8.5" x 11")	0.27	250 g/m ² (66 lb.)	Y	Y	-	-	-	-
	A4	210 x 297 mm (8.3" x 11.7")			Y	Y	Y	Y	Y	Y
	4" x 6"	101.6 x 152.4 mm			Y	Y	Y	Y	Y	Y
Premium Presentation Paper Matte (EAI) Matte Paper Heavy-weight (Euro, Asia)	Letter	215.9 x 279.4 mm (8.5" x 11")	0.23	167 g/m ² (44 lb.)	Y	Y	-	-	-	-
	A4	210 x 297 mm (8.3" x 11.7")			Y	Y	Y	Y	Y	Y
	8" x 10"	203.2 x 254 mm			Y	Y	-	-	-	-
Photo Quality Inkjet Paper	A4	210 x 297 mm (8.3" x 11.7")	0.13	102 g/m ² (27 lb.)	-	-	Y*3	-	Y*3	-
Envelopes	#10	104.8 x 241.3 mm (4.125" x 9.5")	-	75-100 g/m ² (20-27 lb.)	Y	-	Y	-	Y	-
	#DL	110 x 220 mm			-	-	Y	-	Y	-
	#C6	114 x 162 mm			-	-	Y	-	Y	-

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: In case of the printer driver for Euro/Asia, select settings of "Matte Paper Heavy-weight (EPSON Matte)" instead of "Photo Quality Inkjet Paper".



- 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.

Table 1-7. Printing Area (Margins)

Print Mode	Paper Size	Margin			
		Left	Right	Top	Bottom
Standard print	Any size	3 mm	3 mm	3 mm	3 mm
	Envelope	5 mm	5 mm	3 mm	20 mm
Borderless print	4" x 6"	2.54 mm*	2.54 mm*	2.8 mm*	3.39 mm*
	Others			2.96 mm*	

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

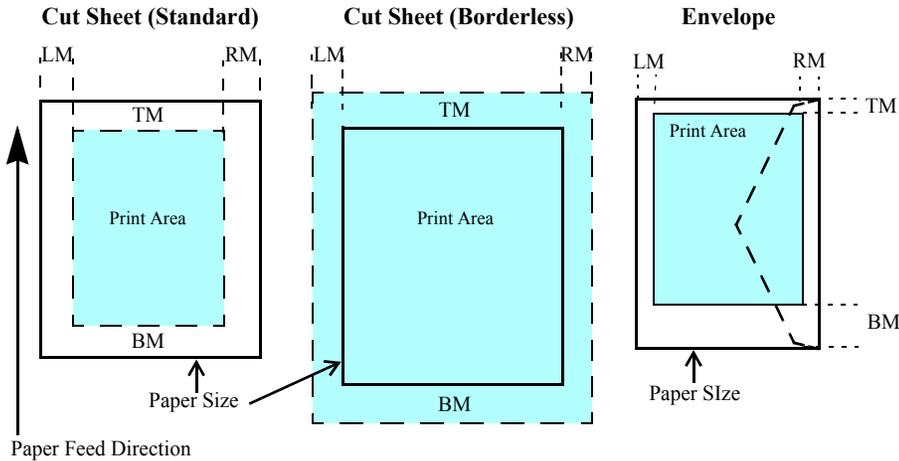


Figure 1-2. Printing Area

1.3 Scanner Specifications

Table 1-8. Basic Specifications

Item	Specification
Scanner type	Flatbed, color
Scanning method	Moving carriage, stationary document
Home position	The rear left corner
Photoelectric device	CIS
Light source	LED
Maximum document sizes	A4 or US letter
Scanning range	8.5" x 11.7" (216 mm x 297 mm)
Maximum resolution	Main scan: 2400 dpi Sub scan: 2400 dpi
Maximum effective pixels	10,200 x 14,040 pixels (CIS optical resolution x Microstep drive)
Pixel depth	16 bit per pixel (input) and 8 bit per pixel (output).

Table 1-9. ADF Specifications

Item	Specification
Document loading	Face-up
Maximum document sizes	A4 or US letter or Legal
Supported paper type	Plain paper only
Paper thickness	60 to 95 g/m ²
Maximum number of documents which can be set	30 sheets (Xerox-P 64 g/m ²) or 3mm (A4,US Letter) / 10 sheet (Legal)
Document path	Feeds from upper tray and ejects to lower tray
Document set position	ASF side

1.3.1 Scanning Range

Table 1-10. Scanning Range

RL (read length)	RW (read width)	OLM (left margin)	OTM (top margin)
297 mm	216 mm	1.5 mm	1.5 mm

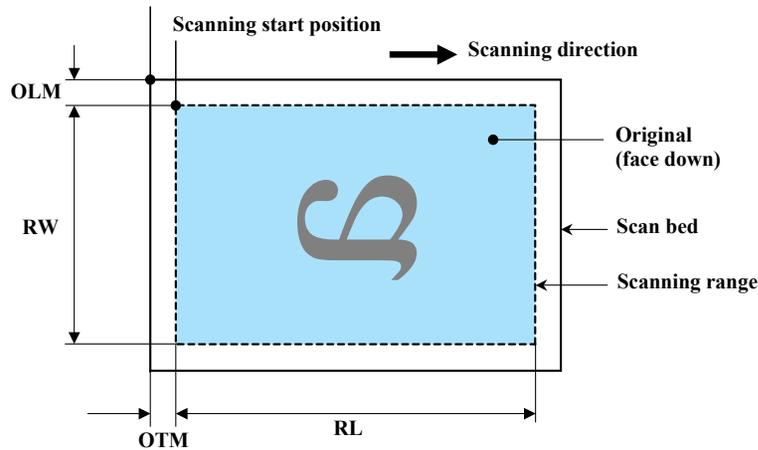


Figure 1-3. Scanning Range

1.4 General Specifications

1.4.1 Electrical Specifications

Table 1-11. Primary Power Specifications

Item		100-120 V model	220-240 V model
Rated power supply voltage		100 to 120 VAC	220 to 240 VAC
Input voltage range		90 to 132 VAC	198 to 264 VAC
Rated current (Max. rated current)		0.5 A (1.1 A)	0.25 A (0.5 A)
Rated frequency		50 to 60 Hz	
Input frequency range		49.5 to 60.5 Hz	
Energy conservation		International Energy Star Program compliant	
Power consumption	Copy (ISO/IEC24712 Pattern)	Approx. 20.0 W	Approx. 20.0 W
	Ready	Approx. 9.0 W	Approx. 9.0 W
	Sleep	Approx. 5.5 W	Approx. 5.5 W
	Off	Approx. 0.2 W	Approx. 0.4 W

Note : If the product has been idle status over 13 minutes, it goes into sleep mode within 2 minutes.

1.4.2 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
Hong Kong	IEC60950-1
Argentina	IEC60950-1
Australia	AS/NZS CISPR22 Class B

1.4.3 Acoustic Noise

39 dB or less
(when printing from PC, on Premium Glossy Photo Paper, in highest quality)

1.4.4 Durability

Item	Specification	Note
Total print life	Black 20,000 pages, or five years whichever comes first	A4, 3.5% duty (ECMA)
	Color 10,000 pages, or five years whichever comes first	Plain Paper A4, ISO24712 Pattern Default Mode print
Printhead	Four billions shots (per nozzle) or five years whichever comes first	
Scanner carriage	36,000 cycles of carriage movement	
Total ADF feeding	10,000 pages	

1.4.5 Environmental Conditions

Table 1-12. 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 (unpacked)	-20 to 40°C*3 (-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 Fig.1-4.
 *2: No condensation
 *3: Must be less than 1 month at 40°C.

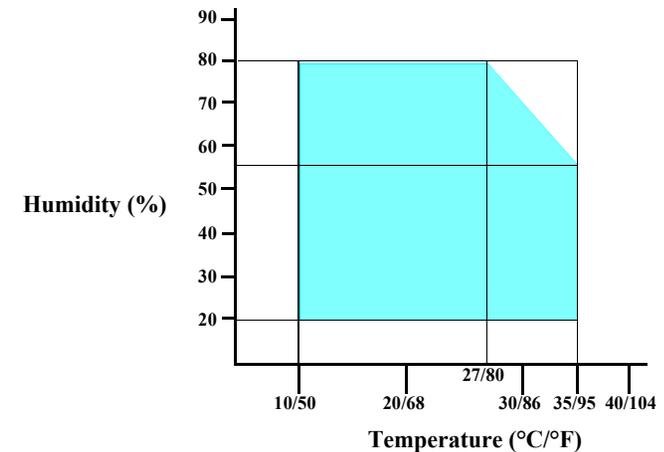


Figure 1-4. Temperature/Humidity Range



- 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.

1.5 Interface

The following is the specifications of the USB Interface, Network Interface, FAX Interface, and Memory Card Slot mounted on this printer.

1.5.1 USB Interface

The table below describes the specifications of the two USB ports; USB device port for connecting with a host such as a computer, and the USB host port for connecting with an external devices such as a DSC (digital still camera).

Table 1-13. 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 Universal Serial Bus Mass Storage Class Bulk-Only Transport Revision 1.0 	<ul style="list-style-type: none"> Universal Serial Bus Specifications Revision 2.0
Transfer rate	480 Mbps (High Speed)	480 Mbps (Max.)
Data format	NRZI	
Compatible connector	USB Series B	USB Series A
Max. cable length	2 [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 1-14. Device ID

When IEEE 1284.4 is Enabled	When IEEE 1284.4 is Disabled
@EJL<SP>ID<CR><LF> MFG:EPSON; CMD:ESCPL2,BDC,D4,D4PX,ESCPRI; MDL:Model Name; CLS:PRINTER; DES:EPSON<SP>Model Name;	@EJL<SP>ID<CR><LF> MFG:EPSON; CMD:ESCPL2,BDC,ESCPRI; MDL:Model Name; CLS:PRINTER; DES:EPSON<SP>Model Name;

The “Model Name” is replaced as shown in the following table.

Table 1-15. Model Names Indicated in the Device ID

Destination	Model Name
North America	WorkForce 600
Euro	Stylus SX600FW
Euro (Office)	Stylus Office BX600FW
Latin/Asia/Pacific	Stylus Office TX600FW
China	ME Office 700FW

1.5.2 FAX Interface

Port Name	Connector	Description
Line port	RJ11	Connects to phone cable from modular wall jack.
EXT port	RJ11	Connects to TAM or Telephone.

1.5.3 Network Interface

EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW can be connected to the network via Wired 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 1-16. 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 1-17. 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 1-18. Wireless LAN

Item	Content	
Applied Standard (2.4GHz spectrum band wireless network standards)	Conforms to IEEE802.11b, IEEE802.11g	
Wireless Operation Mode	IEEE802.11b	DS-SS (Half Duplex)
	IEEE802.11g	OFDM (Half Duplex)
Communication Range (line-of-sight distance)*	IEEE802.11b (11Mbps)	<ul style="list-style-type: none"> • 60m (indoor) • 220m (outdoor)
	IEEE802.11g (54Mbps)	<ul style="list-style-type: none"> • 20m (indoor) • 100m (outdoor)
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)	

Note "*": Referential value. It depends on surrounding conditions.

Table 1-19. 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
2.471 - 2.497	14	802.11/11b	11/5.5/2/1M

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

Switching Wired/Wireless LAN

This printer can be 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 1-20. 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

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.



When changing the networks while the power is on, wait at least for 10 seconds between disconnecting and reconnecting.

1.5.4 Memory Card Slots



CAUTION
If you insert a Memory Stick DUO to the Memory Card Slot without using the adapter, make sure to turn off the printer first, then remove the card using tweezers.

Table 1-21. List of Supported Memory Card

Priority	Slot	Compatible memory card	Standard	Max. capacity	Remarks	
1	Memory Stick/ Memory Stick PRO	Memory Stick	“MemoryStick Standard” Format Specification Ver.1.43-00 compatible	128MB	Includes versions with memory select function	
		MagicGate Memory Stick		128MB	Copy protection function is not supported	
		MagicGate Memory Stick Duo			An adapter should be used	
		Memory Stick PRO	Memory Stick PRO Format Specifications-without security specifications Ver.1.02-00 compatible	32GB	Copy protection function is not supported	
		Memory Stick Duo	MemoryStick Duo Format Specification Ver.1.11-00 compatible		The Memory Stick Duo adapter should be used	
		Memory Stick Pro Duo	MemoryStick PRO Duo Format Specification Ver.1.02-00 compatible		The Memory Stick Duo adapter should be used.	
		Memory Stick micro	Memory Stick Micro Format Specification Ver.1.02-00 compatible		The Memory Stick adapter for standard size should be used.	
	SD/MMC	SD (Security Digital)	SD Memory Card Specifications / PART1. Physical Layer Specification Ver. 2.0 compatible	2GB		
		miniSD/microSD				The SD adapter should be used
		SDHC		32GB		Speed Class is not supported
miniSDHC/microSDHC					The SD adapter should be used Speed Class is not supported	
MultiMediaCard MultiMediaCard Plus	MultiMediaCard Standard Ver. 4.2 compatible	4GB/32MB	Only MultiMediaCard Plus supports up to 32GB.			
xD-Picture card	xD-Picture card	xD-Picture Card Specification Ver.1.20 compatible	2GB	Type M/H supported		
2	CF Type II	Compact Flash	CF+ and CompactFlash Specification Revision 2.1 compatible	32GB	True-IDE compatible memory card only	
		Microdrive				

- Note:
- Memory Stick/PRO, SD/MMC and xD-Picture Card shares the same slot.
 - When cards are inserted in the two slots at once, the slot which will be accessed first is determined according to the priority shown in the table.
 - To select a card that has been inserted in a non-active slot, first remove the card in the active slot.
 - In memory card direct printing mode, the image files in the active slot are valid and have assigned frame numbers. The number of images will not change if a card is inserted in another nonselected slot.
 - When the card inserted in the slot is accessed from the PC, only one drive is displayed at a time as a removable disk* and only the card that is in the active slot can be accessed via the removable disk. A card that has been inserted into a non-selected slot cannot be accessed.
(This is for Windows. For Macintosh, the card in the active slot will be mounted on the desktop.)
 - Does not support 5V type of memory cards.
 - When a memory card is being accessed, do not touch the memory card.
 - For detailed information on the supported file system and formatting the memory card, refer to "1.7.2 Memory Card Direct Print Function (Photos Mode) (p. 26)".

1.6 Control Panel

1.6.1 Operation Buttons & LEDs

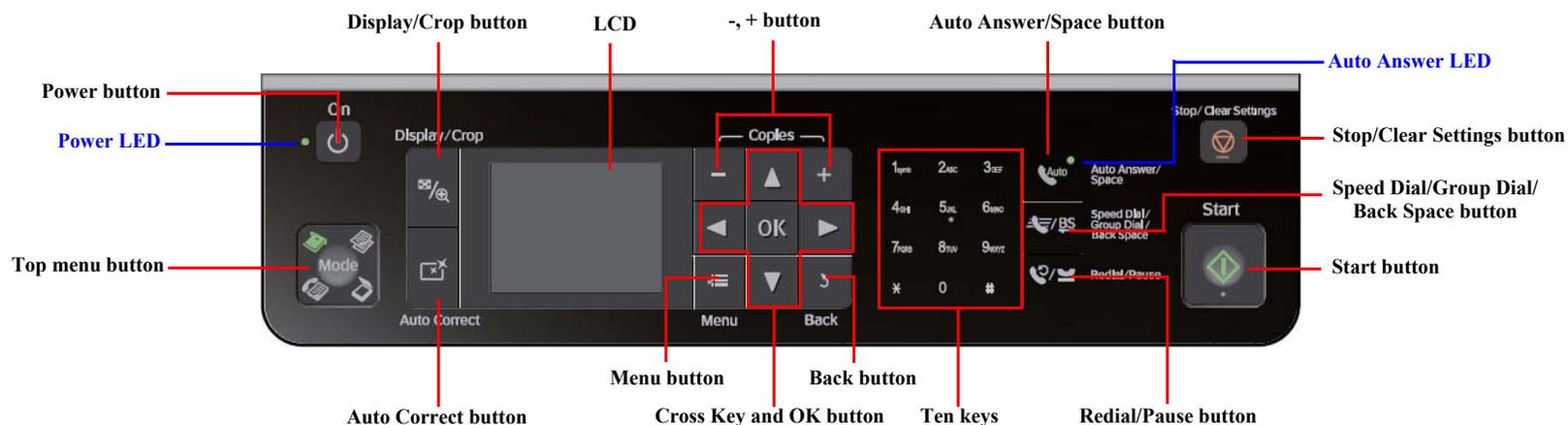


Figure 1-5. Control Panel

Table 1-22. Button Functions

Button	Function
Power	Turns the power ON/OFF.
Display/Crop	<ul style="list-style-type: none"> Goes to the zoom setting screen for the selected image. Changes the image preview layout on the LCD.
-, +	Sets pages to print
Auto Answer/Space	Turns ON/OFF the auto answer settings.
Stop/Clear Settings	<ul style="list-style-type: none"> Stops operation and displays the menu screen. Stops printing and ejects paper. Returns the print settings in the current mode to their defaults and displays the Top screen. (Returns to the previous screen during printing maintaining the current settings)
Speed Dial/Group Dial/Back Space	Goes to the call-up screen for speed dials and group dials.
Start	Starts printing.
Redial/Pause	Calls at the last dialed number.
Ten keys	Enters alphanumeric characters.
Back	Cancel the previous operation.
Cross Key (Up/Down/Left/Right)/OK	<ul style="list-style-type: none"> Selects a menu item or a setting value. Accepts the changed settings

Table 1-22. Button Functions

Button	Function
Menu	Goes to the menu screen for each mode.
Auto Correct	Changes the Auto Correct ON/OFF.
Top menu	Changes modes in the following order. Copy/Photos/Scan/Backup Data/Print Ruled Papers/Setup/Problem Solver/FAX

Table 1-23. LED Functions

LED	Function
Power (Green)	<ul style="list-style-type: none"> Flashes while powering ON/OFF. Flashes during some sequence is in progress. Flashes when a fatal error occurs. Lights when the status is other than above.
Auto Answer	<ul style="list-style-type: none"> Lights when Auto answer is on.
Card Access*2 (Green)	<ul style="list-style-type: none"> Lights when a memory card is inserted. Flashes when a memory card is being identified or accessed.

Note *1: In the Setup mode, the mode LED corresponding to the previous mode lights.

*2: The Card Access LED is provided near the memory card slot.

1.6.2 Control Panel Functions in Each Mode

1.6.2.1 Control Panel Functions

The table below shows the print setting menu items for each mode and their defaults, and when the settings are saved or returned to their defaults. Explanations on detailed control panel functions of the EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW are omitted here, because the LCD displays the detailed instruction.

Table 1-24. Timing of Saving or Initializing Control Panel Settings

Mode		Print Setting	Default Value
Copy	Normal Copy	Copy Type	Color
		Density	±0
		Layout	With Border
		Reduce/Enlarge	Actual
		Paper Size	A4, letter
		Paper Type	Plain Paper
		Document Type	Text & Image
		Quality	Standard
		Expansion	Standard
		Photo Copy	Color Restoration
	Paper Size		4 x 6
	Paper Type		Prem. Glossy
	Borderless		On
	Expansion		Standard
Filter	Off		
Print Photo	Print All Photos/View and Print Photos/DPOF Print	Select Photos	Select All Photos
		Paper Size	4 x 6
		Paper Type	Prem. Glossy
		Borderless	On
		Layout	Borderless
		Quality	Standard
		Borderless	On
		Date	Off
		Fit Frame	On
		Bidirectional	On

Table 1-24. Timing of Saving or Initializing Control Panel Settings

Mode		Print Setting	Default Value
Print Photo	Print Proof Sheet	Paper Size	4 x 6
		Paper Type	Prem. Glossy
		Information	File Name
	Photo Layout Sheet	Layout	2-up
		Paper Size	4 x 6
		Paper Type	Prem. Glossy
		Layout Method	Automatic Layout
		Photo Layout	Place this photo
		Quality	Standard
		Expansion	Standard
		Date	Off
		Fit Frame	On
	Print Index Sheet	Bidirectional	On
Expansion		Standard	

Note : For the default value in FAX mode, refer to "1.7.5 FAX Function (FAX Mode) (p. 36)".

1.7 Specification for Each Function

1.7.1 Stand-alone Copy Function (Copy Mode)

1.7.1.1 Supported Paper and Copy Mode

Table 1-25. Supported Paper and Copy Mode

Paper Type	Size	Print Quality	Resolution	Dot Size	Bi-d	Micro Weave	Border-less
Plain paper	A4, A5*2*3, Letter*1	Draft1	360x120*4	Eco	ON	OFF	N/A
		Normal2	360x360	VSD1	ON	OFF	N/A
		Photo1	720x720	VSD3	ON	ON	N/A
Matte paper	A4, Letter*1	Best Photo	1440x720	VSD3	ON	ON	OK
Photo Glossy	4x6, 5x7, A4	Best Photo	1440x720	VSD3	ON	ON	OK
Photo Paper*2	4x6, 5x7, A4, Letter*1	Best Photo	1440x720	VSD3	ON	ON	OK
Prem. Glossy	Letter*1, A4, 5 x 7, 8 x 10*1, 4 x 6	Best Photo	1440x720	VSD3	ON	ON	OK
Ultra Glossy	letter*, A4, 5 x 7, 8 x 10*1, 4 x 6	Best Photo	1440x720	VSD3	ON	ON	OK

Note *1: Supported only for EAI.

*2: Supported only for Euro/Asia.

*3: Borderless printing in A5 size is not supported.

*4: 360x360 for printing in monochrome.

Note : In the case of copy using ADF, only the plain paper is available.

1.7.1.2 Stand-alone Copy Menu

The stand-alone copy mode menu for the EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW (settable items) are shown in the following tables.

Table 1-26. Copy Menus

Menu		Function
Number of copies		Sets the number of copies within the range of 1 to 99.
Copy type		Selects either color or monochrome.
Layout		Selects from the following three layouts: <ul style="list-style-type: none"> • With Border (normal layout with 3mm margins) • Borderless (no margins) • 2-up Copy (Makes a copy of two A4 or letter sized documents on a sheet of A4 or letter sized paper.)
Print setting	Paper type	Selects paper type from the options shown in Table 1-25 .
	Paper size	Selects paper size from the options shown in Table 1-25 .
	Quality	Selects print quality from the options shown in Table 1-25 .
	Zoom	Selects zoom type from the 13 types below. <ul style="list-style-type: none"> • Actual (Sets any zoom with +/- key (25% to 400%) after selecting "Actual") • Auto Fit Page. • Legal->Letter • Letter->4x6 • 4x6in->Letter • Letter->5x7 • 5x7->Letter • 4x6->A4 • A4->4x6 • 5x7->A4 • A4->5x7 • 4x6->8x10 • 8x10->5x7
Document Type		Selects from "Text", "Text & Image" and "Photo".
Density		Selects from the nine density levels of -4 to +/-0 to +4.
Expansion (for borderless print)		Selects the margins level (margins bleed off the edges of paper) from the Standard (100%), Mid. (50%) or Min. (0%).*

Note * : Percentages in parentheses indicate the proportion of the margin level to the maximum which bleeds off the edges of paper.

Note : When selecting the photo copy, color restoration or filter settings can be available in addition to the above print settings.

1.7.1.3 Copy Speed

Table 1-27. Copy Speed (not using ADF)

Copy Conditions (eMemo2, A4 size)		Copy Speed
Draft 360 x 120	Monochrome copy	T.B.D. cpm
	Color copy	
Default 360 x 360	Monochrome copy	T.B.D. cpm
	Color copy	

Table 1-28. ADF Copy Speed (using ADF)

Copy Conditions		Copy Speed	
		per copy	five copies consecutively
Default	Monochrome copy	3.1 cpm	3.0 cpm
	Color copy	1.1 cpm	1.7 cpm
Best	Monochrome copy	0.8 cpm	0.8 cpm
	Color copy	0.4 cpm	0.4 cpm

1.7.1.4 Relation Between Original and Copy

The scanning start position is located on the front right of the scan bed. The relations between the original placed face down and its copy are as follows.

■ Standard copy

■ Borderless copy

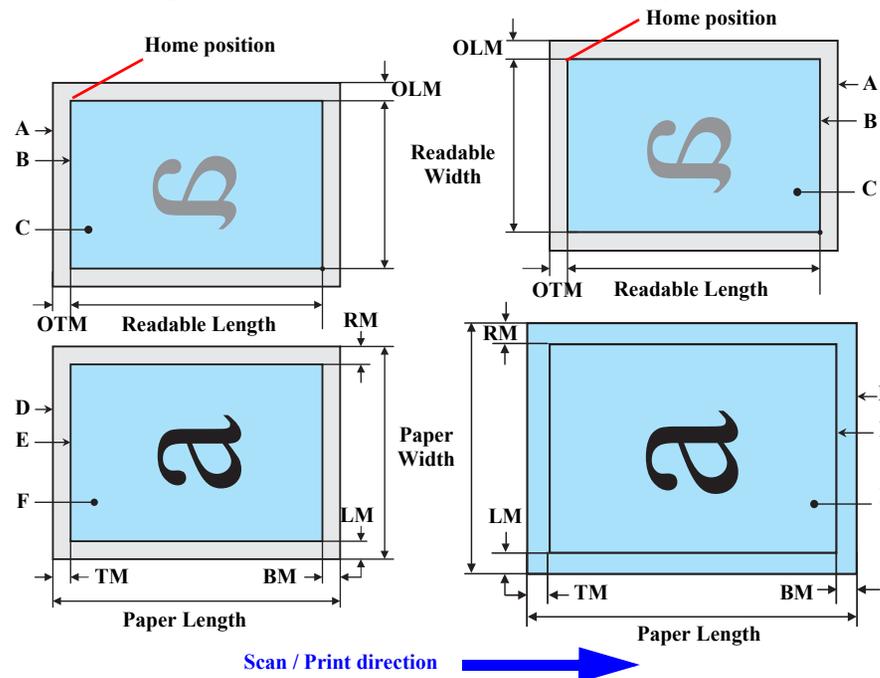


Figure 1-6. Relation Between Original and Copy (Borderless/With Borders)

Original Document

A	Scan bed	---
B	Scan area	“1-10 Scanning Range” (p.17)
C	Original (face down)	---
OTM	Top margin (out of scan range)	“1-10 Scanning Range” (p.17)
OLM	Left margin (out of scan range)	“1-10 Scanning Range” (p.17)

Copied Document

D	Copied paper	---
E	Print area	“1-7 Printing Area (Margins)” (p.16)
F	Copy	---
LM, RM	Left margin, Right margin*	“1-7 Printing Area (Margins)” (p.16)
TM, BM	Top margin, Bottom margin*	

1.7.2 Memory Card Direct Print Function (Photos Mode)

1.7.2.1 Supported Paper and Print Mode

Table 1-29. Supported Paper Type & Print Mode

Paper Type	Size	Print Quality	Resolution	Dot Size	Bi-d	Micro Weave	Borderless
Plain Paper	letter*1, A4,	Normal2	360x360	VSD1	ON	OFF	N/A
		Photo1	720x720	VSD3	ON	ON	N/A
Matte Paper	letter*1, A4	Best Photo	1440x720	VSD3	ON	ON	N/A
Photo Glossy	A4, 5 x 7, 4 x 6	Best Photo	1440x720	VSD3	ON	ON	OK
Photo Paper*2	letter*1, A4, 4 x 6, 5 x 7*2	Best Photo	1440x720	VSD3	ON	ON	OK
Prem. Glossy	letter*1, A4, 5 x 7, 8 x 10*1, 4 x 6, 16:9wide	Best Photo	1440x720	VSD3	ON	ON	OK
Ultra Glossy	letter*1, A4, 5 x 7, 8 x 10*1, 4 x 6	Best Photo	1440x720	VSD3	ON	ON	OK

Note *1: Supported only for EAI.

*2: Supported only for Euro/Asia.

1.7.2.2 Supported File Type and Media Type

The followings describe the file system, media format, and file type supported by the memory card direct function.

Table 1-30. Supported File System, Types and Media Format

Item		Specification
File system		DCF Version 1.0 or 2.0 *1 compliant. Other than those does not ensure proper operation. File systems available with the card reader function are restricted by the host's specification.
Media format	Memory card	<ul style="list-style-type: none"> • DCF Version 1.0 or 2.0 compliant • DOS FAT format (FAT12/FAT16/FAT32 *2) with single partition (basic partitioned)
File type	JPEG (*.JPG)	Image files conform to Exif Version 2.21. (Exif version 1.0/2.0/2.1/2.2/2.21 are supported)
	TIFF (*.TIF)	
	Camera definition file (*.MRK)	Camera definition files used for DPOF mode. "MISC\AUTOPRINT.MRK" file is valid.

Note *1: Refer to the Camera File System Standard; "DCF Version 2.0, JEIDA-CP-3461" for more details.

*2: Available only when the memory card supports FAT32.



The printer does not detect any files stored under the following directories or their sub-directories.

- Directories containing system properties or hidden properties.
- "RECYCLED" (Windows directory for deleted files)
- "PREVIEW" (directories of CASIO DSC for thumbnail images)
- "SCENE" (directories of CASIO DSC for its Best Shot function)
- "MSSONY" (directories of SONY DSC for e-mail images, voice memos, movies, or non-compressed images)
- "DCIM\ALBUM\IMAGE" (directories of CASIO DSC for its album function)

1.7.2.3 Automatic Detection of Images in Memory Card

When a memory card is inserted in the card slot on the printer, or when a memory card is detected at power-on, the printer automatically searches for all images stored in the card. When the card is removed, the printer erases the information on the all detected files.

1.7.2.4 Specifications for Handling Image Data

Table 1-31. Specifications for Handling Image Data

Item	Specification	Remarks
Image size (pixel)	<ul style="list-style-type: none"> • Horizontal: $80 \leq X \leq 9200$ • Vertical: $80 \leq Y \leq 9200$ 	---
Maximum number of images	Up to 9,990 images	When a memory card stores 9,990 or more images, the first 9,990 images are detected and become valid in the printer. The detecting order varies depending on the folder configuration in the card, so which images are included in the first 9,991 cannot be defined. However, images specified by camera definition files can be selected to be printed even when the total number of images has exceeded 9,990. Up to 999 camera defined image files can be specified.
Maximum number of copies	99 copies for each image. Up to 999 sheets in total.	---
Valid date and time	01/01/1980 00:00:00 to 12/31/2099 23:59:59	---
Thumbnail image data	Supports DCF Ver.1.0 or 2.0-compatible data (Exif format, 160x120 pixels)	Thumbnail images are used for the Print Index Sheet function.
File sorting	The printer sorts image files in ascending ASCII order based on their full-pathnames such as “\DCIM\100EPSON\EPSN0000.JPG”, and assigns a number to each of them. If over 1,000 files exist in the memory card, up to 999 files can be numbered and displayed on LCD. You can select which 999 files should be displayed from the menu on LCD.	<ul style="list-style-type: none"> • The image number assigned by the printer may be different from that assigned by the camera. • If two or more files have the same full pathname, the sorting function may not operate properly. (existence of the same full-pathname is not allowed under DOS)

Table 1-31. Specifications for Handling Image Data

Item	Specification	Remarks
Acquisition of date and time information	<p>The printer acquires date and time information included in image files in the order of precedence shown below.</p> <ol style="list-style-type: none"> 1. Shooting date and time information in digital camera standard format (Exif) 2. Digitized date and time information in digital camera standard format (Exif) 3. Date and time information in digital camera standard format (Exif) 4. Date and time information applied on DOS-compliant file system. 5. Fixed date and time information (01/01/1980, 00:00:00) 	Date and time information included in an image file is not always the shooting date and time. It changes each time the image is edited and restored. The printer acquires the latest date and time information.

1.7.2.5 Memory Card Direct Print Menu

The following describes the menu (settable items) in Photos Mode of EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW.

Table 1-32. Memory Card Mode Menu

Menu Item	Function
View and Print Photos*1,2	Prints the selected images.
Print All Photos*1,2	Prints all images in a memory card. Specified number of copies is applied to the all images (the default is 1 copy). Specifying it for each of the images independently also can be made in the preview screen.
Print Proof Sheet	Index prints the images in a memory card. Refer to Figure 1-10 for layout of the index sheet.
Photo Layout Sheet	Prints the images in a memory card with various layout. Refer to Figure 1-9 for layout.
Print Index Sheet	Print Index Sheet Prints an index sheet that prints images in a memory card in thumbnail form. The number of images to be included in the sheet can be selected from the following four options. “All image” (default), “Latest 30”, “Latest 60”, “Latest 90”*2
	Make Prints from Index Sheet Scans the Index Sheet, and prints images according to markings written on the sheet.
Slide Show*3	Starts a slide show on the LCD. Images in a memory card is displayed one by one in the order sorted by the printer. Printing one of the images can be made from the paused screen.

Note *1: 0 to 99 copies can be specified for each of the images. Up to 999 copies in total.

*2: The images are listed in ASCII descending order.

*3: While performing the slide show, displaying number of copies, printing from an external device or from a computer cannot be made.

1.7.2.6 Makes Prints from Index Sheet Function

□ Print settings

Table 1-33. Print Settings

Item	Print Index Sheet	Makes Prints from Index Sheet
Number of copies	---	According to the marking on the index sheet.
Paper Type	Plain paper	
Paper Size	A4	
Layout	---	
Quality	Standard	Standard
Expansion	---	According to the setting made by the control panel.
Date	YYYY.MM.DD (2007.09.21)*1	According to the setting made by the control panel. YYYY.MM.DD (2007.09.21)*1
Bi-directional	On	On
Print Index Sheet Setting-Select	According to the setting made by the control panel.	---

Note *1: EAI model: MMM.DD.YYYY (Sep. 21.2007)

❑ Rules on reading Index Sheet markings

The user can specify images to be printed and their print settings shown in Table 1-33 by putting marking on the Index Sheet. The printer reads the markings according to the following rules.

Table 1-34. Rules on Reading Markings

Item	Mark	Description	Remarks
Left edge (one each)		Reference position for reading markings.	An error occurs if these markings cannot be read due to ink stain or any other cause.
Right edge (one each)		Reference position for reading markings.	
Block code (36 pcs.)		Sheet information (memory card, page)	
Image selection (30 pcs. x 3)		Selects the image to be printed.	An error occurs if no image selection marking is read.
Paper type/size (4 pcs.)		Selects the paper type/size.	An error occurs if two or more markings are read for one image.
Layout (2 pcs.)		Selects the layout.	An error occurs if two or more markings are read for one image. If no marking is read, borderless layout is applied.
Date		Prints the date information.	When this marking is read, the date is printed on the image.

- Note:
- About 50% or more range of the mark area must be marked out to be read by the printer.
 - For running out and excessive marking out, the two white/black search patterns shown above are superimposed on the mark, and judgement is made according to this matching ratio.
 - The judgement criteria is as follows; black matching: 80% or more, white matching: 50% or more.
 - The figure below shows the judgement example according to the rules described above.

<OK example>



<NG example>



❑ Index Sheet errors

Table 1-35. Index Sheet Error List

Error Name	Description
Index sheet scan error (incorrect sheet setting)	The Index Sheet is not properly placed on the document glass.
Index sheet scan error (incorrect image selection marking)*	Image selection markings are not correct.
Index sheet scan error (incorrect paper selection marking)	Paper selection markings are not correct.
Index sheet scan error (unmatch between memory card and sheet)	The memory card may have been changed or some images may have been added or deleted after the Index Sheet is printed.

1.7.2.7 Print Layout

The following table describes supported layout for each paper type when printing the images. For printing area/margins in border-less printing or in bordered printing, refer to "1.2.5 Printing Area" (p.16). Other print layout are described in Figure 1-9.

Table 1-36. Supported Paper Type and Layout

Paper Type	Paper Size	Corresponding Layout												
		Border-free	1 sheet with borders	Upper 1/2	Lower 1/2	2 up	4 up	8 up	20 up	Index-20 up	Index-30 up	Index-80 up	Picture Package*1	Photo ID
Plain Paper	letter*1, A4	---	O	---	---	O	O	O	O	---	---	O	O	---
Matte Paper	letter*1, A4	O	O	O	O	O	O	O	O	---	---	O	O	---
Photo Glossy*2	A4, 5 x 7, 4 x 6	O	O	O	O	O	O	O	O	O*3	O*5	---	---	O*3
Photo Paper	letter*1, A4, 4 x 6, 5 x 7*2	O	O	O	O	O	O	O	O	O*3	O*2*5	O*4	O*4	O*3
Prem. Glossy	letter*1, A4, 5 x 7, 8 x 10*1, 4 x 6, 16:9wide	O	O	O*7	O*7	O*7	O*7	O*7	O*7	O*3*7	O*5*7	O*6*7	O*4*7	O*3*7
Ultra Glossy	letter*1, A4, 5 x 7, 8 x 10*1, 4 x 6	O	O	O	O	O	O	O	O	O*3	O*5	O*6	O*4	O*3

- Note 1: Supported only for EAI.
- 2: Supported only for Euro/Asia.
- 3: Only 4 x 6 is supported.
- 4: Only Letter, A4 are supported.
- 5: Only 5 x 7 is supported.
- 6: Only Letter, A4, 8 x 10 are supported.
- 7: 16:9 wide is not supported.

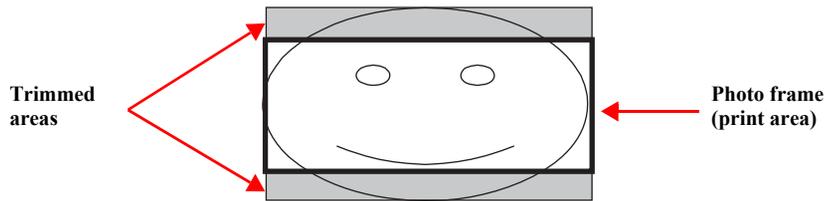
□ Trimming Function

A trimming function is provided as a means of coordinating an image with the types of photo frames handled by the printer. This function can be switched On/Off. This function is described briefly below.

The printed photo frame and an image to be printed are matched in length along one side and the image is resized along the perpendicular side to fit the frame on that side. Any part of the image that does not fit within the photo frame is trimmed away (not printed). However, if the number of pixels of the longer side of the image are more than twice as long as the shortest side, the trimming function is not effective when printing even the trimming is set. The trimming function is always set On if borderless or upper half layout is selected.

Trimming On

- When an image is aligned vertically with the photo frame.



- When an image is aligned horizontally with the photo frame.

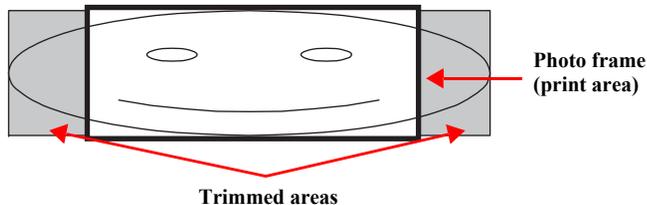
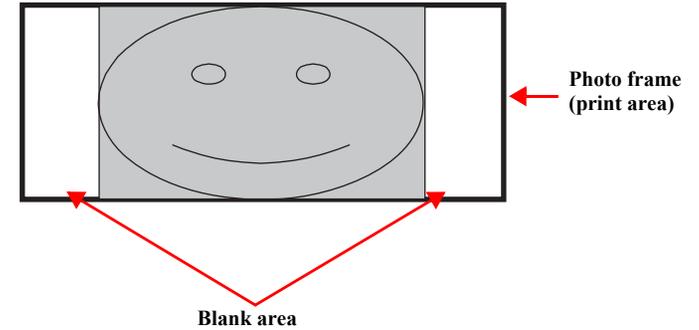


Figure 1-7. Trimming Function (when trimming is being operated)

Trimming Off

- When an image is aligned vertically with the photo frame.



- When an image is aligned horizontally with the photo frame.

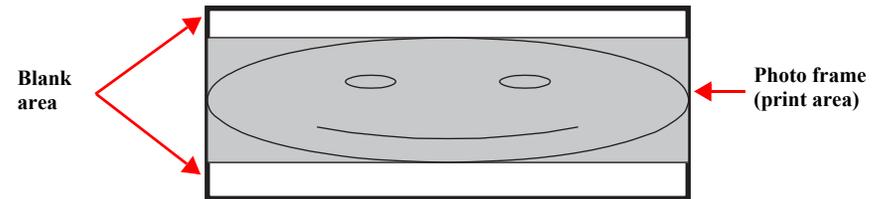


Figure 1-8. Trimming Function (when trimming is not operated)

□ Rules on Numbering and Rotating Images

The numbers shown in the figure below indicate the photo frame numbers used for the print layout. Horizontally oriented images are printed as shown by the numbers. Vertically oriented images, which has more pixels vertically than horizontally, the vertical photo data is allocated instead, and the number shown in the figure below is then rotated 90 degrees before being printed. In Index printing mode, the numbers are printed as they are shown below, regardless of the shape of the photo data.

However, when the photo data has an equal number of pixels vertically and horizontally the photos are printed without rotation, regardless of the layout.

NOTE: The vertical photo data refers to when the photo data file itself is set for a vertical (portrait) orientation. Photo data is defined as the vertical photo data if it is taken by a digital camera with a portrait position detecting function.)

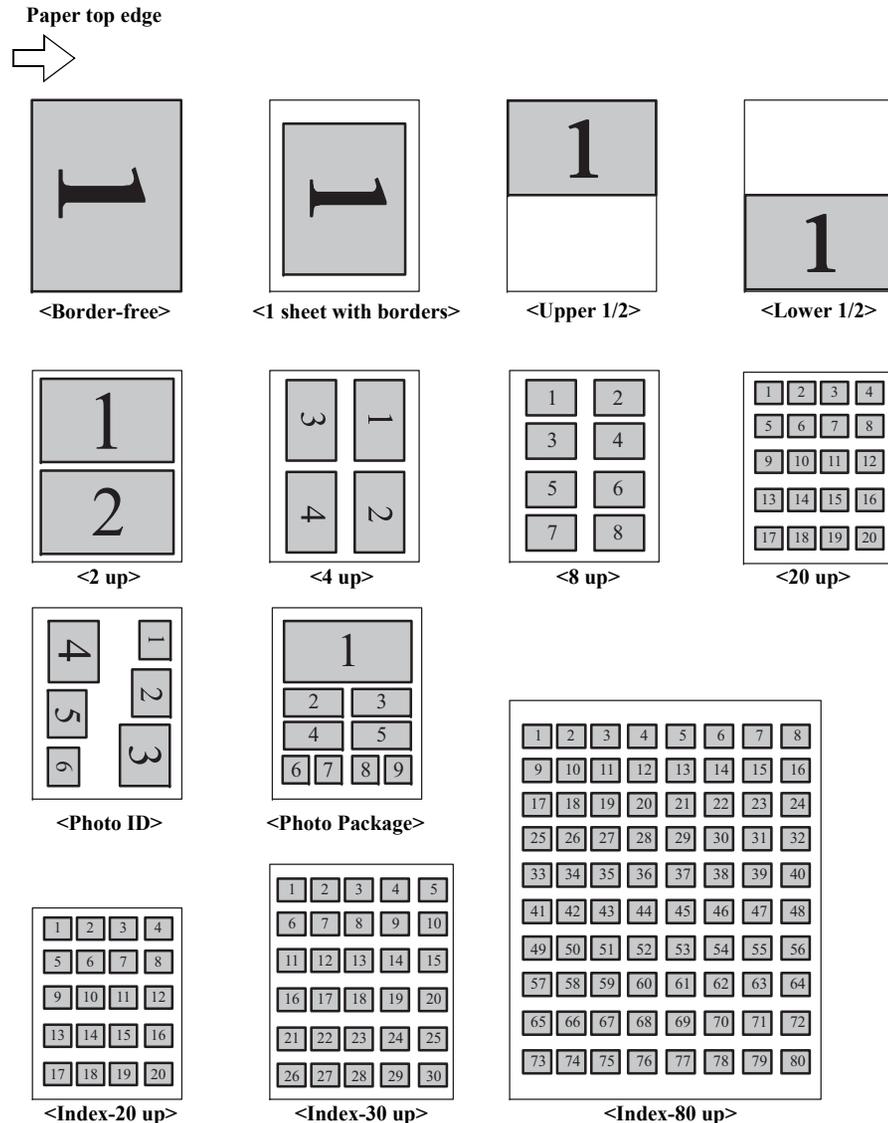


Figure 1-9. Rules on Numbering and Rotating Images

1.7.3 Camera Direct Print Function (PictBridge)

Printing operations (selecting images to be printed, making print settings, starting/canceling printing, and monitoring print process) can be carried out from a directly connected DSC (Digital Still Camera) that conforms to the standard described below.

1.7.3.1 Available DSC

Those devices which are compliant with "CIPA DC-001-2003 Digital Photo Solutions for Imaging Devices" (DPS Version 1.0) or "CIPA DC-001-2003 Rev.2.0, Digital Photo Solutions for Imaging Devices" (DPS Version 1.1).

1.7.3.2 Print Settings Available from DSC

The following print settings can be made from the DSC. However, depending on the DSC, some of the settings may not be available.

Table 1-37. Print Settings Available from DSC

Item	PictBridge
How to specify images	Single Sheet / Multiple Sheet / DPOF specified
Paper type	Plain Paper/ Prem. Glossy
Paper size	4 x 6, 5 x 7, 8 x 10, Letter (EAI model only), A4, 16:9wide
Layout	Borderless / With Borders / 2-up / 4-up / 8-up / 20-up / Index
Date	On / Off
Quality	Not available
Auto Correct	On / Off
Trimming	Any specified area
Control of printer	The following operations are available; Getting the printer status, starting a print job or canceling it immediately or after printing the current page is finished.

1.7.3.3 General Operation Procedure



Before connecting the DSC, check that the printer is in the following status.

- No print job from a computer is processed or performed.
- Direct print from a memory card is not processed or performed.
- Stand alone copy using the scanner function is not operating.
- No paper out error or ink out error is occurring.

The DSC direct print procedure differs depending on the DSC specifications. The following explains common procedure.

1. **Setting on the printer**
Before connecting a DSC with a USB cable, make the print settings such as paper type/size, layout setting on the printer. This may not be required for some DSCs.
2. **Setting on the DSC**
Make the following settings on the DSC before connecting it to the printer. Some DSCs may require to first connect to the printer for making the settings.
 - When printing multiple images, specify images and number of copies using the DPOF and Multiple Sheet menus. The menus may not be available on some DSCs.
 - When printing a single image
Specify an image and the number of copies. Specifying the number of copies may not be available on some DSCs.
 - Select the paper type/size, layout, and make the Fit to Frame setting if necessary. These settings may not be available on some DSCs.
3. **Starting to print**
When the print settings on both the printer and the DSC is completed, follow the procedure below to start printing.
 1. Connect the printer and the DSC with a USB cable. Using a USB cable included in the DSC package is recommended.
 2. Operate the DSC to start printing.
 3. Printing is carried out according to the settings made on the DSC. When some print settings have not been made on the DSC, the corresponding settings made on the printer are applied.

1.7.3.4 Operations when a DSC is connected

Table 1-38. Operations during Connecting DSC

Operation	Specifications
Connecting DSC (print start)	When a DSC is connected as described in "1.7.3.3 General Operation Procedure (p.33)" Step 3-1, EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW displays PictBridge logo on the LCD.
Canceling printing	A print job can be canceled from the DSC. The [Stop/Clear setting] button also cancels the print job.
After printing is completed	When performing memory card direct print after printing from a DSC, the USB cable connecting the DSC must be disconnected from the printer in advance.
Exclusion control	Print settings made on both the DSC and the printer can become impossible settings for the printer due to unsupported combination of paper type, paper size and layout. In such case, the print settings are automatically changed as follows. The settings made on the DSC are maintained. Any print setting items that are not specified by the DSC are changed in accordance with the DSC settings. When the paper type is changed, changed to Prem. Glossy, when the paper size is changed, changed to 4x6 size. And when the layout is changed, changed to Borderless layout.

1.7.4 Various Settings (Setup Mode)

EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW provides various configuration and maintenance. They can be done by selecting "Setup" from the menu on LCD. The following explains the outline of these menu functions.

Table 1-39. Menu List for Setup Mode

Item	Function
Ink Levels	<p>The current ink levels of each of the cartridges are displayed in bar chart by the rules described below. After displaying the ink levels, the next operation can be selected from the following two options; "End the ink levels display" or "Change Ink Cartridge".</p> <ul style="list-style-type: none"> The bar chart is displayed in the order of cyan, magenta, yellow, and black from the left. When initial filling is completed, or after replacing the cartridge, the ink level becomes 100% (full). The ink level is indicated in increment of 1%. Lower than 1% is rounded down. When the remaining ink level becomes lower than approximately 10% (ink low status), zero will be displayed.
Maintenance	<p>Runs various maintenance for the printer. The following shows each menu.</p> <ul style="list-style-type: none"> Nozzle Check A nozzle check pattern to check the Printhead nozzles status is printed. A head clean-ing can be run if necessary. (Refer to Figure 1-10 for Printout pattern.) Head Cleaning Runs a printhead cleaning. The cleaning cannot be made when low ink level is detected. In such case, an ink low error is displayed instead of running the cleaning. LCD Contrast Head Alignment Adjustment to improve the bi-directional print quality. Head alignment icon and the instructions for the adjustment are displayed on the LCD. Change Ink Cartridges Runs an ink cartridge replacement sequence. This can be done from the Ink Level menu or by following the instructions on the LCD when an ink-related error occurs.

Table 1-39. Menu List for Setup Mode

Item	Function
Printer Setup	<p>Changes settings for the printer. The menu is described below.</p> <ul style="list-style-type: none"> Sound Sets ON/OFF for sound output. Display Format The screen when displaying a photo can be selected from the following three types. <ul style="list-style-type: none"> 1-up with Info 1-up without Info View Thumbnail Images Date/Time Daylight Saving Time Country/Region Language
Network Settings	<p>Changes settings for Network.</p> <ul style="list-style-type: none"> Confirmation of Network Settings Displays the current settings. Status Sheet can be printed. (Refer to Figure 1-11.) General Network Settings Changes settings for printer name and TCP/IP (auto/manual). Wireless LAN Setup Enabling/disabling Wireless LAN. File Sharing Setup Changes settings of the files in a memory card for file sharing via network.
Fax Setting	<p>Changes settings for FAX. Refer to "1.7.5 FAX Function (FAX Mode) (p.36)".</p>
Bluetooth Settings	<p>Changes settings for Bluetooth.</p>

1.7.5 FAX Function (FAX Mode)

The following shows the fax functions and specifications of this printer.

Note : The default settings are underlined in the following tables.

1.7.5.1 Basic Specifications

Table 1-40. Basic Specifications

Function	Specification
FAX type	Desktop facsimile with sending/receiving capabilities (Super G3, B&W and color scan)
Supported line	Telephone subscriber line
Modem speed	Up to 33.6kbps
Error Correction Mode	CCITU/ITU Group 3 fax with Error Correction Mode
Speed dials (Max.)	60 names & numbers
Document memory (Max.)	180 pages (ITU-T Chart No.1)
Transmit speed	Approx. 3 seconds per page

1.7.5.2 Supported Functions

□ Scan

Function	Specification
Resolution*	Standard: 200 x 100 dpi
	Fine: 200 x 200 dpi
	Photo: 200 x 200 dpi (with error diffusion)
Contrast	9 levels
Scan size	Flatbed: Fixed to 216 mm x 297 mm
	ADF: 210 to 216 mm x 279 to 335.6 mm

Note* : When in color mode, Standard cannot be selected.

□ Print

Function	Specification
Paper size	Letter/A4/legal*1
Paper type	Fixed to plain paper
Resolution	Standard: 360 x 360 dpi
Dot size	VSD1
Bi-directional	Available
Microweave	N/A
Borderless printing	N/A
Automatic reduction	<u>On</u> /Off
Backup fax reception and reprint	Available
List	Type: Last transaction (<u>off</u> /send error/every send) Fax log (last 30 transactions) Speed dial list Power-fail report Protocol trace
	Font size: 12pt
	Language: Depends on destination
Size mismatch	Print*2
Footer	N/A

Note *1: The default setting is letter for US/Canada/Mexico and A4 for other destinations.

*2: The printer stops printing after printing the first page on the current paper. The received fax images (data) can be reprinted.

□ User Setting

Function	Specification
Volume	Buzzer: <u>On</u> /Off
Date and time	Display*: yyyy.mm.dd.hh:mm (12h/24h)
	Backup: N/A
	Daylight time: Available
Pending job viewer	N/A (cannot reserve)
Elapsed time	Available (displays time to redial)
External memory	N/A
Language	Depends on destination
Audio monitor	Available (buzzer)

Note* : The display format can be changed from the FAX settings menu.

□ Dialing

Function	Specification	
Speed dial	Total registration	60 (Max.)
	Characters available for registering number	1-9, 0, space, *, #, - (pause), space
	Total digits for registering number	64 (Max.)
	Characters available for registering name	a-z, A-Z, 1-9, 0, @, _ - & / ; , ? * () ' = + # ! % ~ , space
	Total characters for registering name	40 (Max.)
	Options	N/A
	Selection method	Press the Speed Dial/Group Dial/Back Space button to display the menu
	Function	Recalls fax numbers*1
	One-touch dial	N/A
Group dial	N/A	
Direct dial	Total digits	64 (Max.)
Redial	Busy	Fixed to two times
	No answer	
	Buffer	Last one number
Redial interval	Fixed to one minute	
Redial attempts	Fixed to two times	
Dial mode	Pulse	
PBX	N/A	
Dial prefix	N/A	
On-hook dialing	N/A	

Note *1: The fax numbers can be edited from the Fax settings menu.

Answering

Function	Specification
Auto answer	<u>On/Off</u> (with answer mode button)
	Ring to answer: 1-9 times*
DRD	All/single/double/triple/double&triple
TAM/IF	Available
Easy receive	N/A
Answer prefix	N/A
Caller ID	N/A
FAX/TEL mode	N/A
Remote receive/remote telephone	N/A

Note* : The default depends on destination.

Transmission

Function	Specification	
Sequential broadcast	N/A	
Direct transmission	Color only	
Memory transmission	Monochrome only	
Delayed memory transmission	Available	
Multi-page transmission	Total pages	100 (Max.)
	Data compression	Monochrome: MH/MR/MMR*1 Color: JPEG
Transmission reservation	N/A	
Fax header (Owner information)	Characters available	a-z, A-Z, 1-9, 0, @, . -&/ :,?*()'=#!%~, space
	Total characters	40 (Max.)
Fax header (Own number)	Characters available	1-9, 0, +, space
	Total characters	40 (Max.)
Overseas mode	N/A	
Poll to send	N/A	

Note *1: The compression method is automatically selected depending on the receiver.

Reception

Function	Specification
FAX forwarding	N/A
Block junk faxes	N/A
Block no-ID calls	N/A
Poll to receive	Available

Communication

Function	Specification
ECM	<u>On/Off</u>
V.34	<u>On/Off</u>
Region	Depends on destination
JBIG	N/A

Telephone

Function	Specification
External telephone	Jack: Available
	Handset: N/A
	Hook detect: Available
	Manual send: Available
	Manual receive: Available

Others

Function	Specification
Power save mode	Available
Receive and print during power off	N/A
Copy during faxing	N/A
Scan during faxing	N/A
Save received data during power off	N/A

1.7.6 Other Functions

EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW allows you to use various functions by selecting one of the following modes from the menu on LCD.

1.7.6.1 Scan Mode

- Scan to Email
- Scan to Memory Card
- Scan to PC
- Scan to PDF

When "Scan to Memory Card" is selected, you can change settings for saving format, scanning range, document type, and saving quality according to the instructions displayed on the LCD. After scanning, the scanned data is saved in the memory card. As for other menus, the Epson Scan installed in PC is activated and runs each function.

1.7.6.2 Saving Data

You can save data as a back up from the file in the memory card to the file in the externally-connected CDR drive, etc. or delete all the files in the memory card.

1.7.6.3 Printing ruled lines for note

You can print ruled lines on A4 plain paper for use of a sheet of notebook or a letter by operating according to the instructions displayed on the LCD. Ten types of ruled lines are available.

CHAPTER

2

OPERATING PRINCIPLES

2.1 Overview

In addition to the functions provided for the previous model, EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW are equipped with an ADF (Auto Document Feeder) on their scanner mechanism, and fax function.

This section describes the operating principles of the Printer Mechanism of EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW.

