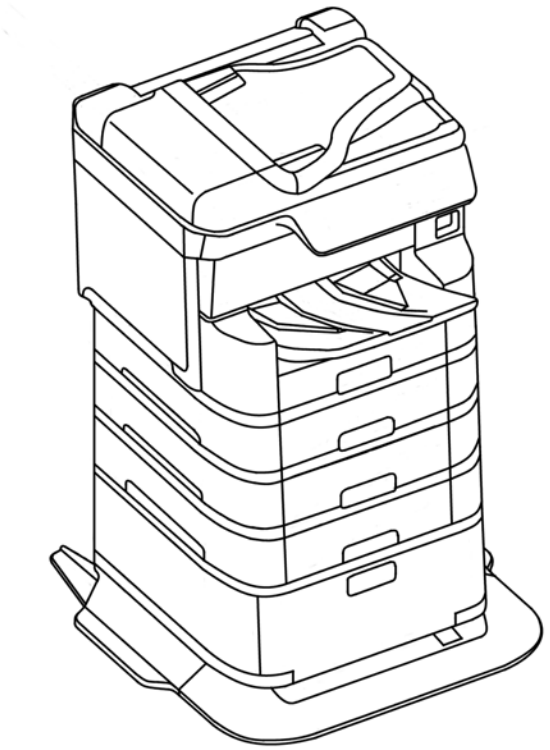
SERVICE MANUAL



Color Inkjet Printer

EPSON WF-C8690/C8690a
WF-C8610
WF-C8190/C8190a

EPSON
EXCEED YOUR VISION

CONFIDENTIAL

SEMF17-013

Notice:

P・CS Quality Assurance Department

Safety Precautions

All safety procedures described here shall be strictly adhered to by all parties servicing and maintaining this product.

DANGER

Strictly observe the following cautions. Failure to comply could result in serious bodily injury or loss of life.

1. Always disconnect the product from the power source and peripheral devices when servicing the product or performing maintenance.
2. When performing works described in this manual, do not connect to a power source until instructed to do so. Connecting to a power source causes high voltage in the power supply unit and some electronic components even if the product power switch is off. If you need to perform the work with the power cable connected to a power source, use extreme caution to avoid electrical shock.

WARNING

Strictly observe the following cautions. Failure to comply may lead to personal injury or loss of life.

1. Always wear protective goggles for disassembly and reassembly to protect your eyes from ink in working. If any ink gets in your eyes, wash your eyes with clean water and consult a doctor immediately.
2. 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.

PRECAUTIONS

Strictly observe the following cautions. Failure to comply may lead to personal injury or damage of the product.

1. Repairs on Epson product should be performed only by an Epson certified repair technician.
2. No work should be performed on this product by persons unfamiliar with basic safety knowledge required for electrician.
3. The power rating of this product is indicated on the serial number/rating plate. Never connect this product to the power source whose voltages is different from the rated voltage.
4. Replace malfunctioning components only with those components provided or approved by Epson; introduction of second-source ICs or other non-approved components may damage the product and void any applicable Epson warranty.

5. In order to protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.
6. Do not tilt this product immediately after initial ink charge, especially after performing the ink charge several times. Doing so may cause ink to leak from the product because it may take some time for the waste ink pads to completely absorb ink wasted due to the ink charge.
7. 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.
8. When disassembling or assembling this product, make sure to wear gloves to avoid injuries from metal parts with sharp edges.
9. Use only recommended tools for disassembling, assembling or adjusting the printer.
10. Observe the specified torque when tightening screws.
11. Be extremely careful not to scratch or contaminate the following parts.
    - Nozzle plate of the print head
    - Gears
    - Rollers
    - LCD
    - Scanner Sensor
    - Exterior parts
12. 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.
13. Apply the specified amount of grease described in this manual.
14. Make the specified adjustments when you disassemble the printer.
15. When cleaning this product, follow the procedure described in this manual.
16. When transporting the product with ink filled in the print head, take precautionary measure against ink leak before packing the product.
17. Make sure to install anti-virus software in the computers used for the service support activities.
18. Keep the virus pattern file of anti-virus software up-to-date.

About This Manual

This manual, consists of the following chapters, is intended for repair service personnel and includes information necessary for properly performing maintenance and servicing the product.

CHAPTER 1.PRODUCT OUTLINE

Describes the feature of the product.

CHAPTER 2. PRODUCT SPECIFICATIONS

Describes the basic specifications of the product.

CHAPTER 3. STRUCTURE

Explains about components and operating principles of the product.

CHAPTER 4. INSTALLATION

Describes how to install and set up the product.

CHAPTER 5. SERVICE SUPPORT MODE

Explains about the service support mode.

CHAPTER 6. TROUBLESHOOTING

Provides information for identifying causes of errors/problems from the symptoms or events, and the procedure for troubleshooting.

CHAPTER 7. REPAIR WORK

Describes how to disassemble and reassemble the product, and describes required adjustments.

CHAPTER 8. MAINTENANCE/INSPECTION

Provides cautions, points to be checked and procedure for maintaining and inspecting the product.

CHAPTER 9. APPENDIX

Provides additional information for reference.

Symbols Used in this Manual

Various symbols are used throughout this manual either to provide additional information on a specific topic or to warn of possible danger present during a procedure or an action.

Be aware of all symbols when they are used, and always read NOTE, CAUTION, or WARNING messages.

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

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

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

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

Indicates 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.

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

Revision Status

Revision	Date of Issue	Description
A	March 28, 2018	First release

Contents

Chapter 7 Repair Work

Chapter 8 Maintenance/Inspection

Chapter 9 Appendix

CHAPTERZ

1

PRODUCT OUTLINE

1.1 Product Summary

This product is Ink Cartridge model and, based on WF-C869R/C869Ra. Therefore, basically specification is same as WF-C869R/C869Ra, and offers the following items.

- ☐ Improvement in serviceability
  - ■ Mechanical structure changes for improving serviceability
    - Repairing major components becomes easier. This reduces time spent for servicing.
    - Reduces working space
      (number of parts/components to be removed is reduced by the scanner with flip-up mechanism, and breakup of the exterior parts/components.)
  - ■ Built-in adjustment programs allow you to perform adjustments without a computer
  - ■ Fault diagnostic function allows you to check each driving part (motor or sensor) individually
- ☐ Improvement in usability
  - ■ Improved operability with the optical touch panel
  - ■ Improvement in productivity of duplex printing with Temp./Humidity Sensor
  - ■ The “Nozzle verification technology” feature automatically detects and adjusts missing dots caused by clogged nozzles.
  - ■ Print quality is improved
  - ■ Stacking printed paper is improved by newly designed Output tray.
- ☐ Fax feature
  - ■ Up to 2,000 contacts can be stored.
  - ■ Improvement in timing for sending a fax.

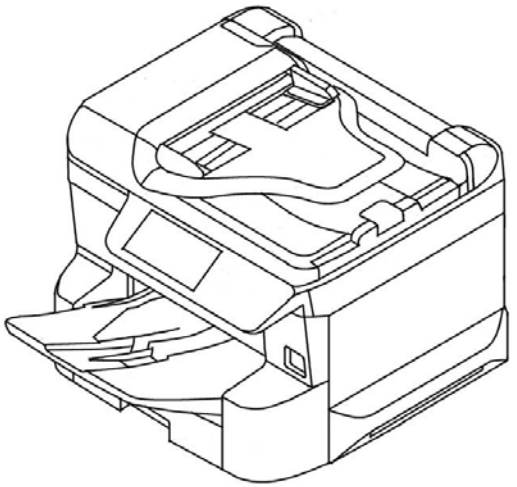


Figure 1-1. External View of WF-C8960/C8690a/C8610

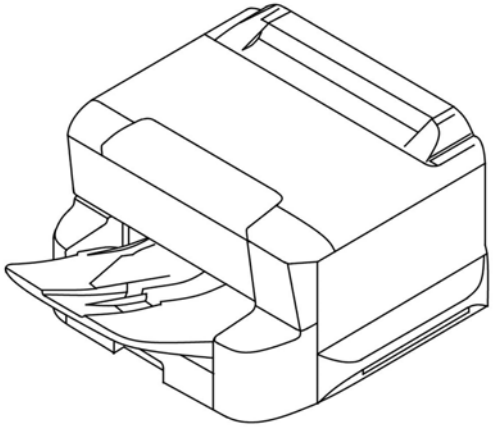


Figure 1-2. External View of WF-C8190/C8190a

CHAPTER

2

PRODUCT SPECIFICATIONS

2.1 Product Hardware Specifications

☐ Hardware specifications

Item			Specification		
			WF-8690/C8690a	WF-C8610	WF-C8190/C8190a
Dimension (printer main unit)	Stored		613mm (W) x 755mm (D) x 493mm (H)		613mm (W) x 755mm (D) x 386mm (H)
	Printing (maximum dimension)		613mm (W) x 866mm (D) x 571mm (H)		613mm (W) x 866mm (D) x 571mm (H)
Dimension (with full options)	Stored		772mm (W) x 797mm (D) x 1263mm (H)		772mm (W) x 797mm (D) x 1186mm (H)
	Printing (maximum dimension)		772mm (W) x 866mm (D) x 1371mm (H)		772mm (W) x 866mm (D) x 1371mm (H)
Weight	Without consumables and options		45.8 Kg		35.3 Kg
	With options (Without consumable)		81.7 Kg		71.2 Kg
LCD			5 inch touch panel		2.4 inch color LCD
Touch panel			Optical touch panel		---
Power supply rating			AC 100 to 240 V		
Input voltage range			AC 90 to 264 V		
Rated current			1.3 - 0.7A		1.0 - 0.5A
Maximum rated current			2.0 - 1.0A		1.6 - 0.8A
Rated frequency range			50 - 60Hz		
Input frequency range			49.5 - 60.5Hz		
Power consumption	Copying		Approx. 30W		---
	Ready mode		Approx. 17W	Approx. 18W	Approx. 8.5W
	Sleep mode		Approx. 1.3W		Approx. 1.2W
	Power off mode		Approx. 0.2W		Approx. 0.2W
Environmental	Operating	Temperature	10 to 35 degrees C		
		Humidity (without condensation)	20 to 80% RH		
		Altitude	3,000 m or lower		
	Stored	Temperature	-20 to 40 degrees C		
		Humidity	5 to 85% RH		
		Altitude	---		

Item		Specification		
		WF-8690/C8690a	WF-C8610	WF-C8190/C8190a
Paper loading capacity	Paper cassette (C1)	250 sheets		
	Paper cassette (C2)	550 sheets		
	Paper cassette (C3)	550 sheets		
	Paper cassette (C4)	550 sheets		
	Rear paper feed tray (Rear ASF Unit)	85 sheets		
Output tray capacity	Plain paper (0.11 mm thickness, 80 g/m^2 paper) Default	250 sheets		
	Plain paper (0.11 mm thickness, 80 g/m^2 paper) Default	250 sheets		
	Photo paper (A4/Letter/8”x10”/5”x7”)	20 sheets		
	Postcard	20 sheets		
Replacement Ink Cartridge	BK	different by each country		
	C	different by each country		
	M	different by each country		
	Y	different by each country		
Replacement Maintenance Box		different by each country		
Product lifetime		600,000 sheets		

☐ Paper handling

Paper source	Paper types	Paper sizes	Paper weight (grams per square meter)
Cassette (C1)	Plain paper	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Bright White Ink Jet Paper	A3, A4	92.5 g/m^2
	Preprinted	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Letterhead	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Recycled	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Color	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Business plain paper	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	73 g/m^2
	Thick paper 1	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	91 to 150 g/m^2
	Thick paper 2	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	151 to 200 g/m^2
Cassette (C2 to C4)	Plain paper	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Bright White Ink Jet Paper	A3, A4	92.5 g/m^2
	Preprinted	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Letterhead	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Recycled	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Color	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Business plain paper	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, 16K, 8K, User-defined sizes	73 g/m^2
	Thick paper 1	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, 16K, 8K, User-defined sizes	91 to 150 g/m^2
	Thick paper 2	A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, 16K, 8K, User-defined sizes	151 to 200 g/m^2

Paper source	Paper types	Paper sizes	Paper weight (grams per square meter)
Rear paper feed tray (Rear ASF Unit)	Plain paper	A3+, A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Postcard	Reply-paid card, Postcard, Postcard for inkjet printers	---
	Envelopes	Envelope #10, Envelope DL, C6	75 to 90 g/m^2
		C4	80 to 100 g/m^2
	Bright White Ink Jet Paper	A3, A4	92.5 g/m^2
	Photo Quality Self Post Card	Postcard	175 g/m^2
	Photo Quality Self Adhesive Sheets	A4	167 g/m^2
	PGPP	A3+, A3, B/Tabloid, Letter, A4, 8 x 10 in., 5 x 7 in/13x18cm., HV16:9 wide, 4 x 6 in/10x15cm.	255 g/m^2
	PSPP	A3+, A3, Letter, A4, 4 x 6 in/10x15cm.	250 g/m^2
	Matte Paper	A3+, A3, Letter, A4, 8 x 10 in.	167 g/m^2
	Archival Matte Paper	A3+/Super A3/B, A3, A4	189 g/m^2
	Double-Sided Matte Paper	Letter, A4	176 g/m^2
	Photo Quality Ink Jet Paper / Presentation Paper Matte	A3, B/Tabloid, Letter, A4,	102 g/m^2
	UGPP	Letter, A4, 8 x 10 in., 5 x 7 in/13x18cm, 4 x 6 in/10x15cm.	300 g/m^2
	Photo Paper Glossy	A3+/Super A3/B, A3, 11 x 17 in., Letter, A4, 5 x 7 in., 4 x 6 in.	200 g/m^2
	Preprinted	A3+, A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Letterhead	A3, US B /11 x 17 in., B4, Legal, Letter, A4, Executive, B5, A5, A6, B6, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Recycled	A3+, A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	64 to 90 g/m^2
	Color	A3+, A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	64 to 90 gm^2
	Business plain paper	A3+, A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	73 g/m^2
	Thick paper 1	A3+, A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	91 to 150 g/m^2
	Thick paper 2	A3+, A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	151 to 200 g/m^2
	Thick paper 3	A3+, A3, B/Tabloid, B4, Legal, Mexico-oficio (8.5 x13.4 in), 8.5 x 13in, Oficio9 (8.46 x 12.4in), Letter, A4, B5, Executive, A5, Half Letter, A6, B6, 16K, 8K, User-defined sizes	201 to 256 g/m^2

2.2 Printing Specifications

Item		Specification
Print method		Serial inkjet
Paper ejection		Face up
Paper feed method		Friction feed method
Print head		µTFP (µTFP4)
Number of nozzles	Black	800 (400 x 2 columns)
	Color	800 for each color (400 x 2 columns for each color)
Minimum ink droplet size		5.7 pl
Number of ink colors		4
Ink type	Black	Pigment ink
	Color	Pigment ink
Order of Ink Packs		Black, Yellow, Magenta, Cyan in that order from the front left.
Number of Ink Packs		4
Maintenance Box		User-replaceable
Maximum print resolution		4800 x 1200
Durability		600,000 sheets
Print speed (monochrome/ color)	One side	24/24 ipm
	2-sided	16/16 ipm
Printer languages		ESC/P Raster, ESC/P-R, ESC/P-RJ, Postscript3

2.3 Copying Specifications

Item		Specification
Scan resolution	Flatbed	300dpi x 600dpi, 600dpi x 600dpi
	ADF	300dpi x 600dpi, 600dpi x 600dpi
Print resolutions		600dpi x 1200dpi, 600dpi x 2400dpi
Document size	Flatbed	4 x 6 in. to A3/Ledger
	ADF	A6 Landscape to A3/Ledger
Number of pages that can be stored for collate copy		320
Copy features		☐ Standard copy ■ One-sided document --> One sided copy (Scanner glass/ADF) ■ One-sided document --> 2-sided copy (Scanner glass/ADF) ■ 2-sided document --> One-sided copy (ADF) ■ 2-sided document --> 2-sided copy (ADF) ☐ 2-Up copy ■ One-sided document --> One sided copy (Scanner glass/ADF) ■ One-sided document --> 2-sided copy (Scanner glass/ADF) ■ 2-sided document --> One-sided copy (ADF) ■ 2-sided document --> 2-sided copy (ADF) ☐ ID card copy (Scanner glass) ☐ Collate copy ☐ Copying of mix documents

Item			Specification
Copy settings	Number of copies		1 to 999
	Zoom	Custom	25% to 400%
		Auto fit	Yes
	2-Sided		☐ One-sided -> One-sided ☐ One-sided -> 2-sided ☐ 2-sided -> One-sided ☐ 2-sided -> 2-sided
	Image adjustment	Density Adjustment	-4 to +4
		Contrast	-4 to +4
		Color balance	-4 to +4
		Sharpness	Yes
		Remove background	Yes
	Document type (Quality)		☐ Text ☐ Text and Image ☐ Ultra fine ☐ Photo
	Dry time for 2-sided copy		0 sec, 30 sec, 60 sec
	Copy density restriction for 2-sided copy		Yes
	Margin		with Boarder (3mm)
Preview			Yes

2.4 ADF Specifications

Item			Specification
Sensor type			CIS
Light source			LED
Maximum optical resolutions (main scan x sub scan)			600 x 600dpi
Document setting			Centering
Document set orientation			Face up
Auto 2-sided scanning			1 path for 2-sided
Scan speed	One-sided	300 dpi color	0.7 msec/line
		300 dpi monochrome	0.7 msec/line
		600 dpi color	0.8 msec/line
		600 dpi monochrome	0.8 msec/line
	2-sided	300 dpi color	0.8 msec/line
		300 dpi monochrome	0.8 msec/line
		600 dpi color	2.0 msec/line
		600 dpi monochrome	2.0 msec/line
Document paper type			Plain paper, Recycled paper
Document paper size		Size	A6 Landscape to A3/ Ledger
		Paper weight	52 to 128 g/m^2
Sheet feeding capacity (plain paper, recycled paper, 64 g/m^2)			50 sheets or less than 5.5 mm of thickness of documents
ADF durability			90,000 sheets

2.5 Scanner Specifications

Item		Specification
Scanner type		Flatbed
Sensor type		CIS
Light source		LED
Optical resolution		600 x 600 dpi
Maximum optical resolutions		1,200 x 2,400 dpi
Maximum scan area		297 x 431.8 mm
Maximum document size		A3, Leger
Document setting		Far left corner
Scan speed	300 dpi color	1.4 msec/line
	300 dpi monochrome	0.9 msec/line
	600 dpi color	4.0 msec/line
	600 dpi monochrome	2.0 msec/line
	1200 dpi color	7.9 msec/line
	1200 dpi monochrome	4.0 msec/line
Scanner durability		30,000 reciprocating operations of the scanner carriage
Output file format		PDF, JPEG, TIFF, Multi-TIFF
Additional features		☐ Scan to Memory ☐ Scan to Folder ☐ Scan to Email ☐ Document Capture Pro (PC) ☐ Scan to Cloud

2.6 Options Specifications

Item		Specification
Optional cassettes	Dimension	567(W) x 160 (H) x 576(D)
	Weight	11.7 Kg
Optional cabinet	Dimension	772(W) x 320 (H) x 797(D)
	Weight	24.2 Kg
Authentication device stand		

2.7 Network Specifications/Fax Specifications

☐ Network specifications

Item	Specification
Wired Ethernet standards	☐ 10BASE-T (IEEE802.3i) ☐ 100BASE-TX (IEEE802.3u) ☐ 1000BASE-T (IEEE802.3ab) ☐ IEEE802.3az (energy save type)
Wi-Fi standards	☐ IEEE802.11b ☐ IEEE802.11g ☐ IEEE802.11n ☐ IEEE802.11ac
Security protocol	TCP/IPv4, TCP/IPv6
Coordination modes	☐ Infrastructure mode ☐ Wi-Fi Direct mode (Simple AP mode)
Wireless security	☐ WEP (64/128 bit) ☐ WPA2-PSK (TKIP/AES) ☐ WPA-2 Enterprise
Frequency range	2.400 to 2.497 GHz

☐ Fax specifications

Item		Specification
Support lines		Standard analog telephone lines (PSTN), PBX (Private Branch Exchange) telephone systems
Resolution	Monochrome	Standard: 8 pixels per mm x 3.85 lines per mm
		Fine: 8 pixels per mm x 7.7 lines per mm
		Super Fine: 8 pixels per mm x 15.4 lines per mm
		Ultra Fine: 16 pixels per mm x 15.4 lines per mm
	Color	200 x 200 dpi
Speed		Up to 33.6 kbps
Encoding method	Monochrome	MH, MR, MMR
	Color	JPEG
Communication mode		CCITT/ITU Group 3, Super Group 3 (V34)
Document sizes		A5 to A3/Ledger
Paper sizes to print faxes		A3, B4, A4, B5, A5, Legal, Letter
Transmission time		Approx. 3 seconds (ITU-T standard document, Monochrome Standard mode, Super Group 3)
Page memory for received faxes		Up to 550 pages or 200 faxes
Speed dial		Up to 2,000 contents
Group dial		Speed dial and group dial together up to 2,000 contents. (Up to 200 contacts can be included from speed dial in one group)

CHAPTER

3

CONFIGURATION

3.1 Product Configuration (Name of Each Part)

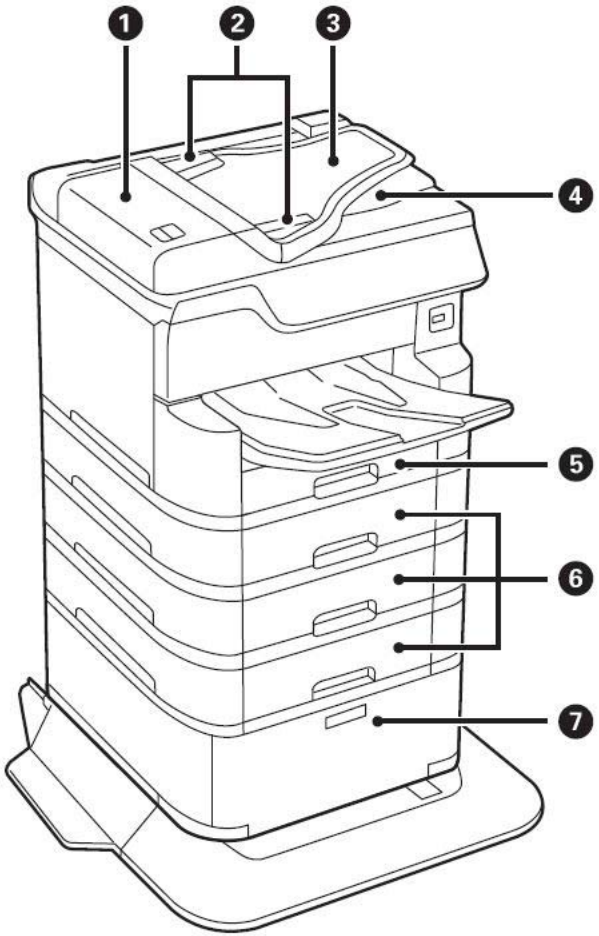


Figure 3-1. Name of Each Part

Table 3-1. Name of Each Part

No.	Name	Description
1	ADF (Auto Document Feeder) Cover (F)	Open when removing jammed originals in the ADF.
2	ADF edge guides	Feed originals straight into the printer. Slide to the edges of the originals.
3	ADF input tray (F)	Feeds originals automatically.
4	ADF output tray	Holds originals ejected from the ADF.
5	Paper Cassette (C1)	Loads paper.
6	Paper Cassette (C1), Paper Cassette (C2) Paper Cassette (C3)	Optional paper cassette unit. Loads paper.
7	Cabinet	Optional cabinet. Stores paper or other consumables.

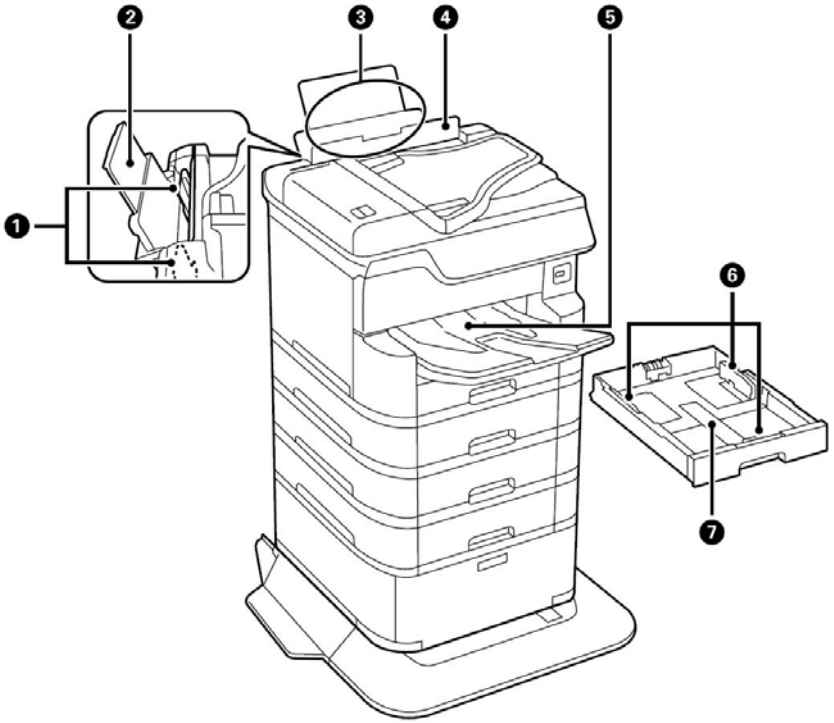


Figure 3-2. Name of Each Part

Table 3-2. Name of Each Part

No.	Name	Description
1	Edge guides	Feed the paper straight into the printer. Slide to the edges of the paper.
2	Paper Support	Supports the loaded paper.
3	Rear Tray (B1)	Load paper.
4	Paper Feed Inlet Cover	Prevents foreign matter from entering inside. Normally, this should be closed.
5	Output Tray (Stacker)	Holds the printed paper. Output tray has lever for adjustment the stack of printed paper.
6	Edge guides	Feed the paper straight into the printer. Slide to the edges of the paper.
7	Paper Cassette	Load paper.

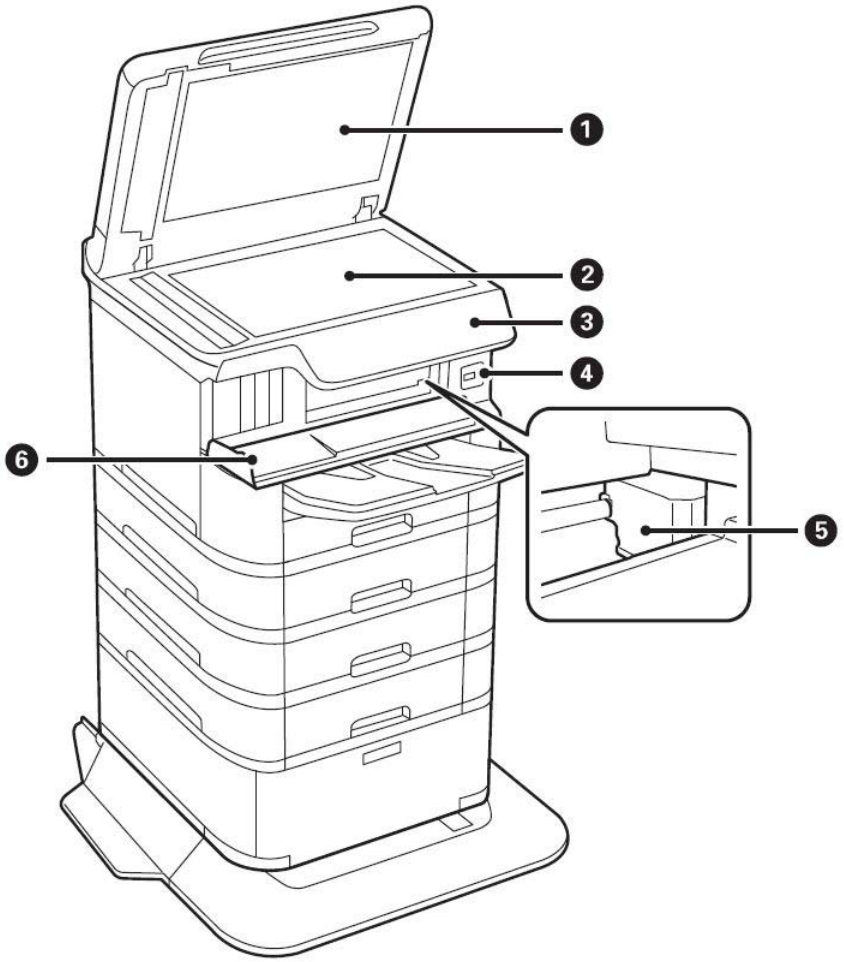


Figure 3-3. Name of Each Part

Table 3-3. Name of Each Part

No.	Name	Description
1	Document cover	Blocks external light during scanning.
2	Scanner Glass	Used to scan the document.
3	Control Panel	Displays the printer status and sets the printer.
4	External Connection Port	Insert external memory.
5	Print Head	Fires ink.
6	Front Cover (A)	Open to remove paper jammed inside.

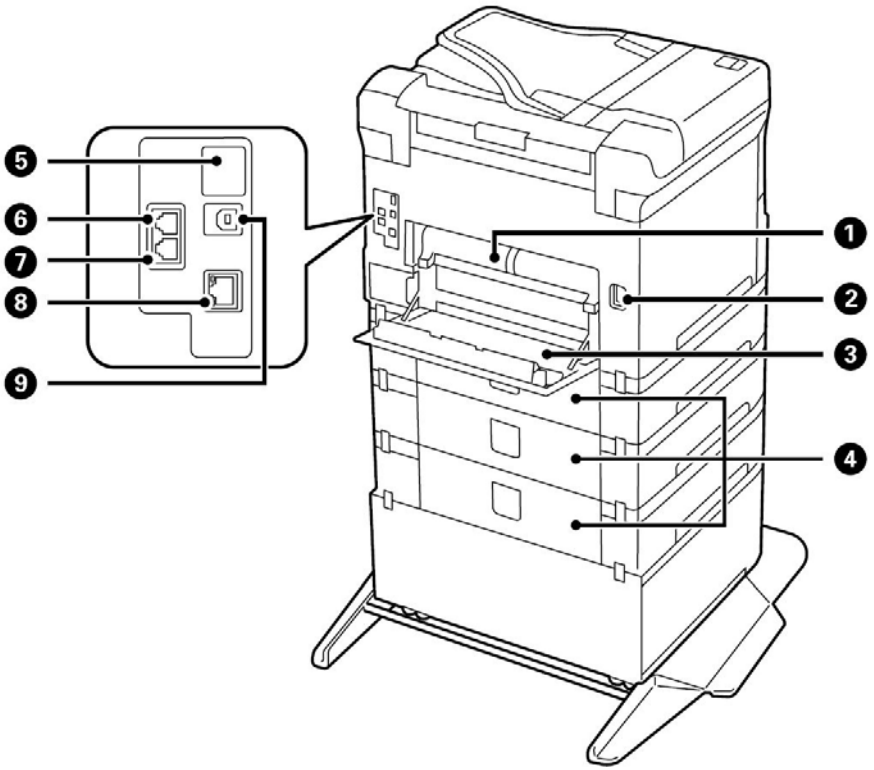


Figure 3-4. Name of Each Part

Table 3-4. Name of Each Part

No.	Name	Description
1	Duplex Unit (D2)	Detach to remove jammed paper.
2	Power Connector	Connect the power cord.
3	Rear Cover (D1)	Open to replace the maintenance box or remove jammed paper.
4	Rear Covers (E)	These are the covers of the optional additional cassette units. Open to remove jammed paper.
5	Service Port	Normally, this is not used. The seal must not be pealed off.
6	LINE Port	Connect a telephone line. (Only when fax subscription)
7	EXT Port	Connect an external telephone. (Only when fax subscription)
8	LAN Port	Connect a LAN cable.
9	USB Port	Connect a USB cable for connecting with a computer.

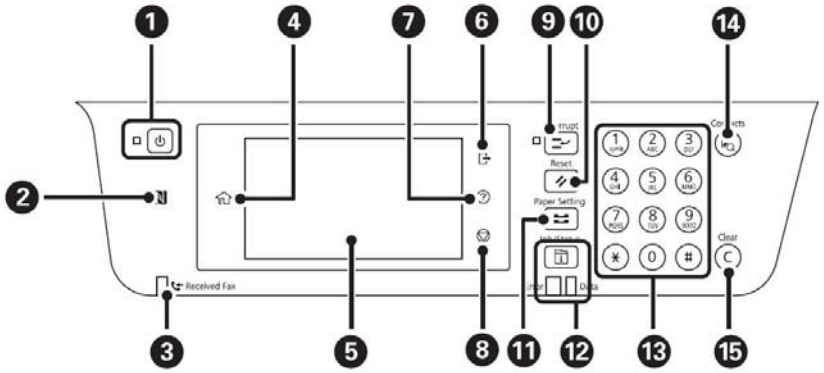


Figure 3-5. Name of Each Part

Table 3-5. Name of Each Part

No.	Description
1	Turns the power on/off.
2	Printing or scanning can be performed by holding up a smart device to this mark.
3	Lit when there is a received document that has not been processed (unread, unprinted, unsaved, etc.)
4	Displays the Home screen.
5	Displays items and messages. Touch the screen to select an item. Slide a finger on the screen to scroll.
6	Logs out from the printer used when user restrictions are enabled. This menu is disabled when users are not restricted.
7	Allows you to check the remedy in the event of trouble or basic operating procedures of the printer.
8	Stops operation.
9	Suspends the operation currently being performed to interrupt it with another operation. Pressing this when the interrupting operation is finished resumes the suspended operation.
10	Restores the setting being operated to the state before the change.
11	Allows the paper size and paper type to be set for each paper feed device.
12	Allows the printer state and job history to be checked. The error lamp (left) flashes or lights when an error occurs. The data lamp (right) flashes during data processing. It is lit if there is a waiting job.
13	Enters numbers, alphabet letters, and symbols.
14	Displays the search screen of the address book. Specifying a registered number displays that contact in the registered mode (scan or fax).
15	Clears the number of copies and other numerical value settings.

3.2 Motor, Sensor, Clutch, and Solenoid Specifications

This section shows the positions and specifications of the motors, sensors, and solenoids used in the product.

3.2.1 Printer Main Unit (Motors)

Table 3-6. Printer Main Unit (Motors)

Name	Function	Type
CR Motor	Used for CR operation driving.	DC motor (42 VDC ±5%)
PF Motor	Used for feed and delivery roller driving.	DC motor (42 VDC ±5%)
ASF Motor	Used for driving the feed mechanism. ☐ Pickup Roller ☐ Rear ASF Unit ☐ Auto Duplex Print Assy (Intermediate Roller)	DC motor (42 VDC ±5%)
Lift Motor	Used for the up/down operation driving of the paper cassettes.	DC motor (42 VDC ±5%)
APG Motor	Used for driving the PG height change mechanism in accordance with the print settings and paper type.	DC motor (42 VDC ±5%)
Supply Pump Motors	Used for supplying ink from the ink packs to the inside of the ink supply unit.	DC motor (42 VDC ±5%)

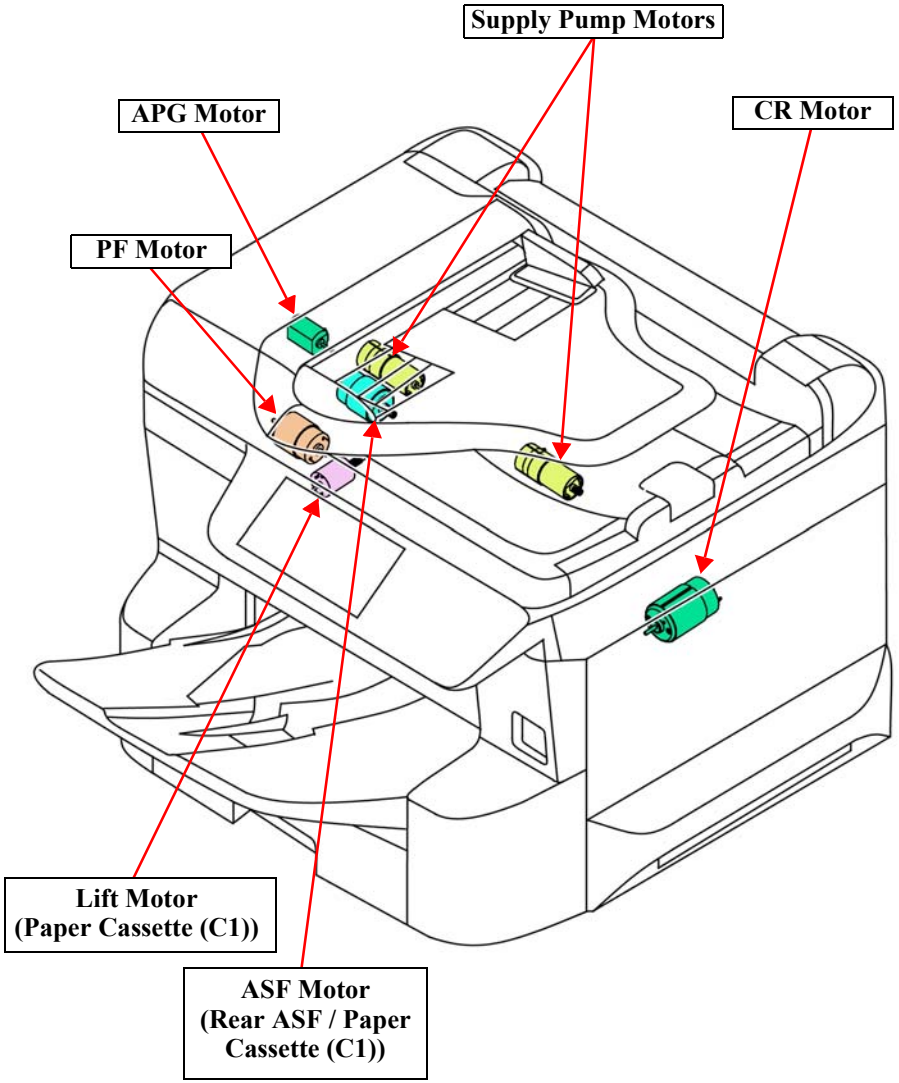


Figure 3-6. Printer Main Unit (Motors)

3.2.2 Printer Main Unit (Ink Detection and Cover Detection System Sensors)

Table 3-7. Ink Supply and Exterior System Sensors

Name	Function	Type
Ink Cartridge Sensor	Used for ink pack recognition.	CSIC
Maintenance Box Sensor	Used for maintenance box recognition.	CSIC
Ink End Sensor	Detects the end of the ink.	Photo interrupter (3.3 VDC ±5%)
Rear Cover Open Sensor	Detects the open/closed state of the rear cover.	Mechanical contact (3.3 VDC ±5%)
Front Cover Open/Closed Sensor	Detects the open/closed state of the front cover.	Mechanical contact (3.3 VDC ±5%)

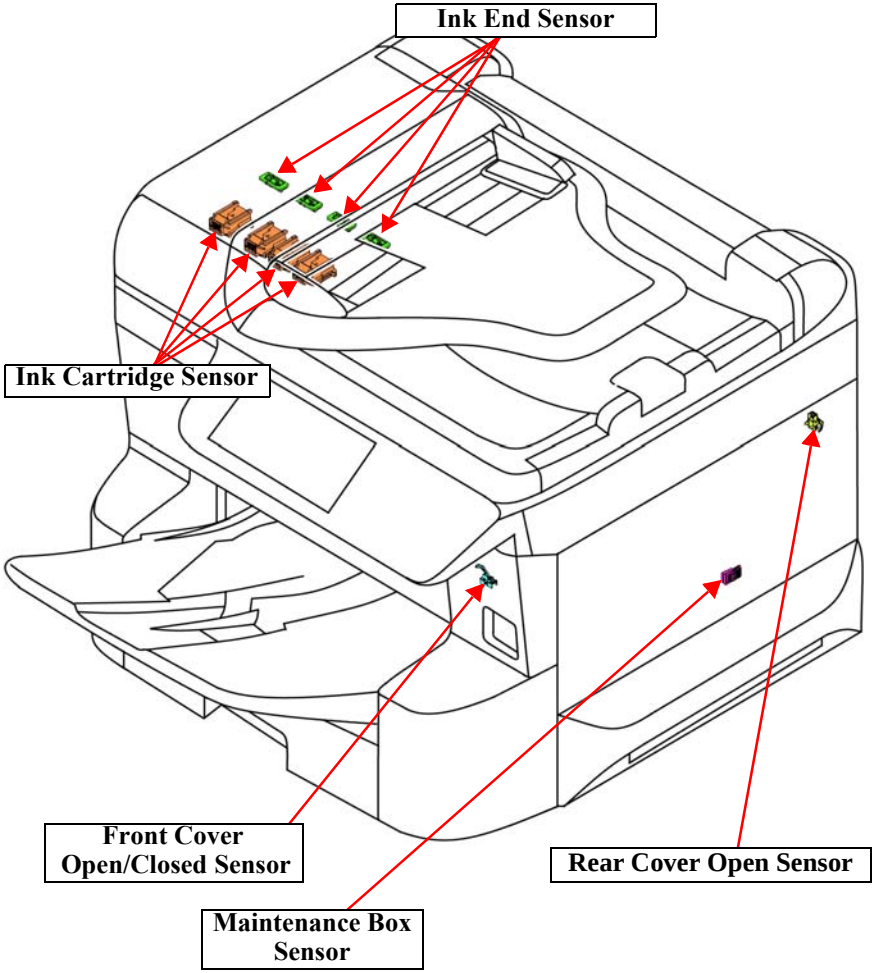


Figure 3-7. Ink Detection and Cover Detection Sensors

3.2.3 Printer Main Unit (CR Mechanism Sensors and Solenoids)

Table 3-8. CR Mechanism Sensors and Solenoids

Name	Function	Type
CR Encoder	Used for CR operation control (CR scale reading).	Photo interrupter (3.3 VDC ±5%)
APG Encoder	Used for APG motor operation control.	Photo interrupter (3.3 VDC ±5%)
PW Sensor	Used for paper leading edge and paper width detection.	Photo interrupter (3.3 VDC ±5%)
APG Drive Sensor	Used for detecting the APG phase.	Photo interrupter (3.3 VDC ±5%)
PW Solenoid	Used for the PW shutter open/close operation.	---

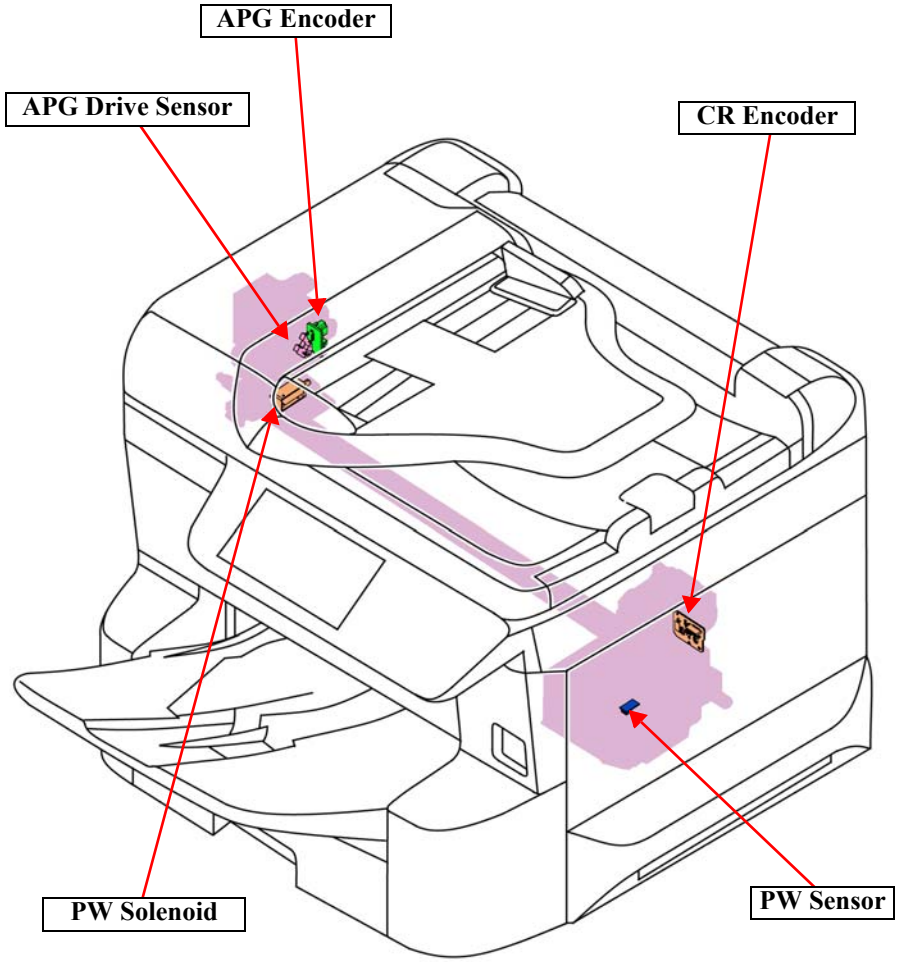


Figure 3-8. CR Mechanism Sensors and Solenoids

3.2.4 Printer Main Unit (Paper Feed and Conveyance System Sensors and Solenoids)

Table 3-9. Paper Feed and Conveyance System Sensors and Solenoids

Name	Function	Type
PF Encoder	Used for paper feed driving (PF motor) control.	Photo interrupter (3.3 VDC ±5%)
ASF Encoder	Used for ASF motor operation control.	Photo interrupter (3.3 VDC ±5%)
Feed Sensor	Used for paper conveyance detection between the pickup roller and PE sensor.	Photo interrupter (3.3 VDC ±5%)
Duplex Print Assy Paper Detection Sensor	Detects whether or not there is paper in the duplex print assy when a paper jam occurs.	Photo interrupter (3.3 VDC ±5%)
PE Sensor	Detects the paper leading edge and paper trailing edge during paper feeding.	Photo interrupter (3.3 VDC ±5%)
Rear ASF Solenoid	Performs switching of the ASF motor drive transmission to the rear ASF unit.	---
Lift Phase Sensor	Used for detecting the phase of lift motor driving.	Photo interrupter (3.3 VDC ±5%)
Hopper Up/down Sensor	Detects the up/down state of the hopper.	Photo interrupter (3.3 VDC ±5%)

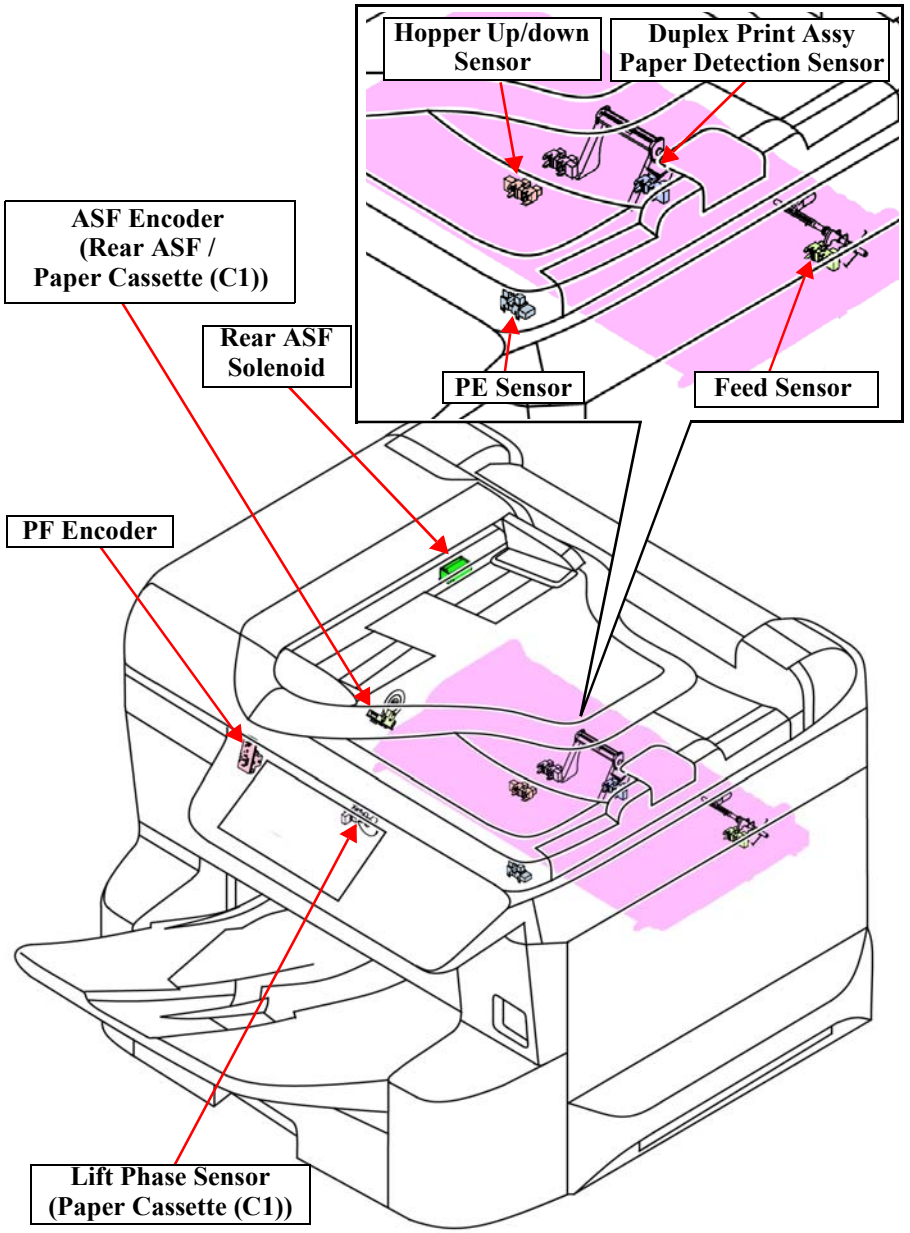


Figure 3-9. Paper Feed and Conveyance System Sensors and Solenoids

3.2.5 Printer Main Unit (Paper Cassette Detection and Other Sensors and Solenoids)

Table 3-10. Paper Cassette Detection and Other Sensors and Solenoids

Name	Function	Type
Paper Detection Sensor	Detects whether or not there is paper inside the paper cassette.	Photo interrupter (3.3 VDC ±5%)
Paper Detection Sensor (Rear ASF Unit)	Detects whether or not there is paper inside the rear ASF unit.	Photo interrupter (3.3 VDC ±5%)
Cassette Detection Sensor	Detects the insertion state of the paper cassette.	Mechanical contact (3.3 VDC ±5%)
Cassette Paper Size Sensor (1)	Detects the size of the paper loaded in the paper cassette. (Paper length is determined from the end guide position.)	Mechanical contact (3.3 VDC ±5%)
Cassette Paper Size Sensor (2)	Detects the size of the paper loaded in the paper cassette. (Paper width detection)	Photo interrupter (3.3 VDC ±5%)
Intermediate Release Solenoid	Releases the nip of the intermediate roller.	---
Intermediate Nip Release Sensor	Detects the nip state of the intermediate roller.	Photo interrupter (3.3 VDC ±5%)
SMAP Phase Sensor (PF Eccentric Correction)	Detects the phase of the SMAP roller.	Photo interrupter (3.3 VDC ±5%)
Temperature and Humidity Sensor	Measures the temperature and humidity to set a suitable print drying time.	---