2.1.1 Printer Mechanism

EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW printer mechanism consists of printhead, carriage mechanism, paper loading mechanism, paper feed mechanism, and ink system.

As the conventional models, EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW is equipped with two DC motors; one is used to drive the paper loading, paper feed mechanisms, and the pump mechanism that includes the carriage lock mechanism, and another one is used to drive the carriage mechanism. A paper is fed from the rear ASF unit by means of the LD roller and Retard roller and ejected to the front tray.

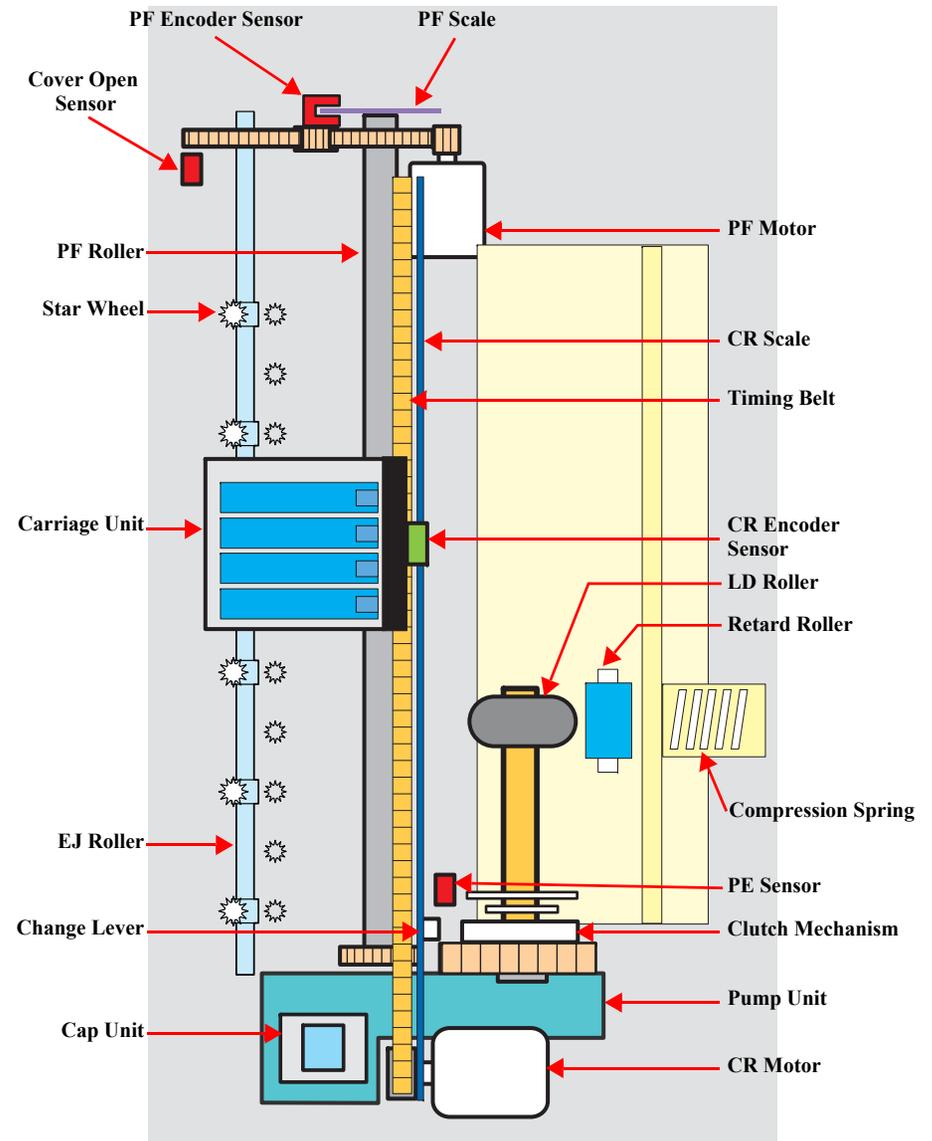


Figure 2-1. Printer Mechanism Block Diagram

2.1.2 Motors & Sensors

EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW are equipped with the following printhead, motors and sensors.

Table 2-1. Printer Mechanism Motors & Sensors

No.	Name	Specification
1	Printhead	O6 Turbo2 head: Black: 128 nozzles x 3 Color: 128 nozzles x 3 (cyan, magenta, yellow)
2	CR Motor	Type: DC motor Drive voltage: 42 VDC ± 5 % (DRV IC voltage) Coil resistance: 22.7 Ω ± 10 % Inductance: 15.9 mH (1 KHz) Drive method: PWM, constant-current chopping
3	PF Motor	Type: DC motor Drive voltage: 42 VDC ± 5 % (DRV IC voltage) Coil resistance: 21.2 Ω ± 10 % Inductance: 17.2 mH (1 kHz) Drive method: PWM, constant-current chopping
4	PE Sensor	Purpose: Detection of paper top and bottom edges, for control to set paper at the print start position Type: Photo interrupter
5	CR Contact Module	Detection of Ink cartridges (CSIC)
6	CR Encoder Sensor	Type: Photo interrupter Resolution: 180 pulse/inch
7	PF Encoder Sensor	Type: Photo interrupter Resolution: 180 pulse/inch
8	Cover Open Sensor	Purpose: To detect the cover's (scanner unit) open/close status Type: Mechanical contact point

Table 2-2. Scanner Mechanism CIS & Motor

No.	Name	Specification
1	CIS Unit	Resolution: 10200 pixel 16 bit per pixel (input), 8 bit per pixel (output)
2	CR Motor	Type: 2-phase 96-pole PM type stepping motor Voltage: 42 VDC ± 5 % (DRV IC voltage) Coil resistance: 38 Ω ± 10 % (MITSUMI) (at 25°C) 43 Ω ± 10 % (OKI) (at 25°C) Inductance: 23 mH ± 20 % (MITSUMI) (at 1KHz, 1Vrms) 24.5 mH ± 20 % (OKI) (at 1KHz, 1Vrms) Drive method: PWM

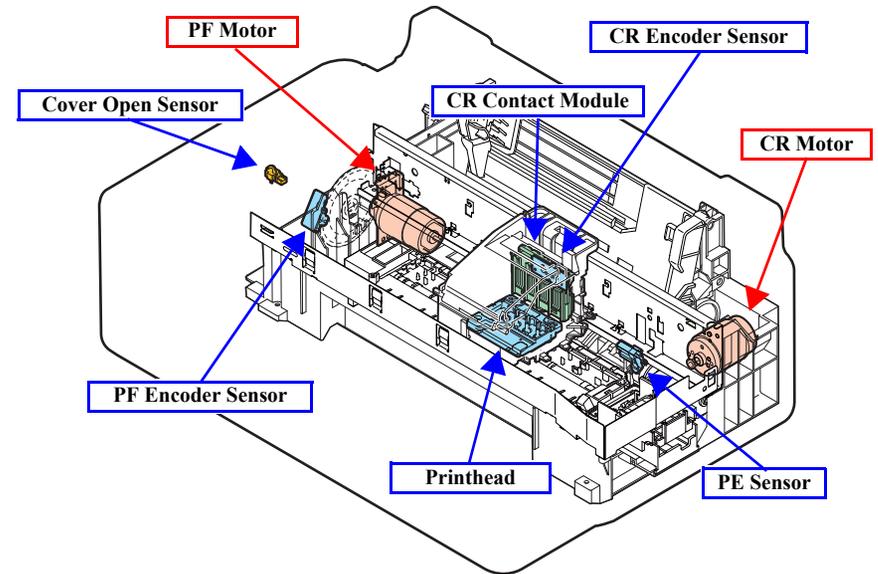


Figure 2-2. Motors & Sensors in Printer Mechanism

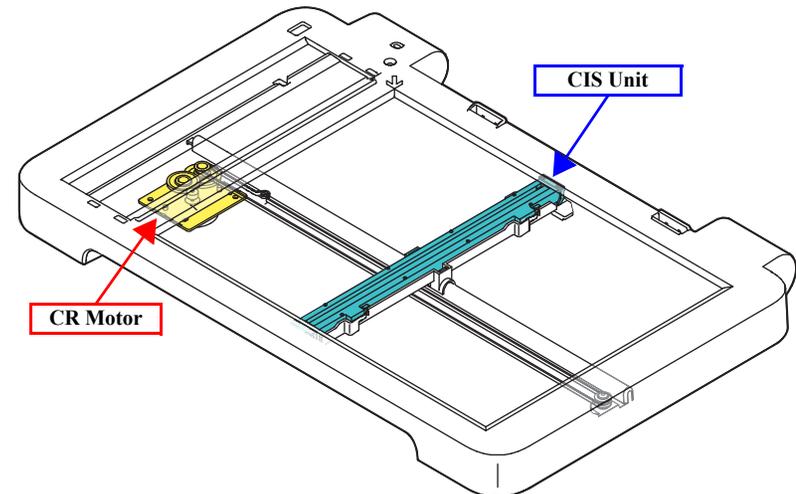


Figure 2-3. CIS Unit and CR Motor in Scanner Mechanism

Table 2-3. ADF Mechanism Motors & Sensors

Name	Specification
ADF DOC (Detection of document) Sensor	Purpose: To detect the presence of a document on the document tray Type: Photo interrupter
ADF PE Sensor	Purpose: Detection of paper top and bottom edges Type: Photo interrupter
ADF Motor	Type: 4-phase 96-pole PM type stepping motor Voltage: 42 VDC ± 5 % (DRV IC voltage) Coil resistance: 28 Ω ± 7 % (at 25°C) Inductance: 13.7 mH/phase Ref. (at 1 KHz, 1 Vrms) Drive method: PWM

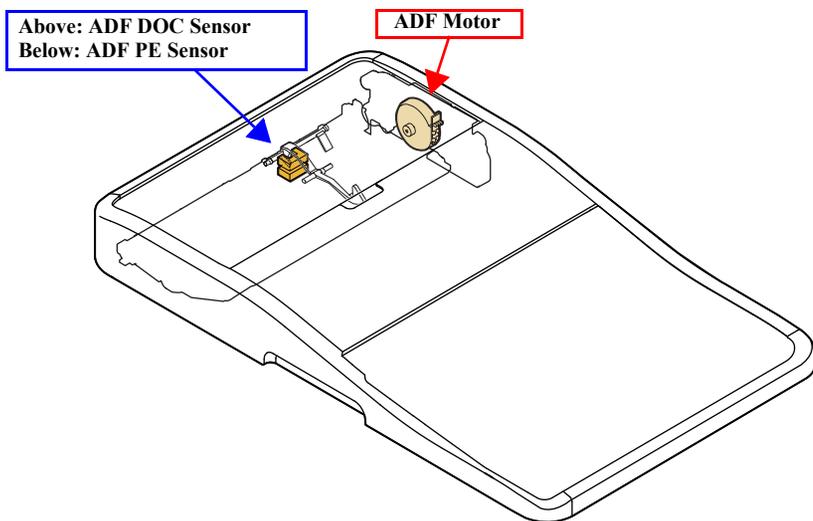


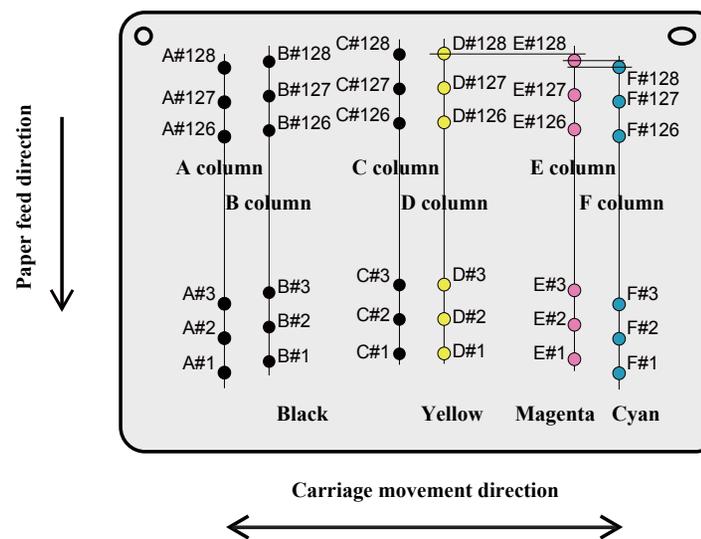
Figure 2-4. Motors & Sensors in ADF Mechanism

2.1.3 Printhead

O6-CHIPS type printhead is employed, which produces variable sized dot and economy dot. The printhead configuration is as follows.

- Nozzle configuration
 - Black: 128 nozzles x 3
 - Color: 128 nozzles x 3 (cyan, magenta, yellow)

The nozzle layout as seen from behind the printhead is shown below.



2.1.4 Printer Initialization

There are four kinds of initialization method, and the following explains each initialization

1. Hardware initialization
This printer is initialized when turning the printer power on, or printer recognized the cold-reset command (remote RS command).
When printer is initialized, the following actions are performed.
 - (a) Initializes printer mechanism
 - (b) Clears input data buffer
 - (c) Clears print buffer
 - (d) Sets default values
2. Operator initialization
Initialization when resetting the USB software, and the following are performed.
 - (a) Clears input data buffer
 - (b) Clears print buffer
 - (c) Sets default values
3. Software initialization
The ESC@ command also initialize the printer.
When printer is initialized, the following actions are performed.
 - (a) Clears print buffer
 - (b) Sets default values
4. IEEE 1284.4 “rs” command initialization
The printer recognized the IEEE 1284.4 “rs” command.
When printer is initialized, the following action is performed.
 - Initialization when an error occurs.
 - (a) Initializes printer mechanism
 - (b) Clears input data buffer
 - (c) Clears print buffer
 - (d) Sets default values
 - Initialization in normal operation
 - (a) Clears input data buffer
 - (b) Clears print buffer
 - (c) Sets default values

CHAPTER

3

TROUBLESHOOTING

3.1 Overview

This chapter describes how to solve problems.



- Be careful to avoid electric shocks when checking the electrical circuit boards (CA18 MAIN and C696 PSE/PSB boards) while the power is turned on.
- Touching an FET, transistor or heat sink with one hand while touching a metal part of the mechanism with the other hand could result in an electric shock, so carefully avoid this.
- After initial filling of ink has been repeated several times, immediate moving or tilting of the printer could result in leaking of ink that has not been completely absorbed by the Waste Ink Pad. When initial filling of ink has been repeated several times, check the ink remaining in the tip of the Waste Ink Tube and the waste ink not absorbed by the Waste Ink Pad before moving the printer.



- Disassembly and reassembly of parts is often required when identifying the causes of problems. The parts should be disassembled and re-assembled correctly while referring to “DISASSEMBLY/ASSEMBLY” (p.89) so that the operation and status of each check item can be correctly verified.
- Some individual part and units may require adjustment once they are removed or replaced. If removing or replacing parts which have specific instructions for adjustment included in “DISASSEMBLY/ASSEMBLY” (p.89), be sure to make these adjustments after repairing the problem location.

3.1.1 Specified Tools

This printer does not require any specified tools for troubleshooting.

3.1.2 Preliminary Checks

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

- The power supply voltage must be within the specification limits. (Measure the voltage at the wall socket.)
- The power code must be free from damage, short circuit or breakage, or miswiring in the power code.
- The printer must be grounded properly.
- The printer should not be located in a place where it can be exposed to too high or low temperature, too high or low humidity, or abrupt temperature change.
- The printer should not be located near waterworks, near humidifiers, near heaters or near flames, in a dusty atmosphere or in a place where the printer can be exposed to blast from an air conditioner.
- The printer should not be located in a place where volatile or inflammable gases are produced.
- The printer should not be located in a place where it can be exposed to direct rays of the sun.
- The printer must be placed on a strong and steady level table (without an inclination larger than five degrees).
- Any vibrating equipment must not be placed on or under the printer.
- The paper used must conform to the specification.
- There is no error in handling of the printer.
- Check the inside of the printer, and remove foreign matters if any, such as paper clips, staples, bits of paper, paper dust or toner.
- Clean the inside of the printer and the rubber rolls.

3.2 Troubleshooting

3.2.1 Motor and Sensor Troubleshooting

□ Motors

The resistance values for the CR motor and the PF motor are given below, however, the values cannot be used to check the motors status since they are DC motor and the resistance between the electric poles varies. Visually check the motors for abnormal operation and if it is hard to judge, replace the motor.

Table 3-1. Motor resistance and check point

Motor	Motor Type	Drive Voltage	Resistance
CR motor	DC motor with brush	DC 42 V ± 5%	28.8 Ω ± 10 %
PF motor			21.2 Ω ± 10 %
Scanner motor	2-phase, 96-pole PM stepping motor		38.0 Ω ± 10%*1 or 43.0 Ω ± 10%*2
ADF motor	4-phase, 96-pole PM stepping motor		28.0 Ω ± 7 %

Note *1: Manufactured by MITSUMI ELECTRIC CO., LTD.

*2: Manufactured by Oki Electric Industry Co., Ltd

□ Sensors

Table 3-2. Sensor check point

Sensor name	Check point	Signal level	Switch mode
PE Sensor	CN7/Pin 1 and 2	Less than 0.4 V	Off: No paper
		More than 2.4 V	On: Detect the paper
Cover Open Sensor	CN8/Pin 1 and 2	Less than 0.4 V	Off: Cover Close
		More than 2.4 V	On: Cover Open
ADF PE Sensor	CN18/Pin 2 and 5	Less than 0.4 V	Off: Document passing
		More than 2.4 V	On: Document not passing
ADF DOC Sensor	CN18/Pin 1 and 3	Less than 0.4 V	Off: Detect the document
		More than 2.4 V	On: No document

3.3 Error Indications and Fault Occurrence Causes

3.3.1 Error Message List

You can handle most of the troubles with messages/instructions shown on the LCD panel.

Table 3-3. Error Indications and Fault Occurrence Causes

Error Name	LCD Message	Error Cause	Reference
Fatal error (System)	A printer error has occurred.	RAM trouble occurs. System trouble occurs.	Table 3-4. (p50)
Fatal error (printer mechanism)	Turn off the printer and turn it on again. See your documentation.	Mechanical trouble occurs.	
Fatal error (Scanner)	A scanner error has occurred. Please see your documentation.	Scanner error occurs.	
Maintenance request (waste ink over flow)	The printer's ink pads are at the end of their service life. Please contact Epson Support.	The waste ink counter exceeds to capacity.	Table 3-5. (p56)
Paper jam error	Paper is jammed in the printer. Turn off the printer, open the scanner unit, and remove the paper. See your documentation.	Paper stays in the paper path after paper ejection.	Table 3-6. (p56)
Ink end error	You need to replace the following ink cartridge(s).	Ink is out in some I/C.	Table 3-7. (p59)
No ink cartridge error	The following ink cartridges have not been installed. Install them.	No I/C is set.	
Incorrect ink cartridge	Cannot recognize the following ink cartridge(s). Install them correctly.	Incorrect I/C is set.	
Ink cartridge cover open error	The ink cartridge cover is open. Open the scanner unit and close the ink cartridge cover. Press OK to continue.	Ink replacement was attempted with the Ink Cartridge Cover open.	Table 3-8. (p60)
Paper out error	Paper out. Load paper and press the Start button.	Failure to load paper to print.	Table 3-9. (p60)
Head cleaning (Ink low error)	Replace the following ink cartridge(s) before cleaning the print head.	Head cleaning was attempted in the Ink low status.	Table 3-10. (p62)
DSC Direct error	Cannot recognize the device.	A device not supported is connected to the port for the connection of external memory devices. The DSC demands the current larger than mechanical limit.	Table 3-11. (p62)

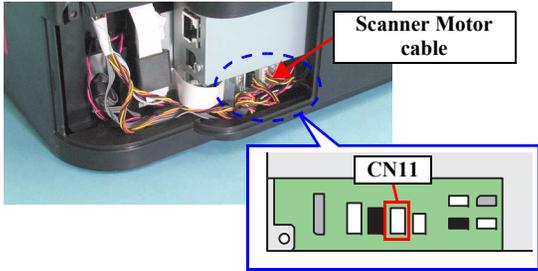
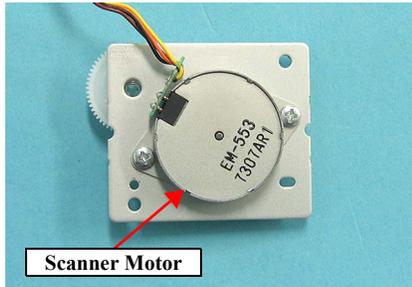
Table 3-3. Error Indications and Fault Occurrence Causes

Error Name	LCD Message	Error Cause	Reference
Memory card error	Cannot recognize the memory card or disk. Do you want to format?	That memory card is not available with this unit. Or no image can be found in that card when memory card print is started.	Table 3-12. (p62)
Index sheet error 1 (No index sheet)	There is no index sheet or it is not positioned correctly. Correct and try again.	The direction of order sheet is opposite. No index sheet is recognized correctly.	Table 3-13. (p63)
Index sheet error 2 (Incorrect marking)	Photos are not selected or the ovals are marked incorrectly. Please correct and try again.	When there is a mismatch in the content of the order sheet (When it is not marked though the selection is necessary.)	Table 3-14. (p63)
Index sheet error 3 (Incorrect card)	The contents of the memory card have changed. Print a new index sheet and try again.	The different card or updated card is found for that sheet.	Table 3-15. (p63)
Pre-scanning error (photo)	Cannot recognize photos. Make sure photos are placed correctly. See your documentation.	Photos cannot be recognized.	Table 3-16. (p64)
Double feed error	Multi-page feed error. Remove and reload the paper, then press the Start button.	Double feed during double sided printing.	Table 3-17. (p64)
Communication error	--	The printer cannot communicate with the PC properly.	Table 3-18. (p65)
Scanner unit open error	Close the scanner unit firmly.	Scanner unit was opened during printing.	Table 3-19. (p66)
ADF paper jam error	Paper jam in the Automatic Document Feeder. Remove the jammed paper.	The power was turned on with the document cover opened. Or paper jammed in the document feeder.	Table 3-20. (p67)
FAX error	--	A FAX error occurred.	“3.5 FAX Troubleshooting” (p.77)
Network error	---	A network related error occurred.	“3.4 Network Troubleshooting” (p.75)

3.3.2 Troubleshooting by Error Message

The following tables provide troubleshooting procedures. Confirm the error message indicated on the LCD, and verify it in the following list for the corresponding troubleshooting remedy. If some parts need to be replaced or repaired, make sure to follow the procedure given in Chapter 4 “DISASSEMBLY/ASSEMBLY”.

Table 3-4. Check point for Fatal error according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Power on • Anywhere 	The Scanner Unit does not initialize when the power is turned on.	Scanner Motor	1. Check if the Scanner Motor cable is connected to CN11 on the Main Board. 	1. Connect the Scanner Motor cable to CN11 on the Main Board.
			2. Check if the coil resistance of the Scanner Motor is about 38Ω *1 or 43Ω *2 by using the tester. (refer to Table 3-1). 	2. Replace the Scanner Motor with a new one.
			3. Check if the Scanner Motor Connector Cable is damaged.	3. Replace the Scanner Motor with a new one.

Note *1: Manufactured by MITSUMI ELECTRIC CO., LTD.
 *2: Manufactured by Oki Electric Industry Co., Ltd.

Table 3-4. Check point for Fatal error according to each phenomenon

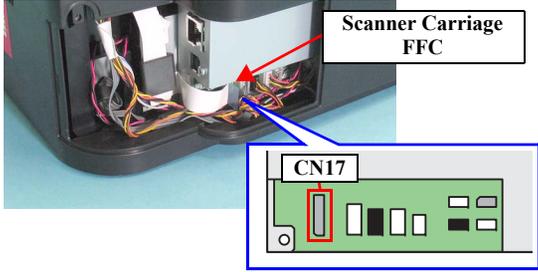
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Power on • Anywhere 	The Scanner Unit does not initialize when the power is turned on.	Scanner Carriage FFC	1. Check if the Scanner Carriage FFC is connected to CN17 on the Main Board. 	1. Connect the Scanner Carriage FFC to CN17 on the Main Board.
			2. Check if the Scanner Carriage FFC is damaged.	2. Replace the Scanner Carriage FFC with a new one.
		Scanner Carriage Unit	1. Check if the Scanner Carriage Unit is damaged. 	1. Replace the Scanner Carriage Unit with a new one.

Table 3-4. Check point for Fatal error according to each phenomenon

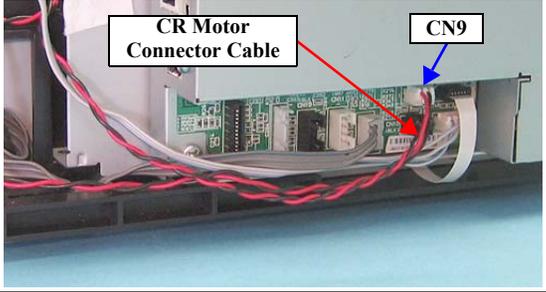
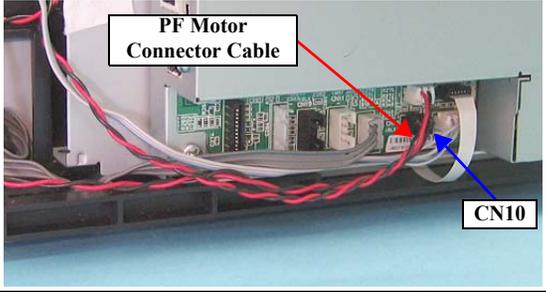
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Power on • Anywhere 	When turning on the power, the CR Motor does not operate at all.	CR Motor	1. Check if the CR Motor Connector Cable is connected to CN9 on the Main Board.	1. Connect the CR Motor Connector Cable to CN9 on the Main Board. 2. Replace the CR Motor with a new one. 3. Replace the CR Motor with a new one.
				
			2. Check if the CR Motor Connector Cable is not damaged. 3. Check if the CR Motor operates.	
	When turning on the power, the PF Motor does not operate at all	PF Motor	1. Check if the PF Motor Connector Cable is connected to CN10 on the Main Board.	1. Connect the PF Motor Connector Cable to CN10 on the Main Board. 2. Replace the PF Motor with a new one. 3. Replace the PF Motor with a new one.
				
			2. Check if the PF Motor Connector Cable is not damaged. 3. Check if the PF Motor operates.	

Table 3-4. Check point for Fatal error according to each phenomenon

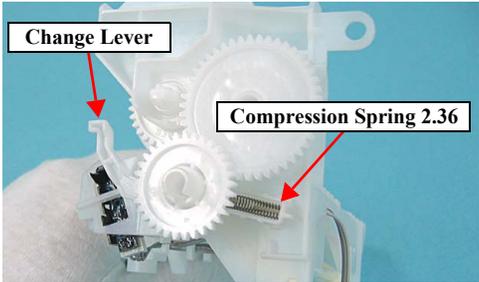
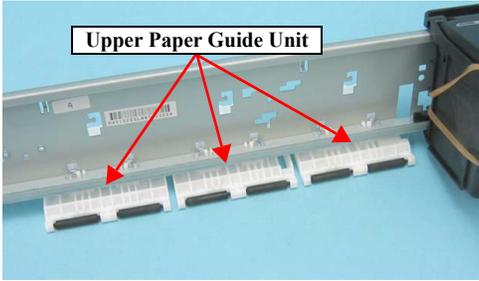
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Power on • Anywhere 	When turning on the power, the Carriage Unit collides to the Change Lever located to the front side of the printer.	PF Motor	<ol style="list-style-type: none"> 1. Check if the PF Motor Connector Cable is connected to CN10 on the Main Board. 2. Check if the PF Motor Connector Cable is not damaged. 3. Check if the PF Motor operates. 	<ol style="list-style-type: none"> 1. Connect the PF Motor Connector Cable to CN10 on the Main Board. 2. Replace the PF Motor with a new one. 3. Replace the PF Motor with a new one.
		ASF Unit	<ol style="list-style-type: none"> 1. Check if the Compression Spring 2.36 does not come off in the Change Lever. 	<ol style="list-style-type: none"> 1. Replace the ASF Unit with a new one.
	The Carriage Unit collides with the Upper Paper Guide Unit when power is turned on.	Upper Paper Guide Unit	<ol style="list-style-type: none"> 1. Check if the Paper Guide Upper Unit is correctly assembled. 	<ol style="list-style-type: none"> 1. Reassemble the Upper Paper Guide Unit to the Main Frame correctly.

Table 3-4. Check point for Fatal error according to each phenomenon

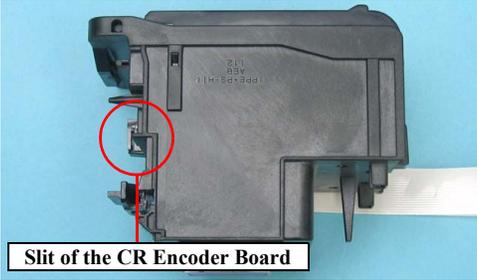
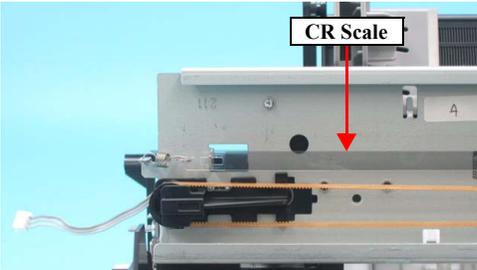
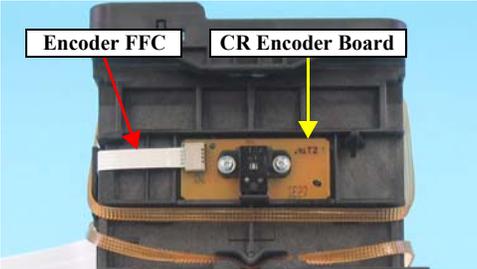
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Power on • Anywhere 	When turning on the power, the Carriage Unit collides to the right side of the Main Frame.	CR Scale	1. Check if the CR Scale does not come off or it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

Table 3-4. Check point for Fatal error according to each phenomenon

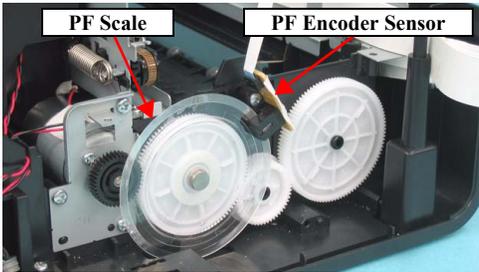
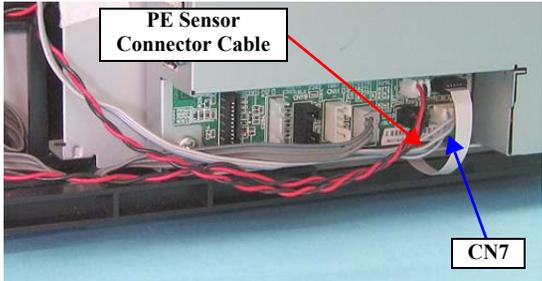
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> Power on Anywhere 	The eject rollers are rotating at high speed when power is turned on. (For about 1 cycle.)	PF Scale/PF Encoder Sensor	1. Check if the PF Scale is not damaged or contaminated.  A photograph showing the internal mechanism of the printer's paper feed system. Two white gears are visible. A red arrow points to a component labeled 'PF Scale' and another red arrow points to a component labeled 'PF Encoder Sensor'.	1. Replace the PF Scale with a new one.
			2. Check if the PF Encoder Sensor is not damaged.	2. Replace the PF Encoder Sensor with a new one.
<ul style="list-style-type: none"> Operation Anywhere 	The Scanner Carriage Unit does not operate.	Lower Scanner Housing	1. Check if the grease is applied enough on the surface of the Guide Rail of the Lower Scanner Housing.	1. Apply the grease on the surface of the Guide Rail of the Lower Scanner Housing after wiping the old grease with a dry, soft cloth. (Refer to Chapter 6 “MAINTENANCE” (p.163))
	A paper feeding sequence failed to feed the paper, but a paper ejection sequence is performed.	ASF Unit	1. Check if the PE Sensor Connector Cable is connected to CN7 on the Main Board.	1. Connect the PE Sensor Connector Cable to CN7 on the Main Board.
			 A photograph of the printer's main board area. A red cable labeled 'PE Sensor Connector Cable' is shown. A blue arrow points to a connector labeled 'CN7' on the board.	2. Reassemble the Scanner Carriage Unit.
2. Check if the PE Sensor Connector Cable is not damaged.	2. Replace the ASF Unit with a new one.			
3. Check if the PE Sensor is not damaged.	3. Replace the ASF Unit with a new one.			

Table 3-5. Check point for the Maintenance request according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • - 	An error is indicated on the STM or LCD.	Waste Ink Pads	---	1. Change the Waste Ink Pads and initialize the Waste Ink Pad Counter. (Refer to Chapter 5 “ADJUSTMENT” (p.150))

Table 3-6. Check point for Paper jam error according to each phenomenon

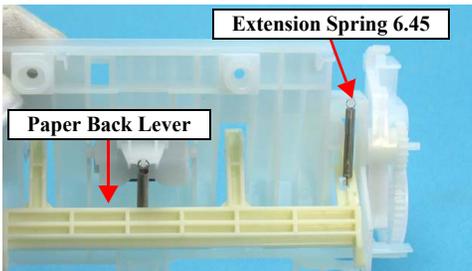
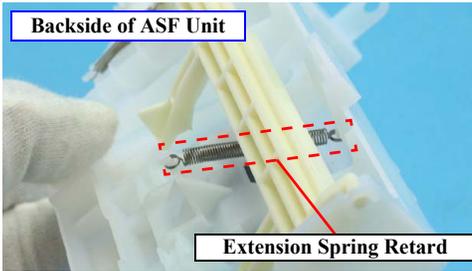
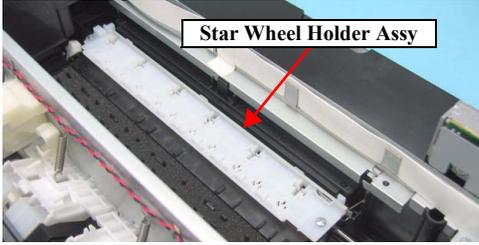
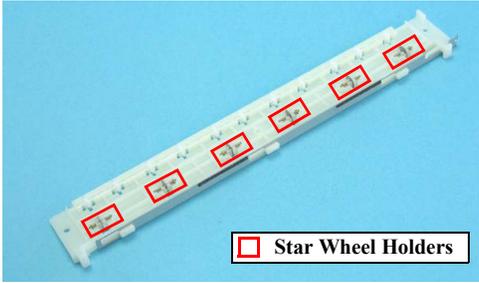
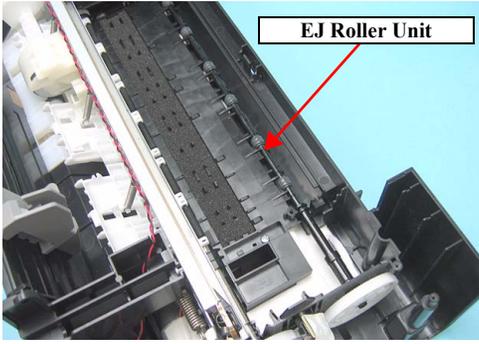
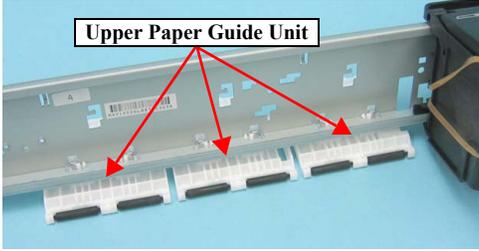
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • Outside HP 	A paper feeding sequence failed to feed the paper, but a paper ejection sequence is performed.	ASF Unit	<ol style="list-style-type: none"> 1. Check if the ASF Unit is properly installed. 2. Check if the Paper Back Lever operates correctly in the paper loading sequence. 	<ol style="list-style-type: none"> 1. Install the ASF Unit properly. 2. Set the Extension Spring 6.45 between the ASF Frame and the Paper Back Lever.
	Paper is being resent during paper feeding operation.	ASF Unit	<ol style="list-style-type: none"> 1. Check if the Extension Spring Retard operates correctly in the paper loading sequence. 	<ol style="list-style-type: none"> 1. Set the Extension Spring Retard between the Retard Roller Unit and the ASF Frame.

Table 3-6. Check point for Paper jam error according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • - 	The top edge of paper does not go through between the EJ Roller Unit and the Star Wheel.	Star Wheel Holder Assy*	1. Check if the Star Wheel Holder Assy is correctly assembled. 	1. Reassemble the Star Wheel Holder Assy correctly.
			2. Check if the Star Wheel Holders does not come off. 	2. Reassemble the Star Wheel Holders correctly.
		EJ Roller Unit*	1. Check if the EJ Roller Unit is correctly assembled. 	1. Reassemble the EJ Roller Unit correctly.
			2. Check if the Spur Gear 51.5 is not damaged.	2. Replace the EJ Roller Unit with a new one.

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

Table 3-6. Check point for Paper jam error according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • — 	The top edge of paper is not loaded to the PF Roller Unit.	Upper Paper Guide Unit*	1. Check if the Upper Paper Guide Unit is correctly assembled. 	1. Reassemble the Upper Paper Guide Unit to the Main Frame correctly.

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

Table 3-7. Check point for Ink end / No ink cartridge / Incorrect ink cartridge error according to each phenomenon

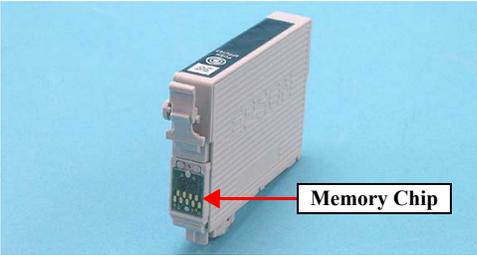
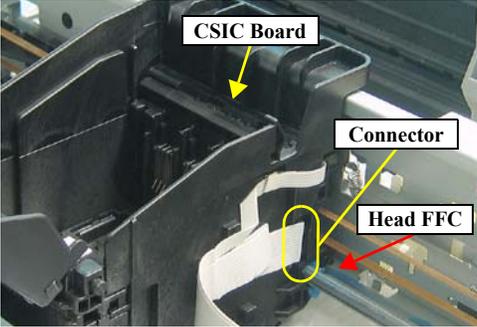
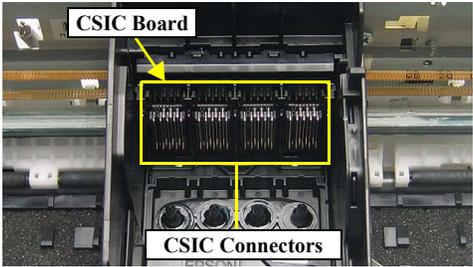
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Power on • Inside HP 	After the printer detects that the carriage is at the home position, an error is displayed.	Ink Cartridge	1. Check if Ink Cartridge is properly installed. 2. Check if the Memory Chip is not disconnected or not chipped. 	1. Install the Ink Cartridge properly. 2. Replace the Ink Cartridge with a new one.
		CSIC Board	1. Check if the Head FFC is connected to connector on the CSIC Board. 	1. Connect the Head FFC to connector on the CSIC Board.
		CSIC Connector	2. Check if the CSIC Board is not damaged. 3. Check if the CSIC Connector is not damaged. 	2. Replace the CSIC Board with a new one. 1. Replace the CSIC Board with a new one.

Table 3-8. Check point for Ink cartridge cover open error according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • - 	An error is indicated on the LCD.	Ink Cartridge Cover	---	1. Close the Ink Cartridge Cover.

Table 3-9. Check point for Paper out error according to each phenomenon

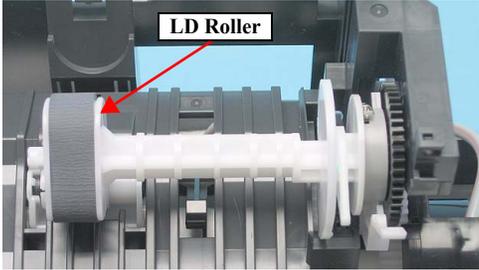
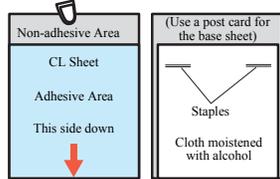
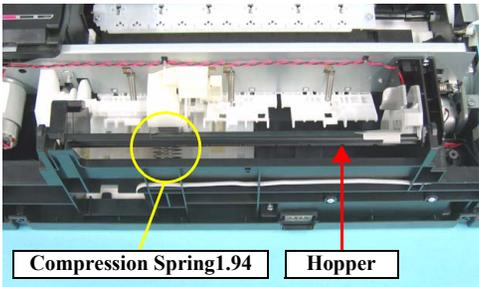
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • - 	The LD Roller cannot pick up paper although the LD Roller attempt to rotate correctly.	ASF Unit	1. Check if any paper dust is not adhered to the surface of the LD Roller. 	1. Set a cleaning sheet in the ASF Unit up side down. Then holding the top edge, try to load the paper from the Printer driver. The micro pearl on the LD Roller surface is removed. To remove severe smear, staple a cloth moistened with alcohol to a post card and clean the roller in the same manner. 
	The Hopper does not operate during the paper loading sequence although the LD Roller rotates to load paper from the ASF Unit.	ASF Unit	1. Check if the Hopper operates correctly in the paper loading sequence. 	1. Reassemble the Compression Spring 1.94 between the Base Frame and the Hopper.

Table 3-9. Check point for Paper out error according to each phenomenon

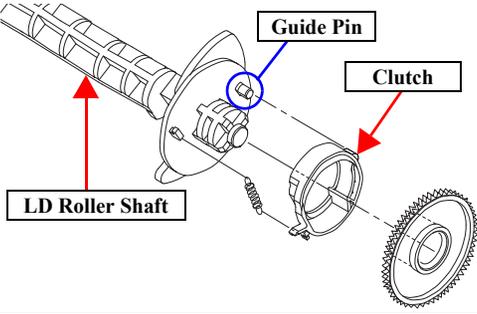
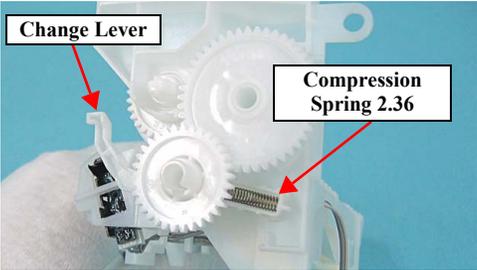
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • - 	The drive of the PF Motor is not transmitted to the LD Roller Shaft.	ASF Unit	1. Check if the Extension Spring 0.143 does not come off in the Clutch mechanism. 	1. Reassemble the Extension Spring 0.143 in the Clutch mechanism.
			2. Check if the positioning hole of the Clutch does not come off from the guide pin of the LD Roller Shaft. 	2. Reassemble the positioning hole of the Clutch on the guide pin of the LD Roller Shaft.
			3. Check if the Clutch tooth is not damaged.	3. Replace the ASF Unit with a new one.
			4. Check if the Clutch is not damaged.	4. Replace the ASF Unit with a new one.
			5. Check if the Compression Spring 2.36 does not come off in the Change Lever. 	5. Replace the ASF Unit with a new one.

Table 3-9. Check point for Paper out error according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • – 	The LD Roller is not set to the ASF home position and paper is always loaded from the ASF Unit during the paper loading sequence.	ASF Unit	1. Check if the tip of the Change Lever is not damaged.	1. Replace the ASF Unit with a new one.

Table 3-10. Check point for Head Cleaning error (Ink low error) according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • – 	Head Cleaning is not carried out.	Ink Cartridge	1. Check if the ink remains in the Ink Cartridge. 2. Check if the Ink Cartridge can be used by installing it to other printer.	1. Replace the Ink Cartridge with a new one. 2. Replace the Ink Cartridge with a new one.

Table 3-11. Check point for DSC Direct error according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • – 	The Digital Camera (as a USB device) cannot be recognized and an error is indicated.	USB Cable Digital Camera	1. Check if the USB Cable is damaged. 2. Confirm whether the digital camera is compatible with the printer.	1. Replace the USB Cable with a new one. 2. Replace the digital camera with a compatible one.

Table 3-12. Check point for Memory Card error according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • – 	The Memory Card cannot be recognized and an error is indicated.	Memory Card Main Board Unit	1. Check if the Memory Card is compatible with the printer. 2. Check if the Memory Card is damaged. 3. Check if a memory card that the adaptor is needed is inserted into the slot without using the adaptor. 1. Check if the Memory Card slot pins on the Main Board is bent or broken.	1. Replace the Memory Card with a compatible one. 2. Replace the Memory Card with a new one. 3. Turn off the printer, then remove the card using tweezers or a similar tool. 1. Replace the Main Board Unit with a new one.

Table 3-13. Check point for Index Sheet 1 error (No index Sheet) according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • - 	This error occurs when attempting to print using the Index Sheet.	Document Cover	1. Check if the Document Cover is open.	1. Close the Document Cover.
		Index Sheet	1. Check if the Index Sheet is set in the wrong way.	1. Set the Index Sheet correctly.
			2. Check if the Index Sheet's standard position is clean.	2. Reprint the Index Sheet.
Scanner Housing Upper	1. Check if the Document Glass is clean.	1. Clean the Document Glass.		



Table 3-14. Check point for Index Sheet error 2 (Incorrect marking) according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • - 	This error occurs when attempting to print using the Index Sheet.	Index Sheet	1. Check if the mark of the Index Sheet has been properly marked out.	1. Mark it out properly.

Table 3-15. Check point for Index Sheet error 3 (Incorrect card) according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • - 	This error occurs when attempting to print using the Index Sheet.	Index Sheet	1. Check if the Index Sheet was printed from the inserted Memory Card.	1. Change the Index Sheet to the one printed from the inserted Memory Card.
		Memory Card	1. Check if the Memory Card storing the Index Sheet data is inserted.	1. Insert Memory Card storing the Index Sheet data.
			2. Check if the Memory Card is damaged.	2. Replace the Memory Card with a new one.

Table 3-16. Check point for Pre-scanning error (photo) according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • – 	No photos cannot be recognized and an error is indicated.	Photo	1. Check if the photo is set correctly.	1. Set the photo correctly.

Table 3-17. Check point for Double feed error according to each phenomenon

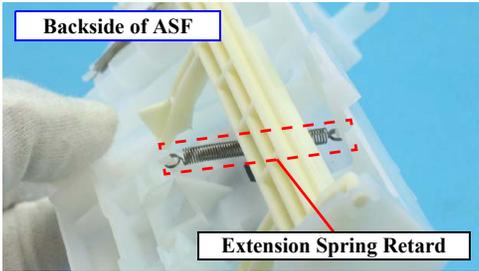
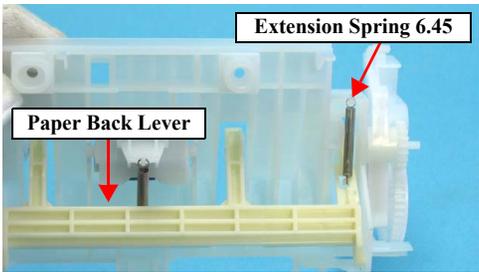
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • – 	After both surfaces were printed, the paper was ejected but an error is displayed.	ASF Unit	1. Check if the Extension Spring Retard operates correctly in the paper loading sequence. 	1. Set the Extension Spring Retard between the Retard Roller Unit and the ASF Frame. 2. Set the Extension Spring 6.45 between the ASF Frame and the Paper Back Lever.
			2. Check if the Paper Back Lever operates correctly in the paper loading sequence. 	

Table 3-18. Check point for Communication error according to each phenomenon

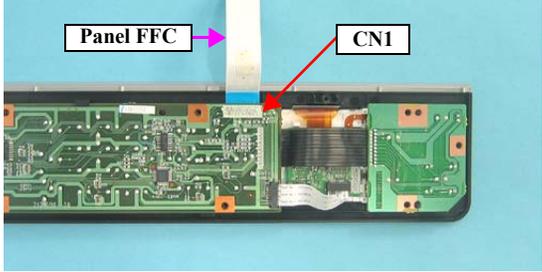
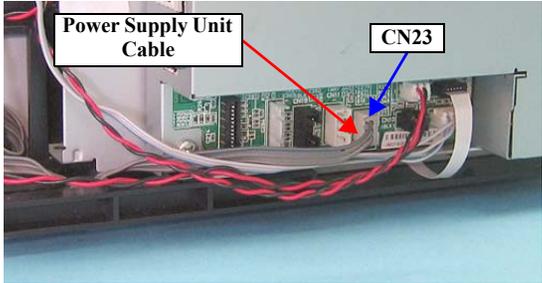
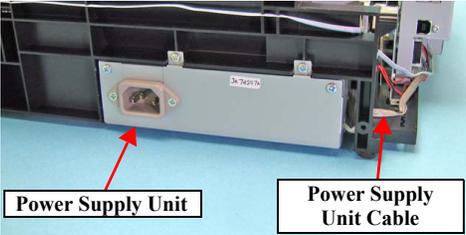
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> Power on Anywhere 	When turning on the power, the printer does not operate at all.	Panel Unit	1. Check if the Panel FFC is connected to CN1 on the Panel Board.  2. Check if the Panel FFC is not damaged. 3. Check if the Panel Board is not damaged.	1. Connect the Panel FFC to CN1 on the Panel Board. 2. Replace the Panel FFC with new one. 3. Replace the Panel Board with new one.
<ul style="list-style-type: none"> Power on Anywhere 	When turning on the power, the printer does not operate at all.	Power Supply Unit	1. Check if the Power Supply Unit Cable is connected to CN23 on the Main Board.  2. Check if the Power Supply Unit Cable/Power Supply Unit is not damaged. 	1. Connect the Power Supply Unit Cable to CN23 on the Main Board. 2. Replace the Power Supply Unit with a new one. * If the problem is not solved, replace the Main Board with new one.

Table 3-18. Check point for Communication error according to each phenomenon

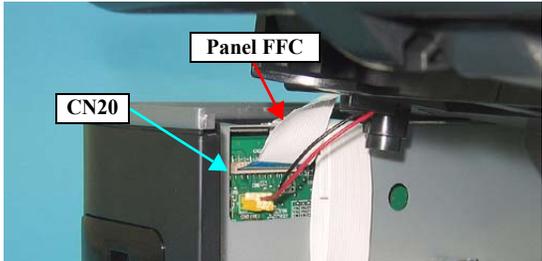
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • - 	When turning on the power, the power on sequence is performed correctly. But, when any printer job is sent to the printer, a communication error is indicated with STM3.	USB Cable	1. Check if the USB Cable is connected between the printer and the PC.	1. Connect the USB Cable to the printer and the PC.
		Main Board Unit	1. Check if a correct model name is stored into the address of the EEPROM on the Main Board. 2. Check if the Panel FFC is connected to CN20 on the Main Board.	1. Use the Adjustment Program to write the correct value to the EEPROM address. 2. Connect the Panel FFC to CN20 on the Main Board.
				

Table 3-19. Check point for Scanner unit open error according to each phenomenon

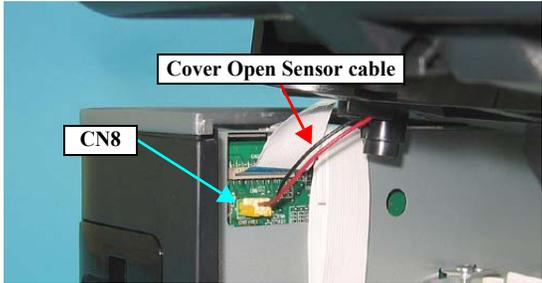
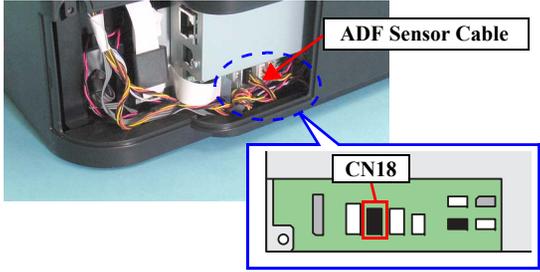
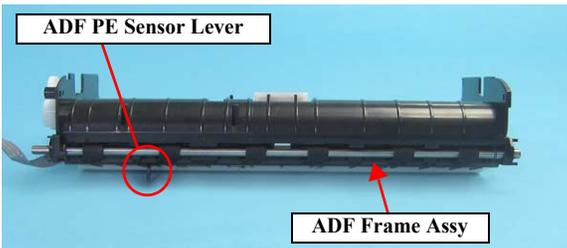
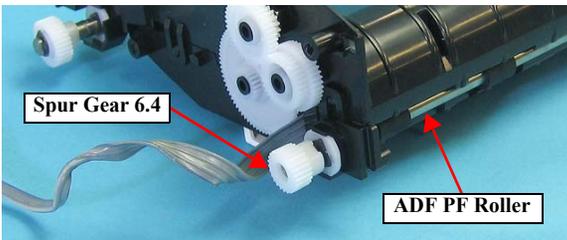
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • Anywhere 	The Printer Cover is closed, but the cover open error is displayed.	Cover Open Sensor	1. Is the Cover Open Sensor cable properly connected to CN8 on the Main Board?	1. Connect the Cover Open Sensor cable to CN8 on the Main Board.
				
			2. Is the Cover Open Sensor cable damaged?	2. Replace the Cover Open Sensor cable with a new one.
			3. Is the Cover Open Sensor damaged?	3. Replace the Cover Open Sensor with a new one.

Table 3-20. Check point for ADF Paper Jam error according to each phenomenon

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Power on • - 	After turning on the power and the initialization process completes, an error is indicated on the LCD panel.	ADF Cover Assy	1. Check if the ADF Cover Assy is opened.	1. Close the ADF Cover Assy.
<ul style="list-style-type: none"> • Operation • Before ADF PF Roller 	The document is fed, but the reading process does not starts, and an error is indicated.	ADF PE Sensor	1. Check if the ADF Sensor Cable is connected to CN18 on the Main Board. 	1. Connect the ADF Sensor Cable to CN18 on the Main Board.
		ADF PE Sensor Lever	2. Check if the ADF Sensor Cable is damaged. 1. Check if the ADF PE Sensor Lever is deformed or damaged. 	2. Replace the ADF Frame Assy with a new one. 1. Replace the ADF Frame Assy with a new one.
		ADF PF Roller	1. Check if the Spur Gear 6.4 is correctly attached to the ADF PF Roller. 	1. Attach the Spur Gear 6.4 correctly.

3.3.3 Superficial Phenomenon-Based Troubleshooting

This section explains the fault locations of the error states (print quality and abnormal noise, ADF/Scanner’s malfunctions) other than the error states in the previous section.

- Table 3-21. Check point for the error that multiple sheets of paper are always loaded without error messages (p.68)
- Table 3-22. Check point for the abnormal noise (p.69)
- Table 3-23. Check point for the defective scanned image quality (p.69)
- Table 3-24. Check point for the ADF’s malfunctions (p.70)
- Table 3-25. Check point for the defective printing quality (p.70)

Table 3-21. Check point for the error that multiple sheets of paper are always loaded without error messages

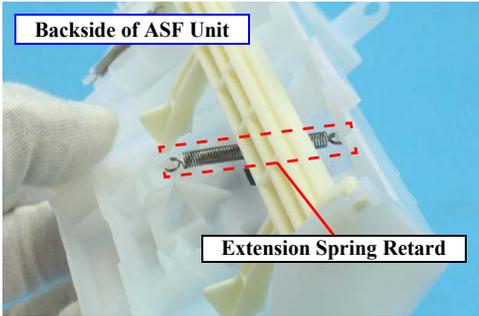
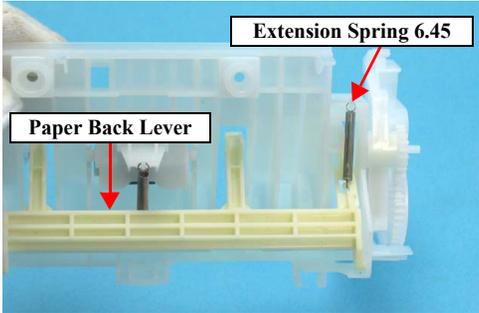
Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> • Operation • – 	<p>The LCD and STM3 are not indicating error conditions. But, multiple sheets of paper are always loaded from the ASF Unit.</p>	<p>ASF Unit</p>	<ol style="list-style-type: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

Table 3-22. Check point for the abnormal noise

Occurrence timing CR position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> Anytime Anywhere 	The abnormal noise occurs at the first power on timing and during each operation although the printing operation is performed.	Carriage Unit	1. Check if the grease on the Carriage Path is sufficient.	1. Wipe off the remaining grease on the Carriage path and lubricate it on its frame.
		ASF Unit	1. Check if the Change Lever moves smoothly.	1. Replace the ASF Unit with a new one.
	The Carriage Unit collides to the Upper Paper Guide Unit during each operation.	Upper Paper Guide Unit	1. Check if the Upper Paper Guide Unit is attached securely. (check if it interferes with the Carriage Unit)	1. Reassemble the Upper Paper Guide to the Main Frame.