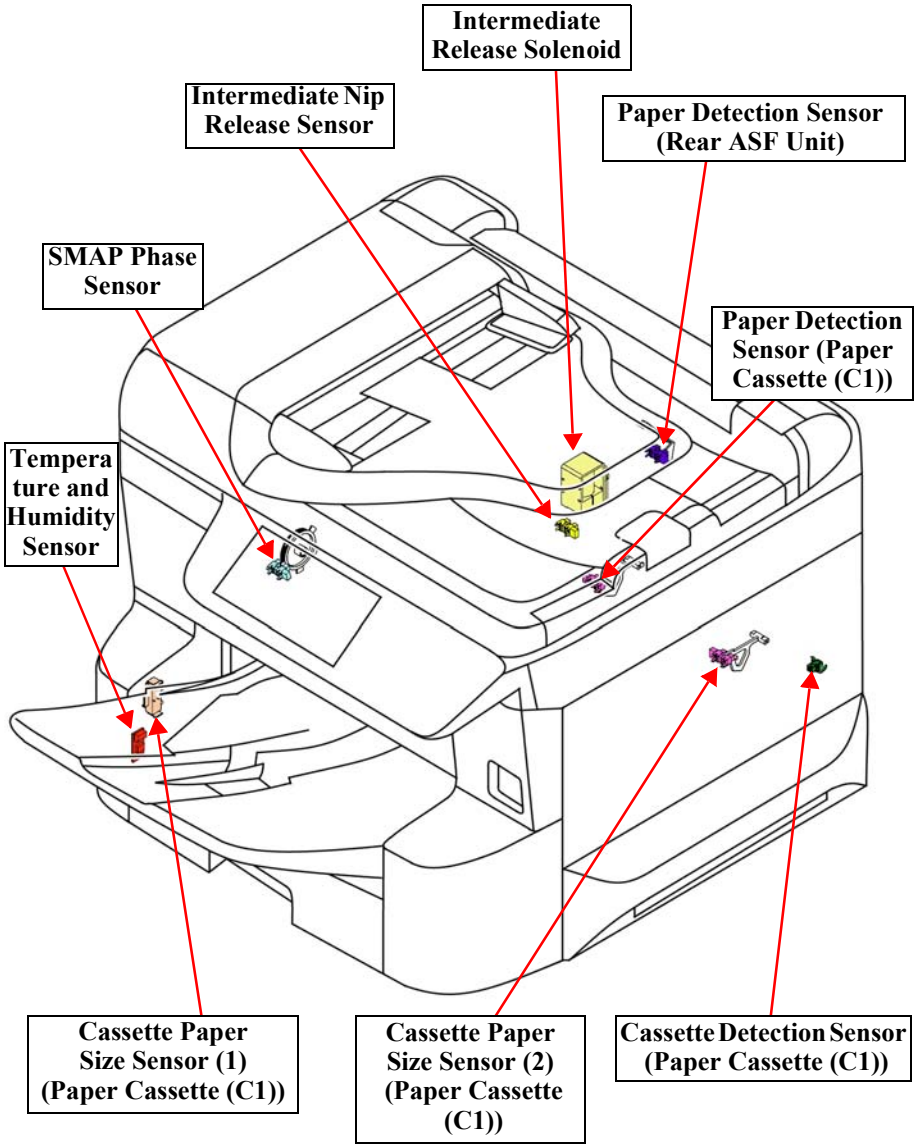


Figure 3-10. Paper Cassette Detection and Other Sensors and Solenoids

3.2.6 Options (Motors)

Table 3-11. Options (Motors)

Name	Function	Type
ASF Motor	Used for driving the feed mechanism. ☐ Pickup Roller ☐ 2nd Separation Roller	DC motor (42 VDC ±7%)
Lift Motor	Used for the up/down operation of the paper cassettes.	DC motor (42 VDC ±7%)

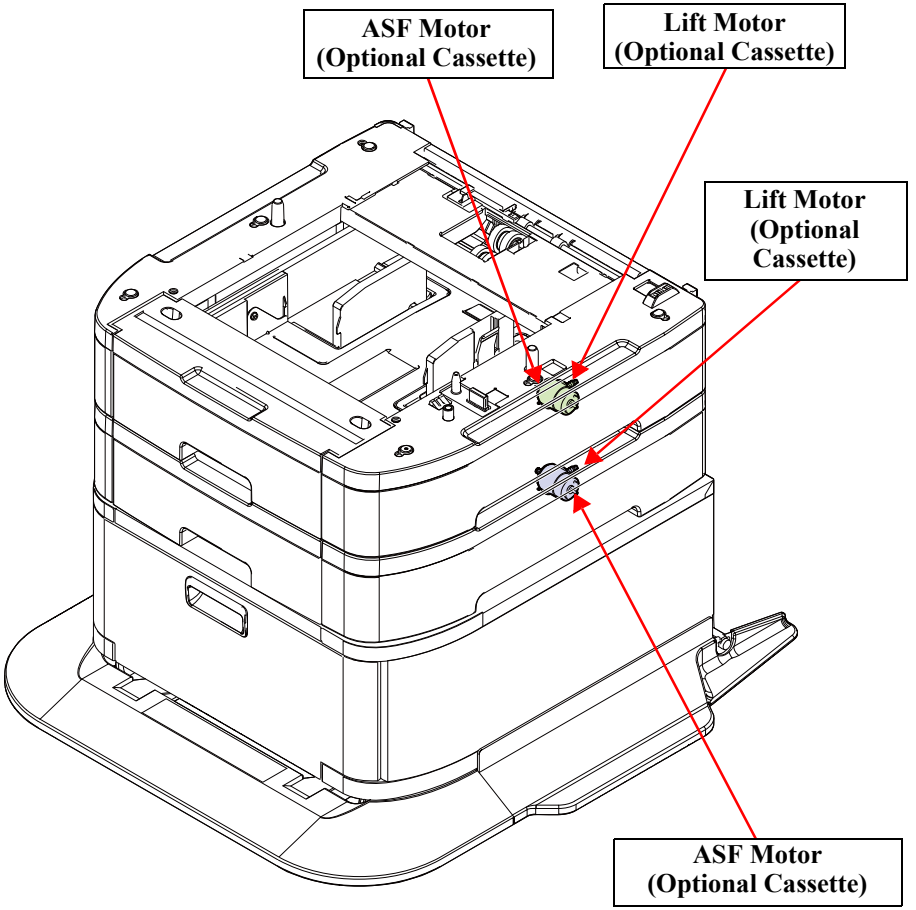


Figure 3-11. Options (Motors)

3.2.7 Options (Sensors)

Table 3-12. Options (Sensors)

Name	Function	Type
ASF Encoder	Used for ASF motor operation control.	Photo interrupter (3.3 VDC ±5%)
Lift Phase Sensor	Used for detecting the phase of lift motor driving.	Photo interrupter (3.3 VDC ±5%)
Hopper Up/down Sensor	Detects the up/down state of the hopper.	Photo interrupter (3.3 VDC ±5%)
Feed Sensor	Used for paper conveyance detection from the pickup roller.	Photo interrupter (3.3 VDC ±5%)
Paper Detection Sensor	Detects whether or not there is paper inside the paper cassette.	Photo interrupter (3.3 VDC ±5%)
Cassette Detection Sensor	Detects the insertion state of the paper cassette.	Mechanical contact (3.3 VDC ±5%)
Jam Processing Cover Sensor	Detects the open/closed state of the rear cover.	Mechanical contact (3.3 VDC ±5%)
Cassette Paper Size Sensor (1)	Detects the size of the paper loaded in the paper cassette. (Paper length is determined from the end guide position.)	Mechanical contact (3.3 VDC ±5%)
Cassette Paper Size Sensor (2)	Detects the size of the paper loaded in the paper cassette. (Paper width detection)	Photo interrupter (3.3 VDC ±5%)

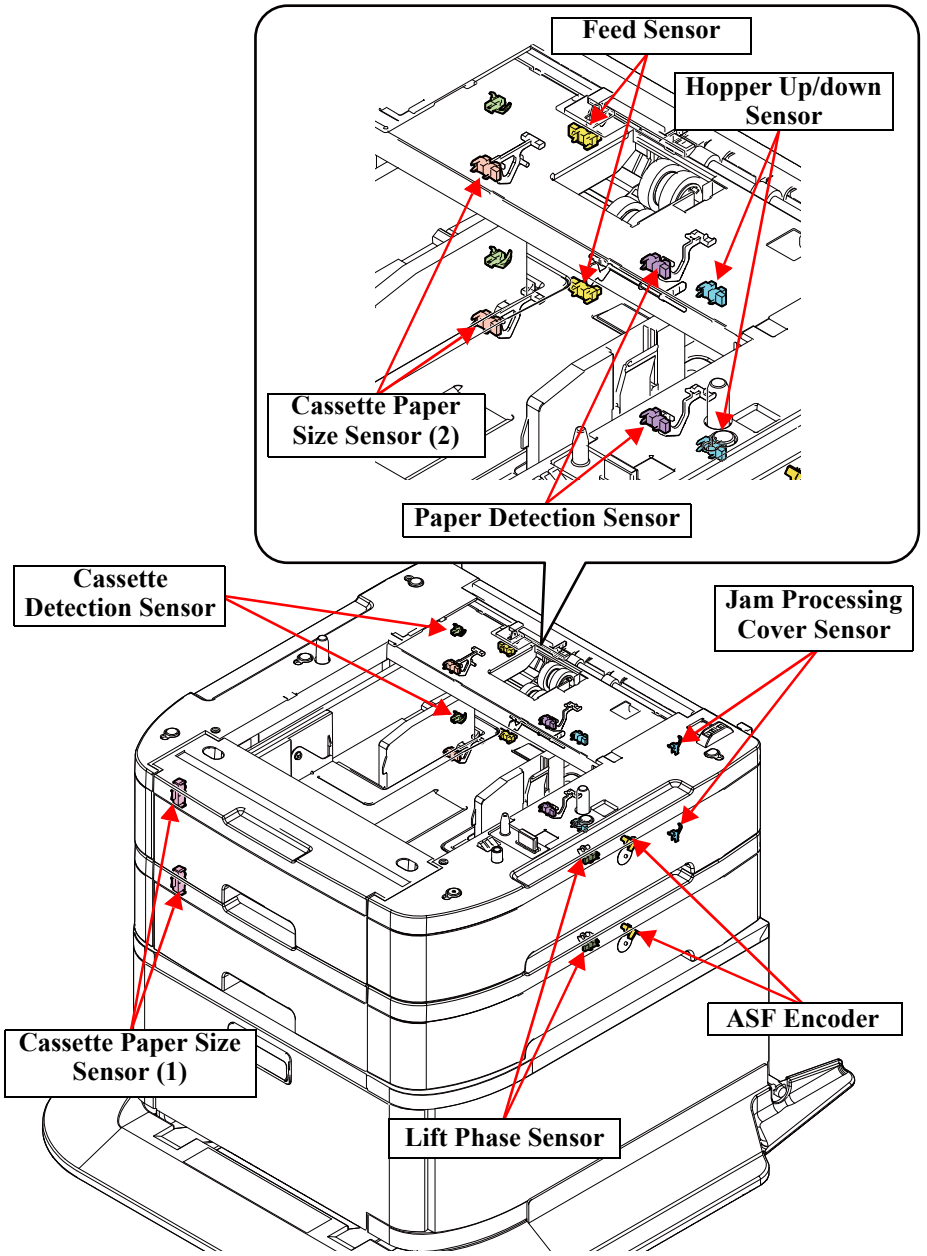


Figure 3-12. Options (Sensors)

3.2.8 Scanner (Motors and Sensors)

Table 3-13. Scanner (Motors and Sensors)

Name	Function	Type
Scanner Motor	Used for driving the scanner carriage.	DC motor (42 VDC ±5%)
CIS Module	Used to read the document on the scanner glass and read the document on the ADF surface.	CIS imaging sensor
SCN Encoder	Used for scanner motor operation control.	Photo interrupter (3.3 VDC ±5%)
SCN Document Size Sensor	Detects the size of the document placed on the scanner glass.	Photo interrupter (3.3 VDC ±5%)
ADF Closed Sensor	Detects the open/closed state of the ADF unit.	Photo interrupter (3.3 VDC ±5%)
ADF Half Closed Sensor		Photo interrupter (3.3 VDC ±5%)

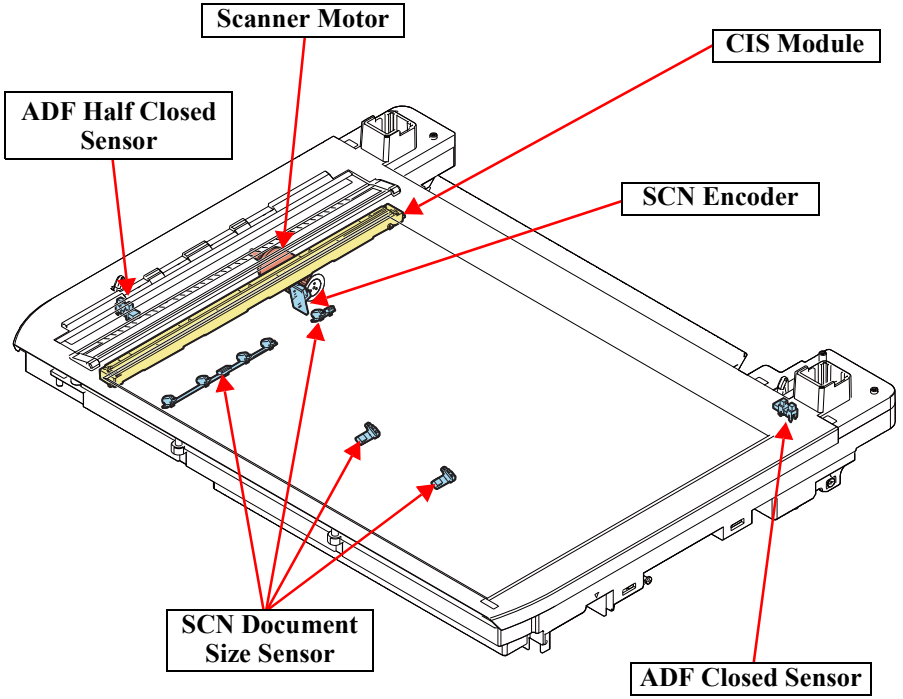


Figure 3-13. Scanner (Motors and Sensors)

3.2.9 ADF (Motors and Sensors)

Table 3-14. ADF (Motors and Sensors)

Name	Function	Type
ADF Pickup Motor	Used for driving the document feed mechanism.	DC motor (42 VDC ±5%)
ADF PF Motor	Used for driving the document conveyance mechanism.	DC motor (42 VDC ±5%)
CIS Module	Used for reading the back side when duplex scanning.	CIS Imaging Sensor
ADF Pickup Encoder	Used for controlling operation of the ADF pickup motor.	Photo interrupter (3.3 VDC ±5%)
ADF PF Encoder	Used for controlling operation of the ADF PF motor.	Photo interrupter (3.3 VDC ±5%)
ADF PE Sensor A	Detects whether or not there is a document in the paper feed path.	Photo interrupter (3.3 VDC ±5%)
ADF PE Sensor B	Detects whether or not there is a document in the paper feed path.	Photo interrupter (3.3 VDC ±5%)
ADF PE Sensor C	Detects whether or not there is a document in the paper feed path.	Photo interrupter (3.3 VDC ±5%)
ADF Document Sensor	Detects whether or not a document is placed on the ADF document support.	Photo interrupter (3.3 VDC ±5%)
ADF Document Size Sensors	Detects the size of the document placed on the ADF document support.	Photo interrupter (3.3 VDC ±5%)
ADF Cover Open/Closed Sensor	Detects the open/closed state of the ADF cover.	Mechanical contact (3.3 VDC ±5%)

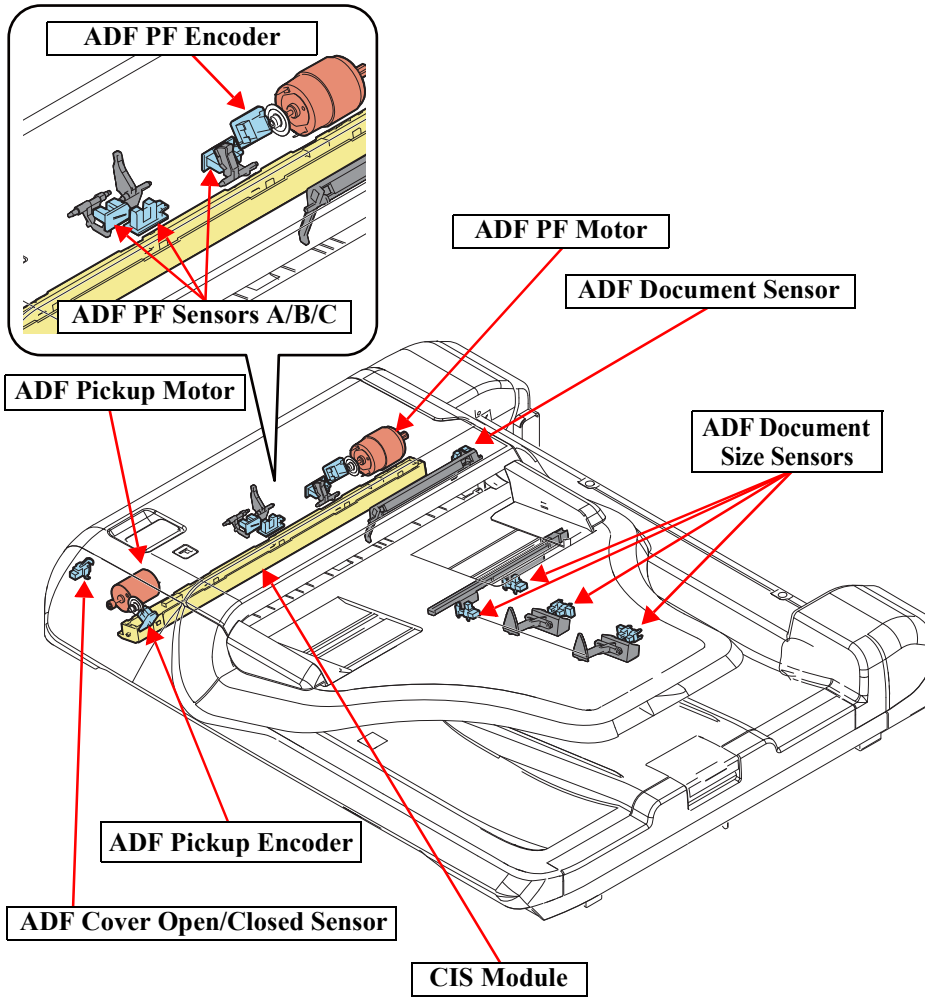


Figure 3-14. ADF (Motors and Sensors)

3.3 OPERATING PRINCIPLES

3.3.1 Print Head

WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a feature the brand new Print Head: mTFP4 head.

The mTFP4 head features dense nozzle pitches (600 dpi); denser than the traditional heads. In addition, the number of nozzles per row is also greater with the row length of 1.33 inches.

These features contribute to higher image quality and faster printing by increasing both the quantity and the density of ink droplets per shot. The mTFP4 head also features excellent durability; twice as good as the traditional Print Heads.

The following table lists the Print Head specifications.

Table 3-15. Nozzle Configuration

Printhead type	µTFP4
Color	Black (B: 2 row), Cyan (C: 2 row) Magenta (M: 2 row), Yellow (Y: 2 row)
Number of nozzles	3200 nozzles (400 nozzles per row)
Nozzle pitch	0.042 mm (1/600 inch)

Figure 3-15. Print Head Appearance

The nozzle arrangement of the mTFP4 head mounted on this printer differs from that of the traditional printers. The nozzles of the same color are not arranged next to each other.

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

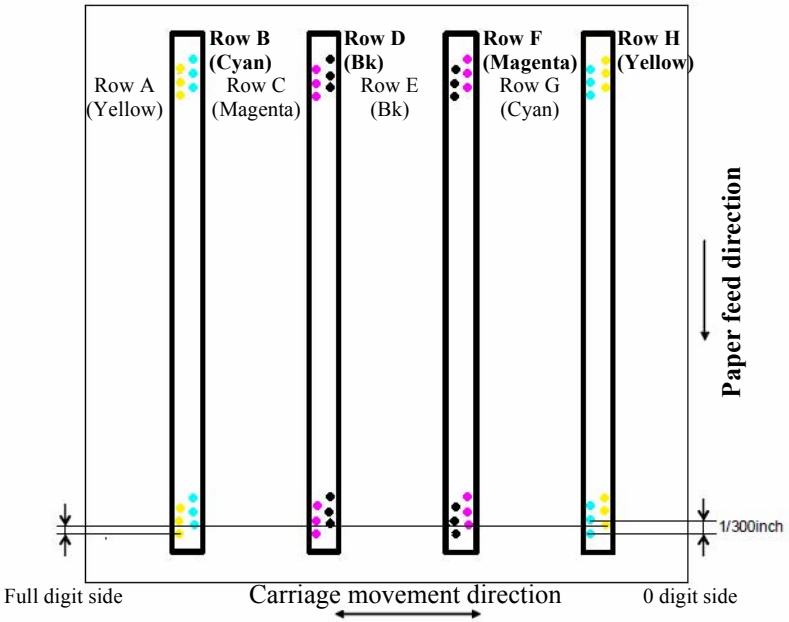


Figure 3-16. Nozzle layout

This product uses off-carriage type ink supply mechanism. Therefore, the Print Head is equipped with self-sealing valves[1] so that the amount of ink fired from the Print Head is not affected by variation in pressure inside the ink path caused by movements of the carriage or ink supply operations.

1. This valve opens only when the pressure of the output side drops below a specified value. Because of this characteristic of the valve, pressure variation in the input side does not affect the output side.

3.3.2 Carriage Mechanism

The carriage mechanism of this product consists of the CR Unit, CR Encoder Sensor, CR Scale, CR Motor, CR Timing Belt, and etc.
The carriage mechanism is a key mechanism to ensure stable print quality because printing is performed by moving the CR Unit from side to side.

The CR Unit is supported by the CR Shaft on the lower part and by the CR Guide Frame on the top.

The CR Unit is attached to the CR Timing Belt that is moved by the CR Motor so that the assy can move from side to side to print. The position and speed of the CR Unit are always monitored by the CR Encoder Sensor and CR Scale, and the CR Motor is controlled in accordance with the information acquired by the CR Encoder Sensor.

To protect the PW Sensor from ink mist, the PW sensor shutter mechanism is mounted on the bottom of the CR Unit.

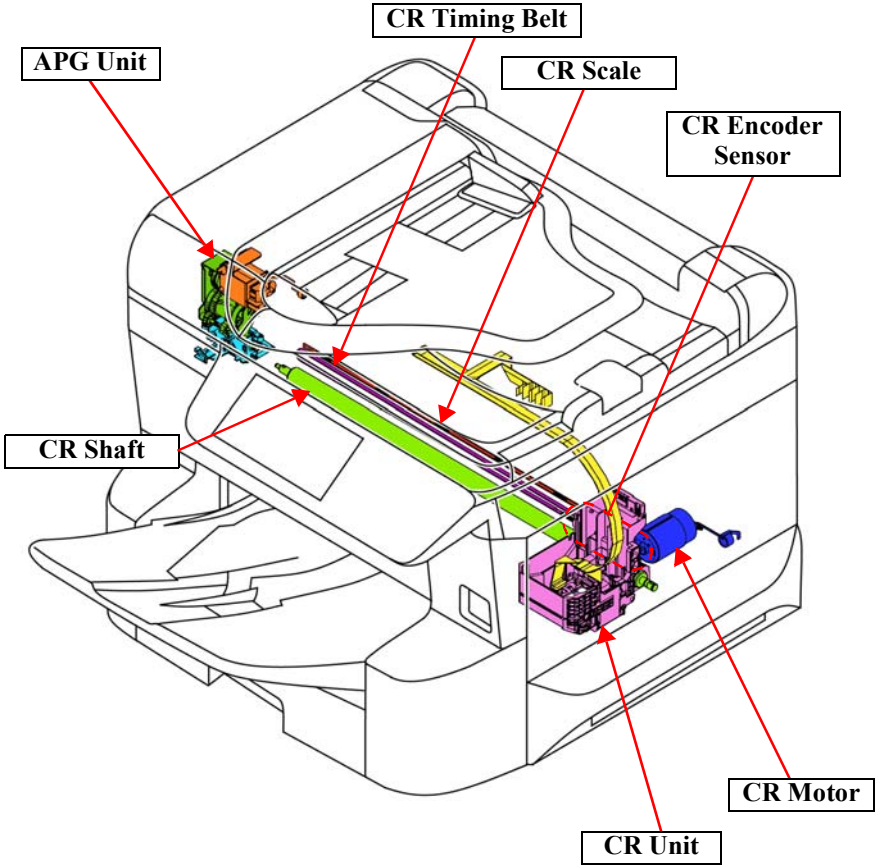


Figure 3-17. Carriage mechanism

3.3.2.1 PW Sensor Shutter Mechanism

To reduce the influence of ink mist on the PW Sensor, WF-C8690/C8690a/ WF-C8610/WF-C8190/C8190a are equipped with the PW sensor shutter mechanism.

PW sensor shutter mechanism is composed of the Knock Cam on the bottom of the CR Unit, the PW Sensor Shutter, and the CR Solenoid Assy at the end of the 130 digit side (Left side of printer).

☐ Operating Principles

The PW sensor shutter mechanism is opened and closed by the Knock Cam mechanism[1] . The Shutter Lever of the CR Solenoid Assy pushes the Knock Shaft, and the PW Sensor Shutter at the end of the shaft slides open accordingly. The PW Sensor Shutter slides shut in the reverse process.

The CR Solenoid Assy controls the operation of the Shutter Lever by electrifying the solenoid[2] . The relationship of the electrifying status of the Solenoid and the sticking-out/retracted status of the Shutter Lever is as follow.

Table 3-16. Electrifying status of the Solenoid and the sticking-out/retracted status of the Shutter Lever

Electrifying status of the Solenoid	Electrified	Not electrified
Shutter Lever	Sticking out	Retracted

By moving the CR Unit to the end of the left side of the printer (where the PW Sensor Lever functions) with the Shutter Lever sticking out, the PW Sensor Shutter is opened or closed.

When printing normally, the Solenoid is not electrified, so if the CR Unit to the end of the Left side of printer (where the PW Sensor Lever functions), the PW Sensor Shutter does not operate at all.

Only when the PW Sensor detects paper, the PW Sensor Shutter is opened. Soon after the PW Sensor detects the paper, the PW Sensor Shutter is closed.

1. This mechanism is composed of the Knock Shaft, Rotor, and the Knock Cam. It is used mainly for the knock shift mechanism of knock type ball point pens. In this case, the CR Unit plays a role of the Knock Cam.
2. Equipped with a pull type Solenoid in which the magnetic body id pulled by the electromagnetic force.

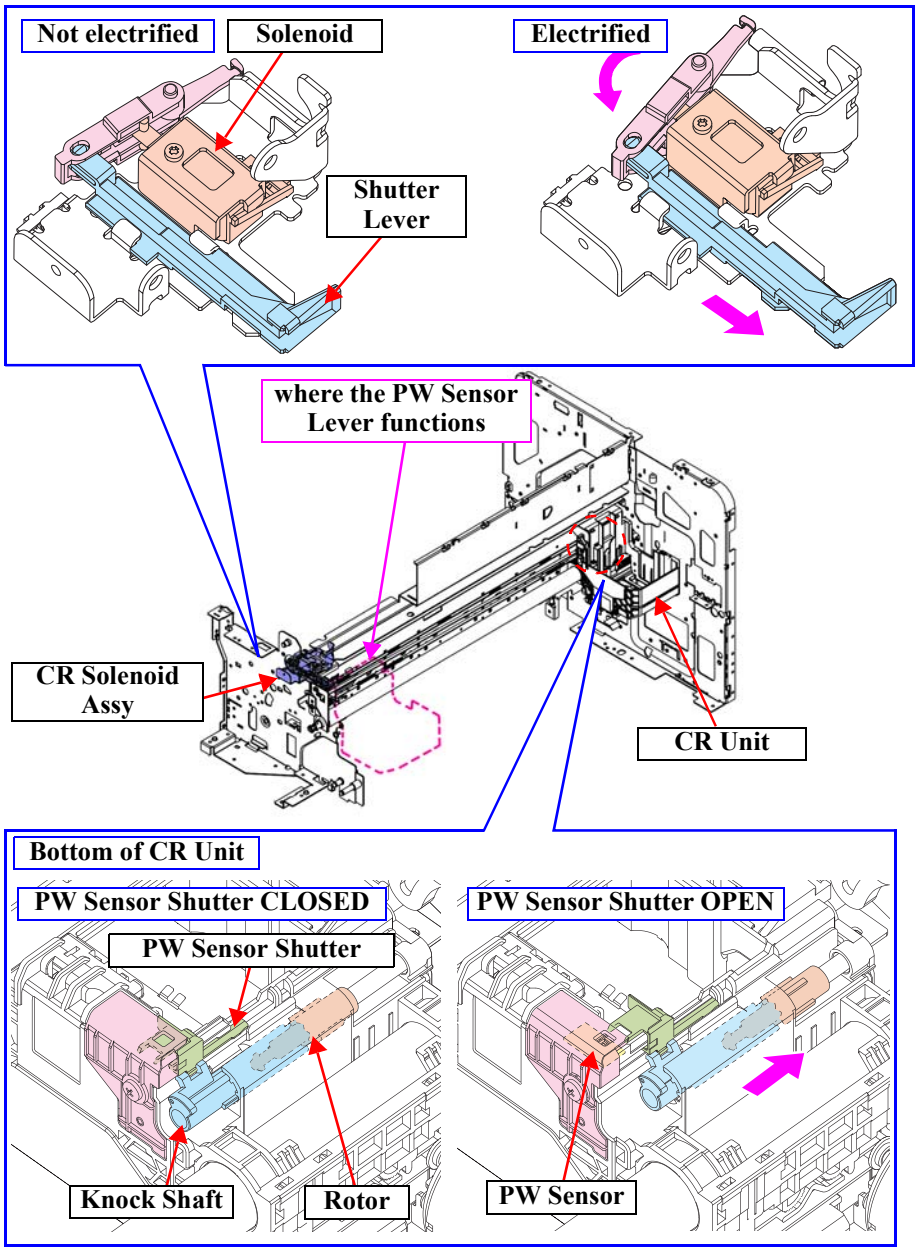


Figure 3-18. PW sensor shutter mechanism

3.3.3 Ink Supply Mechanism

The ink supply mechanism consists of the Decompress Pump Unit and the Ink Supply Unit that is composed of the Ink Supply Tube, Diaphragm Pump[1] , Buffer, and Ink Cartridge Holder.

According to the quantity of ink discharged from the Print Head, ink is sucked from the ink cartridges by the Decompress Pump Unit, Diaphragm Pump and Buffer. The ink path from the Buffer through the ink tube to the self-sealing valve in the Print Head is always kept pressurized even after the power is turned off by the check valves and the Diaphragm Pump. Therefore, ink can be supplied stably during high-volume printing.

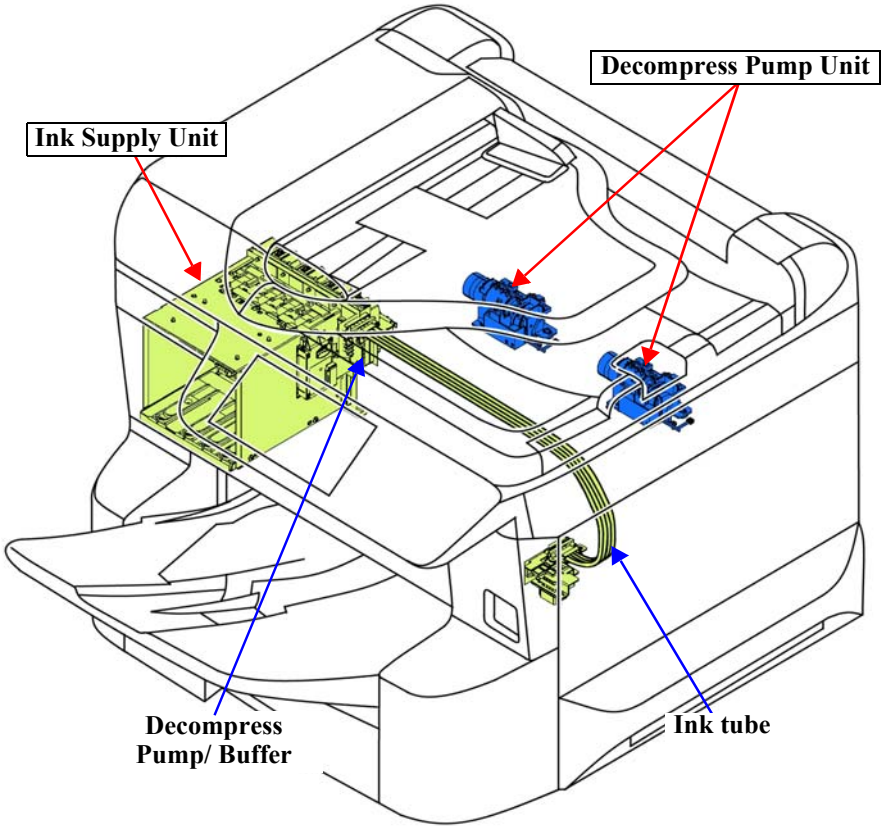


Figure 3-19. Ink supply mechanism

1. The diaphragm pump is a pump equipped with a diaphragm and check valves in both input and output sides. Up-and-down movements of the diaphragms change volume of the pump, and this causes ink to be sucked or ejected.

3.3.3.1 Ink Supply Mechanism Operating Principles

In the case of WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a, ink supply becomes ready by installing the ink cartridge into the Ink Cartridge Holder. The Ink Cartridge also mounts the CR Contact Module.

The diaphragm is operated when the Decompress Pump Unit reduces the pressure inside the Diaphragm Pump, and it sucks ink from the ink cartridges/ ink packs Ink is supplied through the Buffer and ink tube to the Print Head.

WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a feature two Decompress Pumps and connected with the two Diaphragm Pumps in the ink path. These two Decompress Pumps and Diaphragm Pumps supply sufficient ink needed for the quantity of the Print Head's ink discharge in high speed printing with high image quality.

Additionally, WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a has magnet valve to connector of the print head and ink tube for improving the serviceability of the printhead.
When replacing the printhead, closing the magnet valve by removing the magnet holder, and close the ink pass.
As a result, ink discharge from Ink pass is not needed on WF-C8690/C8690a/ WF-C8610/WF-C8190/C8190a.

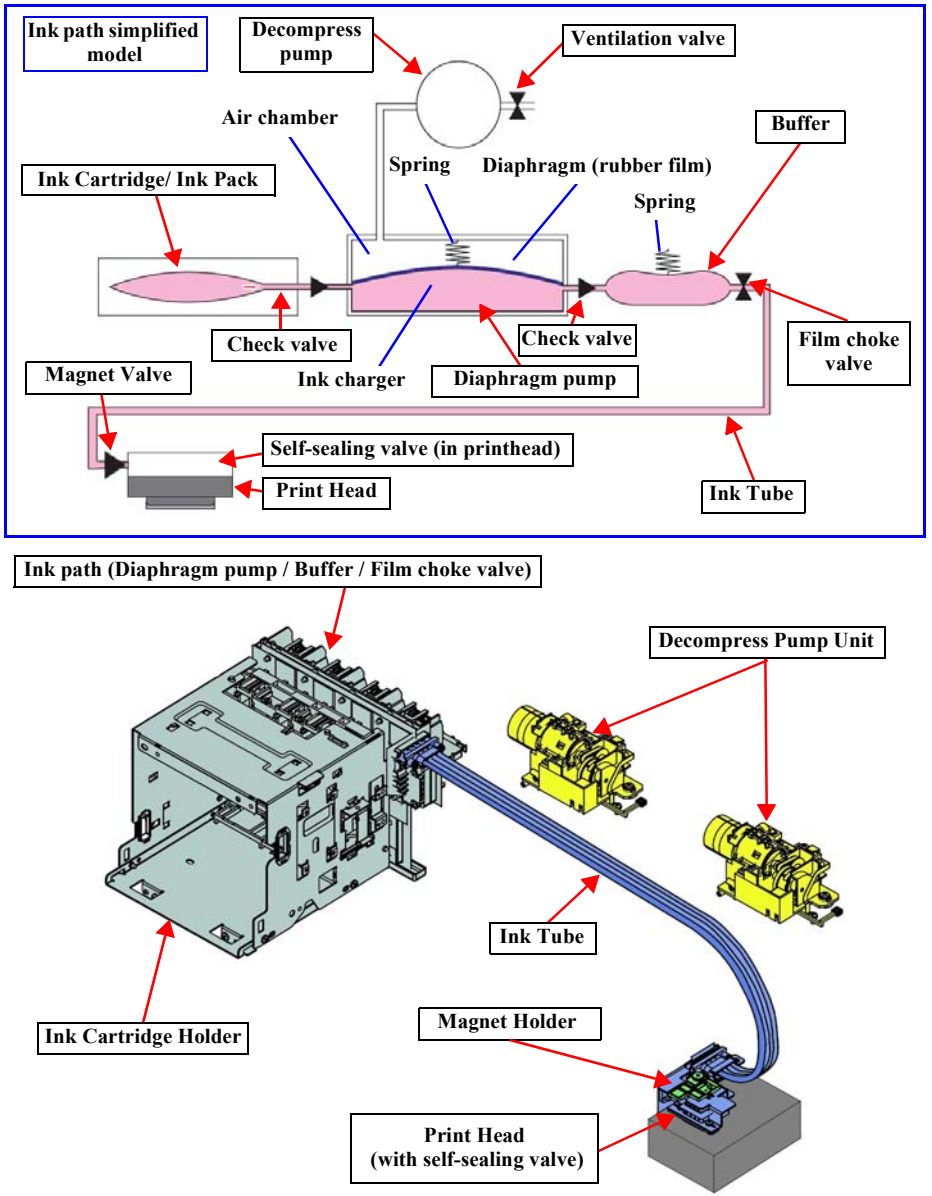


Figure 3-20. Ink supply mechanism

3.3.4 Ink System Mechanism

3.3.4.1 Overview

The ink system mechanism of the WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a is composed of the Maintenance Unit, and Maintenance Box.

The configuration of each unit/assy is as follows.

Table 3-17. Configuration of the ink system mechanism

Unit/Assy	Configuration	Power Source and Control
Maintenance Unit	· Cap mechanism · Wiper mechanism · Carriage lock mechanism	· PF Motor · PF Scale/ PF Encoder
	Pump mechanism	
	Waste Ink Tube	---
Maintenance Box	Waste Ink Pad	---

The ink sucked by the Cap mechanism and Pump mechanism from the Print Head is drained via the Waste Ink Joint Tube and into the Waste Ink Pad in the Maintenance Box. The amount of waste ink is controlled by the counter in the firmware taking the amount of evaporation into account so as not to let the ink leak out of the printer because the waste ink exceeds the limit of the storage capacity.

The Maintenance Box of WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a is removable[1] , so the user can replace the Maintenance Box for themselves when the maintenance error has occurred.

Additionally, serviceability of Maintenance Unit is improved because Maintenance Unit is unitized.

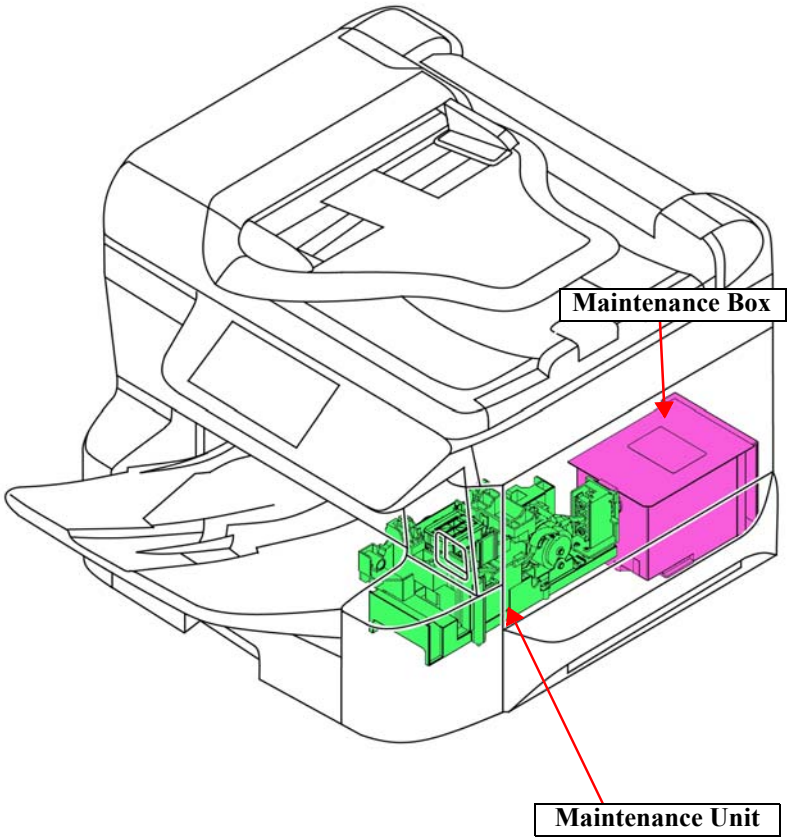


Figure 3-21. Ink system mechanism

1. The Maintenance Box has a CSIC to store the counter value. Therefore, the actual amount of waste ink is kept monitored by the counter if the Maintenance Box is removed before the time for replacement.

3.3.4.2 Drive Path

The wiper mechanism, carriage lock mechanism, pump mechanism, and ink system mechanism is driven by the PF Motor's drive force. The drive path is as follows.

☐ Wiper Mechanism/Carriage Lock Mechanism

The PF Motor's drive force is transmitted from the IS Driven Gear on the end of the PF Roller to the IS Spur Gear/IS Compound Gear/IS Clutch Gear/CR Lock Gear/CR Lock Cam via the ES Gear, and drives the wiper mechanism and the carriage lock mechanism. The transmission of the PF Motor's drive force to the wiper mechanism and carriage lock mechanism is controlled by the cap mechanism and the IS Clutch Gear.

Table 3-18. Wiper/Carriage Lock mechanisms by PF Motor's rotational direction

PF Motor's rotational direction		Clock wise ⟷ Counter clock wise		
Wiper mechanism	IS Clutch Gear/ Intermittent Gear	Down	Up	
Carriage lock mechanism	CR Lock Cam	Down	Set	Down

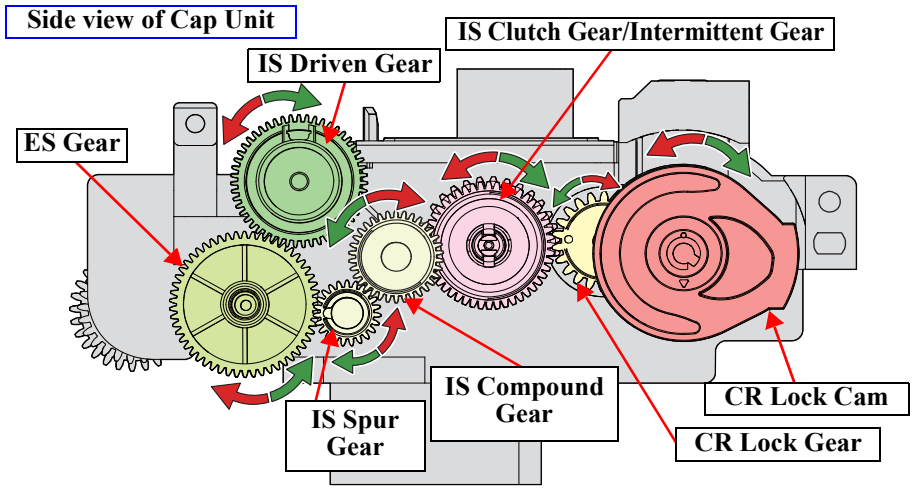


Figure 3-22. Drive path of the wiper mechanism and carriage lock mechanism

Since the protrusion on the Cap Slider[1] is engaged with the hole on the Intermittent Gear normally, the Intermittent Gear is fixed and the PF Motor's drive force is not transmitted to the wiper mechanism or carriage lock mechanism.

If the position of the Cap Slider is changed for capping or the like, the protrusion on the Cap Slider is disengaged from the hole on the Intermittent Gear. Therefore, the Intermittent Gear rotates together with the IS Clutch Gear. In this state, the PF Motor's drive force is transmitted up to the wiper mechanism and carriage lock mechanism.

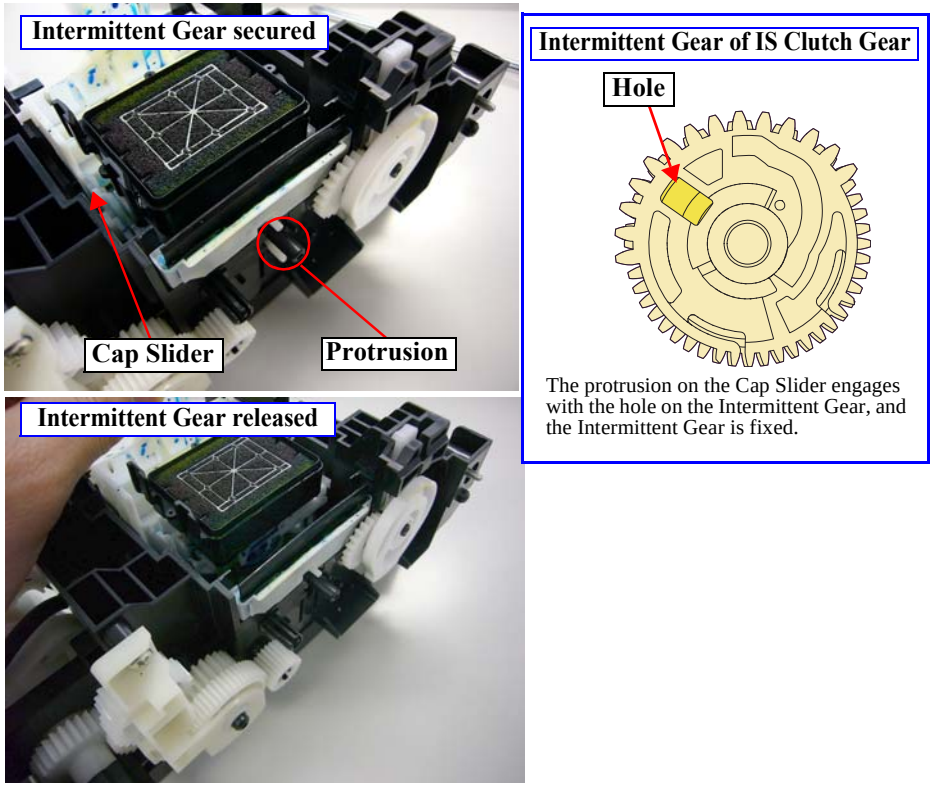


Figure 3-23. Drive control of the wiper mechanism and carriage lock mechanism

1. The operation of the Cap Slider is carried out by the cap mechanism. For the details, see Capping Mechanism (p. 44).

☐ Pump Mechanism

The PF Motor's drive force is transmitted from the IS Driven Gear on the end of the PF Roller to the ES Compound Gear/Pump Compound Gear/Pump Driven Gear via the ES Gear, and drives the pump mechanism.

The PF Motor's drive force is always transmitted to the pump mechanism.

Table 3-19. Rotational direction of the PF Motor and the operation of the pump mechanism

PF Motor's rotational direction	Clockwise	Counterclockwise
Operation of the pump mechanism	Released	Sucking

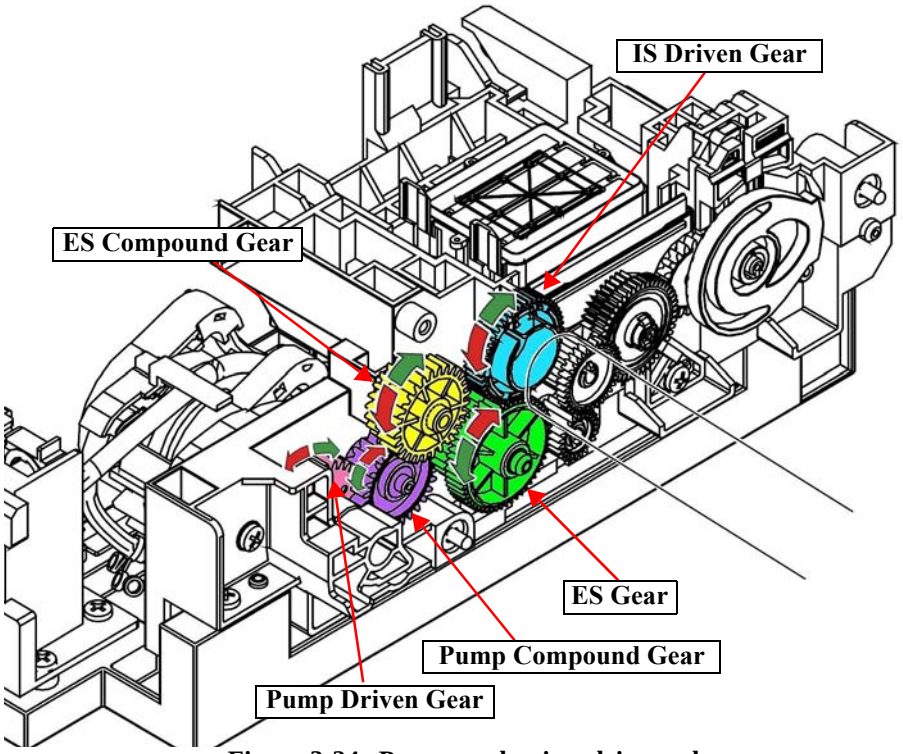


Figure 3-24. Pump mechanism drive path

3.3.4.3 Operation of Each Mechanism

☐ Capping Mechanism

When the CR Unit moves to the home position, the Cap Slider is pushed up by the CR Unit and caps the Print Head. When the CR Unit moves away from the home position, the Cap Slider falls and the capping is released (vented to atmosphere). The ink system mechanism of WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a does not have any venting valves, but this Cap Slider's operation in conjunction with the CR Unit's movement realizes the performance of the traditional venting valves.

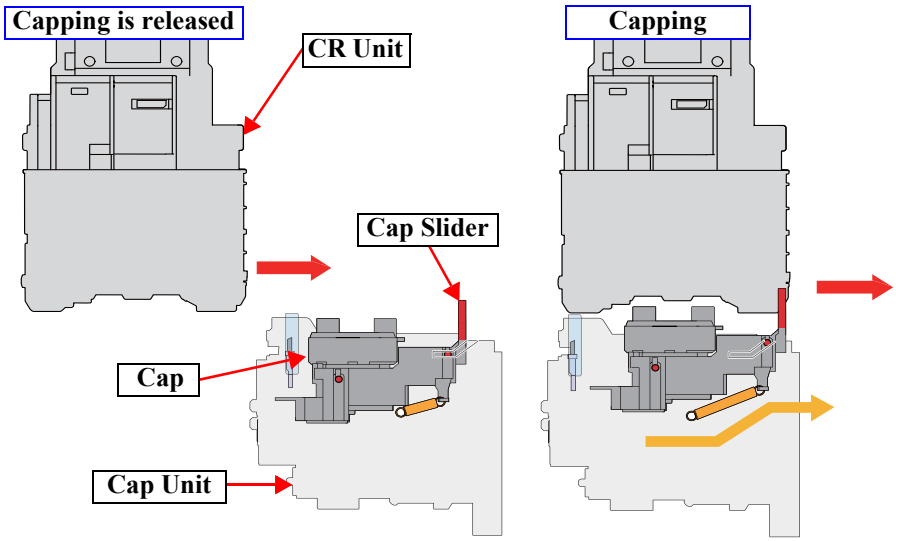


Figure 3-25. Operation of the cap mechanism

The Cap of WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a has a structure which can move up and down and to the right and to the left following the inclination of the Print Head. Because of this structure, accurate capping can be done even the alignment of the Print Head is changed after the head angular mecha adjustment[1] is done. In addition, the operation of the cap mechanism controls the drive force to the wiper mechanism and carriage lock mechanism.

1. For the details, see Wiper Mechanism/Carriage Lock Mechanism (p. 43)

☐ Wiper Mechanism

The wiper mechanism is operated by the rotation of the Intermittent Gear of the IS Clutch Gear. When the Intermittent Gear rotates, the protrusion of the Wiper Holder moves along the groove on the Intermittent Gear to move the Wiper Holder up and down.

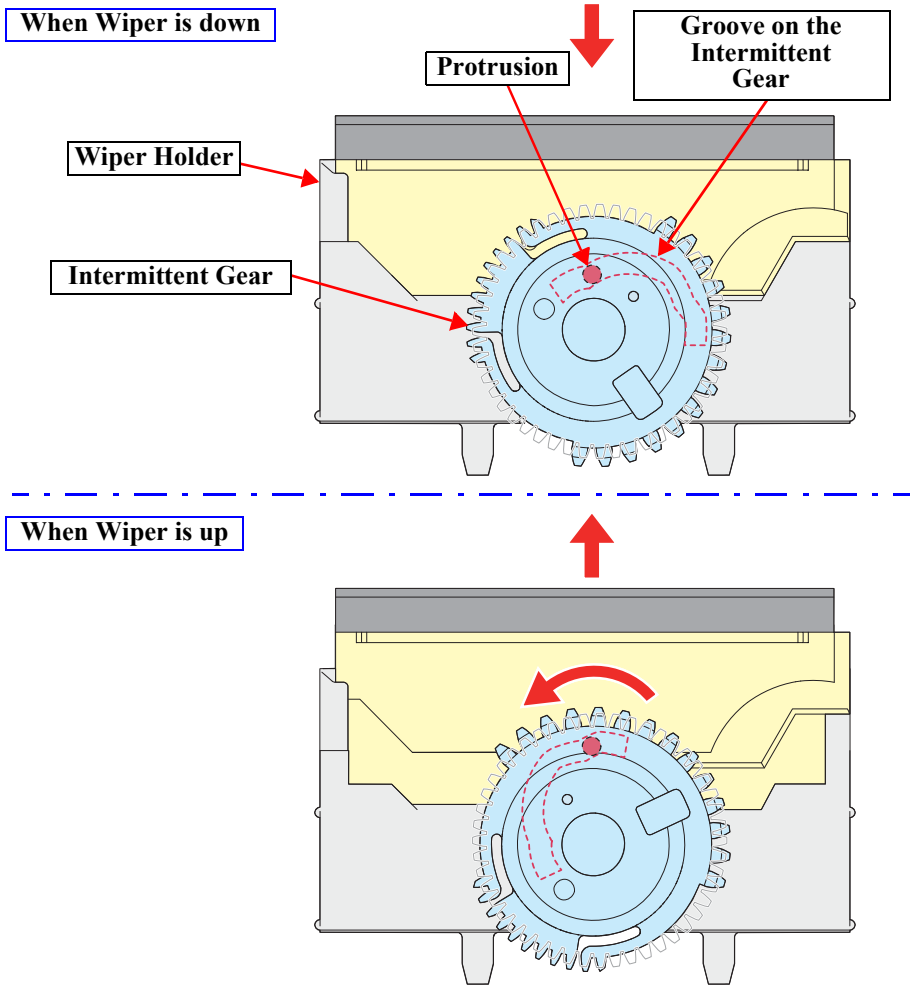


Figure 3-26. Operation of the wiper mechanism

☐ Carriage Lock Mechanism

■ Carriage lock drive mechanism

The carriage lock mechanism is operated by the rotation of the CR Lock Cam. When the CR Lock Cam rotates, the protrusion of the CR Lock Lever moves along the groove on the CR Lock Cam to move the CR Lock Lever up and down.