Table 3-23. Check point for the defective scanned image quality

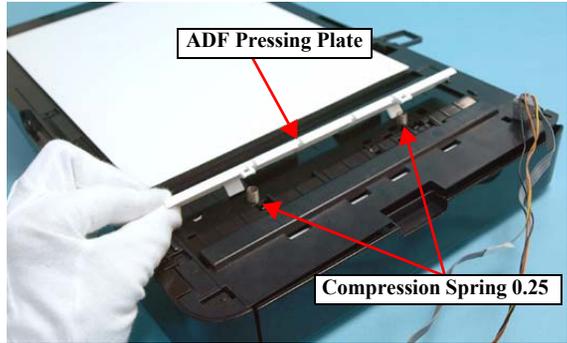
Print Quality State	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> Scanned image is not clear. 	There are dusts or the like on the Document Glass. (white dots appear on the scanned image)	Upper Scanner Housing	1. Check if there is any foreign material on the Document Glass.	1. Remove the foreign material from the Document Glass. (Refer to Chapter 6 “MAINTENANCE” (p.163).)
	There are dusts or the like on the LED inside the Rod Lens Array. (vertical stripes appear on the scanned image)	Scanner Carriage Unit	1. Check if there is not foreign material on the LED.	1. Remove the foreign material from the Document Glass (blow away the dusts).
	The LED of Scanner Carriage Unit does not light up.	Scanner Carriage Unit	1. Check if the LED lights up.	1. Replace the Scanner Carriage Unit with a new one.
	The quality of the scanned image using ADF is poor.	ADF Pressing Plate	1. Check if the Compression Spring 0.25 does not come off. 	1. Install the Compression Spring 0.25 properly.

Table 3-24. Check point for the ADF's malfunctions

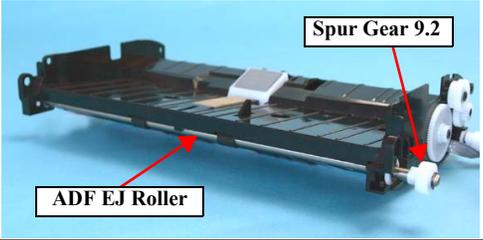
Occurrence timing document position	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> At the start of scanning Document support 	The document is set on the ADF, but the scanning operation does not start.	ADF DOC Sensor	1. Check if the ADF DOC Sensor Lever is damaged.	1. Replace the ADF Frame Assy with a new one.
<ul style="list-style-type: none"> At the end of scanning Near the Paper eject tray 	The paper eject operation does not complete after the scanning, and the document is not ejected completely.	ADF EJ Roller	1. Check if the Spur Gear 9.2 is properly installed to the ADF EJ Roller. 	1. Install the Spur Gear 9.2 properly.

Table 3-25. Check point for the defective printing quality

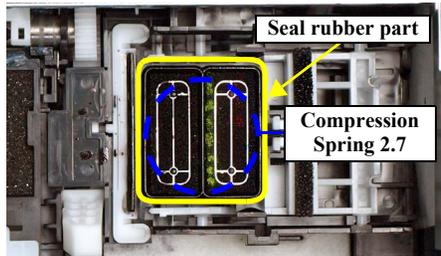
Print Quality State	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> Dot missing and mixed colors 	Ink is scarcely ejected to the Cap from the Printhead.	Ink System Unit (Cap Unit)	1. Check if there is not any foreign material/damage around the seal rubber part on the Cap Unit. 	1. Remove the foreign material around the seal rubber parts carefully.
			2. Check if the Compression Spring 2.7 is correctly mounted on the Cap Unit.	2. Replace the Ink System Unit with a new one.
	Ink is ejected to the Cap from the Print Head, but the printer does not recover from the error after cleaning or ink change.	Print Head	1. Check if it returns to normal by performing CL operation or replacing the Ink Cartridge.	1. Perform CL operation and the Ink Cartridge replacement specified times. If it doesn't work, change the Print Head with a new one.
			2. Check if the Print Head is not damaged.	2. Replace the Print Head with a new one.
		Cleaner Blade	1. Check if the Cleaner Blade does not have paper dust or bending.	1. Replace the Ink System Unit with a new one.
		Main Board	1. Check if the Main Board is not damaged.	1. Replace the Main Board with a new one.

Table 3-25. Check point for the defective printing quality

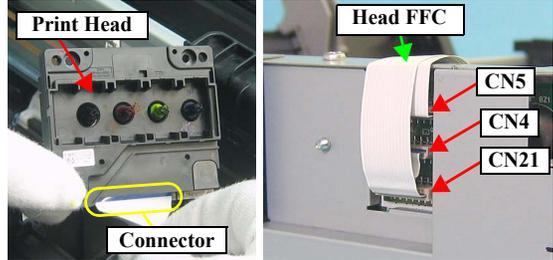
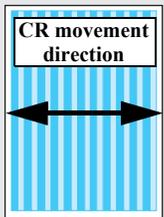
Print Quality State	Detailed phenomenon	Defective unit/part name	Check point	Remedy
<ul style="list-style-type: none"> White streak / abnormal discharge 	Ink is ejected to the Cap from the Print Head, but printing is not done at all after cleaning or ink change, or abnormal discharge occurs.	Head FFC	1. Check if the Head FFC is securely connected to the Print Head Connectors and the Main Board Connectors (CN4, CN5, and CN21). 	1. Connect the Head FFC to the Print Head and the Main Board Connectors.
		Print Head	2. Check if the Head FFC is not damaged. 1. Check if it returns to normal by performing CL operation or replacing the Ink Cartridge.	2. Replace the Head FFC with a new one. 1. Perform CL operation and the Ink Cartridge replacement specified times. If it doesn't work, change the Print Head with a new one.
		Main Board Unit	1. Check if the Main Board is not damaged.	1. Replace the Main Board Unit with a new one.
<ul style="list-style-type: none"> White streak / color unevenness occurrence 	Vertical banding appears against the CR movement direction. And, it looks like uneven printing. 	Adjustment	1. For printing in the Bi-D mode, check if Bi-D Adjustment has been performed properly.	1. Perform Bi-D Adjustment to correct print start timing in bi-directional printing. (Refer to Chapter 5 "ADJUSTMENT" (p.150).)
		Print Head	1. Check if the Nozzle Check Pattern is printed properly.	2. Perform Head Cleaning and check the Nozzle Check Pattern. (Refer to Chapter 5 "ADJUSTMENT" (p.150).) If the problem is not solved, replace the Print Head with a new one.
		Main Frame	1. Check if there is any foreign material on the Carriage path.	1. Remove foreign material from surface of the Carriage path.
2. Check if the Main Frame is deformed. 3. Check if the grease is enough on the Carriage path of the Main Frame.	2. Replace the Main Frame with a new one. 3. After wiping the grease G-71 on the Carriage path with a dry, soft cloth, coat it with grease. (Refer to Chapter 6 "MAINTENANCE" (p.163).)			
	[Note] If the problem is not solved, replace the CR Motor with a new one.			

Table 3-25. Check point for the defective printing quality

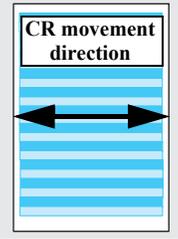
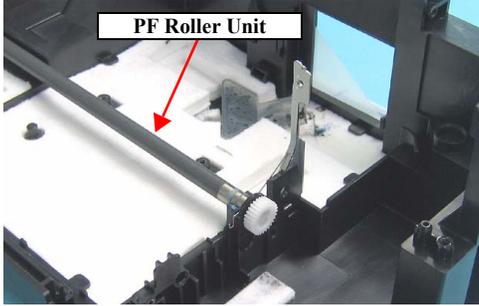
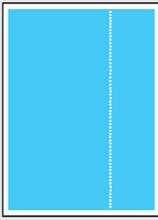
Print Quality State	Detailed phenomenon	Defective unit/part name	Check point	Remedy	
<ul style="list-style-type: none"> White streak / color unevenness occurrence 	<p>Micro banding appears horizontally against the CR movement direction and it appears with the same width.</p>  <p>[Note] If the problem is not solved, replace the PF Motor with a new one.</p>	Printer driver & exclusive paper	1. Check if the suitable paper is used according to the printer driver setting.	1. Use the suitable paper according to the printer driver setting.	
		Print Head	1. Check if the Nozzle Check Pattern is printed correctly.	1. Perform the Head Cleaning and check the Nozzle Check Pattern. (Refer to Chapter 5 "ADJUSTMENT" (p.150).) If the problem is not solved, replace the Print Head with a new one.	
		PF Roller Unit	1. Check if there is not any foreign material on the surface of the PF Roller Unit.		1. Clean the surface of the PF Roller Unit carefully with the soft cloth.
	The Star wheel mark against the CR movement direction.		Star Wheel Holder Assy	1. Check if the Star Wheel Holder does not come off.	1. Reassemble the Star Wheel Holder correctly.
				2. Check if the surface of the Star Wheel Holder Assy is flat.	2. Replace the Star Wheel Holder Assy with a new one.
	Printing is blurred.		Printer driver & exclusive paper	1. Check if the suitable paper is used according to the printer driver setting.	1. Use the suitable paper according to the printer driver setting.
Print Head			1. Check if the correct Head ID is stored into the EEPROM by using the Adjustment Program.	1. Input 25-digit code of the Head ID into the EEPROM by using the Adjustment Program.	

Table 3-25. Check point for the defective printing quality

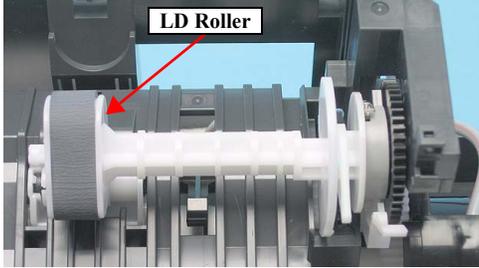
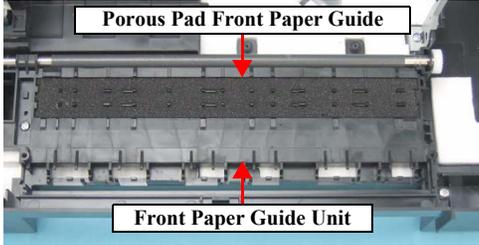
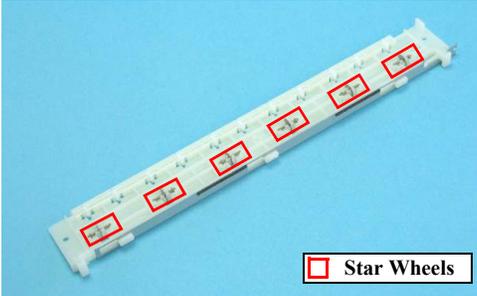
Print Quality State	Detailed phenomenon	Defective unit/part name	Check point	Remedy
• Print start position slip	The printing operation is correctly performed. But, the top margin is insufficient than usual one.	ASF Unit	1. Check if any paper dust is not adhered to the surface of the LD Roller. 	1. Set a cleaning sheet in the ASF up side down. Then holding the top edge, try to load the paper from the Printer driver. The micro pearl on the LD Roller surface is removed. To remove severe smear, staple a cloth moistened with alcohol to a post card and clean the roller in the same manner. As for the cleaning sheet, refer to “Check point for Paper out error according to each phenomenon” (p.60). * If the problem is not solved, replace the ASF Unit with a new one.
• Ink stain of paper	Ink stain occurs at the back, top edge or bottom edge of the print paper.	Front Paper Guide	1. Check if the Front Paper Guide Unit is free from ink stain. 	1. Clean the Front Paper Guide Unit with a soft cloth.
			2. Check if heaps of ink are not formed on Porous Pad Front Paper Guide.	2. Replace the Front Paper Guide Assy with a new one.
		EJ Roller Unit	1. Check if the EJ Roller Unit is free from ink stain.	1. Clean the EJ Roller Unit with a soft cloth.
		PF Roller Unit	1. Check if the PF Roller Unit is free from ink stain.	1. Clean the PF Roller Unit with a soft cloth.

Table 3-25. Check point for the defective printing quality

Print Quality State	Detailed phenomenon	Defective unit/part name	Check point	Remedy
• Ink stain of paper	Ink sticks to other than the print area of the paper, resulting in contamination.	Print Head	1. Check if the Print Head Cover does not have the ink drop.	1. Clean the Print Head Cover carefully with a soft cloth.
		Upper Paper Guide Unit	1. Check if the Upper Paper Guide Unit is free from ink stain.	1. Clean the Upper Paper Guide Unit with a soft cloth.
		Star Wheel Holder Assy	1. Check if the Star Wheels is free from ink stain. 	1. Clean the Star Wheels with a soft cloth.

3.4 Network Troubleshooting

The following table describes the troubleshooting related to the Network function of the EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW.

□ Troubles in Network Settings

Table 3-26. Troubles in Network Settings

Symptom	Check Point	Remedy
Connection with Access Point/ Detection of Access Point can not be made (Wireless LAN)	1. Check if Access Point is ready for the connection.	Check if the connection can be made from the other devices.
	2. Check if Access Point is too far from the printer or blocked by obstruction.	Move Access Point closer to the printer or clear off the obstruction.
	3. Check if Access Point has any limitation for the access.	Check Access Point and change the setting for the access by setting the MAC Address or IP Address, etc. of the printer.
	4. Check if Access Point setting is made for non-display of the SSID (Network).	Input the SSID from the Control Panel.
	5. Check if WEP key or setting for the password is correct.	Check the WEP key and the password in a case-sensitive manner.
Communication with wired LAN can not be made	1. Check if the Wireless LAN Setting on the Control Panel is "Disable".	Change the Wireless LAN Setting into "Disable", because Wireless LAN and Wired LAN can not be used at the same time.
	2. Check if the combination for the HUB and router etc. and Link Speed of the Printer is proper.	Correct the Link Speed setting properly.
	3. Check if 10Base-T Repeater HUB is used.	Try other HUBs (Switching HUB etc.).

□ Troubles in installing a software

Table 3-27. Troubles in Installing a Software

Symptom	Check Point	Remedy
"Can not connect to internet thru LAN" is displayed.	1. In Wireless LAN's case, check if the network connection between the PC and Access Point is made.	Correctly connect the computer and the Access Point.
	2. In Wired LAN's case, check if the computer and the printer are properly connected to a LAN port such as a hub or a router.	Correctly connect the computer and the printer to a LAN port such as a hub or router using a LAN cable.
	3. Check the status of network settings/connection by printing the network status sheet.	Correctly set the network connection again if the network connection is not made.
	4. Check if the link lamp on the Access Point or hub connected to the printer is lighting or flashing.	<ul style="list-style-type: none"> • Try using another port. • Replace the LAN cable. • Configure Wireless LAN setting correctly.
	5. Check is IP address is correctly set.	Correctly set IP address.
	6. For the setting of the Windows Firewall or commercially available security software, check if the installed network access is set to "Shut down" or "Block" etc.	Set the Windows Firewall or commercially available security software as the exceptional application. *If the problem is not solved when using the commercially available security software, restart it once.

- Troubles during printing and scanning from PC

Table 3-28. Troubles during printing and scanning from PC

Symptom	Check Point	Remedy
Print cannot be made Scan cannot be made	1. In Wireless LAN's case, check if the network connection between the PC and Access Point is made.	Correctly connect the computer and the Access Point.
	2. In Wired LAN's case, check if the computer and the printer are properly connected to a LAN port such as a hub or router.	Correctly connect the computer and the printer to a LAN port such as a hub or router using a LAN cable.
	3. Check the status of network settings/connection by printing the network status sheet.	Correctly set the network connection again if the network connection is not made.
	4. Check if the link lamp on the Access Point or hub connected to the printer is lighting or flashing.	<ul style="list-style-type: none"> • Try using another port. • Replace the LAN cable. • Configure Wireless LAN setting correctly.
	5. Check if the network settings are correctly configured?	Correctly configure the network settings.
	6. Check if the network setting screen is displayed on the Control Panel.	Close the screen.
EPSON Scan cannot be started	1. For EPSON Scan settings, check if IP address is set directly.	If IP address is set using the DHCP function, specify IP address by searching address.

3.5 FAX Troubleshooting

3.5.1 FAX Log

When an error related to fax occurs, it is not only indicated on the LCD but also saved as a log file. The error code is recorded in it, and according to this log the contents of the error can be confirmed

Table 3-29. FAX Log (1)

Log Name	Description	Save Destination	
Latest log (Last Transaction)	The latest communication log of sending / polling reception	Nonvolatile memory	
Communication log (Fax Log)	The following information is stored.	Nonvolatile memory	
	Item		Information
	Communication start date / time		Year/month/day/hour/minute
	Communication type		Sending/receiving/polling reception
	Communication ID		Sending/polling reception: <ul style="list-style-type: none"> Destination name of speed dial (first 20 characters) Telephone number (last 20 characters) Destination fax ID (20 characters) Receiving: <ul style="list-style-type: none"> Destination fax ID (20 characters)
	Airtime		Hour/minute/second
	Communication pages		0 to 100
	Communication result		Common: Normal/cancel/error code* Sending/polling reception: No dial tone detected/No fax signal detected/Busy tone detected
Note * : For error codes, see Table 3-31. Error Code List (p.78) .			
Power failure log (Fax Log)	The information stored in this log is the same as the communication log. However, since the airtime is “Unknown” in this case, the result of it is recorded as “power failure”.	Nonvolatile memory	



The communication log is not stored under the following conditions:

- When the sending operation is canceled while storing B&W image or waiting for redialing.
- In the case of a power failure during the operation of sending/polling reception including waiting status for redial, or during receive operation.
- When the receiving operation is canceled before the fax signal is detected.
- If the fax signal is not detected during receiving operation.

Table 3-30. FAX Log (2)

Log Name	Description	Save Destination	
Protocol trace	The following information of the latest communication is stored.	Volatile memory	
	Item		Information
	Communication start date / time		Year/month/day/hour/minute
	Communication type		Sending/receiving/polling reception
	Communication ID		Sending/polling reception: <ul style="list-style-type: none"> Destination name of speed dial (first 20 characters) Telephone number (last 20 characters) Destination fax ID (20 characters) Receiving: <ul style="list-style-type: none"> Destination fax ID (20 characters)
	Airtime		Hour/minute/second
	Communication pages		0 to 100
	Communication result		Common: Normal/cancel/error code Sending/polling reception: No dial tone detected/No fax signal detected/Busy tone detected
	Diagnosing code		10 bytes
	Diagnosing code		The latest 43 commands/responses* <ul style="list-style-type: none"> Time stamp Sending / receiving Command /response code (See Table 3-32. Command/Response Code (p.79)) FCF/FIF (first 33 octets).
Note * : If a large amount of FIF is received, the recorded command/response may be less than 43.			

□ Error codes

Table 3-31. Error Code List

Error Code (HEX)	Phenomenon	LCD Display	Print Example
000	Successful completion (Monochrome)	Complete	OK
C000	Successful completion (Color)	Complete	OK Color
400	Communication error	Communication error	Error code
401	Communication error	Communication error	Error code
402	Communication error	Communication error	Error code
403	Communication error	Communication error	Error code
404	Communication error	Communication error	Error code
405	Communication error	Communication error	Error code
407	Communication error	Communication error	Error code
408	Communication error	Communication error	Error code
409	Communication error	Communication error	Error code
410	Communication error	Communication error	Error code
412	Communication error	Communication error	Error code
416	Communication error	Communication error	Error code
417	Communication error	Communication error	Error code
418	Communication error	Communication error	Error code
420	Fax signal was not detected during receive operation. (The call was a telephone call)	Not displayed	---
421	Communication error	Communication error	Error code
422	Communication error	Communication error	Error code
427	Communication error	Communication error	Error code
433	Communication error	Communication error	Error code
434	Communication error	Communication error	Error code
436	Communication error	Communication error	Error code
459	Communication error	Communication error	Error code
490	Communication error	Communication error	Error code
494	Communication error	Communication error	Error code
495	Communication error	Communication error	Error code
496	Communication error	Communication error	Error code
501	Communication error	Communication error	Error code
502	Communication error	Communication error	Error code
503	Communication error	Communication error	Error code
504	Communication error	Communication error	Error code

Table 3-31. Error Code List

Error Code (HEX)	Phenomenon	LCD Display	Print Example
505	Communication error	Communication error	Error code
540	Communication error	Communication error	Error code
541	Communication error	Communication error	Error code
542	Communication error	Communication error	Error code
543	Communication error	Communication error	Error code
544	Communication error	Communication error	Error code
550	Communication error	Communication error	Error code
554	Communication error	Communication error	Error code
620	Communication error	Communication error	Error code
621	Communication error	Communication error	Error code
623	Communication error	Communication error	Error code
624	Communication error	Communication error	Error code
630	A busy tone was detected after dialing	Talking (Line Busy)	Talking (Line Busy)
631	Communication error	Communication error	Error code
632	Communication error	Communication error	Error code
633	Communication error	Communication error	Error code
634	A fax signal was not detected for a given length of time after dialing	No Answer	No Answer
637	A dial tone was not detected before dialing	No Dial Tone	No Dial Tone
638	A power failure occurred during communication	Not displayed	Power Fail
700	The communication was canceled by an operation	Canceled	Canceled
706	System error	System Error	Error code
709	Communication error	Communication error	Error code
815	Communication error	Communication error	Error code
870	The image memory is full	Memory Full	Memory Full
871	The maximum number of files was exceeded	Error code	Error code
873	Communication error	Communication error	Error code
874	Communication error	Communication error	Error code
875	Communication error	Communication error	Error code
880	System error	System Error	Error code
881	System error	System Error	Error code

Table 3-31. Error Code List

Error Code (HEX)	Phenomenon	LCD Display	Print Example
882	System error	System Error	Error code
883	System error	System Error	Error code
884	System error	System Error	Error code
928	Collision (A call signal was detected when shifting to dial operation)	Not displayed	---
F0B	Communication error	Communication error	Error code
F1E	Communication error	Communication error	Error code
F20	Communication error	Communication error	Error code
F21	System error	System Error	Error code
F23	Communication error	Communication error	Error code
F24	Communication error	Communication error	Error code
F25	Communication error	Communication error	Error code
F27	System error	System Error	Error code
F28	System error	System Error	Error code
F29	Communication error	Communication error	Error code
F2A	Communication error	Communication error	Error code
F2B	No image data for reprint exists	No Image	---
F2F	System error	System Error	Error code
F3A	Communication error	Communication error	Error code
F51	System error	System Error	Error code
F57	Communication error	Communication error	Error code
F58	Communication error	Communication error	Error code
F59	System error	System Error	Error code
F60	A scanner fatal error occurs	See Table 3-3. Error Indications and Fault Occurrence Causes (p.48)	Error code
F61	A printer fatal error occurs	See Table 3-3. Error Indications and Fault Occurrence Causes (p.48)	Error code
F62	Reserved	---	Error code
F63	ADF misfeed or paper jam occurred	---	Error code
F64	The memory for printing received image is full	Error code	Error code

□ Command/response code

Table 3-32. Command/Response Code

Command/response code	FCF value (HEX) (LSB first: X=0)		Content
	First	Second	
DIS	80	-	Digital Identification Signal
CSI	40	-	Called Subscriber Identification
NSF	20	-	Non-Standard Facilities
DTC	81	-	Digital Transmit Command
CIG	41	-	CallInG subscriber identification
NSC	21	-	Non-Standard facilities Command
PWD	C1	-	PassWorD
SEP	A1	-	Selective Polling
Reserved (PSA)	61	-	Polled SubAddress
Reserved (CIA)	E1	-	Calling subscriber Internet Address
Reserved (ISP)	11	-	Internet Selective Polling address
DCS	82	-	Digital Command Signal
TSI	42	-	Transmitting Subscriber Identification
NSS	22	-	Non-Standard facilities Set-up
SUB	C2	-	SUBaddress
SID	A2	-	Sender IDentification
TRN	E6	-	Training
TCF	F0	-	Training Check
CTC	12	-	Continue To Correct
Reserved (TSA)	62	-	Transmitting Subscriber internet Address
Reserved (IRA)	E2	-	Internet Routing Address
CFR	84	-	ConFirmation to Receive
FTT	44	-	Failure To Train
CTR	C4	-	Response for Continue To correct
Reserved (CSA)	24	-	Called Subscriber internet Address
EOM	8E	-	End Of Message
MPS	4E	-	MultiPage Signal
EOP	2E	-	End Of Procedure
PRI-EOM	9E	-	Procedure Interrupt-End Of Message
PRI-MPS	5E	-	Procedure Interrupt-MultiPage Signal
PRI-EOP	3E	-	Procedure Interrupt-End Of Procedure
Reserved (EOS)	1E	-	End Of Selection
PPS-EOM	BE	8E	Partial Page Signal-End Of Message

Table 3-32. Command/Response Code

Command/ response code	FCF value (HEX) (LSB first: X=0)		Content
	First	Second	
PPS-MPS	BE	4E	Partial Page Signal-MultiPage Signal
PPS-EOP	BE	2E	Partial Page Signal-End Of Procedure
PPS-PRI-EOM	BE	9E	Partial Page Signal-Procedure Interrupt-End Of Message
PPS-PRI-MPS	BE	5E	Partial Page Signal-Procedure Interrupt-MultiPage Signal
PPS-PRI-EOP	BE	3E	Partial Page Signal-Procedure Interrupt-End Of Procedure
PPS-EOS	BE	1E	Partial Page Signal-End Of Selection
PPS-NULL	BE	00	Partial Page Signal-partial page boundary
EOR-EOM	CE	8E	End Of Retransmission-End Of Message
EOR-MPS	CE	4E	End Of Retransmission-MultiPage Signal
EOR-EOP	CE	2E	End Of Retransmission-End Of Procedure
EOR-PRI-EOM	CE	9E	End Of Retransmission-Procedure Interrupt-End Of Message
EOR-PRI-MPS	CE	5E	End Of Retransmission-Procedure Interrupt-MultiPage Signal
EOR-PRI-EOP	CE	3E	End Of Retransmission-Procedure Interrupt-End Of Procedure
EOR-EOS	CE	1E	End Of Retransmission-End Of Selection
EOR-NULL	CE	00	End Of Retransmission- partial page boundary
RR	6E	-	Receive Ready
MCF	8C	-	Message ConFirmation
RTP	CC	-	ReTrain Positive
RTN	4C	-	ReTrain Negative
PIP	AC	-	Procedure Interrupt Positive
PIN	2C	-	Procedure Interrupt Negative
PPR	BC	-	Partial Page Request
RNR	EC	-	Receive Not Ready
ERR	1C	-	Response for End of Retransmission
Reserved (FDM)	FC	-	File Diagnostic Message
DCN	FA	-	DisCoNnect
CRP	1A	-	Command RePeat
Reserved (FNV)	CA	-	Field Not Valid

Table 3-32. Command/Response Code

Command/ response code	FCF value (HEX) (LSB first: X=0)		Content
	First	Second	
PIX	FF	-	PIXel image
Space	Other combinations		Unknown command/response

3.5.2 Error Code/Superficial Phenomenon-Based Troubleshooting

This section explains the troubleshooting procedures based on the error codes and superficial phenomenon.



- When an error occurs, it may be displayed on the LCD panel with a message instead of an error code. To check the error code, print out a fax log.
- If the problem is not solved even after carrying out the remedy shown in the [Table 3-33](#), print out a protocol trace to analyze the cause of the error.

Table 3-33. Troubleshooting based on the error code/superficial phenomenon

Error code (LCD Message)/Phenomenon	Description	Remedy
Communication Error (The error is indicated with error code on the fax log.)	Communication error	Turn off v.34 and try again. Turn off ECM and try again. When using xDSL, check the connection from “Line” jack to the fax via the xDSL splitter. When using TAM, check the connection from “Line” jack to the TAM via the fax. Check if the telephone line makes any sounds.
Line Busy	The line is busy.	Try again later.
No answer	The other end of the line does not answer.	Check the number and dial again.
	The other end of the line answered but no answer tone is detected.	
Power fail	Power failure occurred during sending/receiving/printing/redialing.	Confirm the PS Board Connector Cable/PS Board is not damaged, and retry.
706,880-884,F21,F27-F28,F2F,F51,F59	A system error (fax circuit failure) occurs	Replace the Main board with a new one.
Memory full	Out of Memory	Ask the sender to resend the fax in several batches.
871	Maximum number of files is exceeded	
F60	A scanner fatal error occurred	
F61	A printer fatal error occurred	See Table 3-4 “Check point for Fatal error according to each phenomenon” (p.50)
F62-F63	Reserved	---
F64	The memory for printing received image is full	Ask the sender to resend the fax in several batches.
Cannot receive faxes	The telephone cable is not connected properly.	Connect the telephone cable properly.
	The telephone line is not working.	Verify if the phone line works by connecting to a phone to it.
	Auto answer is set to “N”.	Set to “Y”.
	DRD setting is incorrect.	Set the setting to “ALL” and try again. Should other ring patterns be selected, contact the telephone company.
	Calling signal cannot be detected.	Contact the telephone company or obtain the fax log for more analysis.

Table 3-33. Troubleshooting based on the error code/superficial phenomenon

Error code (LCD Message)/Phenomenon	Description	Remedy
Cannot dial	The telephone cable is not connected properly.	Connect the telephone cable properly.
	The telephone line is not working.	Verify if the phone line works by connecting to a phone to it.
	Pulse/Tone dial setting error	Turn the setting to the other one and try again.
Cannot receive/send faxes in color	ECM is set to off.	Set to on and try again.
	Fax mode is set to "B&W only".	Set to "B&W/Color".
Cannot print all the received data when printing data stored in memory	The size of the memory is 2.0 Mbyte. If the data become over the set threshold, oldest data are deleted to make room for new ones.	Ask the sender to resend the data if necessary because the data deleted from the memory can not be restored.
Images run off the paper	Auto reduction is set to off.	Set auto reduction to on and reprint the data.
	Paper size setting does not match the size of the received data.	Choose the correct setting and reprint the data.
	Paper size setting does not match the size of papers in the tray.	Choose the correct setting or load correct sized papers in the tray and reprint the data.

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

3.6.1 Outline

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

Table 3-34. Fax Function/EXT port Function check

Checked Function	Check Method	Necessary Tools	Check Point
Fax Function	Method A*1 (PC FAX) (p.83)	<ul style="list-style-type: none"> PC (OS: Win XP) Repaired/Refurbished unit (1unit) Telephone line simulator*1 (1pcs.) Fax cable (2pcs.) 	<p>[Sender's check point] Make sure that printer send fax data correctly.</p> <p>[Receiver's check point] Make sure that printer receive fax data correctly.</p>
	Method B*1 (Only simulator) (p.87)	<ul style="list-style-type: none"> Guaranteed unit (e.g. EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW) Repaired/Refurbished unit (1unit) Telephone line simulator*1 (1pcs.) Fax cable (2pcs.) 	
	Method C (PBX FAX) (p.88)	<ul style="list-style-type: none"> Guaranteed unit (e.g. EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW) Repaired/Refurbished unit (1unit) PBX in your office (internal phone) Fax cable (2pcs.) 	
External Connection (EXT port) Function	--- *2	<ul style="list-style-type: none"> Telephone (1pcs.) Fax cable (1pcs.) 	<ol style="list-style-type: none"> 1. Check if you can hear ringing tone from telephone before receiving fax. In this case, the telephone sounds ringing. 2. Check if you can't hear dial tone from the telephone during receiving fax data. In this case, the telephone doesn't sound dial tone.

Note *1: In case of these methods, you have to use telephone line simulator for checking fax function. For your reference, web site address of the simulator is outlined below. (as of August 2007)

- http://www.telephonetribute.com/telco_line_simulators.html
- <http://www.skutchelectronics.com/sims.htm>

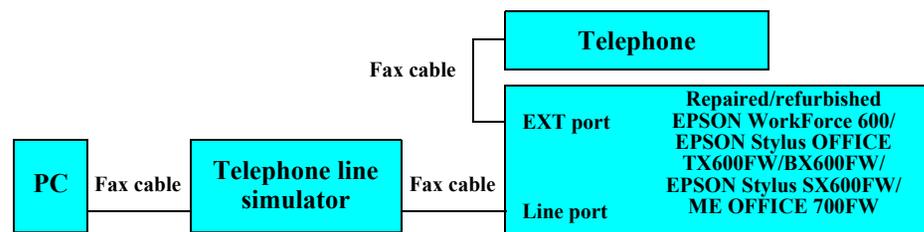
*2: You have to check this test whether you select any check method above.

3.6.2 Fax Function and External Connection Function Check

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

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

SETTING METHOD



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

*Repaired/refurbished EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW is represented by "R" unit from this. *Select default setting to "R" unit before this check referring to the following table.

Table 3-35. Default Settings of Repaired EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW ("R")

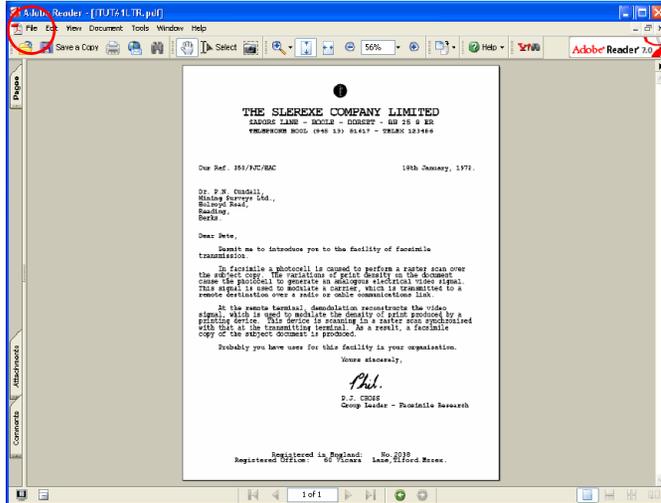
No	Function	Default Setting
1	Resolution	Standard
2	Contrast	Normal
3	Paper size	For US, Canada, Latin: "Letter" For other destinations: "A4"
4	Automatic reduction	On
5	Last transmission report	Off
6	Dial mode	Tone
7	DRD	All
8	ECM	On
9	V.34	On
10	Rings to answer	"5" *For Taiwan, Singapore: "2"

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

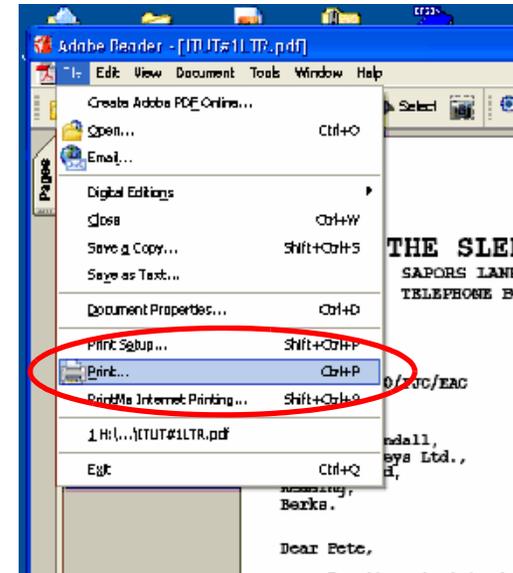
CHECK PROCEDURE

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

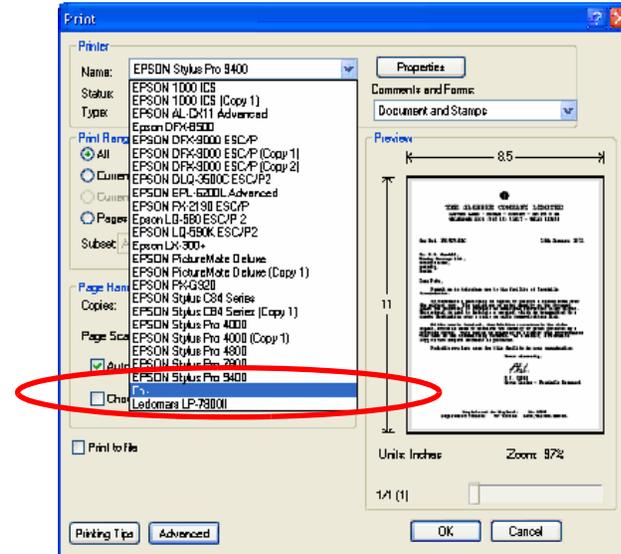
1. Install test chart (test chart name: "ITUT#1LTR.pdf") to PC.
2. Open test chart and select "File" menu.



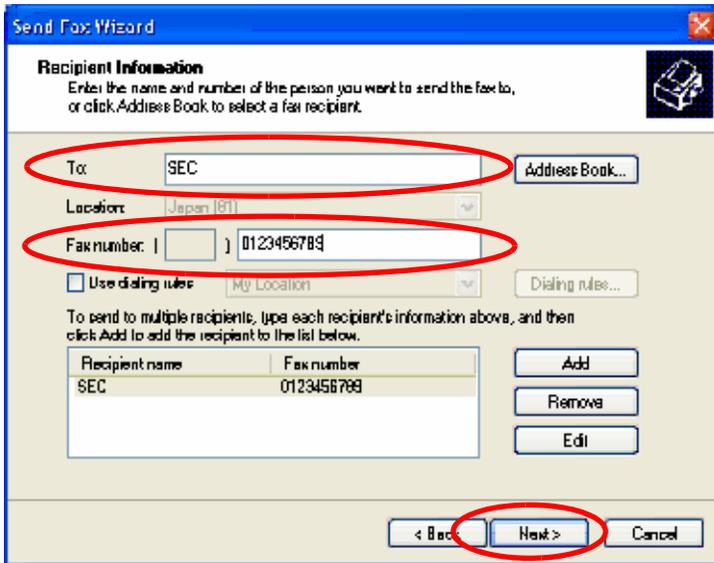
3. Select "Print.....".



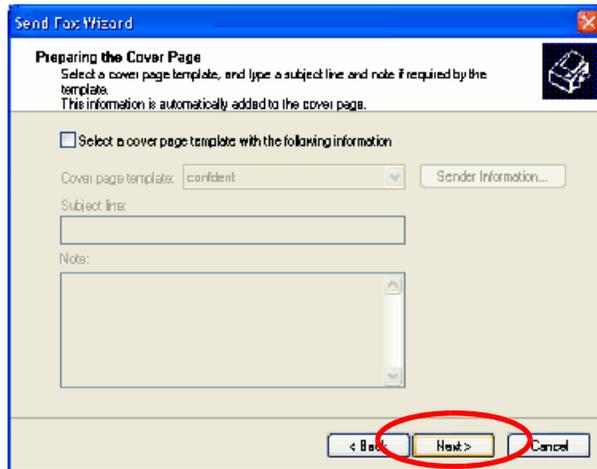
4. Select "Fax" from "Printer Name".



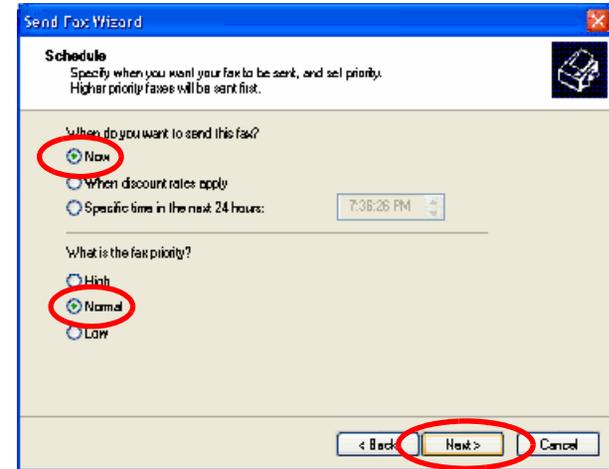
5. Input "Receiver Name" and "Fax Number", and click "Next" button.



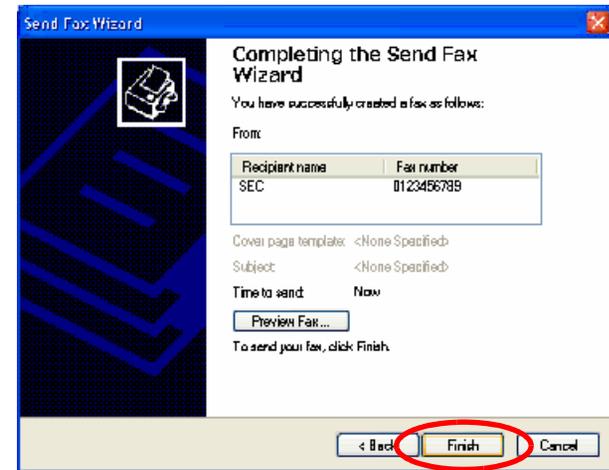
6. Click "Next" button.



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



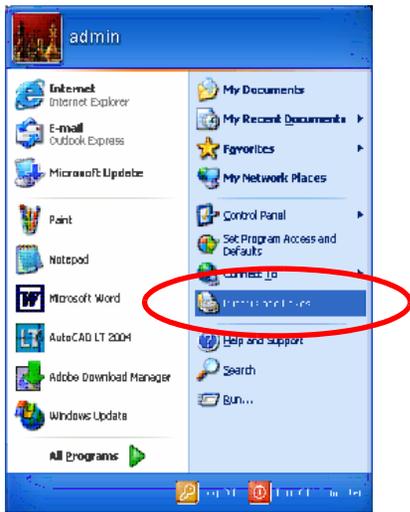
8. Click "Finish" button to send fax data from PC to "R" unit.



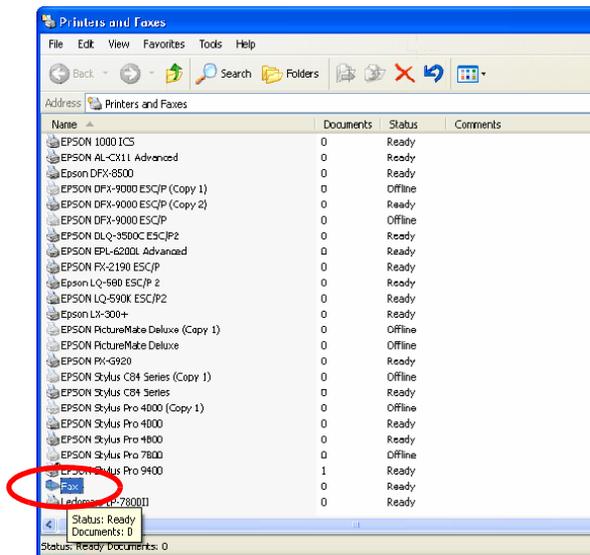
9. Confirm if telephone rings correctly during calling tone of "R" unit rings.
10. Confirm if dial tone of telephone is lost during "R" unit receives fax data without calling tone.

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

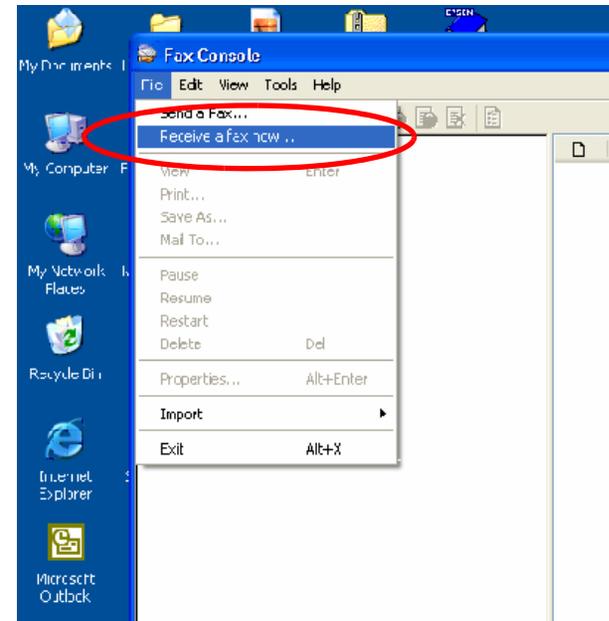
1. Select "Printer and Faxes" from Windows start menu.



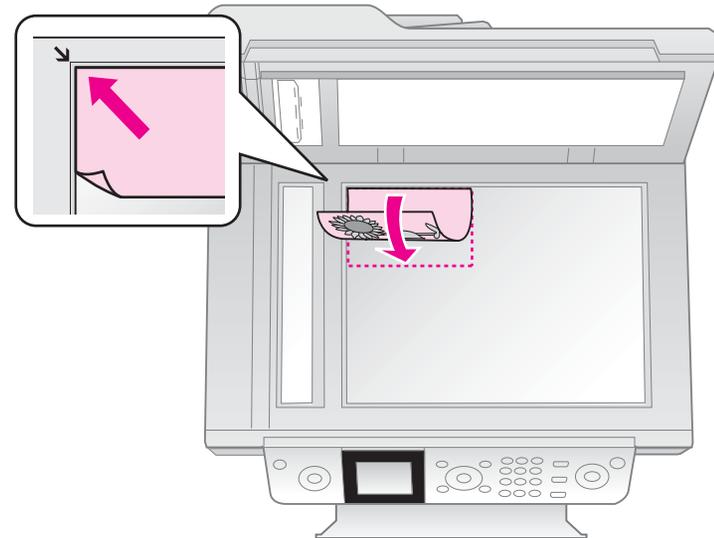
2. Select "Fax console" window.



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



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



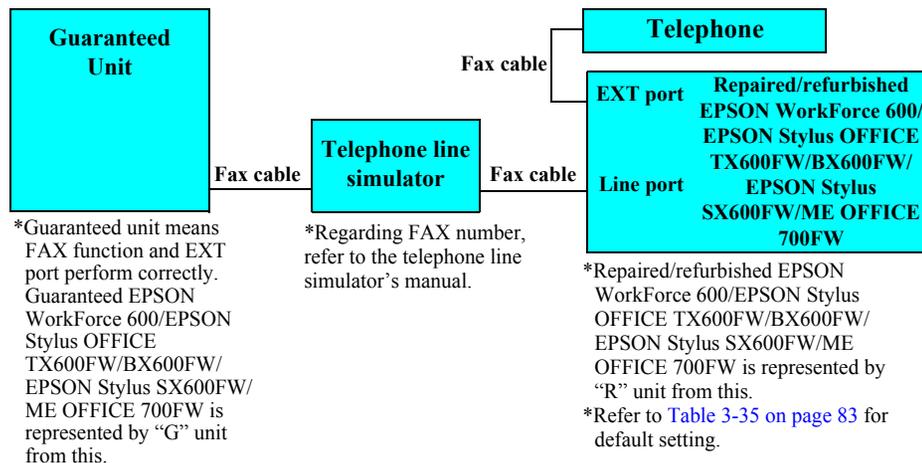
5. Enter fax mode by pushing fax button.
6. Input fax number of PC on "R" unit. (Regarding FAX number, refer to the telephone line simulator's manual.)
7. Push "Start" button in "B&W" mode.
8. Push "Back" button after being displayed as "Send another page?" on LCD panel to send fax data from "R" unit to PC.

CHECK POINT OF "R" UNIT

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

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

SETTING METHOD



CHECK PROCEDURE

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

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

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

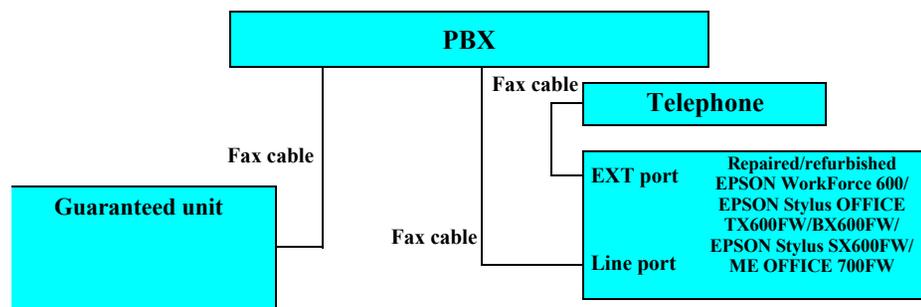
1. Set test chart on the document glass of "G" unit.
2. Enter fax mode by pushing fax button.
3. Input fax number of "R" unit on "G" unit. (Regarding FAX number, refer to the telephone line simulator's manual.)
4. Push "Start" button in "B&W" mode.
5. Push "Back" button after being displayed as "Send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

CHECK POINT OF "R" UNIT

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

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

SETTING METHOD



*Guaranteed unit means FAX function and EXT port perform correctly.
Guaranteed EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW is represented by "G" unit from this.

*Repaired/refurbished EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW is represented by "R" unit from this.
*Refer to [Table 3-35 on page 83](#) for default setting.

CHECK PROCEDURE

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

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

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

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

CHECK POINT OF "R" UNIT

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

CHAPTER

4

DISASSEMBLY/ASSEMBLY

4.1 Overview

This section describes procedures for disassembling the main components of EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW. Unless otherwise specified, disassembled units or components can be reassembled by reversing the disassembly procedure. Procedures which, if not strictly observed, could result in personal injury are described under the heading “WARNING”. “CAUTION” signals a precaution which, if ignored, could result in damage to equipment. Important tips for procedures are described under the heading “CHECK POINT”. If the assembly procedure is different from the reversed disassembly procedure, the correct procedure is described under the heading “REASSEMBLY”. Any adjustments required after reassembly of components or parts are described under the heading “ADJUSTMENT REQUIRED”. When you have to remove any components or parts that are not described in this chapter, refer to the exploded diagrams in the appendix.

Read the following precautions before disassembling and assembling.

4.1.1 Precautions

See the precautions given under the heading “WARNING” and “CAUTION” in the following columns when disassembling or assembling EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW.



- **Disconnect the power cable before disassembling or assembling the printer.**
- **If you need to work on the printer with power applied, strictly follow the instructions in this manual.**
- **Always wear gloves for disassembly and reassembly to protect your eyes from ink. If any ink gets in your eyes, wash your eyes with clean water and consult a doctor immediately.**
- **Always wear gloves for disassembly and reassembly to avoid injury from sharp metal edges.**
- **To protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.**
- **Never touch the ink or wasted ink with bare hands. If ink comes into contact with your skin, wash it off with soap and water immediately. If you have a skin irritation, consult a doctor immediately.**



- **When transporting the printer after installing the ink cartridge, pack the printer for transportation without removing the ink cartridge and be sure to secure the Ink Cartridge to the printer cover with tape tightly to keep it from moving.**
- **Use only recommended tools for disassembling, assembling or adjusting the printer.**
- **Observe the specified torque when tightening screws.**
- **Apply lubricants as specified. (See Chapter 6 “MAINTENANCE” (p163) for details.)**
- **Make the specified adjustments when you disassemble the printer. (See Chapter 5 “ADJUSTMENT” (p150) for details.)**
- **When reassembling the Waste Ink Tube, make sure that the tip of waste ink tube is placed in the correct position, otherwise ink may leak.**
- **When using compressed air products; such as air duster, for cleaning during repair and maintenance, the use of such products containing flammable gas is prohibited.**

4.1.2 Tools

Use only specified tools to avoid damaging the printer.

Table 4-1. Tools

Name	EPSON Tool Code*
(+) Phillips screwdriver #1	1080530
(+) Phillips screwdriver #2	---
Flathead screwdriver	---
Flathead Precision screwdriver #1	---
Tweezers	---
Longnose pliers	---
Acetate tape	1003963
Nippers	---

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

4.1.3 Work Completion Check

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

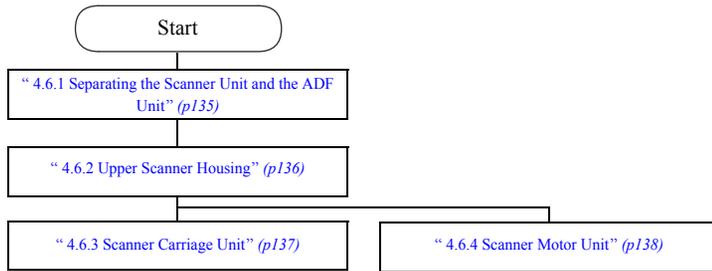
Table 4-2. Work Completion Check

Classification	Item	Check Point	Status
Printer Unit	Self-test	Is the operation normal?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	ON-line Test	Is the printing successful?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	Printhead (Nozzle check pattern print)	Is ink discharged normally from all the nozzles?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	Carriage Mechanism	Does it move smoothly?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Is there any abnormal noise during its operation?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Is the CR Motor at the correct temperature? (Not too hot to touch?)	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	Paper Feeding Mechanism	Is paper advanced smoothly?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		No paper jamming?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		No paper skew?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		No multiple feeding?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		No abnormal noise?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Is the paper path free of any obstructions?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Is the PF Motor at correct temperature?	<input type="checkbox"/> OK / <input type="checkbox"/> NG

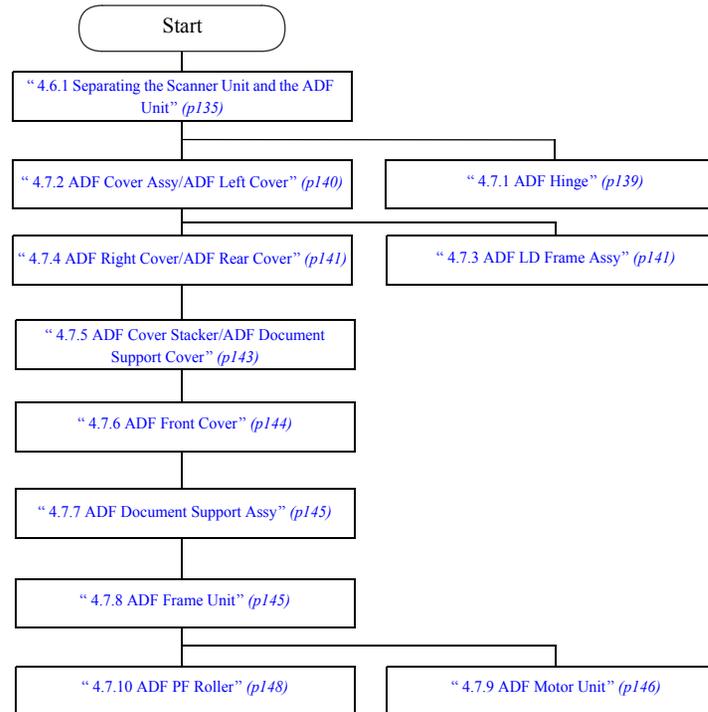
Table 4-2. Work Completion Check

Classification	Item	Check Point	Status
Scanner unit	Mechanism	Is glass surface dirty?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Is any foreign substance mixed in the CR movement area?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	CR mechanism	Does CR operate smoothly?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Does CR operate together with scanner unit?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	Does CR make abnormal noise during its operation?	<input type="checkbox"/> OK / <input type="checkbox"/> NG	
	LED	Does LED turn on normally? And is white reflection test done near home position?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
ON-line Test	ON-line Test	Is the operation normal?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Copy	Copy	Is the local copy action normal?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Adjustment	Specified Adjustment	Are all the adjustment done correctly	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Lubrication	Specified Lubrication	Are all the lubrication made at the specified points?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
		Is the amount of lubrication correct?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Function	ROM Version	Version:	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Packing	Ink Cartridge	Are the ink cartridges installed correctly?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	Waste Ink pad	Are the waste ink pads adequate to absorb?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
	Protective materials	Is the printer carriage placed at the capping position?	<input type="checkbox"/> OK / <input type="checkbox"/> NG
Others	Attachments, Accessories	Have all the relevant items been included in the package?	<input type="checkbox"/> OK / <input type="checkbox"/> NG

□ Disassembling the Scanner Unit



□ Disassembling the ADF Unit



- You need to remove the parts/units shown in dashed line box if they exist on the way to the target part/unit.
- For the disassembling procedures of the Scanner Unit and the ADF Unit, see [Flowchart 4-1 Disassembling Flowchart \(1\) \(p92\)](#).
- The ADF Unit can be removed individually before the procedure of removing the Scanner Unit/ADF Unit. See [4.3.3 Scanner Unit/ADF Unit \(p95\)](#).