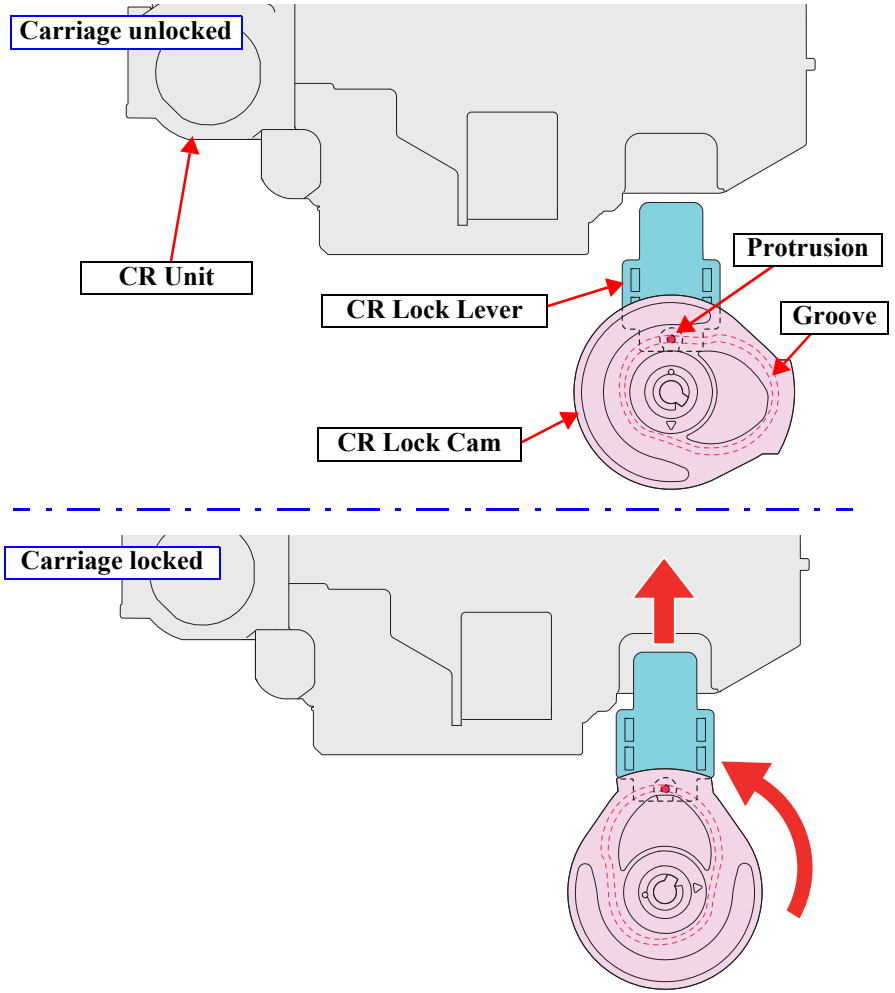


Figure 3-27. Operation of the carriage lock mechanism

■ CR lock lever mechanism

The CR lock lever is composed of the CR lock lever holder, CR lock lever and spring, and it is a structure that the CR locking lever can be released by pushing the CR locking lever even in the state of the carriage lock.

Therefore, CR lock can be released by pushing the CR lock lever when the CR lock drive part is damaged and CR lock can not move condition.

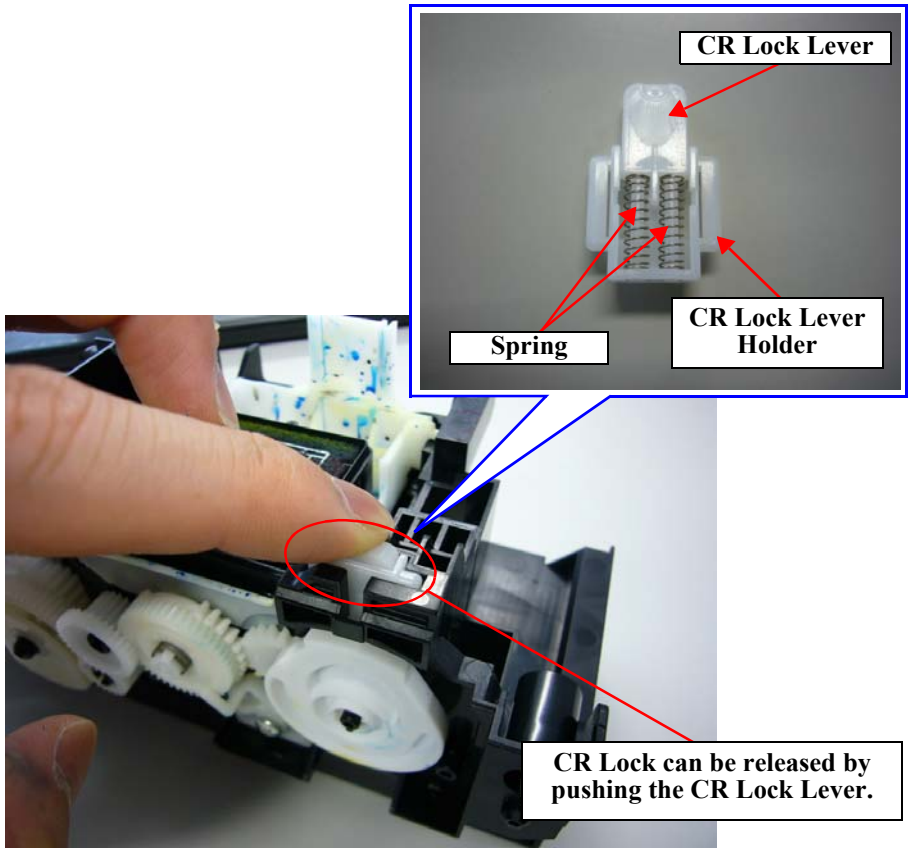


Figure 3-28. CR lock lever mechanism

☐ Pump Mechanism

The pump mechanism sucks ink from the Print Head during cleaning.

The drive force from the Pump Driven Gear is transmitted to the Pump Shaft because the two hooks on the Timing Plate are engaged in turn by the rotation of the Pump Driven Gear. Because of the Timing Plate, the starting point of Pump Driven Gear's rotation and that of the Pump Shaft differ so that the pump operation starts after the PF Motor's rotation reaches the predetermined degree.

When the PF Motor rotates counterclockwise, the drive force transmitted via the Pump Driven Gear rotates the Pump Pulley while the pulley presses the tube flat, sucking is made (negative pressure is generated). When the PF Motor rotates clockwise, the Pump Pulley rotates without pressing the tube flat, the negative pressure is not generated (released).

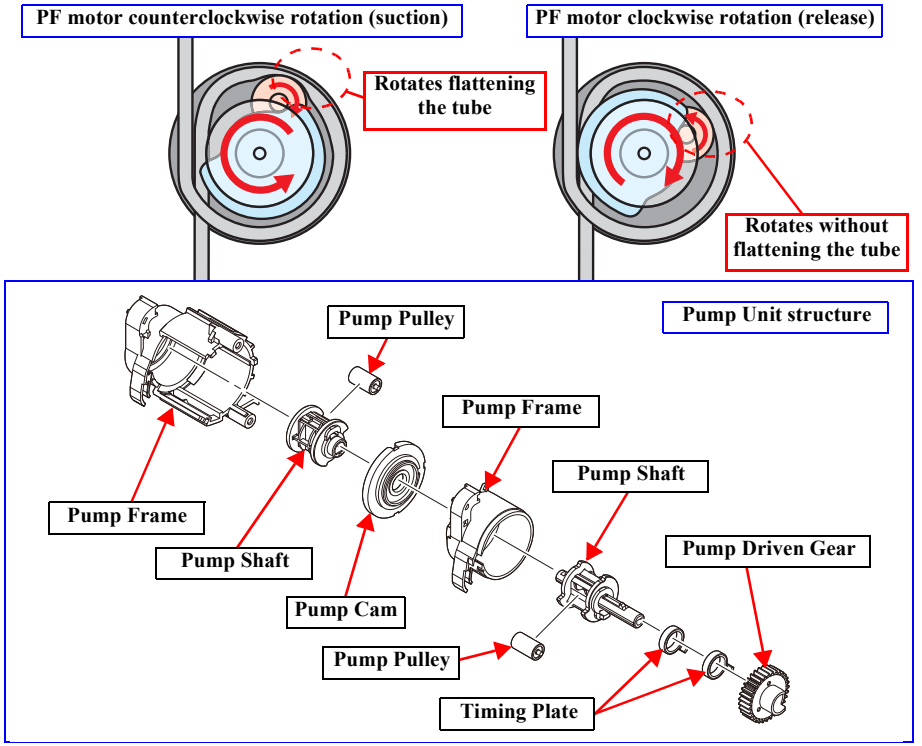


Figure 3-29. Scanner mechanism

3.3.5 Paper Loading/Paper Feed

3.3.5.1 Overview

The components of the paper loading mechanism and the loading method are as follows.

Feeding Direction		Configuration	Power Source and Control
Front paper loading	Standard cassette	· Cassette Assy · Lift-up mechanism · Pick-up mechanism · Intermediate feeding mechanism[a]	· Lift-up Motor · Lift-up Encoder/Lift-up Scale · ASF Motor · ASF Encoder/ASF Scale
	Optional cassettes	· Option Cassette Assy · Option lift-up mechanism · Option ASF mechanism · Intermediate feeding mechanism	· Option Lift-up Motor · Option Lift-up Encoder/Option Lift-up Scale · Option ASF Motor · Option ASF Encoder/Option ASF Scale · ASF Motor · ASF Encoder/ASF Scale
Rear paper loading		· Rear paper loading mechanism · Intermediate feeding mechanism	· ASF Motor · ASF Encoder/ASF Scale

a. Uses the Duplex Unit's Intermediate Roller for feeding. For the details, see Intermediate Feeding Mechanism (p. 53).

The paper feed mechanism is composed of the PF Motor, PF Roller, EJ Roller, and Star Wheel Assy, etc. When performing automatic duplex printing, the paper printed on one side is pulled back into the printer by the PF Roller and EJ Roller, and then it is reversed and fed continuously in the Duplex Unit.

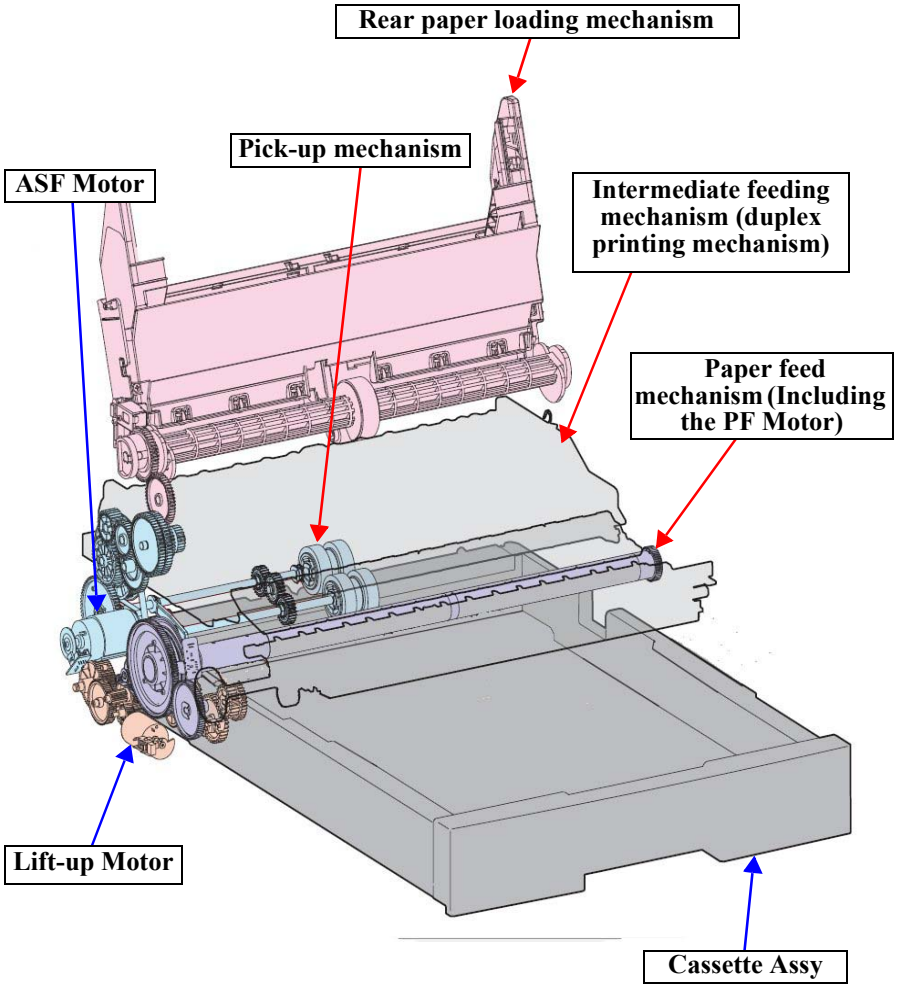


Figure 3-30. Paper loading/paper feed (Other than the optional cassettes)

WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a, optional cassettes can be added up to two cassettes.

The optional cassette has the Option lift-up mechanism and Option ASF mechanism in it. When loading paper from the optional cassette, the Option lift-up mechanism and Option ASF mechanism pick up paper and load it to the intermediate feeding mechanism.

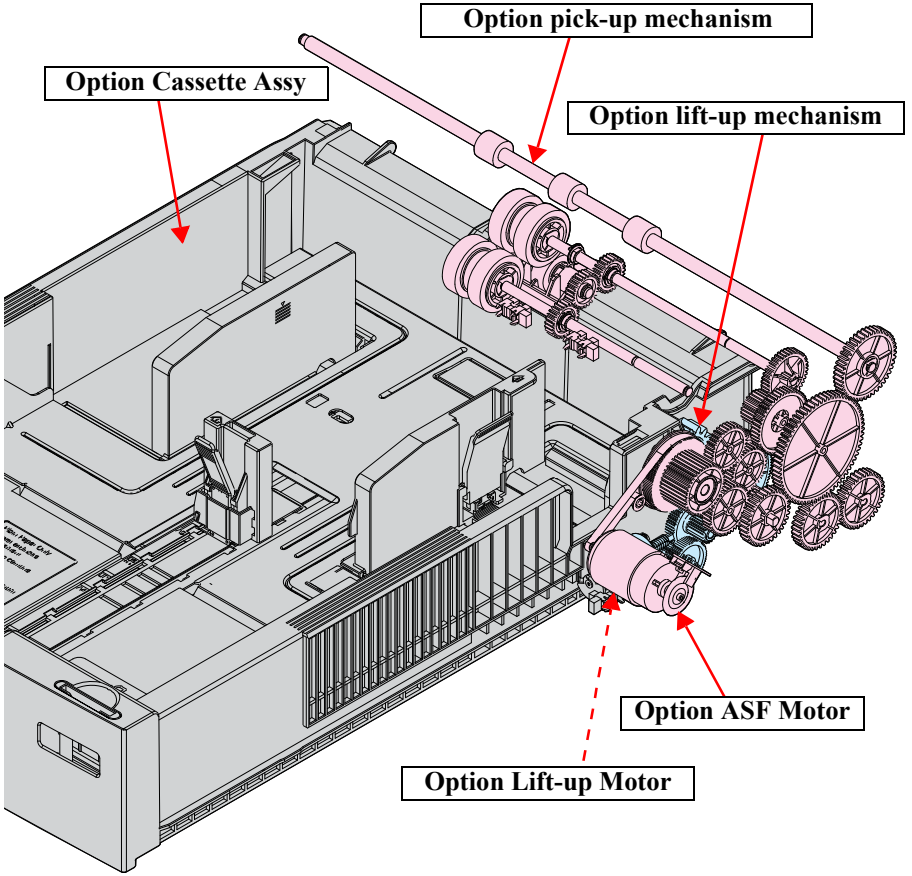


Figure 3-31. Paper loading/paper feed (Optional cassettes)

3.3.5.2 Paper Loading/Feed Path

☐ Feeding From The Front Cassette

The drive force of the Lift-up Motor is transmitted to the Lift-up shaft, and the Lift-up shaft raises the Cassette Hopper. The paper set in the Cassette Assy is also raised together by the Cassette Hopper and comes in contact with the Pick-up Roller.

The ASF Motor drives the Pick-up Roller and feeds the paper to the Separation Roller. The paper (the top sheet) fed to the Separation Roller is separated by the Separation Roller and Retard Roller from the second sheet and passes the paper detection point of the Rear PE Sensor, and to the Intermediate Roller.
The paper fed to the first Intermediate Roller is fed by the two Intermediate Rollers up to the paper detection position of the PE Sensor.

When the PE Sensor detects the paper, skew correction[1] is carried out according to printing conditions. After skew correction, the paper is fed by the PF Roller up to the print start position and printing starts. After printing is complete, the paper is ejected by the PF Roller and EJ Roller.

1. See Paper Feed Mechanism (p. 56) for the details.

3.3.5.3 Rear Feed

The rear loading mechanism[2] starts operating by the printing command from the print driver and the ASF Motor rotates the LD Roller. The paper set on the Hopper is fed by the LD Roller to the Intermediate Roller. The paper fed to the Intermediate Roller is fed up to the paper detection position of the PE Sensor and printing is made in the same way as feeding from the Front Cassette.

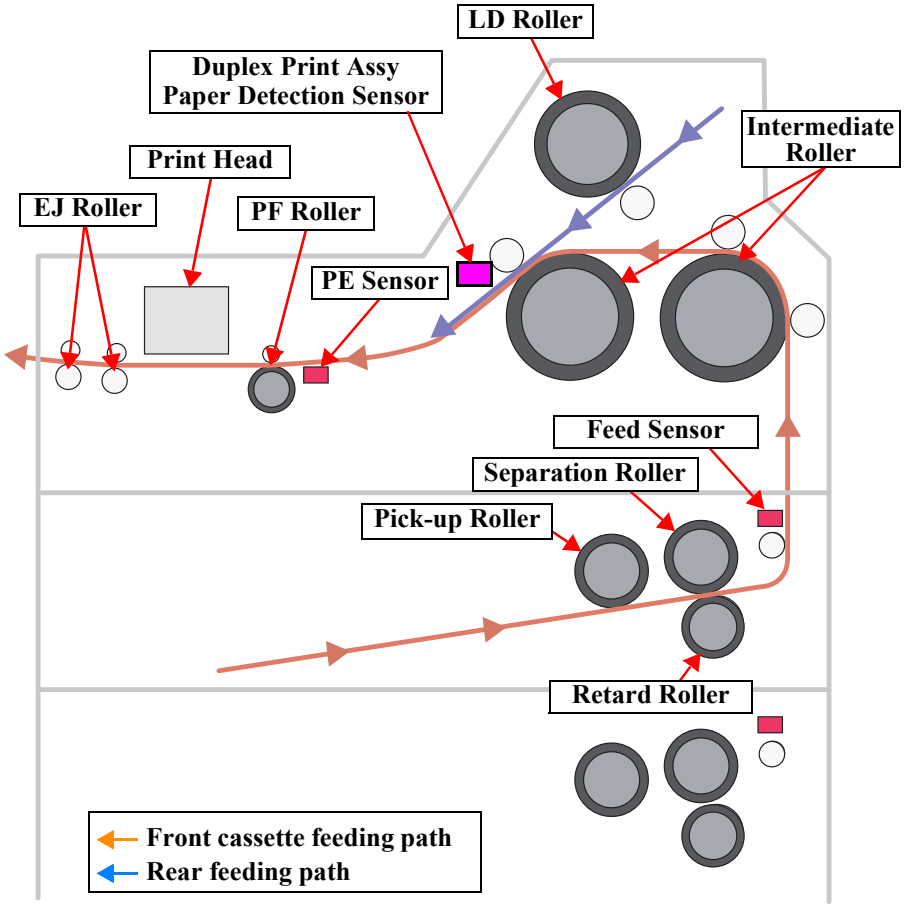


Figure 3-32. Paper loading/feed path (1)

2. See Rear Feeding Mechanism (p. 54) for the details.

☐ Feeding From The Optional Cassette

The drive force of the Option Lift-up Motor is transmitted to the Option Lift-up shaft, and the Option Lift-up shaft raises the Option Cassette Hopper.
The paper set in the Option Cassette Assy is also raised together by the Option Cassette Hopper and comes in contact with the Option Pick-up Roller.

The Option ASF Motor drives the Option Pick-up Roller and the Separation Roller feed the paper to the Option Intermediate Roller.
The paper (the top sheet) fed to the Option Intermediate Roller is fed up to the paper detection point of the Rear PE Sensor.

When the Rear PE Sensor detects the paper, the ASF Motor starts driving and the Intermediate Roller feeds the paper up to the paper detection point of the PE Sensor and printing is made in the same way as feeding from the Front Cassette.

☐ Automatic Duplex Printing

DRYING TIME AUTOMATIC DETERMINATION FUNCTION

WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a's automatic duplex printing features the auto drying time detection so as to prevent the wet printed face from rubbing with something. If the printer judges the printed front face must be dried after the front face printing, a two-step drying is carried out on the Stacker and inside the Duplex Unit[1] .

WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a sets the optimum drying time according to the usage environment by Temperature and Humidity sensor. As a result, improving the throughput.

BACK FACE PRINTING DURING THE AUTOMATIC DUPLEX PRINTING

If the printer judges the printed front face must be dried during the automatic duplex printing, the first drying is carried out on the Stacker after the front face printing. Then, the paper is pulled back into the printer and fed to the Intermediate Roller. The paper fed to the Intermediate Roller is fed by the Intermediate Roller (Duplex Unit) just before the paper detection point of the PE Sensor and reversed.

After feeding the paper just before the paper detection point of the PE Sensor and reversing it, the 2nd drying is carried out. After the drying is complete, the paper is fed by the Intermediate Roller up to the paper detection point of the PE Sensor and printing is made in the same way as the front face printing.

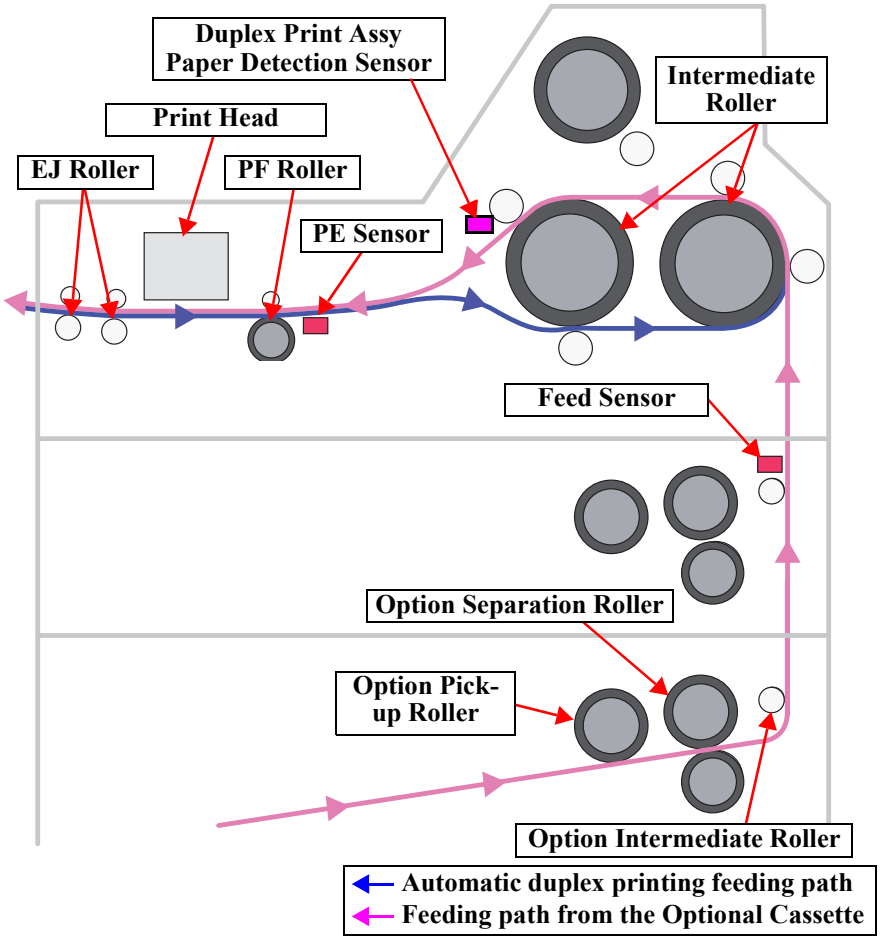


Figure 3-33. Paper Loading/Feed path (2)

1. The printer stops operation and waits until the specified drying time has passed.

3.3.5.4 Drive Path

☐ Lift-up Mechanism

This mechanism raises the paper set on the Cassette Assy up to the paper pick-up position of the pick-up mechanism.

Lift-up mechanism operates the drive force of the Lift-up Motor. The Lift-up Motor's drive force is transmitted via the Compound Gear A, and to the Lift Gear Group on the Cassette Assy, and rotates the Lift-up shaft.

Table 3-20. Lift-up Motor's rotational directions and operation of the Lift-up shaft

Lift-up Motor's rotational direction	Clockwise	Counterclockwise
Operation of the Lift-up shaft	Rises	Not rotates

On the shaft of the Compound Gear A, the One Way Clutch is mounted. When the Lift-up Motor rotates CCW, the drive force is cut off by the One Way Clutch, so the Lift-up shaft does not rotate.

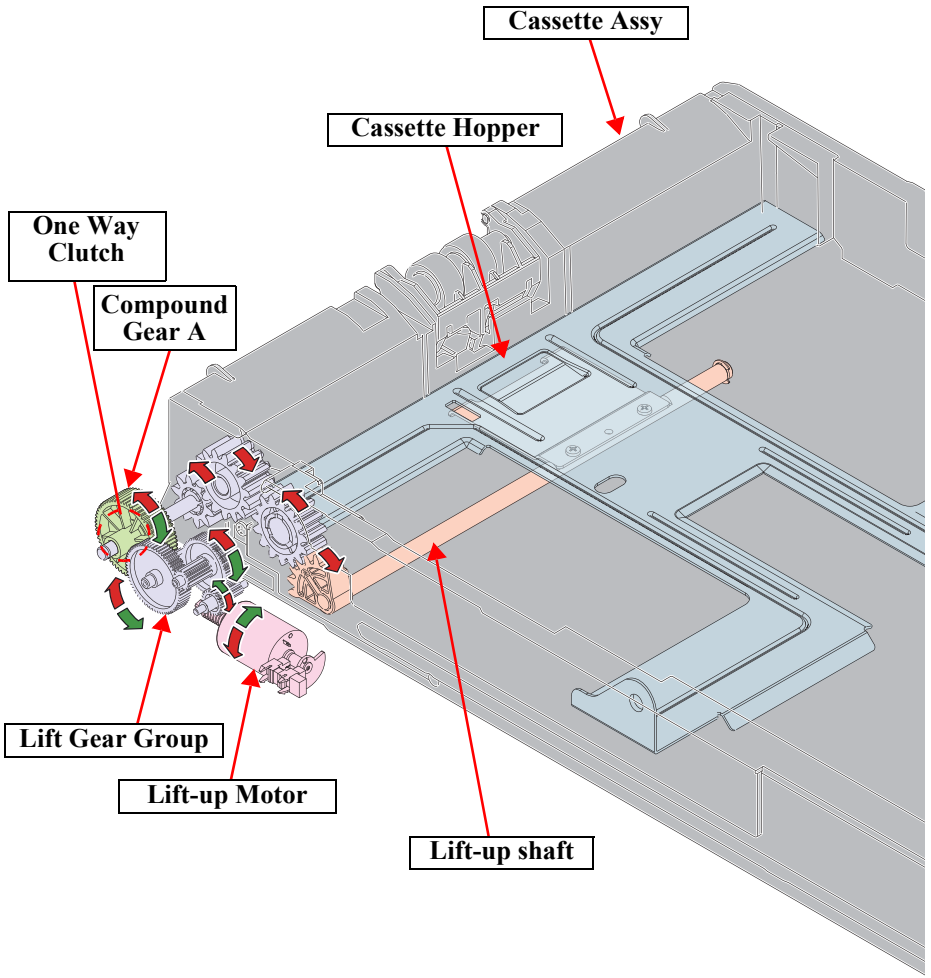


Figure 3-34. Lift-up mechanism

☐ Front Feeding Mechanism

The front feeding mechanism is composed of the Pick-up mechanism and the intermediate feeding mechanism.

PICK-UP MECHANISM

This mechanism picks up paper from the Cassette Assy and feeds it up to the intermediate feeding mechanism. The retard separation method is used for paper separation.

The ASF Motor drives the pick-up mechanism. ASF Motor's drive force is transmitted via the ASF Compound Gear A, then through the Pick-up Gear Group, and rotates the Pick-up Roller and Separation Roller.

Table 3-21. ASF Motor's rotational directions and the operation of the Pick-up mechanism

ASF Motor's rotational direction	Clockwise	Counterclockwise
Operation of the Pick-up mechanism	Feeds paper	Not rotates

On the shafts of the Pick-up Roller and Separation Roller, the One Way Clutch is mounted. When the ASF Motor rotates CCW, the drive force is cut off by the One Way Clutch, so neither the Pick-up Roller nor Separation Roller rotates.

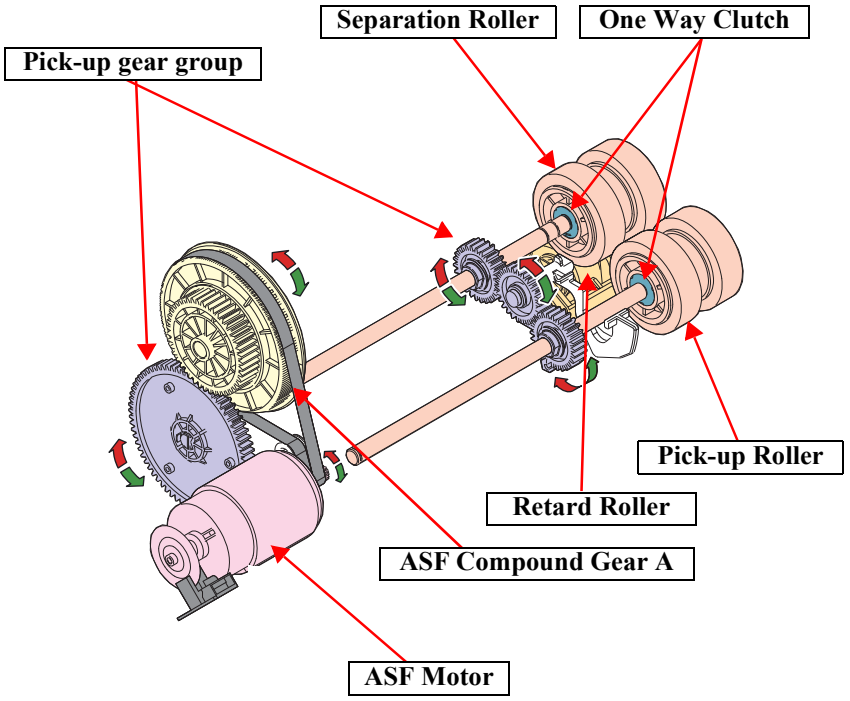


Figure 3-35. Pick-up mechanism/manual sheet feed mechanism

INTERMEDIATE FEEDING MECHANISM

This mechanism feeds the paper fed from the Cassette Assy or MSF Unit to the paper feed mechanism. The paper is fed by the Duplex Unit's Intermediate Roller.

The intermediate feeding mechanism is driven by the ASF Motor. The ASF Motor's drive force is transmitted via the ASF Gear Group to the one way drive mechanism. The drive force of the one way drive mechanism is transmitted via the Duplex Unit's Intermediate Roller Gear Group to the Intermediate Roller.

Table 3-22. ASF Motor's rotational directions and the operation of the intermediate feeding mechanism

ASF Motor's rotational direction	Clockwise	Counterclockwise
Operation of the intermediate feeding mechanism	Normal feeding	Normal feeding

One way drive mechanism

There are two drive paths from the ASF Motor to the one way drive mechanism, one is the path via the ASF Compound Gear A, Spur Gear (1), and Spur Gear (2) to the Clutch Gear A, and the other is the path via the ASF Compound Gear A and Spur Gear (3) and to the Clutch Gear B. Because of this mechanism, the Clutch Gear A and Clutch Gear B rotates in the directions opposite to each other.

Table 3-23. ASF Motor's rotational directions and Clutch Gear A/B's rotational directions

ASF Motor's rotational direction	Clockwise	Counterclockwise
Clutch Gear A's rotational direction	Counterclockwise	Clockwise
Clutch Gear B's rotational direction	Clockwise	Counterclockwise

The shafts on the Clutch Gear A/B, the One Way Clutch is mounted. Regardless of the ASF Motor's rotational directions, they rotate the Intermediate Roller in the feeding direction (one way). When the ASF Motor rotates clockwise, its rotational direction is the same as the engaging direction of the One Way Clutch mounted on the Clutch Gear B, so the Clutch Gear B rotates the ASF Driven Shaft and transmits the ASF Motor's drive force to the ASF Compound Gear B. Meanwhile, the Clutch Gear A rotates in the rotational direction opposite to the engaging direction of the One Way Clutch, so it does not transmit any drive force.

When the ASF Motor rotates counterclockwise[1] , its rotational direction is the same as the engaging direction of the One Way Clutch mounted on the Clutch Gear A so the Clutch Gear A rotates the ASF Driven Shaft and transmits the ASF Motor's drive force to the ASF Compound Gear B. Meanwhile, the Clutch Gear B rotates in the rotational direction opposite to the engaging direction of the One Way Clutch, so it does not transmit any drive force.

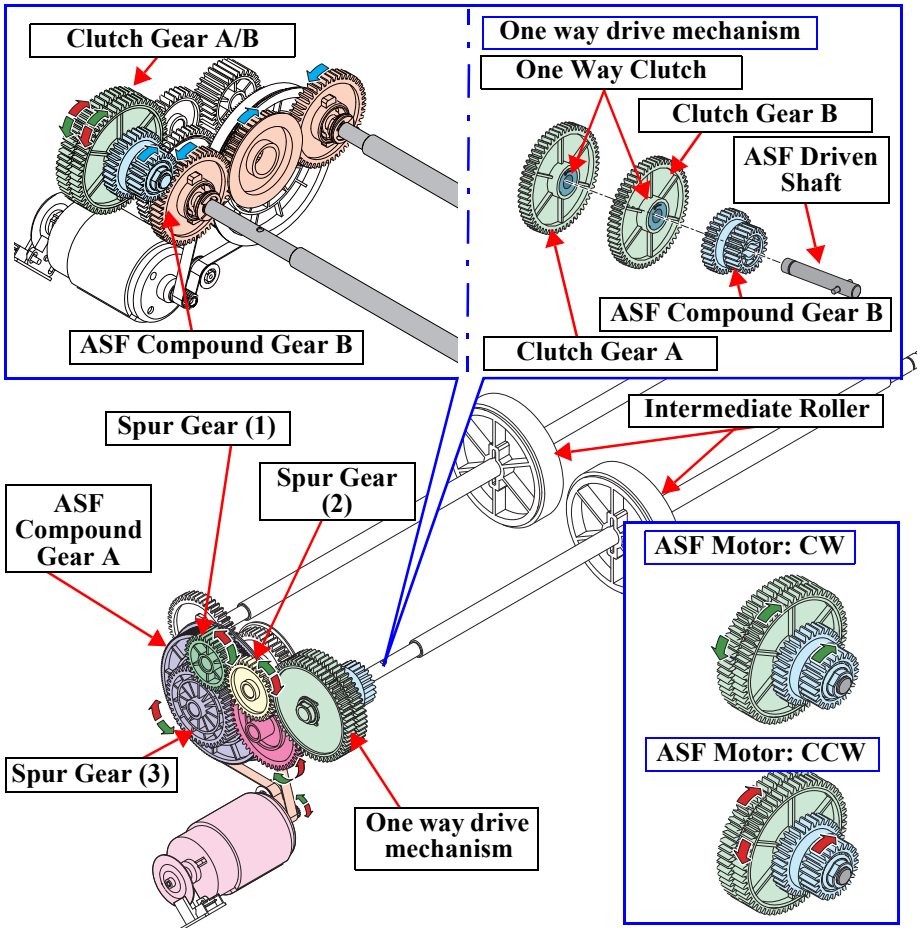


Figure 3-36. Intermediate feeding mechanism

1. Rotational direction for skew correction or when operating in synchronization. For the details, see Paper Feed Mechanism (p. 56).

☐ Rear Feeding Mechanism

This mechanism feeds the paper set on the Hopper to the intermediate feeding mechanism. The retard separation method is used for paper separation.

REAR FEEDING MECHANISM DRIVE PATH

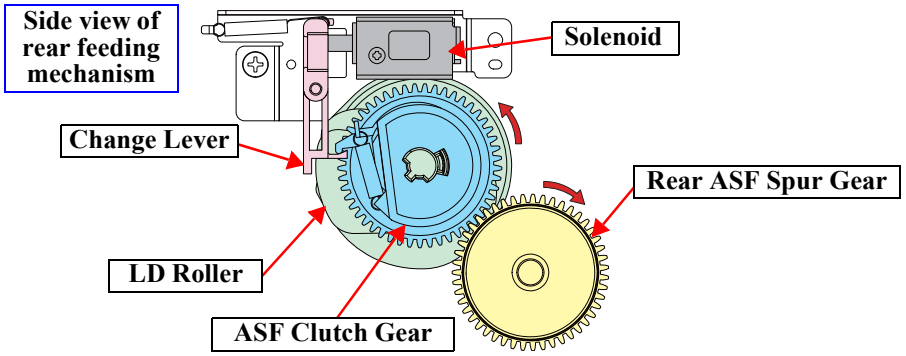
The rear feeding mechanism is driven by the ASF Motor. The ASF Motor's drive force is transmitted via the ASF Compound Gear B then through the Rear ASF Spur Gear, and rotates the LD Roller via the ASF Clutch Gear. The Hopper and the Paper Back Lever Right/Left are driven together by the cams on both the right and the left sides of the LD Roller.

Table 3-24. Rear feeding operations by ASF Motor's rotational directions

ASF Motor's rotational direction	Clockwise	Counterclockwise
Operation of the rear feeding mechanism	Feeds paper	Feeds paper

The drive path from the ASF Motor to the rear feeding mechanism is partly the same (from the ASF Motor to the ASF Compound Gear) as that of the intermediate feeding mechanism[1] . Therefore, even the ASF Motor rotates counterclockwise (opposite to the paper feeding direction), the LD Roller rotates in the paper feeding direction.

Since the ASF Motor drives the pick-up mechanism and intermediate feeding mechanism, the ASF Clutch Gear and Rear ASF Solenoid Assy turn the drive force ON/OFF so that the LD Roller rotates during the rear feed only.



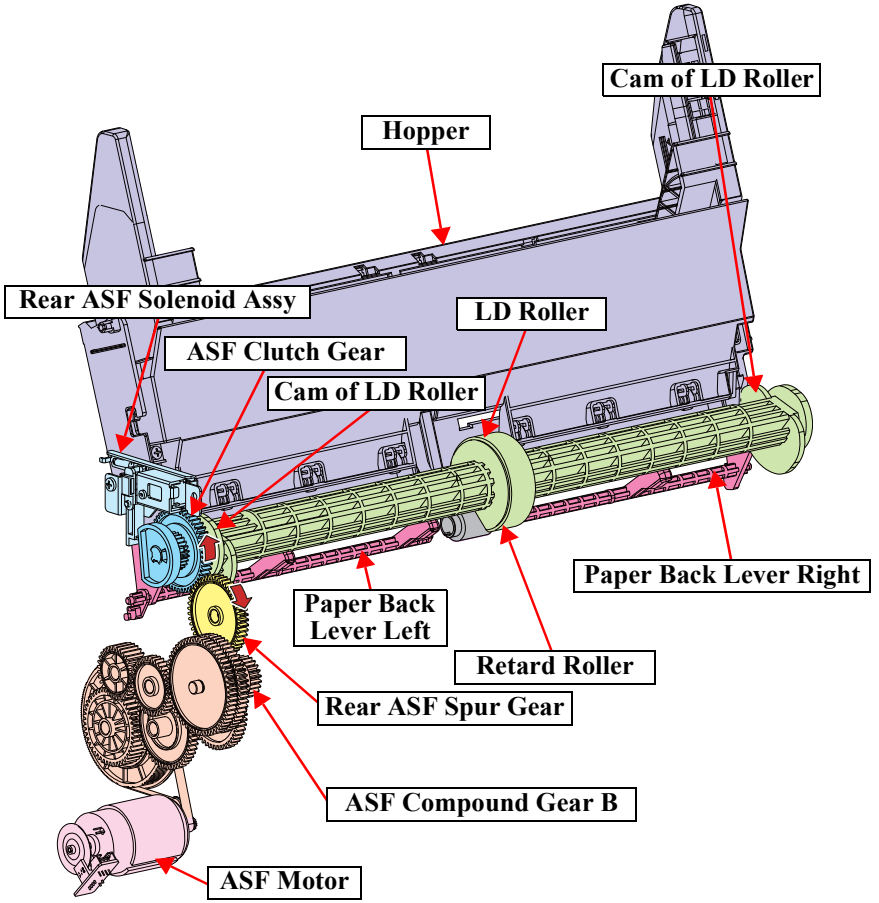


Figure 3-37. Rear feeding mechanism drive path

1. For the details, see Intermediate Feeding Mechanism (p. 53).

OPERATION OF THE REAR FEEDING MECHANISM

This section explains the operation of rear feed and how the ASF Motor's drive force is controlled by the ASF Clutch Gear and Rear ASF Solenoid Assy.

Drive force control by the ASF Clutch Gear and Rear ASF Solenoid Assy

The Rear ASF Solenoid Assy controls the operation of the Change Lever by electrifying the Solenoid[1] . The relationship of the electrifying status of the Solenoid and the status of the Change Lever is as follow.

Table 3-25. Electrifying status of the Solenoid and the operation of the Change Lever

Electrifying status of the Solenoid	Electrified	Not electrified
Change lever	Unlocked	Locked

When the Change Lever engages with (or locks) the hook on the ASF Clutch Gear, the clutch of ASF Clutch Gear is cut off and the ASF Motor's drive force is not transmitted to the LD Roller.

When the Change Lever releases (unlocks for driving the rear feeding) the hook on the ASF Clutch Gear, the clutch of ASF Clutch Gear engages and the ASF Motor's drive force is transmitted to the LD Roller.

When performing the rear feed

When the printer starts performing the rear feed, the Solenoid of the Rear ASF Solenoid Assy is electrified and the Change Lever is pulled toward the rear of the printer. Then the clutch of the ASF Clutch Gear engages and the drive force of the ASF Motor is transmitted to the LD Roller. After the lock is released, the ASF Motor drives the ASF Clutch Gear and LD Roller to move the hook on the ASF Clutch Gear away from the lock position. Therefore, when electrifying the Solenoid is stopped and the Change Lever is back to the original position, the hook on the ASF Clutch Gear is positioned lower than the Change Lever due to the rotation of the LD Roller and not going to be locked again.

After electrifying the Solenoid is stopped, the ASF Motor rotates clockwise further and the LD Roller rotates in the paper feed direction. A sheet of paper set on the Hopper is separated by the LD Roller and Retard Roller and fed to the intermediate feeding mechanism.

When the LD Roller rotates once, the Change Lever engages with the hook on the ASF Clutch Gear and the roller is locked. Then, the ASF Motor's drive force to the LD Roller is cut off and the rear feed process is complete.[2]

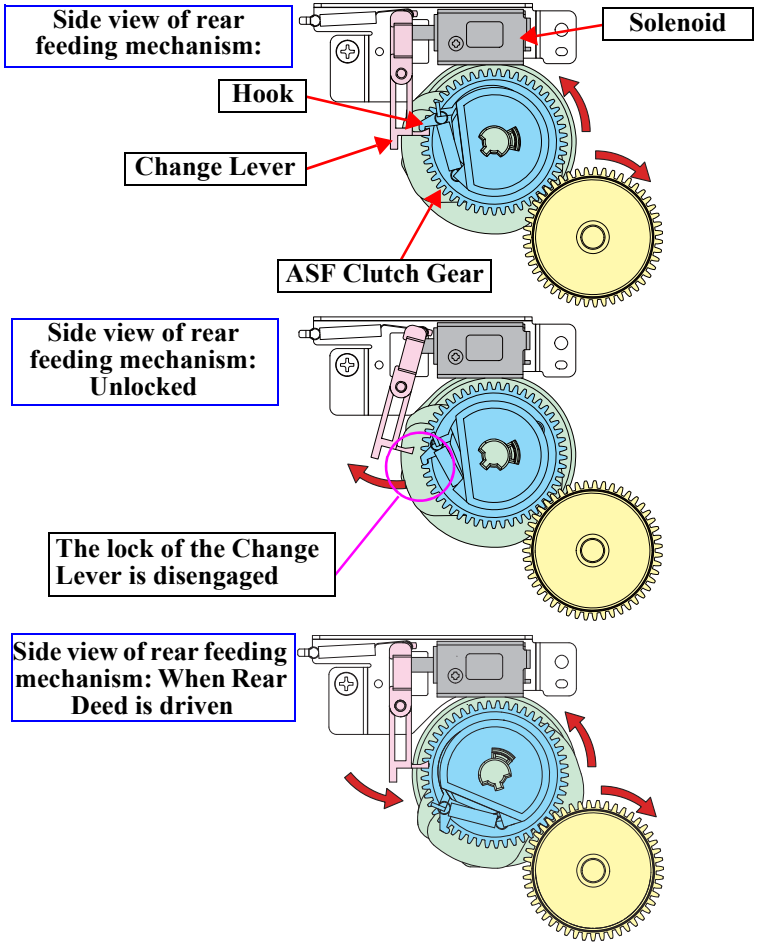


Figure 3-38. Operation of the rear feeding mechanism

1. Equipped with a pull type Solenoid in which the magnetic body id pulled by the electromagnetic force.

2. The LD Roller is D-shaped. This shape allows the LD Roller and Retard Roller to release the paper when the paper reaches the intermediate feeding mechanism so as not to affect the paper feeding process of the intermediate feeding mechanism.

☐ Paper Feed Mechanism

This mechanism feeds the paper fed from the intermediate feeding mechanism into the printer. The paper feed mechanism is driven by the PF Motor's drive force. The drive force of the PF Motor is transmitted by the PF Timing Belt to the PF Roller. The drive force is then transmitted forward to the Ink system mechanism[1] and EJ Roller.

Table 3-26. PF Motor's rotational direction and the operation of the paper feed mechanism

PF Motor's rotational direction	Clockwise	Counterclockwise
Operation of the paper feed mechanism	Normal feeding	Reverse feeding

According to the rotational direction of the PF Motor, the PF Roller and EJ Roller rotate in the same direction.

When feeding paper, the paper feed mechanism and the intermediate feeding mechanism are driven to perform skew correction[2] and to feed paper up to the print start position.

The PF Roller and Intermediate Roller of WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a are driven separately by the dedicated drive motors. Therefore, so as not to apply too much back tension or front tension to the paper during loading and feeding, the mechanisms are driven by synchronizing the PF Motor and ASF Motor.

Driving by synchronizing the PF Motor and ASF Motor is called the synchronized drive, and performed when loading, feeding, and ejecting paper.

1. For the details, see Ink System Mechanism (p. 42).
2. Appropriate skew correction type is determined from the following four types according to the print conditions.
   No skew correction: Loads paper as is without skew correction
   Reverse and tap correction: Feeds paper by the Intermediate Roller in normal rotation and the PF Roller in reverse rotation, then after the paper has reached the PF roller, the above condition is kept for a specified time to warp the paper to correct the skew.
   Catch-and release skew correction: Once loads paper up to the PF roller, then stops the Intermediate Roller and reverses the PF roller to warp the paper to correct the skew.
   Tapping Method: Feeds paper by the forward rotation of the Intermediate Roller while the PF roller is stopped. Even after the paper reaches the PF roller and stops with the top edge pressed against the roller, the roller force is still applied to the paper for a predetermined time making the paper slightly arch to correct the paper skew.

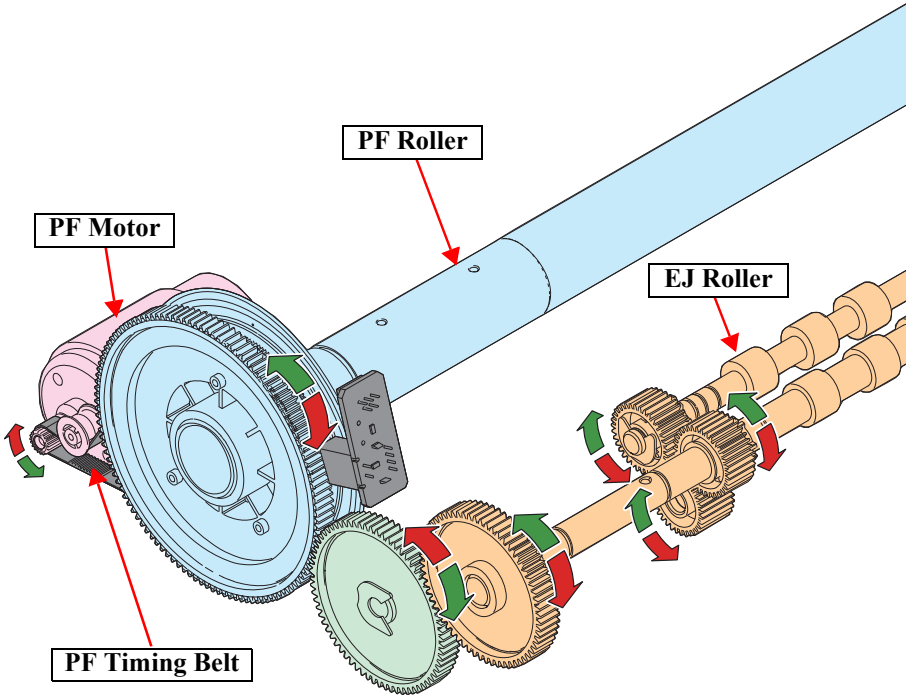


Figure 3-39. Paper feed mechanism

☐ Duplex Printing Mechanism

This mechanism reverses the paper fed back by the paper feed mechanism after printing on the front face and feeds the reversed paper back into the paper feed mechanism.

The duplex printing mechanism is driven by the ASF Motor. The drive path and the operation are the same as those of the intermediate feeding mechanism[3] .

3. For the details, see Intermediate Feeding Mechanism (p. 53).

☐ Option Cassette Loading Mechanism

This mechanism is composed of the Option lift-up mechanism and Option ASF mechanism.

OPTION LIFT-UP MECHANISM

This mechanism lifts the paper loaded on the Option Cassette Assy up to the paper pickup position.

The Option lift-up mechanism is driven by the drive force of the Option Lift-up Motor. The Option Lift-up Motor's drive force is transmitted via the Option Lift-up Gear Group to the Option Lift-up shaft and rotates the Option Lift-up shaft.

Table 3-27. Option Lift-up Motor's rotational direction and the operation of the Option lift-up mechanism

Option Lift-up Motor's rotational direction	Clockwise	---
Operation of the Option lift-up mechanism	Lift-up	---

The Option Lift-up Motor drives the Option lift-up mechanism only. Therefore, the Option Lift-up Motor never rotates counterclockwise.

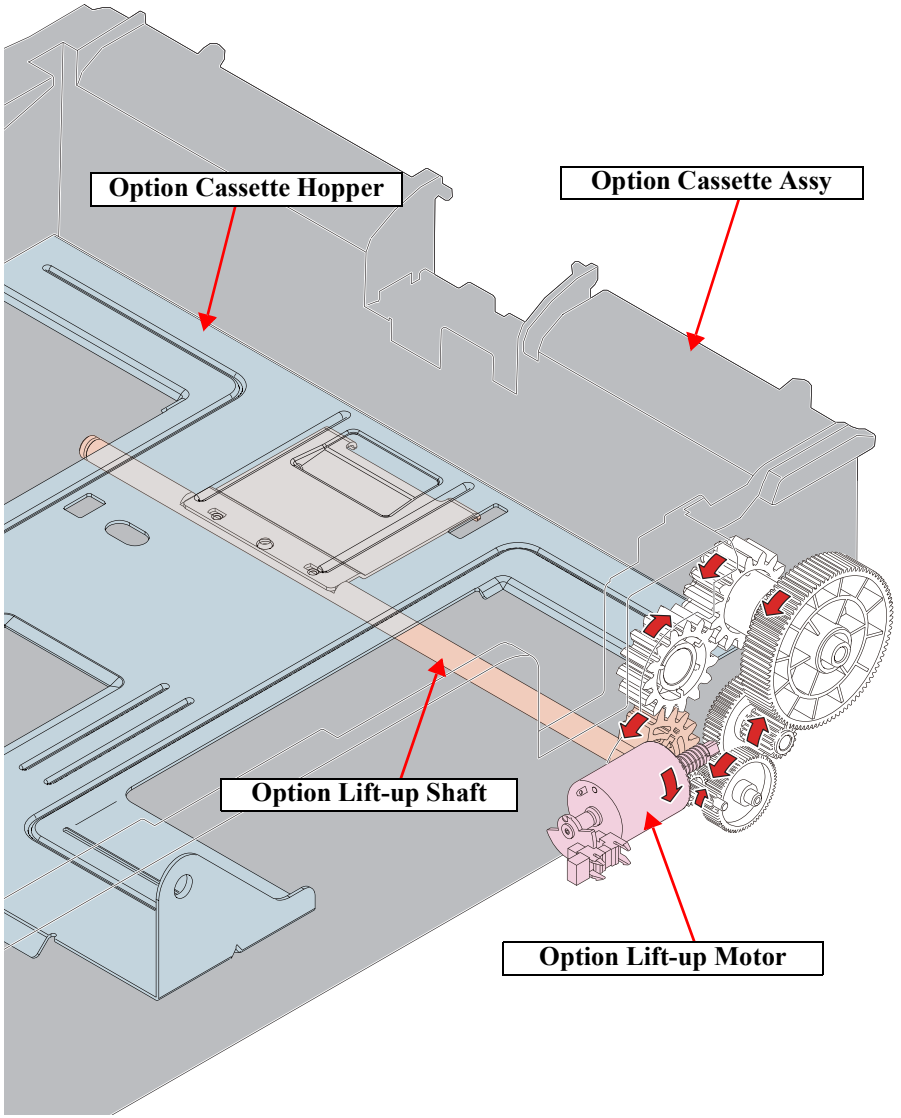


Figure 3-40. Option lift-up mechanism

OPTION ASF MECHANISM

This mechanism picks up paper on the Option Cassette Assy and feeds it up to the intermediate feeding mechanism on the printer. The retard separation method is used for paper separation; the same method as for the Cassette Assy.

The Option ASF mechanism is composed of the Option pick-up mechanism and Option intermediate feeding mechanism and driven by the drive force of the Option ASF Motor. The Option ASF Motor's drive force is transmitted via the Option ASF Compound Gear and to the Option Pick-up Gear Group and Option Intermediate Gear Group, and rotates the Option Pick-up Roller, Option Separation Roller, and Option Intermediate Roller.

Table 3-28. Option ASF Motor's rotational direction and the operation of the Option ASF mechanism

Option ASF Motor's rotational direction		Clockwise	Counterclockwise
Operation of the Option ASF mechanism	Option pick-up mechanism	Feeds paper	Not rotates
	Option intermediate feeding mechanism	Normal feeding	Normal feeding

Option pick-up mechanism

On the shafts of the Pick-up Roller and Separation Roller, the One Way Clutch is mounted. When the Option ASF Motor rotates counterclockwise, the drive force is cut off by the One Way Clutch, so neither the Option Pick-up Roller nor Option Separation Roller rotates.

Option intermediate feeding mechanism

The Clutch Gear C, Clutch Gear D, Option ASF Spur Gear, and Option ASF Driven Shaft on the drive path between the Option ASF Motor and Option Intermediate Roller are the same configuration as of those in the one way drive mechanism.[1] Therefore, the Option Intermediate Roller rotates in the feeding direction only regardless of the rotational direction of the Option ASF Motor.

1. For the details, see Intermediate Feeding Mechanism (p. 53).

Table 3-29. Rotational direction of Option ASF Motor and Clutch Gear C/D

Option ASF Motor's rotational direction	Clockwise	Counterclockwise
Clutch Gear C's rotational direction	Counterclockwise	Clockwise
Clutch Gear D's rotational direction	Clockwise	Counterclockwise

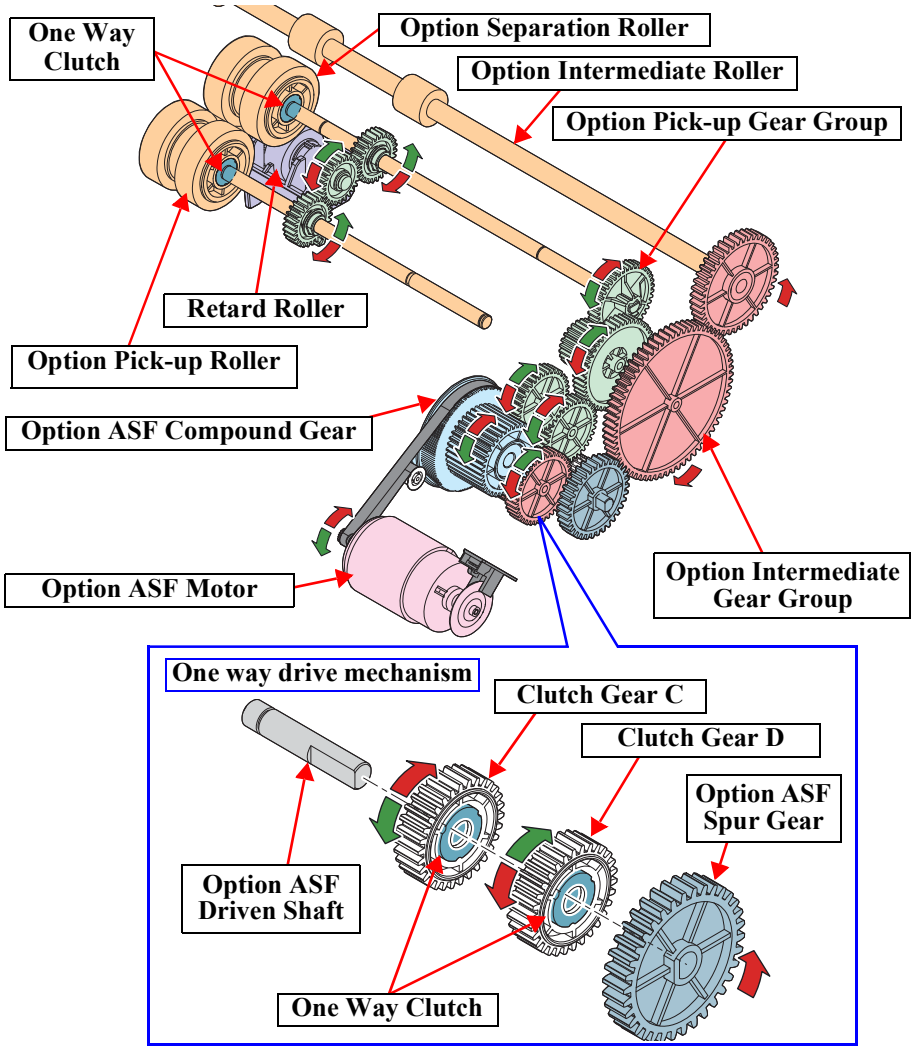


Figure 3-41. 2nd ASF mechanism

3.3.6 Scanner/ADF Mechanism

3.3.6.1 Scanner Mechanism

The scanner mechanism[1] of WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a is composed of the CIS Modules and the Scanner Motor[2] for driving the Scanner Carriage. As the light source for scanning, an LED is used for its long life and less power consumption.

To support document scanning of up to A3, seven reflective photo-interrupters are mounted for document size detection.

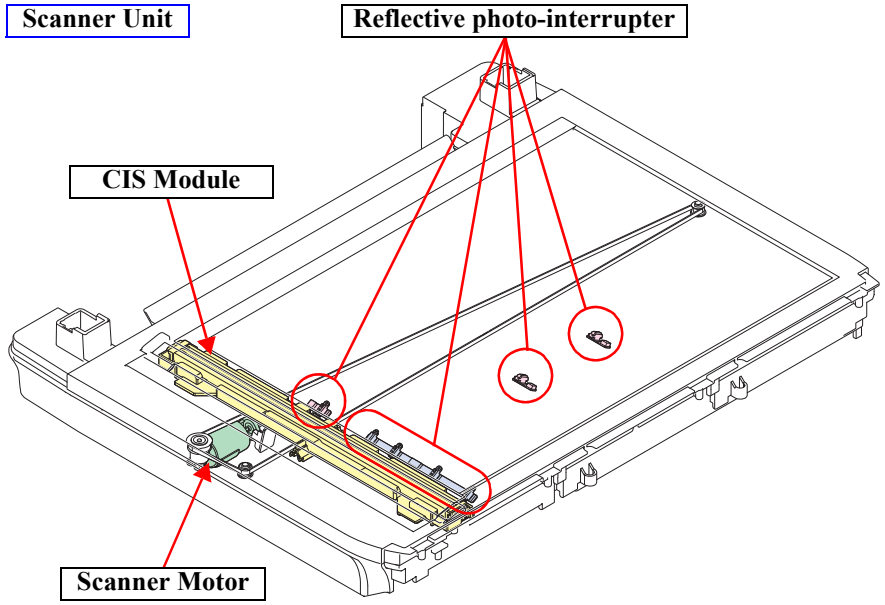


Figure 3-42. Scanner mechanism

1. Some models do not have scanner mechanism.
2. Because the scanner motor is a DC motor, there are an encoder and scale to control the motor installed.

3.3.6.2 ADF Mechanism

☐ Overview

The ADF mechanism of WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a is composed of the pick-up mechanism and the document feed mechanism, and they are driven by the ADF Pick-up Motor and by the ADF PF Motor in the written order respectively.

Table 3-30. Configuration of the ADF mechanism

Mechanism		Configuration	Power Source and Control
ADF mechanism	Pick-up mechanism	· Pick-up Assy · ADF Pad Assy · ADF Intermediate Roller · ADF PE Sensor A	· ADF Pick-up Motor · ADF Pick-up Scale/ Encoder
	Paper Feed Mechanism	· ADF 1st PF Roller · ADF 2nd PF Roller · ADF PE Sensor B · ADF PE Sensor C · ADF EJ Roller	· ADF PF Motor · ADF PF Scale/Encoder

The ADF mechanism[1] of this printer features duplex scanning. The CIS Module on the fixed scanner mechanism and the CIS Module on the ADF mechanism read both sides of the document at the same time.

The pad separation method is used for paper separation. To support document feeding up to A3, four transmissive photo-interrupters are mounted in the Document Support for document size detection.

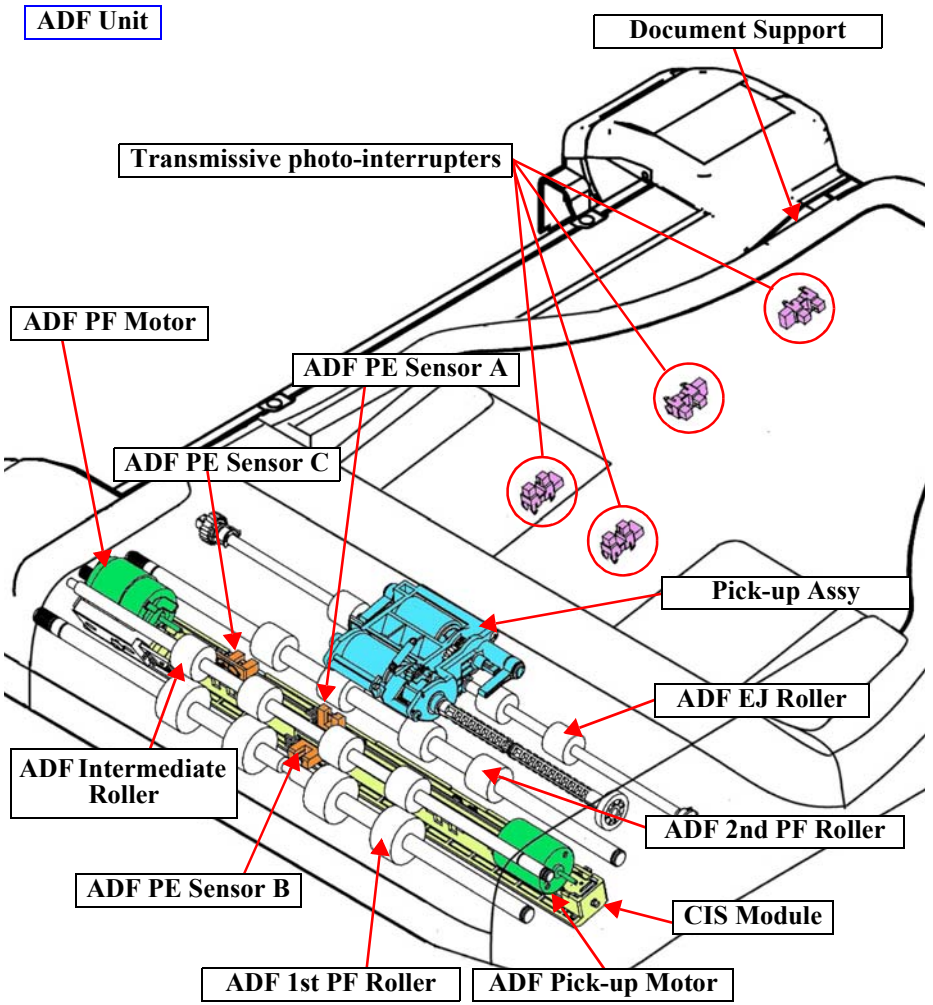


Figure 3-43. ADF mechanism

1. Some models do not have ADF.

☐ Document Feed Path

The document feed path of the documents to be read is as follows.

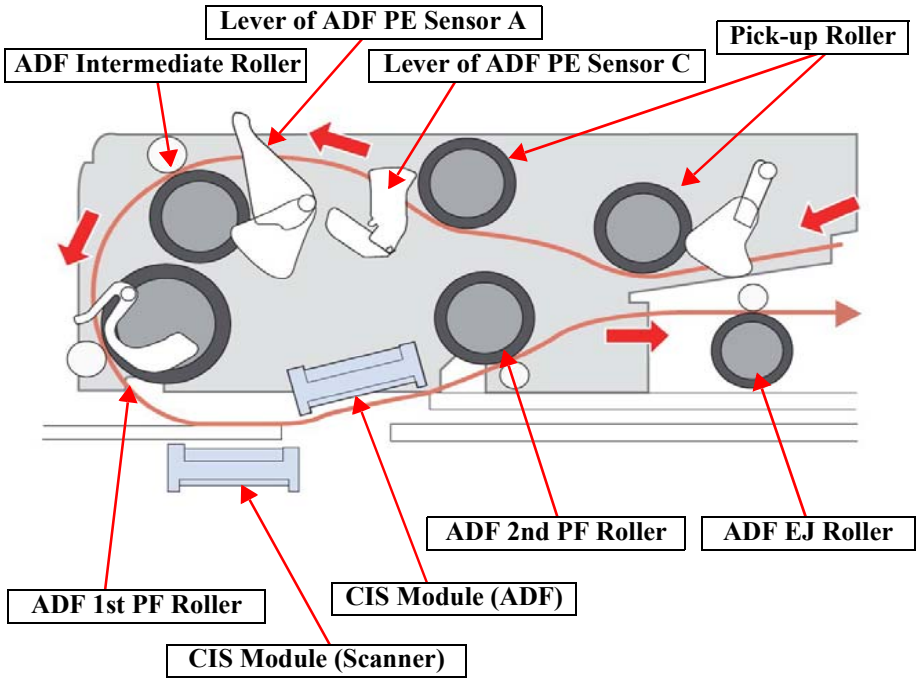


Figure 3-44. Document feed path

WF-C8690/C8690a/WF-C8610/WF-C8190/C8190a are equipped with the CIS Modules in the ADF mechanism. Since the document is not needed to be reversed any more, the tapping[1] skew correction is performed after the ADF PE Sensor A detects the document.

1. Feeds paper by the rotation of the Pick-up Roller while the ADF 1st PF Roller is stopped. Even after the paper reaches the ADF 1st PF Roller, keeps feeding as is to make the paper arch for a predetermined time to correct the paper skew.

3.4 Life Management

3.4.1 Periodic replacement parts

Part name	Model	End of life detection	Remedy	Continuation of use	Operation after continuation of use	Part lifespan
Main Unit Cassette Feed Roller	---	(Near end) 1. When end job with which specified number of sheets reached 2. When power turns on	Press the OK button to turn off the error LED.	Possible	Displays near end indication every 300 sheets until reach number of sheets of lifespan. (Reset when end of life reached)	200,000 sheets
		(End) 1. When end job with which specified number of sheets reached 2. When power turns on	☐ Replace part Turn off the power and replace the periodic part. ☐ Continue use	Possible	Displays end indication every 300 sheets until reach number of sheets of lifespan.	
Additional Cassette Feed Roller	---	(Near end) 1. When end job with which specified number of sheets reached 2. When power turns on	Press the OK button to turn off the error LED.	Possible	Displays near end indication every 300 sheets until reach number of sheets of lifespan. (Reset when end of life reached)	200,000 sheets
		(End) 1. When end job with which specified number of sheets reached 2. When power turns on	☐ Replace part Turn off the power and replace the periodic part. ☐ Continue use	Possible	Displays end indication every 300 sheets until reach number of sheets of lifespan.	
Rear ASF Unit	Refer to parts List*1	Not displayed	☐ Replace part.	Possible	Not displayed	50,000 sheets
Periodic Maintenance*2	---	(Near end) 1. When end job with which specified number of sheets reached 2. When power turns on	☐ Press the OK button to turn off the error LED.	Possible	Displays near end indication every 300 sheets until reach number of sheets of lifespan. (Reset when end of life reached)	300,000 sheets
		(End) 1. When end job with which specified number of sheets reached 2. When power turns on	☐ Refer to “"3.4.2 Periodic Maintenance" *(p. 63)*”	Possible	Displays end indication every 300 sheets until reach number of sheets of lifespan.	

*1 :Regarding the parts number, refetr to part list of applicable product.

3.4.2 Periodic Maintenance

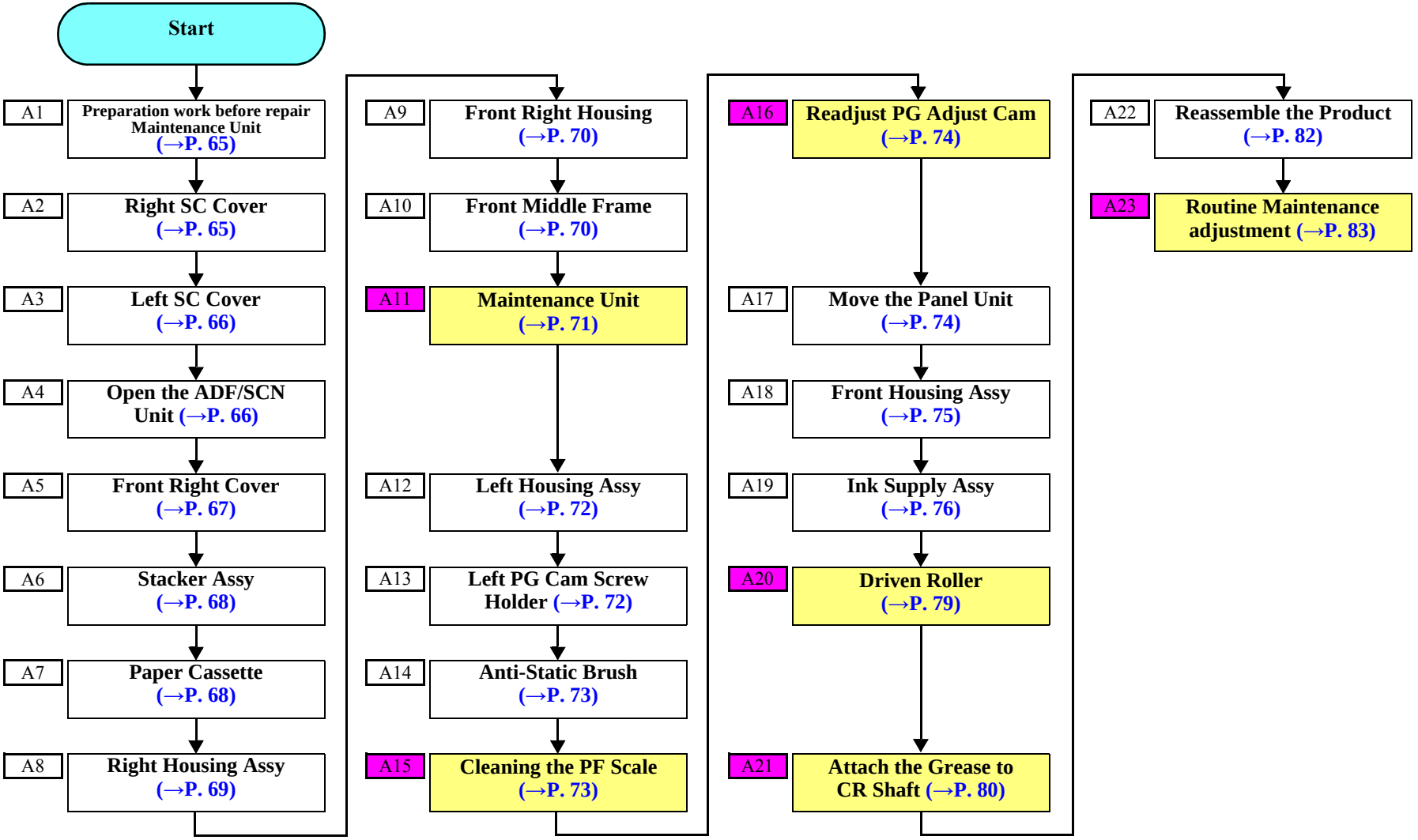
Periodic maintenance is needed in this product to secure the product life (600,000 pages).

☐ Periodic Mainten

Maintenance	Overview
Replace the Maintenance Unit	Maintenance Unit is replaced as correspondence to Pump life of Maintenance Unit wears.
Cleaning the PF Scale	The PF scale cleaning is executed as correspondence to the PF scale reading defective by the ink mist accumulation of the PF scale.
Readjust the PG Adjust Cam	As the CR Unit bearing wears, the PG value is changes. Move the cam one notch upward as correspondence to the PG value changing.
Attach the Grease to CR Shaft	As bearing part of Carriage Unit deteriorates, the load on Bearing part of Carriage Unit increases. As a countermeasure to the above, clean the CR Shaft and applying the new grease.
Replace the Driven Roller	Driven Roller is replaced as correspondence to the Driven Roller wears.
Readjustment related to Paper feed. ■ Reset the PF/EJ Counter ■ Band Feed Adjust (Short)	Degradation of Paper Feed Roller deteriorates the accuracy of Paper Feed. As a countermeasure to the above, readjust the paper feed adjustment items.

☐ Periodic maintenance procedure

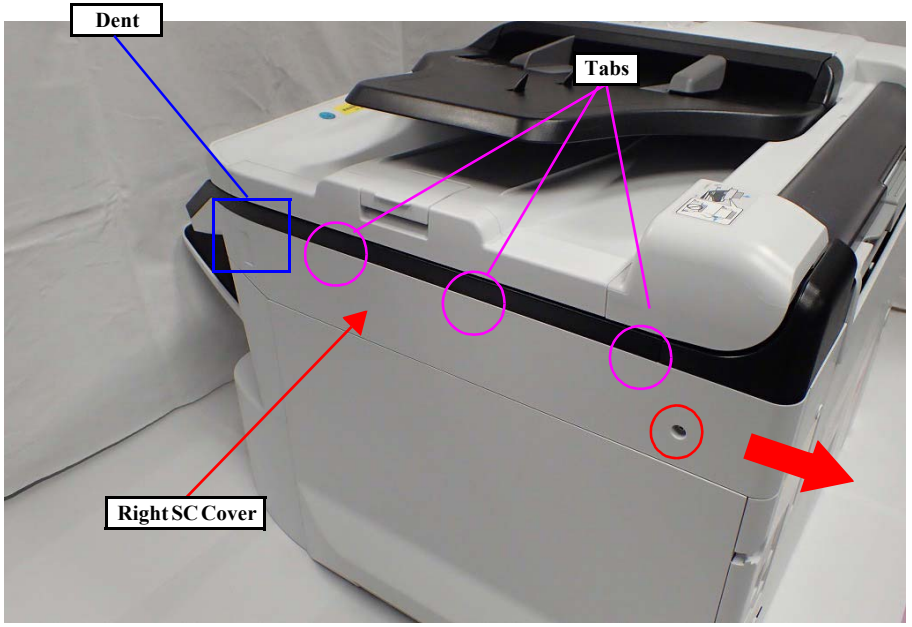
Perform the periodic maintenance operation according to the following operation flow.



A1		Preparation work before repair Maintenance Unit

1. Perform the "**Preparation work before repair Maintenance Unit**".
   (Refer to"MemoB92 Maintenance Unit *(p. 361)*")

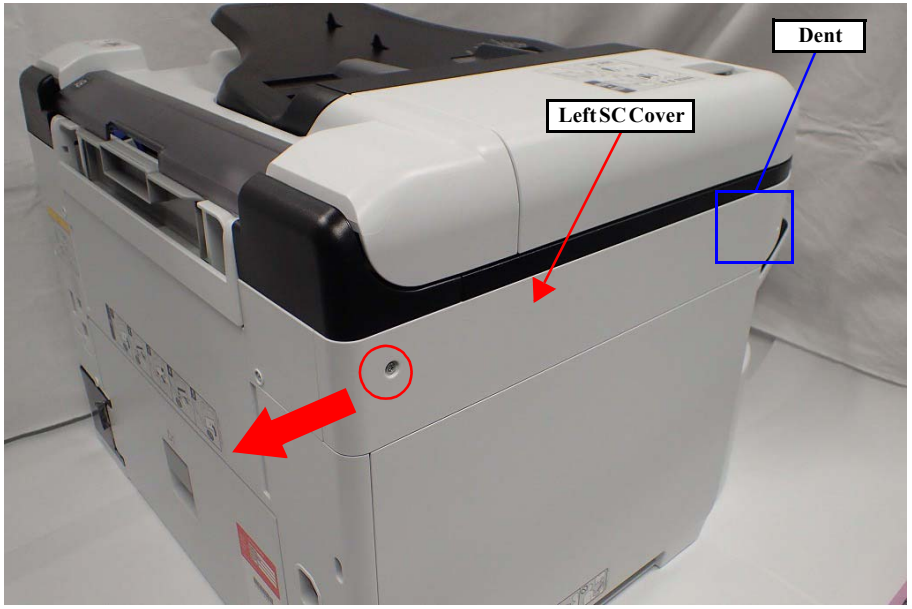
A2		Right SC Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

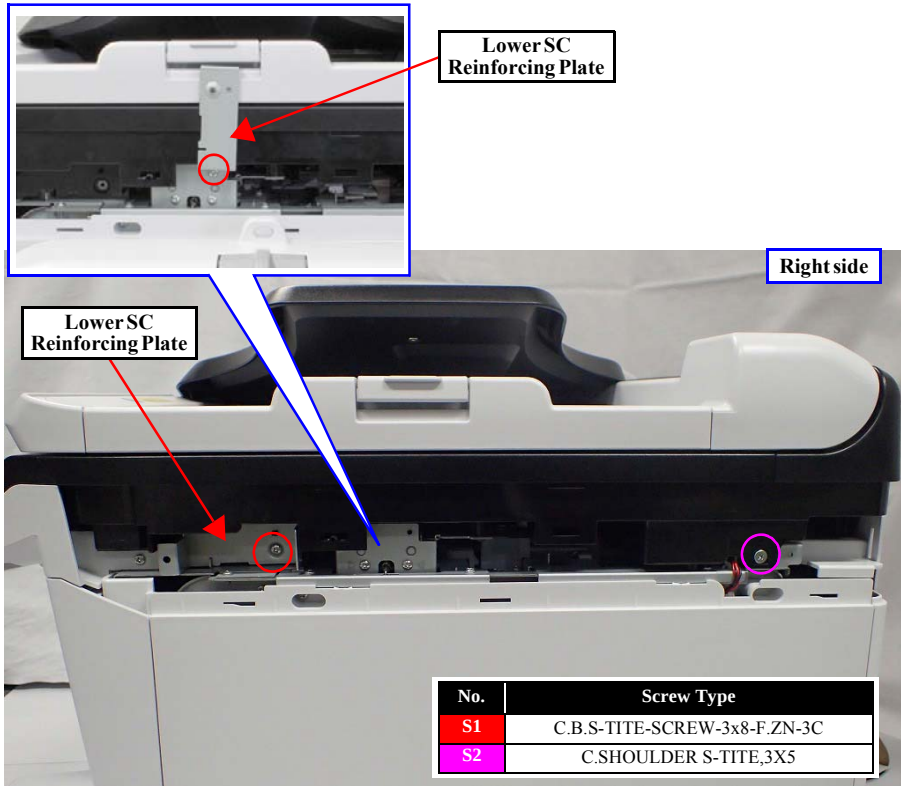
A3 Left SC Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

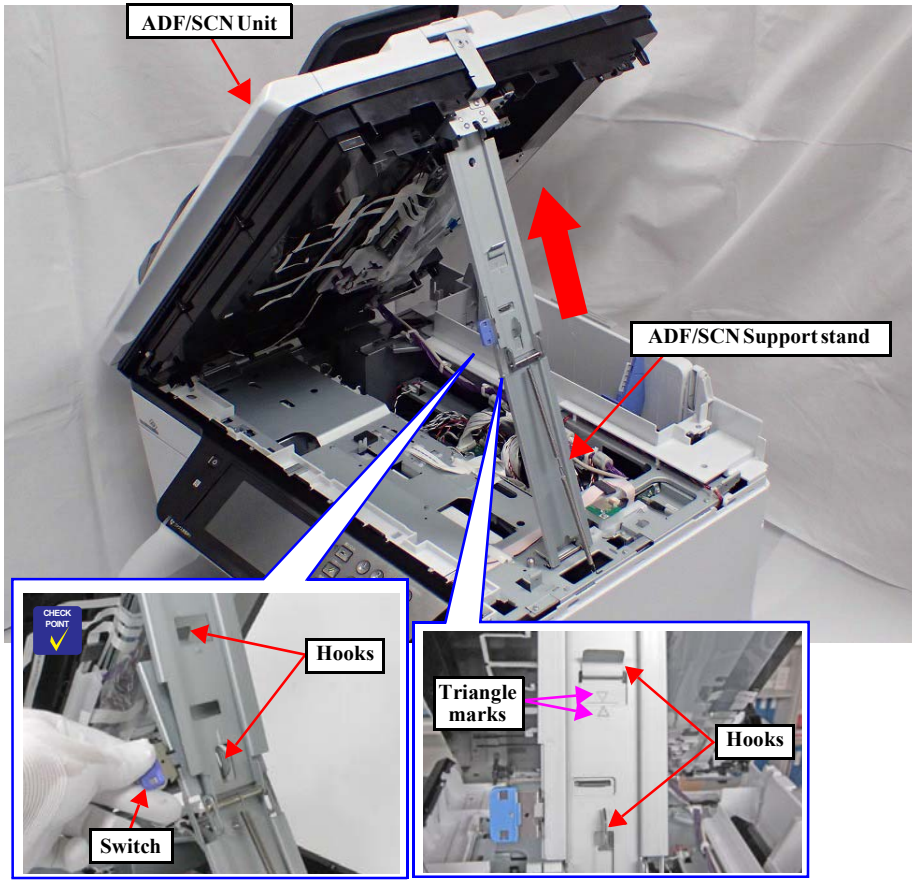
A4 Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit

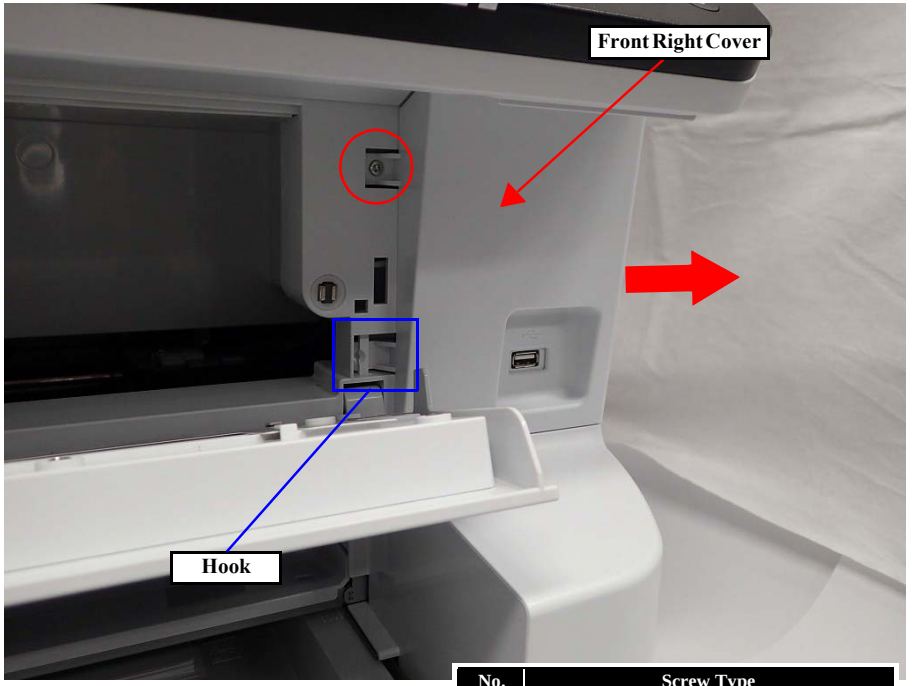


4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A5		Front Right Cover



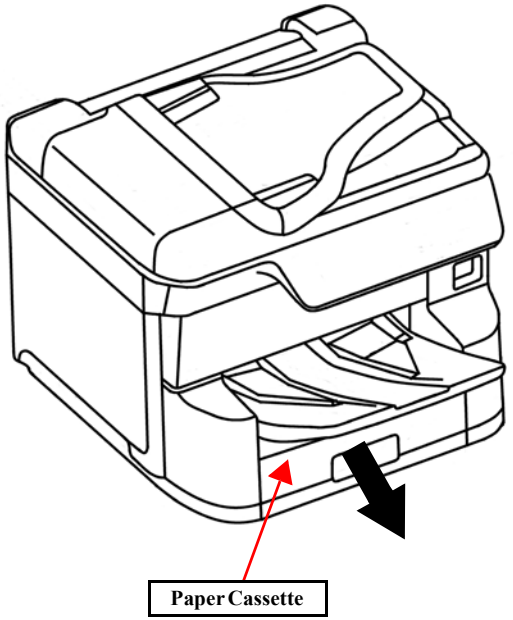
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

A6		Stacker Assy

1. Remove the Stacker Assy.

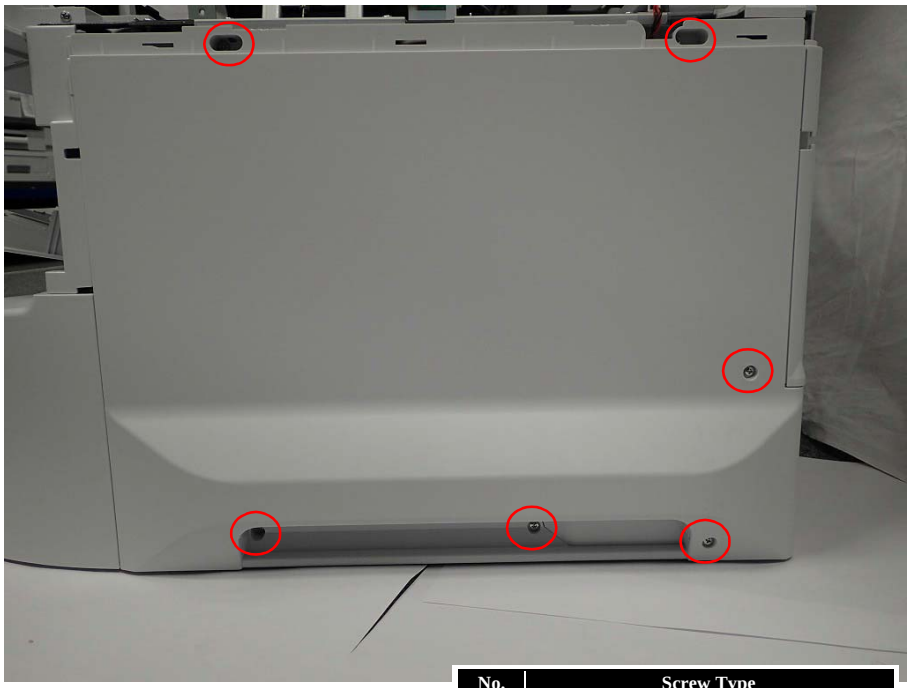
A7		Paper Cassette



1. Remove Paper Cassette.

A8	

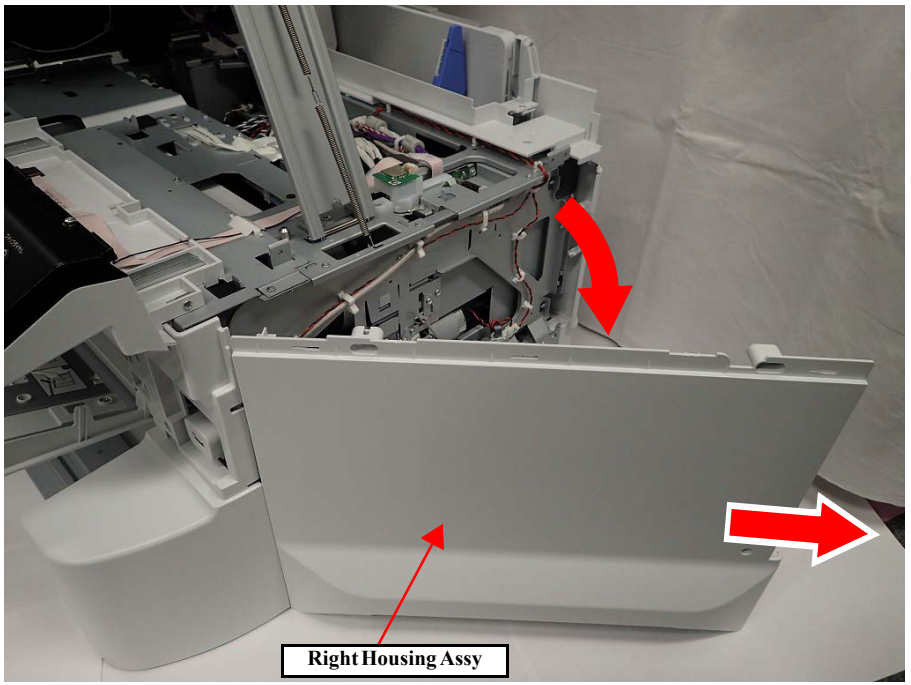
Right Housing Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

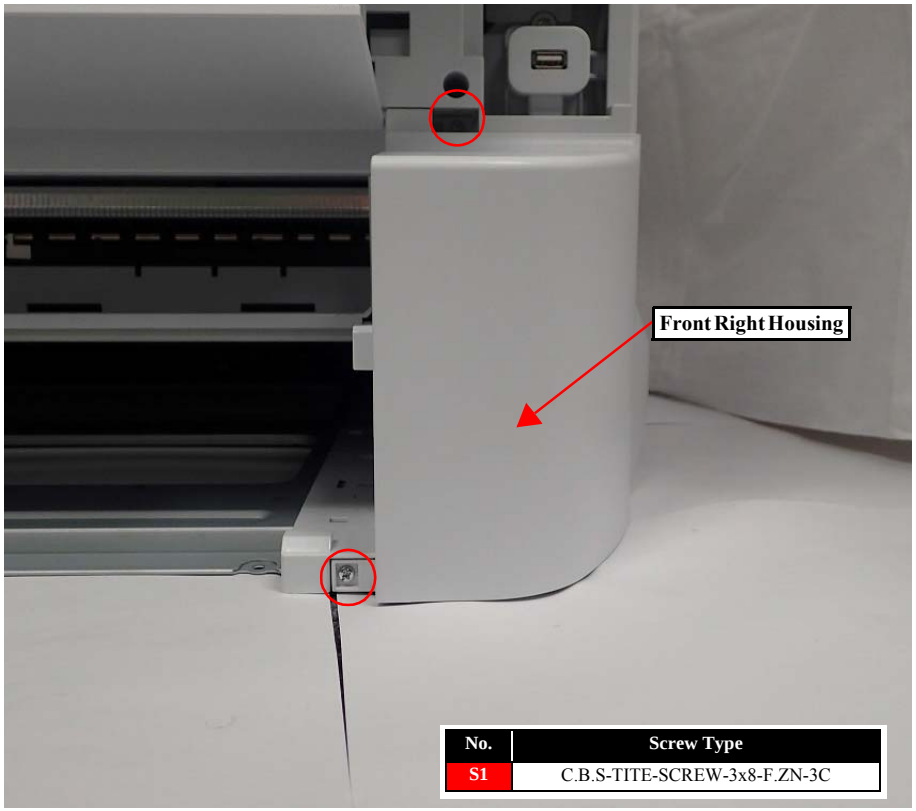
1. Remove six screw (S1: ○).

Right Housing Assy



2. Open the Rear side of Right Housing Assy like the above figure.
3. Slide the Right Housing Assy to derection of arrows in state of rear side of RIgth Housing Assy opened condition, and remove it.

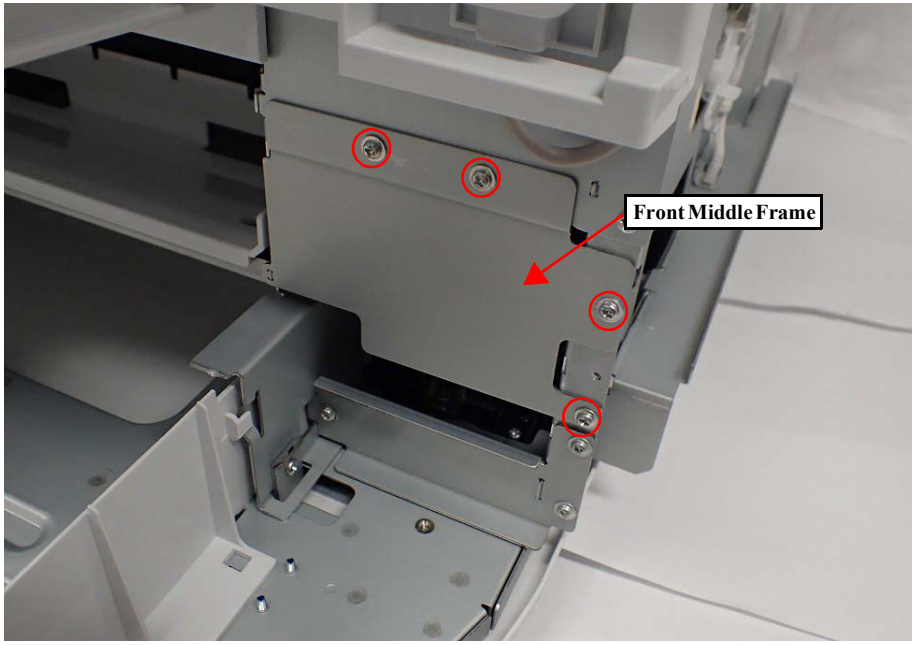
A9		Front Right Housing



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Front Right Housing.

A10		Front Middle Frame

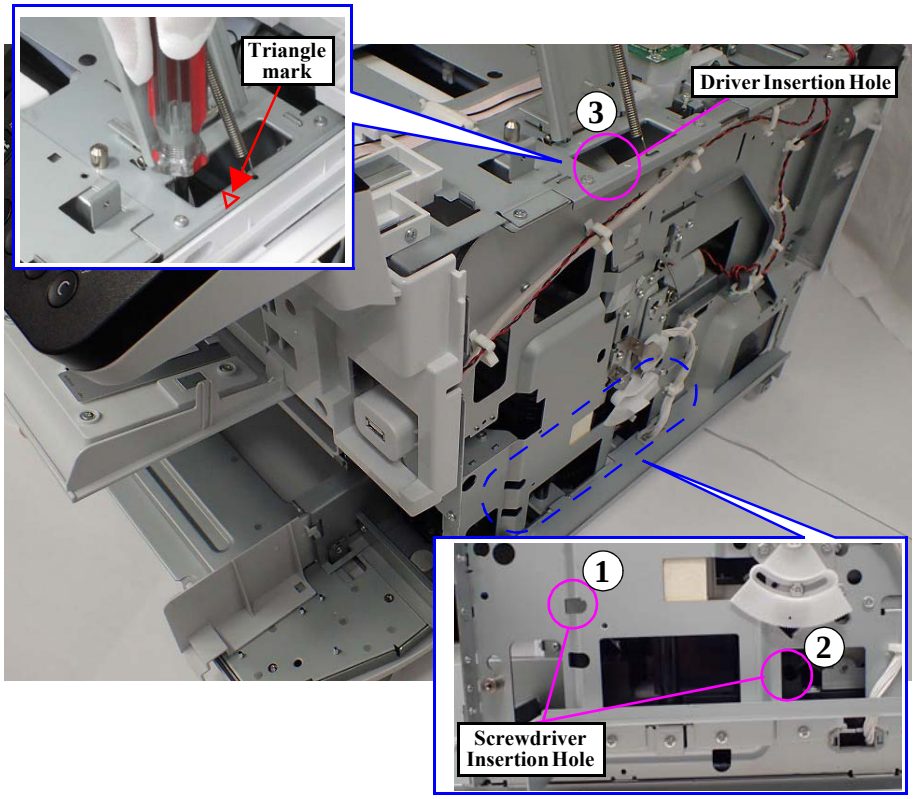


No.	Screw Type
S7	C.C.S-TITE-SCREW-3x5-F.ZN-3C

1. Remove the four screws (S7: ○), then remove the Front Middle Frame.

A11

Maintenance Unit



1. Insert the screwdriver into the hole and drive the three screws fixing the Maintenance Unit until run idle the screw.

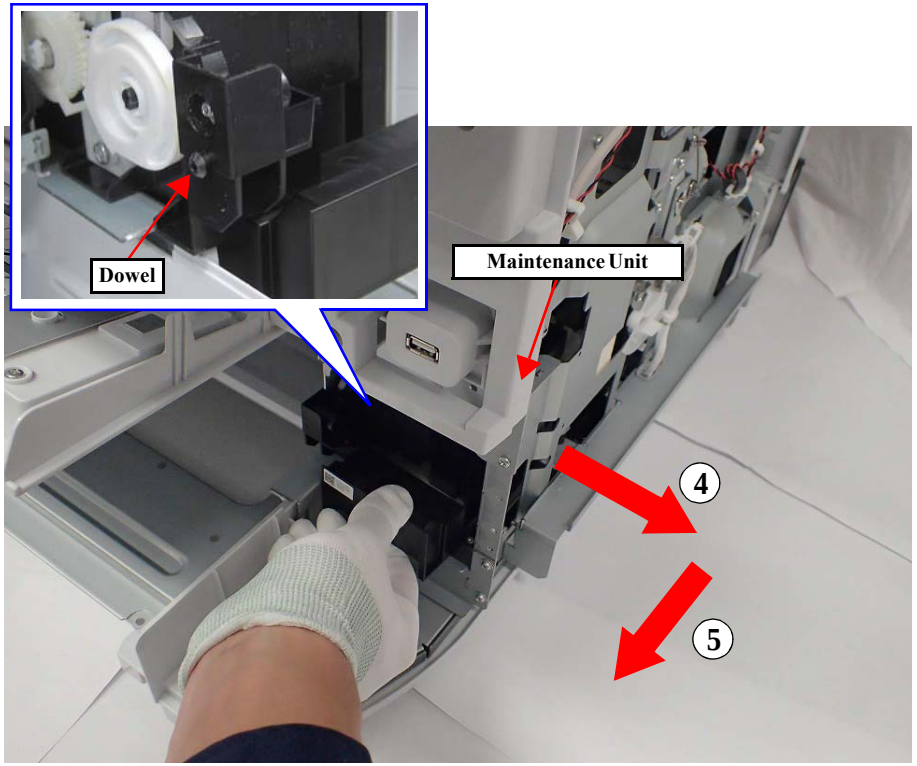
CHECK POINT

- ☐ Release the CR lock, then move the CR Unit to center before removing the Maintenance Unit.
- ☐ The screws are not removed because there is a screw clamp.
- ☐ Tighten the screw which is inside of the triangle mark.
- ☐ Use the screw driver whose shaft length is more than 25 cm to access the screw from the top.

REASSEMBLY

Tighten the screws in numerical order as shown in the picture.

Maintenance Unit



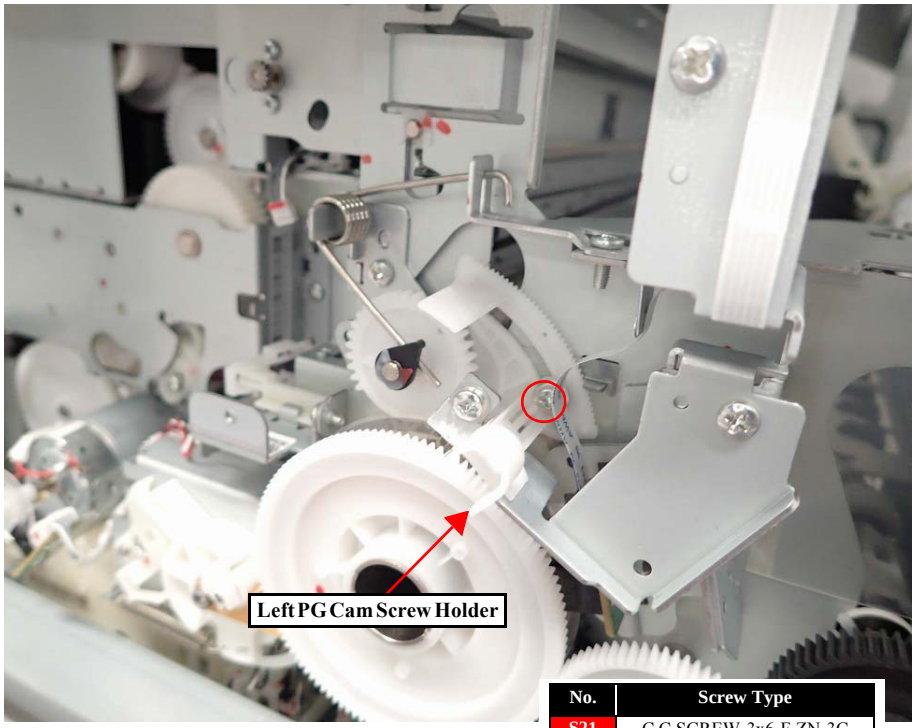
2. Open the Duplex Print Cover.
3. Remove Maintenance Box.
4. Slide the Maintenance unit rightward, and disengage the positioning dowel.
5. Pull the Maintenance Unit forward.

A12 Left Housing Assy

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screw (S1: ○), and remove the Left Housing Assy.