Flowchart 4-2. Disassembling Flowchart (2)

4.3 Removing the Housing

4.3.1 Paper Support Assy/ASF Cover

- Parts/Components need to be removed in advance: None
- Removal procedure
 1. Pull out the Paper Support Assy.
 2. Release the dowels (x2) that secure the Paper Support Assy and remove the Paper Support Assy from the Upper Housing.
 3. Release the dowels (x2) and remove the ASF Cover.

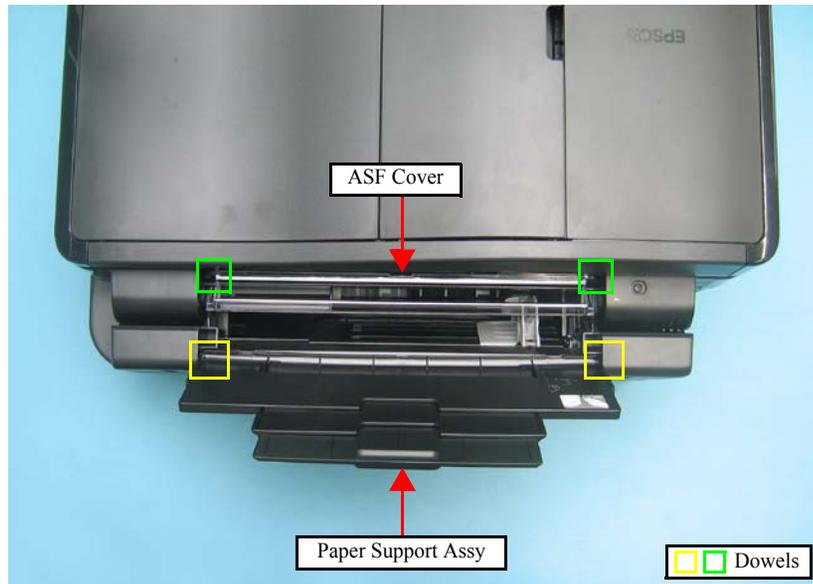


Figure 4-1. Removing the Paper Support Assy/ASF Cover

4.3.2 Stacker Assy

- Parts/Components need to be removed in advance: None
- Removal procedure
 1. Pull out the Stacker Assy.
 2. Release the hooks (x2) from the grooves (x2) at the bottom of the Lower Housing, and remove the Stacker Assy.

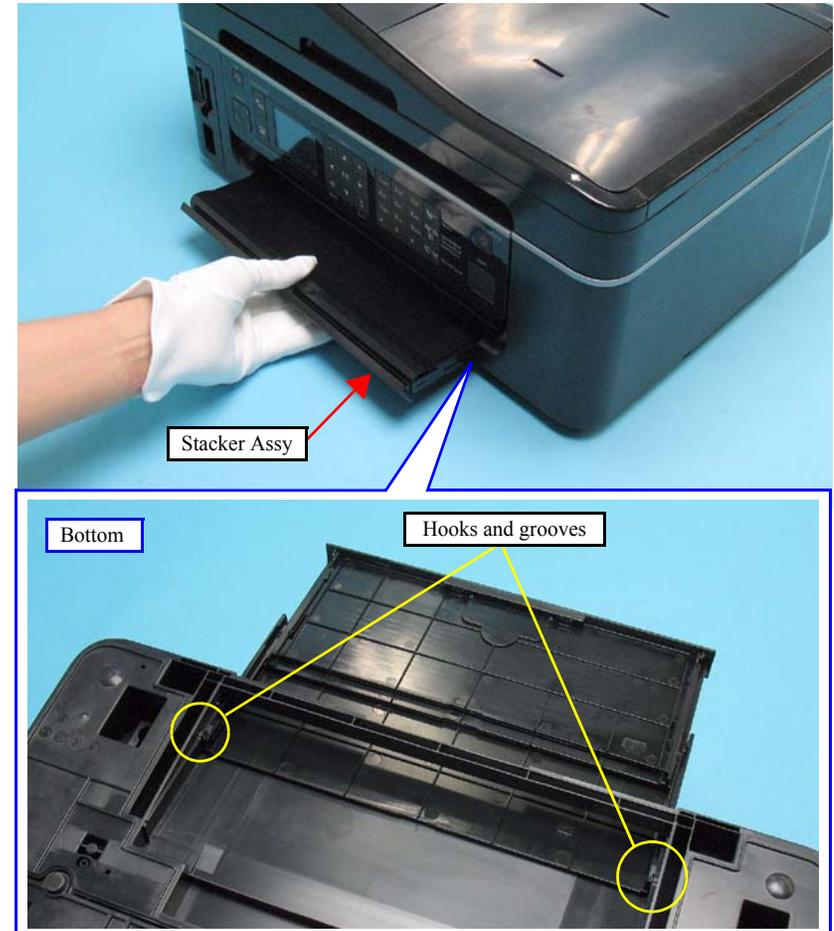


Figure 4-2. Removing the Stacker Assy

4.3.3 Scanner Unit/ADF Unit



When removing the ADF Unit individually, follow the procedure below.

1. Step 1 and 4 of 4.3.3 Scanner Unit/ADF Unit (p95)
2. All the steps of 4.6.1 Separating the Scanner Unit and the ADF Unit (p135)

- Parts/Components need to be removed in advance: None
- Removal procedure
 1. Remove the screw (x1) that secures the Interface Cover and release the hooks (x2), and then remove the Interface Cover in the direction of the arrow.

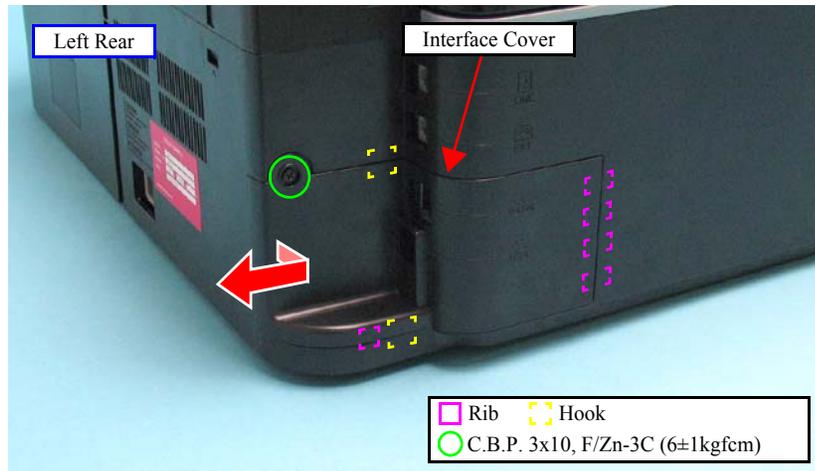


Figure 4-3. Removing the Interface Cover

2. Peel off the Scanner Carriage FFC secured with the double-sided tapes (x2) from the Left Frame.
3. Peel off the acetate tape and remove the screw (x1) that secures the grounding wires (x2) of the Scanner Unit and ADF Unit.
4. Disconnect the Scanner Motor cable (CN11), Scanner Carriage FFC (CN17), ADF Sensor cable (CN18) and ADF Motor connector cable (CN19) from the connectors on the Main Board.

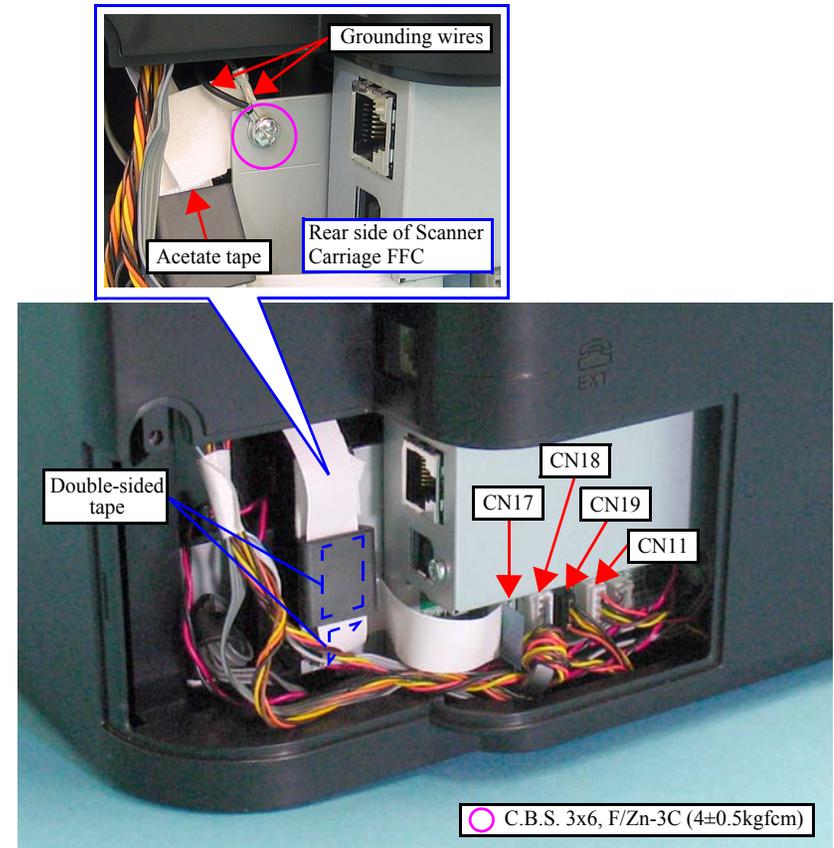


Figure 4-4. Removing the Scanner Unit/ADF Unit (1)

5. Remove the screws (x1) that secure the Scanner Unit.
6. Open the Scanner Unit.
7. Remove the Scanner Unit and the ADF Unit by pulling them out in the direction of the arrow while taking care not to hook the cables of the Scanner Unit and ADF Unit to the Upper Housing.



Figure 4-5. Removing the Scanner Unit/ADF Unit (2)



- Check the following points when routing the cables of the Scanner Unit and the ADF Unit.
 - To prevent the cables from getting caught, place the cables and the ferrite cores (x2) inside the printer and make sure not to let them out of the line — as shown in the figure below.

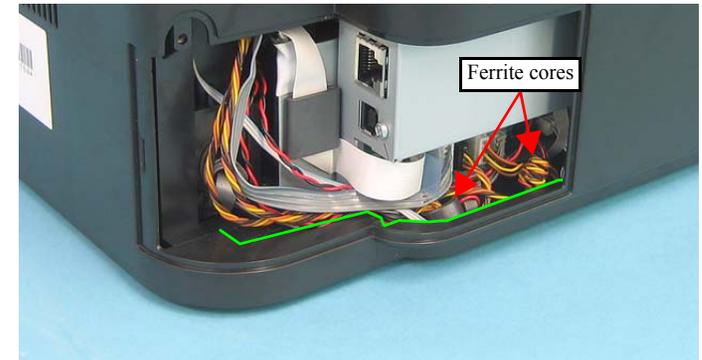


Figure 4-6. Routing the cables

- Fold back the Scanner Carriage FFC at the fold shown below.
- Align the ferrite core with the line mark, then secure it to the Left Frame with double-sided tapes (x2).

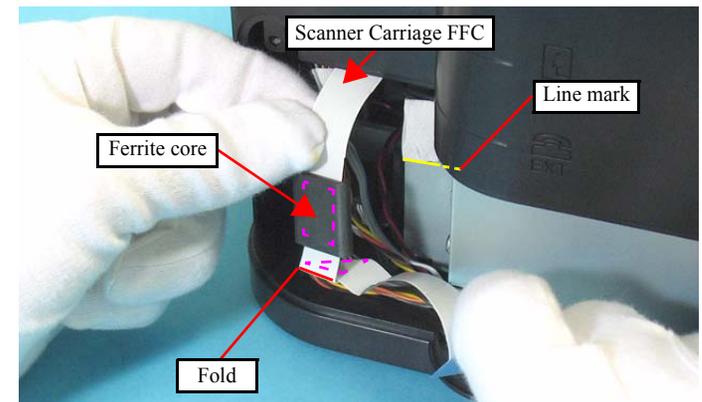


Figure 4-7. Routing the cables Scanner Carriage FFC



- When installing the Interface Cover, insert the ribs (x5) of the Interface Cover inside the Housing as shown in [Figure 4-3](#) and secure them with the hooks (x2).
- Install the Scanner Unit and ADF Unit following the procedure below.
 1. Insert the dowel of the Upper Housing at the right inside of the printer to the positioning hole of the Scanner Unit.
 2. Insert the rib of the hinge to the space inside the ribs () of the Scanner Unit.

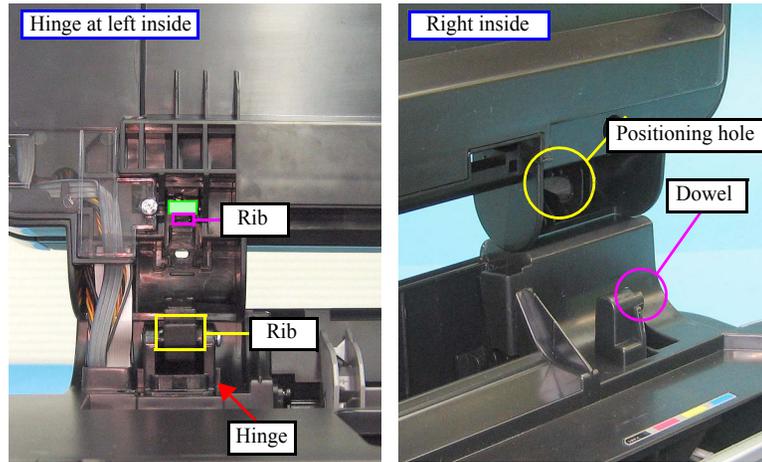


Figure 4-8. Installing the Scanner Unit/ADF Unit

4.3.4 Upper Housing /Hinge/Middle Cover

- Parts/Components need to be removed in advance: None
Scanner Unit/ADF Unit
- Removal procedure
 1. Remove the screw (x1) and remove the Hinge from the Upper Housing.
 2. Release the hooks (x2) of the Middle Cover with a flathead screwdriver etc. and remove the Middle Cover from the Upper Housing.

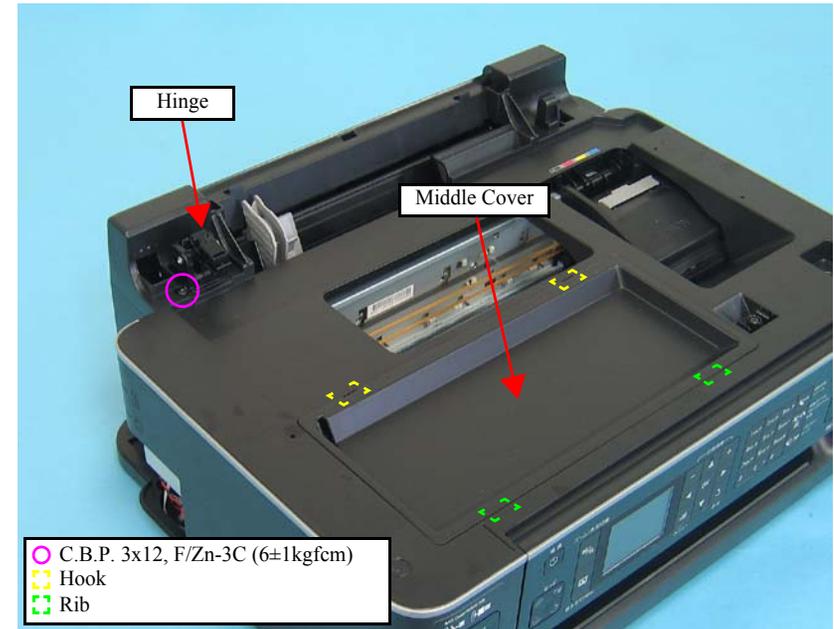


Figure 4-9. Removing the Upper Housing (1)

3. Remove the screws (x5) that secure the Upper Housing.
4. Remove the screw that secure the grounding wire.
5. Release the hooks (x2) at the rear of the Upper Housing.

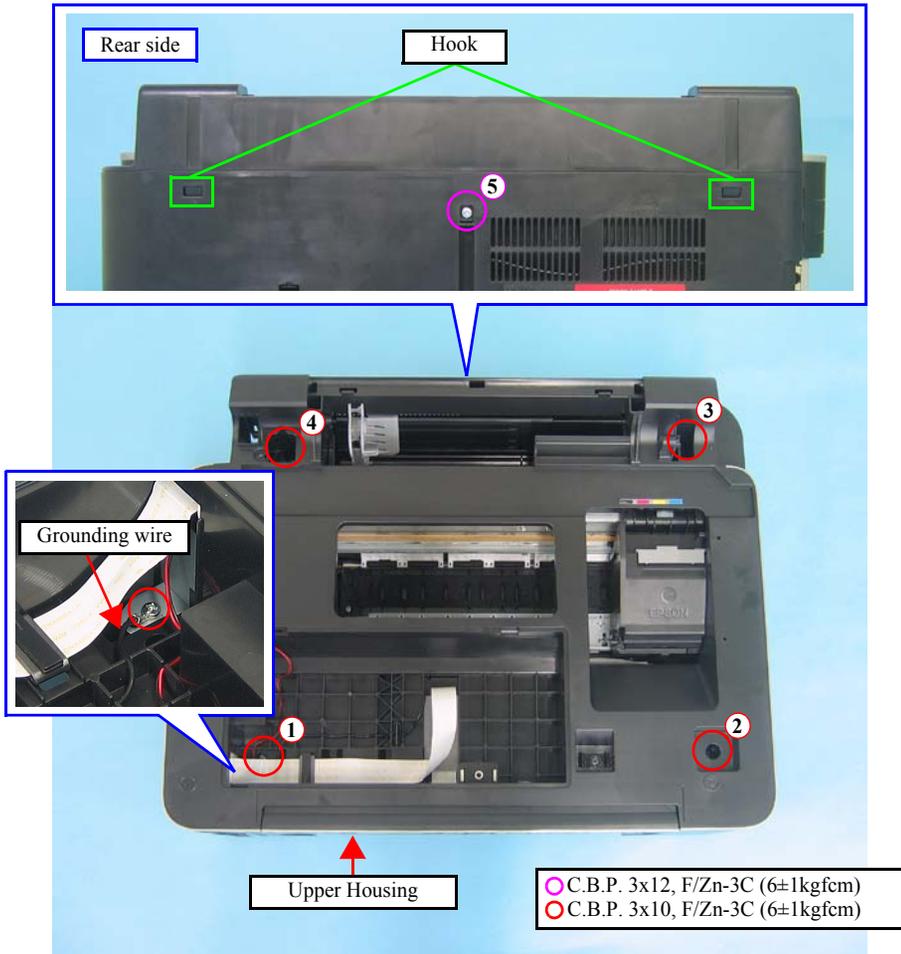


Figure 4-10. Removing the Upper Housing (2)

6. Release the rib on the Mall Right from the Upper Housing.

CAUTION

In the next step, remove the Upper Housing with care, since the Upper Housing and Main Board of the printer are connected with the Cover Open Sensor Cable and Panel FFC.

7. Release the positioning holes (x2) of the Upper Housing in right-to-left order from the hook (x2) of the Lower Housing, and remove the Upper Housing from the printer avoiding the Mall Right.
8. Remove the Mall Right and the Mall Left from the Lower Housing (Refer to Figure. 4-14).

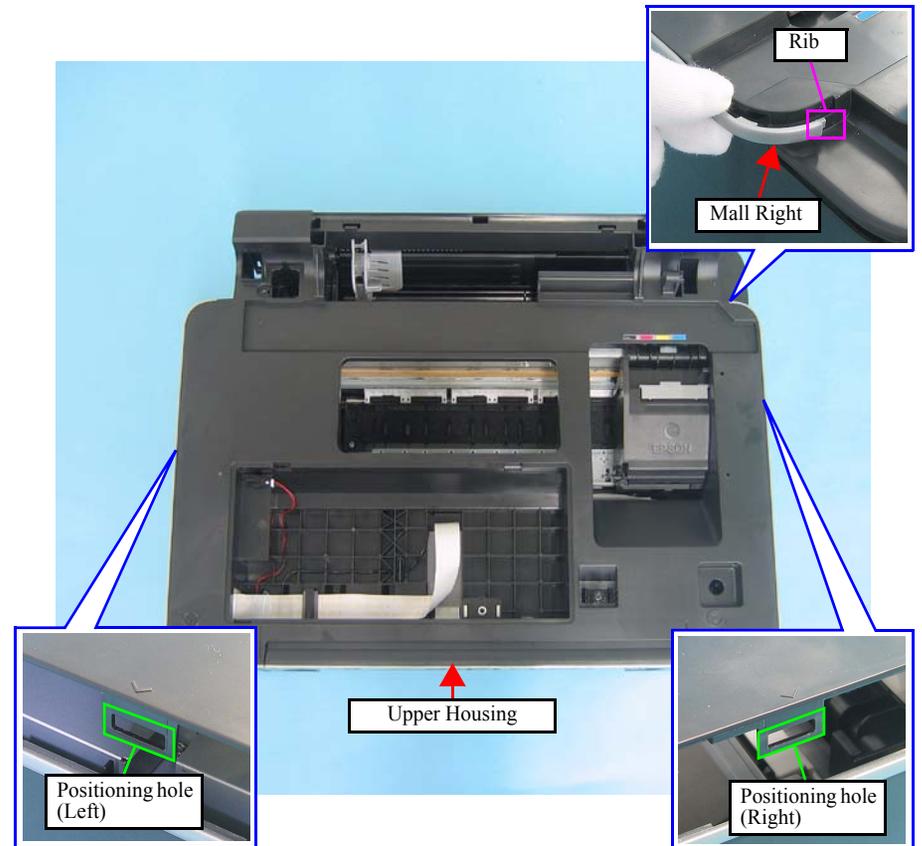


Figure 4-11. Removing the Upper Housing (3)

- Remove the Cover Open Sensor cable and Panel FFC from the connectors (CN8, CN20) on the Main Board and remove the Upper Housing.

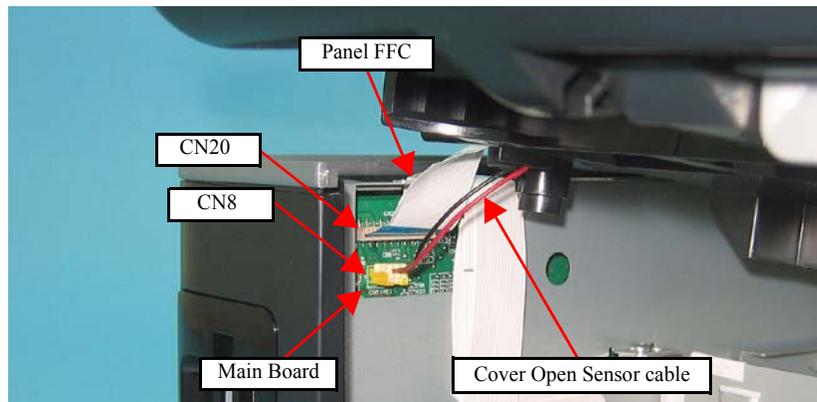


Figure 4-12. Removing the Upper Housing (4)

- Release the hook securing the Cover Open Sensor and remove the Open Sensor from the Upper Housing in the direction of the arrow.

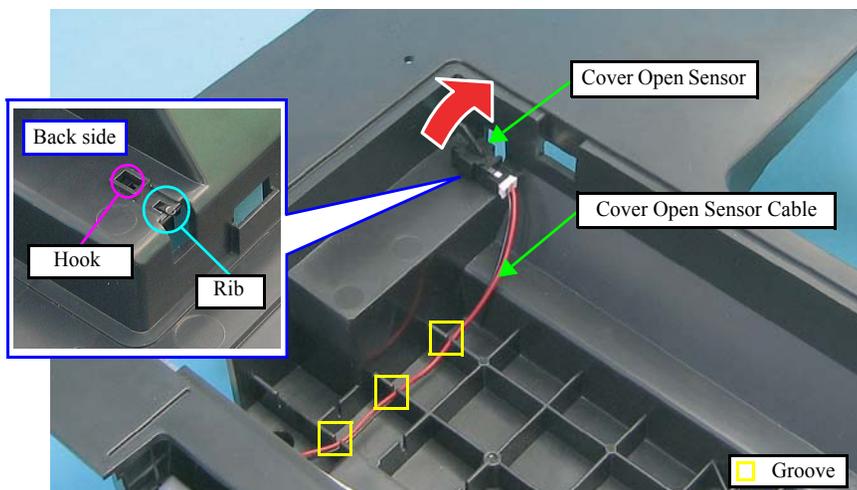


Figure 4-13. Removing the Cover Open Sensor



- Check the following points when installing the Upper Housing.
 - Route the Cover Open Sensor cable through the grooves (x3) of the Upper Housing as shown in Figure 4-13.
 - Align the grooves of Mall Left and those of Mall Right (Left x4, Right x6) with the Upper Housing as shown below.
 - Set the part  of the Mall Right shown below on the Upper Housing.

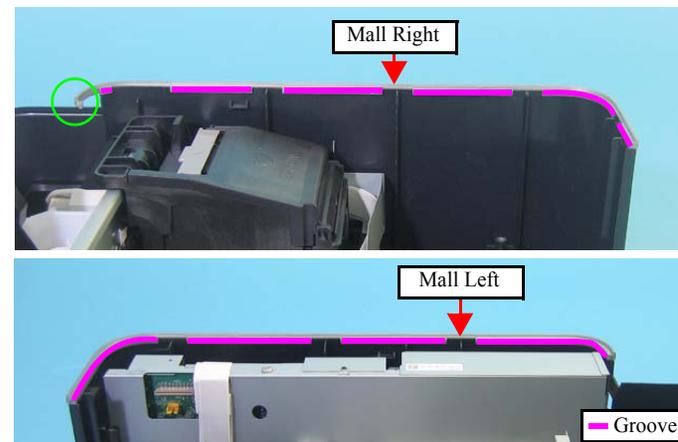


Figure 4-14. Installing the Upper Housing (1)

- When replacing the Upper Housing, make sure to attach the Cartridge Position Label aligning it with the area (slightly hollowed area) shown in the figure below.

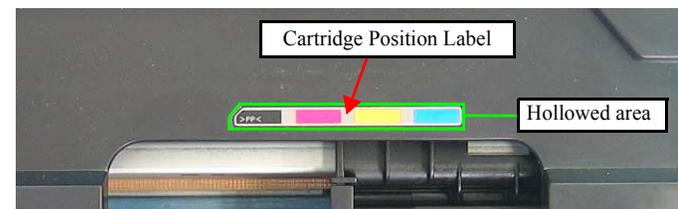


Figure 4-15. Installing the Upper Housing (2)

- When installing the Cover Open Sensor, insert the rib of the Sensor into the Upper Housing and secure it with the hook as shown in Figure 4-13.

4.3.5 Panel Unit

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover

- Removal procedure

1. Pull out the Panel Unit in the direction of the arrow (1) while pulling the Panel Lever.
2. Push the Panel Shafts into the Panel Unit (x2) in the direction of the arrow (2) with a flathead screwdriver etc. and remove the Panel Shafts (x2) from the grooves (x2) of the Upper Housing.

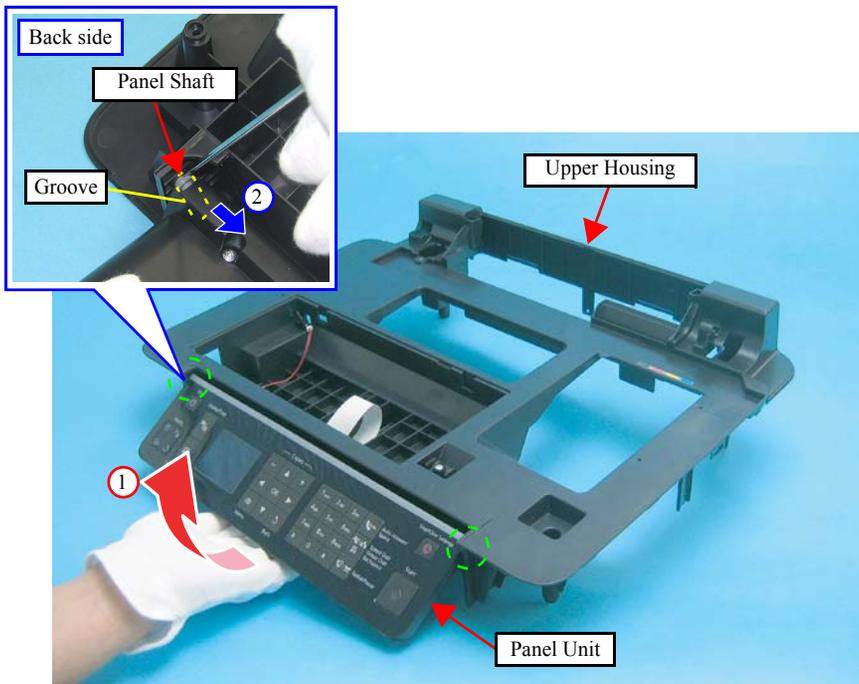


Figure 4-16. Removing the Panel Unit (1)

3. Remove the ferrite core from the Pressing plate of the Upper Housing in the direction of the arrow (1), and peel off the Panel FFC from the Upper Housing.
4. Remove the grounding wire from the grooves (x8) of the Upper Housing.
5. Slide the Panel Unit in the direction of the arrow (2) while pulling the Panel Lever, and remove the Panel Unit from the Upper Housing.

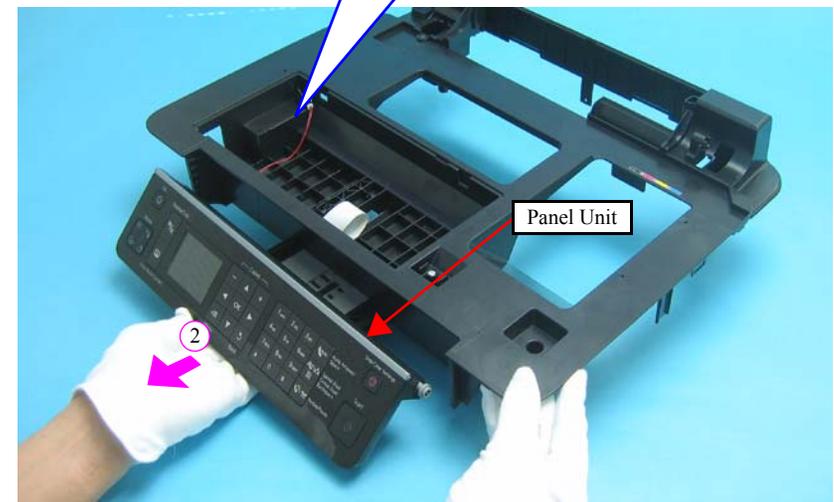
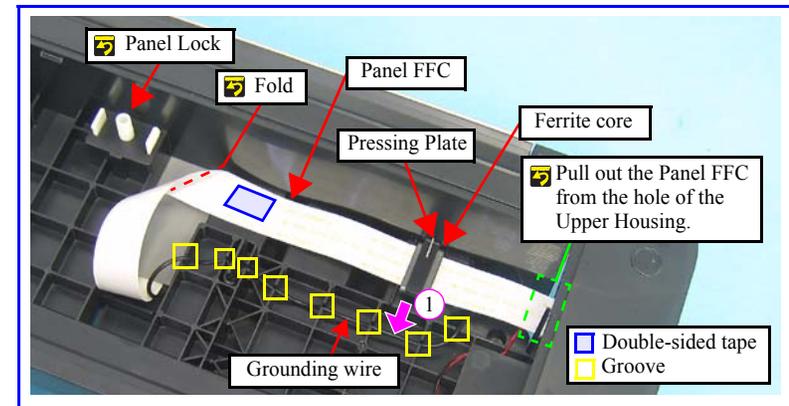


Figure 4-17. Removing the Panel Unit (2)

6. Pull out the Panel FFC through the hole of the Panel Lever.
7. Release the dowels (x2) of the Panel Guide Assy, and remove the Panel Guide Assy from the Panel Unit.

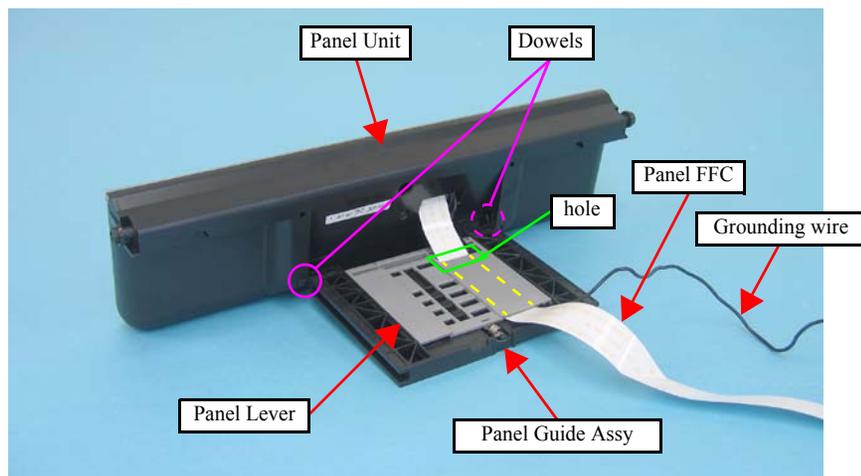


Figure 4-18. Removing the Panel Unit (3)

8. Remove the Extension Spring of the Panel Lever that secures the Panel Guide Assy.
9. Release the hook (□) of the Panel Lever from the Panel Guide Assy.
10. Slide the Panel Cover in the direction of the arrow to remove it.
11. Release the grounding wire from the Panel Lever.

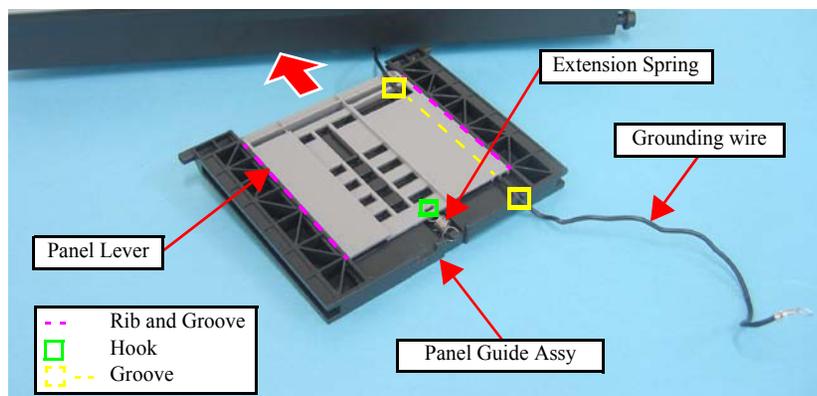


Figure 4-19. Removing the Panel Unit (4)



- Route the grounding wire through the three grooves of the Panel Guide Assy and Panel Lever as shown in Figure. 4-19.
- Install the Panel Lever, Align the ribs (x2) of the Panel Lever with the grooves (x2) of the Panel Guide Assy as shown in Figure. 4-19.
- Install the Panel Unit to the Upper Housing according to the following procedure.
 1. Align the grooves --- (x2) of the Panel Guide Assy with the grooves --- (x2) at the bottom of the Upper Housing. (Refer to Figure. 4-20.)

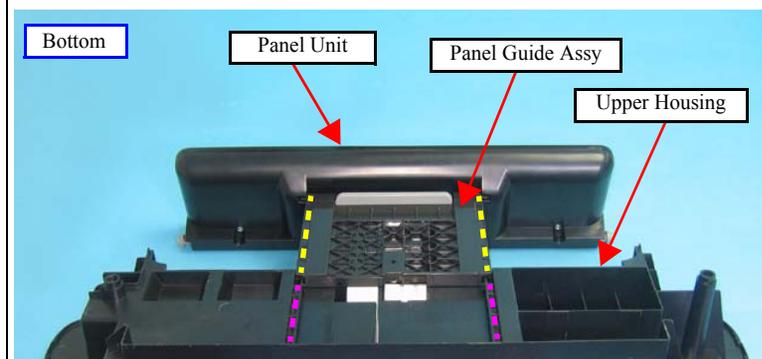


Figure 4-20. Installing the Panel Unit

2. Insert the Panel Unit to the Upper Housing with the panel lock pulled toward upside the printer. (Refer to Figure. 4-17.)
 3. Install the Panel Shafts (x2) into the groove of the Upper Housing. (Refer to Figure. 4-16.)
- Route the Panel FFC and grounding wire as shown in Figure. 4-17.

4.4 Removing the Circuit Boards

4.4.1 Main Board Unit

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/ Middle Cover/Printer Mechanism/Card Slot Cover

- Removal procedure

1. Disconnect the following connectors (x4) and FFCs (x4) from the Main Board.

CN No	Cable	CN No	Cable
CN4	Head FFC	CN9	CR Motor cable
CN5	Head FFC	CN10	PF Motor cable
CN6	PF Encoder FFC	CN21	Head FFC
CN7	PE Sensor cable	CN23	Power Supply Unit cable

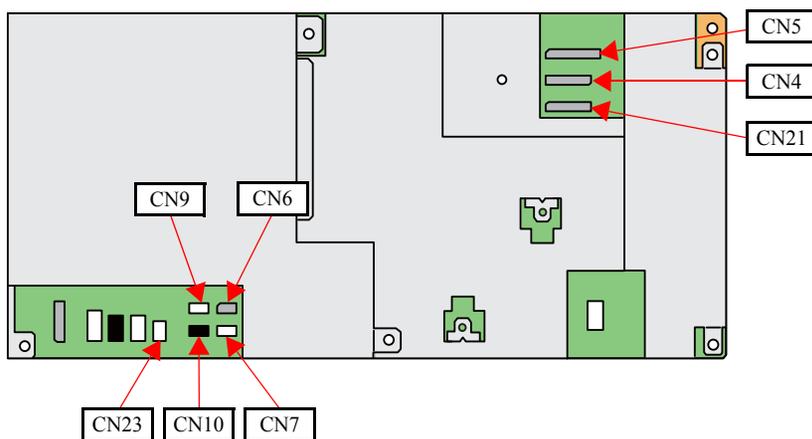


Figure 4-21. Connector Layout of the Main Board Unit

2. Peel off the Panel FFC secured with a double-sided tape on the Main Board Unit.
3. Peel off the ferrite core from the Main Board Unit.
4. Remove the screws (x2) that secure the Main Board Unit, and remove the Main Board Unit.

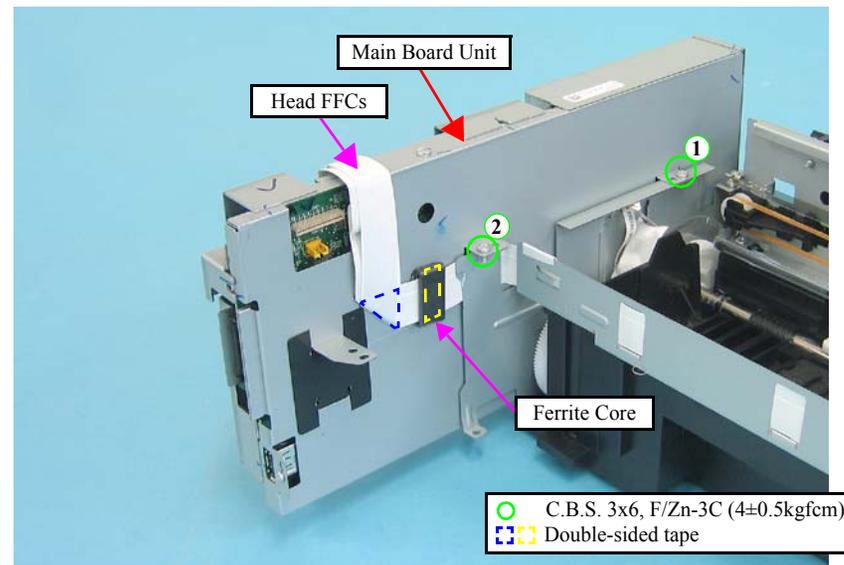


Figure 4-22. Removing the Main Board Unit



- When installing the Main Board Unit, make sure to engage its cutout (x2) with the hooks (x2) of the Left Frame.

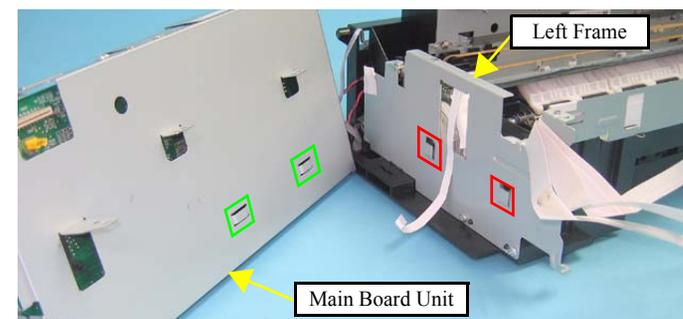


Figure 4-23. Installing the Main Board Unit



- When routing the the PE Sensor cable, route it outside the the PF Encoder FFC as shown in the following figure.

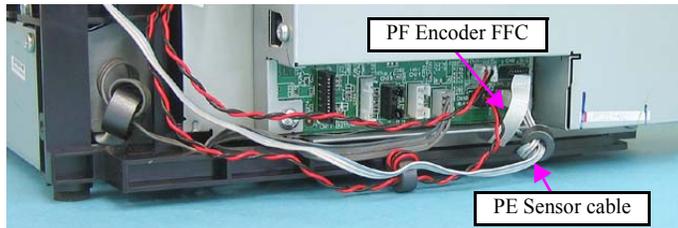


Figure 4-24. Routing the PE Sensor cable

- When installing the Main Board Unit, tighten the screws in the order given in Figure. 4-22.
- When routing the Head FFCs, follow the steps below.
 1. Route the Head FFCs through the space between the Left Frame and the MB Lower Shield Plate.
 2. Connect the Head FFCs to connectors CN4, 5, 21 on the Main Board. (See Figure. 4-21.)
 3. Route the Head FFC aligning it with the line mark on the MB Lower Shield Plate, and secure it with double-sided tape.
 4. Align the ferrite core with the line mark of the MB Lower Shield Plate, then secure it with double-sided tape.

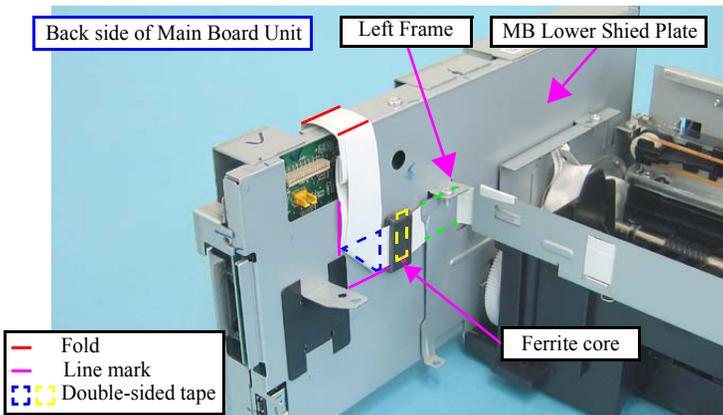


Figure 4-25. Routing the Head FFCs

- Disassembling the Main Board Unit
 1. Remove the Wireless LAN Module. (Refer to "4.4.2 Wireless LAN Module (p105)")
 2. Remove the screws (x4) and remove the MB Upper Shield Plate.

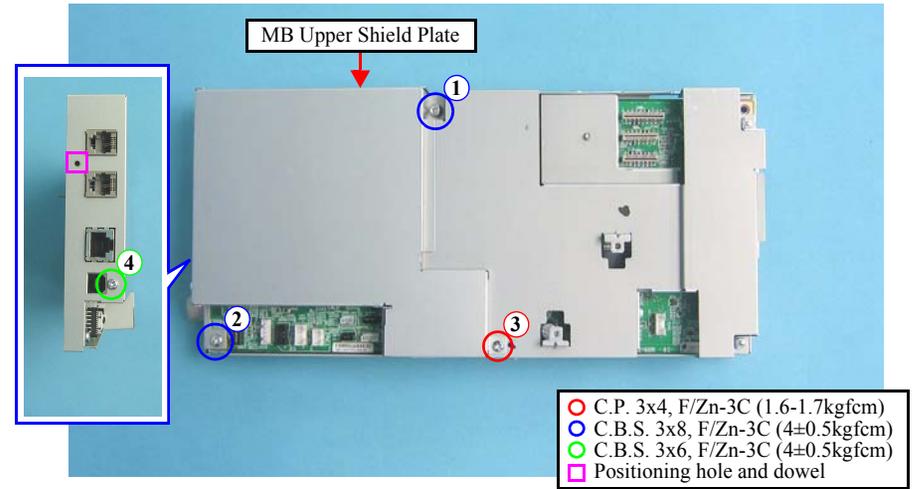


Figure 4-26. Removing the MB Upper Shield Plate

3. Remove the screws  (x4) and remove the MB Front Shield Plate.
4. Remove the screws   (x2) and remove the Main Board from the MB Lower Shield Plate.

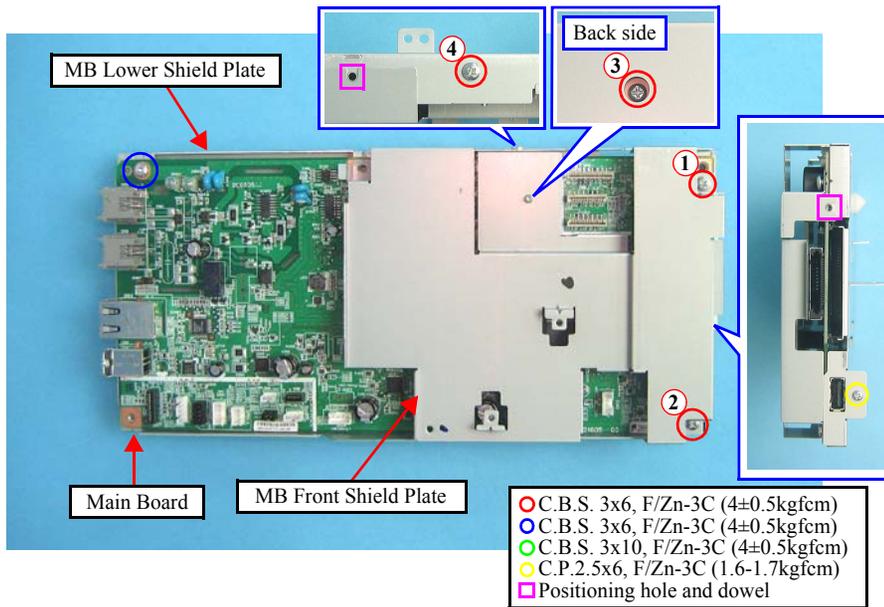


Figure 4-27. Removing the Main Board



- When installing the Main Board to the MB Lower Shield Plate, make sure to match the positioning holes to the dowels (x2) as shown in [Figure 4-28](#).

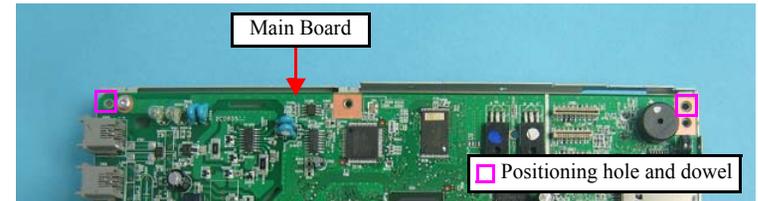


Figure 4-28. Installing the Main Board

- When reassembling the Main Board Unit, make sure to match the positioning holes to the dowels (x2) as shown in [Figure 4-26](#) and [Figure 4-27](#).
- When installing the MB Upper Shield Plate and MB Front Shield Plate, tighten the screws in the order given in [Figure 4-26](#) and [Figure 4-27](#).
- If the EEPROM data cannot be read out from the old Main Board when replacing the Main Board, the MAC Address is required to be set. In this case, attach the new label “Label, MAC Address (Parts code: 1489500)” on the position as shown in [Figure 4-29](#) and execute the “[5.2.8 MAC Address Setting \(p161\)](#).”

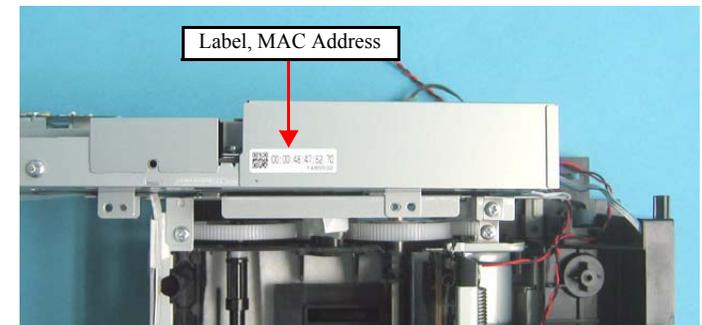


Figure 4-29. Position to attach the MAC Address Label

4.4.2 Wireless LAN Module

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/ Middle Cover/Printer Mechanism/Card Slot Cover
- Removal procedure
 1. Remove the screws (x2) securing the Wireless LAN Module.

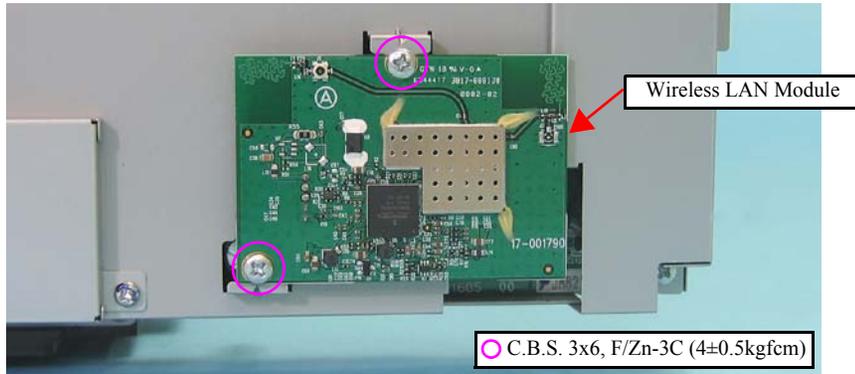


Figure 4-30. Removing the Wireless LAN Module (1)

2. Disconnect the Wireless LAN Module cable from the connector on the Main Board (CN13) and remove the Wireless LAN Module from the MB Front Shield Plate.

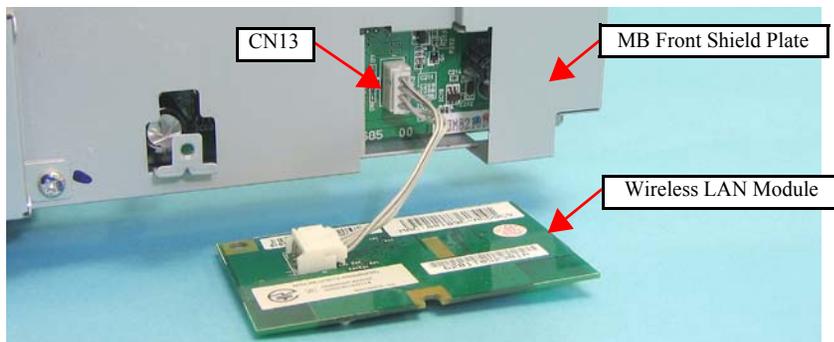


Figure 4-31. Removing the Wireless LAN Module (2)

4.4.3 Disassembling the Panel Unit

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Panel Unit
- Removal procedure

4.4.3.1 Panel Board/ Panel Board B

1. Remove the screws (x3) securing the Panel Lower Housing.
2. Remove the hooks (x3) of the Panel Unit and remove the Panel Lower Housing from the Panel Unit.
3. Pull out the Panel FFC and grounding wire through the hole of the Panel Lower Housing and remove the Panel Lower Housing from the Panel Unit.

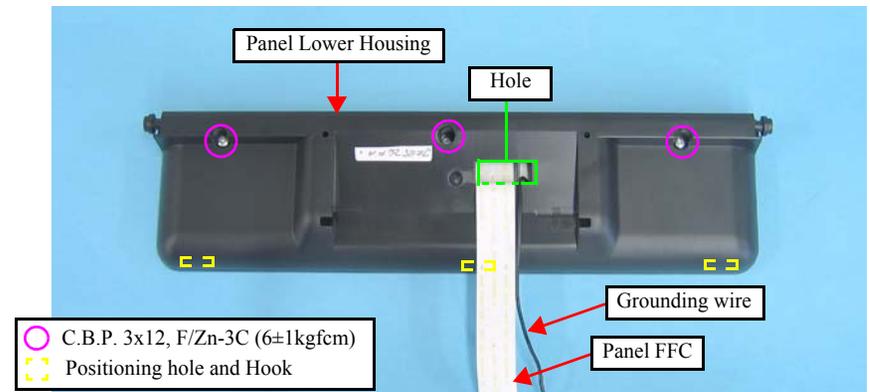


Figure 4-32. Removing the Panel Lower Housing

CAUTION



When removing the Panel Board Frame, do not damage the cable shown in **Figure 4-33** with the Panel Board Frame.

- Remove the screws (x5) securing the Panel Board Frame, and remove the grounding wire.
- Peel off the Panel FFC from the Panel Board Frame and remove the Panel Board Frame in the direction of the arrow.

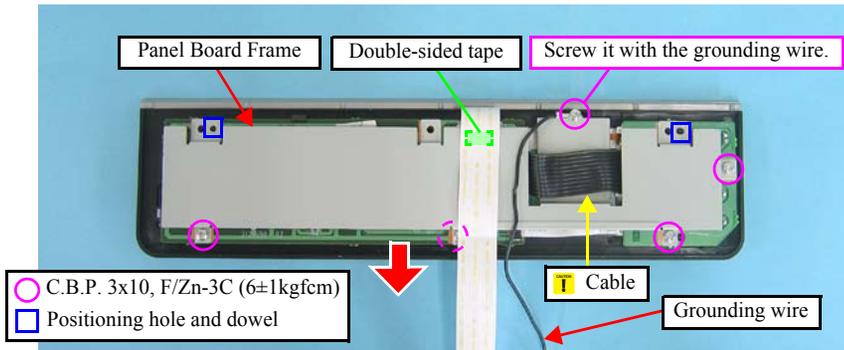


Figure 4-33. Removing the Panel Board Frame

- Disconnect the LCD FFC from the connector on the LCD Board.
- Disconnect the Panel FFC from the connector on the Panel Board B.
- Release the hook (x1) of the Panel Cover and remove the Panel Board and Panel Board B.

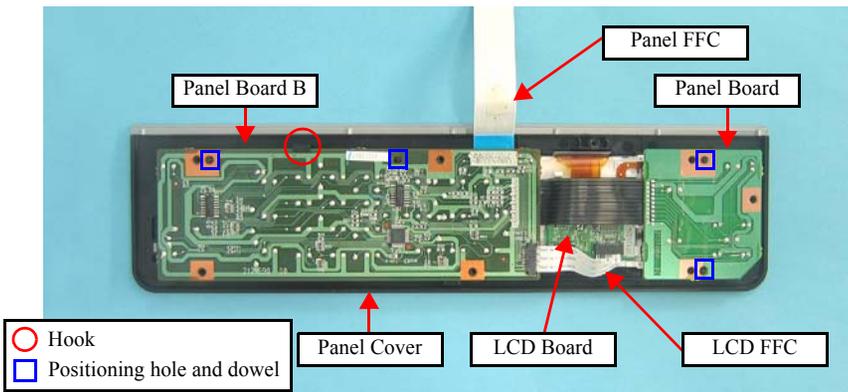


Figure 4-34. Removing the Panel Board/ Panel Board B

REASSEMBLY



- When installing the Panel Board and Panel Board B, make sure to match the positioning holes (x4) with their positioning pins of the Panel Cover as shown in **Figure 4-34**.
- When installing the Panel Board Frame, align the positioning holes (x2) of the Panel Board Frame with the dowels (x2) of the Panel Cover as shown in **Figure 4-33**.
- When installing the Panel Lower Housing, tighten the screws after aligning the positioning holes (x3) of the Panel Lower Housing and the hooks (x3) of the Panel Cover as shown in **Figure 4-32**.

4.4.3.2 LCD Module/ LCD Cover

- Remove the Panel Board and Panel Board B. (Refer to "4.4.3.1 Panel Board/ Panel Board B (p105)")
- Remove the screws (x2) securing the LCD Module and remove the LCD Module from the Panel Cover.
- Peel off the LCD Cover from the Panel Cover.