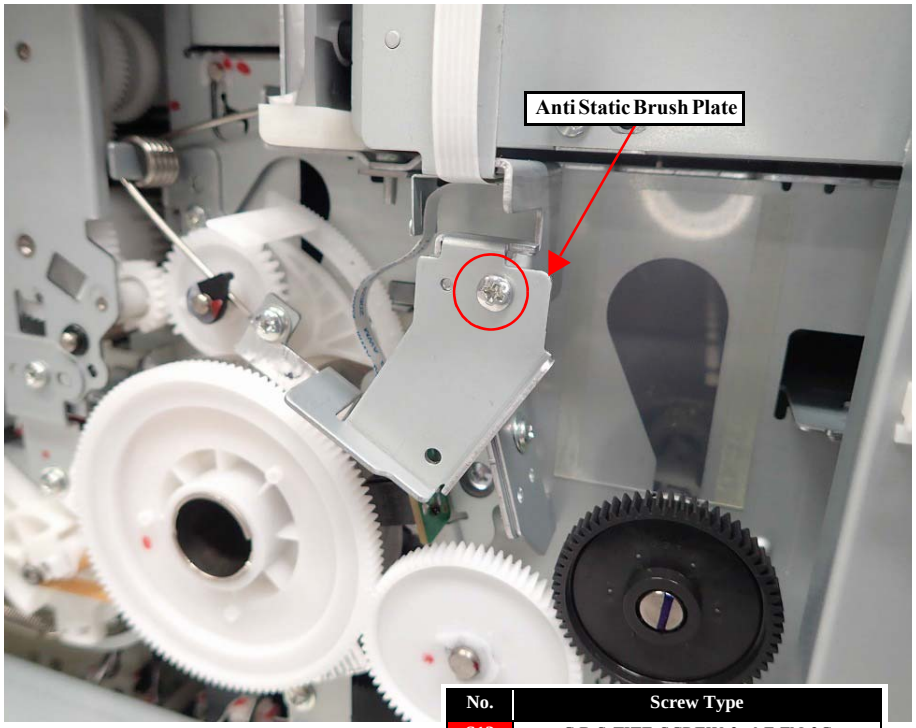
A13 Left PG Cam Screw Holder



No.	Screw Type
S21	C.C.SCREW-3x6-F.ZN-3C

1. Remove the screw (S21: ○), then remove the Left PG Cam Screw Holder with the screw.

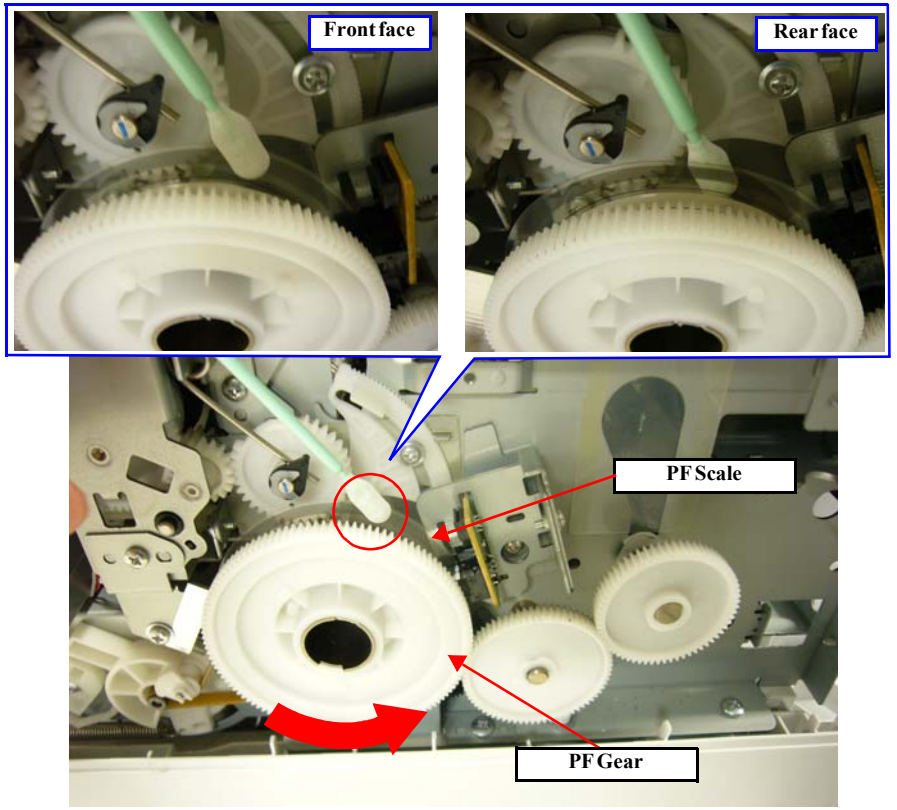
A14 Anti-Static Brush



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the screw (S13: ○), then remove the Anti Static Brush Plate.

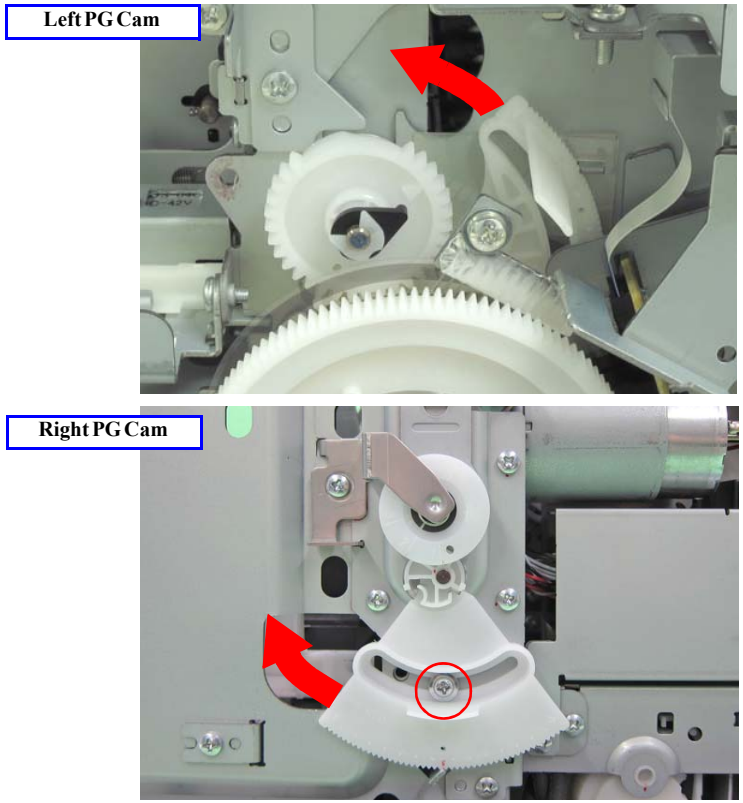
A15 Cleaning the PF Scale



1. Sork the Polyester Swab with alcohol (Ethanol)
2. Rotate the PF Gear counterclockwise by hand and clean the scaled part on the PF Scale with the Polyester Swab.

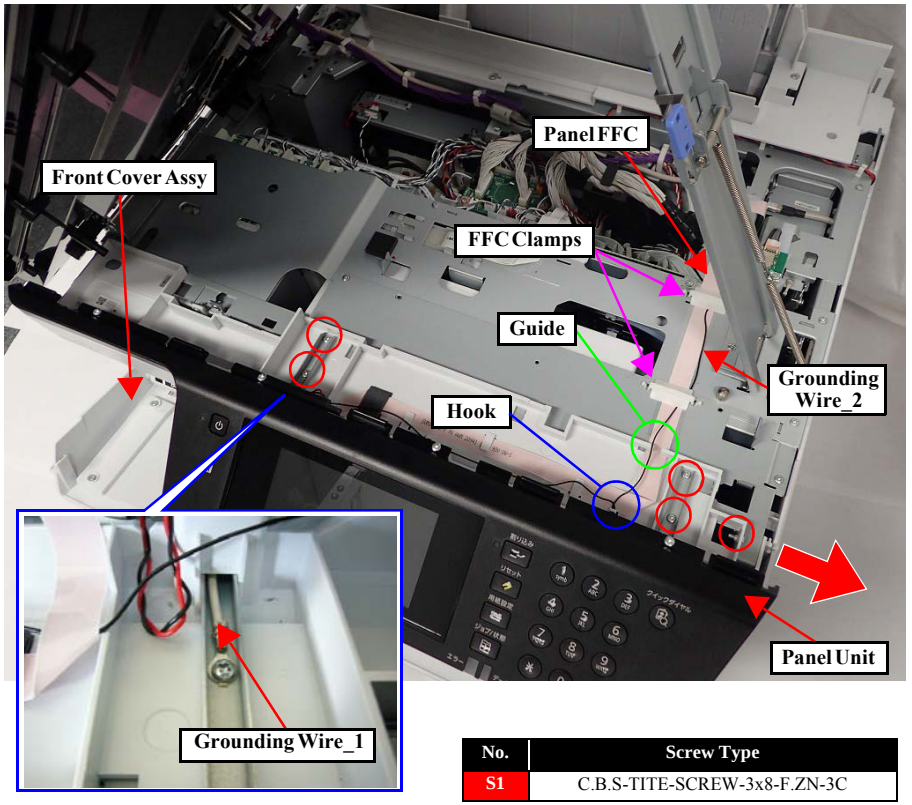
CAUTION
- ☐ Make sure not to add strong force to PF Scale.
- ☐ Clean the PF Scale until contamination does not adhere to the Polyester Swab.

A16 Readjust PG Adjust Cam



1. Remove the screws of Left PG Cam and Right PG Cam.
2. Move the each PG Cam one notch in the direction in which PG increases.

A17 Move the Panel Unit

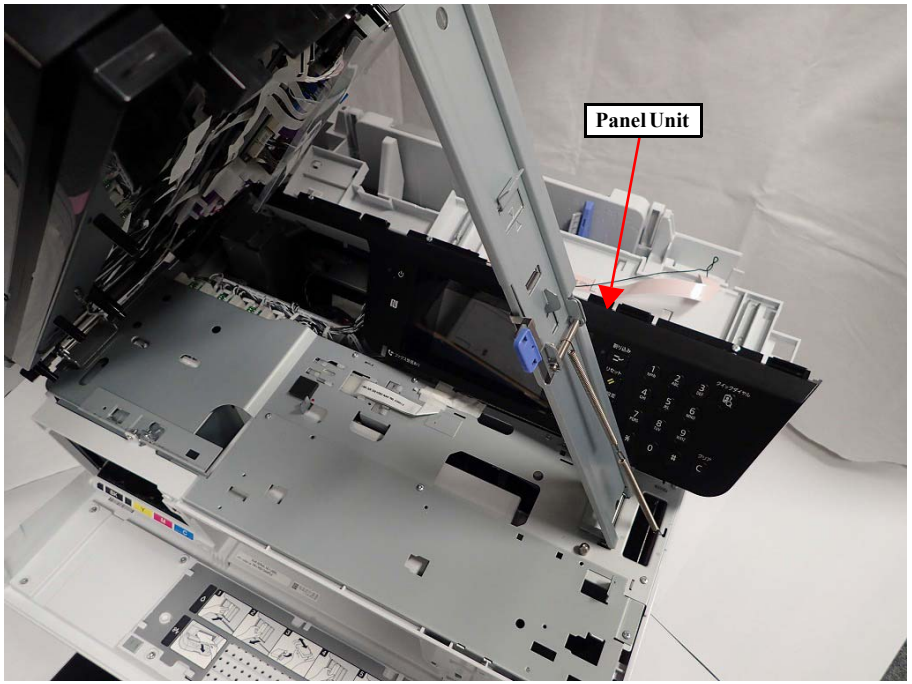


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○)
2. Remove the two FFC clamps.
3. Release the Panel FFC and the grounding wire_2 from the guide.
4. Release thgrounding wire_2 from Hook.
5. Open the Front Cover Assy.
6. Slide the panel unit rightward to remove it.

REASSEMBLY
- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

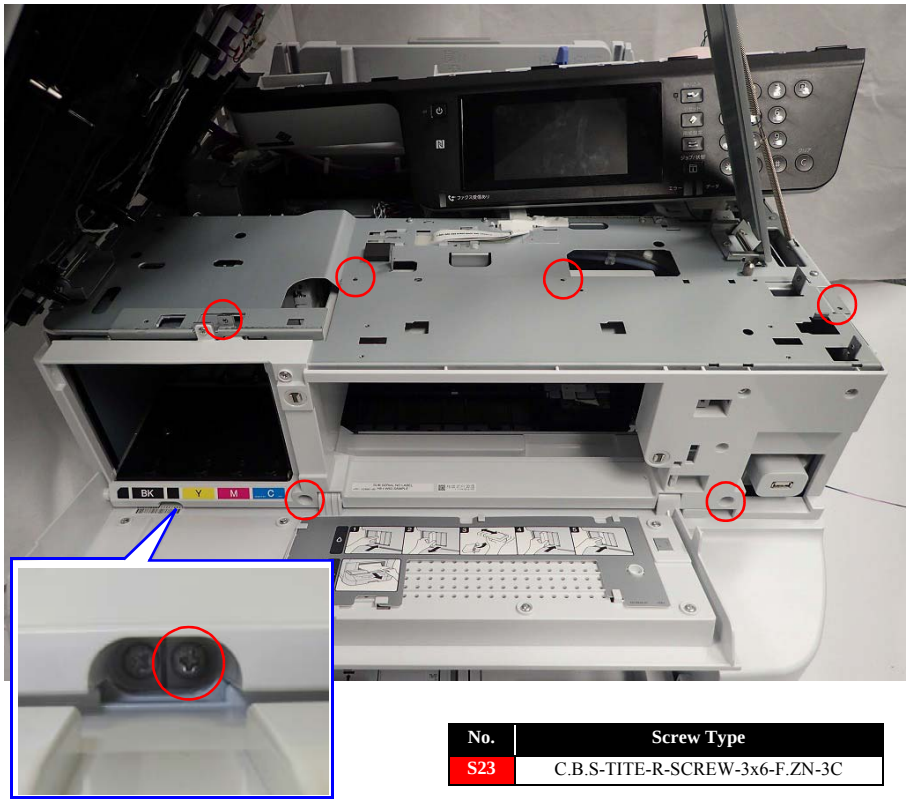
Move the Panel Unit



7. Put the panel unit at the rear side of the printer.

A18	

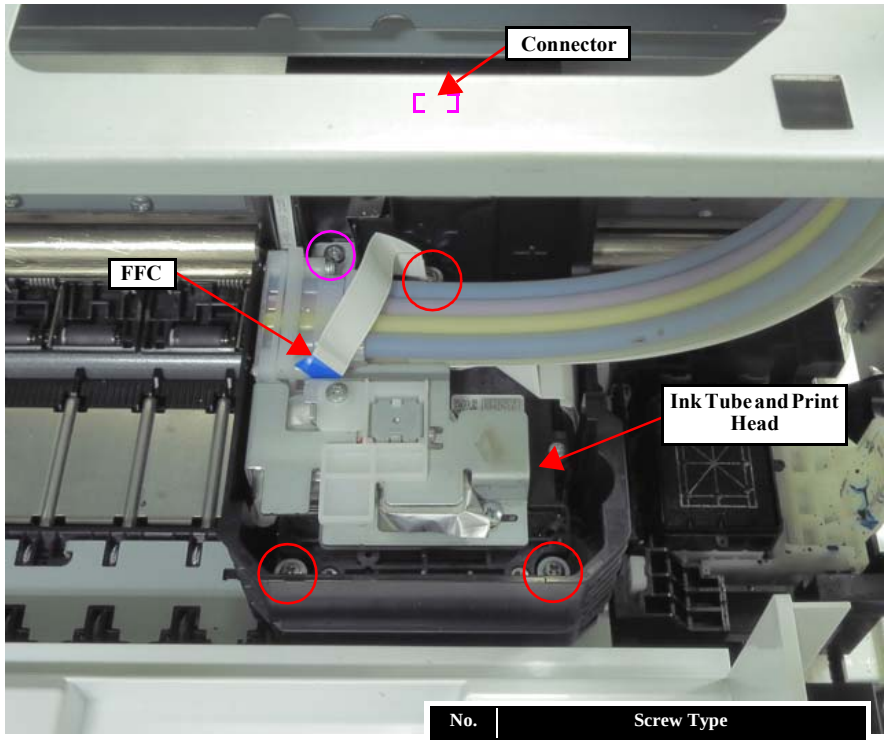
Front Housing Assy



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

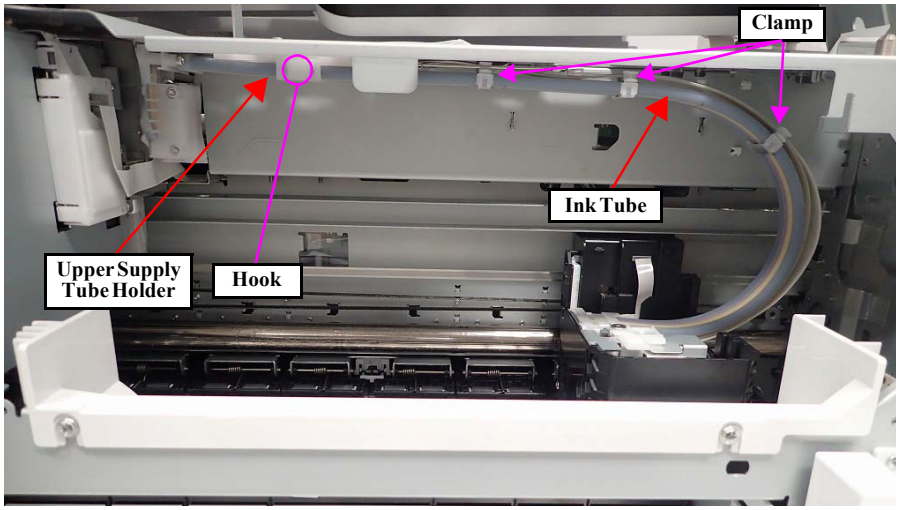
A19		Ink Supply Assy



No.	Screw Type
S6	SCREW,MOUNT,HEAD,ASSY
S5	ep-TITE-SCREW-2.6x17-F.ZN-3C

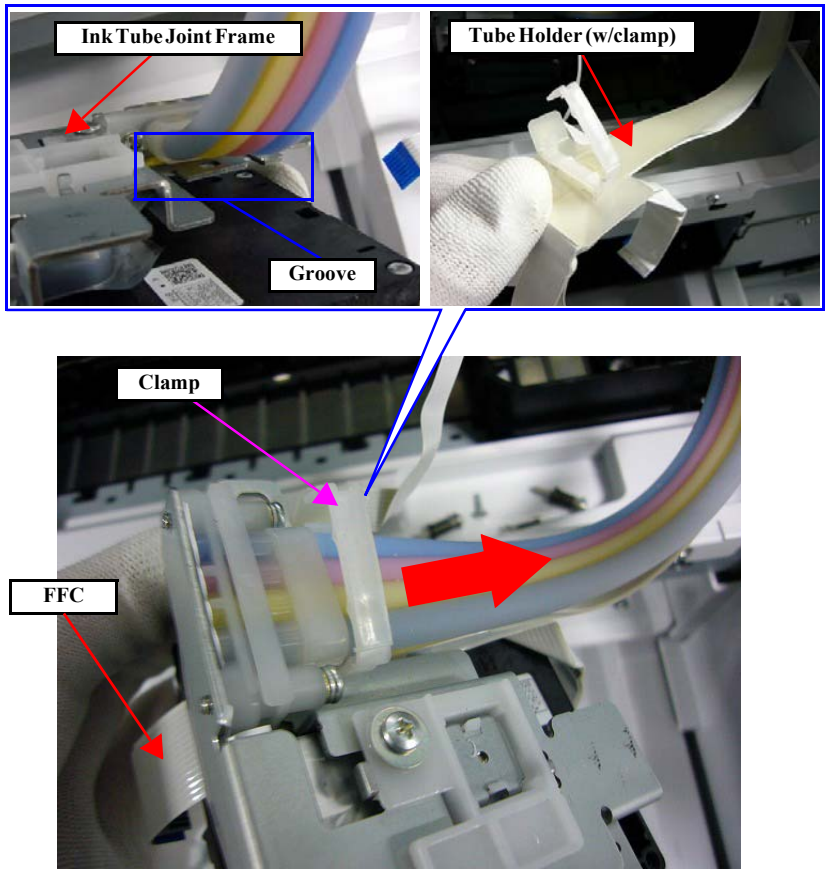
1. Disconnect the FFC from the connector.
2. Remove the three screws (S6: ○) and the screw (S5: ○), then remove the Print Head with ink tubes.

Ink Supply Assy



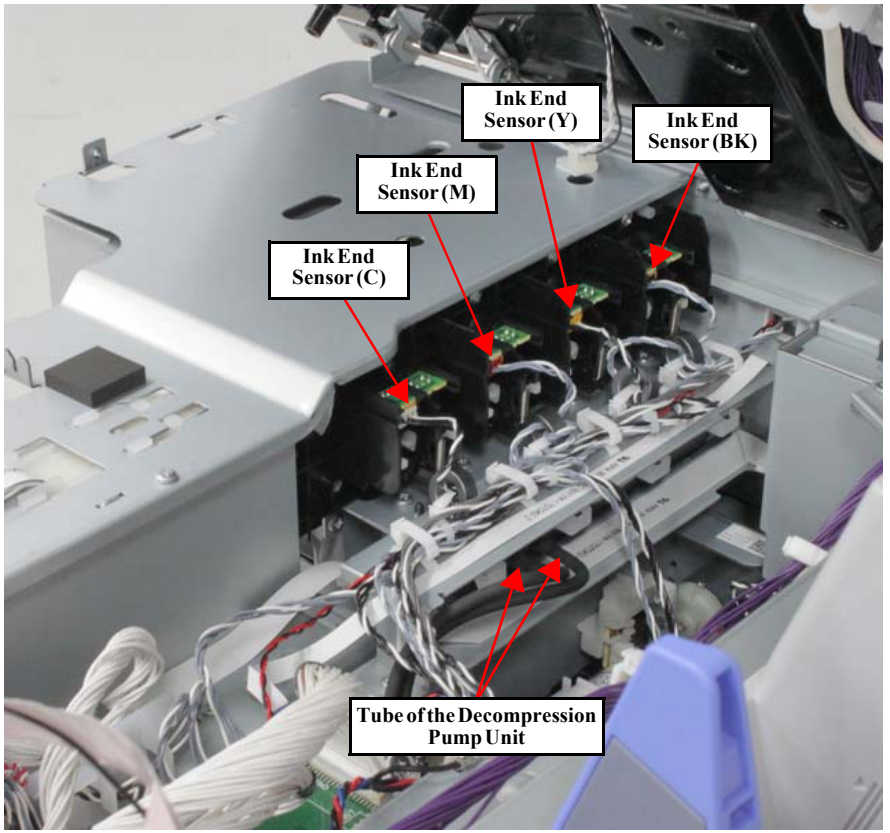
3. Disengage the hook, then release the ink tubes from the upper supply tube holder.
4. Release the ink tubes from the three clamps.

Ink Supply Assy



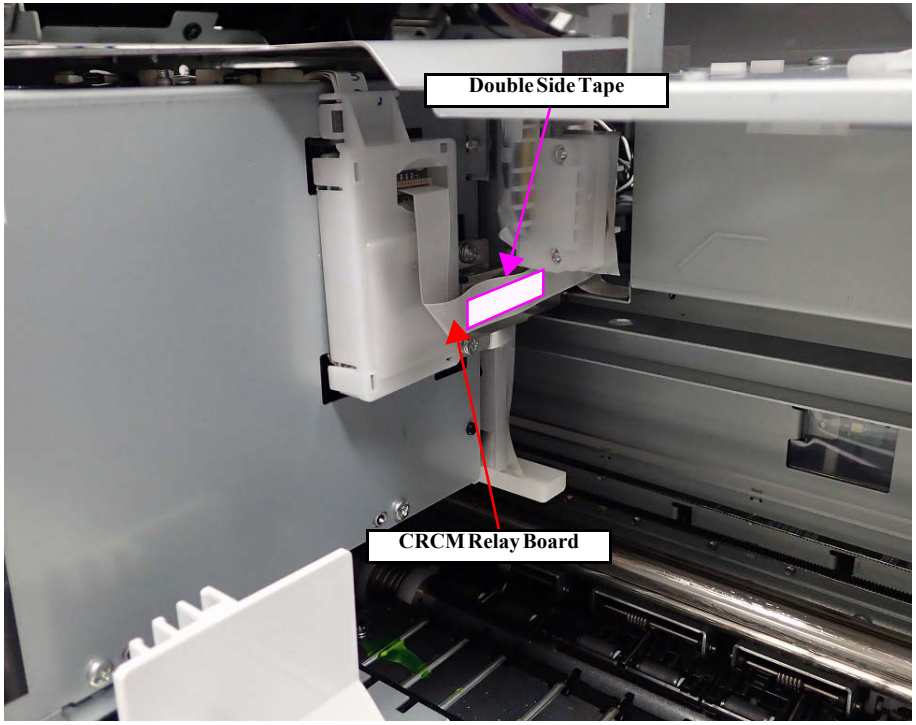
5. Disconnect the four FFC from Print Head.
6. Release the clamp.
7. Slide the Tube Holder (w/clamp) to direction of the arrow, and remove the Tube Holder (w/clamp) while releasing the clamp from groove of ink tube joint frame.

Ink Supply Assy



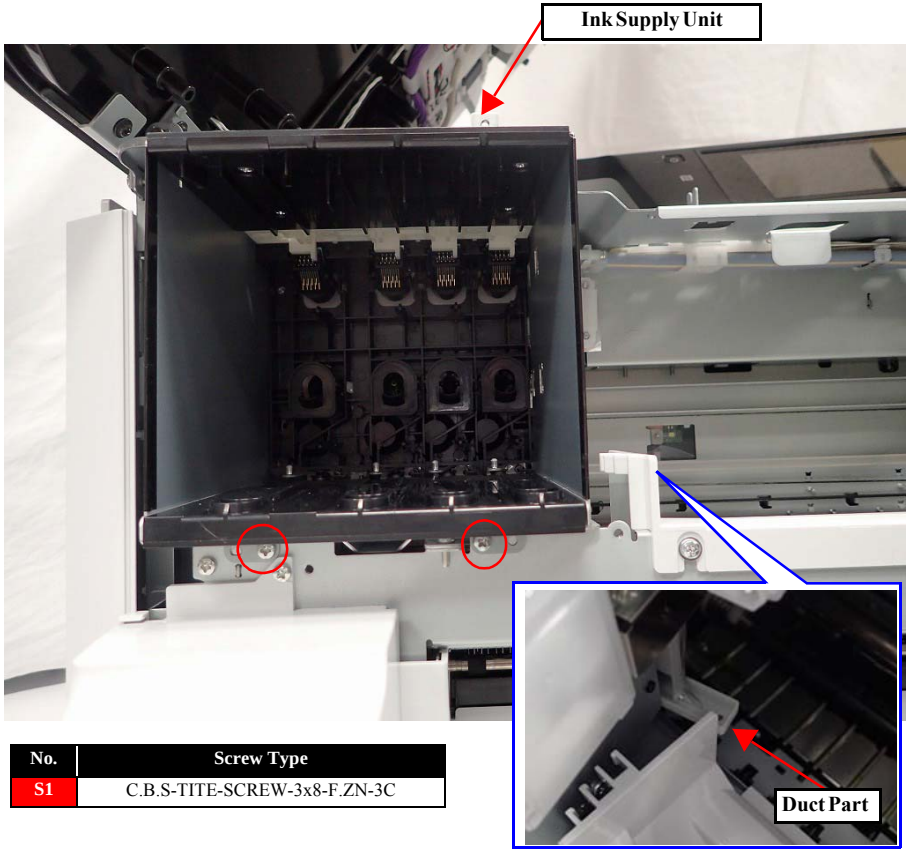
8. Disconnect the cable from the connector of the Ink End Sensor.
9. Pull out the two tubes from the decompression pump unit from the Ink Supply Unit.

Ink Supply Assy



10.Disconnect the CRCM Relay FFC from CRCM Board.
11.Remove the CRCM Relay FFC from Ink Suppky Unit. (with double side tape)

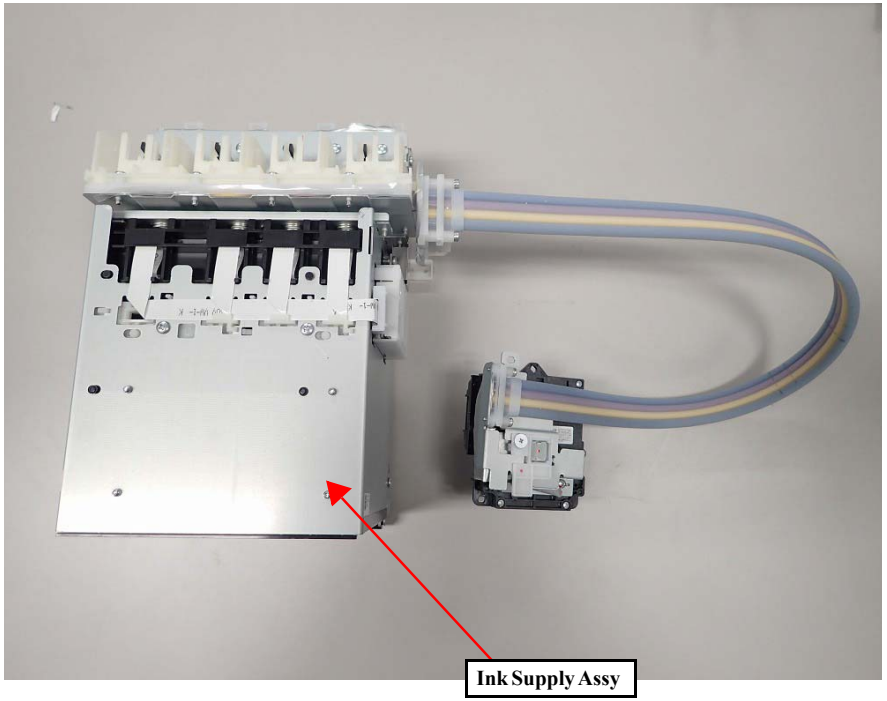
Ink Supply Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

12.Remove the two screws (S1: ○).
13.Remove the Ink Supply Unit while releasing the duct part.

Ink Supply Assy

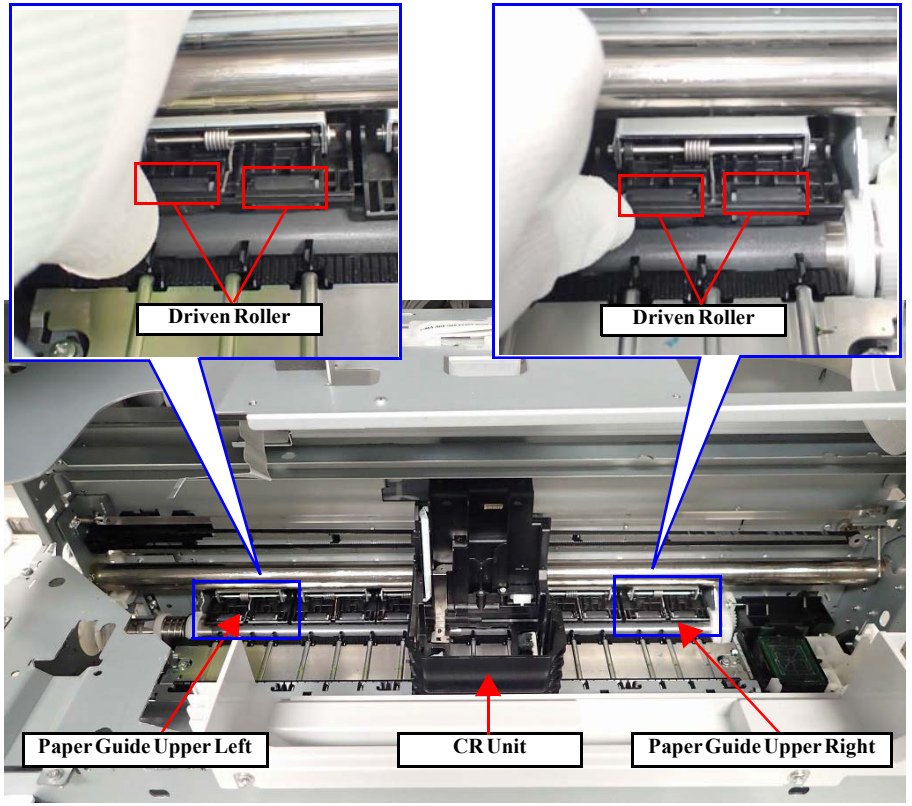


14.Remove the Ink Supply Assy.

CAUTION Ink Supply Unit cannot be completely removed because the Head FFC is connected to the Print Head.

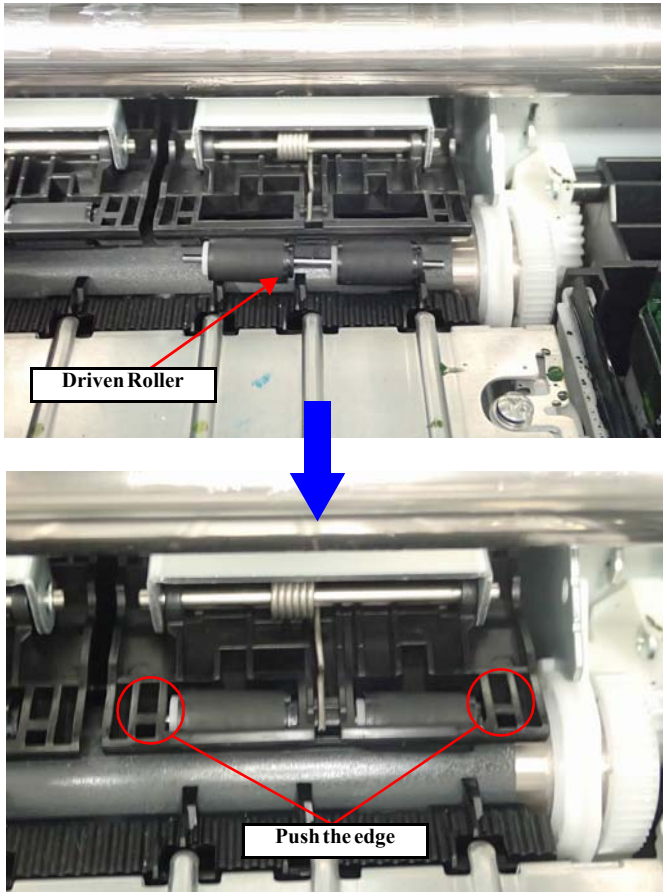
A20

Driven Roller (Only Paper Guide Upper Left and Paper Guide Upper Right)



1. Move the CR Unit to the center.
2. Hold up the Paper Guide Upper Left or Paper Guide Upper Right by finger, and push the edge of Driven Roller (two position) .
3. Remove the Driven Roller.

Driven Roller (Only Paper Guide Upper Left and Paper Guide Upper Right)



REASSEMBLY

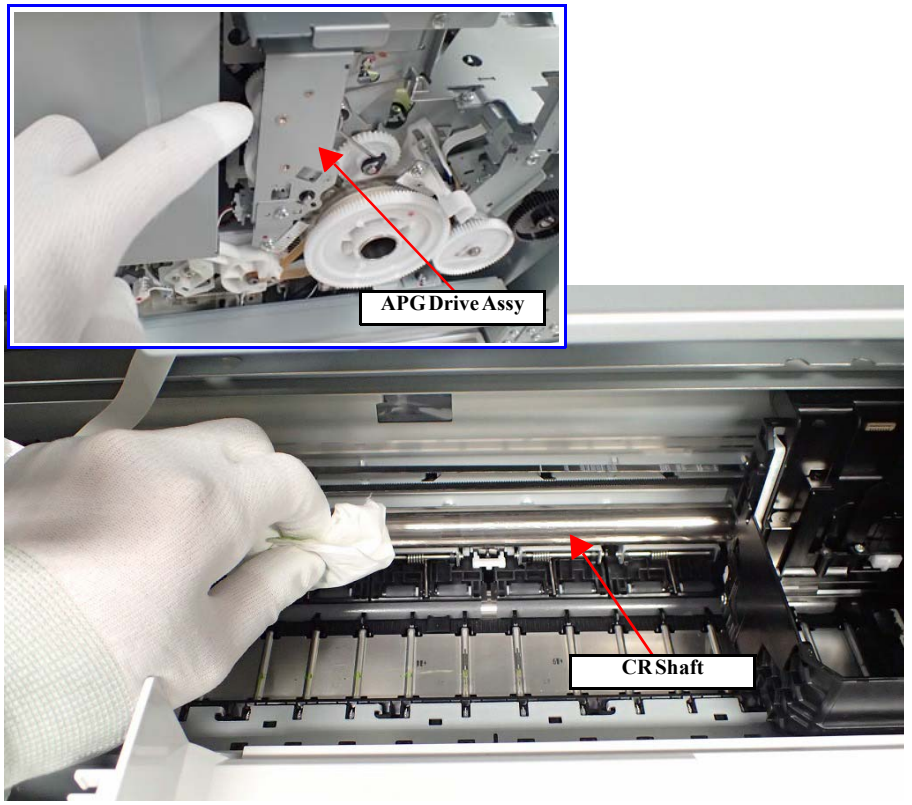
1. Put the Driven Roller aligned in Paper Guide Front.
2. Hold up the paper Guide Upper Left or paper Guide Upper Right, and move the Driven Roller to installing position.
3. Push the edge of Driven Roller (two position), and install the Driven Roller.

CAUTION

Driven Roller has installation direction.
Therefore, make sure to install the Drive Roller correct direction.
(The White part of Drive Roller faces the center)

A21

Attach the Grease to CR Shaft



1. Wipe off the Grease from CR Shaft with dry clean cloth.

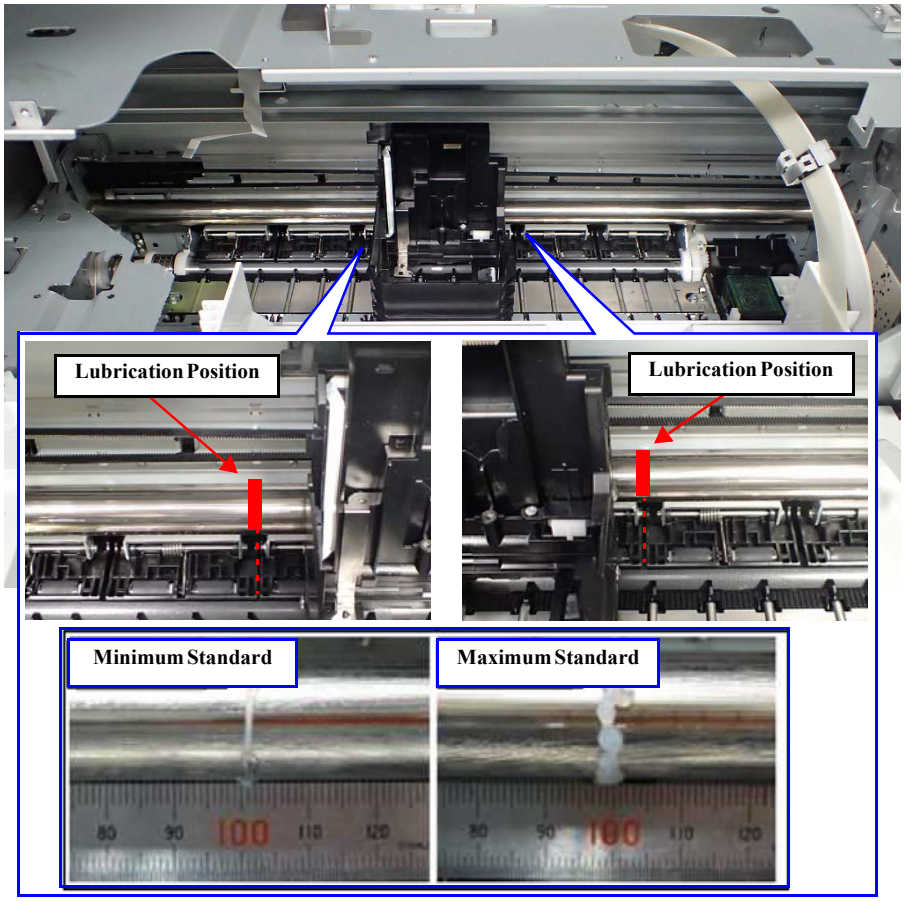
CHECK POINT

Make sure wipe off the Grease on back side surely too.
CR Shaft can be rotate by rotate the APG Drive Assy Gear.

Attach the Grease to CR Shaft

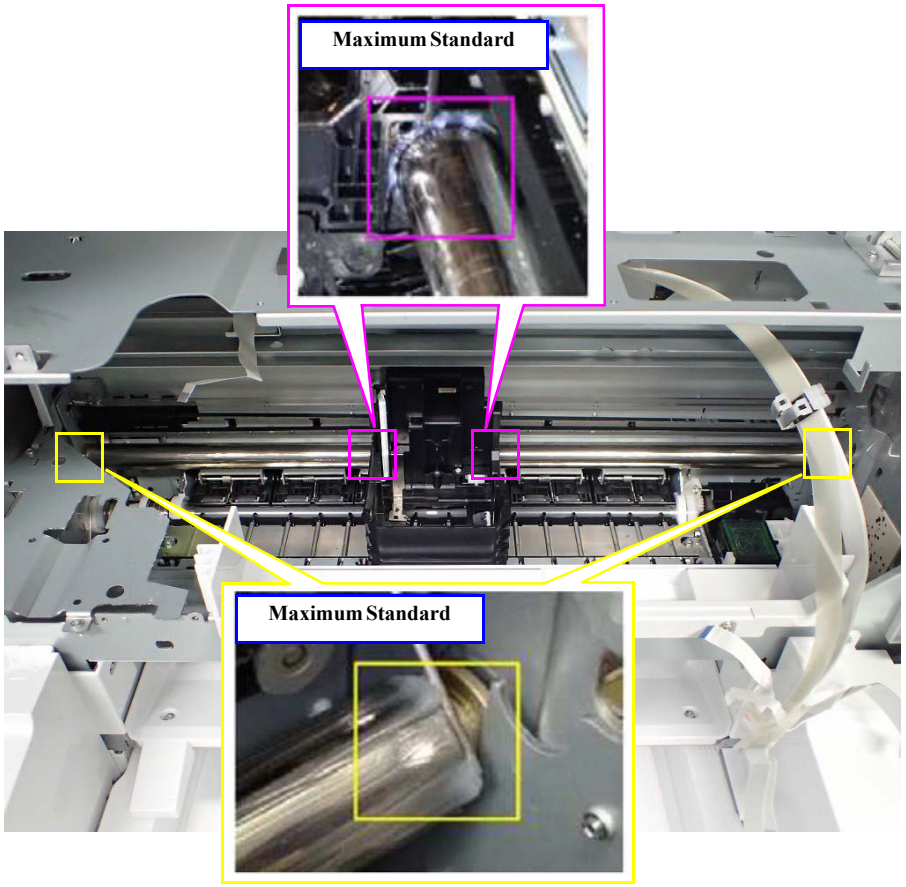
2. Attach the Grease (G-97) to the all face of CR Shaft.
   2-1. Move the CR Unit to Home Position (Right side of printer).
   2-2. Attach the Grease to CR Shaft by using the writing brush.
   2-3. Move the CR Unit to Full side (Left side of printer).
   2-4. Rotate the APG Drive Assy Gear, and make the back side of the CR Shaft visible.
   2-5. Repeat Step2-1 to Step2-3, and attach the Grease to Back side of CR Shaft.

Attach the Grease to CR Shaft



3. Attach the Grease (G-97) on all around of the CR Shaft.
   3-1. Move the CR Unit to center.
   3-2.Attach the Grease to two position of the CR Shaft.
   (Regarding the lubrication amount, refer to above figure)
   - Ful side (Left side of printer)
     Position is between the Paper Guide Upper Left and the Paper Guide Upper Center.
   - Home postion side (Right side of printer)
     Postion is between the paper Guide Upper Right and the Paper Guide Upper Center.

Attach the Grease to CR Shaft



4. Move the CR Unit two reciprocations.
5. Confirm the Grease remained on “Bearing part of CR Unit” and “edge part of CR Shaft”. (If remained grease is more than maximum standard, make ure to remove the remaind grease.)

A22		Reassemble the Product

1. Assemble the product up to the product state (state where it can be activated).

A23		Routine Maintenance Adjustment

1. Start the Pritner by Service Support Mode.
   (Refer to *Memo5.1 Service Support Mode (p. 100)*)
2. Select the " Adjustment: MENU" from service support mode menu.
3. Select the " Routine Maintenance: MENU" from adjustment menu.
4. Select the *Memoo B70 After Adjustment (p. 365)*.

CHAPTER

4

INSTALLATION

4.1 Introduction and Installation

In this section, product introduction and installation is explained.

- **Make sure to update the firmware to newest version when installing the printer.**
- **Make sure to install or update the printer driver /scanner driver of newest version.**
  In this timing, obtain the customer's agreement.

4.1.1 Overview of Introduction and Installation

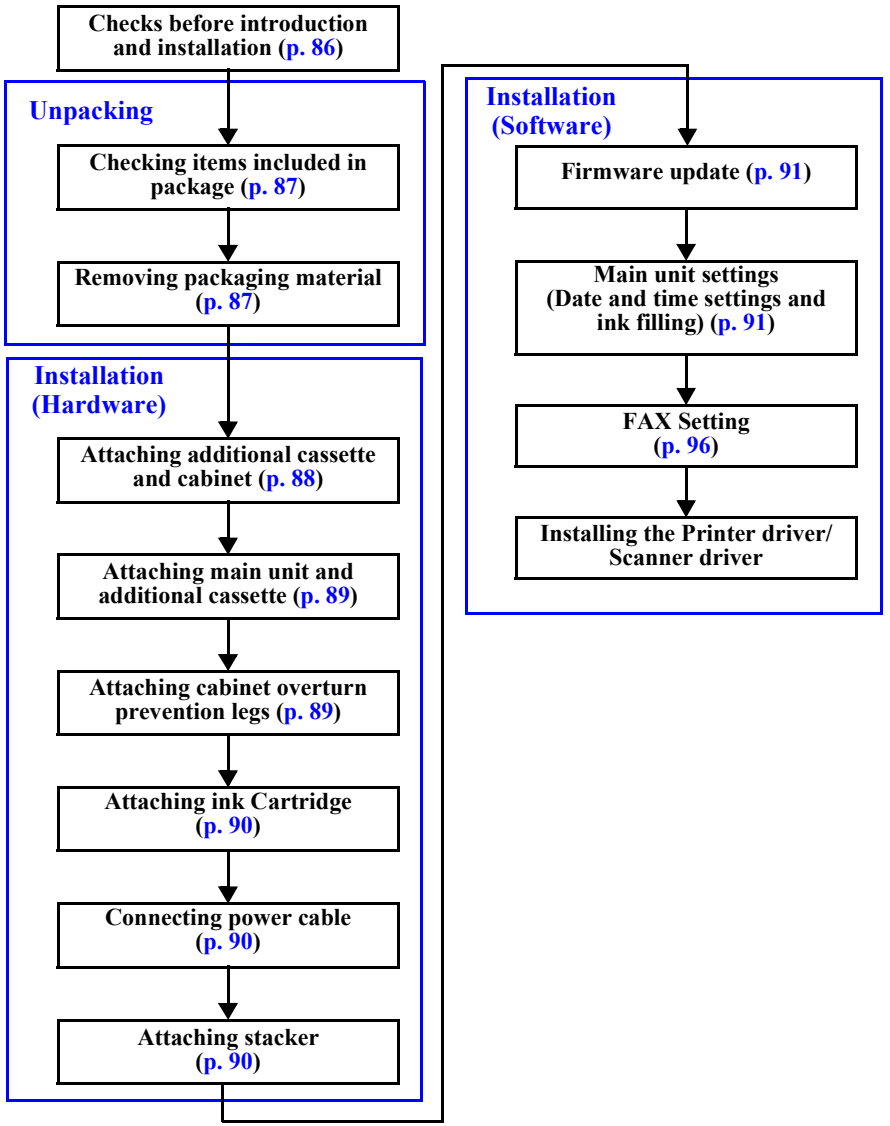


Figure 4-1. Overall Flow of Introduction and Installation

4.1.2 Checks Before Introduction and Installation

Check that the installation location has the space and can withstand the weight shown below. (For the detailed specifications, refer to *Chapter 2 "Product Specifications"(P. 12).*)

☐ Printer main unit only

Item	WF-C8690/C8690a WF-C8610	WF-C8190/C8190a
External dimensions	☐ For storage	☐ For storage
	■ Width: 613 mm	■ Width: 613 mm
	■ Depth: 755 mm	■ Depth: 755 mm
	■ Height: 493 mm	■ Height: 386 mm
	☐ For printing	☐ For printing
	■ Width: 613 mm	■ Width: 613 mm
	■ Depth: 866 mm	■ Depth: 866 mm
	■ Height: 571 mm	■ Height: 571 mm
Weight	45.8 kg	35.3 kg

☐ Printer main unit + options

Item	WF-C8690/C8690a WF-C8610	WF-C8190/C8190a
External dimensions	☐ For storage	☐ For storage
	■ Width: 772 mm	■ Width: 772 mm
	■ Depth: 797 mm	■ Depth: 797 mm
	■ Height: 1263 mm	■ Height: 1186 mm
	☐ For printing	☐ For printing
	■ Width: 772 mm	■ Width: 772 mm
	■ Depth: 866 mm	■ Depth: 866 mm
	■ Height: 1371 mm	■ Height: 1371 mm
Weight	81.7 kg	71.2 kg

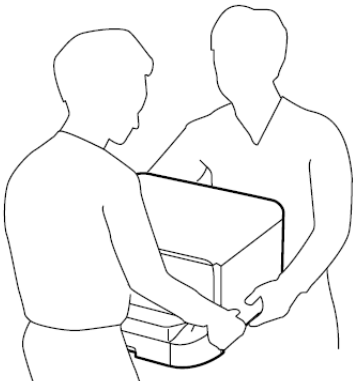
4.1.3 Installation

4.1.3.1 Installation Procedure

CAUTION

When moving the main unit, be sure to perform the work in accordance with the following points.

- ☐ **The printer is heavy so the work to unpack and move it must be carried out by at least two people.**
- ☐ **When lifting up the printer, lift it up with your hands placed in the locations indicated in the diagram below. Be sure to hold the printer as indicated because there is a risk of dropping it or trapping your fingers when lowering it if other parts are held when lifting up the printer.**
- ☐ **To prevent the printer from dropping or falling, do not tilt the printer when moving it.**



1. Unpacking and checking items included in package
   When unpacking, check that the following items are included.

No.	Name	Remark
(1)	Printer main unit	
(2)	Ink Cartridge	One for each color (Black, cyan, yellow, and magenta)
(3)	Power cable	
(4)	Paper size label	
(5)	User's guide	
(6)	FAX Guide	
(7)	Precautions on using the product	
(8)	Software disc (CD-R)	
(9)	Stacker (output tray)	

2. Removing the protective tape and protective material
   Remove the protective tape and protective materials attached to the printer. Be careful because there is in particular the risk of forgetting to remove the following.

[CR fixing material]

CAUTION

- ■ **Make sure to remove the CR fixing material (plastic) and CR upper fixing material (Styrofoam) form CR Unit.**
- ■ **Make sure to remove the all fixing material, because fatal error is occurred by remaining the fixing material.**

3. Preparing the additional cassette and cabinet

CHECK POINT

Perform this procedure if an additional cassette and cabinet need to be attached.

Check that the following items are included in the package.

☐ Additional cassette unit

	Name	Remark
(1)	Additional cassette unit	
(2)	Paper size label	
(3)	Cassette number label	
(4)	Additional cassette fixing screw	For fixing front (x2), for fixing back (x2)

☐ Cabinet

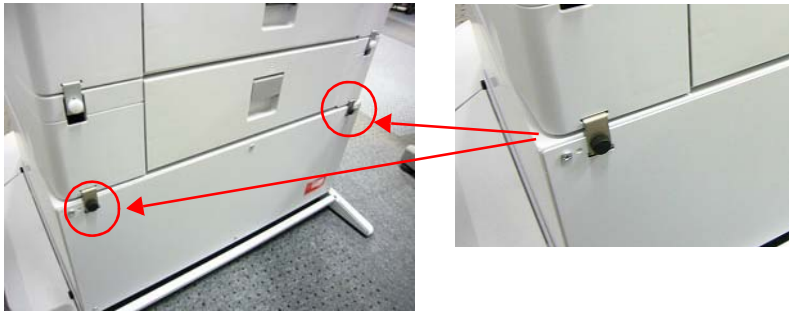
	Name	Remark
(1)	Cabinet main unit	
(2)	Overturn prevention legs frame	1 for each of left and right (including side decorative plates)
(3)	Overturn prevention reinforcing frame	For front (short frame) For rear (long frame)
(4)	Front decorative plate	
(5)	L-shaped bracket for connection	
(6)	Overturn prevention leg fixing screw	Black screw (x8)
(7)	Additional cassette fixing screw	For fixing front (x2), for fixing back (x2)

4. Attaching additional cassette and cabinet

4-1. Remove the protective tape and protective material from the additional cassette and cabinet.

4-2. Pull out the paper cassette of the additional cassette.

4-3. Insert the additional cassette in the cabinet and secure it with the L-shaped bracket for connection and additional cassette fixing screws.



[Rear]

[Front]

4-4. Insert another cassette and secure it with the additional cassette fixing screws in the same way.

4-5. Affix the paper size labels to the paper cassettes of the additional cassettes.

5. Attaching the printer main unit

5-1. Pull out the paper cassette (C2) from the printer.

5-2. Place the printer on the additional cassette and cabinet.

CAUTION

When placing the printer on the additional cassette and cabinet, there is a risk of damaging the connector of the additional cassette, so be sure to lower it down vertical while aligning the four corners of the printer and the additional cassette.

5-3. Secure the printer main unit and additional cassette with the additional cassette fixing screws.