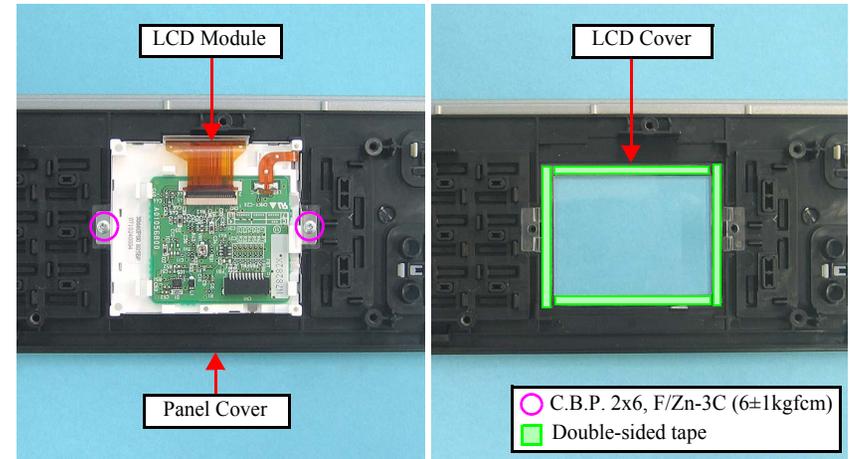


Figure 4-35. Removing the LCD Module/ LCD Cover

REASSEMBLY



When installing the LCD Module, be sure to keep out dust between the LCD Cover and LED Module.

4.4.3.3 Button/ Power Lens/ Mall Panel

1. Remove the Panel Board and Panel Board B.
(Refer to "4.4.3.1 Panel Board/ Panel Board B (p105)")
2. Remove the Buttons (x30) shown below from the Panel Cover by releasing the hooks.

No.	Button	No.	Button
1	Power button	8	Start button
2	Display/Crop button	9	Redial/Pause button
3	Minus Button, Plus Button	10	Back button
4	Ten keys	11	Cross Key and OK button
5	Auto Answer/Space button	12	Menu button
6	Speed Dial/Group Dial/Back Space button	13	Auto Correct button
7	Stop/Clear Settings button	14	Top menu button

3. Remove the screw and remove the Power Lens.
4. Remove the Mall Panel from the Panel Cover.

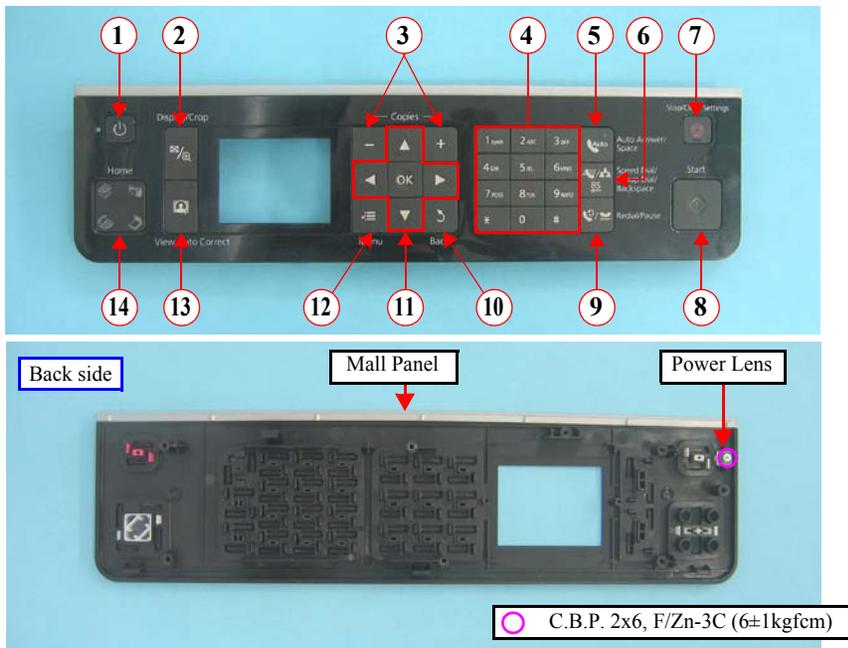


Figure 4-36. Removing the Button/ Power Lens/ Mall Panel



When installing the Buttons, engage the hook of each Button securely to the Panel Cover. After assembling the Panel Unit, press all the Buttons and confirm they click.

4.4.3.4 Panel Shaft

1. Remove the Panel Lower Housing.
(Refer to "4.4.3.1 Panel Board/ Panel Board B (p105)")
2. Release the ribs (x2) of the Panel Shafts (x2) from the grooves (x2) of the Panel Lower Housing and remove the Panel Shafts (x2) and Panel Shaft Springs (x2) from the Panel Lower Housing.

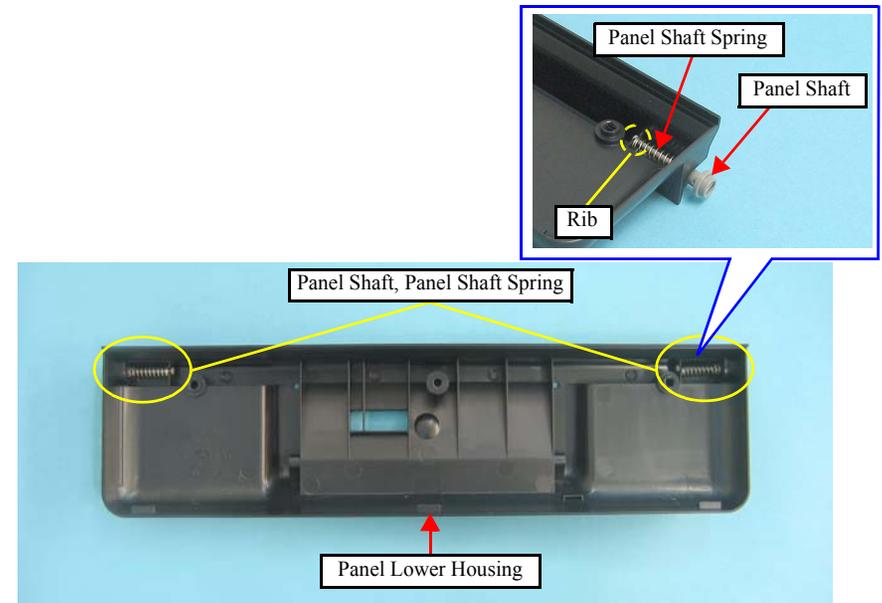


Figure 4-37. Removing the Panel Shaft

4.4.4 Power Supply Unit

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/ Middle Cover/Printer Mechanism/Card Slot Cover

- Removal procedure

1. Disconnect the connector of the Power Supply Unit (CN23) on the Main Board.
2. Remove the Power Supply Unit cable from the hook of the Base Frame.

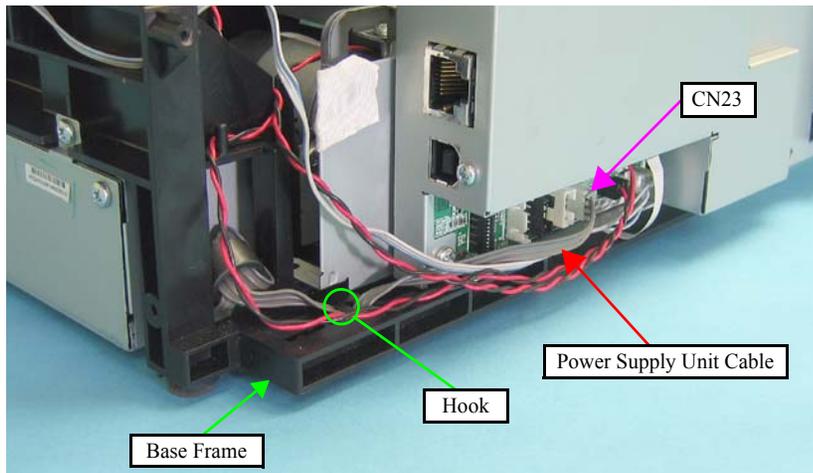


Figure 4-38. Removing the Power Supply Unit (1)

3. Remove the screws (x2) that secure the Power Supply Unit.
4. Lift the Base Frame a little and remove the Power Supply Unit.

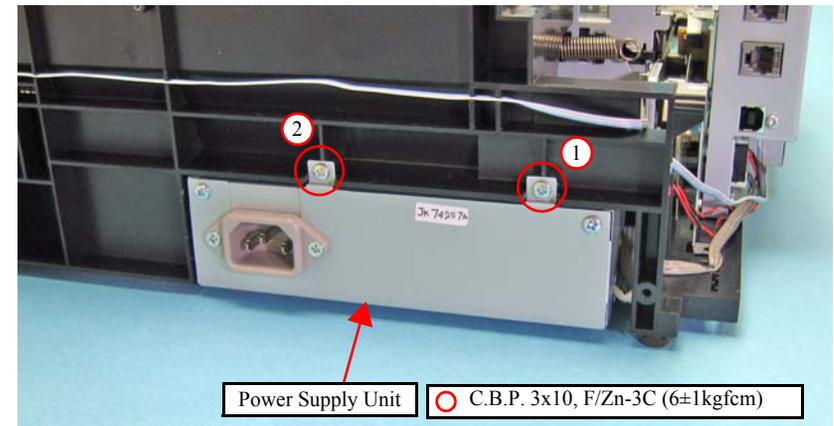


Figure 4-39. Removing the Power Supply Unit (2)



- Insert the tabs (x2) of the Power Supply Unit into the holes on the Base Frame.

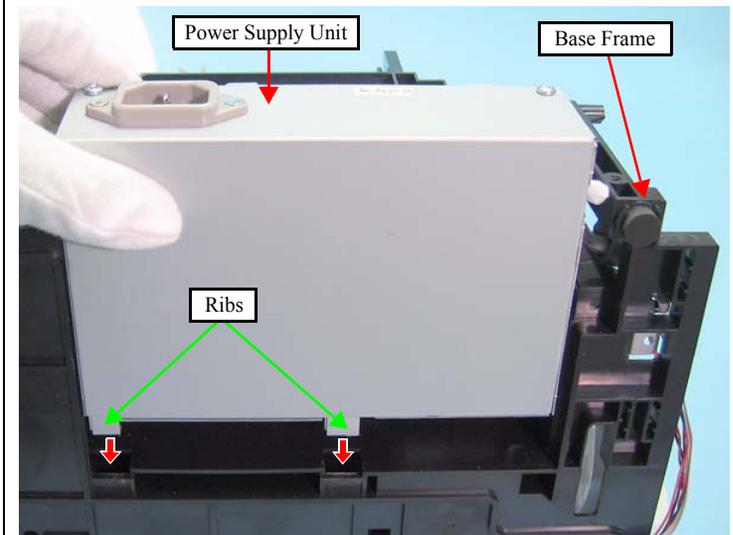


Figure 4-40. Installing the Power Supply Unit



- Tighten the screws in the order given in [Figure 4-39](#).
- Secure the Power Supply Unit Cable with the hook of the Base Frame as shown in the figure below.
- Put the ferrite core of the Power Supply Unit cable into the hole of the Base Frame.

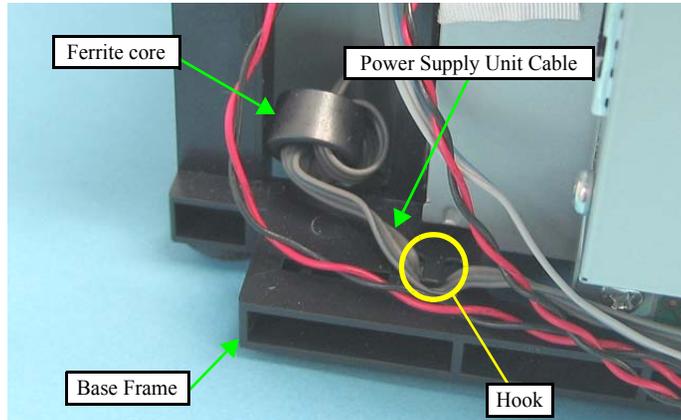


Figure 4-41. Routing the Power Supply Unit Cable

4.5 Disassembling the Printer Mechanism

4.5.1 Printhead

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover
- Removal procedure
 1. Rotate the Spur Gear 51.5 to unlock the carriage, and move the CR Unit to the center.

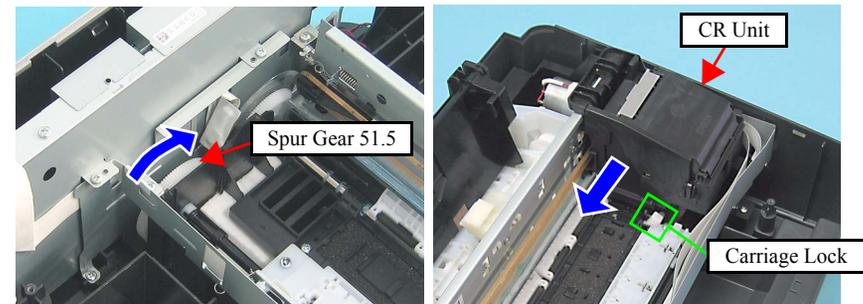


Figure 4-42. Unlocking the Carriage and Moving the CR Unit

2. Open the Cartridge Cover and remove all the ink cartridges from the CR Unit.



The Cartridge Cover Hinge must be broken to be removed since the hinge is permanently-set. When replacing the Printhead, make sure to replace the Cartridge Cover Hinge with a new one.

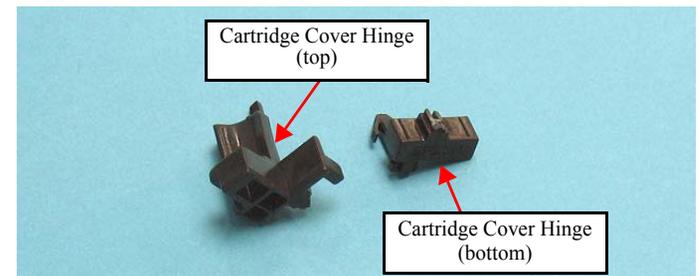


Figure 4-43. Cartridge Cover Hinge

3. Cut the Cartridge Cover Hinge with a nipper, and remove the upper half of it and Hinge Cover Cartridge.
4. Release the hooks of the lower half of the Cartridge Cover Hinge with tweezers, and remove the lower half of it. (See [Figure 4-43](#))

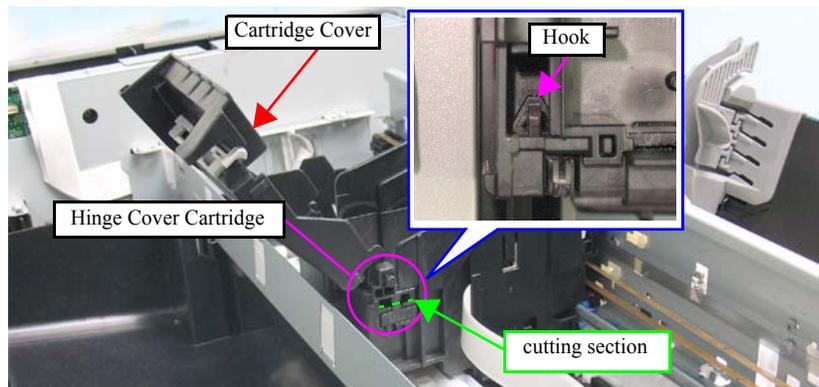


Figure 4-44. Removing the Cartridge Cover

5. Release the hook  (x1) of the Head Cable Cover with a flathead precision screwdriver, and remove the Head Cable Cover downward.
6. Release the hook  (x1) securing the Ink Guide and remove the Ink Guide.

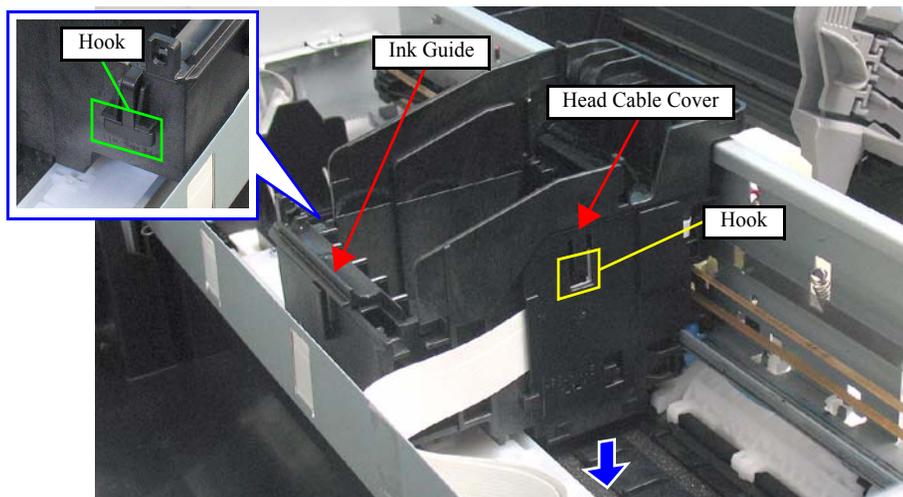


Figure 4-45. Removing the Head Cable Cover

7. Disconnect the Head FFC (x1) that is connected to the CSIC Board.
8. Release the tabs (x2) securing the Holder Board Assy with a flathead screwdriver or the like, and remove the Holder Board Assy upward.

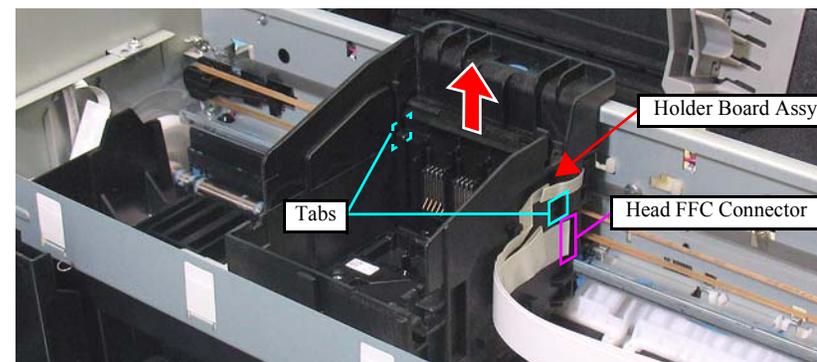


Figure 4-46. Removing the Holder Board Assy

9. Remove the Head Cable Inner Cover according to the following procedure.
 - 9-1. Release the hook (x1) and release the rib (1) of the Head Cable Inner Cover from the Carriage Unit by lifting upward.
 - 9-2. Remove the Rib (2) of the Head Cable Inner Cover from the Carriage Unit while sliding it in the direction of the arrow.

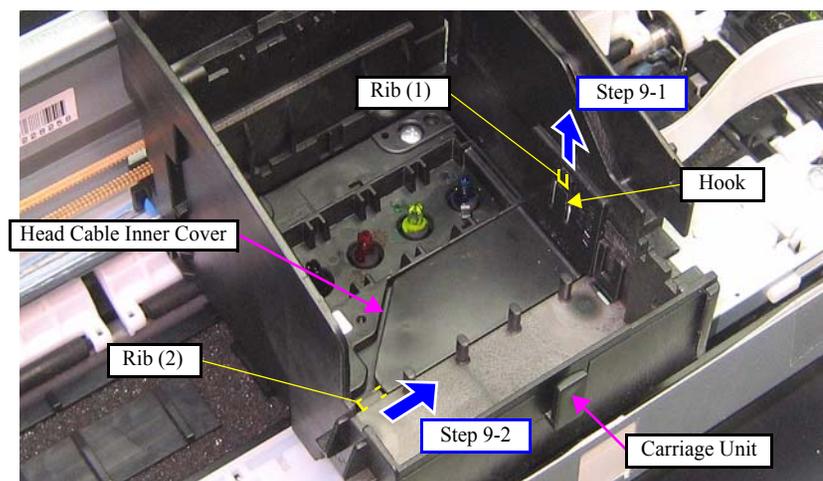


Figure 4-47. Removing the Head Cable Inner Cover



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

10. Remove the screws (x3) that secure the Printhead, and lift the Printhead with longnose pliers.

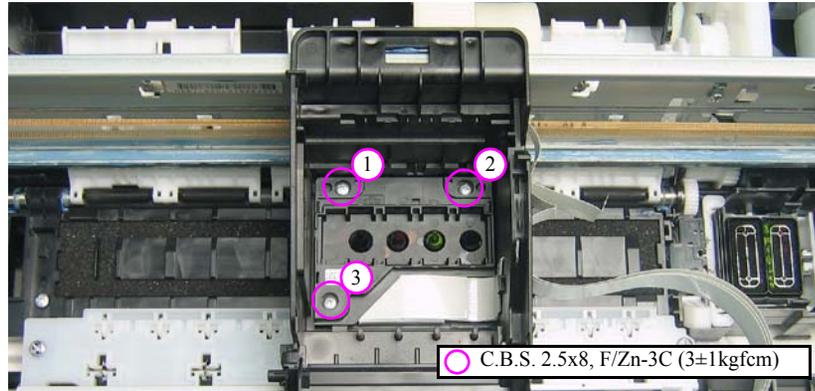


Figure 4-48. Removing the Printhead (1)

11. Disconnect the Head FFC from the connectors (x3) of the Printhead, and remove the Printhead.

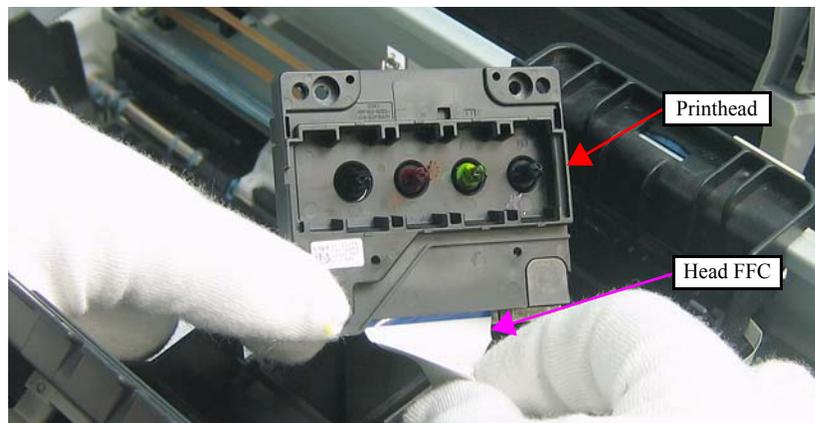


Figure 4-49. Removing the Printhead (2)



- Tighten the screws in the order given in [Figure. 4-48](#).
- Insert the Holder Board Assy vertically into the CR Unit so as not to put the Holder Board Assy on the rib of the Printhead.



Whenever the Printhead is removed/replaced, the required adjustments must be carried out.

- [Chapter 5 “ADJUSTMENT” \(p.150\)](#)

4.5.2 CR Scale

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/ Middle Cover
- Removal procedure

CAUTION

Pay attention to the following instructions:

- Do not touch the CR Scale with bare hands.
- Do not damage the CR Scale.
- Do not stretch Extension Spring 3.289 too much.

1. Release the right end of the CR Scale from the hook.
2. Pull out the CR Scale through the slit of the CR Encoder Sensor.

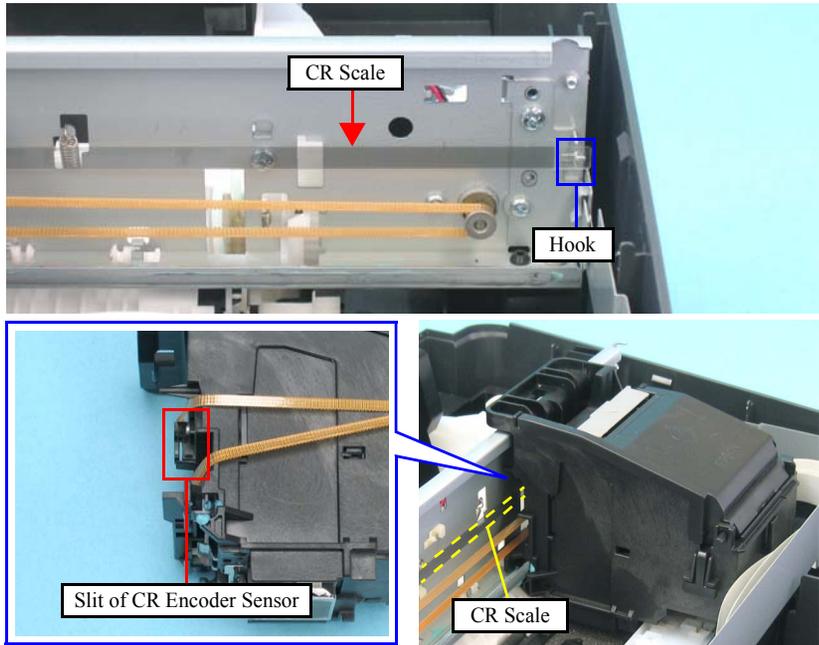


Figure 4-50. Removing the CR Scale (1)

3. Release the Extension Spring 3.289 from the hook of the Main Frame.
4. Rotate the CR Scale 90 degrees as shown in the figure and remove the scale from the Main Frame.

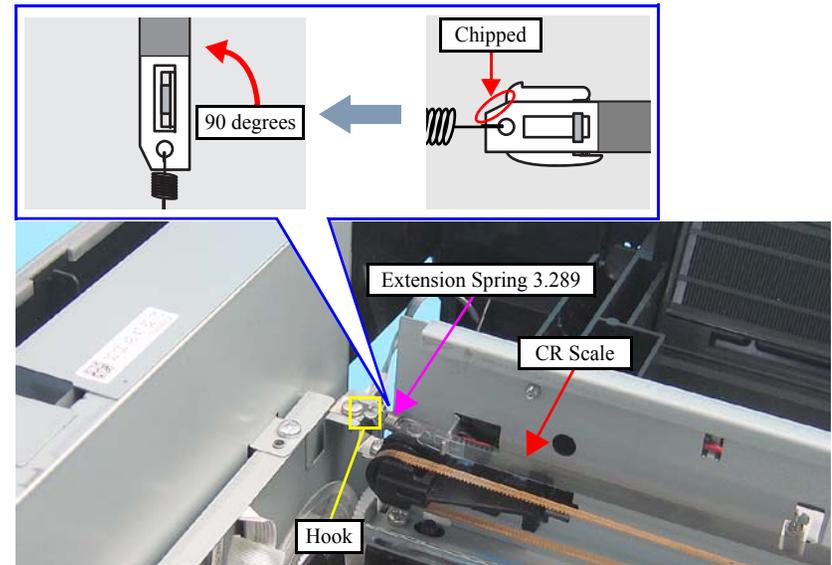


Figure 4-51. Removing the CR Scale (2)

REASSEMBLY

When installing the CR Scale, pay attention to the following instructions:

- Chipped part of the CR Scale must face upward.
- CR scale should be passed through the slit of the CR Encoder Sensor.
- Make sure that the Extension Spring 3.289 is not be twisted, and then attach its end to the hook of the Main Frame.

4.5.3 Hopper

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover
- Removal procedure
 1. Release the dowel A of the Hopper.
 2. Release the dowel B of the Hopper, and remove the Hopper together with the Compression Spring 1.94.

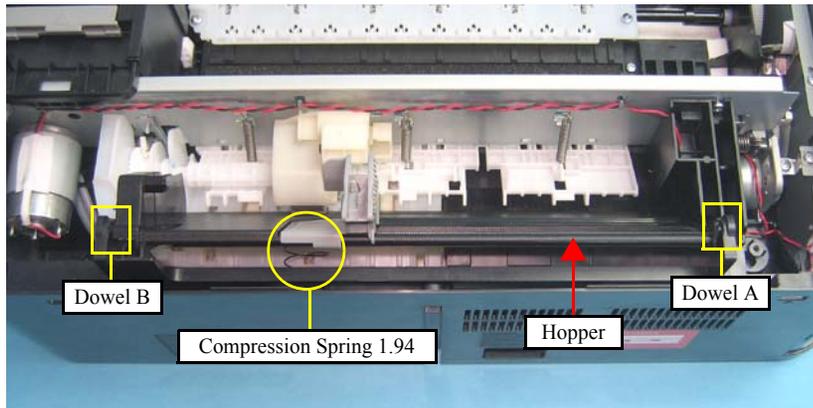


Figure 4-52. Removing the Hopper



When installing the Hopper, be sure to engage the rib of the Hopper with the guide groove of the Base Frame.

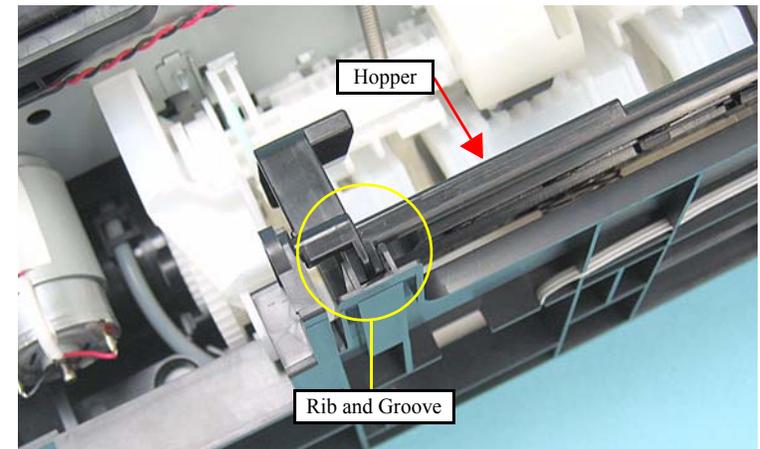


Figure 4-53. Installing the Hopper



Whenever the Hopper is removed/replaced, the required adjustments must be carried out.

[Chapter 5 “ADJUSTMENT” \(p.150\)](#)

4.5.4 Removing the Printer Mechanism/Card Slot Cover

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover

- Removal procedure

1. Remove the screw (x1) securing the Card Slot Cover.
2. Release the hooks (x2) securing the Card Slot Cover, and remove the Card Slot Cover.

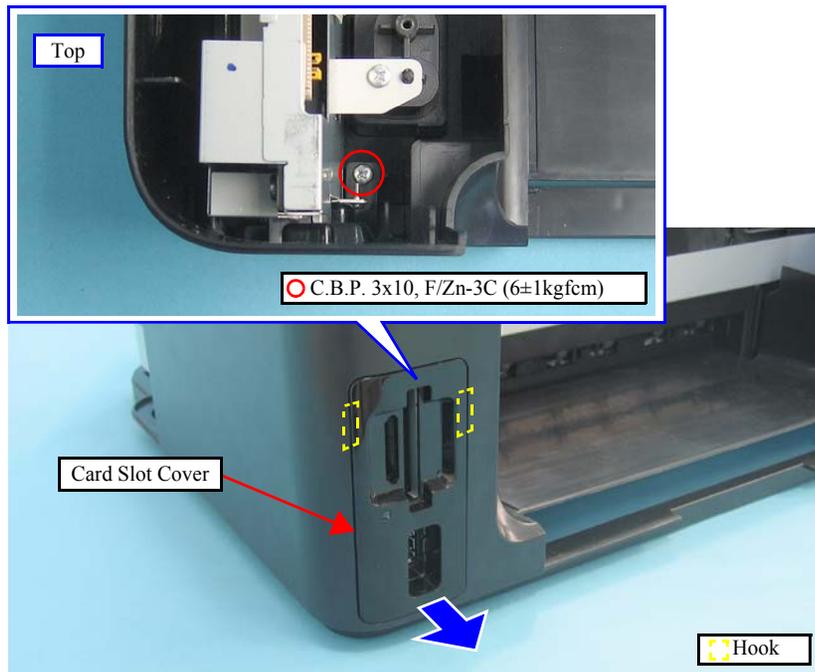


Figure 4-54. Removing the Card Slot Cover

3. Release the hook that secures the Rear Cover with tweezers, and remove the Rear Cover.

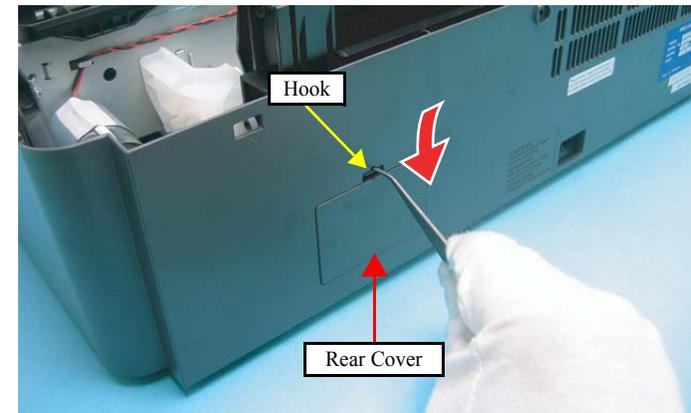


Figure 4-55. Removing the Rear Cover



When lifting the Printer Mechanism, be sure to hold the positions specified in the figure below to prevent the Main Frame from being deformed.

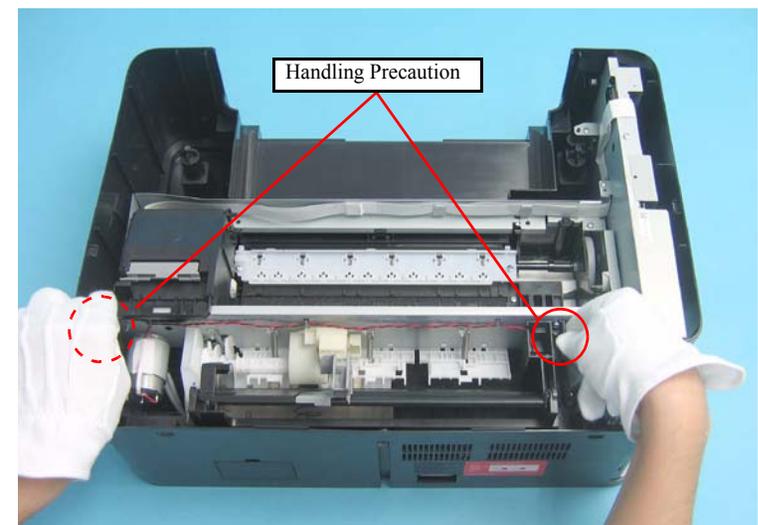


Figure 4-56. Printer Mechanism Handling Precaution

- Remove the screws (x5) that secure the Printer Mechanism, and remove the Printer Mechanism by lifting it.

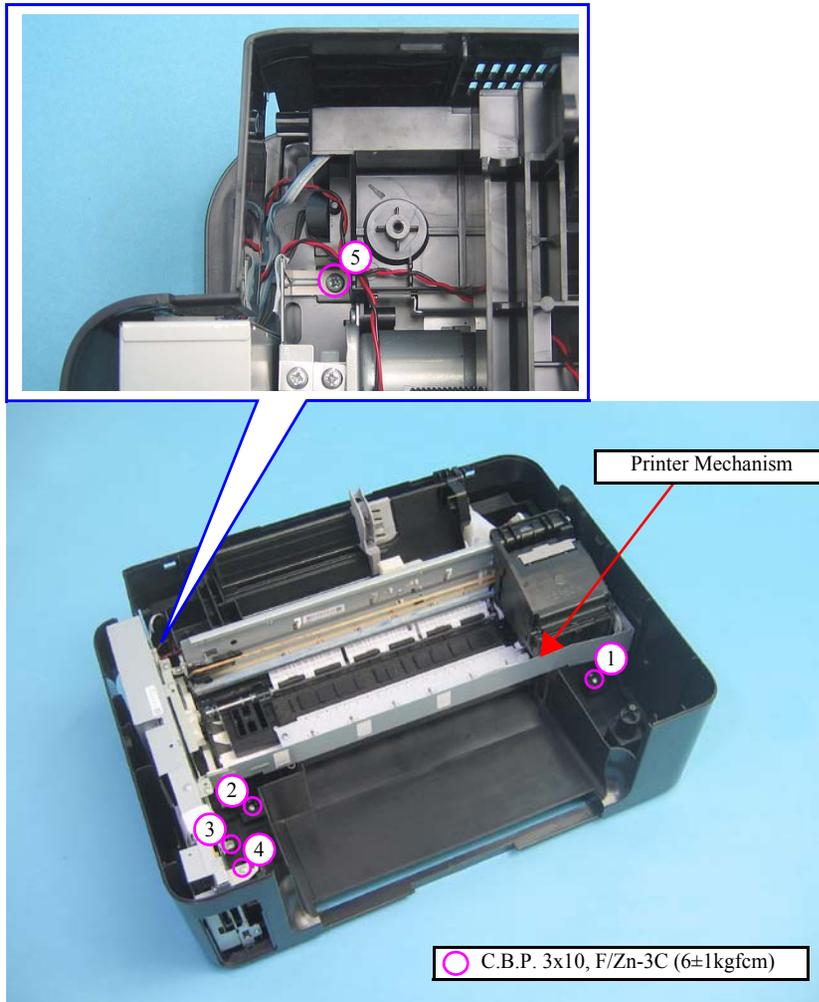


Figure 4-57. Removing the Printer Mechanism

4.5.5 Left Frame

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit
- Removal procedure
 - Peel off the double sided tape that secures the PF Encoder FFC to the Left Frame.
 - Remove the screws (x2), and remove the grounding plate.
 - Remove the screws (x3) that secure the Left Frame, and remove the Left Frame.

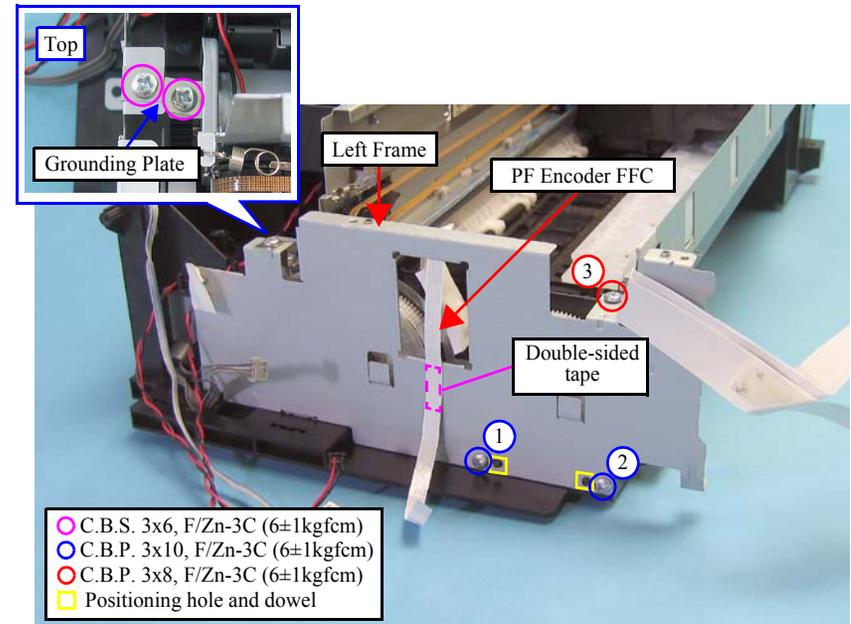


Figure 4-58. Removing the Left Frame



- When installing the Left Frame, take care of the following.
 - Make sure to route the PF Encoder FFC through the hole of the Left Frame, and secure it with a double-sided tape as shown in [Figure 4-58](#).
 - Make sure to match the dowels of the Base Frame and the positioning holes of the Left Frame as shown in [Figure 4-58](#).
- When installing the Left Frame, tighten the screws in the order given in [Figure 4-58](#).

4.5.6 Front Frame/Right Frame

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame
- Removal procedure
 1. Remove the acetate tape (x2) that secures the Head FFC to the Front Frame.
 2. Peel off the ferrite core that secures the Head FFC to the Front Frame.
 3. Release the Head FFC from the hooks (x3) of the Front Frame.
 4. Remove the Grounding Spring from the Front Frame.

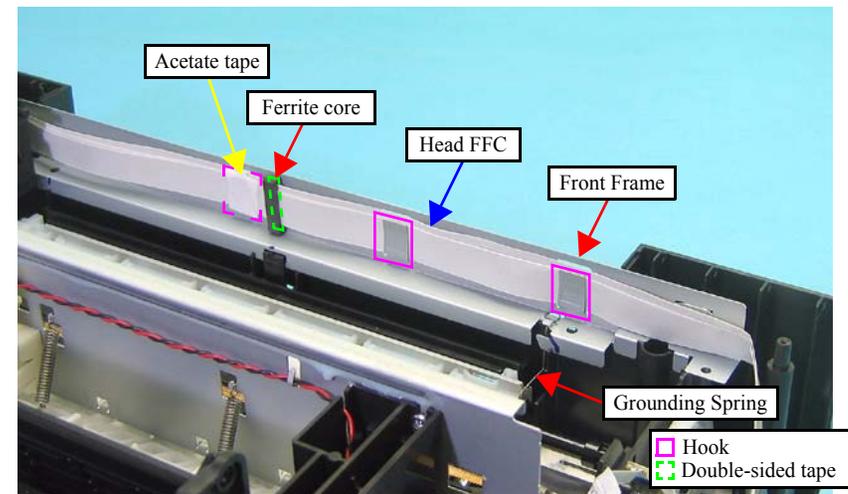


Figure 4-59. Removing the Front Frame/Right Frame (1)

5. Peel off the Porous Pad Frame Right from the Right Frame and the Base Frame.

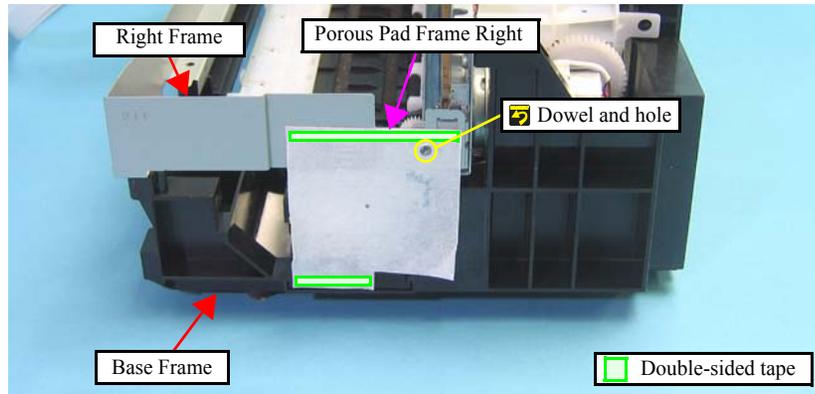


Figure 4-60. Removing the Front Frame/Right Frame (2)

6. Remove the screw (x1) that secures the Front Frame and the Right Frame together.
7. Release the dowel (x1) and the hook (x1) that secure the Right Frame, and remove the Right Frame.

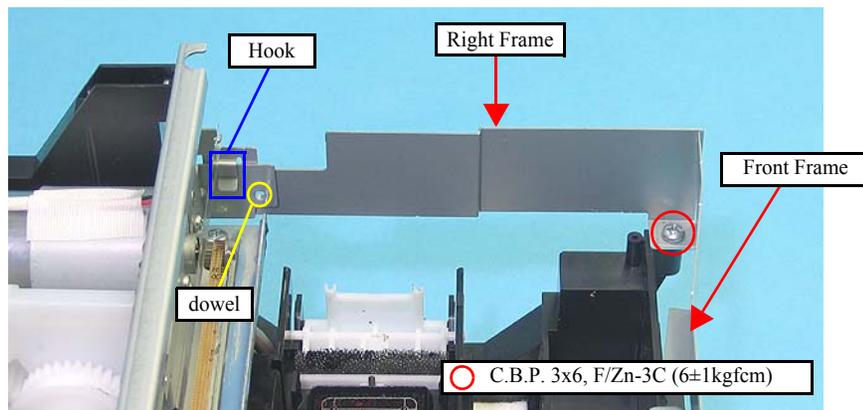


Figure 4-61. Removing the Front Frame/Right Frame (3)

8. Release the hook (x1), and remove the Front Frame.

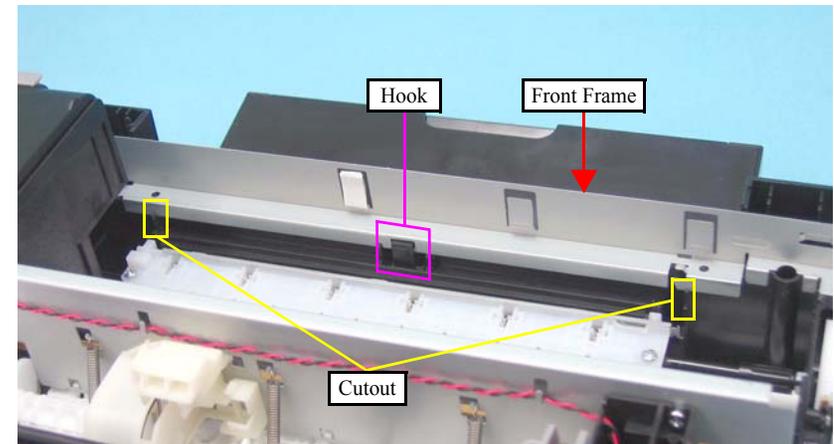


Figure 4-62. Removing the Front Frame/Right Frame (4)



- Align the ferrite core with the line mark shown in Figure 4-63, then secure it to the Front Frame with double-sided tape.
- After replacing the Front Frame, be sure to attach acetate tape as shown in the figure below.

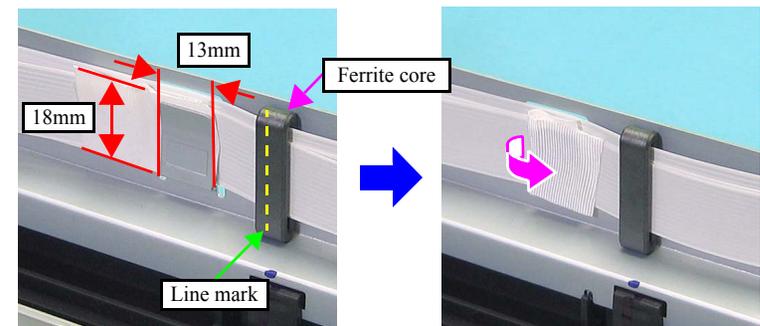


Figure 4-63. Standard of acetate tape attachment

- Before securing the Porous Pad Frame Right, align the hole of the Porous Pad Frame Right with the dowel of the Right Frame as shown in Figure 4-60.



- When installing the Front Frame, pay attention to the following instructions.
 - As shown in [Figure 4-62](#), be sure to secure the Front Frame with the hook (x1) and the cutouts (x2).
 - As shown in [Figure 4-61](#) secure the Front Frame and Right Frame together with the screw. (Place the Right Frame on top of the Front Frame.)
- Secure the Head FFCs (x3) to the Front Frame with the acetate tape (x1) as shown in the figure below.

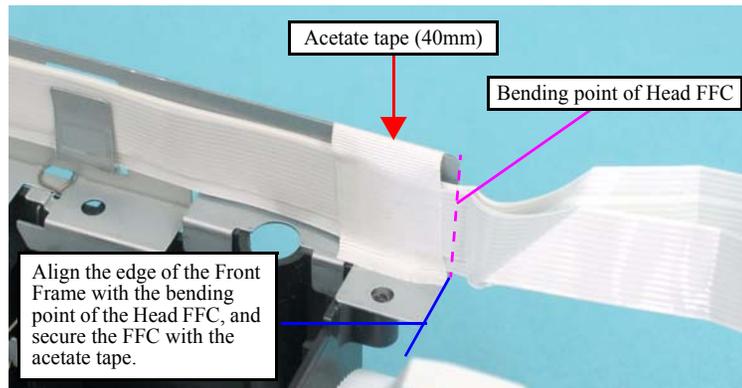


Figure 4-64. Acetate tape position

4.5.7 Star Wheel Holder Assy

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover
- Removal procedure
 1. Remove the Grounding Spring from the Star Wheel Holder Assy.
 2. Remove the screws (x2) that secure the Star Wheel Holder Assy, and remove the Star Wheel Holder Assy.

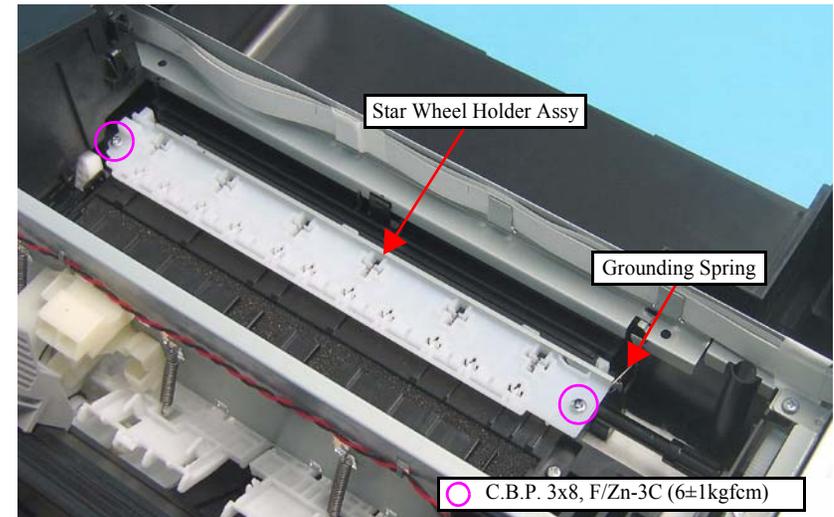


Figure 4-65. Removing the Star Wheel Holder Assy

4.5.8 EJ Roller

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame/Star Wheel Holder Assy

- Removal procedure

**CHECK
POINT**



The Spur Gear 51.5 cannot be reused after it is removed. Whenever the gear is removed, make sure to attach a new one.

1. Insert a flathead precision screwdriver between the Spur Gear 51.5 and the EJ Roller, and remove the Spur Gear 51.5 by pushing it in the direction of the arrow.

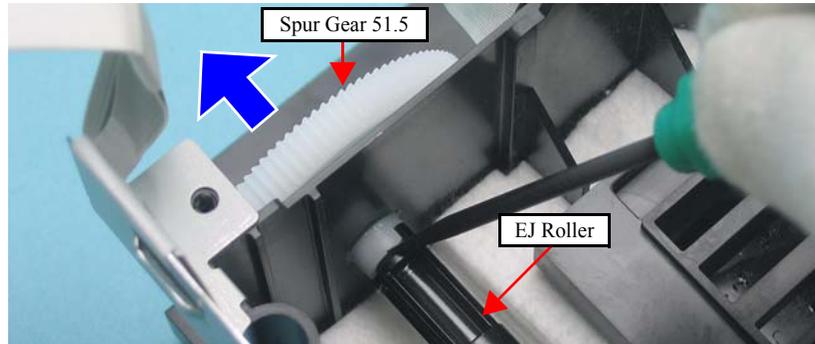


Figure 4-66. Removing the EJ Roller (1)

2. Remove the EJ Roller while pushing the tab on the right side of the Base Frame in the direction of the arrow.

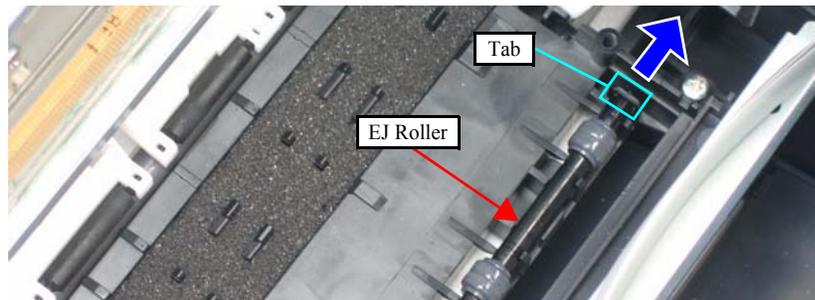


Figure 4-67. Removing the EJ Roller (2)



- When installing the EJ Roller, pay attention to the following instructions.
 - Make sure that the rubber part of the EJ Roller does not contact with the hook of the Front Paper Guide.
 - Be cautious not to touch the rubber part of the EJ Roller.
 - Be sure to align the rib (x1) of the Front Paper Guide with the slit on the EJ Roller.

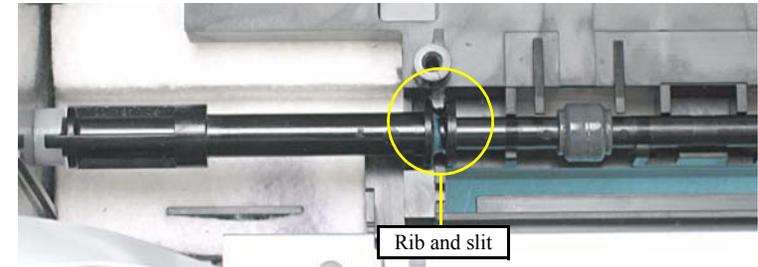


Figure 4-68. Installing the EJ Roller

- When installing the Spur Gear 51.5, be sure to align the concave section of it with the convex section of the EJ Roller.

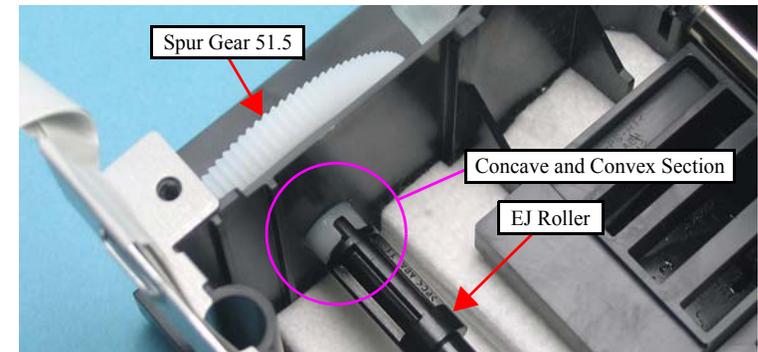


Figure 4-69. Installing the Spur Gear 51.5



- Whenever the EJ Roller is removed/replaced, the required adjustments must be carried out.
 - Chapter 5 “ADJUSTMENT” (p.150)
- After replacing the EJ roller, be sure to perform the required lubrication.
 - Chapter 6 “MAINTENANCE” (p.163)

4.5.9 PF Encoder Sensor

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame

- Removal procedure

1. Peel off the acetate tape (x1) from the PF Encoder Sensor.
2. Release the PF Encoder FFC from the connector (x1) of the PF Encoder Sensor.
3. Remove the screw (x1) that secures the PF Encoder Sensor, and remove the PF Encoder Sensor.

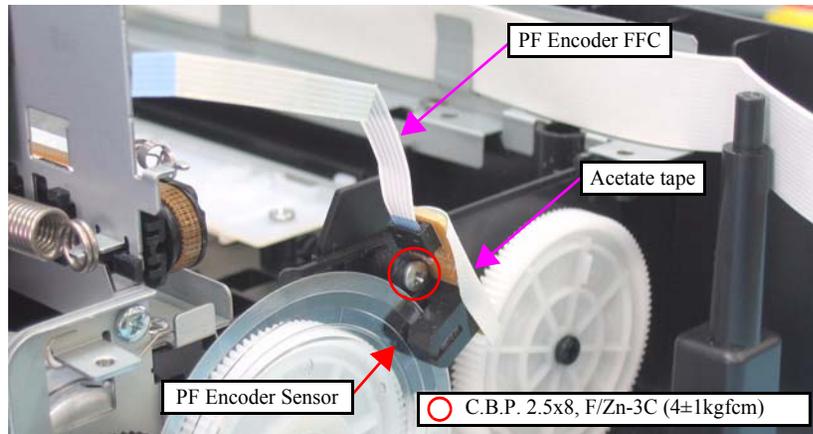


Figure 4-70. Removing the PF Encoder Sensor



When installing the PF Encoder Sensor, be sure to attach the acetate tape (x1) referring to the figure below.

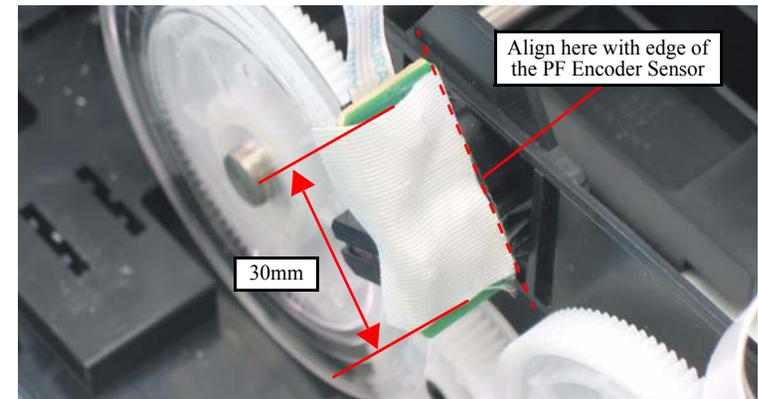


Figure 4-71. Acetate tape position

4.5.10 PF Scale

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame/PF Encoder Sensor

- Removal procedure

CAUTION
!