[Rear]

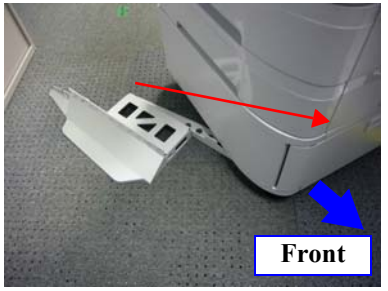
[Front]

6. Attaching the cabinet overturn prevention legs

6-1. Attach the overturn prevention frames (left and right) and secure them with the overturn prevention leg fixing screws.

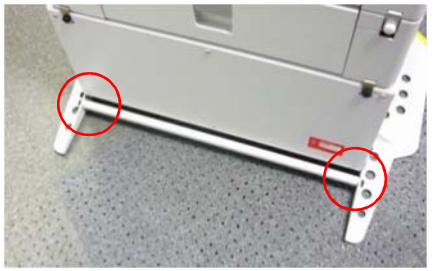
CHECK POINT

Pass the overturn prevention leg frames through from the cabinet sides, and then attach them while aligning the ribs of the overturn prevention leg frames with the holes in the cabinet.



6-2. Attach the overturn prevention reinforcing frames (front and rear) and secure them with the overturn prevention leg fixing screws.

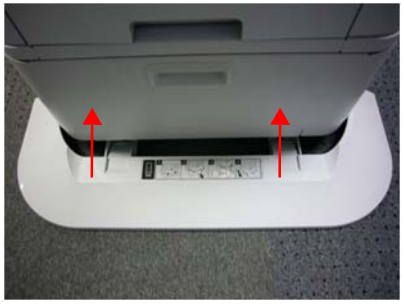
[Front]



[Rear]

6-3. Move the cabinet to the installation position and then lock the casters (x2) at the front of the cabinet.

6-4. Attach the front decorative plate.



CHECK POINT

Before moving the product from the installation position, remove the front decorative plate and unlock the casters (x2).

7. Attaching ink packs
   Open the ink case and attach the ink packs.

CAUTION

☐ **Do not touch the chip part of the ink cartridge.**

8. Connect the power cable.
9. Installing the Stacker Assy.

4.1.3.2 Firmware update

CAUTION

Make sure to update the firmware to the newest version.
Regarding the procedure of firmware update, refer to "8.3 USB F/W Update" *(p. 785)*.

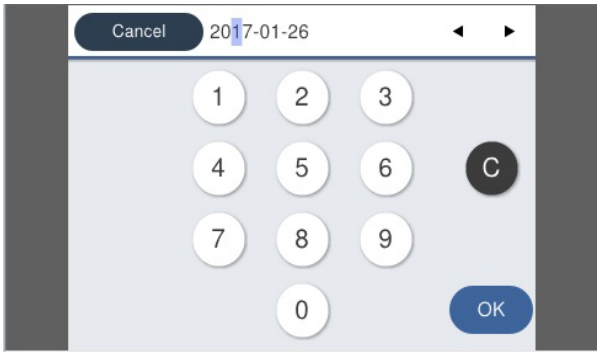
4.1.3.3 Main Unit Settings

1. Setting the date and time

Turn on the power and then configure the date and time settings.

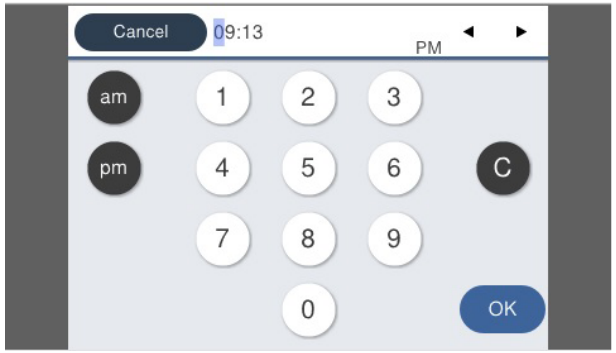
1-1. Select [Date Format].

1-2. Enter the date.



1-3. Select the time display format.

1-4. Enter the time.



2. Performing of initial ink filling

Initial ink filling is performed automatically after the power is turned on.

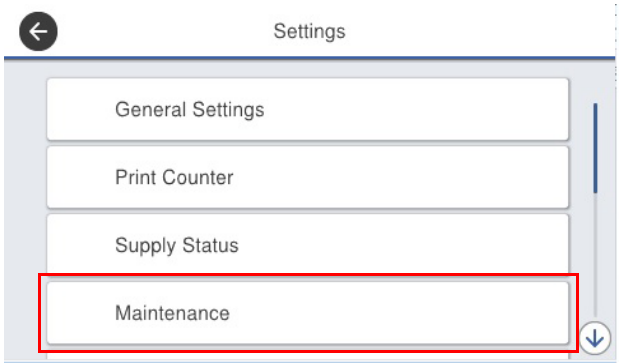
- ☐ **Do not turn off the power during initial ink filling.**
- ☐ **Do not open any of the covers.**
- ☐ **Do not remove an ink cartridge from the printer.**

3. Checking operation

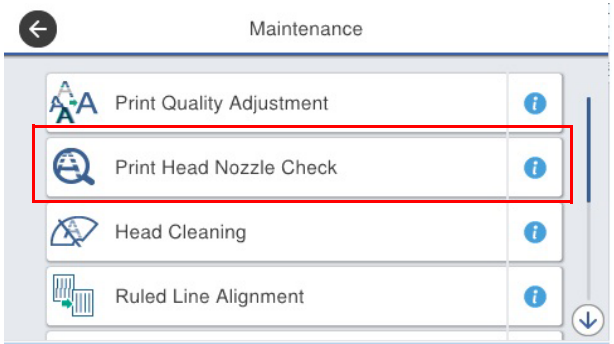
☐ Nozzle check print

3-1. Select [Settings] from the Home menu.

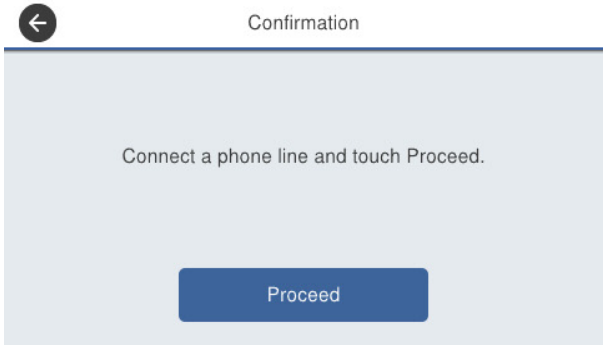
3-2. Select [Maintenance] from the Settings menu.



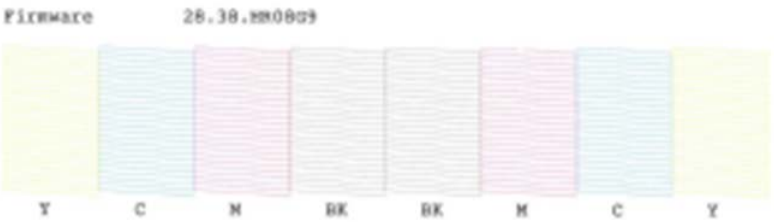
3-3. Select [Print Head Nozzle Check].

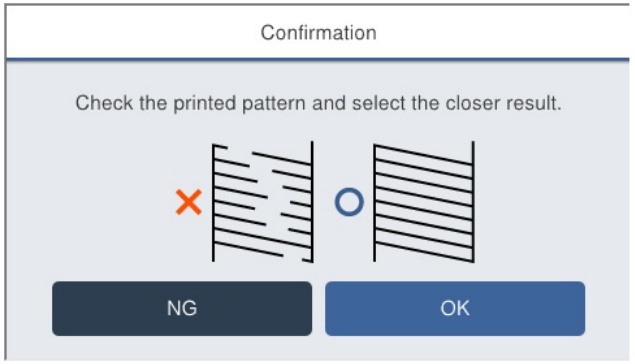


3-4. Load paper into the paper cassette (C1) and press [Start].



3-5. Check the check patterns and make sure that there are no nozzles missing and all nozzles discharge ink correctly.
If all nozzles discharge ink correctly, press the [OK] button to end the nozzle check. If any of the nozzles are missing, press the [NG] button to execute head cleaning.





☐ Copy function check

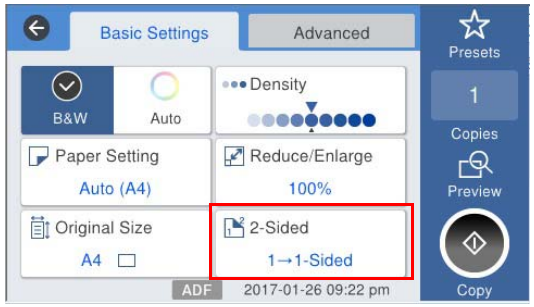
CHECK POINT

Confirm the following items in copy function check.

- **ADF Unit**
  - **Document feed operation confirmation**
  - **Scan (Copy) image quality confirmation**
- **Scanner Unit**
  - **Scan (Copy) image quality confirmation**

■ Operation check of ADF Unit

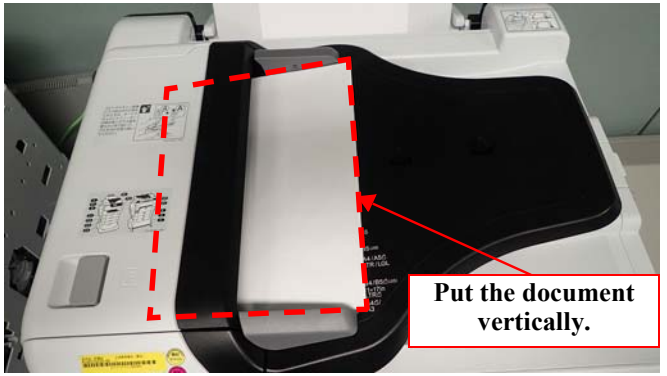
1. Load paper(A3 size) into the paper cassette.
2. Load a any document (A3 size) into the ADF unit.
3. Select [Copy] from the Home screen.
4. Press [2-Sided], select [2→2 Sided], and press the Start button to execute copying.



CHECK POINT

If you cannot prepare the document (A3 size), perform the following confirmation.

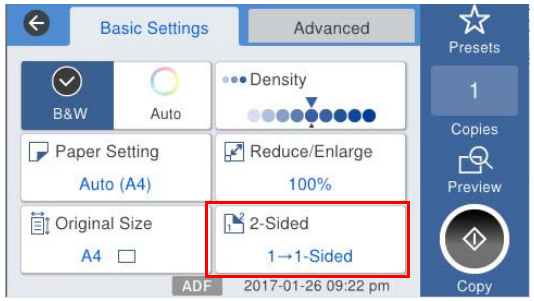
1. **Load paper (A4 size) into the paper cassette.**
2. **Load a any document (A4 size) vertically into the ADF Unit.**



3. **Select [Copy] from the Home screen.**
4. **Press [2-Sided], select [2→2 Sided], and press the Start button to execute copying.**

■ Operation check of Scanner Unit.

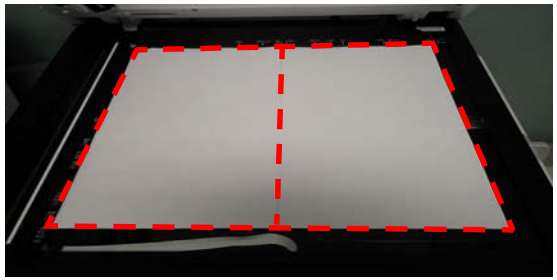
1. Load paper(A3 size) into the paper cassette.
2. Load a any document (A3 size) into the Flatbed.
3. Select [Copy] from the Home screen.
4. Press [2-Sided], select [1→1 Sided], and press the Start button to execute copying.



CHECK POINT

If you cannot prepare the document (A3 size), perform the following confirmation.

1. **Load paper (A3 size) into the paper cassette.**
2. **Load two documents (A4) into the flatbed like the following figure.**



3. **Select [Copy] from the Home screen.**
4. **Change the Copy setting like the following setting, and press the Start button to execute copying.**
   - **Paper setting : A4**
   - **Reduce/Enlarge : Auto**
   - **2-sided : 1→1 Sided**

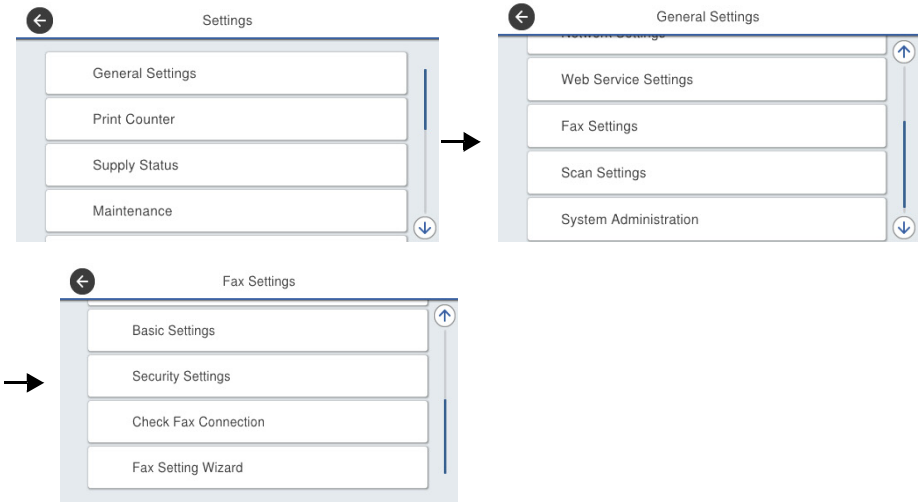
5. Installing the Printer driver/Scanner driver.

4.1.3.4 Fax Settings

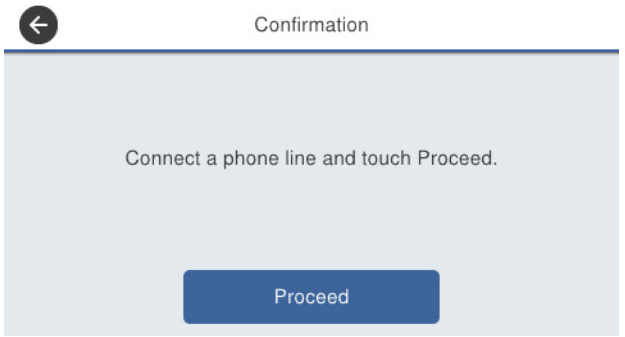
CHECK POINT

This work is not required if the user will not use the fax function.

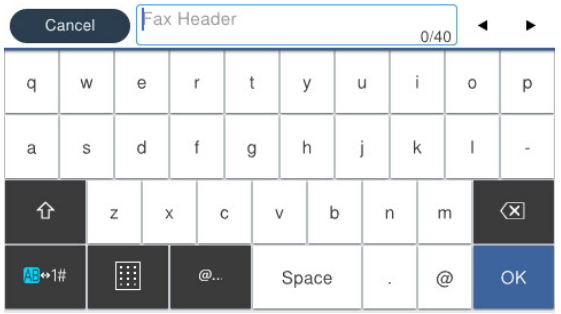
1. Connect the telephone line to the printer.
2. Select [Settings] from the Home menu.
3. Select [General Settings] > [Fax Settings] > [Fax Setting Wizard].



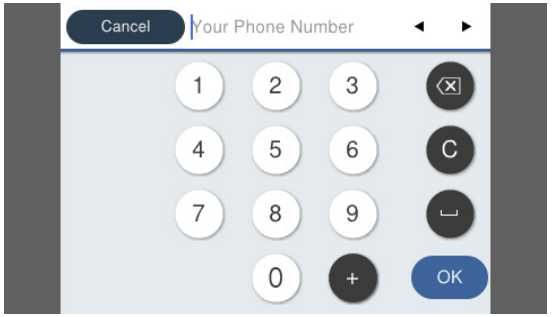
4. Press [Proceed] to run the fax setup wizard.



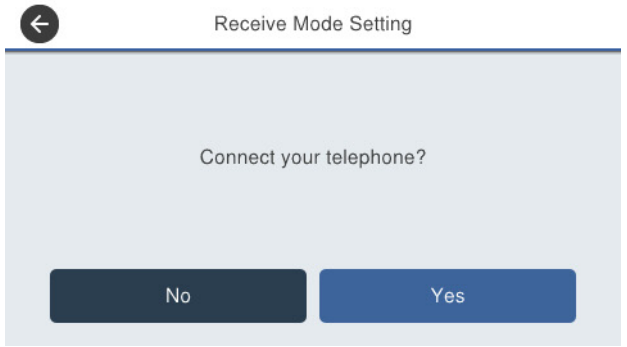
5. Enter the name of the sender (e.g., company name) in the sender name input screen.



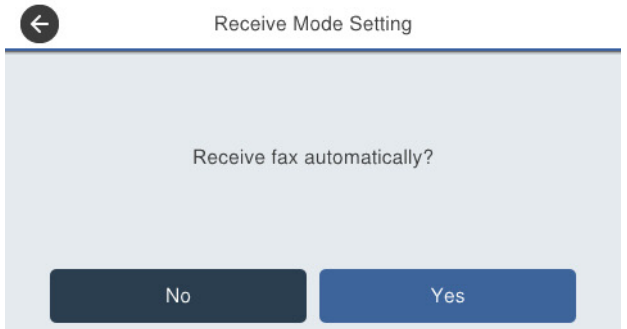
6. Enter the fax number of the sender in the sender number input screen.



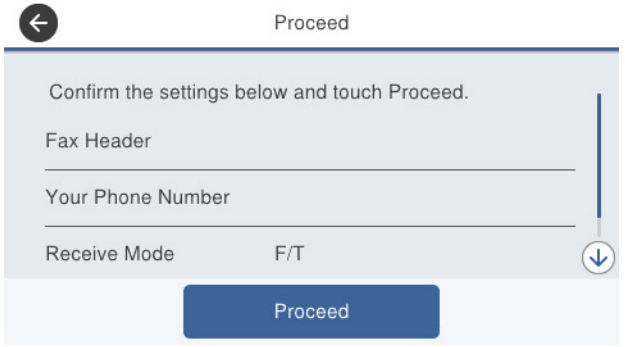
7. Select whether or not to use a telephone connected to the printer in the Receive Mode Setting screen.
   - Use: Press [Yes] to proceed to the next step.
   - Not use: Press [No] and go to step 9. Receive mode is set to [Auto].



8. Select whether or not to receive faxes automatically in the Receive Mode Selection screen.
   - Receive automatically: Press [Yes]. Receive mode is set to [Switch Fax/Telephone Automatically].
   - Not receive automatically: Press [No]. Receive mode is set to [Manual].



9. Confirm the settings in the Setting Confirmation screen and then press [Proceed].
   To correct a setting, press the [←] button to return to the previous screen.



10. Press [Start Checking] to perform diagnosis of the fax function.
    When a message for printing the diagnosis results appears, press the [Print] button to print the fax function diagnosis report.

CHECK POINT

- ☐ **If an error is displayed in the report, resolve the problem according to the instructions in the report.**
- ☐ **If the Select Connection Line screen appears, select the connection line. When connected to a private branch exchange (PBX) or terminal adapter, [Private Branch Exchange (PBX)] must be selected.**
- ☐ **If the Dial Tone Detection Selection screen appears, select [Do not detect]. However, when [Do not detect] is set, there is a risk of a wrong number being dialed due to the first digit of a fax number not being dialed.**
- ☐ **To individually set the items without using the fax setup wizard or change items that were already set with the fax setup wizard, select [General Settings] >[Fax Settings] and then select and set each corresponding individual item from the Fax Settings screen.**
- ☐ **In an environment in which an external dial number such as “0” or “9” is required such as an office that uses extension telephones, set the following settings.**
  1. **Select [Settings] from the Home menu.**
  2. **Select [General Settings] > [Fax Settings] > [Basic Settings] > [Line Type] in this order.**
  3. **Select [PBX].**
  4. **Select [Use] in the Access code screen.**
  5. **Press [Access code], enter the external dial number that is used, and press [OK].**

  After setting these settings, enter "#" instead of the actual external dial number when sending a fax to an external number.

CHAPTER

5

SERVICE SUPPORT MODE

5.1 Service Support Mode

5.1.1 Overview

Service support mode is a service dedicated special mode that can be started by a special operation, and allows you to execute functions including adjustment, inspection, and individual operation check functions.

5.1.2 Service mode startup and operating procedures

WF-C8690/C8690A/C8610 STARTING METHOD

1. Press and hold down the power button while pressing the [#] button from the power-off state until a message appears on the panel LCD.

Figure 5-1. Star operation of panel

Figure 5-2. ID number input screen (1)

2. Enter ID number of Service Support Mode, and start the service support mode.

CHECK POINT	**Enter "89109" when starting service support mode**

Figure 5-3. ID number input screen (2)

☐ Operating procedure

- Number input (move in ascending order) : [2] button
- Number input (move in descending order) : [8] button
- Input digit shift : [6] button
- Execute : [#] button

- ID number input procedure

1. Press a number input button ([2] button or [8] button) to enter a number from 1 to 9.
2. Press the input digit shift button ([6] button) to shift to the next digit.

CHECK POINT

- **It is not possible to return to the previous digit after shifting digits. If you wish to correct the number of the previous digit, proceed with the steps until after step 5 and then perform input again.**
- **Please note that the execute button is not enabled until at least two digits have been entered.**

3. Press a number input button ([2] button or [8] button) to enter a number from 1 to 9.
4. Repeat the above procedure to enter the specified ID number.
5. When all of the ID number is entered, press the execute button ([#] button). (A confirmation message appears.)
6. Press the execute button ([#] button) to execute or press the input digit shift button ([6] button) to enter the number again.

```
Service Support Mode Top
Up/Down:[2][8] Shift:[4][6]
Back:[*] Run:[#]
Individual Action Check: MENU
Before Repair Operation:MENU
Adjustment:MENU
Maintenance:MENU
Swap Mech Unit:MENU
USB FWUpdate
CR Unlock Power Off
User Log Get Mode
Debug Log Get Mode:MENU
Counter Reset
```

Figure 5-4. Service Support Mode Screen

WF-C8690/C8690A STARTING METHOD

1. Press and hold down the power button while pressing the [OK] button from the power-off state until a message appears on the panel LCD.

Figure 5-5. Start Operation of Panel

```
UP: [U] / DOWN: [D]
SHUFT: [R] / Fin: [OK]

_
```

Figure 5-6. ID Number input screen

2. Enter ID number of Service Support Mode, and start the service support mode.

CHECK POINT

Enter "89109" when starting service support mode

```
UP: [U] / DOWN: [D]]
SHIFT: [R] / Fin : [OK]

 ***_
```

Figure 5-7. ID number input screen (2)

☐ Operating procedure

- Number input (move in ascending order) : [↑] button
- Number input (move in descending order) : [↓] button
- Input digit shift : [→] button
- Execute : [OK] button

☐ ID number input procedure

1. Press a number input button ([↑] button or [↓] button) to enter a number from 1 to 9.
2. Press the input digit shift button ([→] button) to shift to the next digit.

CHECK POINT

- ☐ **It is not possible to return to the previous digit after shifting digits. If you wish to correct the number of the previous digit, proceed with the steps until after step 5 and then perform input again.**
- ☐ **Please note that the execute button is not enabled until at least two digits have been entered.**

3. Press a number input button ([↑] button or [↓] button) to enter a number from 1 to 9.
4. Repeat the above procedure to enter the specified ID number.
5. When all of the ID number is entered, press the execute button ([#] button). (A confirmation message appears.)
6. Press the execute button ([#] button) to execute or press the input digit shift button ([→] button) to enter the number again.

```
Service Support Mode Top
Up/Down:[ ↑ ][ ↓ ] Shift:[ → ]
Back:[Back] Run:[OK]

Individual Action Check: MENU
Before Repair Operation:MENU
Adjustment:MENU
Maintenance:MENU
Swap Mech Unit:MENU
```

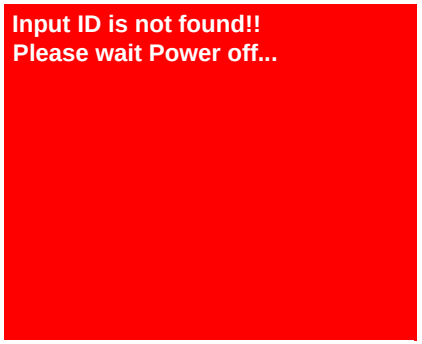
```
Service Support Mode Top
Up/Down:[ ↑ ][ ↓ ] Shift:[ → ]
Back:[Back] Run:[OK]

USB FWUpdate
CR Unlock Power Off
User Log Get Mode
Debug Log Get Mode:MENU
Counter Reset
```

Figure 5-8. Service Support Mode Screen

CAUTION

Solution if enter and execute the wrong ID

- **When a different mode starts:**
  If you enter the wrong ID and a different mode starts, there is the possibility of changing important settings of the unit, so press the power button to turn off the power immediately and then perform the process again to enter the correct ID number.
- **When non-existent ID number:**
  The following panel LCD display appears and the power is turned off automatically.



5.1.3 Service mode menu configuration

```
Service Support Mode Top
Up/Down:[2][8] Shift:[4][6]
Back:[*] Run:[#]
Individual Action Check: MENU
Before Repair Operation:MENU
Adjustment:MENU
Maintenance:MENU
Swap Mech Unit:MENU
USB FWUpdate
CR Unlock Power Off
User Log Get Mode
Debug Log Get Mode:MENU
Counter Reset
```

Figure 5-9. Service Support Mode: Top Menu Screen

Display	Overview	Usage situation	Details
Individual Action Check: MENU	Allows you to check whether or not the various motors, sensors, and solenoids are operating normally.	Troubleshooting	"Individual Action Check Function" *(p. 206)*
Before Repair Operation: MENU	Perform the supplemental work of parts for which supplemental work is required before performing repair work.	When performing repair work	"Repair Work" *(p. 262)*
Adjustment: MENU	Allows you to make the adjustments required when replacing parts.		
Maintenance: MENU	Perform ink filling, cleaning, and other maintenance inside the ink supply system.		
Swap Mech Unit: MENU	Use this to back up the data from the old machine and restore the data on the new machine when exchanging the product.	When exchanging product	"Product Swap" *(p. 788)*
USB FW Update	When updating the firmware, use this to update the firmware using external storage media such as a USB memory device.	When updating firmware	"USB F/W Update" *(p. 785)*
CR Unlock Power Off	Turn off the power of the printer in the CR unlock state.	Before troubleshooting and repair work	---
User Log Get Mode	When performing analysis, copy the user log data to external storage media such as a USB memory device connected to the main unit.	When performing troubleshooting analysis	---
Debug Log Get Mode: MENU			
Counter Reset	When replace the parts, reset the printer counter.	When performing repair work	"Repair Work" *(p. 262)*

5.1.4 Service Support Menu Screen Transition

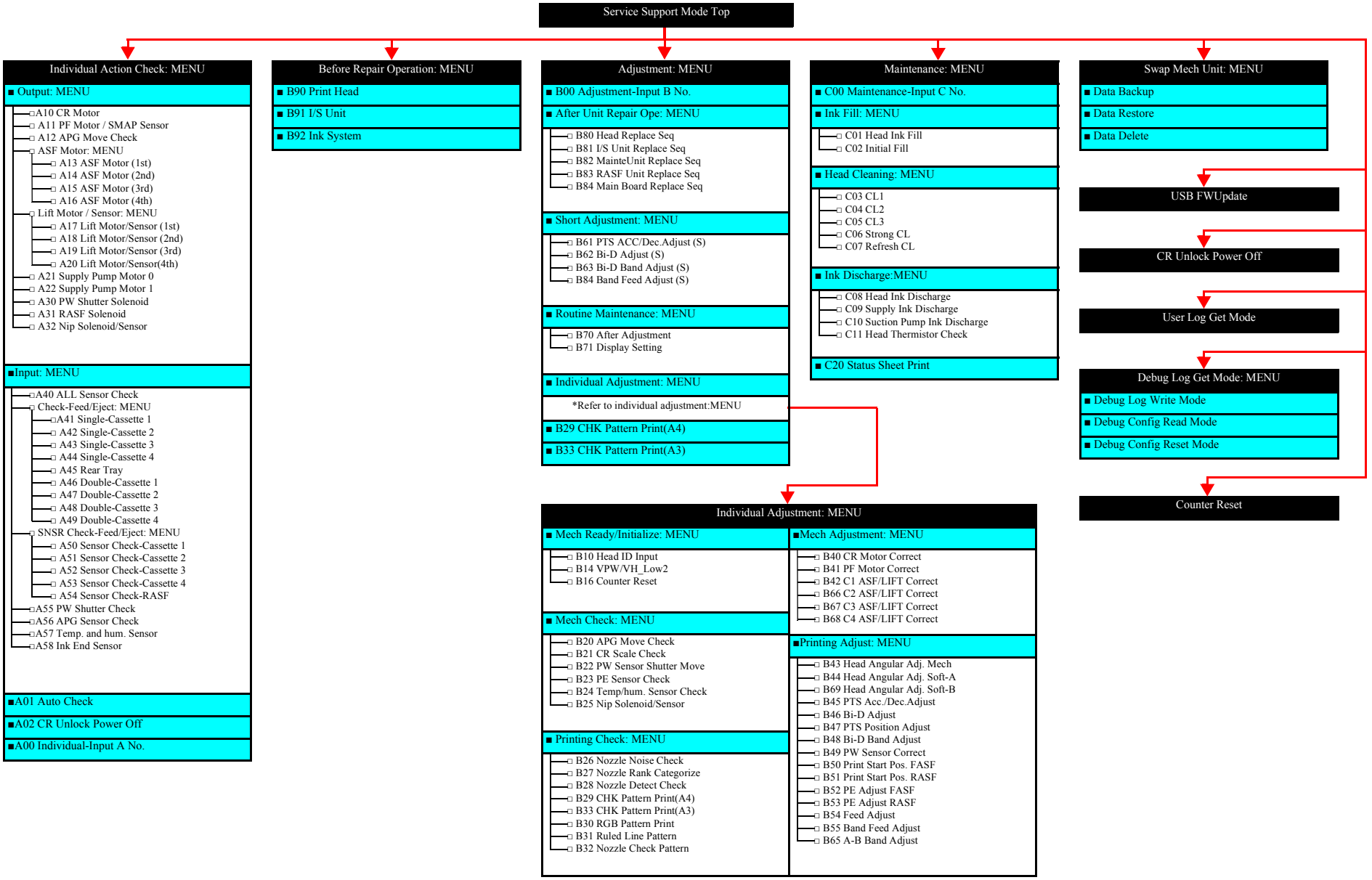


Figure 5-10. Service Support Menu Screen Transition

CHAPTER

6

TROUBLESHOOTING

6.1 Troubleshooting Workflow

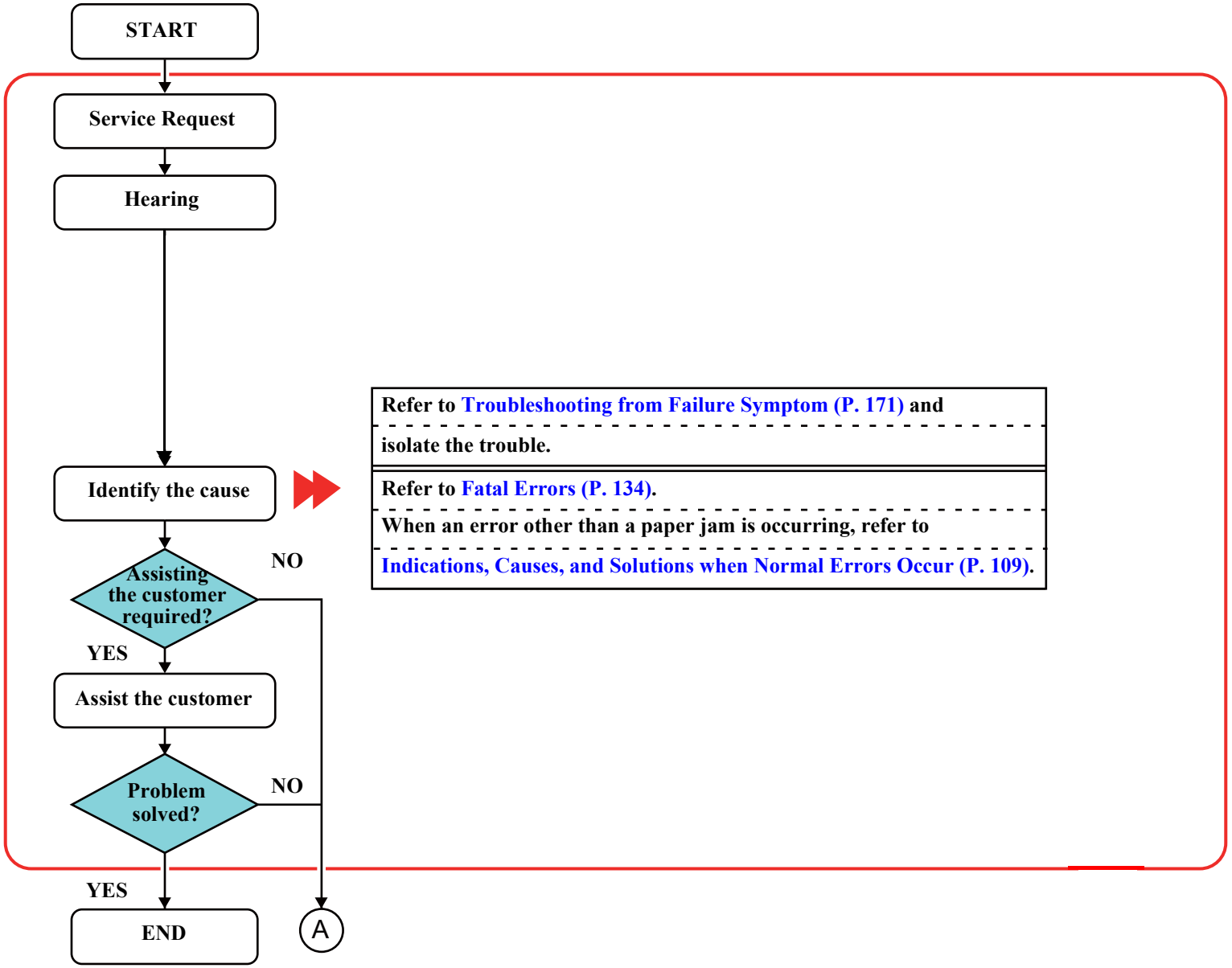


Figure 6-1. Troubleshooting Workflow (1)

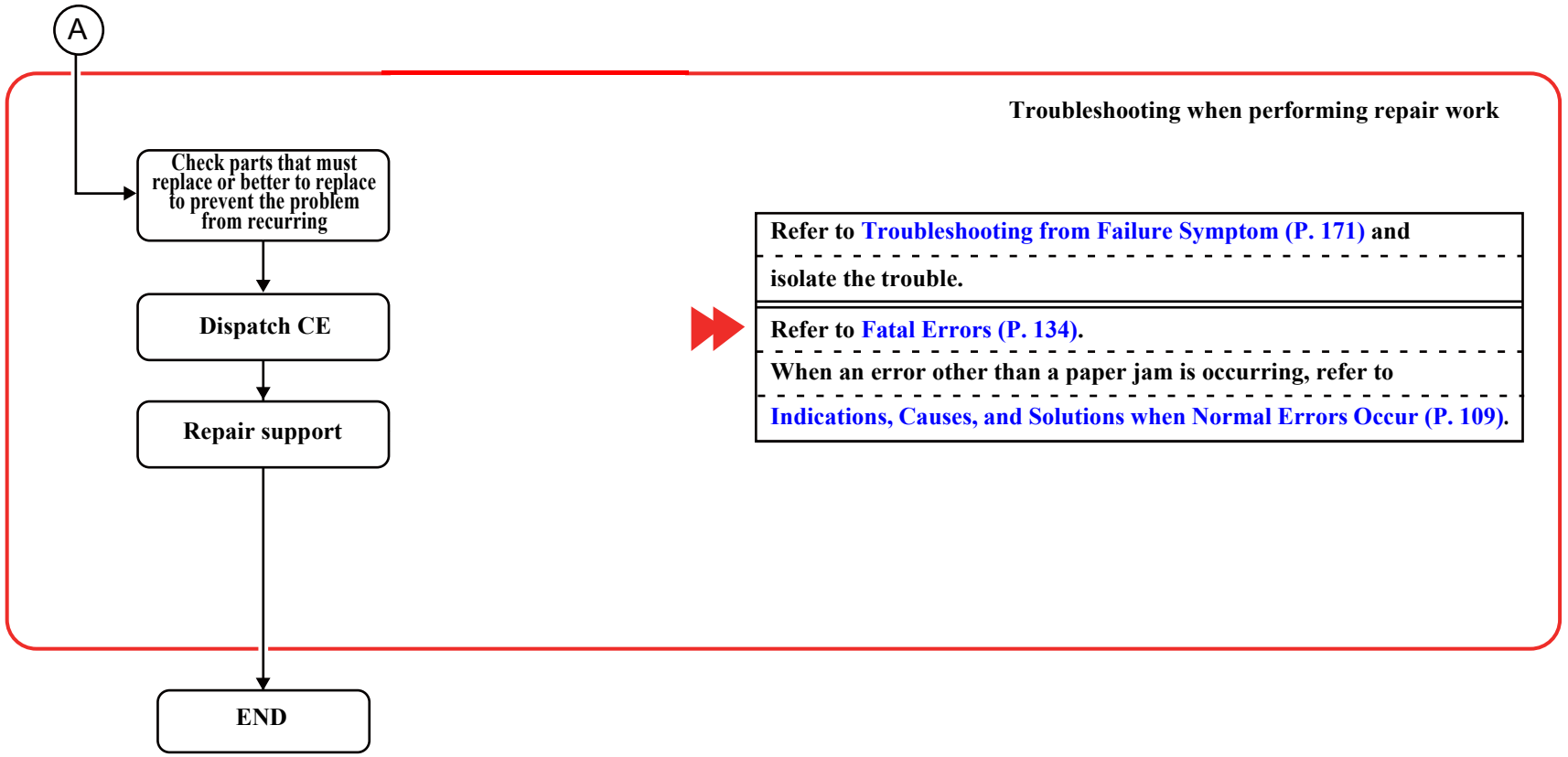


Figure 6-2. Troubleshooting Workflow (2)

6.2 Error Display and Solution

6.2.1 Indications, Causes, and Solutions when Normal Errors Occur

CHECK POINT

- **Error codes are also assigned to normal errors with this product, and the occurrence history can be checked in the following ways.**
  - **Service status sheet**
- **Unlike with a fatal error, the error code is not displayed on the panel when an error occurs.**

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
920000	Paper jam error	---	Occurs if a paper jam has occurred in the printer mechanism.	Remove the paper jammed in the path. **“ Paper jam error” *(p. 130)***
920001	CR protective material removal forgotten error	---	Occurs if mechanism initialization was not performed normally because removal of the CR protective material or protective tape had been forgotten when the power was first turned on.	Remove the CR protective material.
920021	Not feeding error	Paper Cassette (C1)	Occurs if the paper did not reach the feed sensor when paper feeding was executed.	**“ Not Feeding Error” *(p. 129)***
920022		Paper Cassette (C2)		
920023		Paper Cassette (C3)		
920024		Paper Cassette (C4)		
920025		Rear tray		
920041	Not feeding error (feed roller replacement)	Paper Cassette (C1)	Occurs if the paper did not reach the feed sensor when paper feeding was executed. (Occurs only immediately after feed roller maintenance.)	Check the feed roller attachment state and reattach the feed roller. * If this error occurs again later, isolate the cause as described in the remedy procedure for the not feeding error.
920042		Paper Cassette (C2)		
920043		Paper Cassette (C3)		
920044		Paper Cassette (C4)		
920061	Stack collapsed error	Paper Cassette (C1)	Occurs if separation of the paper with the separation roller could not be performed well, so the second sheet is in a half fed state and in a position different from the original paper feed start position.	Fan the paper and then reload the paper in the paper cassette. If this error subsequently occurs frequently, see **“ Stack Collapsed Error” *(p. 129)***
920062		Paper Cassette (C2)		
920063		Paper Cassette (C3)		
920064		Paper Cassette (C4)		

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
920201	No paper error	Paper Cassette (C1)	Occurs if there is determined to be no paper when printing is executed.	Load paper into the corresponding cassette or tray. If this error is not resolved, refer to the following. **" No Paper Error" *(p. 126)***
920202		Paper Cassette (C2)		
920203		Paper Cassette (C3)		
920204		Paper Cassette (C4)		
920205		Rear tray		
920221	No cassette/tray error	Paper Cassette (C1)	Occurs if the specified paper cassette is determined to be not attached.	Attach the paper cassette. If this error is not resolved, refer to the following. **" No Cassette Error" *(p. 126)***
920222		Paper Cassette (C2)		
920223		Paper Cassette (C3)		
920224		Paper Cassette (C4)		
920245	Double Feeding error	Rear tray	Occurs if multiple sheets are fed at the same time when manual duplex printing.	Reload the paper and then try again..
920261	Automatic duplex paper size mismatch error	Paper Cassette (C1)	Occurs if the length of the paper loaded when automatic duplex printing differs from that of the setting.	Match the main unit setting and actual paper size.
920262		Paper Cassette (C2)		
920263		Paper Cassette (C3)		
920264		Paper Cassette (C4)		
920265		Rear tray		
920281	Fax paper length mismatch error	Paper Cassette (C1)	Occurs if the paper size when fax printing is determined to not match.	Match the main unit setting and actual paper size.
920282		Paper Cassette (C2)		
920283		Paper Cassette (C3)		
920284		Paper Cassette (C4)		
920285		Rear tray		
920301	Paper size mismatch error	Paper Cassette (C1)	Occurs if paper corresponding to the paper size setting of the driver, etc. is not set on the main unit.	Match the paper size setting of the driver, etc. and the actual paper size.
920302		Paper Cassette (C2)		
920303		Paper Cassette (C3)		
920304		Paper Cassette (C4)		
920305		Rear tray		

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
920321	Paper type mismatch error	Paper Cassette (C1)	Occurs if paper corresponding to the paper type setting of the driver, etc. is not set on the main unit.	Match the paper type setting of the driver, etc. and the actual paper type.
920322		Paper Cassette (C2)		
920323		Paper Cassette (C3)		
920324		Paper Cassette (C4)		
920325		Rear tray		
920341	Paper size and type mismatch error	Paper Cassette (C1)	Occurs if the paper size and paper type mismatches occur at the same time.	Match the paper settings (size and type) of the driver, etc. and the actual paper (size and type).
920342		Paper Cassette (C2)		
920343		Paper Cassette (C3)		
920344		Paper Cassette (C4)		
920345		Rear tray		
920361	Paper size mismatch error (physical)	Paper Cassette (C1)	Occurs if main unit settings / print settings and the actual paper size differ.	Match the main unit setting / print settings and actual paper size.
920362		Paper Cassette (C2)		
920363		Paper Cassette (C3)		
920364		Paper Cassette (C4)		
920365		Rear tray		
920381	Duplex printing not possible error	Paper Cassette (C1)	Occurs if a paper size or paper type mismatch occurs and the duplex reverse process is determined to be physically impossible.	Match the main unit setting / print settings and actual paper size.
920382		Paper Cassette (C2)		
920383		Paper Cassette (C3)		
920384		Paper Cassette (C4)		
920385		Rear tray		
920401	Cassette failure error	Paper Cassette (C1)	Occurs if the cassette fails and cannot perform operation appropriately during the paper lift up operation due to cassette attachment.	**“ Cassette Failure Error” *(p. 127)***
920402		Paper Cassette (C2)		
920403		Paper Cassette (C3)		
920404		Paper Cassette (C4)		
920421	Feed roller end of life reached error	Paper Cassette (C1)	Occurs when printing ends or the power turns on if the print count of the corresponding cassette has reached the number of pages for its life.	■ Temporarily turn the error display off (if will continue use without replacing the part). • Press the [OK] button in the Error screen. (The error will be displayed later every 300 sheets or when the power is turned on.) ■ Replace the part and reset the internal counter.
920422		Paper Cassette (C2)		
920423		Paper Cassette (C3)		
920424		Paper Cassette (C4)		
920425		Rear tray		

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
920500	Front cover open error	---	Occurs if the corresponding cover is in an open state.	Close the corresponding cover. If this error is not resolved, refer to the following. **“ Cover Open Error” *(p. 127)***
920501	Rear cover open error	---		
920502	Rear cover open error (additional cassette)	---		
920550	Left outside CAP error	---	The CR was left in a stopped state out of the home position for at least 30 minutes and the process was canceled.	Press the [OK] button in the Warning screen.
920551	Print impossible error (BK mode)	---	Occurs if color print data is sent when the printer into the BK print Mode.	Cancel the print job, and resend the correct print data.
920552	Cleaning impossible error (BK mode)	---	This error occurs when cleaning is selected from the printer driver in the BK print mode in an environment where PC and printer bidirectional communication is not performed	Press the [OK] button in the Warning screen.
920566	Paper Reload waiting error	---	Occurs if the printer wait reload the paper when back side print of manual duplex print.	Set the paper.
920601	Ink end error	Black	Occurs if the remaining amount of ink goes below the limit value.	Replace the ink cartridge.
920602		Cyan		
920603		Magenta		
920604		Yellow		
920621	Ink recognition read error	Black	Occurs if the ink cartridge is in a state in which it cannot be recognized	**“ Ink Recognition Error” *(p. 128)***
920622		Cyan		
920623		Magenta		
920624		Yellow		
920641	Ink recognition write error	Black		
920642		Cyan		
920643		Magenta		
920644		Yellow		
920661	Ink not attached error	Black	Occurs if the ink cartridge is not attached.	Attach the ink cartridge.
920662		Cyan		
920663		Magenta		
920664		Yellow		

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
920681	Remaining amount of ink for initial filling insufficient warning error	Black	Occurs if there is less than the amount of ink required for filling when initial filling starts.	Attach an ink Cartridge for initial filling.
920682		Cyan		
920683		Magenta		
920684		Yellow		
920701	Error for initial filling I/C	Black	Occurs if an ink cartridge supplied with the product was used for ink replacement for other than initial ink filling.	Attach other than the ink cartridge for initial filling (ASP ink cartridge).
920702		Cyan		
920703		Magenta		
920704		Yellow		
920721	Ink recognition error (non-genuine)	Black	Occurs if the inserted ink is unrecognizable because it is non-genuine ink.	Attach the correct ink cartridge.
920722		Cyan		
920723		Magenta		
920724		Yellow		
920741	Remaining amount of ink insufficient error	Black	Occurs if the remaining amount of ink is insufficient when executing strong cleaning and ink replacement.	Attach an ink cartridge with the amount required for cleaning.
920742		Cyan		
920743		Magenta		
920744		Yellow		
920900	Maintenance box full error	---	Occurs if the usage amount of the maintenance box exceeded the limit value.	Replace the maintenance box.
920901	No maintenance box error	---	Occurs if there is no maintenance box attached.	Attach a maintenance box.
920902	Maintenance box recognition error (read)	---	Occurs if the maintenance box cannot be recognized.	**“ M/B Recognition Error” *(p. 128)***
920903	Maintenance box recognition error (write)	---		
920904	Remaining amount of maintenance box insufficient error	---	Occurs if the remaining amount of the maintenance box is insufficient when executing strong cleaning and ink replacement.	Attach a maintenance box with the amount required for cleaning.

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
920980	Memory full error	---	Occurs if page data that uses a large amount of memory is sent and the main unit memory capacity is exceeded.	Reduce the amount of memory used for print page data by, for example, splitting up the print pages.
920981	Memory insufficient error	---	Occurs if print data that uses a large amount of memory is sent and the main unit memory becomes insufficient.	
920982	Memory insufficient error (number of print copies)	---	Occurs if a number of print copies data of a data size exceeding the free space is sent in the state in which there is little free space in the main unit memory.	
920983	Memory insufficient error (resolution reduction)	---		
920984	Memory insufficient error (reverse printing)	---		
920985	Manual feed error	---	Occurs if manual feeding is specified from the PCL driver and then printing is executed.	Load paper into the rear tray.
920987	Driver miss match error	---	Occurs if unsupported driver is used.	Use the supported driver.
921001	Feed roller end of life approaching warning	Paper Cassette (C1)	Displayed at the point in time when the number of sheets for replacement of a periodically replaced part has reached 97%.	Press the [OK] button in the Error screen. (The error will be displayed later every 300 sheets or when the power is turned on until the end of life of the part is reached.)
921002		Paper Cassette (C2)		
921003		Paper Cassette (C3)		
921004		Paper Cassette (C4)		
921005		Rear tray		
921021	Feed roller end of life reached warning	Paper Cassette (C1)	Occurs when printing ends or the power turns on if the print count of the corresponding cassette has reached the number of pages for its life.	■ Temporarily turn the error display off (if will continue use without replacing the part). • Press the [OK] button in the Error screen. (The error will be displayed later every 300 sheets or when the power is turned on.) ■ Replace the part and reset the internal counter.
921022		Paper Cassette (C2)		
921023		Paper Cassette (C3)		
921024		Paper Cassette (C4)		
921025		Rear tray		
921201	Ink low	Black	Occurs if the remaining amount of the ink pack has become near the limit value.	---
921202		Cyan		
921203		Magenta		
921204		Yellow		
921400	Maintenance box nearly full	---	Occurs if the usage amount of the maintenance box has become near the limit value.	---
921401	BK Print mode warning	---	TBD	TBD

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
921428	Maintenance Unit near end warning	---	Displayed at the point in time when the number of sheets for replacement of a periodically replaced part has reached 97%.	Press the [OK] button in the Error screen. (The error will be displayed later every 300 sheets or when the power is turned on until the end of life of the part is reached.)
921429	Maintenance Unit end warning	---	Occurs when printing ends or the power turns on if the print count of the maintenance unit has reached the number of pages for its life.	■ Temporarily turn the error display off (if will continue use without replacing the part). • Press the [OK] button in the Error screen. (The error will be displayed later every 300 sheets or when the power is turned on.) ■ Replace the part and reset the internal counter.
921607	Product life near end warning	---	Displayed at the point in time when the number of sheets for replacement of a Product life has reached 91.6%.	Press the [OK] button in the Error screen. (The error will be displayed later every 3000 sheets or when the power is turned on until the end of life of the part is reached.)
921608	Product life end warning	---	Occurs when printing ends or the power turns on if the print count of the Product has reached the number of pages for its life.	■ Temporarily turn the error display off (if will continue use without replacing the part). • Press the [OK] button in the Error screen. (The error will be displayed later every 3000 sheets or when the power is turned on.) ■ Replace the Printer main unit.
930000	ADF paper jam	---	Occurs if a paper jam occurred in the ADF unit.	Remove the paper jammed in the path.
930001	ADF cover open error	---	Occurs if the ADF cover is in an open state.	
940000	Send memory storage error	---	Occurs if there is no memory remaining when fax scanning.	Split up the document and send it in parts. Specify direct printing and then send the document.
940001	Receive memory storage error	---	Occurs if there is no memory remaining during fax receiving or if a document exceeding 100 pages is received at one time.	Process the in box data (print, cancel, or delete).
940002	Sending incomplete (no dial tone)	---	Occurs if dialing the other party's fax number failed because a dial tone could not be detected.	Check the telephone line and then try again.
940003	Sending incomplete (busy)	---	Occurs if dialing the other party's fax number failed because the other party's line was busy.	Wait a while and then try again.
940004	Send incomplete (no response)	---	Occurs if dialing the other party's fax number failed because there was no response.	Wait a while and then try again.

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
940005	Sending incomplete (reverse insertion)	---	Occurs if the modular cords are connected to LINE and EXT in reverse.	Connect them to LINE and EXT correctly.
940006	Sending incomplete (no connection)	---	Occurs if the modular cord is not connected to the telephone line.	Check the telephone line and connect the modular cord.
940007	DNS error (email)	---	Occurs if the DNS settings of the email server are invalid.	Check the DNS settings of the printer. Check the DNS server settings.
940008	DNS error (folder)	---	Occurs if the DNS settings of the save destination are invalid.	
940009	Authentication error (email)	---	Occurs if the authentication settings of the email server are invalid.	■ Check the authentication method. • Check the SMTP server address and port. • Check the POP3 server address and port. ■ Check the account name. ■ Check the password.
940010	Authentication error (folder)	---	Occurs if one of the following settings is invalid. • Save destination • User name • Password setting	Check the following. • Folder path • User name • Password • Account name
940011	Communication error (email)	---	Occurs if a communication error occurred during email forwarding.	■ Check the SMTP server address and port. ■ Check the POP3 server address and port. ■ Check the network settings (IP address, subnet mask, and default gateway). ■ Check that the network cable is physically connected. ■ Check whether or not the address is correct. ■ Check the access point settings. ■ Check the firewall settings. ■ Check the server (possibility of server being down).

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
940012	Communication error (folder)	---	Occurs if a communication error occurred during folder forwarding.	■ Check the folder path. ■ Check that the network cable is physically connected. ■ Check the network settings (IP address, subnet mask, and default gateway). ■ Check the access point settings. ■ Check the firewall settings. ■ Check the server (possibility of server being down). ■ Check whether or not a file of the same name in the save destination has been left open. ■ Check whether or not a file of the same name in the save destination is write prohibited.
940013	Destination invalid error (folder)	---	Occurs if the specified save destination did not exist.	Check that the following save destination settings are correct. • Communication mode • Folder path • User name • Password • Port number
940014	Save destination space insufficient error	---	Occurs if writing could not be performed because there is no free space in the save destination folder.	Free up space in the save destination.
940015	No received data	---	Occurs if the received data the user is attempting to print again has been discarded.	---
940016	Preview not possible	---	Occurs if the preview button is pressed when direct transmission is in the enabled state.	Disable direct transmission.
940017	Color transmission not possible for transmission at specified time	---	Occurs if transmission at a specified time is specified and then the color start key is pressed.	Do the following depending on the intended use. ■ When wish to transmit in color • Transmit without specifying a time. ■ When wish to specify a time and then transmit • Select black and white and then transmit.

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
940020	Color transmission to multiple destinations not possible	---	Occurs if multiple destinations are specified and then the color start key is pressed.	Do the following depending on the intended use. ■ When wish to transmit in color • Transmit to one destination at a time. ■ When wish to perform fax broadcasting • Select black and white and then transmit.
940021	Duplex color transmission not possible	---	Occurs if duplex scanning is specified and then the color start key is pressed.	Do the following depending on the intended use. ■ When wish to transmit in color • Cancel duplex scanning. ■ When wish to perform duplex scanning • Select black and white and then transmit.
940022	Color transmission not possible when ECM off	---	Occurs if the color start key is pressed when the ECM setting is in the disabled state.	Do the following depending on the intended use. ■ When wish to transmit in color • Enable the ECM setting. ■ When the ECM setting cannot be changed • Select black and white.
940024	Hook operation disabled	---	Occurs if the on-hook dial button is pressed when the line is in use.	Wait until the line becomes available and then try again.
940025	Dial buffer	---	Occurs if a number is input when the dial buffer is full with on-hook dialing.	Wait until the input dial data is processed and the buffer space becomes available.
940029	Paper size mismatch error	---	Occurs if fax printing is started when the set paper size is smaller than the paper size of the fax data to be printed.	Set the correct paper size.
940030	Media error (media removed)	---	Occurs if the media is removed during saving or creating a folder.	Connect the media and then try again.
940031	Media error (memory full)	---	Occurs if media for saving received faxes is inserted but the media has no free space.	Connect media with free space and then try again.
940032	Memory error (write prohibited)	---	Occurs if connected media for saving received faxes and attempted to create a folder for saving received faxes in the storage media but the media is write protected.	■ Cancel the media setting (write prohibited). ■ Connect media that is not write protected.
940033	Media error (failure)	---	Occurs if a write error occurred during saving received faxes.	■ Reconnect the media. ■ Connect different media. (A folder must be created by storage dedicated folder creation.)
940034	Fax function in use	---	Occurs if attempted to change the fax settings while the fax function was in use.	Make sure fax usage has finished before changing the settings.

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
940035	PC in use	---	Occurs if attempted to change the fax settings while the fax settings were being changed from a PC.	Make sure changing of the fax settings from a PC has finished before changing the settings.
940036	Other function being executed	---	Occurs if attempted to execute the fax function when a function that cannot be executed at the same time is running.	Make sure the running function has finished before trying again.
940037	Email server not set	---	Occurs if email is selected in the forwarding settings when the email server settings have not been configured.	Configure the email server settings.
940038	No connection to email server	---	Occurs if email is selected in the forwarding settings in the state in which there is no connection with the email server.	Check the connection with the email server and establish a connection.
950000	DNS error for Scan to Email	---	Occurs if the DNS settings of the email server are invalid.	■ Check the DNS settings of the printer. ■ Check the DNS server settings.
950001	Communication error for Scan to Email	---	Occurs if a communication error occurred during Scan to Email execution.	■ Check the SMTP server address and port. ■ Check the POP3 server address and port. ■ Check the network setting related items. • IP address, subnet mask, and default gateway → Perform email server connection diagnosis (Scan to Email function only) ■ Check that the network cable is physically connected. ■ Check whether or not the address is correct. ■ Check the access point settings. ■ Check the firewall settings. ■ Check the server (possibility of server being down).
950002	Authentication error for Scan to Email	---	Occurs if the authentication settings of the email server are invalid.	■ Check the authentication method. • Check the SMTP server address and port. • Check the POP3 server address and port. ■ Check the account name. ■ Check the password.

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
950003	Size exceeded for Scan to Email	---	Occurs if the size of the scanning data to be attached exceeded the maximum attachment file size.	■ Change the scan settings (increase the maximum attachment file size). ■ Reduce the size of the scanning data (reduce the size by changing the resolution or compression ratio). ■ Reduce the number of document pages.
950004	Insufficient memory for Scan to Email	---	Occurs if insufficient memory during Scan to Email execution.	Make sure the job being executed has finished before trying again.
950005	ADF document removal required for Scan to Email	---	Occurs if a document needs to be removed from the ADF unit during Scan to Email execution.	Remove the document from the ADF.
950006	ADF document loading required for Scan to Email	---	Occurs if a document needs to be loaded in the ADF unit during Scan to Email execution.	Load the document in the ADF.
950007	Addition limit exceeded for Scan to Email	---	Occurs if the number of document scanning sheets has reached the limit with the document addition function.	Send and save the scanned data and then scan the remaining document sheets as a different job.
950020	DNS error for Scan to Folder	---	Occurs if the DNS settings of the save destination are invalid.	■ Check the DNS settings of the printer. ■ Check the DNS server settings.
950021	Communication error for Scan to Folder	---	Occurs if a communication error occurred during Scan to Folder execution.	■ Check that the following save destination settings are correct. • Communication mode • Folder path • Connection mode • Port number ■ Check that the network cable is physically connected. ■ Check the network setting related items. • IP address, subnet mask, and default gateway ■ Check the access point settings. ■ Check the firewall settings. ■ Check the server (possibility of server being down).

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
950022	Authentication error for Scan to Folder	---	Occurs if any of the user name and password settings for accessing the specified save destination is invalid.	■ Check that the following save destination settings are correct. • Communication mode • Folder path • User name • Password • Port number
950023	Size exceeded error for Scan to Folder	---	Occurs if the scanned data did not fit in the folder of the save destination.	■ Ensure there is sufficient storage area in the save destination folder. ■ Reduce the size of the scanning data (reduce the size by changing the resolution or compression ratio). ■ Reduce the number of document pages.
950024	Insufficient memory for Scan to Folder	---	Occurs if insufficient memory during Scan to folder execution.	Make sure the job being executed has finished before trying again.
950025	ADF document removal required for Scan to Folder	---	Occurs if a document needs to be removed from the ADF unit during Scan to Folder execution.	Remove the document from the ADF.
950026	ADF document loading required for Scan to Folder	---	Occurs if a document needs to be loaded in the ADF unit during Scan to Folder execution.	Load the document in the ADF.
950027	Addition limit exceeded for Scan to Folder	---	Occurs if the number of document scanning sheets has reached the limit with the document addition function.	Send and save the scanned data and then scan the remaining document sheets as a different job.
950028	Destination invalid for Scan to Folder	---	Occurs if the specified save destination did not exist.	■ Check that the following save destination settings are correct. • Communication mode • Folder path • User name • Password • Port number
950029	File name duplicated for Scan to Folder	---	Occurs if a file name in the save destination is duplicated.	■ Remove the file with the same name in the save destination folder. ■ Set the file header to a different character string and then execute again.
950040	Communication error for Scan to Cloud	---	Occurs if a communication error occurred during destination acquisition.	Check that there is a connection to the network.

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
950041	Service stopped for Scan to Cloud	---	Occurs when the Epson Connect service of the printer is paused.	Enable the service in Epson Connect settings of the setup.
950042	Service not registered for Scan to Cloud	---	Occurs if the Epson Connect service is not registered.	Register the Epson Connect service to the printer.
950043	Not logged in for Scan to Cloud	---	Occurs if not connected to the Epson Connect server due to one of the following reasons. ■ When the login process is performed after printer startup but a destination search is started during the process. ■ When the login process failed due to communication error	■ Check that there is a connection to the network. ■ Wait a while and then try again.
950044	ADF document removal required for Scan to Cloud	---	Occurs if a document needs to be removed from the ADF unit during Scan to Cloud execution.	Remove the document from the ADF.
950045	ADF document loading required for Scan to Cloud	---	Occurs if a document needs to be loaded in the ADF unit during Scan to Cloud execution.	Load the document in the ADF.
950046	Size exceeded for Scan to Cloud	---	Occurs if the scanned data exceeded the size of data that can be transmitted.	Reduce the number of document pages and then try again.
950047	Invalid destination for Scan to Cloud	---	Occurs if the destination is invalid. (Occurs if the destination information on the server is rewritten during the period from acquiring the destination list to transmitting the data.)	Set the destination again.
950048	Destination not registered for Scan to Cloud	---	Occurs if not even one destination is registered to the server.	Register a destination to the Epson Connect service.
950049	Addition limit exceeded for Scan to Cloud	---	Occurs if the number of document scanning sheets has reached the limit with the document addition function.	Send and save the scanned data and then scan the remaining document sheets as a different job.
950060	Communication error for AirPrint (eSCL)	---	Occurs if a communication error occurred during execution of each function.	Check that there is a connection to the network.
950070	Communication error for Scan to WSD	---		
950080	Communication error for Scan to Document Capture Pro	---		
950081	PC in use error for Scan to Document Capture Pro	---	Occurs if the destination PC is busy.	Check whether or not the destination is currently communicating with another printer. (If communication is in progress, make sure communication has finished before trying again.)

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
950082	No applicable PC for Scan to Document Capture Pro	---	Occurs if not connected with a PC compatible with Document Capture Pro.	Connect with a PC compatible with Document Capture Pro.
950090	Communication error for Scan to Document Capture Pro Server	---	Occurs if a communication error occurred during Scan to Document Capture Pro Server execution.	Check that there is a connection to the network.
950091	Server in use error for Scan to Document Capture Pro Server	---	Occurs if the server is busy.	Wait a while and then try again.
950092	No response for Scan to Document Capture Pro Server	---	Occurs if a server compatible with Document Capture Pro Server could not be found.	Connect with a server compatible with Document Capture Pro Server.
950093	No job error for Scan to Document Capture Pro Server	---	Occurs if not even one job is registered to the server.	Register a job on Document Capture Pro Server.
950100	Communication error for SMTP Server	---	Occurs if a communication error occurred during communication to SMTP Server.	■ Check that there is a connection to the network. ■ Check mail sever setting ■ Check that SMTP Server is operated correctly.
950101	Communication error for POP3 Server	---	Occurs if a communication error occurred during communication to POP3 Server.	■ Check that there is a connection to the network. ■ Check mail server setting ■ Check that POP3 Server is operated correctly.
950102	DNS error for mail server (SMTP)	---	Occurs if trouble occurred during connection to SMTP Server.	■ Check mail server setting. (SMTP Server Address) ■ Check the connection state to DNS Server.
950103	DNS error for mail server (POP3)	---	Occurs if trouble occurred during connection to POP3 Server.	■ Check mail server setting. (POP3 Server Address) ■ Check the connection state to DNS Server.
950104	Authentication error for SMTP Server	---	Occurs if authentication process is failure on SMTP Server.	Check following mail server setting. ■ Authentication method ■ Authentication account ■ Authentication password
950105	Authentication error for POP3 Server	---	Occurs if authentication process is failure on POP3 Server.	
950106	Certificate error (Date/time)	---	Occurs if printer's date and time setting is incorrect, or if you have a root certificate for the server, but it has expired.	Check date and time setting of printer.

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
950107	Certificate error (CA certificate)	---	Occurs if printer does not have a root certificate corresponding to the server or if the CA certificate for verifying the partner server is not imported.	■ Check that printer have route certificate corresponding to the server. ■ Check that CA certificate for verifying the Partner server is imported.
950108	Certificate error (other)	---	Occurs if certificate obtained from the server is broken.	Check that certificate obtained from the server is correctly.
950109	Secure connection mismatch (Server is not SSL)	---	Occurs if mismatch SMTP connection setting on server and Client, or server is not support SMTP Secure Connection (SSL Connection).	Check that secure connection setting on Sever and Client are matched.
950110	Secure connection mismatch (Server is SSL/TLS)	---	Occurs if mismatch SMTP connection setting on server and client, or if Server request the SSL/ TLS connection to SMTP Secure Connection.	
950111	Secure connection mismatch (Server is STARTTLS)	---	Occurs if mismatch SMTP connection setting on server and client, or if Server request the STARTTLS connection to SMTP Secure Connection.	
950112	SMTP server connection failure (“Connection to server failed” of “Sever is not SMTP Server)	---	Occurs if printer communication by using the no support protocol.	Check following mail server setting. ■ SMTP server address ■ SMPT Server port number
950113	SMTP Server Authentication method mismatch (SMTP-Auth is necessary)	---	Occurs if mismatch the authentication method on Server and client.	Change the Authentication method of printer to SMTP Authentication.
950114	SMTP Server Authentication method mismatch (SMTP-Auth is not necessary)	---		Change the Authentication method of printer to POP before SMTP.
950115	Source address specification error	---	Occurs if source address specification is mistake.	Check source address.
990000	Insufficient space for Scan to External Memory	---	The storage media space for scanning data is insufficient.	■ Ensure there is sufficient storage area in the storage media. ■ Reduce the size of the scanning data (reduce the size by changing the resolution or compression ratio). ■ Reduce the number of document pages.
990001	Write prohibited for Scan to External Memory	---	Occurs if the storage media is write prohibited.	Cancel the write prohibited settings of the storage media.
990002	Folder creation for Scan to External Memory	---	Occurs if a folder cannot be created in the storage media.	Connect different media.

Error Code	Error		Error details	Error solution
	Name	Path / ink color		
990003	Card removed for Scan to External Memory	---	The storage media was removed during Scan to External Media execution.	Connect the media.
990004	Insufficient memory for Scan to External Memory	---	Occurs if insufficient memory during Scan to External Memory execution.	Make sure the job being executed has finished before trying again.
990005	Other error for Scan to External Memory	---	Occurs if saving failed due to an error other than the above.	Try again. (If the same error occurs again after trying again, contact service support.)
990006	Addition limit exceeded for Scan to External Memory	---	Occurs if the number of document scanning sheets has reached the limit with the document addition function.	Send and save the scanned data and then scan the remaining document sheets as a different job.
990100	External memory recognition not possible	---	Occurs if the connected media is not formatted or is in an unsupported format.	Connect different media.
990101	Simultaneous operation execution error for external memory printing	---	Occurs if attempted to execute the external memory printing function when a function that cannot be executed at the same time is running.	Make sure the running function has finished before trying again.
990200	Security (user restriction) print restriction	---	Occurs if user authentication was successful but there is no PC printing privilege for that user.	Add the PC printing privilege for the corresponding user in WebConfig and NetConfig.
990201	Security (user restriction) authentication error	---	■ Occurs if user authentication failed. ■ Occurs if the setting for permitting execution of a job with no authentication information is set to “Prohibit” when a print job with no authentication information (user name and password) is received.	■ Check that the user name and password are correct. ■ Set the setting for permitting execution of a job with no authentication information to “Permit”.
990300	Memory full error for copying	---	Occurs if the number of document scanning sheets exceeded the memory capacity.	Split up the document and scan it in parts.
991000	Reboot notification warning accompanied with setting change	---	It is displayed when it is necessary to restart the main unit due to setting change.	Reboot the printer.

NO PAPER ERROR

- Error occurrence condition
  - Occurs if there is determined to be no paper when printing is executed.
- Trouble related parts and causes
  - Paper incorrectly loaded
  - Paper detection sensor failure
  - Paper detection sensor lever failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the paper loading state** Check that the paper is correctly loaded in the cassette.	Go to step 2	Reload the paper.
2	**Check the paper detection sensor lever** Check that the paper detection sensor lever is not damaged.	Go to step 3	Replace the paper detection sensor lever.
3	**Check the paper detection sensor** Perform an individual action check and make sure that there is no sensor output error. • A50 to A54 Sensor Check - Cassette ○	Replace the main board (If the trouble is not resolved, contact the service support)	Replace the paper detection sensor.

NO CASSETTE ERROR

- Error occurrence condition
  - Occurs if the specified paper cassette is determined to be not attached.
- Trouble related parts and causes
  - Paper cassette incorrectly inserted
  - Paper cassette failure
  - Paper cassette detection sensor failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the paper cassette insertion state** Check that the paper cassette is correctly inserted.	Go to step 2	Reinsert the paper cassette.
2	**Check the paper cassette** Check that the paper cassette is not damaged.	Go to step 3	Replace the paper cassette.
3	**Check the paper detection sensor** Perform an individual action check and make sure that there is no sensor output error. • A50 to A53 Sensor Check - Cassette ○	Replace the main board (If the trouble is not resolved, contact the service support))	Replace the paper cassette detection sensor.

COVER OPEN ERROR

- Error occurrence condition
  - Occurs if the corresponding cover is in an open state.
- Trouble related parts and causes
  - Corresponding cover open state
  - Corresponding cover damaged
  - Corresponding cover open sensor failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Close the cover** Does the error occur when the front cover is in the closed state?	Go to step 2	End
2	**Check the cover state** Check that the cover is not damaged.	Replace the cover open sensor.	Replace the cover.

CASSETTE FAILURE ERROR

- Error occurrence condition
  - Occurs if lift up detection is not possible when the paper cassette is inserted due to a failure of the lift up sensor or lift up motor. (State in which the operation of feeding from the corresponding cassette is not performed.
    * However, feeding and printing from the different cassettes is possible.
- Trouble related parts and causes
  - Paper feed cassette hopper up mechanism failure
  - Lift gear train part damaged
  - Lift motor failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the paper cassette** Is the hopper up mechanism of the paper cassette damaged?	Go to step 2	Reconnect the encoder cable.
2	**Check the lift gear train parts** The lift gear train parts must not be damaged or become detached	Go to step 3	Replace the lift motor assembly.
3	**Check the lift motor and lift encoder states** Perform an individual action check and make sure that there is no sensor output error. • A50 to A53 Sensor Check - Cassette ○	Contact service support)	Replace the lift motor assembly.

M/B RECOGNITION ERROR

- Error occurrence condition
  - Occurs if the data written to CSIC of the maintenance box differs from normal or cannot be recognized.
- Trouble related parts and causes
  - Maintenance box attachment failure
  - CSIC contact parts dirty (main unit side and maintenance box side)
  - Maintenance box CSIC defect
  - CSIC contact part failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Reattach the maintenance box** Does the error occur?	Go to step 2	End
2	**Clean the CSIC contact parts** Clean the CSIC contact parts with a dust-free cloth. Does the error occur?	Go to step 3	End
3	**Attach a new maintenance box** Does the error occur?	Replace the CSIC contact parts.	End

INK RECOGNITION ERROR

- Error occurrence condition
  - Occurs if the data written to CSIC of the ink pack differs from normal or cannot be recognized.
- Trouble related parts and causes
  - Ink pack attachment failure
  - CSIC contact parts dirty (main unit side and maintenance box side)
  - Ink pack CSIC failure
  - CSIC contact part failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Reattach the ink pack** Does the error occur?	Go to step 2	End
2	**Clean the CSIC contact parts** Clean the CSIC contact parts with a dust-free cloth. Does the error occur?	Go to step 3	End
3	**Attach a new ink pack** Does the error occur?	Replace the CSIC contact parts.	End

NOT FEEDING ERROR

- Error occurrence condition
  - Occurs if the paper did not reach the feed sensor when paper feeding was executed.
- Trouble related parts and causes
  - Caused by paper (paper type, paper bent, etc.)
  - Foreign object or paper jammed in paper feed path
  - Feed roller worn out
  - Feed roller dirty
  - Feed sensor lever operation defect or damage
  - Feed sensor failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check for a foreign object and remaining jammed paper** Check that there is no foreign object or paper jam in the feed path.	Go to step 2	Remove the foreign object or jammed paper.
2	**Check the paper feed operation using genuine paper** Check the paper feed operation using genuine paper. Did the error occur?	Go to step 3	Explain that the problem is caused by the paper.
3	**Check the feed roller state** Check that the feed rollers are not dirty, scratched, or damaged.	Go to step 4	Clean or replace the feed rollers.
4	**Check the feed sensor lever operation** Move the feed sensor lever by hand to check the operation and whether the lever is damaged. There must be no lever operation error or damage.	Go to step 5	Reassemble or replace the feed sensor lever.
5	**Check the feed sensor detection** Check that the feed sensor detection operation is performed correctly with “A40 All Sensor Check” of the individual action checks.	Contact service support	Replace the feed sensor.

STACK COLLAPSED ERROR

- Error occurrence condition
  - Occurs if separation of the paper with the separation roller could not be performed well, so the second sheet is in a half fed state and in a position different from the original paper feed start position.
- Trouble related parts and causes
  - Caused by paper (paper type, paper bent, etc.)
  - Feed roller worn out
  - Feed roller dirty
  - Cassette end guide position inappropriate
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the paper feed operation using genuine paper** Check the paper feed operation using genuine paper. Did the error occur?	Clean or replace the feed rollers.	Explain that the problem is caused by the paper.

PAPER JAM ERROR

CHECK POINT

In this product, in order to improve the analysis of paper jam error, sub code is allocated for each paper jam occurrence factor.
When a paper jam occurs, sub code is recorded simultaneously with a paper jam error.
(Regarding the detail of paper jam occurrence factor, refer to)

Table 6-1. Paper Jam sub code list

Paper Cassette (C1)		Paper Cassette (C2)		Paper Cassette (C3)		Paper Cassette (C4)		Duplex		Rear Tray	
Code	Content of paper jam	Code	Content of paper jam	Code	Content of paper jam	Code	Content of paper jam	Code	Content of paper jam	Code	Content of paper jam
001	C1 normal rotation PE sensor Unreached	037	C2 normal rotation PE sensor Unreached	073	C3 normal rotation PE sensor Unreached	109	C4 normal rotation PE sensor Unreached	145	Duplex normal rotation PE sensor Unreached	181	Rear Tray normal rotation PE sensor Unreached
002	C1 reverse PE sensor Unreached	038	C2 reverse PE sensor Unreached	074	C3 reverse PE sensor Unreached	110	C4 reverse PE sensor Unreached	146	Duplex reverse PE sensor Unreached	182	Rear Tray reverse PE sensor Unreached
003	C1 normal rotation PE sensor not off	039	C2 normal rotation PE sensor not off	075	C3 normal rotation PE sensor not off	111	C4 normal rotation PE sensor not off	147	Duplex normal rotation PE sensor not off	183	Rear Tray normal rotation PE sensor not off
004	C1 reverse PE sensor not off	040	C2 reverse PE sensor not off	076	C3 reverse PE sensor not off	112	C4 reverse PE sensor not off	148	Duplex reverse PE sensor not off	184	Rear Tray reverse PE sensor not off
005	C1 PW sensor Unreached	041	C2 PW sensor Unreached	077	C3 PW sensor Unreached	113	C4 PW sensor Unreached	149	Duplex PW sensor Unreached	185	Rear Tray PW sensor Unreached
006	C1 ME sensor Unreached	042	C2 ME sensor Unreached	078	C3 ME sensor Unreached	114	C4 ME sensor Unreached	150	Duplex ME sensor Unreached	186	Rear Tray ME sensor Unreached
007	C1 FE sensor Unreached	043	C2 FE sensor Unreached	079	C3 FE sensor Unreached	115	C4 FE sensor Unreached	151	Duplex FE sensor Unreached	187	Rear Tray FE sensor Unreached
008	C1 FE sensor Unreached B	044	C2 FE sensor Unreached B	080	C3 FE sensor Unreached B	116	C4 FE sensor Unreached B	152	Duplex FE sensor Unreached B	188	Rear Tray FE sensor Unreached B
009	C1 FE sensor not off	045	C2 FE sensor not off	081	C3 FE sensor not off	117	C4 FE sensor not off	153	Duplex FE sensor not off	189	Rear Tray FE sensor not off
010	C1 FE2 sensor Unreached	046	C2 FE2 sensor Unreached	082	C3 FE2 sensor Unreached	118	C4 FE2 sensor Unreached	154	Duplex FE2 sensor Unreached	190	Rear Tray FE2 sensor Unreached
011	C1 FE2 sensor not off	047	C2 FE2 sensor not off	083	C3 FE2 sensor not off	119	C4 FE2 sensor not off	155	Duplex FE2 sensor not off	191	Rear Tray FE2 sensor not off
012	C1 FE3 sensor Unreached	048	C2 FE3 sensor Unreached	084	C3 FE3 sensor Unreached	120	C4 FE3 sensor Unreached	156	Duplex FE3 sensor Unreached	192	Rear Tray FE3 sensor Unreached
013	C1 FE3 sensor not off	049	C2 FE3 sensor not off	085	C3 FE3 sensor not off	121	C4 FE3 sensor not off	157	Duplex FE3 sensor not off	193	Rear Tray FE3 sensor not off
014	C1 FE4 sensor Unreached	050	C2 FE4 sensor Unreached	086	C3 FE4 sensor Unreached	122	C4 FE4 sensor Unreached	158	Duplex FE4 sensor Unreached	194	Rear Tray FE4 sensor Unreached
015	C1 FE4 sensor not off	051	C2 FE4 sensor not off	087	C3 FE4 sensor not off	123	C4 FE4 sensor not off	159	Duplex FE4 sensor not off	195	Rear Tray FE4 sensor not off
016	C1 ME sensor not off	052	C2 ME sensor not off	088	C3 ME sensor not off	124	C4 ME sensor not off	160	Duplex ME sensor not off	196	Rear Tray ME sensor not off
017	C1 CR Motor	053	C2 CR Motor	089	C3 CR Motor	125	C4 CR Motor	161	Duplex CR Motor	197	Rear Tray CR Motor
018	C1 PF Motor	054	C2 PF Motor	090	C3 PF Motor	126	C4 PF Motor	162	Duplex PF Motor	198	Rear Tray PF Motor

Table 6-1. Paper Jam sub code list

Paper Cassette (C1)		Paper Cassette (C2)		Paper Cassette (C3)		Paper Cassette (C4)		Duplex		Rear Tray	
Code	Content of paper jam	Code	Content of paper jam	Code	Content of paper jam	Code	Content of paper jam	Code	Content of paper jam	Code	Content of paper jam
019	C1 ASF Motor	055	C2 ASF Motor	091	C3 ASF Motor	127	C4 ASF Motor	163	Duplex ASF Motor	199	Rear Tray ASF Motor
020	C1 ASF2 Motor	056	C2 ASF2 Motor	092	C3 ASF2 Motor	128	C4 ASF2 Motor	164	Duplex ASF2 Motor	200	Rear Tray ASF2 Motor
021	C1 ASF3 Motor	057	C2 ASF3 Motor	093	C3 ASF3 Motor	129	C4 ASF3 Motor	165	Duplex ASF3 Motor	201	Rear Tray ASF3 Motor
022	C1 ASF4 Motor	058	C2 ASF4 Motor	094	C3 ASF4 Motor	130	C4 ASF4 Motor	166	Duplex ASF4 Motor	202	Rear Tray ASF4 Motor
023	C1 NF error	059	C2 NF error	095	C3 NF error	131	C4 NF error	167	Duplex NF error	203	Rear Tray NF error
024	C1 Stack collapsed	060	C2 Stack collapsed	096	C3 Stack collapsed	132	C4 Stack collapsed	168	Duplex Stack collapsed	204	Rear Tray Stack collapsed
026	Home seek failure	062	Home seek failure	098	Home seek failure	134	Home seek failure	170	Home seek failure	206	Home seek failure
027	CR protective material removal forgotten error	063	CR protective material removal forgotten error	099	CR protective material removal forgotten error	135	CR protective material removal forgotten error	171	CR protective material removal forgotten error	207	CR protective material removal forgotten error
028	Emergency shutdown	064	Emergency shutdown	100	Emergency shutdown	136	Emergency shutdown	172	Emergency shutdown	208	Emergency shutdown
029	Option connect error	065	Option connect error	101	Option connect error	137	Option connect error	173	Option connect error	209	Option connect error

Table 6-2. Detail of paper jam occurrence factor

Paper jam occurrence factor	Detail
Normal rotation PE sensor Unreached	This error occurs when the paper does not reach the PE sensor at the time of feeding paper from the corresponding paper feeder.
Reverse PE sensor Unreached	This error occurs when the paper does not reach the PE sensor at the time of pulling in paper at duplex print from the corresponding paper feeder.
Normal rotation PE Sensor not off	This error occurs when PE Sensor is not becoming the off condition at the time of the printer fed the paper with specified step after the paper reaches to the PE Sensor.
Reverse PE Sensor not off	This error occurs when PE Sensor is not becoming the off condition at the time of the feeding the paper with specified step at duplex print after the paper reaches to the PE Sensor.
PW Sensor Unreached	This error occurs when PW Sensor does not detect the paper edge at the time of feeding the paper from with specified step after the paper reaches to the PE Sensor.
ME Sensor Unreached	This error occurs when the paper does not reach the Duplex Print Assy Paper Detection Sensor at the time of feeding paper from the corresponding paper feeder.
FE Sensor Unreached	This error occurs when feed sensor does not detect the paper at the time of feeding the paper with specified step from the corresponding paper feeder.
FE Sensor Unreached B	This error occurs when feed sensor of printer does not detect the paper at the time of feeding the paper from option cassette.
FE Sensor not off	This error occurs when feed sensor does not becoming the off condition at the time of the feeding the paper with specified step after the paper reaches to the feed sensor.
FE2 sensor Unreached	This error occurs when the feed sensor of option cassette (2nd) does not detect the paper at the time of feeding the paper from corresponding paper feeder.
FE2 Sensor not off	This error occurs when feed sensor of option cassette (2nd) does not becoming the off condition at the time of feeding the paper with specified step after the paper reaches to the feed sensor of option cassette(2nd).

Table 6-2. Detail of paper jam occurrence factor

Paper jam occurrence factor	Detail
FE3 sensor Unreached	This error occurs when the feed sensor of option cassette (3rd) does not detect the paper at the time of feeding the paper from corresponding paper feeder.
FE3 Sensor not off	This error occurs when feed sensor of option cassette (3rd) does not becoming the off condition at the time of feeding the paper with specified step after the paper reaches to the feed sensor of option cassette (3rd).
FE4 sensor Unreached	This error occurs when the feed sensor of option cassette (4th) does not detect the paper at the time of feeding the paper from corresponding paper feeder.
FE4 Sensor not off	This error occurs when feed sensor of option cassette (4th) does not becoming the off condition at the time of feeding the paper with specified step after the paper reaches to the feed sensor of option cassette (4th).
ME Sensor not off	This error occurs when the Duplex Print Assy Paper Detection Sensor does not become the off condition at the time of feeding the paper with specified step after the paper reaches to the Duplex Print Assy Paper Detection Sensor.
CR Motor	This error occurs when detecting the speed down of CR movement at the time of feeding and printing the paper from corresponding paper feeder.
PF Motor	This error occurs when detecting the excess load of PF movement at the time of feeding the paper from the corresponding paper feeder.
ASF Motor	This error occurs when detecting the excess load of ASF movement at the time of feeding the paper from the corresponding paper feeder.
ASF2 Motor	This error occurs when detecting the excess load of ASF movement of option cassette (2nd) at the time of feeding the paper from the corresponding paper feeder.
ASF3 Motor	This error occurs when detecting the excess load of ASF movement of option cassette (3rd) at the time of feeding the paper from the corresponding paper feeder.
ASF4 Motor	This error occurs when detecting the excess load of ASF movement of option cassette (4th) at the time of feeding the paper from the corresponding paper feeder.

Table 6-2. Detail of paper jam occurrence factor

Paper jam occurrence factor	Detail
NF Error	This error occurs when the paper does not feed form the corresponding paper feeder.
Stack collapsed	This error occurs when separation of the paper with the separation roller could not be performed well, so the second sheet is in a half fed state and in a position different from the original paper feed start position.
Home seek failure	This error occurs when the printer does not detect the contact to the CR Lock when performing the Home position seek.
CR protective material removal forgotten error	This error occurs when mechanism initialization was not performed normally because removal of the CR protective material or protective tape had been forgotten when the power was first turned on.
Emergency shutdown	This error occurs when open the rear cover while printing.
Option connect error	This error occurs when printer and optional cassette can not connect.

6.2.2 Fatal Errors

Table 6-3. Fatal Errors

Category	Error code	Error details	Troubleshooting procedure
Scanner	100001	ADF PID excess speed detection	P. 137
	100002	ADF PID reverse detection	P. 138
	100003	ADF PID lock detection	P. 138
	100005	ADF PID excess load	P. 138
	100006	ADF PID driving time	P. 137
	100017	Contact detection distance exceeded	P. 139
	100033	ALD PID excess speed detection	P. 137
	100034	ALD PID reverse detection	P. 138
	100035	ALD PID lock detection	P. 138
	100037	ALD PID excess load	P. 138
	100038	ALD PID driving time	P. 137
	100048	Scanner option error	P. 139
	100050	MAIN-B ROM level mismatch error	P. 140
	100053	Scanner illegal error	P. 141
	100054	Paper jam error	P. 141
	100065	FB PID excess speed error detection	P. 137
	100066	FB PID reverse detection	P. 138
	100067	FB PID lock detection	P. 138
	100069	FB PID excess load	P. 138
	100070	FB PID driving time	P. 137
	100073	FB BS+ excess sped detection	P. 137
	100074	FB BS+ reverse detection	P. 138
	100075	FB BS+ lock detection	P. 138
	100077	FB BS+ excess load	P. 138
	100078	FB BS+ driving time	P. 137
	100094	Main-B board µSD recognition error	P. 140
µSD(PDL)	205604	Match error between Main ROM and µSD ROM (PDL Program)	---

Table 6-3. Fatal Errors

Category	Error code	Error details	Troubleshooting procedure
Printer	000020	CR PID driving time error	P. 142
	000021	CR PID excess load error	P. 143
	000022	CR PID excess speed error	P. 142
	000023	CR PID reverse error	P. 143
	000024	CR PID lock error	P. 143
	000025	CR PID underspeed error	P. 144
	000027	CR PID excess load error 2	P. 143
	000030	CR load position driving time error	P. 142
	000031	CR load position excess load error	P. 143
	000032	CR load position excess speed error	P. 142
	000033	CR load position reverse error	P. 143
	000040	PF PID driving time error	P. 144
	000041	PF PID excess load error	P. 146
	000042	PF PID excess speed error	P. 144
	000043	PF PID reverse error	P. 146
	000044	PF PID lock error	P. 146
	000050	PF load position driving time error	P. 144
	000051	PF load position excess load error	P. 146
	000052	PF load position excess speed error	P. 144
	000053	PF load position reverse error	P. 146
	000060	ASF PID driving time error	P. 147
	000061	ASF PID excess load error	P. 148
	000062	ASF PID excess speed error	P. 147
	000063	ASF PID reverse error	P. 148
	000064	ASF PID lock error	P. 148
	000070	ASF load position driving time error	P. 147
	000071	ASF load position excess load error	P. 148
	000072	ASF load position excess speed error	P. 147
	000073	ASF load position reverse error	P. 148
	000080	2nd ASF PID driving time error	P. 153
	000081	2nd ASF PID excess load error	P. 154

Table 6-3. Fatal Errors

Category	Error code	Error details	Troubleshooting procedure
Printer	000082	2nd ASF PID excess speed error	P. 153
	000083	2nd ASF PID reverse error	P. 154
	000084	2nd ASF PID lock error	P. 154
	000090	2nd ASF load position driving time error	P. 153
	000091	2nd ASF load position excess load error	P. 154
	000092	2nd ASF load position excess speed error	P. 153
	000093	2nd ASF load position reverse error	P. 154
	000160	LFT1 PID driving time error	P. 149
	000161	LFT1 PID excess load error	P. 150
	000162	LFT1 PID excess speed error	P. 149
	000164	LFT1 PID lock error	P. 150
	000180	LFT2 PID driving time error	P. 155
	000181	LFT2 PID excess load error	P. 156
	000182	LFT2 PID excess speed error	P. 155
	000184	LFT2 PID lock error	P. 156
	000200	LFT3 PID driving time error	P. 155
	000201	LFT3 PID excess load error	P. 156
	000202	LFT3 PID excess speed error	P. 155
	000204	LFT3 PID lock error	P. 156
	000220	LFT4 PID driving time error	P. 155
	000221	LFT4 PID excess load error	P. 156
	000222	LFT4 PID excess speed error	P. 155
	000224	LFT4 PID lock error	P. 156
	000480	PG PID driving time error	P. 151
	000481	PG PID excess load error	P. 152
	000482	PG PID excess speed error	P. 151
	000483	PG PID reverse error	P. 152
	000484	PG PID lock error	P. 152
	000540	ASF3 PID driving time error	P. 153
	000541	ASF3 PID excess load error	P. 154
	000542	ASF3 PID excess speed error	P. 153

Table 6-3. Fatal Errors

Category	Error code	Error details	Troubleshooting procedure
Printer	000543	ASF3 PID reverse error	P. 154
	000544	ASF3 PID lock error	P. 154
	000550	ASF3 load position driving time error	P. 153
	000551	ASF3 load position excess load error	P. 154
	000552	ASF3 load position excess speed error	P. 153
	000553	ASF3 load position reverse error	P. 154
	000560	ASF4 PID driving time error	P. 153
	000561	ASF4 PID excess load error	P. 154
	000562	ASF4 PID excess speed error	P. 153
	000563	ASF4 PID reverse error	P. 154
	000564	ASF4 PID lock error	P. 154
	000570	ASF4 load position driving time error	P. 153
	000571	ASF4 load position excess load error	P. 154
	000572	ASF4 load position excess speed error	P. 153
	000573	ASF4 load position reverse error	P. 154
	030001	PE detector error	P. 159
	030002	PW sensor light value adjust error	P. 159
	030004	Emergency stop error caused by cover opening	P. 160
	031001	X-Hot detect error (pre printing)	P. 157
	031002	X-Hot detect error (after flushing)	P. 157
	031003	Transistor temperature error	P. 160
	031004	Head temperature error	P. 157
	031005	X-Hot detect error (at ink replacement timing)	P. 157
	031006	Print head fuse blown error	P. 157
	031007	Voltage not reduced as abnormal printing temporary countermeasure error	---
	031008	VBS over-voltage error	P. 158
	031011	HCS error	P. 158
	032001	Over adding connection error	P. 158
	032002	Unsupported additional cassette connection error	P. 161

Table 6-3. Fatal Errors

Category	Error code	Error details	Troubleshooting procedure
Printer	032051	Addition setting state error 1	P. 162
	032052	Addition setting state error 2	P. 162
	032101	Addition recovery mode error	P. 162
	032151	Addition communication error 1	P. 163
	032152	Addition communication error 2	
	032153	Addition communication error 3	
	032154	Addition communication error 4	
	032155	Addition communication error 5	
	032156	Addition communication error 6	
	032157	Addition communication error 7	
	032158	Addition communication error 8	
	032159	Addition communication error 9	
	032160	Addition communication error 10	
	032161	Addition communication error 11	
	032162	Addition communication error 12	
	033001	CRCM fuse blown error	P. 164
	033002	ASIC access error	P. 164
	033003	CS rank setting out of range error	---
	033004	Fatal error when sending SC	P. 165
	033006	Read parity error	P. 165
	033007	Write parity error	P. 165
	033008	Access inconsistency error	---
	034001	Home position seek error	P. 166
	034002	Deadlock avoidance	P. 166
	034003	Impossible contact detection error	P. 167
	034008	Print error in non-print inspection mode	---
	034010	Motor runaway error	P. 167
	034011	APG target position not reached error	P. 168
	034012	SMAP phase detection error	P. 168
	034016	PW detector failure error	P. 169
	034017	PW sensor detected foreign object error	P. 169

Table 6-3. Fatal Errors

Category	Error code	Error details	Troubleshooting procedure
Printer	034018	3rd NIP release sensor failure error	P. 170
	034500	Contact error at ink replacement timing (power off)	---
	060001	Error caused by other than printer device	---
	060002	Driver mismatch error	Driver is not supported
	060003	Error due to PCD verify command	Main board failure
	060008	PDL SOC version miss match error	---
System error	202620	Wi-Fi Board failure	1. Check the connection of corresponding parts. 2. Replace the corresponding parts. 3. Replace the main board.
	202623	NFC Board failure	
	203004	Panel Unit failure	
	203201	PDL Board failure	
	Excluding the above-mentioned	Firmware failure	Contact the service support.

CHECK POINT

Even if a fatal error occurs, the screen display may become a paper jam error.

In this case, the fatal error generation history remains.

ADF/SCN RELATED FATAL ERROR_1

- Error name
  - ADF PID excess speed detection (error code: 100001)
  - ALD PID excess speed detection (error code: 100033)
  - FB PID excess speed detection (error code: 100065)
  - FB BS+ excess speed detection (error code: 100073)
- Cause

  State in which driven at unexpected speed (fast) for control.
- Suspected cause
  - Encoder cable disconnected
  - ADF/SCN unit failure (motor driver failure)
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the connection state of the encoder cable** Is the cable of the corresponding encoder correctly connected to the SCN main board? (CN30, CN31, and CN32)	Replace the ADF/SCN unit.	Reconnect the encoder cable.

ADF/SCN RELATED FATAL ERROR_2

- Error name
  - ADF PID excess time (error code: 100006)
  - ALD PID excess time (error code: 100038)
  - FB PID excess time (error code: 100070)
  - FB BS+ excess time (error code: 100078)
- Cause

  The driving time of the motor exceeded the set time.
- Suspected cause

  ADF/SCN unit failure (SCN main board failure)
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the reproducibility** Did the corresponding error occur?	Replace the ADF/SCN unit.	Not reproducible (contact service support)

ADF/SCN RELATED FATAL ERROR_3

- Error name
  - ADF PID reverse detection (error code: 100002)
  - ADF PID lock detection (error code: 100003)
  - ADF PID excess load (error code: 100005)
  - ALD PID reverse detection (error code: 100034)
  - ALD PID lock detection (error code: 100035)
  - ALD PID excess load (error code:100037)
  - FB PID reverse detection (error code: 100066)
  - FB PID lock detection (error code: 100067)
  - FB PID excess load (error code: 100069)
  - FB BS+ reverse detection (error code: 100074)
  - FB BS+ lock detection (error code: 100075)
  - FB BS+ excess load (error code: 100077)
- Cause
  - The driving time of the motor exceeded the set time.
  - When rotated in the opposite direction to rotation direction (There was a sudden load error, and the motor rotated in the opposite direction in reaction to it)
  - State in which load of motor exceeds expected load, and motor does not rotate at all
- Suspected cause
  - Foreign object or jammed paper remaining
  - Motor cable disconnected
  - ADF/SCN unit failure (main board failure, drive part damaged)
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check for a foreign object and jammed paper remaining** Check that there is no foreign object or paper jam remaining in the document feed path.	Go to step 2	Remove the foreign object or jammed paper.
2	**Check the connection state of the motor cable** Is the corresponding motor cable correctly connected to the SCN main board? (CN20, CN21, and CN22)	Replace the ADF/SCN unit.	Reconnect the motor cable.

ADF/SCN RELATED FATAL ERROR_4

- Error name
  - Contact detection distance exceeded (error code: 100017)
- Cause

  Occurs if the SCN CIS module cannot correctly detect the origin position during the initial operation.
- Suspected cause
  - SCN CIS module FFC disconnected
  - ADF/SCN unit failure (SCN unit failure)
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the connection state of the SCN CIS module FFC** Is the SCN CIS module correctly connected to the SCN main board? (CN462 and CN463)	Replace the ADF/SCN unit.	Reconnect the SCN CIS module FFC.

ADF/SCN RELATED FATAL ERROR_5

- Error name
  - MAIN-B connection error (error code: 100048)
- Cause

  Occurs if communication is not possible between the SCN main board and main unit main board.
- Suspected cause
  - Faulty connection between SCN main board and main unit main board (cable disconnected or broken)
  - ADF/SCN unit failure (SCN main board failure)
  - Main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the cable connection state** Are the 2 cables connected correctly between the SCN main board and main unit main board? Furthermore, there must be no damage. (SCN main board: CN432, CN458) (Main unit main board: CN103, CN104)	Go to step 2	Reconnect or replace the cables.
2	**Reinstall and check the ADF/SCN unit** Reinstall the ADF/SCN unit and check whether or not the error occurs. Did the error occur?	Replace the main unit main board.	Replace the ADF/SCN unit.

ADF/SCN RELATED FATAL ERROR_6

- Error name
  - MAIN-B ROM level mismatch error (error code: 100017)
- Cause

  Occurs if the main unit firmware and SCN firmware versions do not match.
- Suspected cause
  - Main unit firmware and SCN firmware version mismatch
- Troubleshooting
  - Update the firmware to match the main unit firmware and SCN firmware versions.

ADF/SCN RELATED FATAL ERROR_7

- Error name
  - Main-B board µSD recognition error (error code: 100094)
- Cause

  Occurs if the µSD on the SCN board cannot be recognized.
- Suspected cause
  - µSD disconnected
  - µSD failure
  - ADF/SCN unit failure (SCN main board failure)
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the µSD attachment state** Is the µSD attached correctly?	Go to step 2	Reattach the µSD.
2	**Check the operation after reinserting the µSD** Reinstall the µSD and check whether or not the error occurs. Did the error occur?	Replace the ADF/SCN unit.	Replace the µSD.

ADF/SCN RELATED FATAL ERROR_8

- Error name
  - Scanner illegal error (error code: 100053)
- Cause

  Occurs if enter a state that is not logically possible. (Does not occur normally.)
- Suspected cause
  - Entered a state that is not logically possible. (Not part failure, etc.)
- Troubleshooting
  - Turn the power off and then back on.

ADF/SCN RELATED FATAL ERROR_9

- Error name
  - Paper jam error (error code: 100054)
- Cause

  Occurs if a paper jam occurred in the document feed path of the ADF.
- Suspected cause
  - Paper jam or foreign object
- Troubleshooting
  - Remove the jammed paper or foreign object.

CR RELATED FATAL ERROR_1

- Error name
  - CR PID driving time error (error code: 000020)
  - CR load position driving time error (error code: 000030)
- Cause

  The driving time of the motor exceeded the set time.
- Suspected cause
  - Main board failure
- Troubleshooting

Step	Check and Measure	Yes	No
1	**Check the reproducibility** Did the corresponding error occur?	Replace the main board	Inquire at service support

CR RELATED FATAL ERROR_2

- Error name
  - CR PID excess speed error (error code: 000022)
  - CR load position excess speed error (error code: 000032)
- Cause

  State in which driven at unexpected speed (fast) for control.
- Suspected cause
  - CR timing belt detached or broken
  - Motor failure
  - Main board failure
- Troubleshooting

Step	Check and Measure	Yes	No
1	**Check the CR timing belt** Is the timing belt detached or broken?	Replace the following parts in sequence • CR motor • Main board (If the trouble is not resolved, inquire at service support)	Reattach the CR timing belt or Replace the CR timing belt

CR RELATED FATAL ERROR_3

☐ Error name

- CR PID excess load error (error code: 000021)
- CR PID reverse error (error code: 000023)
- CR PID lock error (error code: 000024)
- CR load position excess load error (error code: 000031)
- CR load position reverse error (error code: 000033)
- CR PID excess load error (error code: 000027)

☐ Cause

- State in which load of CR motor exceeds expected load
- When rotated in the opposite direction to rotation direction (There was a sudden load error, and the motor rotated in the opposite direction in reaction to it)
- State in which load of motor exceeds expected load, and motor does not rotate at all

☐ Suspected cause

- Paper jam paper remaining
- Foreign object remaining
- CR lock lever failure (Maintenance Unit failure)
- CR main shaft lubrication shortage
- PG error
- CR encoder failure
- CR motor failure
- Motor driver failure/main board failure

☐ Troubleshooting

Step	Check and Measure	Yes	No
1	**Check for paper jam paper remaining and foreign object** There is no paper jam paper and foreign object in the CR scanning section.	Go to step 2	Remove the paper jam paper and foreign object
2	**Check the CR lock lever operation** Does the CR lock lever operate correctly when the power is on? (Is the lowering operation performed correctly?)	Go to step 4	Go to step 3
3	**Check the CR lock lever gear train** Check the operation of the CR lock lever. Is the CR lock lever gear train damaged?	Go to step 4	Check the gear train of the CR lock or Replace the Maintenance Unit
4	**Check the status of the CR main shaft** Is the CR main shaft dirty from paper dust or mist? Is a lubrication shortage occurring?	Go to step 5	Lubricate the CR main shaft
5	**Check the PG** Is the PG value the standard value? Are the CR unit and platen in contact?	Go to step 6	Adjust the PG
6	**Check the CR operation** Turn on the power and check the CR operation. Is the CR operating normally? (Is it not in runaway condition? Is it operating?)	Main board (If the trouble is not resolved, inquire at service support)	<When in runaway condition> Replace the CR encoder (replace the CR unit) <When not operating> Replace the CR motor

CR RELATED FATAL ERROR_4

- Error name
  - CR PID underspeed error (error code: 000025)
- Cause

  When lower than the expected speed is detected
- Suspected cause
  - Paper jam paper remaining
  - Foreign object remaining
- Troubleshooting

Step	Check and Measure	Yes	No
1	**Check for paper jam paper remaining** There is no paper jam paper in the CR scanning section.	Go to step 2	Remove the paper jam paper
2	**Check for foreign object** There is no foreign object in the CR scanning section.	Inquire at service support	Remover the foreign object

PF RELATED FATAL ERROR_1

- Error name
  - PF PID riving time error (error code: 000040)
  - PF load position driving time error (error code: 000050)
- Cause

  The drive time of the motor exceeded the set time.
- Suspected cause
  - Main board failure
- Troubleshooting

Step	Check and Measure	Yes	No
1	**Check the reproducibility** Did the corresponding error occur?	Replace the main board	Inquire at service support

PF RELATED FATAL ERROR_2

- Error name
  - PF PID excess speed error (error code: 000042)
  - PF load position excess speed error (error code: 000052)
- Cause

  State in which driven at unexpected speed (fast) for control.
- Suspected cause
  - PF timing belt detached or broken
  - PF gear train part damaged
  - Motor failure
  - Motor driver failure/main board failure
- Troubleshooting

Step	Check and Measure	Yes	No
1	**Check the PF timing belt** Is the PF timing belt detached or not broken?	Go to step 2	Reattach the PF timing belt or Replace the PF timing belt
2	**Check the PF gear train parts** Are the PF related gears damaged? Also, is the gear train in the correct state?	Replace the following parts in sequence • CR motor • Main board (If the trouble is not resolved, inquire at service support)	Replace the damaged part

PF RELATED FATAL ERROR_3

- Error name
  - PF PID excess load error (error code: 000041)
  - PF PID reverse error (error code: 000043)
  - PF PID lock error (error code: 000044)
  - PF load position excess load error (error code: 000051)
  - PF load position reverse error (error code: 000053)
- Cause
  - State in which load of PF motor exceeds expected load
  - When rotated in the opposite direction to rotation direction (There was a sudden load error, and the motor rotated in the opposite direction in reaction to it)
  - State in which load of motor exceeds expected load, and motor does not rotate at all
- Suspected cause
  - Stacker incorrectly set
  - Paper jam paper remaining
  - Paper path damaged and feed roller worn out
  - Gears locking due to foreign object
  - PF gear train part damaged
  - Maintenance Unit failure
  - PF encoder failure
  - PF motor failure
  - Motor driver failure/main board failure

- Troubleshooting

Step	Check and Measure	Yes	No
Advance check 1	**Check the stacker attachment state** Is the stacker attached correctly?	Go to advance check 2	Reattach the stacker
Advance check 2	**Check for paper jam paper remaining and foreign object** There is no paper jam paper or foreign object remaining in the paper feed path.	Go to advance check 3	Remove the paper jam paper and foreign object
Advance check 3	**Check the timing of error occurrence** At what timing does the error occur with the product? Does it occur when the power is turned on?	Go to step 3	Go to step 1
1	**Check the operation of the feed roller (upper paper guide)** The feed roller is not damaged or worn out. Also, is it operating normally? (Does the roller rotate?)	Go to step 2	Replace the upper paper guide.
2	**Check for damaged or broken part in the paper feed path** There is no damaged or broken part in the paper feed path. (There is nothing hindering paper feeding.)	Go to step 3	Remove the foreign object or Replace the damaged part
3	**Perform PF motor operation check 1** Turn on the power and check the PF motor operation. Did the PF motor operate (rotate)?	Go to step 5	Go to step 4
4	**Check the PF drive transmission gears** Are the PF drive transmission gears damaged? Also, is there locking due to foreign object? [Check points] 1. Drive transmission gears in the vicinity of the PF motor 2. Maintenance Unit drive gears	Replace the PF motor assembly (If the trouble is not resolved, replace the main board)	Remove the foreign object or Replace the damaged part
5	**Perform PF motor operation check 2** Is the PF motor operating abnormally?	Replace the main board (If the trouble is not resolved, inquire at service support)	Replace the PF encoder

ASF RELATED FATAL ERROR_1

- Error name
  - ASF PID driving time error (error code: 000060)
  - ASF load position driving time error (error code: 000070)
- Cause

  The drive time of the motor exceeded the set time.
- Suspected cause
  - Main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the reproducibility** Did the corresponding error occur?	Replace the main board	Inquire at service support

ASF RELATED FATAL ERROR_2

- Error name
  - ASF PID excess speed error (error code: 000062)
  - ASF load position excess speed error (error code: 000072)
- Cause

  State in which driven at unexpected speed (fast) for control.
- Suspected cause
  - ASF gear train part damaged
  - ASF motor encoder failure
  - Motor driver failure/main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the ASF gear train parts** Has an ASF gear train part dropped off or become detached?	Replace the following parts in sequence • ASF motor assembly • Main Board (If the trouble is not resolved, inquire at service support)	Reassemble the ASF gear train parts.