Pay attention to the following instructions.

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

1. Peel of the PF Scale that is secured with the double-sided tape (x1) from the Spur Gear 32.4.

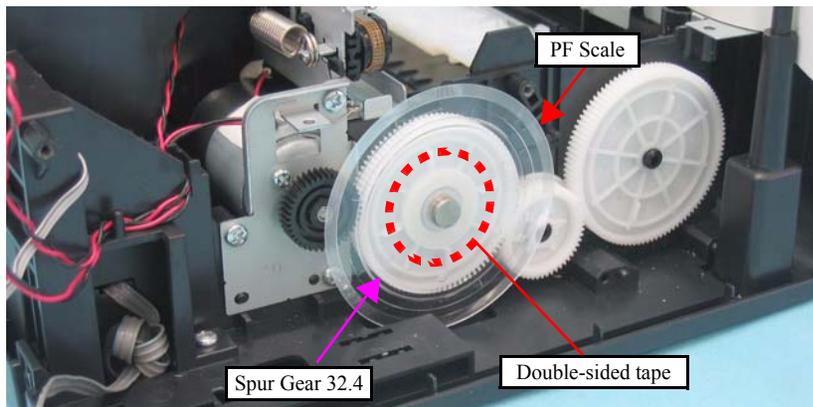


Figure 4-72. Removing the PF Scale

4.5.11 PF Motor Assy

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame/PF Encoder Sensor/PF Scale

- Removal procedure

1. Release the PF Motor connector cable from the notches (x2) of the Base Frame.

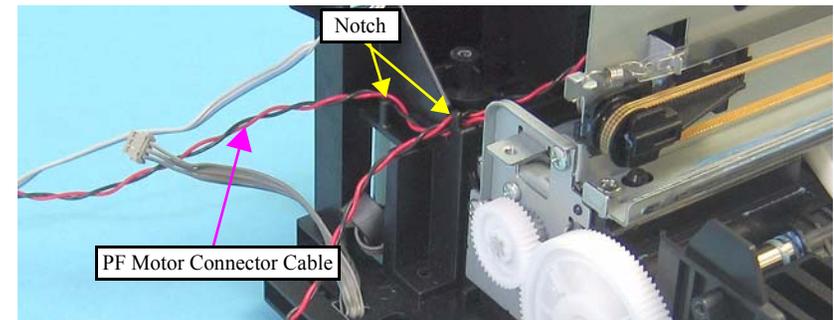


Figure 4-73. Removing the PF Motor Assy (1)

2. Remove the screws (x3) securing the PF Motor Assy and remove the PF Motor Assy.

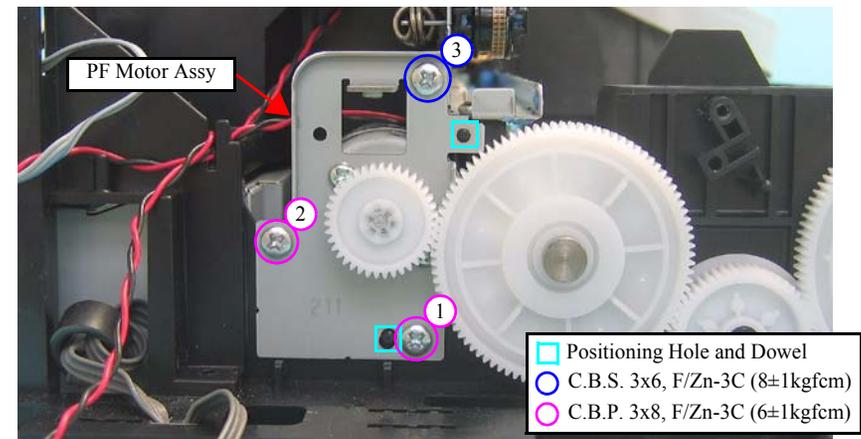


Figure 4-74. Removing the PF Motor Assy (2)

REASSEMBLY



- When installing the PF Motor Assy, pay attention to the following instructions.
 - Insert the dowels (x2) on the Base Frame into the positioning holes (x2) of the PF Motor Assy as shown in [Figure 4-74](#).
 - Route the PF Motor Connector Cable as shown in the figure below.

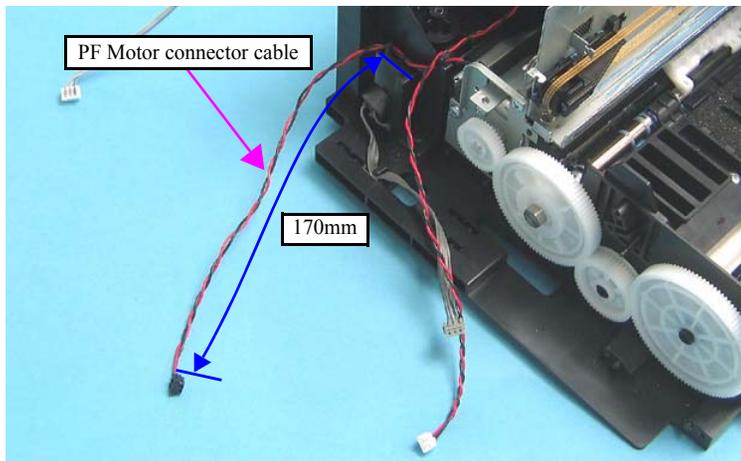


Figure 4-75. Routing the PF Motor Connector Cable

- Tighten the screws in the order given in [Figure 4-74](#).

4.5.12 CR Motor

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/ Card Slot Cover/Main Board Unit/Left Frame/Front Frame/Right Frame
- Removal procedure
 1. Turn the Spur Gear 51.5 to release the Carriage Lock, and move the CR Unit to the center.
(Refer to 4.5.1 Printhead Step1 (p109))



Be careful not to damage the CR Motor cable when releasing the cable from the hooks of the Main Frame.

2. Release the CR Motor cable from the notches (x3) of the Base Frame and the hooks (x3) of the Main Frame, and then pull out the cable through the hole of the Base Frame.

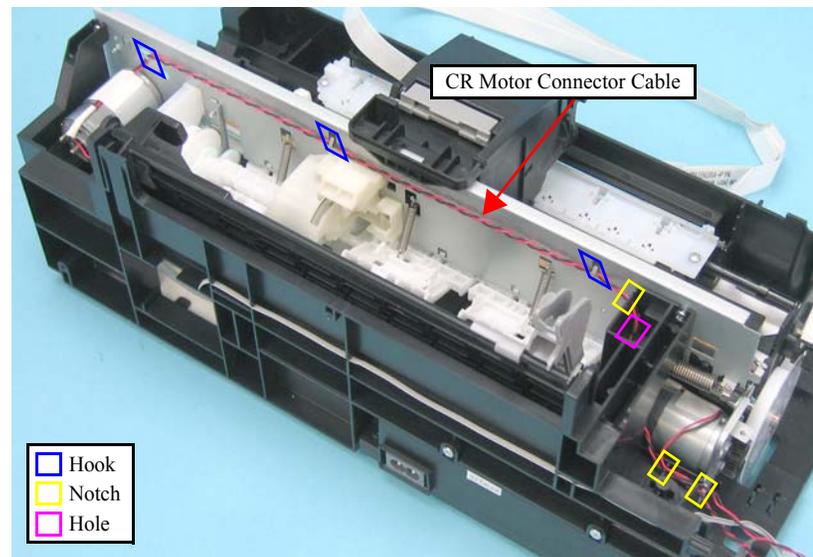


Figure 4-76. Removing the CR Motor (1)

CAUTION



After releasing the Timing Belt, temporarily secure the belt to the Cartridge Cover with a tape or the like so as not to allow the grease to come in contact with the Timing Belt. Contaminating the belt with grease can result in malfunction of the printer.

- Loosen the tension of the Timing Belt by pressing the Driven Pulley Holder in the direction of the arrow as shown in the figure, and release the Timing Belt from the pinion gear of the CR Motor.

CAUTION



Do not damage the pinion gear of the CR Motor.

- Remove the screws (x2) that secure the CR Motor, and remove the CR Motor.

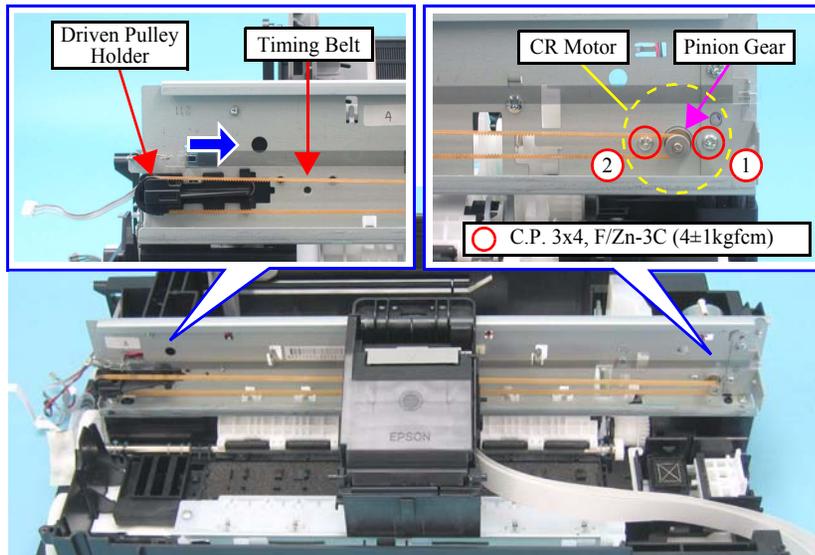


Figure 4-77. Removing the CR Motor (2)

REASSEMBLY



- Be sure to install the CR Motor so that the groove on it faces downward.

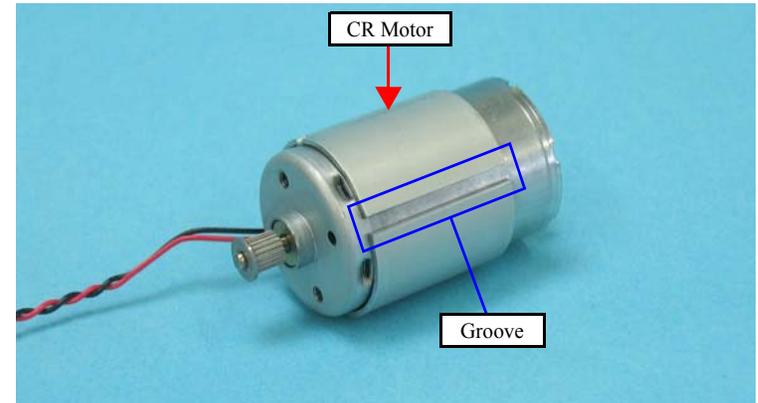


Figure 4-78. CR Motor

- Tighten the screws in the order given in Figure 4-77.
- Make sure that there is no gap between the CR Motor and the Main Frame.

ADJUSTMENT REQUIRED



- Whenever the CR Motor is removed/replaced, the required lubrication must be carried out.
 - Chapter 6 “ MAINTENANCE” (p.163)

4.5.13 Main Frame Assy

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame/Front Frame/Right Frame/CR
Motor/CR Scale/Hopper

**CHECK
POINT**

Main Frame Assy consists of the following parts.

- Main Frame
- CR Unit
- Printhead
- Upper Paper Guide

- Removal procedure

1. Release one end of the Extension Spring from the hook of the Main Frame with longnose pliers, and then remove the spring together with the Driven Pulley Holder.

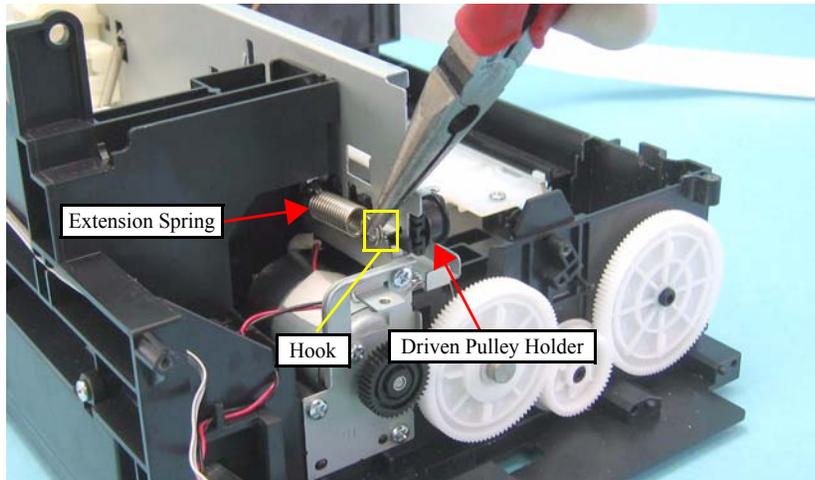


Figure 4-79. Removing the Extension Spring and Driven Pulley Holder

2. Move the CR Unit to the left side of the printer.
3. Remove the screw (x1) that secures the LD Shaft Holder.
4. Move the LD Shaft Holder in the direction of the arrow while holding down its tab with a flathead precision screwdriver, and remove the LD Shaft Holder.

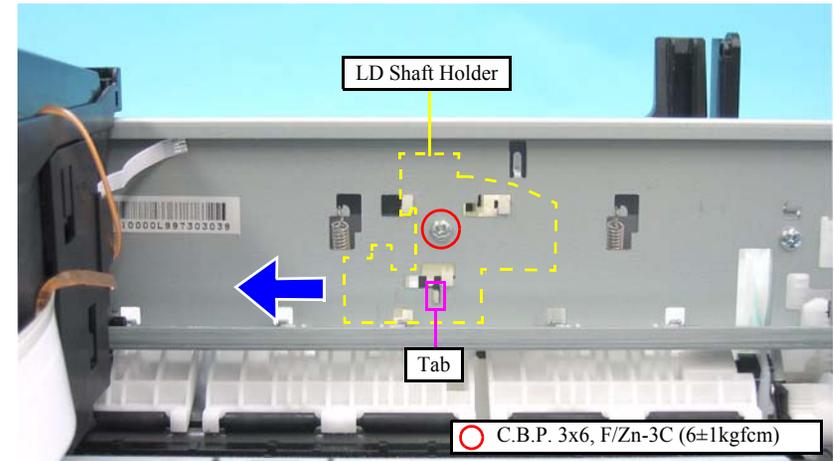


Figure 4-80. Removing the LD Shaft Holder

5. Remove the Extension Springs 10.99 (x3) from each hook of the Main Frame and the Upper Paper Guide.

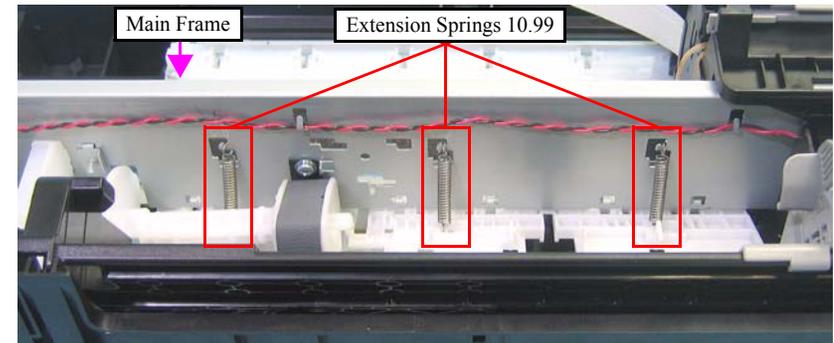


Figure 4-81. Removing the Upper Paper Guide (1)

CAUTION



When laying the Main Frame Assy, make sure to put it as shown in the figure below. Do not lay it with the rollers of the Upper Paper Guide facing downward, or the rollers or the nozzle surface may get damaged.

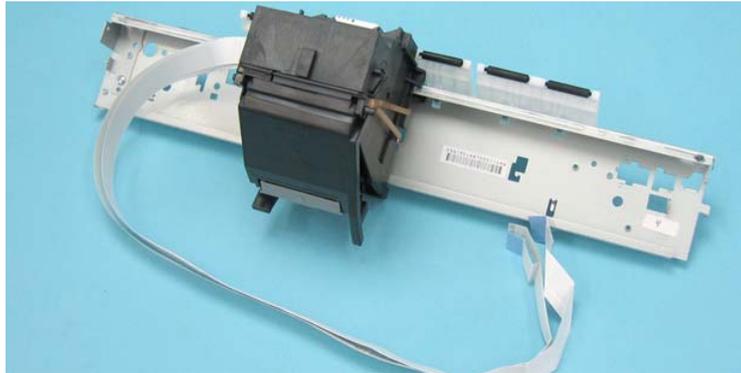


Figure 4-82. Precaution on Handling Main Frame Assy

- Remove the screws (x6) that secure the Main Frame, and remove it while avoiding the LD Roller Shaft so as not to hit the Upper Paper Guide.

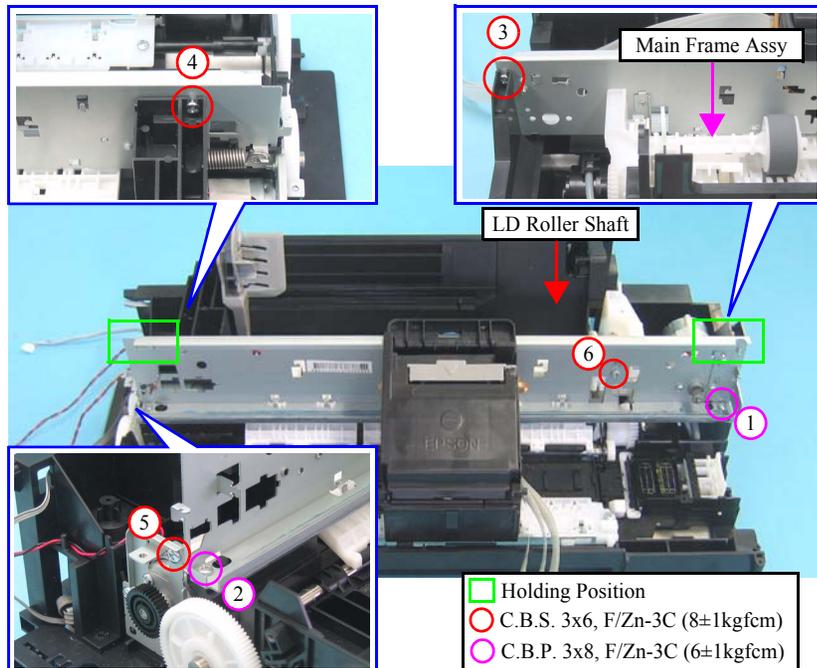


Figure 4-83. Removing the Main Frame Assy

REASSEMBLY



When installing the Main Frame Assy, pay attention to the following instructions.

- Put the right part of the Upper Paper Guide under the LD Roller Shaft as shown in the figure below.
- Align the hook (x1) of the Frame Support with the positioning hole (x1) of the Main Frame.
- Align the hook (x1) of the ASF Unit with the positioning hole (x1) of the Main Frame.
- Align the dowels (x2) of the Base Frame with the positioning holes (x2) of the Main Frame.

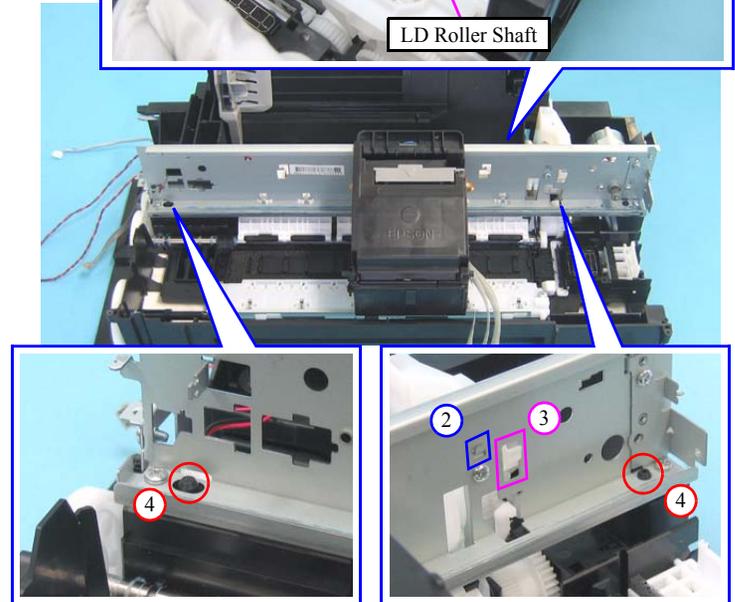
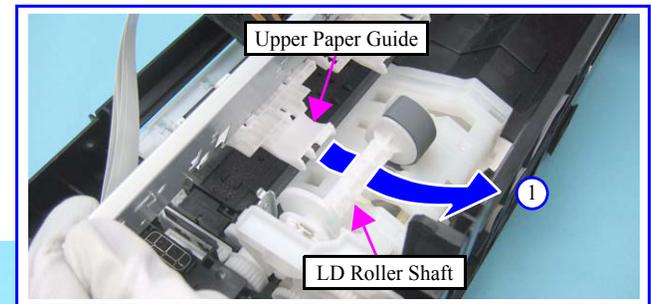


Figure 4-84. Main Frame Assy

REASSEMBLY



- Tighten the screws in the order given in [Figure 4-83](#).
- Follow the steps below to install the Extension Spring 10.99 to the Upper Paper Guide.
 1. Attach the one end of the Extension Spring 10.99 to the hook of the Upper Paper Guide.
 2. Attach the other end of the Extension Spring 10.99 to the hook of the Main Frame with longnose pliers.

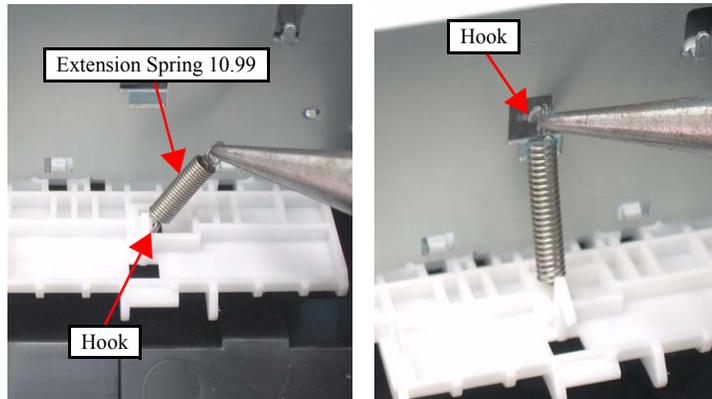


Figure 4-85. Installing the Extension Spring 10.99

4.5.14 CR Unit

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame/Front Frame/Right Frame/CR
Motor/CR Scale/Hopper/Main Frame Assy/Printhead
- Removal procedure
 1. Remove the screw (x1) that secures the CR Scale Holder, and remove the CR Scale Holder.
 2. Move the CR Unit in the direction of the arrow to remove the CR Unit.

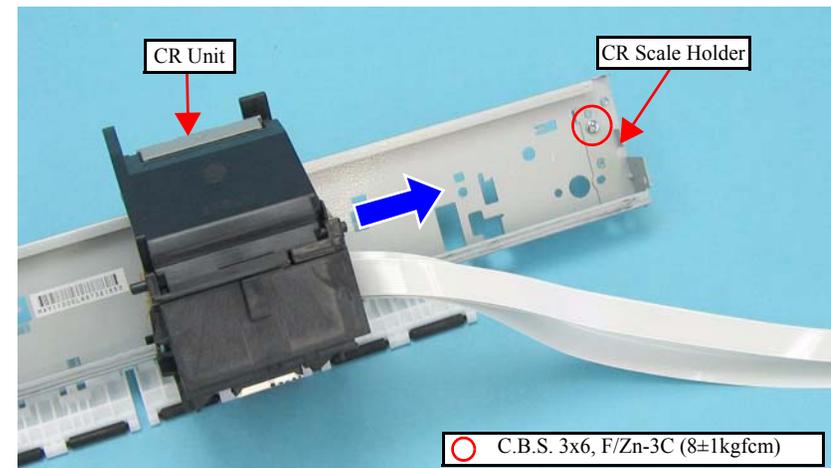


Figure 4-86. Removing the CR Unit (1)

3. Release the Timing Belt from the groove of the CR Unit.

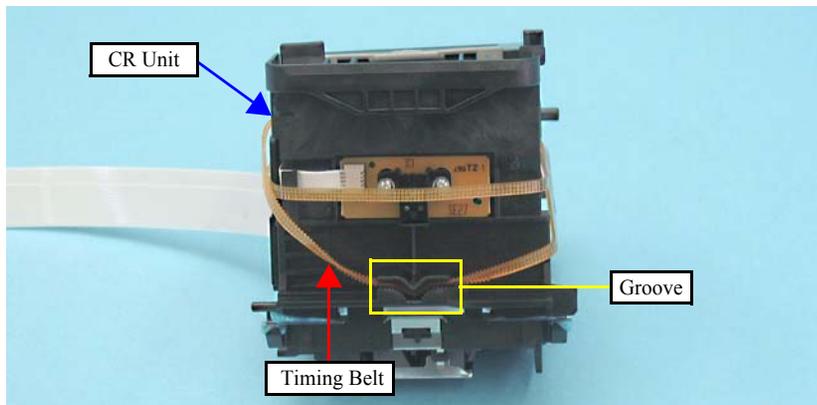


Figure 4-87. Removing the CR Unit (2)



■ Put the part of the Timing Belt toothed on its both sides into the groove of the CR Unit.

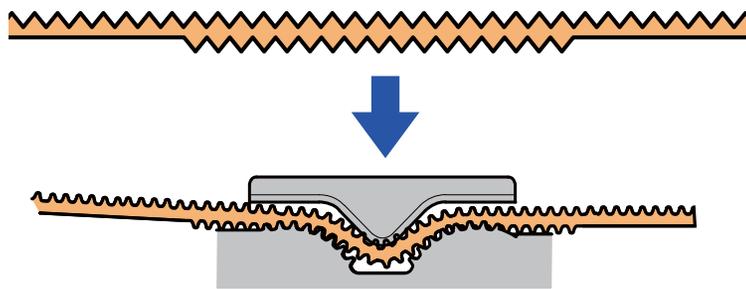


Figure 4-88. Installing the Timing Belt



■ After replacing the CR Unit, be sure to perform the required lubrication.
 • Chapter 6 “ MAINTENANCE” (p.163)

4.5.15 Upper Paper Guide

□ Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
 Card Slot Cover/Main Board Unit/Left Frame/Front Frame/Right Frame/CR
 Motor/CR Scale/Hopper/Main Frame Assy

□ Removal procedure

1. Release the hooks (x6), and remove the Upper Paper Guide.

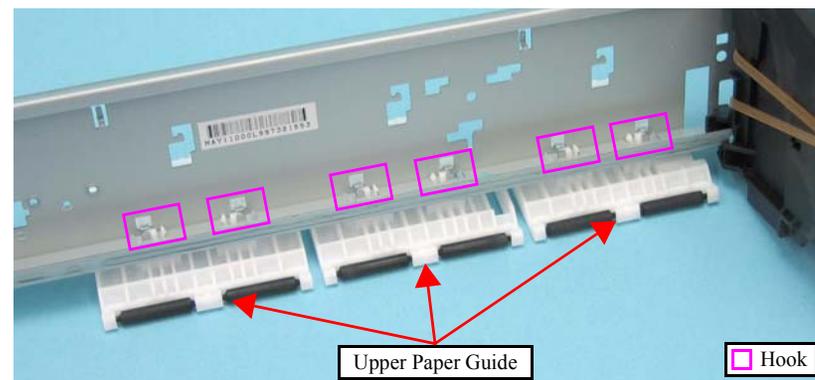


Figure 4-89. Removing the Upper Paper Guide



When installing the Upper Paper Guide, insert the legs (x2) of the antistatic cloth into the holes (x2) of Upper Paper Guide as shown in the figure below.

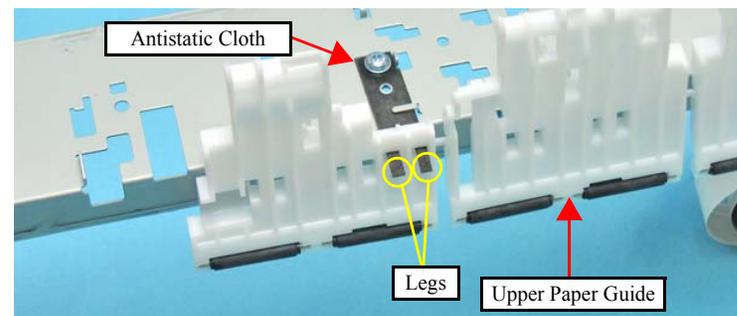


Figure 4-90. Installing the Upper Paper Guide

4.5.16 ASF Unit

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame/Front Frame/Right Frame/CR
Motor/CR Scale/Hopper/Main Frame Assy

- Removal procedure

1. Release the PE Sensor cable from the notches (x6) of the Base Frame and pull out the cable from the hole (x1).

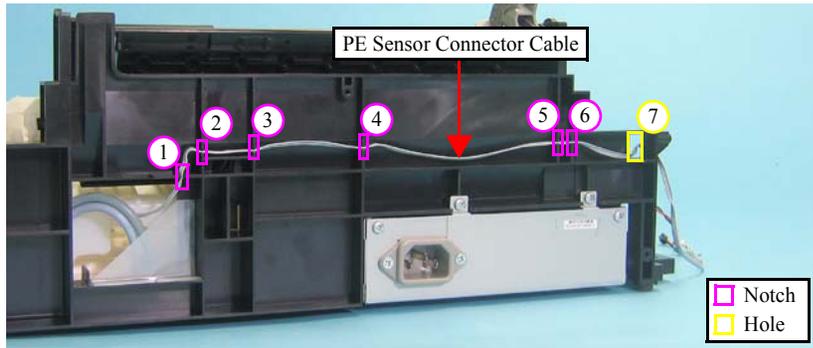


Figure 4-91. Releasing the PE Sensor Connector Cable

CAUTION



When performing the following steps, be cautious not to get injured with the sharp edges of the Frame Support.

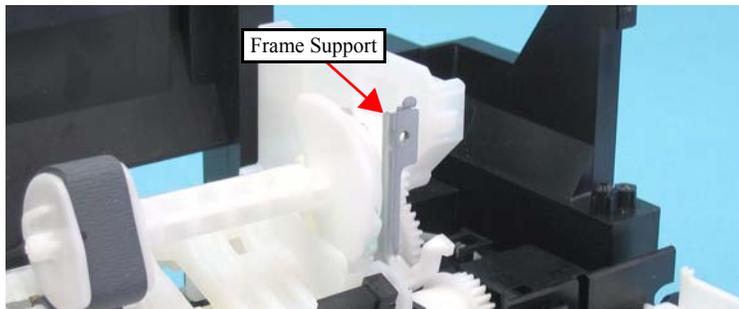


Figure 4-92. Sharp Edges of the Frame Support

2. Remove the screws (x2) that secure the ASF Unit.

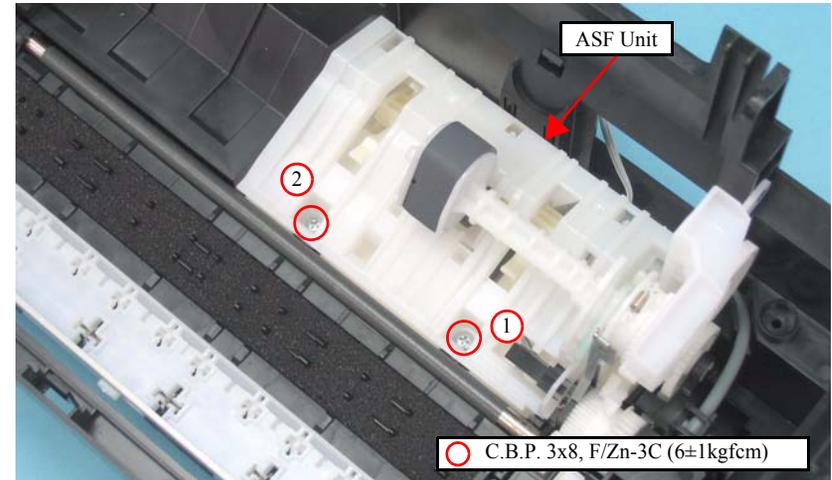


Figure 4-93. Removing the ASF Unit (1)

3. Release the dowel (x1) and dowels (x2) of the Base Frame and the shaft (x1) of the ASF Unit, then remove the ASF Unit.

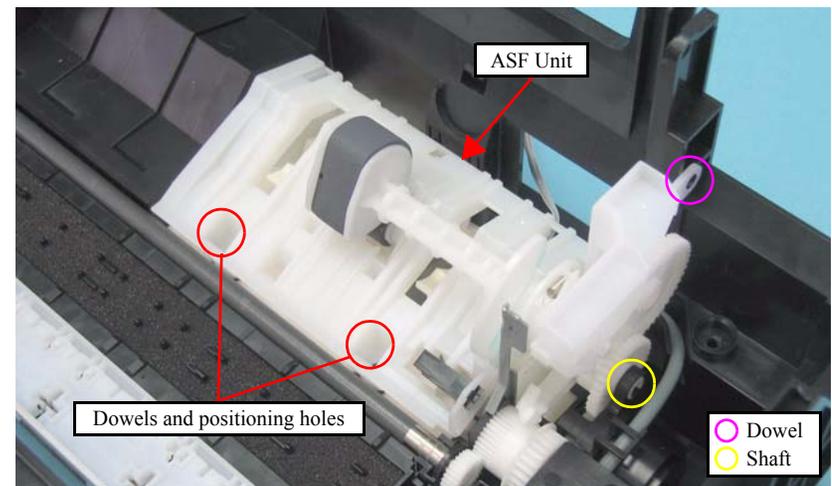


Figure 4-94. Removing the ASF Unit (2)

REASSEMBLY



- When installing the ASF Unit, be sure to align the dowels (x2) of the Base Frame with the positioning holes (x2) of the ASF Unit as shown in [Figure 4-94](#).
- Tighten the screws in the order given in [Figure 4-93](#).
- When routing the PE Sensor cable, pay attention to the following instructions.
 - Route the cable in the order given in [Figure 4-91](#).
 - Make sure to attach the cable with the blue line facing toward the Base Frame.

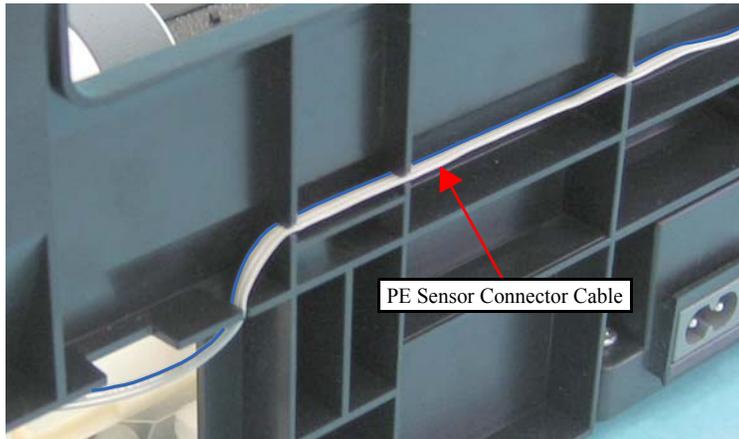


Figure 4-95. Routing PE Sensor Cable

- Check that the cable is tightly routed and there is no slack in it.

ADJUSTMENT
REQUIRED

- After replacing the ASF Unit, be sure to perform the required lubrication.
 - [Chapter 6 “MAINTENANCE” \(p.163\)](#)

4.5.17 Ink System Unit

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame/Front Frame/Right Frame/CR
Motor/CR Scale/Hopper/Main Frame Assy/ASF Unit
- Removal procedure

CAUTION



When disassembling/assembling the Ink System Unit, pay attention to the following instructions.

- Be cautious not to get injured with the sharp edges of the Frame Support.

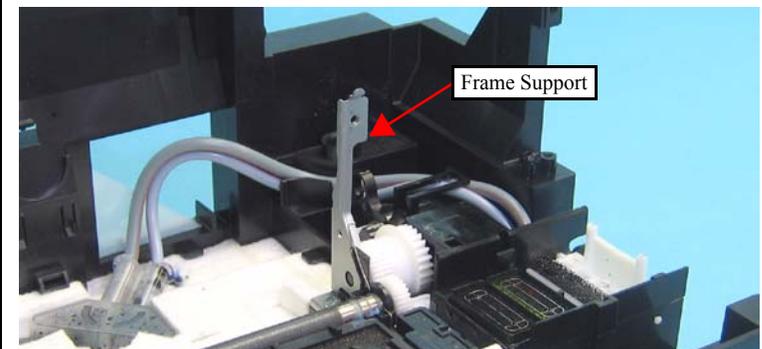


Figure 4-96. Sharp Edges of Frame Support

- Do not touch or damage the Sealing Rubber or the Head Cleaner.
- Mark the connecting point before removing the Ink Tube.

1. Detach the Waste Ink Tube (x2) together with the Tube Stopper from the Waste Ink Cover.
2. Detach the Waste Ink Tube (x2) from the groove of the Base Frame.

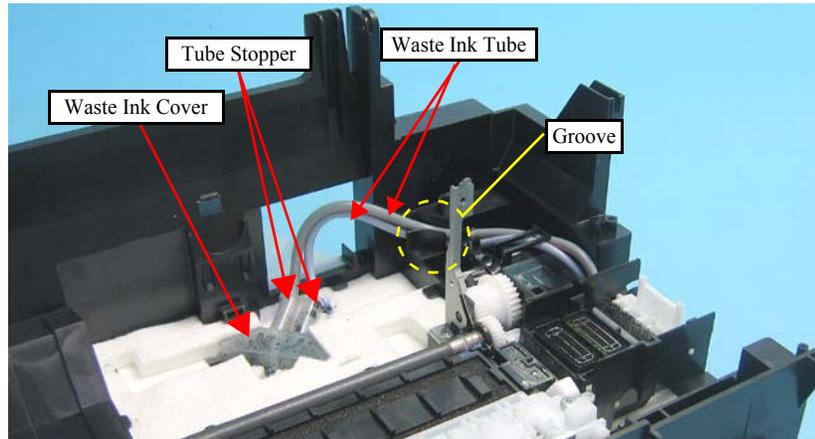


Figure 4-97. Detaching Waste Ink Tube

3. Remove the screw (x1) that secures the Ink System Unit.
4. Slide the Ink System Unit in the direction of the arrow while releasing the hook with a flathead precision screwdriver or a similar tool, and remove the Ink System Unit.

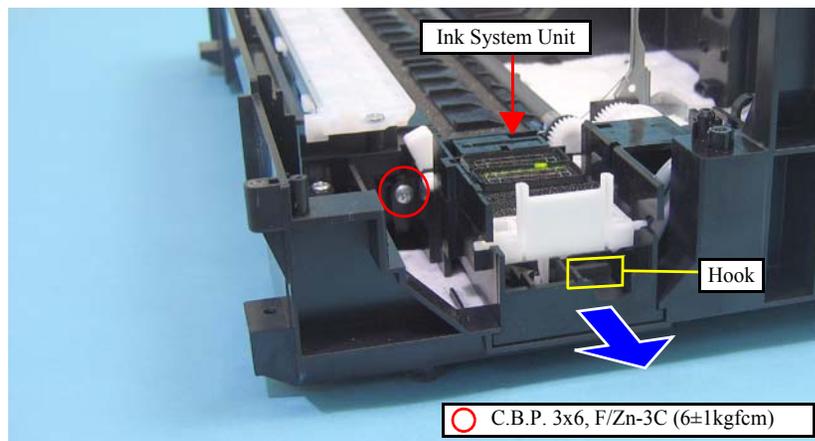


Figure 4-98. Removing the Ink System Unit



- If the Carriage lock lever comes off, reassemble it following the steps below.

1. Attach the one end of the Extension Spring 0.8 to the hook of the Carriage Lock Lever.
2. Attach the other end of the Extension Spring 0.8 to the Ink System Unit.
3. Insert the dowel (x1) of the Carriage Lock Lever into the hole (x1) of the Ink System Unit.

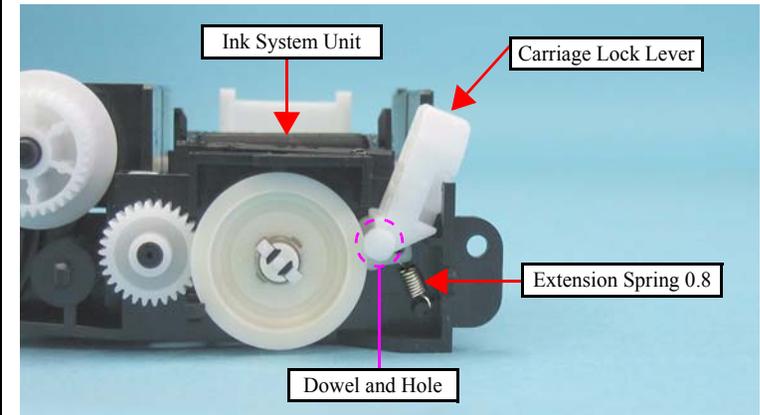


Figure 4-99. Installing the Carriage Lock Lever



- When installing the Ink System Unit, pay attention to the following instructions.
 - Align the dowels (x3) of the Ink System Unit with the positioning holes (x3) of the Base Frame.

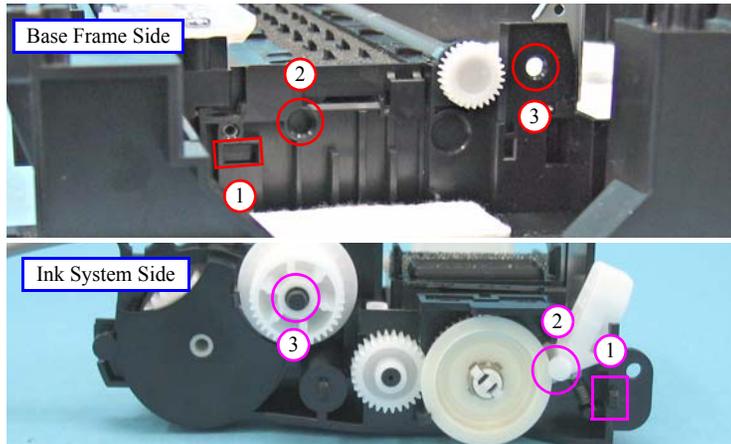


Figure 4-100. Installing the Ink System Unit (1)

- Align the ribs (x2) of the Ink System Unit with the grooves (x2) of the Base Frame.

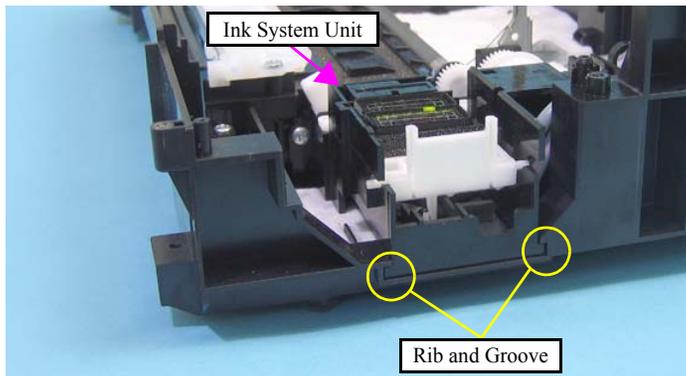


Figure 4-101. Installing the Ink System Unit (2)

- Place the tube with a red line to the rear as shown below, and route the waste ink tubes (x2) without any twisting.

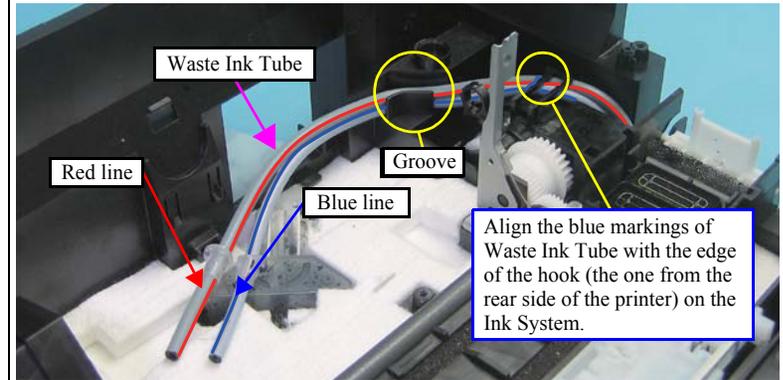


Figure 4-102. Routing the Waste Ink Tube

- Attach the Tube Stopper to the Waste Ink Tube as shown in the figure below, and insert them into the Waste Ink Cover.

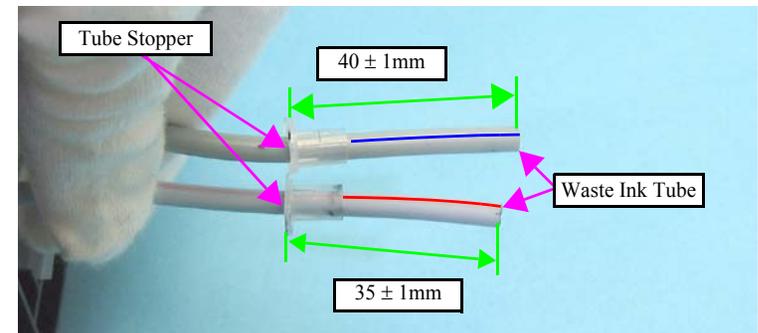


Figure 4-103. Installing the Waste Ink Tube

4.5.18 Front Paper Guide

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame/Front Frame/Right Frame/CR
Motor/CR Scale/Hopper/Main Frame Assy/ASF Unit/Ink System Unit/Star Wheel
Holder Assy/EJ Roller

- Removal procedure



When removing the Front Paper Guide, be cautious not to damage the ribs on the upper surface of the Front Paper Guide.

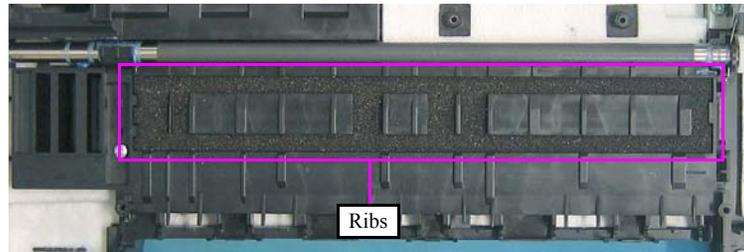


Figure 4-104. Ribs of the Front Paper Guide

1. Remove the screws (x2) that secure the Front Paper Guide.

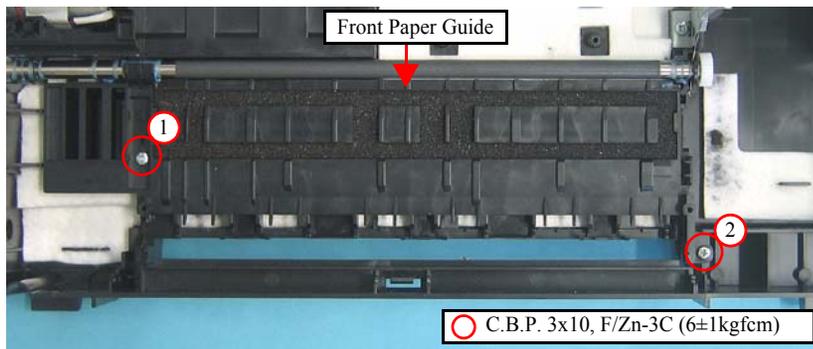


Figure 4-105. Removing the Front Paper Guide (1)

2. Release the hook (x1) of the Front Paper Guide, and remove the Front Paper Guide.

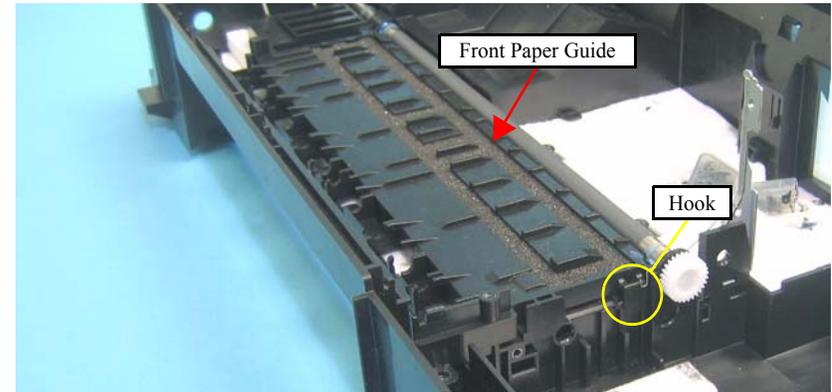


Figure 4-106. Removing the Front Paper Guide (2)



- When installing the Front Paper Guide, be cautious not to damage the PF Roller.
- Install the Front Paper Guide so that the Grounding Spring comes outside of the hook of the Front Paper Guide.
- Confirm that the leg of the Pad Front Paper Guide is not caught between the Front Paper Guide and Base Frame.

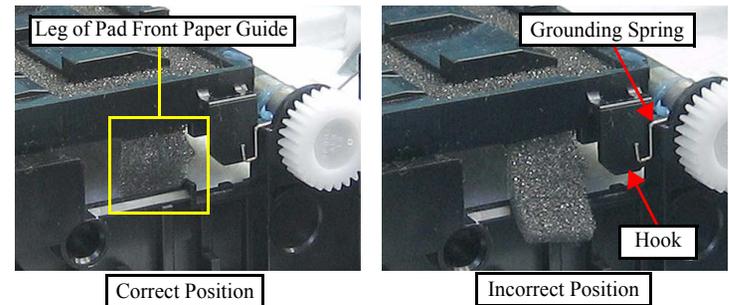


Figure 4-107. Installing the Front Paper Guide

- Tighten the screws in the order given in Figure. 4-105.



- After replacing the Front Paper Guide, be sure to perform the required lubrication.
 - Chapter 6 “ MAINTENANCE” (p.163)

4.5.19 PF Roller

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/
Card Slot Cover/Main Board Unit/Left Frame/Front Frame/Right Frame/CR
Motor/CR Scale/Hopper/Main Frame Assy/ASF Unit/Ink System Unit/Star Wheel
Holder Assy/EJ Roller/Front Paper Guide/PF Encoder Sensor/PF Scale

- Removal procedure



When removing the PF Roller, be cautious not to touch or damage the coated surface of the PF Roller.

1. Remove the Spur Gear 13.5 from the PF Roller with a flathead precision screwdriver or a similar tool.

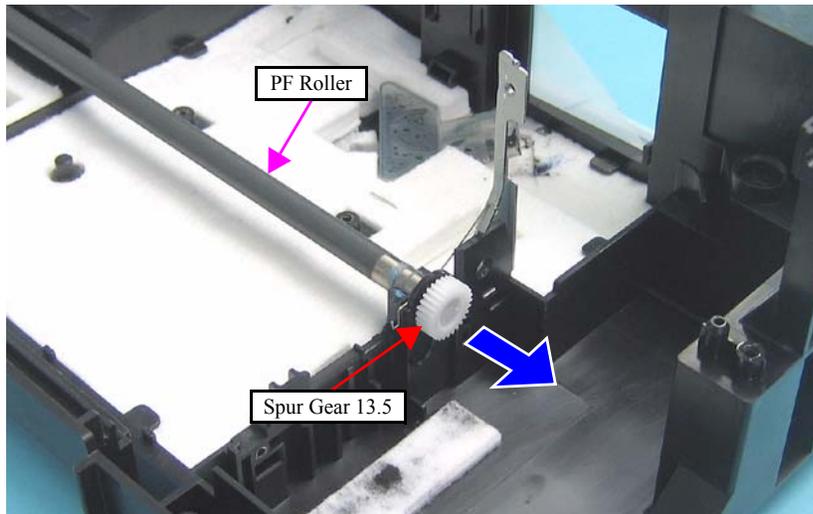


Figure 4-108. Removing the PF Roller (1)

2. Release the PF Roller from the cutout of the Base Frame (Step 2-1), and remove the PF Roller (Step 2-2)

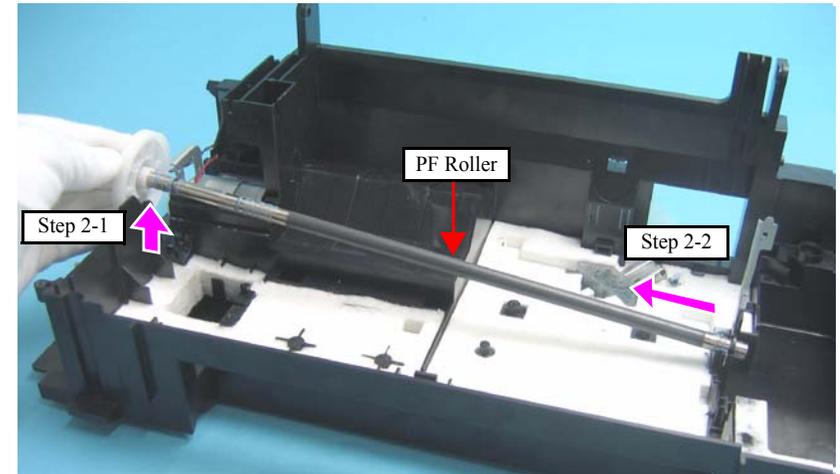


Figure 4-109. Removing the PF Roller (2)



Install the PF Roller after attaching the Grounding Spring as shown in the figure below.

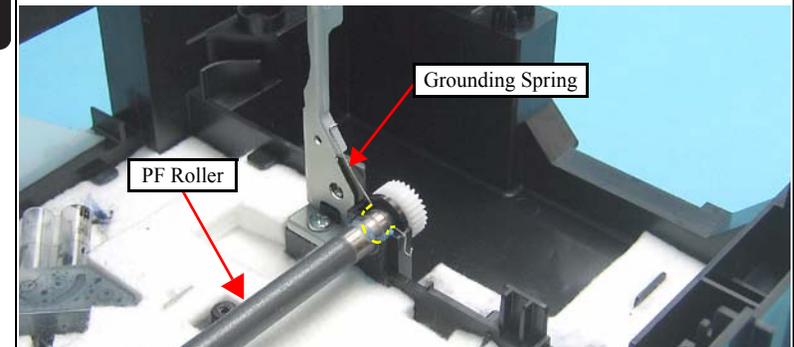


Figure 4-110. Installing the PF Roller

4.5.20 Waste Ink Pads

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/Upper Housing /Hinge/Middle Cover/Printer Mechanism/ Card Slot Cover/Main Board Unit/Left Frame/Front Frame/Right Frame/CR Motor/CR Scale/Hopper/Main Frame Assy/ASF Unit/Ink System Unit/Star Wheel Holder Assy/EJ Roller/Front Paper Guide/PF Encoder Sensor/PF Scale/PF Roller

- Removal procedure

1. Remove the Waste Ink Pads (x6) from the sections indicated with A to C of the Base Frame.

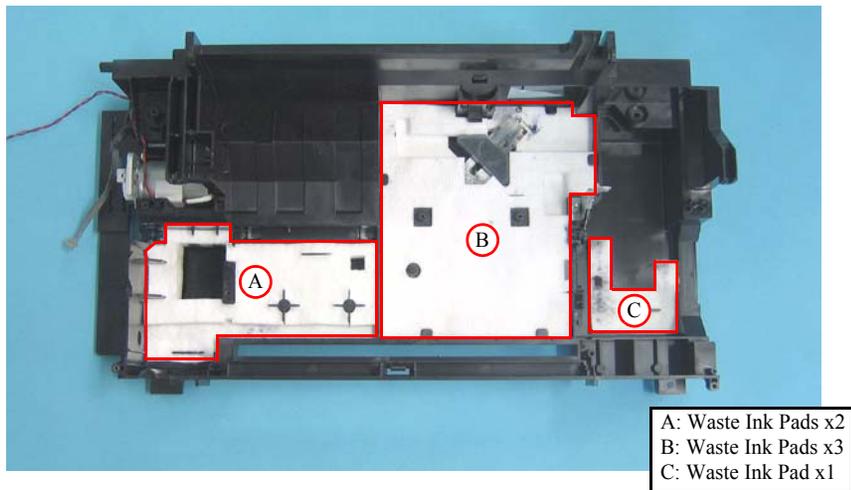


Figure 4-111. Removing the Waste Ink Pads

2. Remove the Waste Ink Cover and the Diffusion Sheet.

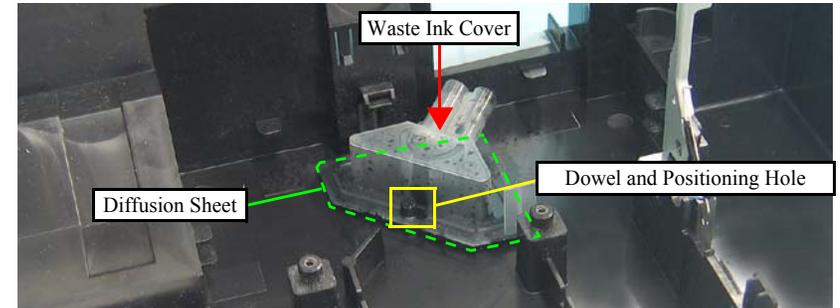


Figure 4-112. Removing the Waste Ink Cover and Diffusion Sheet



- When installing the Diffusion Sheet, Waste Ink Cover, and the Waste Ink Pads (x3) on section B, attach them in the order given in the figure below.

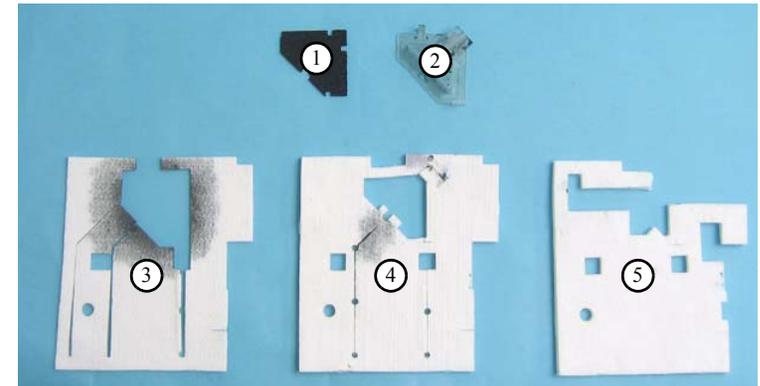


Figure 4-113. Installing the Waste Ink Pads

- When installing the Waste Ink Cover, be sure to align the dowel (x1) of the Base Frame with the positioning hole (x1) of the Waste Ink Cover as shown in [Figure. 4-112](#). Make sure to confirm the cover is properly secured on the Diffusion Sheet without any gap.



Whenever the Waste Ink Pads is removed/replaced, the required adjustments must be carried out.

- [Chapter 5 “ADJUSTMENT” \(p.150\)](#)

4.6 Disassembling the Scanner Unit

4.6.1 Separating the Scanner Unit and the ADF Unit

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit

- Removal procedure

1. Remove the screw (x1) and remove the Scanner Cable Cover.
2. Peel off the acetate tape bundling the ADF Sensor Cable, ADF Motor Cable, Scanner Motor Cable and the grounding wires (x2) together.
3. Release the cables (x5) from the rib (1).
4. Remove the ADF Sensor cable from the rib (2) and separate the cables (x5) into the ADF Motor cable, ADF Sensor cable, Scanner Motor cable and the grounding wires (x2).

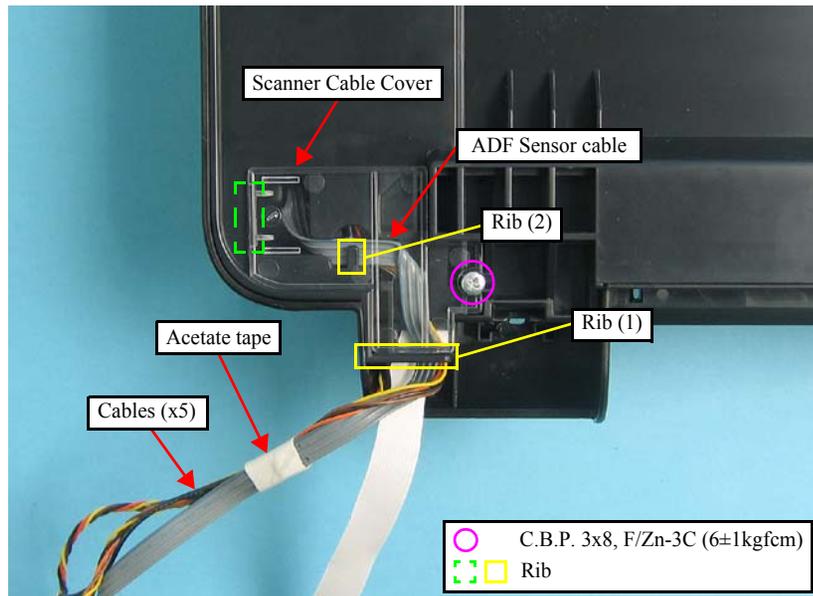


Figure 4-114. Separating the Cables

5. Remove the ferrite core from the ADF Motor cable.

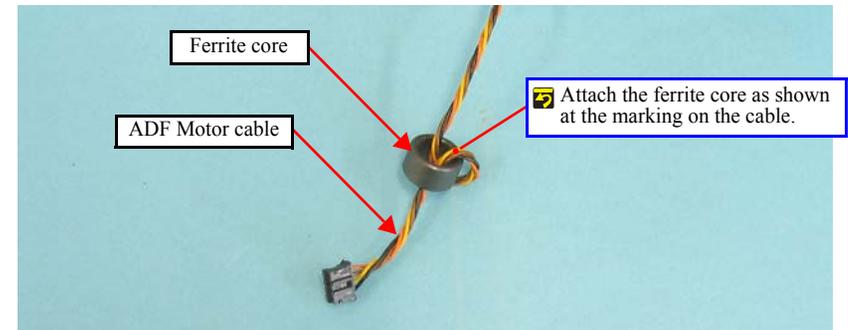


Figure 4-115. Removing the ADF Unit (1)

6. While lifting the ADF Unit, release the hooks (x2) of the Scanner Unit that secure the ADF Hinges (x2) with a flathead precision screwdriver.

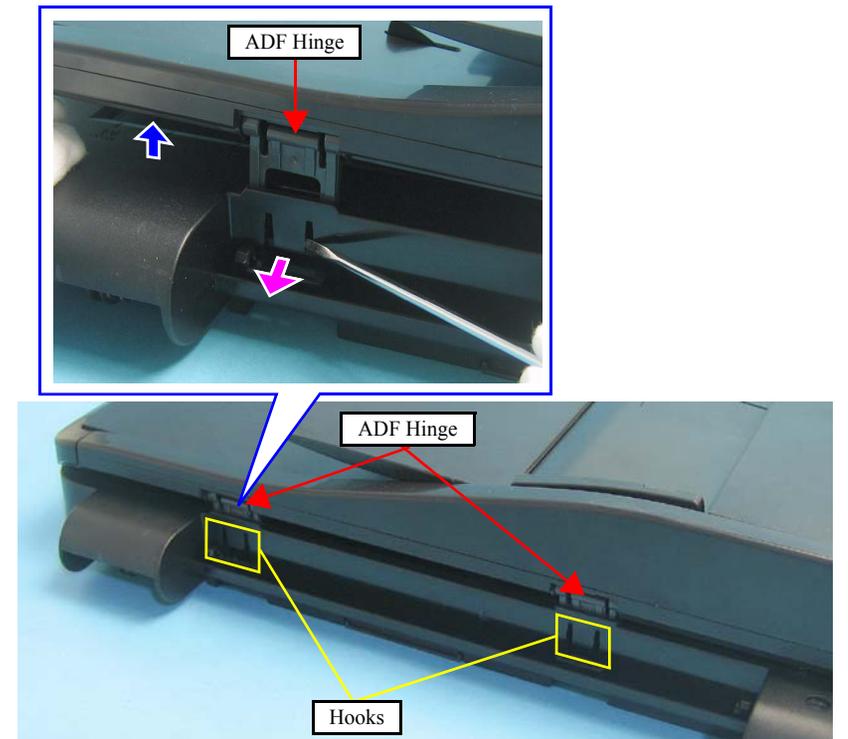


Figure 4-116. Removing the ADF Unit (2)

7. Lift the rear side of the ADF Unit and release the hook (x1) of the ADF Cable Cover from the hole of the Scanner Unit.
8. Pull out the cables of the ADF Unit through the hole of the Scanner Unit, and remove the ADF Unit.

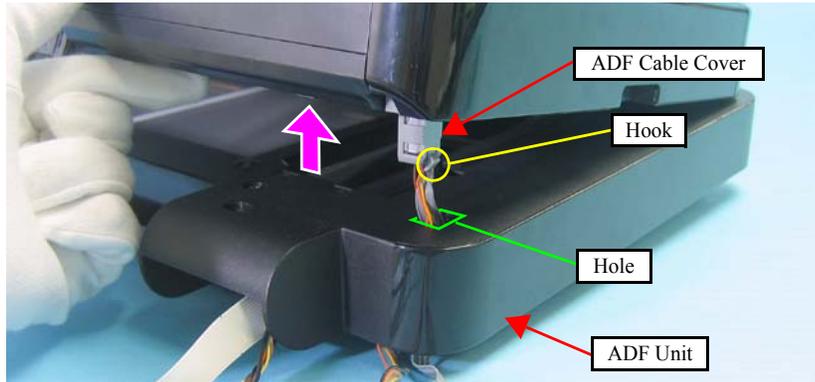


Figure 4-117. Removing the ADF Unit (2)



- Route the ADF Sensor cable and ADF Motor cable as shown in the figure below before installing the Scanner Cable Cover.

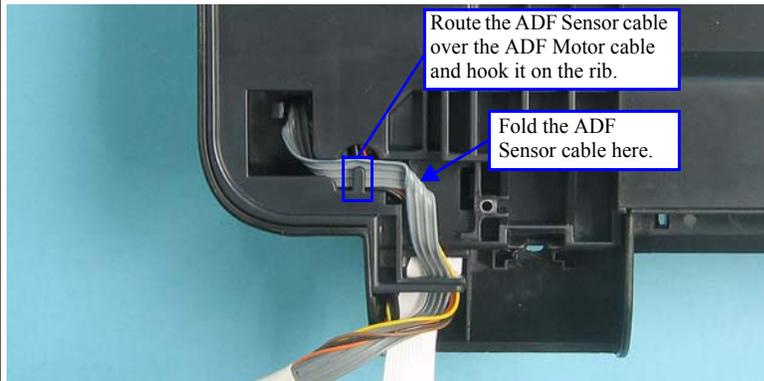


Figure 4-118. Routing the ADF Cable

- When installing the Scanner Cable Cover, first insert the rib of the Scanner Cable Cover shown in Figure. 4-114 to the Lower Scanner Housing, then tighten the screw.

4.6.2 Upper Scanner Housing

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit
- Removal procedure



- Following work should be performed in a room where there is a little dust. A clean room or a clean bench would be preferable.
- Do not scratch the Rod Lens Array when removing the CIS Assy.

1. Remove the screws (x7) securing the Upper Scanner Housing and remove the Upper Scanner Housing.

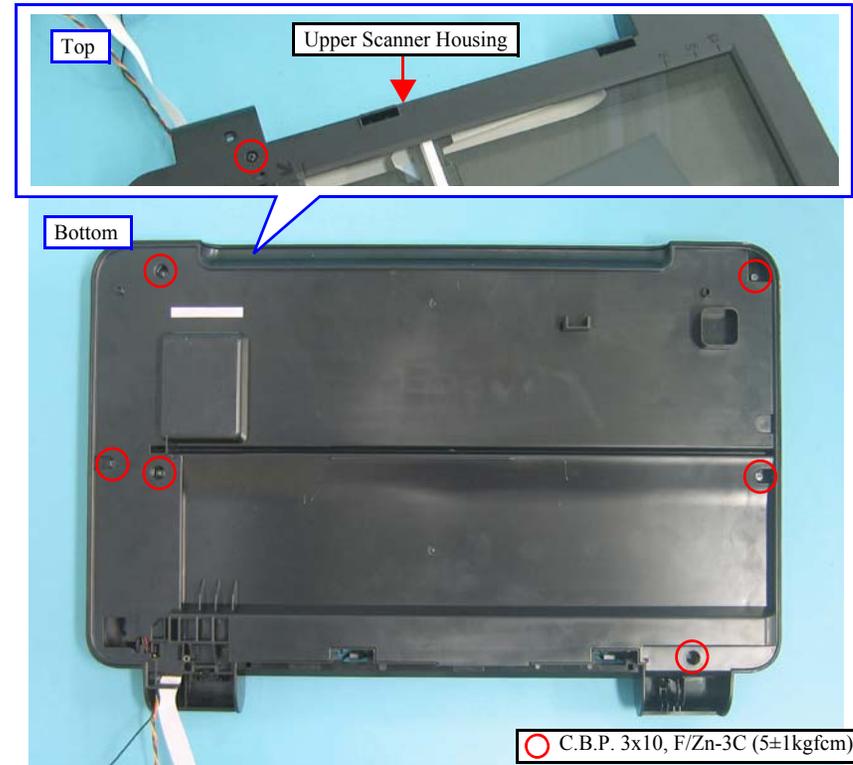


Figure 4-119. Removing the Upper Scanner Housing (1)

REASSEMBLY



Check the following points when installing the Upper Scanner Housing.

- Route the grounding wire to the position as shown in the figure below.

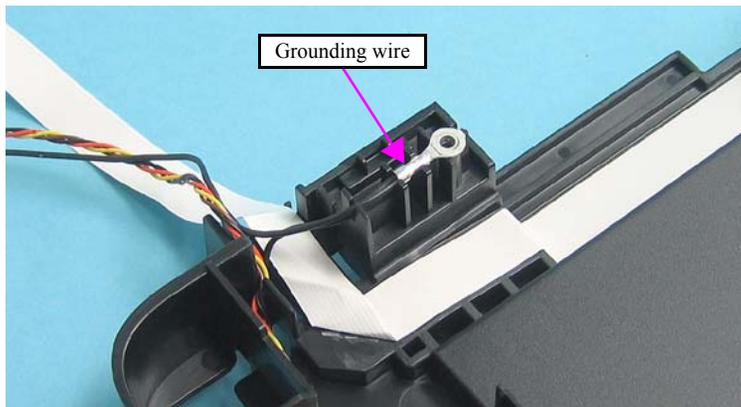


Figure 4-120. Setting position of the grounding wire

- When installing the Upper Scanner Housing, align the inside of the ribs (x3) on the Upper Scanner Housing with the ribs (x3) on the Lower Scanner Housing as shown below.

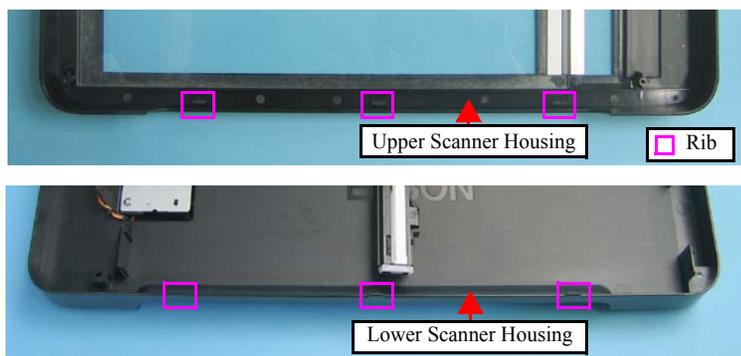


Figure 4-121. Installing the Upper Scanner Housing

4.6.3 Scanner Carriage Unit

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/Upper Scanner Housing
- Removal procedure

CAUTION



Do not scratch the Rod Lens Array when removing the Scanner Carriage Unit.

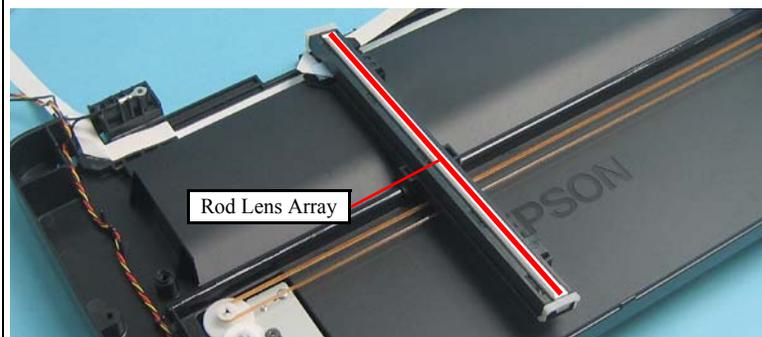


Figure 4-122. Handling the Scanner Carriage Unit

1. Move the Scanner Carriage Unit to the center.

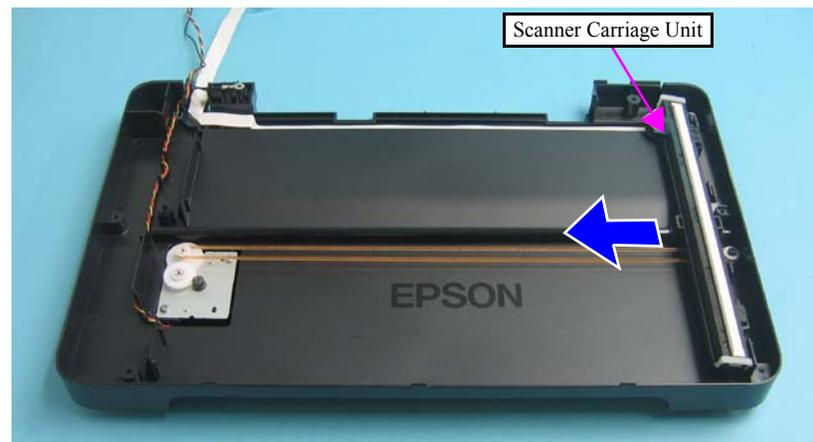


Figure 4-123. Moving the Scanner Carriage Unit

CAUTION



Take extra care not to contaminate the Scanner Timing Belt with grease on the rail of the Lower Scanner Housing.

- Remove the Driven Pulley from the Lower Scanner Housing and remove the Scanner Timing Belt from the Combination Gear 22.8, 7.762 and Driven Pulley.

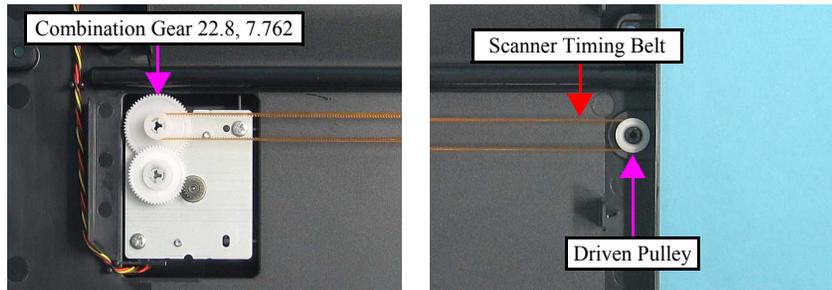


Figure 4-124. Removing the Scanner Carriage Unit (1)

CAUTION



Be careful not to damage the Scanner Carriage FFC that is secured with the double-sided tape (x3).

- Peel off the Scanner Carriage FFC from the Lower Scanner Housing and remove the Scanner Carriage Unit.

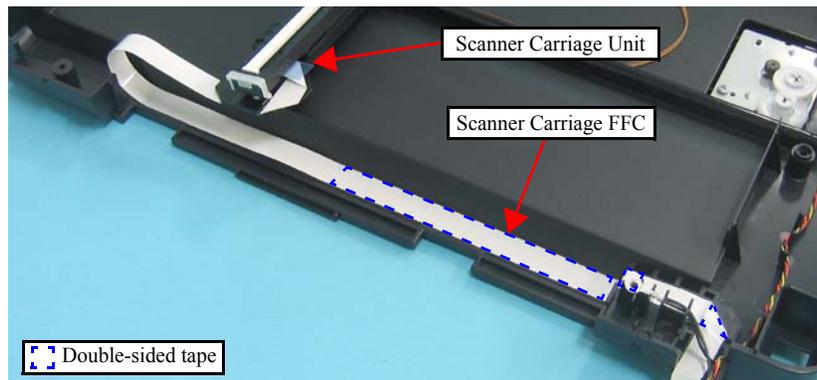


Figure 4-125. Removing the Scanner Carriage Unit (2)

4.6.4 Scanner Motor Unit

- Parts/Components need to be removed in advance
Document Cover/ASF Cover/Scanner Unit/Upper Scanner Housing

Removal procedure

- Move the Scanner Carriage Unit to the center.
(Refer to 4.6.3 Scanner Carriage Unit Step1 (p137))
- Release the Driven Pulley from the Lower Scanner Housing, and release the Scanner Timing Belt from the Combination Gear 22.8, 7.762 and the Driven Pulley.
(Refer to 4.6.3 Scanner Carriage Unit Step2 (p138))
- Release the Scanner Motor cable and the grounding wire from the grooves   (x2) and the ribs  (x6) of the Lower Scanner Housing.
- Remove the two screws that secure the Scanner Motor Unit and remove the Scanner Motor Unit.

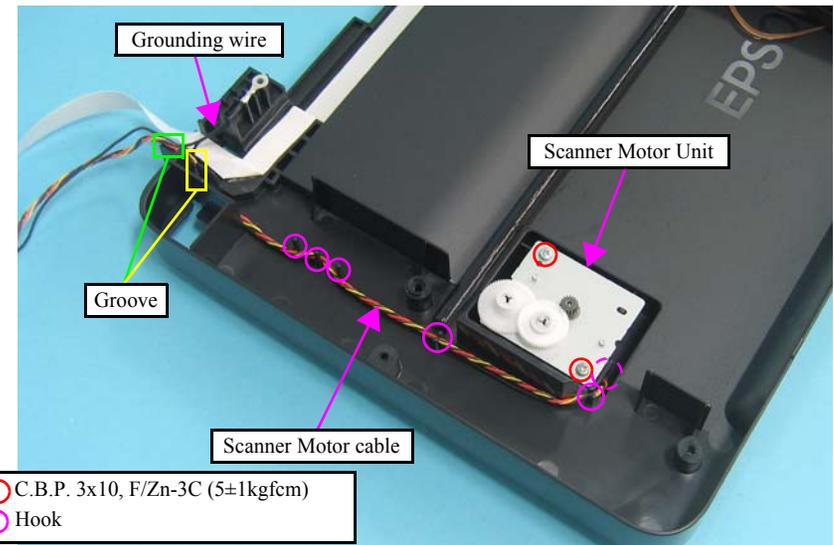


Figure 4-126. Removing the Scanner Motor Unit (1)

5. Remove the screw that secures the grounding wire to the Scanner Motor Unit, and remove the grounding wire.

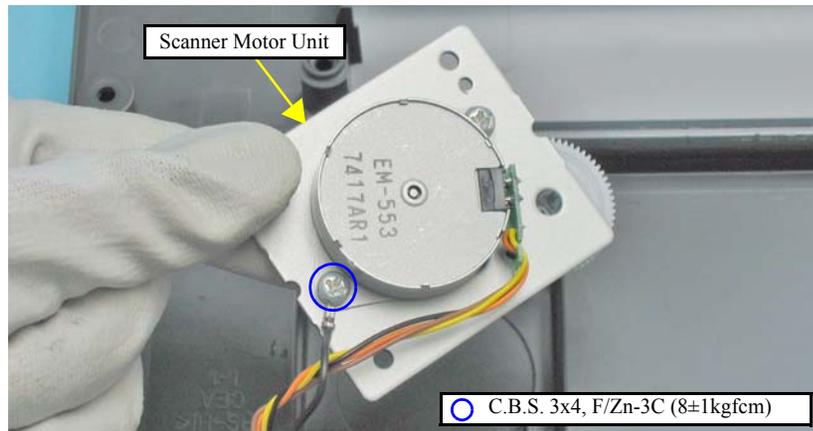


Figure 4-127. Removing the Scanner Motor Unit (2)



When installing the Scanner Motor Unit, route the Scanner Motor Cable and the grounding wire as shown in [Figure 4-126](#).

4.7 Disassembling the ADF Unit

4.7.1 ADF Hinge

- Parts/Components need to be removed in advance: Scanner Unit/ADF Unit
- Removal procedure
 1. Release the dowels (x2 each) that secure the ADF Hinges, and remove the ADF Hinges from the ADF Base.

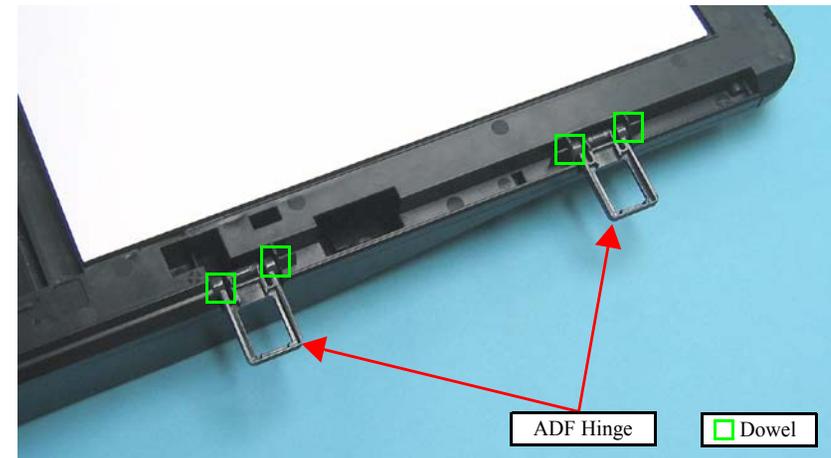


Figure 4-128. Removing the ADF Hinges

4.7.2 ADF Cover Assy/ADF Left Cover

- Parts/Components need to be removed in advance: Scanner Unit/ADF Unit
- Removal procedure
 1. Open the ADF Cover Assy.
 2. Release the dowels (x2) that secure the ADF Cover Assy, and remove the ADF Cover Assy.

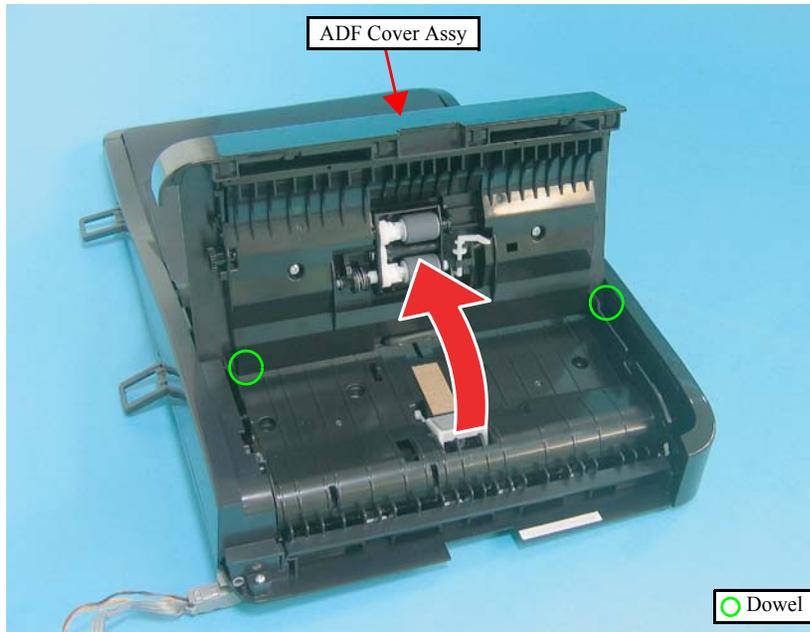


Figure 4-129. Removing the ADF Cover Assy

3. Release the hooks (x4) of the ADF Left Cover securing the ADF Left Cover and the hooks (x2) of the ADF Cover Assy, and remove the ADF Left Cover from the ADF Cover Assy.

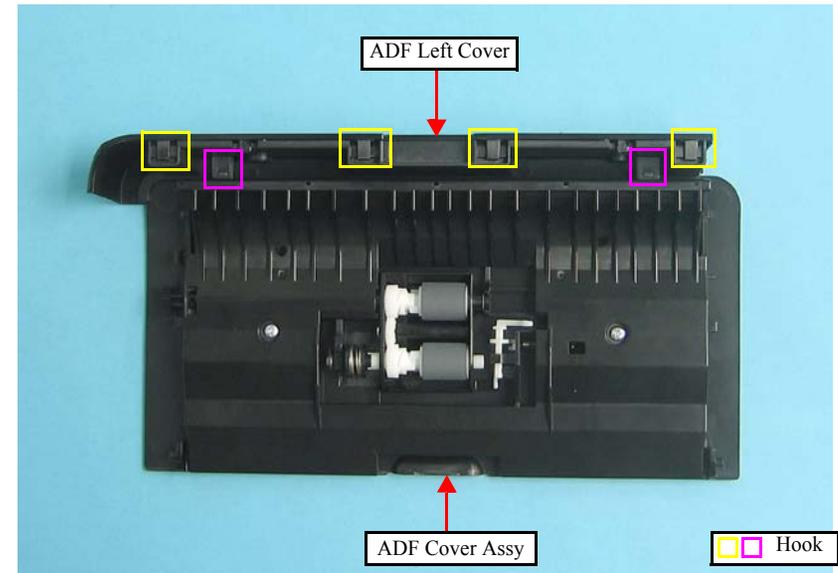


Figure 4-130. Removing the ADF Left Cover

4.7.3 ADF LD Frame Assy

- Parts/Components need to be removed in advance: Scanner Unit/ADF Unit
Scanner Unit/ADF Unit/ADF Cover Assy
- Removal procedure
 1. Remove the screws (x4) securing the ADF LD Frame Assy, and remove the ADF LD Frame Assy from the ADF Cover Assy.

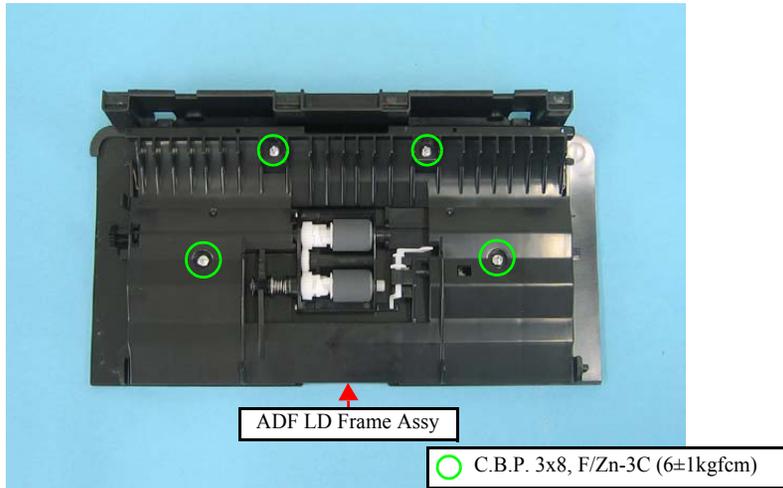


Figure 4-131. Removing the ADF LD Frame Assy

4.7.4 ADF Right Cover/ADF Rear Cover

- Parts/Components need to be removed in advance: Scanner Unit/ADF Unit
Scanner Unit/ADF Unit/ADF Cover Assy
- Removal procedure
 1. Release the ribs (x3) securing the ADF Right Cover and remove the ADF Right Cover from the ADF Base Assy.

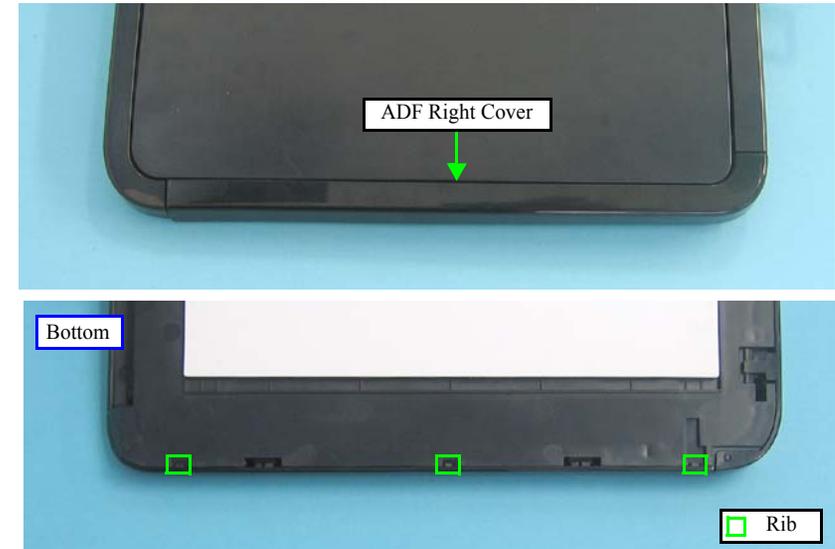


Figure 4-132. Removing the ADF Right Cover

2. Remove the screws (x2) securing the ADF Rear Cover.
3. Release the hooks (x5) securing the ADF Rear Cover, and remove the ADF Rear Cover from the ADF Base Assy.

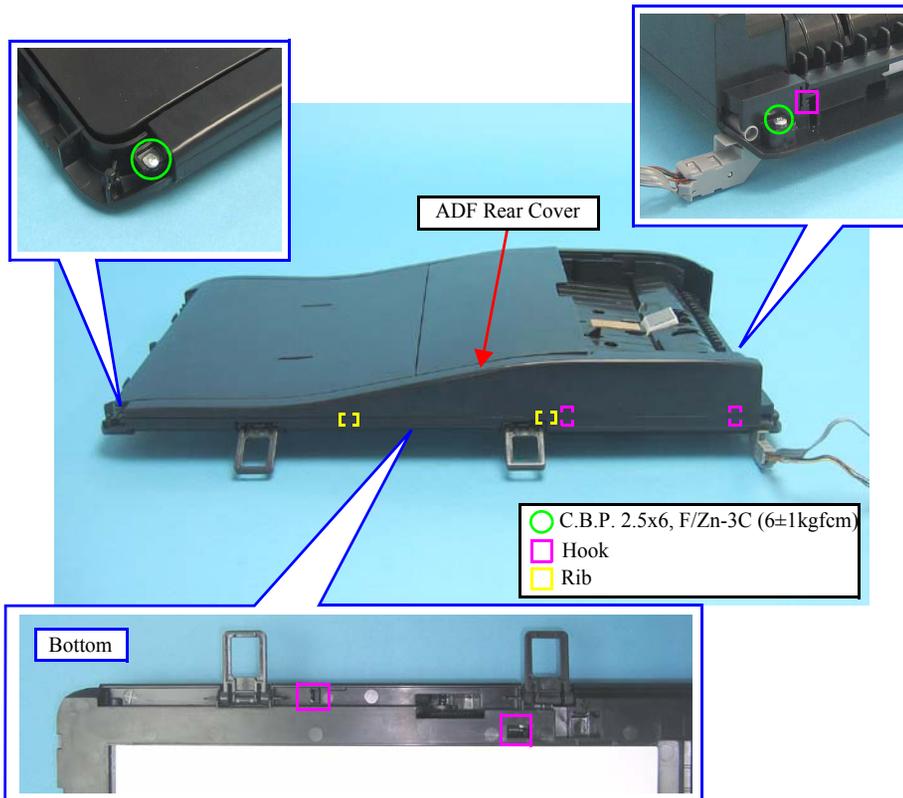


Figure 4-133. Removing the ADF Rear Cover



- When installing the ADF Right Cover, align the ribs (x3) shown in Figure 4-132, the positioning holes as shown below, with the dowels (x2), and hooks (x2).



Figure 4-134. Installing the ADF Right Cover

- When installing the ADF Rear Cover, align the hooks (x5) and the rib (x2) shown in Figure 4-133 with the positioning holes and dowels (x2) as shown below.

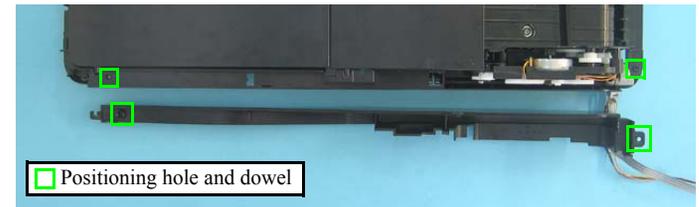


Figure 4-135. Installing the ADF Rear Cover

4.7.5 ADF Cover Stacker/ADF Document Support Cover

- Parts/Components need to be removed in advance: Scanner Unit/ADF Unit
Scanner Unit/ADF Unit/ADF Cover Assy/ADF Right Cover/ADF Rear Cover
- Removal procedure
 1. Release the dowels (x2) securing the ADF Cover Stacker, and remove the ADF Cover Stacker from the ADF Base Assy.

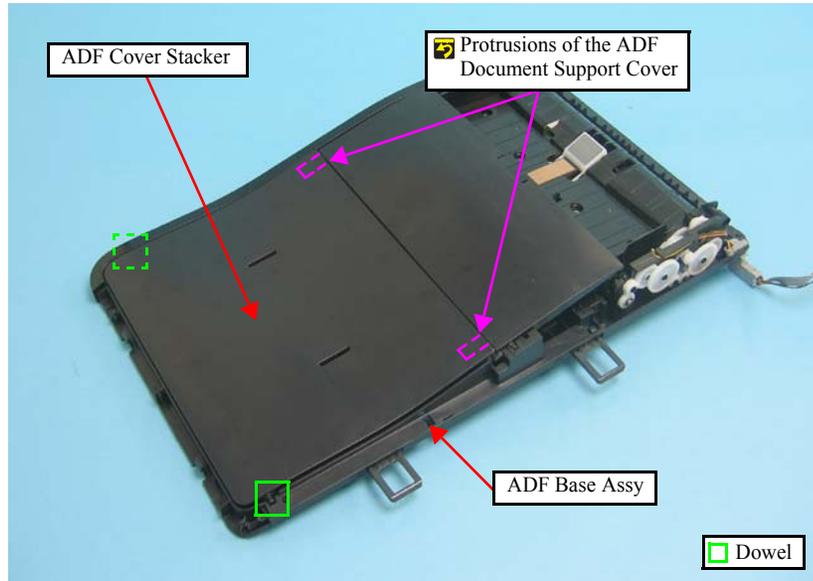


Figure 4-136. Removing the ADF Cover Stacker

2. Release the dowels (x2) securing the ADF Document Support Cover, and remove the ADF Document Support Cover from the ADF Base Assy.

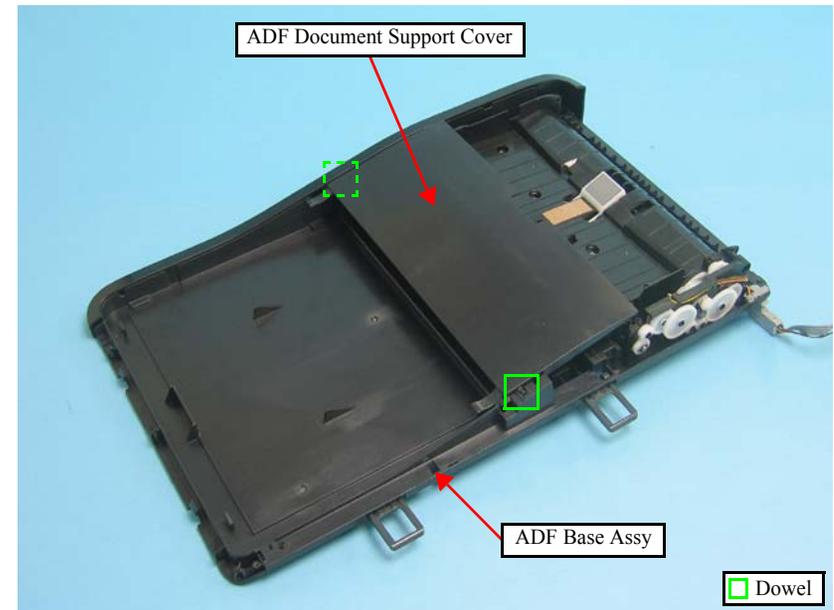


Figure 4-137. Removing the ADF Document Support Cover



When installing the ADF Cover Stacker, set the protrusions (x2) of the ADF Document Support Cover shown in [Figure 4-136](#) under the ADF Cover Stacker.

4.7.6 ADF Front Cover

- Parts/Components need to be removed in advance: Scanner Unit/ADF Unit
Scanner Unit/ADF Unit/ADF Cover Assy/ADF Right Cover/ADF Rear Cover/
ADF Cover Stacker/ADF Document Support Cover
- Removal procedure
 1. Release the dowels (x2) and the hooks (x4) securing the ADF Front Cover.

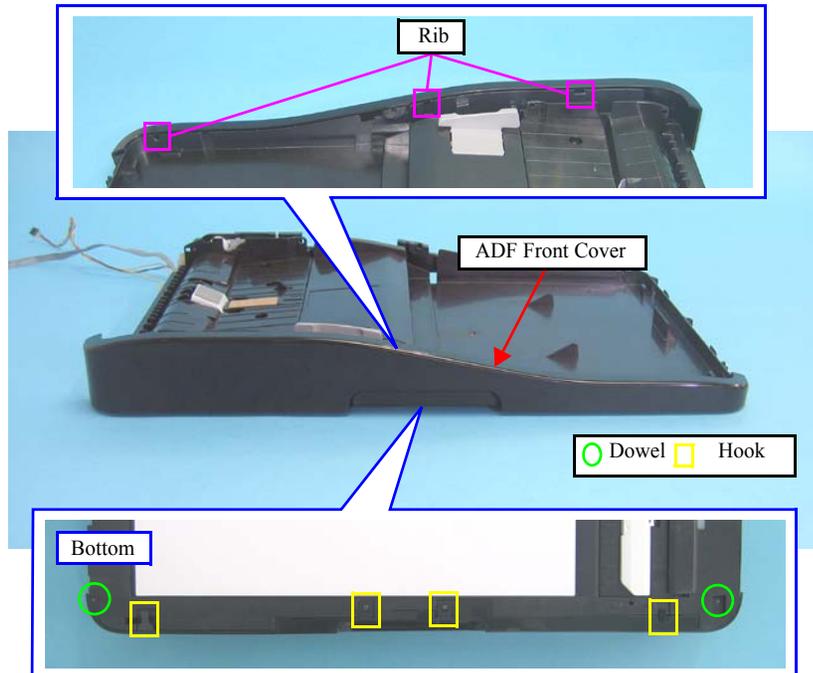


Figure 4-138. Removing the ADF Front Cover (1)



Be cautious not to damage the ribs (x3) of the ADF Front Cover shown in [Figure 4-138](#) when removing the ADF Front Cover.

2. Remove the ADF Front Cover in the direction of the arrow.

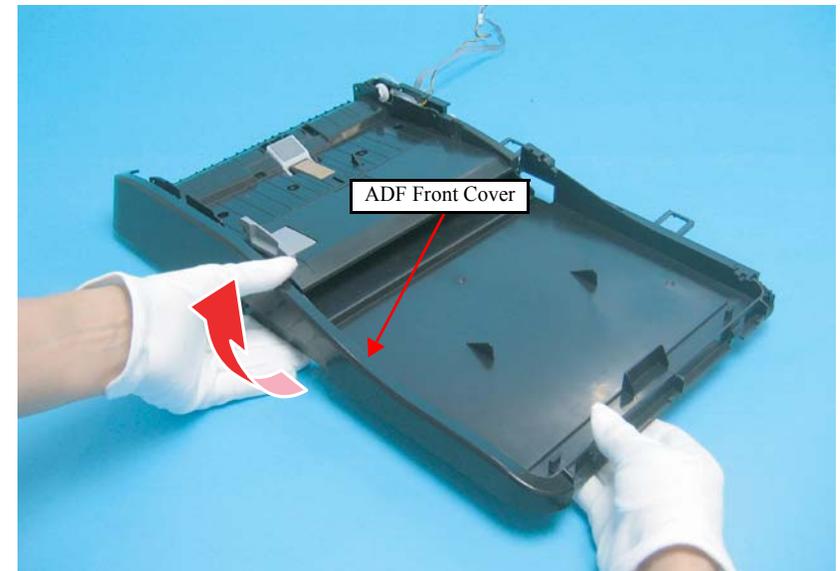


Figure 4-139. Removing the ADF Front Cover (2)



When installing the ADF Front Cover, align the upper ribs (x3) shown in [Figure 4-138](#), then secure the cover with the dowels (x2) and the hooks (x4) at the bottom.

4.7.7 ADF Document Support Assy

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/ADF Cover Assy/ADF Right Cover/ADF Rear Cover/
ADF Cover Stacker/ADF Document Support Cover/ADF Front Cover

- Removal procedure

1. Release the hooks (x2) securing the ADF Document Support Assy.
2. Release the dowels (x2) securing the ADF Document Support Assy and remove the ADF Document Support Assy from the ADF Base Assy.

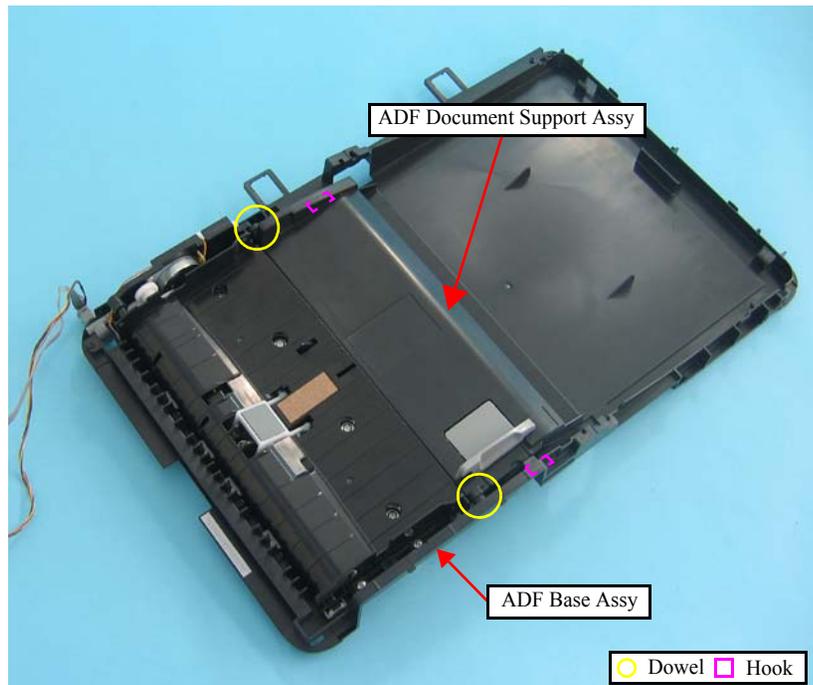


Figure 4-140. Removing the ADF Document Support Assy

4.7.8 ADF Frame Unit

- Parts/Components need to be removed in advance

Scanner Unit/ADF Unit/ADF Cover Assy/ADF Right Cover/ADF Rear Cover/
ADF Cover Stacker/ADF Document Support Cover/ADF Front Cover/ADF
Document Support Assy

- Removal procedure

1. Release the ADF Motor cable and grounding wire from the rib of the ADF Frame Unit.
2. Remove the ADF Cable Cover from the hole of the ADF Base Assy, and pull out the ADF Sensor cable, ADF Motor cable and grounding wire through the hole of the ADF Base Assy.

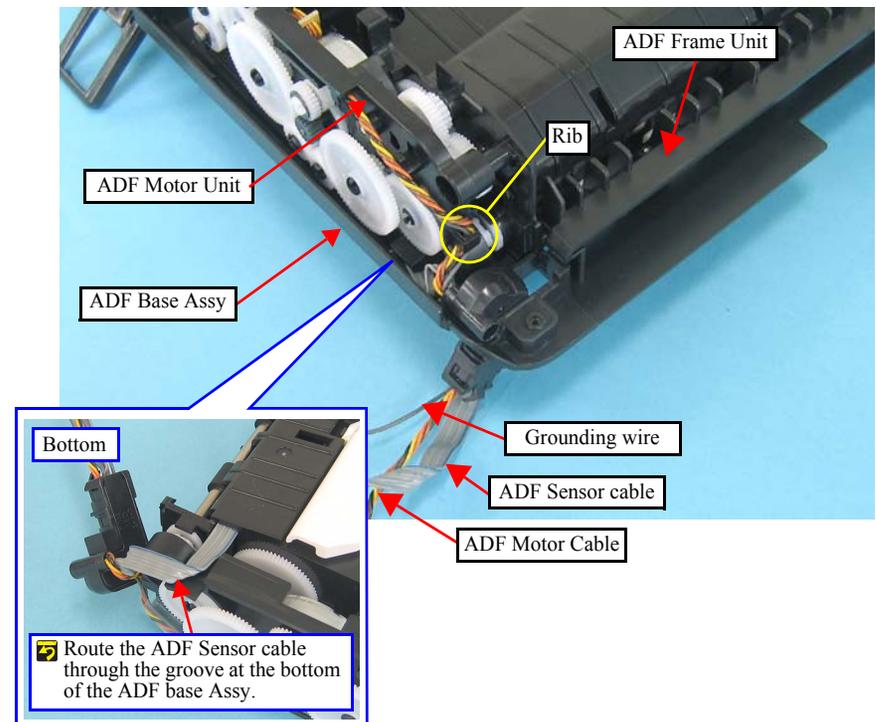


Figure 4-141. Removing the ADF Frame Unit (1)

3. Remove the screws (x2) securing the ADF Frame Unit.
4. Release the dowel (x1) of the ADF Base Assy and dowels (x2) of the ADF Frame Unit, and remove the ADF Frame Unit from the ADF Base Assy.

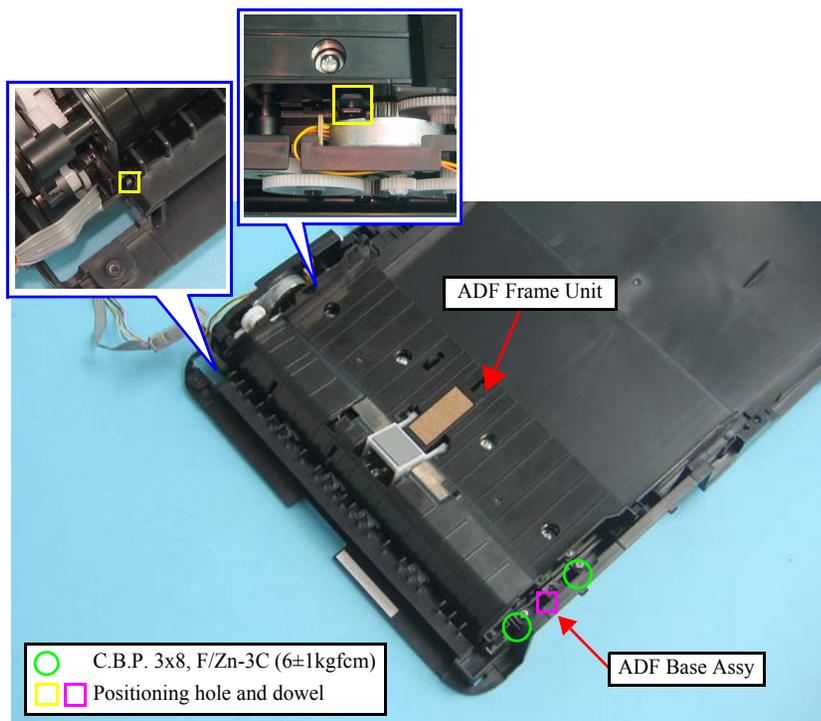


Figure 4-142. Removing the ADF Frame Unit (3)



- When installing the ADF Frame Unit, align the positioning holes (x3) of the ADF Frame Unit and ADF Base Assy with the dowels (x3) for them as shown in Figure. 4-142.
- Route the ADF Motor cable as shown in Figure. 4-141.

4.7.9 ADF Motor Unit

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/ADF Cover Assy/ADF Right Cover/ADF Rear Cover/ADF Cover Stacker/ADF Document Support Cover/ADF Front Cover/ADF Document Support Assy/ADF Frame Unit
- Removal procedure
 1. Release the hooks (x6) of the ADF Cable Cover and open the ADF Cable Cover, and release the ADF Motor cable, ADF Sensor cable and grounding wire.

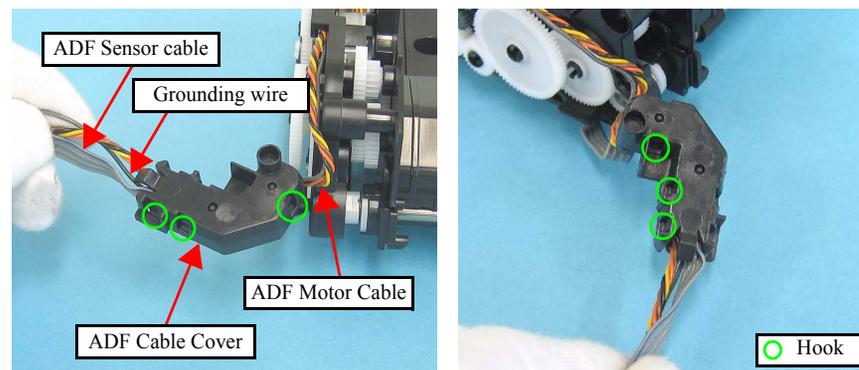


Figure 4-143. Releasing the Cable



When removing the ADF Motor Unit, be cautious not to drop the gears (x4) of the ADF Frame Unit shown below.



Figure 4-144. Handling the ADF Motor Unit

2. Remove the screws (x2) that secure the ADF Motor Unit.
3. Remove the torsion spring from the ADF EJ Roller, and remove the ADF Motor Unit from the ADF Frame Unit.

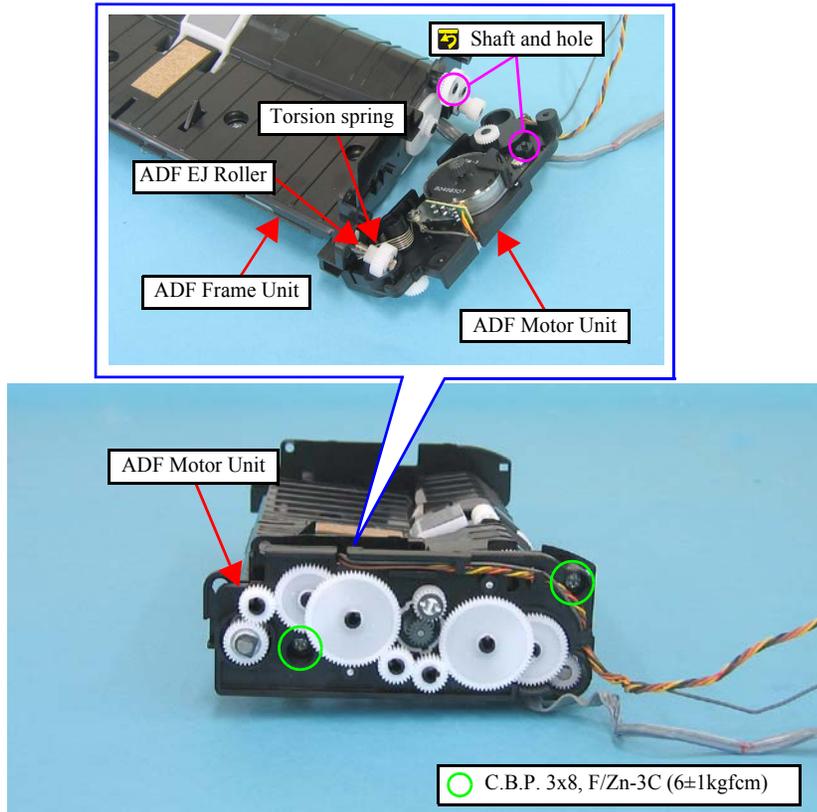


Figure 4-145. Removing the ADF Motor Unit (1)



When installing the ADF Motor Unit, check the following points.

- Attach the torsion spring from under the ADF EJ Roller as shown below.

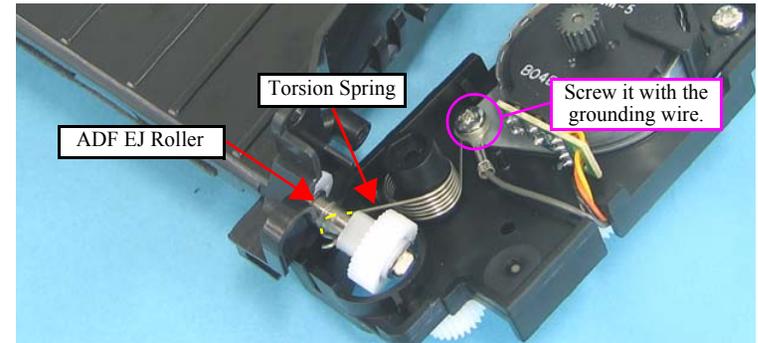


Figure 4-146. Handling the Torsion Spring

- Insert the shaft of the ADF Motor Unit as shown in the [Figure 4-145](#) to the hole of the ADF Frame Unit.
- Route the ADF Motor Cable and grounding wire as shown in the figure below.

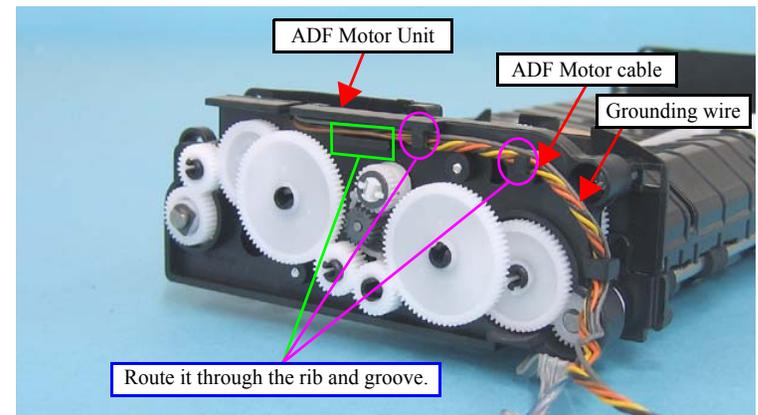


Figure 4-147. Routing the ADF Motor cable



- When setting the cables into the ADF Cable Cover, route them as shown in the figure below.

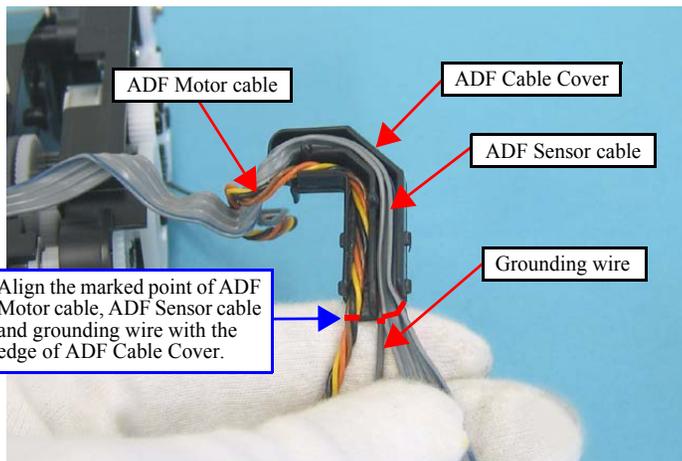


Figure 4-148. Routing the cables in the ADF Cable Cover

4.7.10 ADF PF Roller

- Parts/Components need to be removed in advance
Scanner Unit/ADF Unit/ADF Cover Assy/ADF Right Cover/ADF Rear Cover/ADF Cover Stacker/ADF Document Support Cover/ADF Front Cover/ADF Document Support Assy/ADF Frame Unit
- Removal procedure
 1. Remove the Spur Gear 6.4, Cover Ring and ADF EJ Rear Bush from the ADF PF Roller.

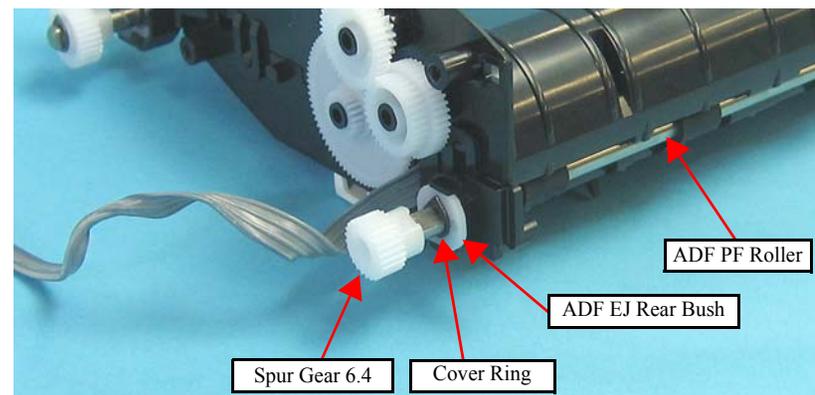


Figure 4-149. Removing the ADF PF Roller (1)

2. Release the hooks (x2), and remove the ADF EJ Front Bush from the ADF Frame Unit.

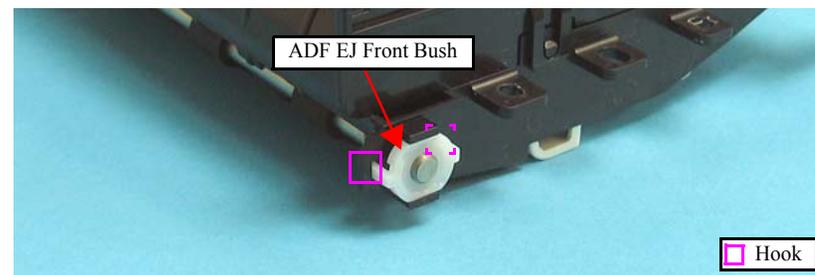


Figure 4-150. Removing the ADF PF Roller (2)

3. Remove the E-Ring.
4. Remove the torsion spring from the ADF PF Roller, and remove the ADF PF Roller from the ADF Frame Unit in the direction of the arrow.

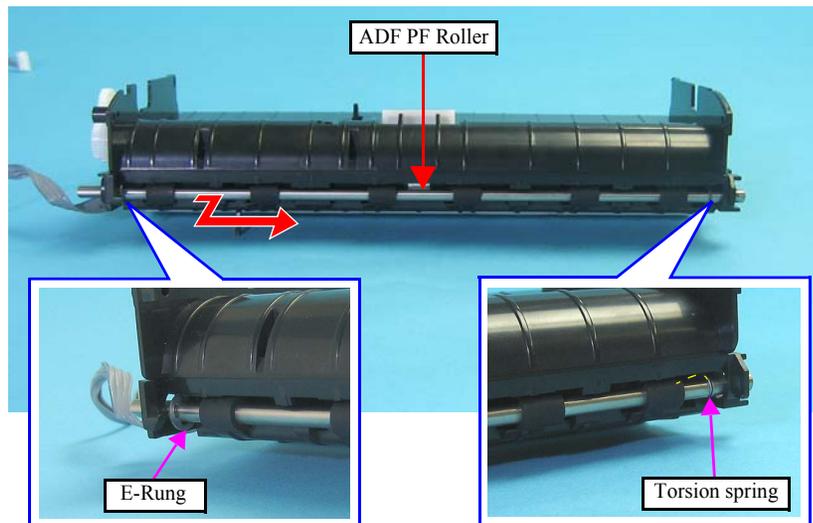


Figure 4-151. Removing the ADF PF Roller (3)

REASSEMBLY


When installing the ADF PF Roller, attach the leg of the torsion spring on the ADF PF Roller as shown in [Figure. 4-151](#).

**ADJUSTMENT
REQUIRED**


After replacing the ADF PF Roller, be sure to perform the required lubrication.

- [Chapter 6 “ MAINTENANCE” \(p.163\)](#)

CHAPTER

5

ADJUSTMENT

5.1 Adjustment Items and Overview

This chapter describes adjustments required after the disassembly/reassembly of the printer.

5.1.1 Servicing Adjustment Item List (TBD)

The adjustment items of this product are as follows.



For information on how to carry out the adjustments and media required for the adjustments, see the instructions displayed by the Adjustment Program.

Table 5-1. Adjustment Items

Adjustment Item	Purpose	Method Outline	Tool
EEPROM data copy	When the main board needs to be replaced, use this to copy adjustment values stored on the old main board to the new board. If this copy is completed successfully, all the other adjustments required after replacing the main board are no longer necessary.	Readout the EEPROM data from the main board before removing it. Then replace the board with a new one, and load the EEPROM data to the new board.	• Adjustment Program
Initial setting	This must be carried out after replacing the main board to apply settings for the target market.	Select the target market. The selected market settings are automatically written to the main board.	• Adjustment Program
USB ID input	This sets a USB ID of the printer. A computer identifies the printer by the ID when multiple same models are connected via a USB hub.	Enter the product serial number of the printer. The ID is automatically generated and written to the main board.	• Adjustment Program
Head ID input	This must be carried out after replacing the Printhead in order to enter the new Printhead ID (Head ID) that reduces variation between Printheads.	Enter the ID printed on the Head QR code label attached on the Printhead. The correction values are automatically written to the main board.	• Adjustment Program
MAC address read/write	When the Main board needs to be replaced use this menu to write necessary information onto the new board.	See “ 5.2.8 MAC Address Setting (p161) ” for the detailed procedure.	• Adjustment Program • LAN Cable
TOP margin adjustment	This corrects top margin of printout.	A top margin adjustment pattern is printed. Examine the lines printed near the top edge of the printout, and enter the value for the line that is exactly 3 mm away from the top edge.	• Adjustment Program • Ruler
First dot position adjustment	This corrects left margin of printout. The print start position in the carriage moving direction is corrected by software.	A first dot adjustment pattern is printed. Examine the lines printed near the left edge of the printout and enter the value for the line that is exactly 5 mm away from the left edge.	• Adjustment Program • Ruler
Head angular adjustment	This must be carried out after replacing the Printhead in order to correct tilt of the Printhead by software.	A head angular adjustment pattern is printed. Examine the printed lines and enter the value for the most straight lines.	• Adjustment Program
Bi-D adjustment	This corrects print start timing in bi-directional printing to improve the print quality.	A Bi-D adjustment pattern is printed. Black and color patterns are printed for each of the five dot sizes (ECO, VSD1, VSD2, VSD3, VSD4). So, there are 10 groups. Examine the patterns and enter the value for the pattern with no gap and overlap for each mode.	• Adjustment Program

Table 5-1. Adjustment Items

Adjustment Item	Purpose	Method Outline	Tool
Initialize PF deterioration offset	This resets the counter to maintain paper feed accuracy which decreases due to paper dust.	Reset the counter to its default.	• Adjustment Program
Disable PF deterioration offset	When reading the counter value from the old main board is impossible in the case of replacing the board, use this to set the counter to its maximum value.	Set the counter to its maximum value (10000).	• Adjustment Program
CR motor heat protection control	This must be carried out for efficient heat control of the CR motor. Electrical variation of the motor and the power supply board are measured to acquire correction values for them.	Select the parts that you replaced. The correction values are automatically written to the main board.	• Adjustment Program
PF motor heat protection control	This must be carried out for efficient heat control of the PF motor. Electrical variation of the motor and the power supply board are measured to acquire correction values for them.	Select the parts that you replaced. The correction values are automatically written to the main board.	• Adjustment Program
PF adjustment	This corrects variations in paper feed accuracy when using the Microweave to achieve higher print quality.	A PF adjustment pattern is printed. Examine the printout patterns and enter the value for the best pattern to register the correction value to the printer. (Carry out the procedure for each color.)	• Adjustment Program
PF band adjustment	This corrects variations in paper feed accuracy in the band print mode to achieve higher print quality.	A PF band adjustment pattern is printed. Examine the printout patterns and enter the value for the best pattern to register the correction value to the printer.	• Adjustment Program
Bottom margin adjustment	In order to improve the throughput, the printer minimizes the number of print passes when printing on the bottom margin (bleed) in the borderless printing. This may cause white area to appear on the bottom edge of the borderless printout. In such case, use this adjustment to correct the printing range on the bottom margin (bleed).	A bottom margin adjustment pattern is printed. Examine the printout patterns and enter the value for best pattern to register the correction value to the printer.	• Adjustment Program • Ruler

Table 5-2. Maintenance Items

Maintenance Item	Purpose	Method Outline	Tool
Waste ink pad counter	The printer causes a maintenance error when the waste ink pad counter reaches its maximum. Use this to reset the counter after replacing the Waste Ink Pad. If you find the counter is close to the maximum during servicing, carry out the pad replacement and the counter reset to avoid the printer returned from the user due to the maintenance error.	After replacing the Waste Ink Pad, reset the counter to its default.	• Adjustment Program
Ink charge	This must be carried out after replacing the Printhead in order to fill ink inside the new Printhead. The Printhead becomes ready for print.	Filling ink inside the Printhead is automatically performed. Print a nozzle check pattern to check if all nozzles are firing ink properly.	• Adjustment Program

Table 5-3. Additional Functions

Additional Functions		Purpose	Method Outline	Tool
Final check pattern print	A4 size	Use this to check if the all adjustments have been properly made.	The all adjustment patterns are printed automatically.	• Adjustment Program
	US Letter size			
EEPROM dump		Use this to readout the EEPROM data for analysis.	The all EEPROM data is automatically readout and stored as a file.	• Adjustment Program
Printer information check	Manual CL counter	Use this to readout information on the printer operations.	The printer information is automatically readout.	• Adjustment Program
	I/C exchange CL counter			
	Timer CL counter			
	Print path counter			

5.1.2 Required Adjustments (TBD)

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	
Part Name	Adjustment Item	EEPROM data copy	Initial setting	USB ID input	Waste ink pad counter	MAC address setting	Ink charge	Head ID input	Top margin adjustment	First dot position adjustment	Head angular adjustment	BI-D adjustment	Initialize PF deterioration offset/ Disable PF deterioration offset	CR motor heat protection control	PF motor heat protection control	PF adjustment	PF band adjustment	Bottom margin adjustment	
	Main board unit	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Replace (Read OK)		O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Replace (Read NG)		---	O	O	O Replace the pad	O	---	O	O	O	O	O	O Input max. value (10000)	O	O	O	O	O	O
Printhead	Remove	---	---	---	---	---	---	---	O	O	O	O	---	---	---	O	O	O	
	Replace	---	---	---	---	---	O	O	O	O	O	O	---	---	---	O	O	O	
Power Supply unit	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	O	O	---	---	---	
Hopper	Remove	---	---	---	---	---	---	---	O	O	---	---	---	---	---	---	---	---	
	Replace	---	---	---	---	---	---	---	O	O	---	---	---	---	---	---	---	---	
CR motor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	---	
EJ roller	Remove	---	---	---	---	---	---	---	---	---	---	O	---	---	---	O	O	O	
	Replace	---	---	---	---	---	---	---	---	---	---	O	---	---	---	O	O	O	
PF motor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	
Main frame	Remove	---	---	---	---	---	---	---	---	---	O	O	---	---	---	---	---	---	
	Replace	---	---	---	---	---	---	---	---	---	O	O	---	O	---	---	---	---	

Table 5-4. Required Adjustment List

Priority		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Part Name	Adjustment Item	EEPROM data copy	Initial setting	USB ID input	Waste ink pad counter	MAC address setting	Ink charge	Head ID input	Top margin adjustment	First dot position adjustment	Head angular adjustment	BI-D adjustment	Initialize PF deterioration offset/ Disable PF deterioration offset	CR motor heat protection control	PF motor heat protection control	PF adjustment	PF band adjustment	Bottom margin adjustment
	ASF unit	Remove	---	---	---	---	---	---	---	O	O	---	---	---	---	---	O	O
Replace		---	---	---	---	---	---	---	O	O	---	---	---	---	---	O	O	O
CR unit	Remove	---	---	---	---	---	---	---	O	O	O	O	---	---	---	O	O	O
	Replace	---	---	---	---	---	---	---	O	O	O	O	---	---	---	O	O	O
Upper paper guide	Remove	---	---	---	---	---	---	---	O	---	---	---	---	---	---	O	O	O
	Replace	---	---	---	---	---	---	---	O	---	---	---	O Reset to 0	---	---	O	O	O
Front paper guide unit	Remove	---	---	---	---	---	---	---	O*	---	O	O	---	---	---	O	O	O
	Replace	---	---	---	---	---	---	---	O*	---	O	O	---	---	---	O	O	O
PF roller	Remove	---	---	---	---	---	---	---	O*	---	---	---	---	---	---	O	O	O
	Replace	---	---	---	---	---	---	---	O*	---	---	---	---	---	---	O	O	O
Waste ink pad	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Replace	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---



- When the EEPROM data copy is impossible with the main board that needs to be replaced, the Waste Ink Pad 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 : <Meaning of the marks in the table>
 “O” indicates that the adjustment must be carried out. “O*” indicates that the adjustment is recommended. “---” 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.

5.2 Using the Adjustment Program (TBD)

This section describes how to judge the adjustment patterns printed by the Adjustment Program. For information on how to operate the Adjustment Program, see the instructions displayed by the Adjustment Program.

5.2.1 TOP Margin Adjustment

The following pattern is printed.

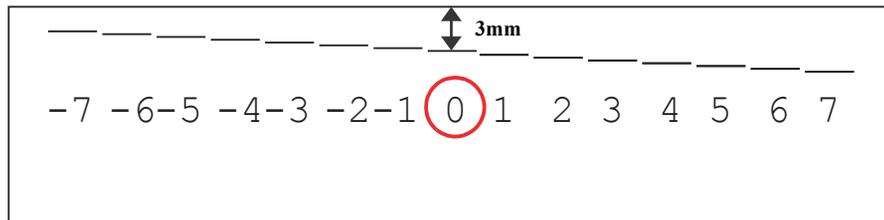


Figure 5-1. Top Margin Adjustment Printout Pattern

How to Judge

Measure the length from the top edge of the paper to the printed line. Enter the value for the line that is exactly 3 mm away from the top edge.

5.2.2 First Dot Position Adjustment

The following pattern is printed.

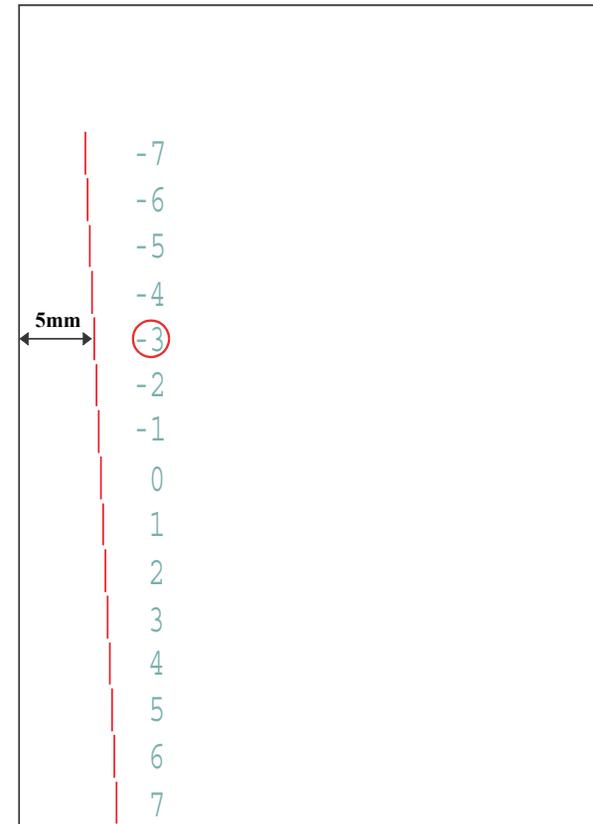


Figure 5-2. First Dot Position Adjustment Printout Pattern

How to judge

Measure the length from the left edge of the paper to the printed line. Enter the value for the line that is exactly 5 mm away from the left edge.

5.2.3 Head Angular Adjustment

Two patterns are printed as shown below.

Band pattern

The following pattern is printed. The lines below “1 to 80” are printed while the carriage moves from the home to the other side, and lines below “80 to 1” are printed while the carriage returns to the home.

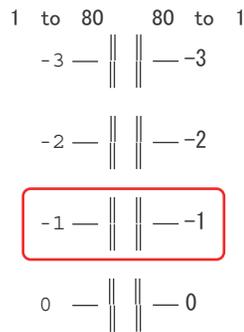


Figure 5-3. Head Angular Adjustment Printout Pattern (1)

How to Judge

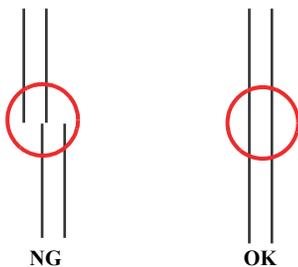
Examine the printout patterns and enter the value (-3 to 3) for the most straight lines.

Additional information

When “3” or “-3” is the most straight lines, it indicates that the Printhead is not installed correctly. Reassemble the Printhead and carry out this adjustment again.



Example for judgement



Microweave Pattern

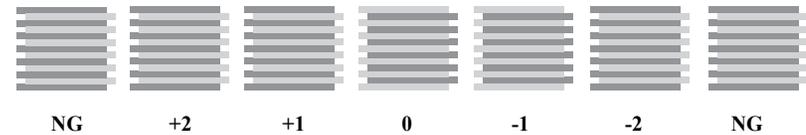


Figure 5-4. Head angular adjustment Pattern Printing (2)

How to Judge

Examine the printout patterns (+2 to -2) and select the value for the group of which the gaps between the 2 color bars are the smallest.

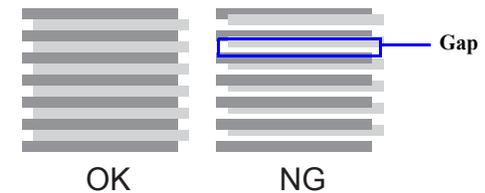
Additional information

If no appropriate pattern is found, reassemble/replace the Printhead.

When “+2” or “-2” is the group of which the gaps between the 2 color bars are the smallest, reassemble/replace the Printhead.



Example for judgement



5.2.4 Bi-D Adjustment

The following pattern is printed for each of the five print mode (five dot size modes).



Figure 5-5. Bi-D Adjustment Printout Pattern

How to Judge

Examine the printout patterns for each of the five modes, and enter the value for the pattern with no gap and overlap for each mode.

Additional Information

If no OK pattern is printed, enter the value for the best one, and print the adjustment pattern again.

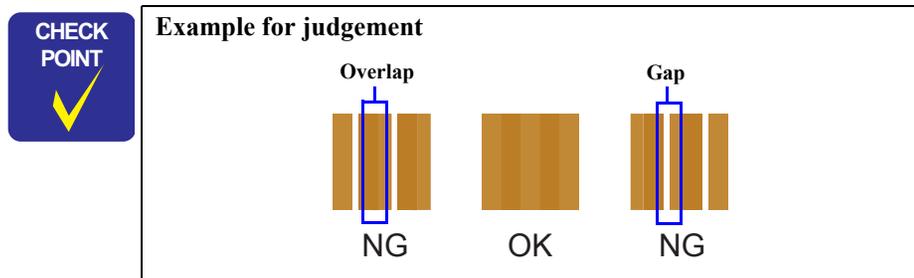


Figure 5-6. PF (standard print area) Adjustment Printout Pattern

How to Judge

1. Examine the printed patches from the left to the right, and select a value for the patch with least white oblique lines on its upper (top) area. If two or more patches are found as the best patch, be sure to select a value for the left most one.

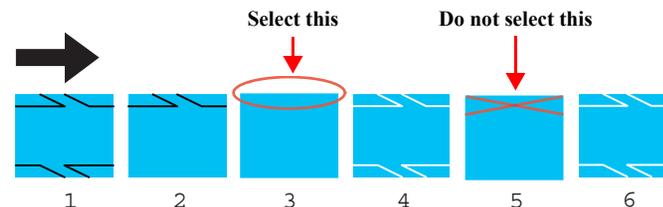


Figure 5-7. PF Adjustment (1)

2. Examine the printed patches from the right to the left, and select a value for the patch with least white lines on its lower (bottom) area. If two or more patches are found as the best patch, be sure to select a value for the right most one. If it is difficult to judge, compare the most likely patch with the one on the left.

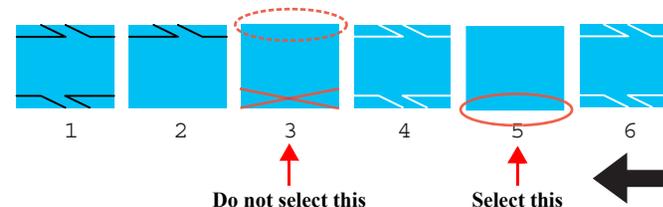


Figure 5-8. PF Adjustment (2)

3. Input the selected value for each of the top and bottom in the program, and print a PF adjustment check pattern.

□ PF- for bottom margin area

The following pattern is printed.

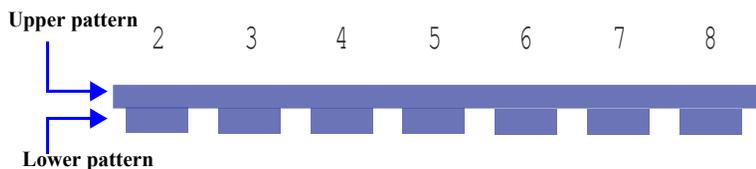


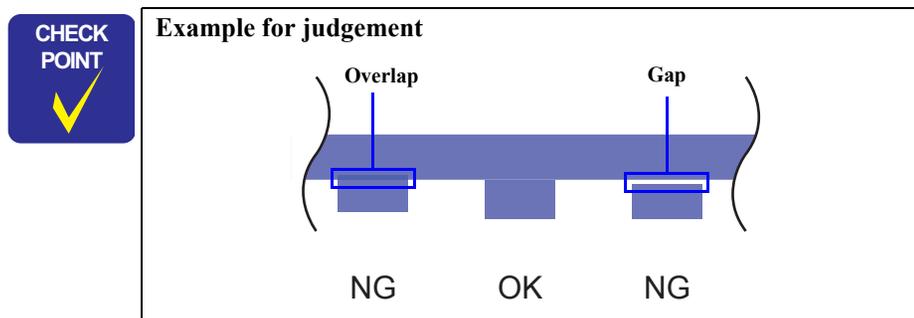
Figure 5-9. PF (bottom margin area) Adjustment Printout Pattern

How to Judge

Examine the printout patterns, and enter the value for the pattern with no overlap and gap between the upper and lower ones.

Additional Information

When overlap and gap are observed in the all patterns, enter the value for the best one, and print the adjustment pattern again.



5.2.6 PF Band Adjustment

The following pattern is printed.

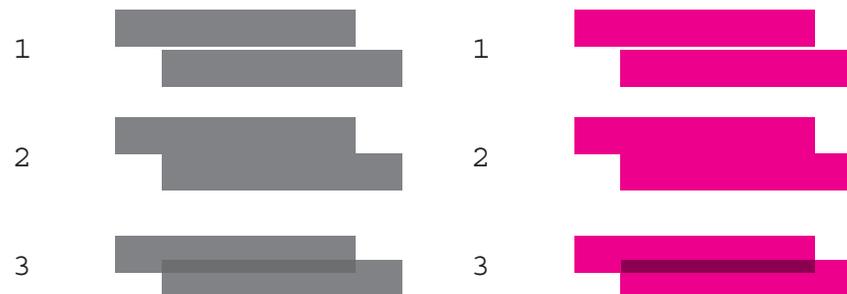


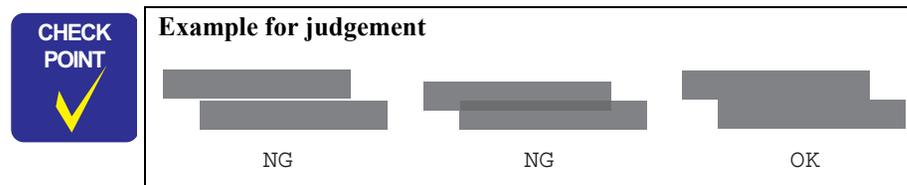
Figure 5-10. PF Band Adjustment Printout Pattern

How to Judge

Examine the printout patterns and enter the value for the pattern with no overlap and gap between the two rectangles.

Additional Information

When overlap and gap are observed in the all patterns, enter the value for the best one, and print the adjustment pattern again.



5.2.7 Bottom Margin Adjustment

The following pattern is printed.

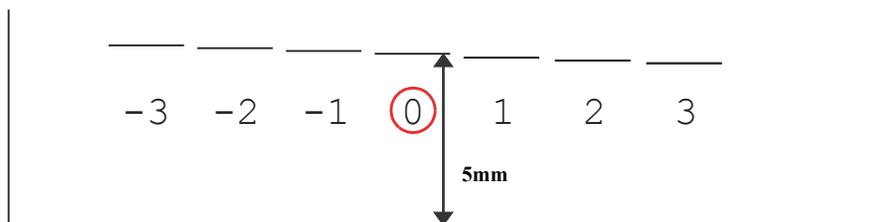


Figure 5-11. Bottom Margin Adjustment Printout Pattern

How to Judge

Measure the length from the bottom edge of the paper to the printed line. Enter the value for the line that is exactly 5 mm away from the bottom edge.

5.2.8 MAC Address Setting

□ Overview

EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW have a network function and stores their MAC address (Media Access Control Address) in the EEPROM on the Main Board. The Main 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 Main Board after replacement. The following explains the procedure.



- When the data of EEPROM on the old Main Board can be read out, this adjustment is not required.
- 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 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 Main Board, make sure to note down the MAC address written on a label on the MB Upper Shield Plate. If the address is not readable due to contamination or any other cause, attach a new MAC address label (part code: 1489500) and note down the new address. See "4.4.1 Main Board Unit (p102)" for description about the label position.



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

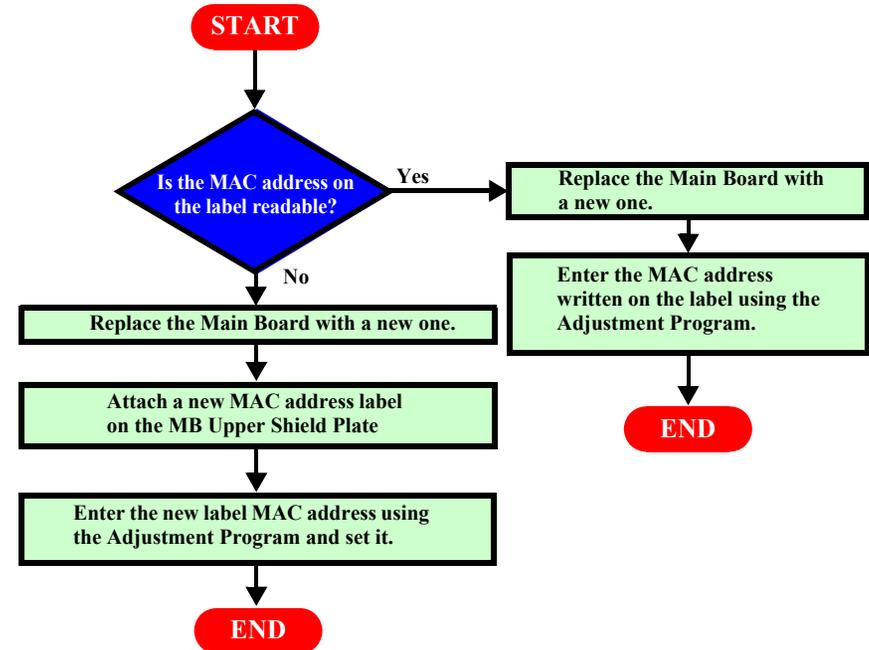


Figure 5-12. MAC Address Setting Flowchart

□ Setting procedure



The MAC address required on the Adjustment Program is written on the MAC address label on the MB Upper Shield Plate. Make sure to correctly enter the address.

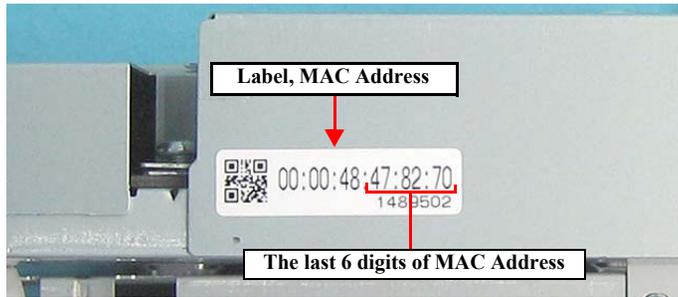


Figure 5-13. MAC Address Label

1. Connect the printer and a computer using a LAN cable.
2. Start the Adjustment Program.
3. Select the “Initial Setting” from the menu. The initial setting screen appears.
4. 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.)
5. 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.

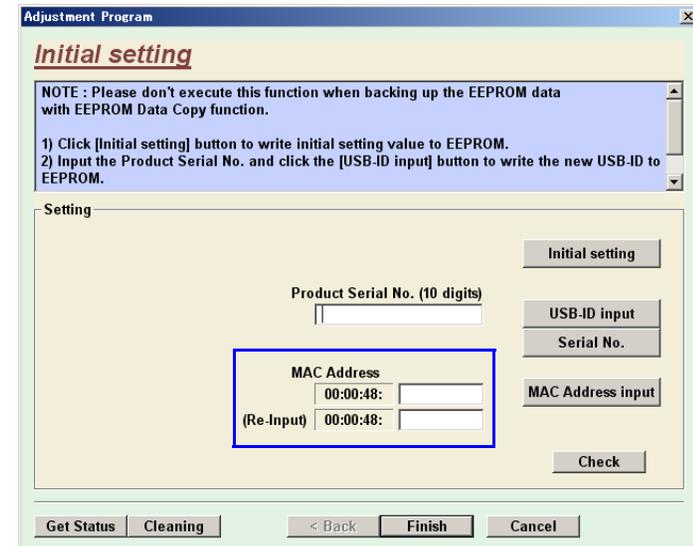


Figure 5-14. MAC Address Setting Screen

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 except the Printhead. Therefore, when returning the printer to the user, check the following parts and perform appropriate cleaning if stain is noticeable.

CAUTION



- Never use chemical solvents, such as thinner, benzine, and acetone to clean the exterior parts of the printer like the Housing. These chemicals may deform or deteriorate the components of the printer.
- Be careful not to damage any components when you clean inside the printer.
- Do not scratch the coated surface of the PF roller. Use a soft brush to wipe off any dusts.
- Use a soft cloth moistened with alcohol to remove the ink stain.
- When using compressed air products; such as air duster, for cleaning during repair and maintenance, the use of such products containing flammable gas is prohibited.

- Exterior parts
Use a clean soft cloth moistened with water, and wipe off any dirt. If the exterior parts are stained by the ink, use a cloth moistened with neutral detergent to wipe it off.
- Inside the printer
Use a vacuum cleaner to remove any paper dust.
- LD Roller
When paper loading function does not operate because friction of the LD roller is lowered by any paper dust, use a soft cloth moistened with alcohol to remove the paper dust.

6.1.2 Service Maintenance

If any abnormal print (dot missing, white line, etc.) has occurred or the printer indicates the “Maintenance request error” (This error is displayed as “Service Required” in the STM3), take the following actions to clear the error.

6.1.2.1 Printhead Cleaning

When dot missing or banding phenomenon has occurred, you need to perform the printhead cleaning operation* by using the printhead cleaning function. This function can be performed by the control panel operation, the printer driver utility and the Adjustment program.

* : EPSON WorkForce 600/EPSON Stylus OFFICE TX600FW/BX600FW/EPSON Stylus SX600FW/ME OFFICE 700FW have three modes for manual cleaning, and even during printing, the appropriate cleaning mode is automatically selected and performed according to various conditions. Therefore the ink consumption amount for manual cleaning varies depending on each mode.

6.1.2.2 Maintenance Request error

Ink is used for the Printhead cleaning or cap flushing operation as well as the printing operation. When the ink is used for the Print Head cleaning or flushing operation, the ink is drained via the pump to the Waste ink pads. The amount of the waste ink is stored as the waste ink counter into the EEPROM on the Main Board. Due to this, when the waste ink counter has reached the limit of the absorbing capability of the Waste ink pads, the Maintenance call error is indicated on Status monitor 3. However, the limit value of the waste ink counter varies according to the usage.

CHECK POINT



Refer to following chapter about indication of the maintenance request error.

[Chapter 3 TROUBLESHOOTING \(p.45\)](#)

When the maintenance request error has occurred, replace the waste ink pad with new one and clear the waste ink counter stored into the EEPROM. If the waste ink counter is closed to its limit, we recommend to replace the Waste ink pad with new one. This is because the Maintenance request error will may occur after returning the repaired product to the customer.

6.1.3 Lubrication

The type and amount of the grease used to lubricate the printer parts are determined based on the results of the internal evaluations. Therefore, be sure to apply the specified type and amount of the grease to the specified part of the printer mechanism on the following occasion.

- Any parts required the lubrication are replaced.
- The printer is disassembled/assembled. (If necessary)



- Never use oil or grease other than those specified in this manual. Use of different types of oil or grease may damage the component or give bad influence on the printer function.
- Never apply larger amount of grease than specified in this manual.

Table 6-1. Specified Lubricant

Type	Name	EPSON Code	Supplier
Grease	G-45	1033657	EPSON
Grease	G-71	1304682	EPSON
Grease	G-74	1409257	EPSON

- Refer to the following figures for the lubrication points.

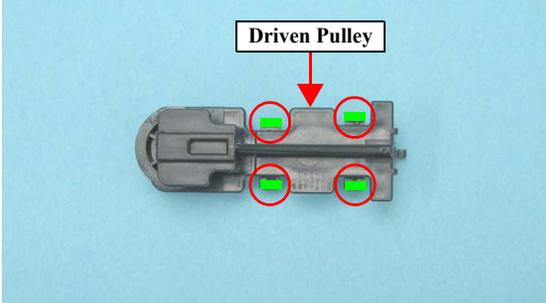
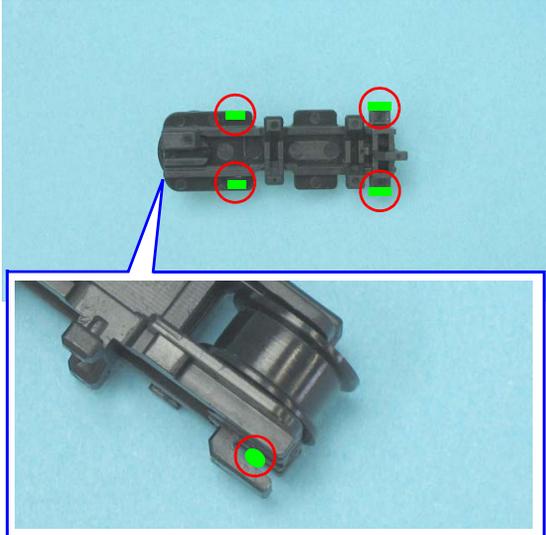
<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px; text-align: center;">Front</div> 	<p><Lubrication Point> Contact points (x 9) with the Main Frame.</p>
<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px; text-align: center;">Back</div> 	<p><Lubrication Type> G-71</p>
<p><Lubrication Amount> φ 1 mm x 1 mm</p>	
<p><Remarks> Use an injector to apply G-71.</p>	

Figure 6-1. Lubrication on Driven Pulley

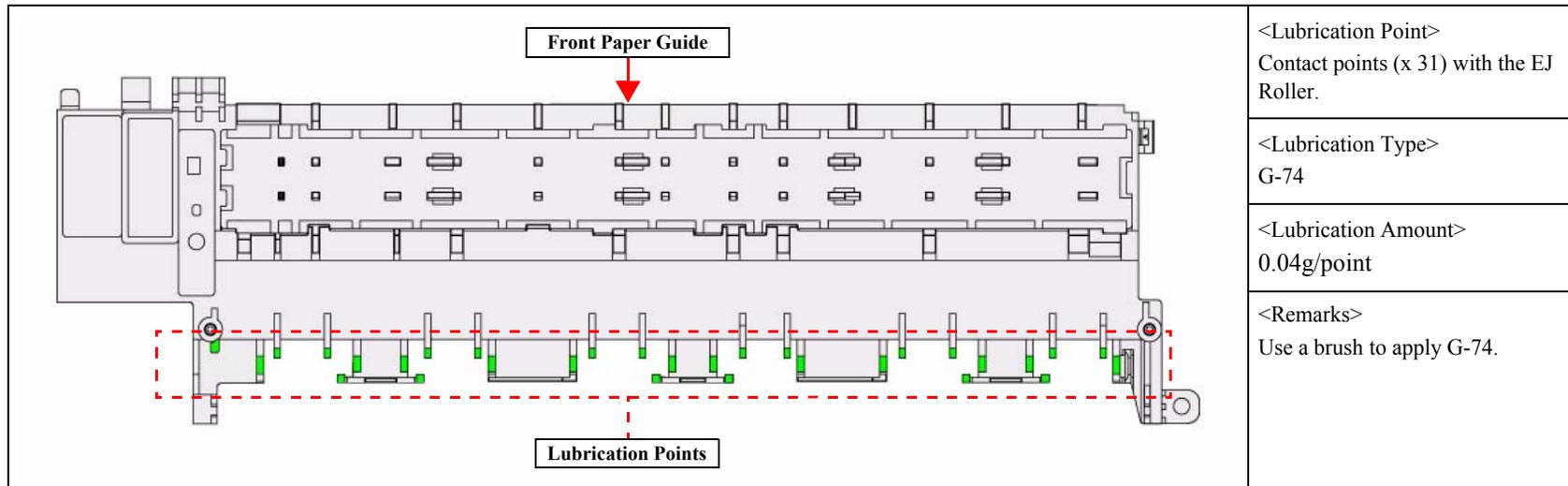


Figure 6-2. Lubrication on Front Paper Guide (1)

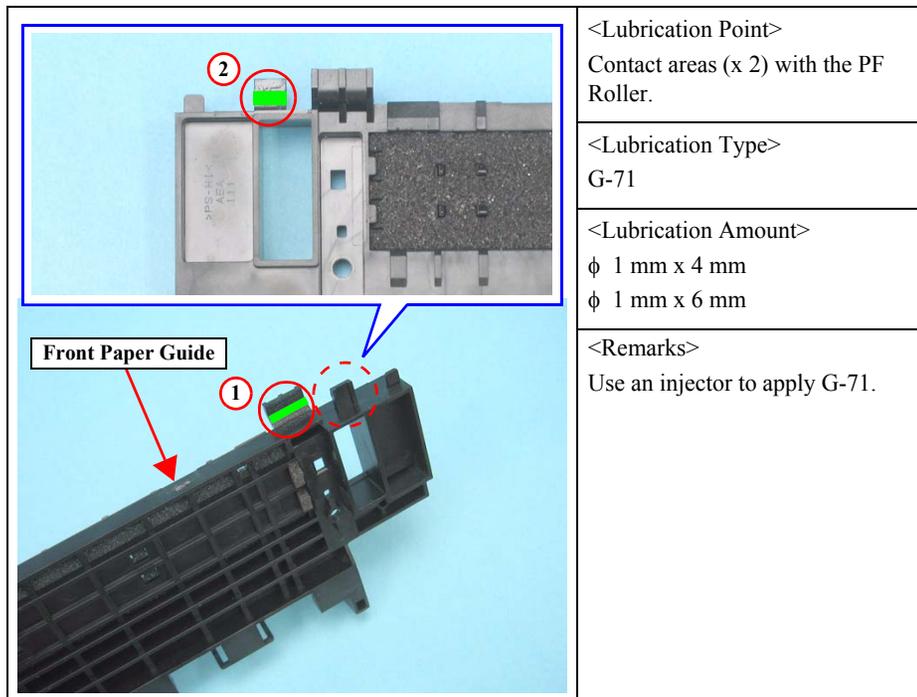


Figure 6-3. Lubrication on Front Paper Guide (2)

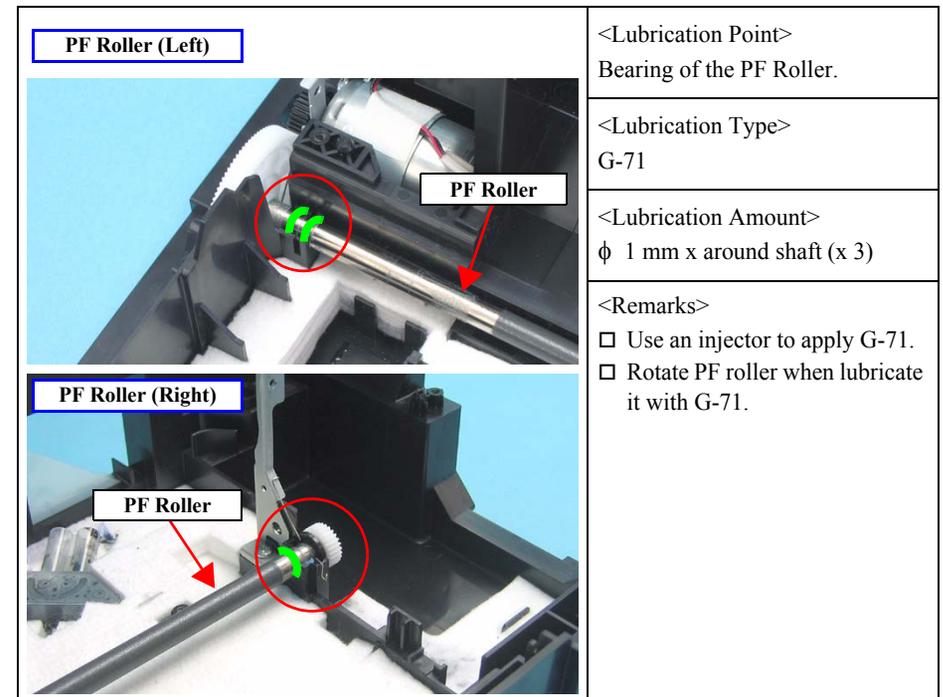


Figure 6-4. Lubrication on PF Roller

Figure 6-5. Lubrication on PF Roller Grounding Spring

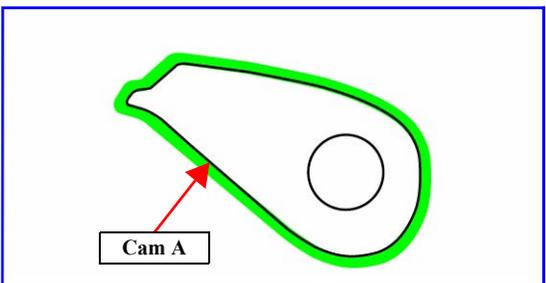
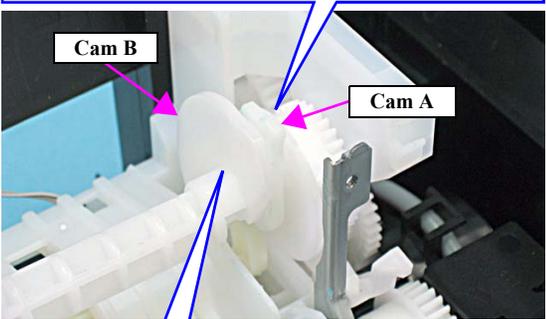
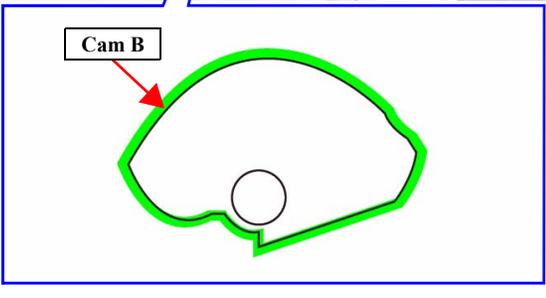
	<p><Lubrication Point> Cam A and Cam B of the LD Roller shaft</p>
	<p><Lubrication Type> G-71</p>
	<p><Lubrication Amount> φ 1 mm x around each cam</p>
<p><Remarks></p> <ul style="list-style-type: none"> <input type="checkbox"/> Use an injector to apply G-71. <input type="checkbox"/> Rub off excess G-71 with a cotton bud if necessary. 	

Figure 6-6. Lubrication on LD Roller Shaft

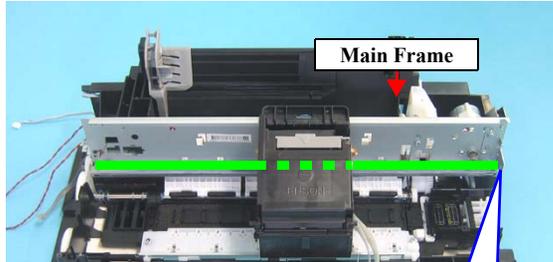
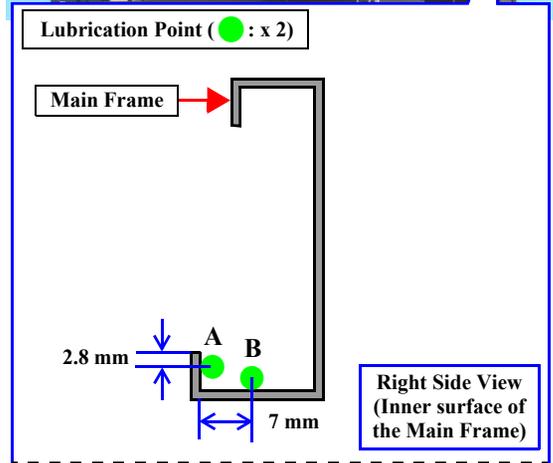
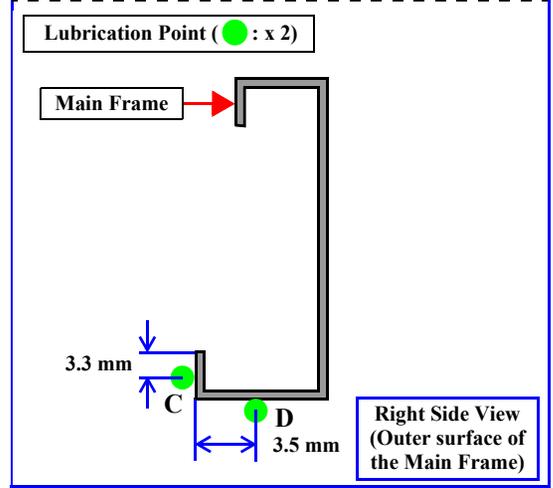
	<p><Lubrication Point> Along the contact areas between the front of the Main Frame and the CR Unit. (x 4: Point A - Point D)</p>
 <p>Lubrication Point (● : x 2)</p> <p>Main Frame</p> <p>2.8 mm</p> <p>A B</p> <p>7 mm</p> <p>Right Side View (Inner surface of the Main Frame)</p>	<p><Lubrication Type> G-71</p>
 <p>Lubrication Point (● : x 2)</p> <p>Main Frame</p> <p>3.3 mm</p> <p>C D</p> <p>3.5 mm</p> <p>Right Side View (Outer surface of the Main Frame)</p>	<p><Lubrication Amount> φ 2 mm x 380 mm (x 4)</p>
<p><Remarks></p> <ul style="list-style-type: none"> <input type="checkbox"/> Use an injector to apply G-71. <input type="checkbox"/> Clean the lubrication points with a cloth beforehand. 	

Figure 6-7. Lubrication on Main Frame (1)

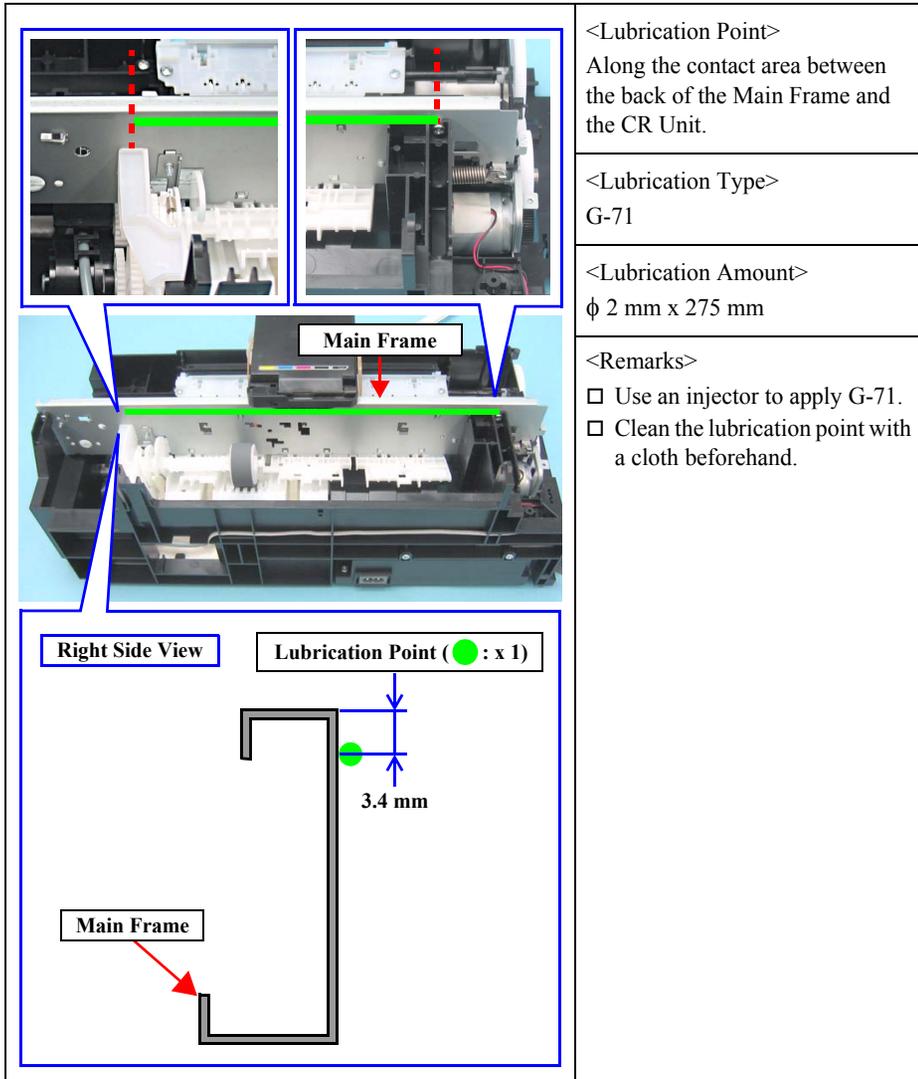


Figure 6-8. Lubrication on Main Frame (2)

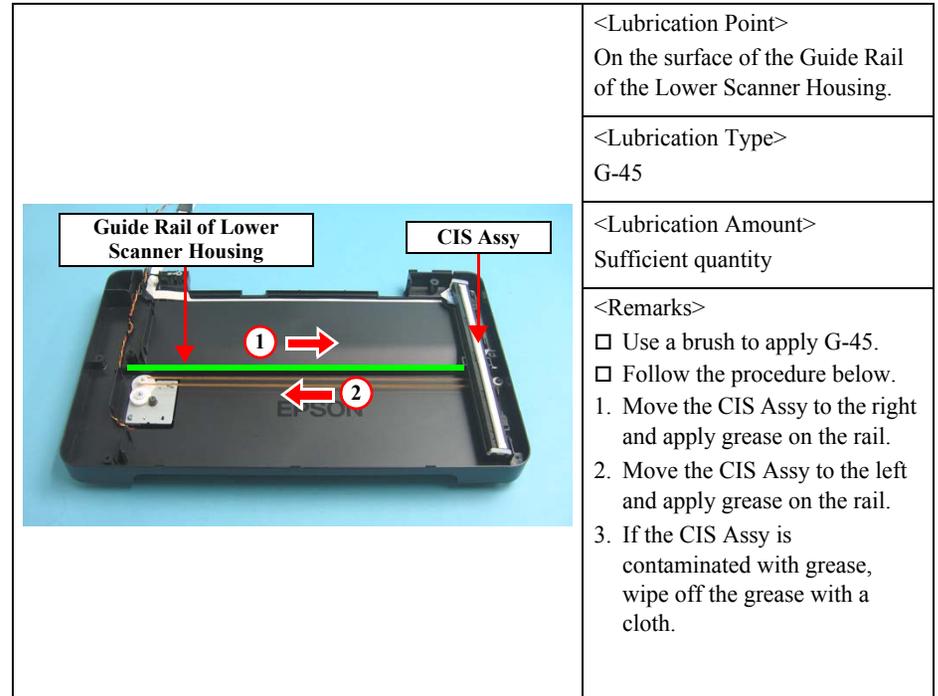


Figure 6-9. Lubrication on the Guide Rail of the Lower Scanner Housing

CHAPTER

7

APPENDIX

7.1 Exploded Diagram / Parts List

This manual does not provide exploded diagrams or parts list.
For the information, see SPI (Service Parts Information).