ASF RELATED FATAL ERROR_3

- Error name
  - ASF PID excess load error (error code: 000061)
  - ASF PID reverse error (error code: 000063)
  - ASF PID lock error (error code: 000064)
  - ASF load position excess load error (error code: 000071)
  - ASF load position reverse error (error code: 000073)
- Cause
  - State in which load of ASF motor exceeds expected load
  - When rotated in the opposite direction to rotation direction (There was a sudden load error, and the motor rotated in the opposite direction in reaction to it)
  - State in which load of motor exceeds expected load, and motor does not rotate at all
- Suspected cause
  - Jammed paper remaining
  - Paper path damaged and conveyance roller worn out
  - Gears locking due to foreign object
  - Locked because ASF gear train part failure
  - ASF motor encoder failure
  - PF motor failure
  - Motor driver failure/main board failure

- Troubleshooting

Step	Check and measure	Yes	No
Go to advance check 1	**Check for jammed paper remaining and foreign object** There is no jammed paper or foreign object remaining in the paper feed path.	Go to advance check 2	Remove the jammed paper and foreign object
Go to advance check 2	**Check the timing of error occurrence** At what timing does the error occur with the product? Does it occur when the power is turned on?	Go to step 2	Go to step 1
1	**Check the feed roller and conveyance roller state** A conveyance roller is not damaged or worn out.	Go to step 2	Replace the feed roller. or Replace the intermediate roller (duplex print assy)
2	**Check the ASF motor operation_1** Turn on the power and check the ASF motor operation. Did the ASF motor operate (rotate)?	Go to step 4	Go to step 3
3	**Check the ASF gear train parts** Check that there is no damage to or foreign object on the ASF gear train parts.	Replace the ASF motor assembly. (If the trouble is not resolved, replace the main board)	Remove the foreign object or Replace the ASF motor assembly.
4	**Check the ASF motor operation_2** Is the PF motor operating abnormally?	Replace the main board (If the trouble is not resolved, inquire at service support)	Replace the ASF motor encoder.

LIFT RELATED FATAL ERROR_1

- Error name
  - LFT1 PID driving time error (error code: 000160)
- Cause

  The drive time of the motor exceeded the set time.
- Suspected cause
  - Main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the reproducibility** Did the corresponding error occur?	Replace the main board	Inquire at service support

LIFT RELATED FATAL ERROR_2

- Error name
  - LFT PID excess speed error (error code: 000162)
- Cause

  State in which driven at unexpected speed (fast) for control.
- Suspected cause
  - Lift gear train part damaged
  - Lift motor encoder failure
  - Main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the lift gear train parts** Has a lift gear train part dropped off or become detached?	Replace the main board (If the trouble is not resolved, inquire at service support)	Reassemble the lift gear train parts. or Replace the lift motor assembly.

LIFT RELATED FATAL ERROR_3

- Error name
  - LFT1 PID excess load error (error code: 000161)
  - LFT1 PID lock error (error code: 000164)
- Cause
  - The load became unexpectedly high with hopper lift driving.
  - State in which load of motor exceeds expected load, and motor does not rotate at all
- Suspected cause
  - Paper incorrectly loaded or number of sheets loaded exceeds maximum
  - Foreign object in paper cassette
  - Paper cassette failure
  - Damage to or foreign object trapped in lift gear train parts
  - Lift phase sensor failure
  - Lift motor failure
  - Main board failure

- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the paper cassette_1** Check that there is no foreign object in the paper cassette and that more than the maximum number of sheets of paper is not loaded. Furthermore, is the paper loaded correctly?	Go to step 2	Reduce the number of sheets of paper loaded. or Remove the foreign object
2	**Check the paper cassette_2** Has the paper cassette failed? Is the hopper mechanism of the paper cassette operating correctly?	Go to step 3	Replace the paper cassette.
3	**Check the lift gear train parts** Check the ASF gear train parts to make sure that there is no foreign object on or damage to them.	Replace the main board (If the trouble is not resolved, inquire at service support)	Remove the foreign object or Replace the lift motor assembly.

APG RELATED FATAL ERROR_1

- Error name
  - PG PID driving time error (error code: 000480)
- Cause

  The drive time of the motor exceeded the set time.
- Suspected cause
  - Main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the reproducibility** Did the corresponding error occur?	Replace the main board	Inquire at service support

APG RELATED FATAL ERROR_2

- Error name
  - PG PID excess speed error (error code: 000482)
- Cause

  State in which driven at unexpected speed (fast) for control.
- Suspected cause
  - APG gear train part damaged
  - APG failure
  - Main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the APG gear train parts** Has an APG gear train part dropped off or become detached?	Replace the following parts in sequence • APG motor assembly • Main Board (If the trouble is not resolved, inquire at service support)	Reassemble the APG gear train parts. or Replace the APG drive assembly

APG RELATED FATAL ERROR_3

- Error name
  - PG PID excess load error (error code: 000481)
  - PG PID reverse error (error code: 000483)
  - PG PID lock error (error code: 000484)
- Cause
  - State in which load of motor exceeds expected load
  - When rotated in the opposite direction to rotation direction (There was a sudden load error, and the motor rotated in the opposite direction in reaction to it)
  - State in which load of motor exceeds expected load, and motor does not rotate at all
- Suspected cause
  - Disconnect APG Motor Sensor/APG Motor cable
  - APG gear phase shift
  - Gears locking due to foreign object
  - APG phase sensor or APG motor encoder failure
  - Damage to or foreign object trapped in lift gear train parts
  - APG gear train part damaged
  - APG motor failure
  - Main board failure

- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the APG Motor Sensor/APG Motor cable** Check that the APG Motor Sensor/APG Motor Cable is not disconnect.	Go to step 2	Connect the cable.
2	**Check the APG motor operation** Turn on the power and check the APG motor operation. Did the APG motor operate?	Go to step 3	Replace the APG motor assembly.
3	**Check the APG motor sensor state** Did the APG motor operate abnormally (runaway) when the power was turned on?	Go to step 4	Replace the APG motor sensor.
4	**Check the APG gear phase** Is the APG gear phase correct?	Go to step 5	Match the APG gear phase.
5	**Check the APG gear train parts** Check the APG gear train parts to make sure that there is no foreign object on or damage to them.	Replace the main board (If the trouble is not resolved, inquire at service support)	Remove the foreign object or Replace the APG drive assembly or APG motor assembly.

ADDITIONAL ASF RELATED FATAL ERROR_1

- Error name
  - 2nd ASF PID driving time error (error code: 000080)
  - 2nd ASF load position driving time error (error code: 000090)
  - ASF3 PID driving time error (error code: 000540)
  - ASF3 load position driving time error (error code: 000550)
  - ASF4 PID driving time error (error code: 000560)
  - ASF4 load position driving time error (error code: 000570)
- Cause

  The drive time of the motor exceeded the set time.
- Suspected cause
  - Additional main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the reproducibility** Did the corresponding error occur?	Replace the main board	Inquire at service support

ADDITIONAL ASF RELATED FATAL ERROR_2

- Error name
  - 2nd ASF PID excess speed error (error code: 000082)
  - 2nd ASF load position excess speed error (error code: 000092)
  - ASF3 PID excess speed error (error code: 000542)
  - ASF3 load position excess speed error (error code: 000552)
  - ASF4 PID excess speed error (error code: 000562)
  - ASF4 load position excess speed error (error code: 000572)
- Cause

  State in which driven at unexpected speed (fast) for control.
- Suspected cause
  - Additional ASF gear train detached or damaged
  - Motor failure
  - Main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the additional ASF gear train parts** Has an additional ASF gear train part dropped off or become detached?	Replace the additional board unit. (If the trouble is not resolved, inquire at service support)	Reassemble the additional ASF gear train parts.

ADDITIONAL ASF RELATED FATAL ERROR_3

- Error name
  - 2nd ASF PID excess load error (error code: 000081)
  - 2nd ASF PID reverse error (error code: 000083)
  - 2nd ASF PID lock error (error code: 000084)
  - 2nd ASF load position excess load error (error code: 000091)
  - 2nd ASF load position reverse error (error code: 000093)
  - ASF3 PID excess load error (error code: 000541)
  - ASF3 PID reverse error (error code: 000543)
  - ASF3 PID lock error (error code: 000544)
  - ASF3 load position excess load error (error code: 000551)
  - ASF3 load position reverse error (error code: 000553)
  - ASF4 PID excess load error (error code: 000561)
  - ASF4 PID reverse error (error code: 000563)
  - ASF4 PID lock error (error code: 000564)
  - ASF4 PID lock error (error code: 000565)
  - ASF4 PID lock error (error code: 000566)
- Cause
  - State in which load of additional ASF motor exceeds expected load
  - When rotated in the opposite direction to rotation direction (There was a sudden load error, and the motor rotated in the opposite direction in reaction to it)
  - State in which load of motor exceeds expected load, and motor does not rotate at all
- Suspected cause
  - Jammed paper remaining
  - Additional ASF motor encoder failure
  - Paper path damaged and conveyance roller worn out
  - Gears locking due to foreign object
  - Locked because additional ASF gear train part failure
  - Additional ASF motor failure
  - Motor driver failure/additional main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check for jammed paper remaining** There is no jammed paper remaining in the paper feed path.	Go to step 2	Remove the jammed paper.
2	**Check the sensor state** Turn on the power of the product and check the feed operation. Check that the additional ASF motor does not operate abnormally.	Go to step 3	Replace the additional ASF motor encoder.
3	**Check the paper feed path and conveyance roller.** A conveyance roller is not damaged or worn out. Also, is it operating normally?	Go to step 4	Replace the conveyance roller.
4	**Check the 2nd APG gear train parts** Check the ASF gear train parts to make sure that there is no foreign object on or damage to them.	Replace the main board (If the trouble is not resolved, inquire at service support)	Replace the damaged part

ADDITIONAL LIFT RELATED FATAL ERROR_1

- Error name
  - LFT2 PID driving time error (error code: 000180)
  - LFT3 PID driving time error (error code: 000200)
  - LFT4 PID driving time error (error code: 000220)
- Cause

  The driving time of the motor exceeded the set time.
- Suspected cause
  - Additional main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the reproducibility** Did the corresponding error occur?	Replace the additional main board.	Inquire at service support

ADDITIONAL LIFT RELATED FATAL ERROR_2

- Error name
  - LFT2 PID excess speed error (error code: 000182)
  - LFT3 PID excess speed error (error code: 000202)
  - LFT4 PID excess speed error (error code: 000222)
- Cause

  State in which driven at unexpected speed (fast) for control.
- Suspected cause
  - Additional lift gear train detached or damaged
  - Lift motor encoder failure
  - Additional main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the additional lift gear train parts** Has an additional lift gear train part dropped off or become detached?	Replace the additional board unit. (If the trouble is not resolved, inquire at service support)	Reassemble the additional lift gear train parts.

ADDITIONAL LIFT RELATED FATAL ERROR_3

- Error name
  - LFT2 PID excess load error (error code: 000181)
  - LFT2 PID lock error (error code: 000184)
  - LFT3 PID excess load error (error code: 000201)
  - LFT3 PID lock error (error code: 000204)
  - LFT4 PID excess load error (error code: 000221)
  - LFT4 PID lock error (error code: 000224)
- Cause
  - The load became unexpectedly high with additional hopper lift driving.
  - State in which load of motor exceeds expected load, and motor does not rotate at all
- Suspected cause
  - Paper incorrectly loaded or number of sheets loaded exceeds maximum
  - Foreign object in paper cassette
  - Damage to or foreign object trapped in additional lift gear train parts
  - Additional lift phase sensor failure
  - Additional lift motor failure
  - Additional main board failure

- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the paper cassette_1** Check that there is no foreign object in the paper cassette and that more than the maximum number of sheets of paper is not loaded. Furthermore, is the paper loaded correctly?	Go to step 2	Reduce the number of sheets of paper loaded. or Remove the foreign object
2	**Check the paper cassette_2** Has the paper cassette failed? Is the hopper mechanism of the paper cassette operating correctly?	Go to step 3	Replace the paper cassette.
3	**Check the lift gear train parts** Check the ASF gear train parts to make sure that there is no foreign object on them.	Replace the additional main board unit. (If the trouble is not resolved, inquire at service support)	Remove the foreign object

HEAD RELATED FATAL ERROR_1

- Error name
  - X-Hot detect error (pre printing) (error code: 031001)
  - X-Hot detect error (after flushing) (error code: 031003)
  - Head temperature error (error code: 031004)
  - X-Hot detect error (at ink replacement timing) (error code: 031005)
- Cause

  Occurs if the head temperature exceeds a set temperature.
- Suspected cause
  - Head FFC inserted slanted
  - Print head failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the head FFC connection state** Check that the head FFC is not inserted slanted.	Replace the print head	Reassemble

HEAD RELATED FATAL ERROR_2

- Error name
  - Print head fuse blown error (error code: 031006)
- Cause

  Occurs if the print head fuse has blown.
- Suspected cause
  - Print head failure
  - Head FFC inserted slanted
  - Head FFC damaged
  - Main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the head FFC connection state** Check that the head FFC is not inserted slanted.	Go to step 2	Reassemble
2	**Check the head FFC state** Check the head FFC state to make sure that the FFC is not damaged. (Head FFC connection part has come off, FFC disconnected, etc.)	Go to step 3	Replace the head FFC.
3	**Check the main board fuse** Check that the head fuse (F701) on the main board has not blown.	Replace the print head (If the trouble is not resolved, also replace the main board.)	Replace the main board (If the trouble is not resolved, also replace the print head.)

HEAD RELATED FATAL ERROR_3

- Error name
  - VBS over-voltage error (error code: 031008)
- Cause

  Occurs when an abnormal voltage is applied to the head drive circuit.
- Suspected cause
  - Print head failure
  - Main board failure
  - Head FFC inserted slanted
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the head FFC state** Check the head FFC state to make sure that the FFC is not damaged. (Head FFC connection part has come off, FFC disconnected, etc.)	Replace the following parts in sequence • Print Head • Main Board (If the trouble is not resolved, also replace the head FFC. If the trouble is still not resolved, contact service support.)	Replace the head FFC.

HEAD RELATED FATAL ERROR_4

- Error name
  - HCS error (error code: 031011)
- Cause

  Occurs if communication is not possible between the print head and main unit.
- Suspected cause
  - Print head failure
  - Head FFC damaged
  - Main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the head FFC state** Check the head FFC state to make sure that the FFC is not damaged. (Head FFC connection part has come off, FFC disconnected, etc.)	Replace the following parts in sequence • Print Head • Main Board (If the trouble is not resolved, also replace the head FFC. If the trouble is still not resolved, contact service support.)	Replace the head FFC.

PE DETECTOR ERROR (ERROR CODE: 030001)

☐ Cause

Occurs when PE detection can not be performed correctly due to failure of PE sensor etc.

☐ Suspected cause

- PE sensor failure
- Main board failure

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Check the PE sensor cable connection state.** Check that the PE sensor cable is properly connected.	Go to step2	Reassemble
2	**Check the operation after reinstalling the Main Board.** Replace main board with normal product and check operation. Did the error occur?	Replace the PE sensor.	Replace the Main board.

PW SENSOR LIGHT VALUE ADJUST ERROR (ERROR CODE:030002)

☐ Cause

Occurs when the paper presence can not be detected even if the maximum light emission amount is increased in the adjustment of the light emission amount.

☐ Suspected cause

- PW sensor failure
- Main board failure

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Check the PW Sensor FFC connection state.** Check that the PW sensor FFC is properly connected.	Go to step2	Reassemble
2	**Check the operation after reinstalling the Main Board.** Replace main board with normal product and check operation. Did the error occur?	Replace the PW sensor.	Replace the Main board.

EMERGENCY STOP ERROR CAUSED BY COVER OPENING (ERROR CODE: 030004)

☐ Error name

Occurs if the rear cover is opened during motor driving.
(Although the fatal error occurrence history is recorded to the main unit, the main unit display indicates a paper jam error)

☐ Cause

- Rear cover opened during motor driving
- Rear cover open sensor failure

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Turn the power off and then back on.** Did the corresponding error occur after the power was turned off and then back on? Does an open error occur while the rear cover is in the closed state?	Replace the rear cover open sensor.	End

TRANSISTOR TEMPERATURE ERROR (ERROR CODE: 031003)

☐ Cause

Occurs if an FET of the main board or head drive circuit exceeds a set temperature.

☐ Suspected cause

- Main board failure
- Print head failure

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Did the corresponding error occur after the power was turned off and then back on?** Turn the power off and then leave the product for a while. Did the error occur when the power was turned back on?	Replace the following parts in sequence • Print Head • Main Board (If the trouble is not resolved, contact service support.)	End

ADDITIONAL_CONNECTION RELATED FATAL ERROR_1

- Error name
  - Over-adding connection error (error code: 032001)
- Cause

  State in which more than four additional cassettes connected
- Suspected cause
  - More than the maximum number of additional cassettes connected
- Troubleshooting
  - Install within the specified number of additional cassettes.

ADDITIONAL_CONNECTION RELATED FATAL ERROR_2

- Error name
  - Unsupported additional cassette connection error (error code: 032002)
- Cause
  - Occurs when an unsupported additional cassette is connected.
- Suspected cause
  - Unsupported additional cassette connected
- Troubleshooting
  - Use supported additional cassettes.

ADDITIONAL_CONNECTION RELATED FATAL ERROR_3

- Error name
  - Additional setting state error 1 (Error code: 032051)
  - Additional setting state error 2 (Error code: 032052)
- Cause

  Occurs when the condition that the connection terminal seems to be defective connection is detected at the main unit and additional cassette connection section.
- Suspected cause
  - Additional cassette installation failure
  - Foreign object (in connection part)
  - Additional cassette connection part failure
  - Additional cassette main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the Additional Cassette installation state** Check that the Additional Cassette is properly installed.	Go to step 2	Reassemble the Additional cassette
2	**Check the foreign material in connection part** Check that there is no foreign object trapped in the contact point between the main unit and the extension cassette	Go to step 3	Remove the foreign object from connection part.
3	**Check the operation after reinstalling the Connection part of additional cassette** Replace the connection part of additional cassette with normal product and check operation. Did the error occur?	Replace the additional cassette main board.	End

ADDITIONAL CASSETTE RECOVERY MODE ERROR (ERROR CODE:032101)

- Cause

  Occurs when the recovery mode is entered due to a failure of the firmware update of the additional cassette.
- Suspected cause
  - Additional cassette firmware update is failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Re-update the firmware.** Re-update the firmware in the error occurring state. Did the error occur after updating the firmware?	Replace the additional cassette main board. (Update the firmware after replacing the additional cassette main board)	End

ADDITIONAL_COMMUNICATION RELATED FATAL ERROR

- Error name
  - Addition communication error 1 (Error code:032151)
  - Addition communication error 2 (Error code:032152)
  - Addition communication error 3 (Error code: 032153)
  - Addition communication error 4 (Error code: 032154)
  - Addition communication error 5 (Error code: 032155)
  - Addition communication error 6 (Error code: 032156)
  - Addition communication error 7 (Error code: 032157)
  - Addition communication error 8 (Error code: 032158)
  - Addition communication error 9 (Error code: 032159)
  - Addition communication error 10 (Error code: 032160)
  - Addition communication error 11 (Error code: 032161)
  - Addition communication error 12 (Error code: 032162)
- Cause
  - Communication data abnormality due to noise etc.
  - Occurs when changing the number of stages of additional cassettes while the power is on.
- Suspected cause
  - Additional cassette connection part failure.
  - Additional cassette main board failure.
  - Main board failure.

- Troubleshooting

Step	Check and measure	Yes	No
1	**Did the corresponding error occur after the power was turned off and then back on?** Turn the power off and then leave the product for a while. Did the error occur when the power was turned back on?	Go to step 2	End
2	**Check the operation after reinstalling the additional cassette** Replace the additional cassette with normal product and check operation. Did the error occur?	Go to step 3	Replace the main board.
3	**Check the operation after reinstalling the Connection part of additional cassette** Replace the connection part of additional cassette with normal product and check operation. Did the error occur?	Replace the additional cassette main board.	End

CRCM FUSE BLOWN ERROR (ERROR CODE:033001)

- Cause

  CRCM fuse is blown

- Suspected cause
  - CRCM FFC inserted slanted
  - CRCM FFC failure
  - Main board failure

- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the CRCM FFC connection state.** Check that the PE sensor cable is properly connected.	Go to step 2	Reassemble
2	**Check the CRCM FFC state** Check the CRCM FFC state to make sure that the FFC is not damaged. (CRCM FFC connection part has come off, FFC disconnected, etc.)	Replace the main board	Replace the CRCM FFC

ASIC ACCESS ERROR (ERROR CODE: 033002)

- Cause

  Occurs if the CS rank setting value is not supported.

- Suspected cause
  - PCD setting data is not set correctly or is damaged.

- Troubleshooting

  Contact service support. (Rewriting of PCD data is required.)

FATAL ERROR WHEN SENDING SC (ERROR CODE: 033004)

- Cause

  Occurs if SC sending fails.

- Suspected cause
  - Main board failure (SOC abnormal operation on board)
- Troubleshooting

  Replace the main board

CRCM RELATED FATAL ERROR

- Error name
  - Read parity error (error code: 033006)
  - Write parity error (error code: 033007)
- Cause

  Communication error when reading/writing data from the CRCM

- Suspected cause
  - CRCM FFC detached
  - CRCM FFC disconnected/damaged
  - CRCM board failure
  - Main board failure
- Troubleshooting

Step	Check and measure	Yes	No
1	**Check the connection state of the CRCM FFC** Check that the FFC between the main board and CRCM board is connected correctly.	Go to step 2	Reconnect the FFC.
2	**Check whether the CRCM FFC is disconnected/damaged** Check that there is no disconnection between the main board and CRCM and that the connector parts are not bent up.	Go to step 3	Replace the CRCM FFC.
3	**Check the operation after reinstalling the CRCM board** Reinstall the CRCM board and check whether or not the error occurs. Did the error occur?	Replace the main board	Replace the CRCM FFC.

HOME POSITION SEEK ERROR (ERROR CODE: 034001)

☐ Cause

Occurs if the home position seek failed.

☐ Suspected cause

- Paper jam or foreign object (in CR operation area)
- CR lock lever failure (Maintenance Unit failure)
- Maintenance Unit gear train damaged

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Check for paper jam and foreign object** Check that there is no paper jam or foreign object in the CR operation area.	Go to step 2	Remove the jammed paper and foreign object
2	**Check the CR lock lever operation** Turn on the power and check that the CR lock lever is operating.	Contact service support.	Replace the Maintenance Unit

DEADLOCK AVOIDANCE IMPOSSIBLE (ERROR CODE: 034002)

☐ Cause

Occurs when cannot return because state of the lock lever and CR interference.

☐ Suspected cause

- Paper jam or foreign object (in CR scanning area)
- CR lock lever failure (Maintenance Unit failure)
- Maintenance Unit gear train damaged

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Check for paper jam and foreign object** Check that there is no paper jam or foreign object in the CR operation area.	Go to step 2	Remove the jammed paper and foreign object
2	**Check the CR lock lever operation** Turn on the power and check that the CR lock lever is operating.	Contact service support	Replace the Maintenance Unit

IMPOSSIBLE CONTACT DETECTION ERROR (ERROR CODE: 034003)

- Cause

  Contact detection is not possible even when CR performs specified step movement.

- Suspected cause
  - Paper jam or foreign object (in CR operation area)
  - CR lock lever failure
  - Main board failure

- Troubleshooting

Step	Check and measure	Yes	No
1	**Check for paper jam and foreign object** Check that there is no paper jam or foreign object in the CR operation area.	Go to step 2	Remove the jammed paper and foreign object
2	**Check the CR lock lever operation** Turn on the power and check that the CR lock lever is operating.	Replace the main board (If the trouble is not resolved, contact service support.)	Replace the Maintenance Unit

MOTOR RUNAWAY ERROR (ERROR CODE: 034010)

- Cause

  Occurs when state of motor being driven even though a voltage is not applied to the motor.

- Suspected cause
  - Main board failure

- Troubleshooting
  - Replace the main board

APG TARGET POSITION NOT REACHED ERROR (ERROR CODE:034011)

☐ Cause

Even if the APG reset operation is performed, it occurs when the home can not be detected and the position becomes unknown

☐ Suspected cause

- APG phase sensor failure
- Main board failure

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Check the APG phase sensor state** Perform the ”Individual action check (A56 APG Sensor check)”, and check the sensor state. Is the sensor normal?	Replace the main board	Replace the APG phase sensor

SMAP PHASE DETECTION ERROR (ERROR CODE: 034012)

☐ Cause

Occurs if sensor detection was not possible when PF roller rotation phase detection driving performed.

☐ Suspected cause

- SMAP phase sensor failure
- Rotation member (flap) for detection damaged
- Main board failure

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Check the rotation member (flap) for detection** Check that the rotation member (flap) for detection is not damaged.	Replace the following parts in sequence • SMAP phase sensor • Main Board (If the trouble is not resolved, contact service support.)	Repair impossible (Contact service support.)

PW DETECTOR FAILURE ERROR (ERROR CODE: 034016)

☐ Cause

Occurs when the output of the PW sensor is in a state lower than the prescribed condition and reflected light can not be obtained as expected.

☐ Suspected cause

- PW Shutter Solenoid failure
- PW Shutter failure
- PW sensor failure
- main board failure
- Dirt on reflection face of Platen.

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Check the reflection face of platen.** Check that dirt does not adhere to the reflection face of platen.	Go to step 2	Clean the reflection face of platen.
2	**Check the operation of PW Shutter Solenoid** Perform “Individual action check (A30 PW Sensor Shutter Solenoid)”, and check the Solenoid State. Is the Solenoid operation normal?	Go to step 3	Replace the PW Drive Shutter.
3	**Check the operation of PW Shutter** Perform “Individual action check (A55 PW Sensor Check)”, and check the PW shutter operation. Is the PW Shutter operation is normal?	Go to step 4	Replace the CR Unit.
4	**Check the operation after reinstalling the Main board** Replace the main board with normal product and check operation. Did the error occur?	Replace the PW Sensor.	Replace the main board.

PW SENSOR DETECTED FOREIGN OBJECT ERROR (ERROR CODE:034017)

☐ Cause

Occurs when the output of the PW sensor is in a state lower than the prescribed condition and reflected light can not be obtained as expected.

☐ Suspected cause

- PW Shutter Solenoid failure
- PW Shutter failure
- PW sensor failure
- Main board failure

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Check the reflection face of platen.** Check that dirt does not adhere to the reflection face of platen.	Go to step 2	Clean the reflection face of platen.
2	**Check the operation of PW Shutter Solenoid** Perform “Individual action check (A30 PW Sensor Shutter Solenoid)”, and check the Solenoid State. Is the Solenoid operation normal?	Go to step 3	Replace the PW Drive Shutter.
3	**Check the operation of PW Shutter** Perform “Individual action check (A55 PW Sensor Check)”, and check the PW shutter operation. Is the PW Shutter operation is normal?	Go to step 4	Replace the CR Unit.
4	**Check the operation after reinstalling the Main board** Replace the main board with normal product and check operation. Did the error occur?	Replace the PW Sensor.	Replace the main board.

3RD NIP RELEASE SENSOR FAILURE ERROR (ERROR CODE: 034018)

☐ Cause

Intermediate NIP Release sensor failure or Intermediate Release Solenoid failure.

☐ Suspected cause

- Intermediate NIP Release sensor failure
- Intermediate Release Solenoid failure
- Main board failure

☐ Troubleshooting

Step	Check and measure	Yes	No
1	**Check the Intermediate Release Solenoid and Intermediate NIP release sensor_1** Perform "Individual action check (A32 Nip Release Solenoid / Sensor)". Did you hear of the solenoid operation sound?	Go to step 2	Replace the Intermediate release solenoid.
2	**Check the Intermediate Release Solenoid and Intermediate NIP release sensor_2** Perform "Individual action check (A32 Nip Release Solenoid / Sensor). Is the check result is not good?	Replace the Intermediate NIP Release sensor. (If the trouble is not resolved, replace the main board)	End

MATCH ERROR BETWEEN MAIN ROM AND μ SD ROM (PDL Program) (ERROR CODE:205604)

☐ Cause

Occurs when the firmware version of the main firmware and the μSD (PDL Program) do not match.

☐ Suspected cause

- Firmware version of main firmware and the μSD (PDL Program) do not match.

☐ Troubleshooting

Perform the firmware update, and matching the firmware version of the Main firmware and μSD (PDL Program).

6.2.3 Troubleshooting from Failure Symptom

Table 6-4. Symptom List

Symptom	Reference
A Nozzles missing	P. 172
B ADF/scanner trouble	P. 175
Ink bleed (characters distorted/blurred)	P. 177
White or black bands (in feed direction)	P. 179
Print position offset in CR operation direction	P. 182
Print position offset in feed direction	P. 184
Print smudges	P. 186
Color deviation	P. 189
Blank printout (blank paper ejected)	P. 192
Stackability poor	P. 194
Lines not smooth and ruled-line deviation	P. 196
Paper damaged or bent	P. 198
Double feeding	P. 200
Abnormal sound	P. 202

NOZZLES MISSING

- Symptom

  Nozzles missing

- Cause
  - Nozzles clogged

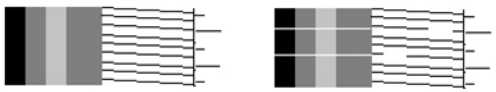


Figure 6-3. Nozzles Clogged

  - Maintenance unit malfunction
  - Air bubbles collected in ink tubes
  - Head defective

☐ Troubleshooting

Step	Check and Measure	YES	No
1	**Check the nozzle check pattern** Print nozzle check patterns and check whether there are nozzles missing or deflection. Nozzle condition is excellent? ☐ Nozzle check pattern print method is belows. ■ Normal menu (User Menu) • [Setting] ⇒ [Maintenance] ⇒ [Print Head Nozzle Check] ■ Service Support Mode • B32 Nozzle Check Pattern (p. 267)	End (No reproduction)	Nozzles missing in several places • Nozzles missing rank • Obtain the information of cleaning 1 to 5 from the service status sheet (p. 812) and execute head cleaning according to the nozzle missing state check matrix table. If nozzle missing is not improved, go to step 3.
2	**Check the Maintenance Unit** Check the following point about the Maintenance Unit (Execute "CR Unlock Power Off2" from the Service Support mode(p. 100) in advance to release the CR lock before checking the Maintenance Unit. Maintenance Unit is correct condition? 1. Check the cap parts • Check that the cap surfaces are not dirty. • Hold the CR belt with a hand and move the CR to the home position and visually check that the nozzle surfaces are capped properly. 2. Check the wiper parts • Check that there is not soiling or damage to the wiper parts • With the cap sliders drawn to the right side, rotate the PF gears by hand and check that the wipers move up and down	Go to step 4	☐ When cap/wiper is dirty • Cleaning the cap surface / wiper part ☐ When capping failure of the nozzle surface is confirmed • Replace the Maintenance Unit.(p. 504) ☐ When the wiper part breakage / wiper operation failure is confirmed • Replace th Maintenance Unit.(p. 504) If nozzle missing is not improved after performing the above, go to Step 4.
3	**Check the ink tubes** Visually check that air bubbles have not collected in the ink tubes. (If there are parts where the color is unmistakably pale in the supply system ink tubes, air bubbles may have collected.) Ink tube is correct condition?	Go to step 5	Execute strong head cleaning and then check that the bubbles have been removed from inside the tubes If nozzle missing is not improved after performing the above, go to Step 4.
4	**Replace the print head** If the symptom is not resolved even after performing the steps above, replace the print head.	Replace the print head.(p. 552)	

☐ Nozzle missing state matrix table

Table 6-5. Nozzle Missing State Matrix Table

Cleaning history (strongest cleaning within 3 days, out of 5 history items)		Nozzles missing state				
		0 (E0) No nozzles missing	1 (E1) Total of 5 nozzles or less	2 (E2) 3 to 32 nozzles	3 (E3) 33 nozzles or more	F (EF) 6 or more nozzles failed
A	None	A-0*	A-1	A-2	A-3	A-4
B	CL/CL2	B-0*	B-1	B-2	B-3	B-4
C	CL3	C-0*	C-1	C-2	C-3	C-4
D	Head Cleaning Strong	D-0*	D-1	D-2	D-3	D-4

Note: Even if there were no missing nozzles in "Nozzle Verification Technology" detection, execute when there are print defects (cleaning is not necessary if there are not).

Resolution examples:

A-0/1 : Recommended to execute Head Cleaning CL1
A-2/3 : Recommended to execute Head Cleaning CL2
A-4, B-0 to B-4 : Recommended to execute Head Cleaning CL3
C-0 to C-4 : Recommended to execute Head Cleaning Strong
D-0 to D-4 : Recommend to perform judgment before head replacement

■ How to view the nozzle missing state matrix table

1. Check the cleaning history and nozzle missing state (rank). It can be checked by Status Sheet Print (P. 812).

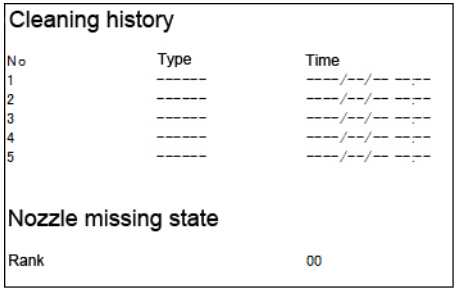


Figure 6-4. Cleaning History

2. Check the place where the checked cleaning history and nozzle missing state (rank) intersect in the matrix table.
3. Refer to the item at the intersecting place and perform the recommended measure.
   Example) If the strongest cleaning within 3 days was Head Cleaning CL2 and the nozzle rank was 02, the place of intersection is B-2 so execute the recommended Head Cleaning CL3.

ADF/SCANNER TROUBLE

- Symptom

  Does not occur during printing (printing from a PC) and occurs only when copying from the ADF or scanning glass.

- Cause
  - Glass dirty
  - Scanning sensor dirty
  - Feed path roller dirty/deteriorated
  - Feed path foreign object/damaged
  - ADF Hinge damaged
  - ADF/SCN CIS module failure

☐ Troubleshooting

Symptom	Check and measure	Correspondence after confirmation
Image defect 1 Black line soiling	☐ ADF Unit Check the contamination of the ADF scan glass surface / ADF reading part. [Measure] Clean the ADF scan glass surface/ADF reading part. ☐ SCN Unit Check the contamination of the SCN glass surface. [Measure] Clean the SCN glass surface.	If the symptom continues to occur after cleaning, replace the ADF/SCN Unit.(p. 423)
Image defect 2 Some or all of an image is not scanned	1. Check the contamination of ADF/SCN glass surface. [Measure] Clean the glass surface of the ADF/scanning glass. 2. Check the scanner cable connection. [Measure] Reconnect the Scanner cable correctly. 3. If the scanned document and size recognized on the printer side do not match, replace the ADF/SCN Unit.	If the symptom continues to occur after carrying out the measure, replace the ADF/SCN Unit.(p. 423)
Image defect 3 Light	Scanning (CIS sensor) + glass back side dirty? [Measure] Clean the corresponding parts.	If the symptom continues to occur after cleaning, replace the ADF/SCN Unit.(p. 423)
Image defect 4 Image skewed on paper (only when ADF) (Image skewed only when copying)	Check that the height of the ADF is appropriate in relation to the scanning glass. Check that the ADF is attached parallel to the scanning glass.	☐ Replace the hinges (p. 423). ☐ If the ADF position is offset from the scanning glass even after replacing the hinges, replace the ADF/SCN Unit (p. 423).
Image defect 5 Image defects other than the above that occur only when copying	1. Check the contamination of ADF/SCN glass surface. [Measure] Clean the ADF/SCN glass surface. 2. Check the scanner cable connection. [Measure] Reconnect the Scanner cable correctly.	If the symptom continues to occur after carrying out the measure, replace the ADF/SCN Unit.(p. 423)
Feed defect 1 Double Feeding	Clean the ADF Pickup Roller Assy/ADF Pad.	If the symptom continues to occur after cleaning, replace the ADF Pickup Roller Assy and ADF Pad.(p. 442) (If the symptom continues to occur after replacing the ADF Pickup Roller and ADF Pad, replace the ADF/SCN Unit (p. 423))
Feed defect 2 Document bending	Check that there is no foreign object or damage in the ADF feed path.	If a part is found to be damaged, etc. after cleaning the path, replace the corresponding part or ADF/SCN Unit.(p. 423)
Feed defect 3 Paper jam occurs when feeding from the ADF	☐ Check that the ADF is closed correctly. ☐ Check that the height of the ADF is appropriate. ☐ Clean the ADF feed path. ☐ Clean the feed roller surfaces.	Replace the ADF/SCN Unit.(p. 423)

INK BLEED (CHARACTERS DISTORTED/BLURRED)

☐ Symptom

Characters and images are distorted or blurred

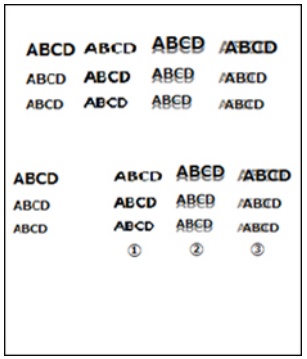


Figure 6-5. Ink Bleed

☐ Cause

- ADF/SCN Unit failure
- Paper
- Ink
- Miss-match the Printer setting and print paper.
- Print head failure
- Temperature and humidity sensors failure
- PG adjustment value deviation

☐ Troubleshooting

Step	Check and measure	YES	No
1	**Check whether printing or copying** Check whether the symptom occurs with printing or with copying.	☐ Occurs with printing and copying. Go to the Step 2	☐ Occurs with copying only Refer to ADF/SCANNER TROUBLE (→P. 175)
2	**Check the settings** Check that the print settings and paper type setting is correct.	Go to step 3	Change the settings. If the symptom continues to occur after changing the setting, go to step 3.
3	**Check the paper** Print with standard paper and check that there is no character distortion or blurring.	Go to step 4	Recommend using the standard paper. If the symptom continues to occur after changing the paper to standard paper, go to step 4.
4	**Check the ink** Check that genuine ink packs are attached.	Go to Step 5	Recommend using genuine ink packs. If the symptom continues to occur after changing to the genuine ink packs, go to step 5.
5	**Check the nozzle check pattern** Print nozzle check patterns and check whether there are nozzles missing or deflection. Nozzle condition is excellent? ☐ Nozzle check pattern print method is belows. ■ Normal menu (User Menu) • [Setting] ⇒ [Maintenance] ⇒ [Print Head Nozzle Check] ■ Service Support Mode • B32 Nozzle Check Pattern(p. 267)	Go to step 6	Nozzles missing in several places • Nozzles missing rank • Obtain the information of cleaning 1 to 5 from the service status sheet (p. 812) and execute head cleaning according to the nozzle missing state check matrix table. If nozzle missing is not improved, refer to Nozzles Missing (→P. 172). If the symptom continues to occur, go to step 6.
6	**Check the PG** Check the PG with the thickness gauge and check that it is within the specified value range (1.35 ±0.05 mm).	Go to step 7	Perform the PG Adjustment (p. 265). If the symptom continues to occur after performing the PG adjustment, go to step 7
7	**Check the temperature** Check that the head thermistor and temperature and humidity sensor temperatures are appropriate. 1. B24 Temp. and hum. Sensor Check (p. 266) 2. C11 Head Thermistor Check Appropriate temperature: (2) - (1) = -3 to +5[°C] * The head temperature becomes very hot after continuous printing so wait about 1 hour after printing before performing the check.	Contact to service support.	1. Replace the print head (p. 552). If the symptom continues to occur, 2. Replace the temperature and humidity sensors (p. 493).

WHITE OR BLACK BANDS (IN FEED DIRECTION)

☐ Symptom

White or black (dark) bands occur in the horizontal direction on images.

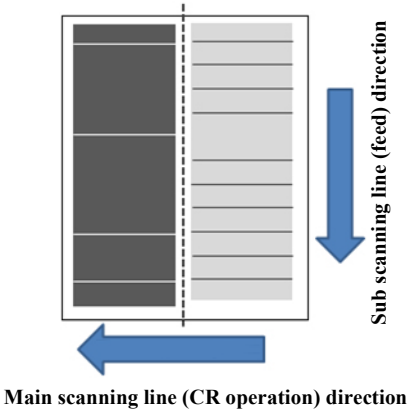


Figure 6-6. White or Black Bands

☐ Cause

- Paper settings/drive settings of main unit are inappropriate
- Nozzles missing
- Maintenance unit
- Adjustment values are inappropriate
- Paper skewed

☐ Troubleshooting

Step	Check and measure	YES	No
1	**Check the settings** Check that the paper type and size are appropriate. Check that the rubbing avoidance mode is “off”.	Go to step 1	Change the settings.
2	**Check the spacing of white or black bands** 1. If occurs periodically at head length (33 mm) = Nozzles missing, adjustment values 2. If occurs in multiple places within the head length (33 mm) = Nozzles missing * If the spacing of bands is 66 mm and a white band and black band occurs alternately or a dark white band and light white band or a dark black band and a light black band appears alternately and repeatedly, contact Smart Charge Cent.	☐ In the case_1 Check that there is no nozzles missing and then perform print trouble resolutions. * However, if the trouble only occurs with specific paper, perform the print trouble remedies for each paper.	☐ In the case_2 Go to step 3
3	**Check the nozzle check pattern** Print nozzle check patterns and check whether there are nozzles missing or deflection. Nozzle condition is excellent? ☐ Nozzle check pattern print method is belows. ■ Normal menu (User Menu) • [Setting] ⇒ [Maintenance] ⇒ [Print Head Nozzle Check] ■ Service Support Mode • B32 Nozzle Check Pattern (p. 267)	Go to step 4	Nozzles missing in several places • Nozzles missing rank • Obtain the information of cleaning 1 to 5 from the service status sheet (p. 812) and execute head cleaning according to the nozzle missing state check matrix table. If nozzle missing is not improved, refer to Nozzles Missing (→P. 172). If the symptom continues to occur, go to step 4.
4	**Check the Maintenance Unit** Check the following point about the Maintenance Unit (Execute “CR Unlock Power Off2” from the “Service Support mode(p. 100)” in advance to release the CR lock before checking the Maintenance Unit. Maintenance Unit is correct condition? 1. Check the cap parts • Check that the cap surfaces are not dirty. • Hold the CR belt with a hand and move the CR to the home position and visually check that the nozzle surfaces are capped properly. 2. Check the wiper parts • Check that there is not soiling or damage to the wiper parts • With the cap sliders drawn to the right side, rotate the PF gears by hand and check that the wipers move up and down	Go to step 5	☐ When cap/wiper is dirty • Cleaning the cap surface / wiper part ☐ When capping failure of the nozzle surface is confirmed • Replace the Maintenance Unit.(p. 504) ☐ When the wiper part breakage / wiper operation failure is confirmed • Replace th Maintenance Unit.(p. 504) If nozzle missing is not improved after performing the above, go to Step 5.

Step	Check and measure	YES	No
5	**Check whether or not skewing** • Check that there is no paper skewing when feeding. • Is there a difference between the banding on the left and right (left black and right white, etc.) • If there is skewing, check the paper loaded, paper feeding path, and solenoid operation B29 NIP Release Solenoid/ Sensor (p. 267)	Contact to service support	If the solenoid does not operate, replace it (p. 652).

PRINT POSITION OFFSET IN CR OPERATION DIRECTION

☐ Symptom

The image is offset in the main scanning direction (left and right margins are not equal) and the left or right edge of the image is cut off.

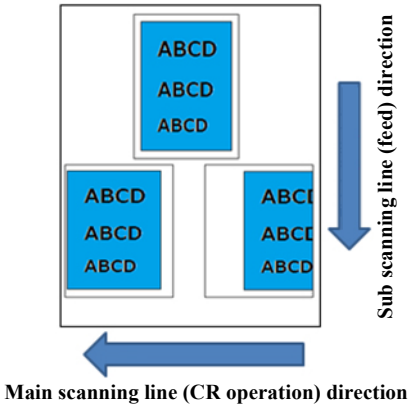


Figure 6-7. Print Position Offset in CR Operation Direction

☐ Cause

- Paper load position offset
- Paper settings/drive settings of main unit are inappropriate
- Print start position process adjustment value deviation
- PW sensor is dirty or has deteriorated
- PW sensor adjustment value incorrect
- CR scale dirty, damaged, or defective

☐ Troubleshooting

Step	Check and Measure	YES	No
1	**Check the paper cassette** Check that the paper size and guide position are appropriate.	Go to step 2	☐ Correct the guide position ☐ Straighten the paper edges If the symptom continues to occur, go to step 2.
2	**Check the settings** Main unit settings: Check that the paper settings and automatic size detection settings of the main unit are appropriate. Driver: Check that a value other than 0 is not input for the offset in the extended settings.	Go to step 3	Change the settings If the symptom continues to occur, go to step 3.
3	**Check the print start position process adjustment value** Check that the print start position process adjustment value is appropriate. 1. B50 Print Start Pos. FASF (p. 271) 2. B51 Print Start Pos. RASF (p. 271) 3. B47 PTS Position Adjust (p. 270)	Go to step 4	Enter an appropriate value from the adjustment pattern. If the symptom continues to occur, go to step 4.
4	**Check the PW sensor** 1. A55 PW Sensor Shutter Check (p. 214) 2. A30 PW Sensor shutter Solenoid (p. 212) 3. B49 PW Sensor Correct (p. 270)	Go to step 5	☐ If trouble is occurred in “1”,”2” Replace the PW sensor ☐ In the “3” select and enter an appropriate value from the adjustment pattern If the symptom continues to occur, go to step 5.
5	**Check the rollers** Check that the surfaces and attachment states of the intermediate rollers and feed rollers are appropriate. (Locked part is askew, assembling of unit faulty, something is caught, etc.)	Go to step 6	Reattach the rollers. If roller is damaged, replace any rollers. If the symptom continues to occur, go to step 6.
6	**Check the CR scale** Visually check the CR scale to confirm that it is not dirty or damaged. B21 CR Scale Check (p. 266)	Contact service support	1. Replace the CR scale 2. Replace the CR Unit (CR scale sensor) (p. 566)

PRINT POSITION OFFSET IN FEED DIRECTION

☐ Symptom

The image is offset in the sub scanning (feed) direction (top and bottom margins are not equal) and the top or bottom edge of the image is cut off.

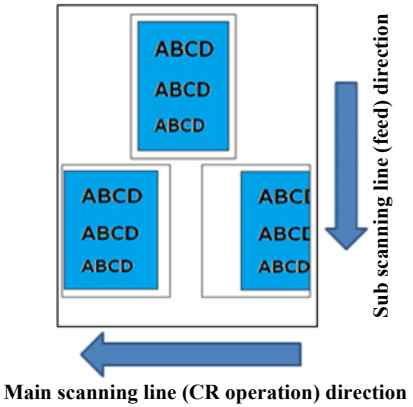


Figure 6-8. Print Position Offset in Feed Direction

☐ Cause

- The paper that is being used is inappropriate
- Paper settings/drive settings of main unit are inappropriate
- PE sensor lever
- PE sensor
- PW sensor problem

☐ Troubleshooting

Step	Check and Measure	YES	No
1	**Check the paper** Check that suitable paper (1. paper is not printed. 2. paper don't have punch holes, etc.) is being used.	Go to step 2	Change the paper to suitable paper.
2	**Check the settings** Main unit settings: Check that the paper settings and automatic size detection settings of the main unit are appropriate. Driver: Check that a value other than 0 is not input for the offset in the extended settings.	Go to step 3	Change the settings If the symptom continues to occur, go to step 3.
3	**Check the feed rollers** Check that the contamination and damage are not attached to the feed roller.	Go to step 4	Cleaning the feed roller. Replace the feed rollers
4	**Check the PE sensor lever** Check that the state and movement of the PE sensor lever are normal. (Perform the following item from service support mode) B23 PE Sensor Check (p. 266)	Go to step 5	Replace the PE sensor lever
5	**Check the PE sensor adjustment value** Check that the PE sensor process adjustment value is appropriate. (Perform the following items from service support mode) 1. B52 PE Adjust FASF (p. 271) 2. B53 PE Adjust RASF (p. 271)	Go to step 6	Enter an appropriate value from the adjustment pattern
6	**Check the PW sensor adjustment value** Check that the PW sensor process adjustment value is appropriate. (Perform the following items from service support mode) 1. A55 PW Sensor Shutter Check (p. 214) 2. A30 PW Sensor shutter Solenoid (p. 212) 3. B49 PW Sensor Correct (p. 270)	Contact service support	☐ If trouble is occurred in “1”,”2” Replace the PW sensor ☐ In the “3” select and enter an appropriate value from the adjustment pattern

PRINT SMUDGES

- Symptom

  Unexpected smudges can be seen somewhere (including back side) on printouts.

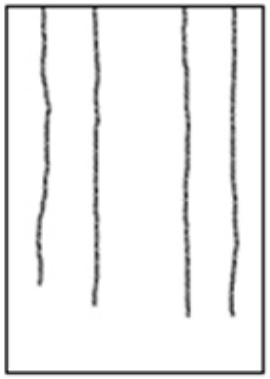


Figure 6-9. Print smudges

- Cause
  - Dirt on scanner glass is scanned (when copying)
  - Dirt transferred from feed path
  - Contact with nozzle surface

☐ Troubleshooting

Step	Check and measure	YES	No
1	**Check whether printing or copying** Check whether the symptom occurs with printing or with copying.	☐ Occurs with printing and copying. Go to step 2	☐ Occurs with copying only Refer to ADF/SCANNER TROUBLE (→P. 175).
2	**Check whether both or only duplex** Check whether or not occurs only when duplex printing or occurs regardless of whether duplex printing or single-sided printing.	☐ If occurs with both. Go to step3	☐ If occurs only with duplex Check/clean/replace the duplex unit.
3	**Confirm the contamination adherence.** ☐ Check inside the product Check that there is no noticeable dirt inside the product. ☐ Check the platen Check that there is no noticeable dirt on the platen. ☐ Check the feed path (roller surfaces) If there are smudges at the center of the paper, check the various feed rollers. ☐ CR side surface Check that there is no dust or ink adhered.	Go to step 4	Clean the corresponding parts. * When cleaning the gaps in the SMAP driven roller, you can raise the driven roller a little to make cleaning easier by executing [Settings] > [Printer Cleaning] > [Remove Scraps of Paper]. * If there are large ink deposits, check that there is no ink leaking. If there is noticeable dirt on the platen, operation without paper may have occurred so execute cleaning and check the following items as well. 1. Paper size setting of main unit / driver 2. Check the PW sensor operation (refer to step 7 below)
4	**Check the paper and settings** Check that the paper is in an appropriate state (no curling). Check whether or not the paper settings are appropriate.	Go to Step 5	Change the paper or settings. Use the rubbing avoidance mode. If the symptom continues to occur, go to step 5.

Step	Check and measure	YES	No
5	**Check the Maintenance Unit.** Check the following point about the Maintenance Unit. (Execute "CR Unlock Power Off2" from the" Service Support mode (p. 100)" in advance to release the CR lock before checking the Maintenance Unit. Maintenance Unit is correct condition? 1. Check the cap parts • Check that the cap surfaces are not dirty. • Hold the CR belt with a hand and move the CR to the home position and visually check that the nozzle surfaces are capped properly. 2. Check the wiper parts • Check that there is not soiling or damage to the wiper parts • With the cap sliders drawn to the right side, rotate the PF gears by hand and check that the wipers move up and down	Go to step 6	☐ When cap/wiper is dirty • Cleaning the cap surface / wiper part ☐ When capping failure of the nozzle surface is confirmed • Replace the Maintenance Unit.(p. 504) ☐ When the wiper part breakage / wiper operation failure is confirmed • Replace th Maintenance Unit.(p. 504) If nozzle missing is not improved after performing the above, go to Step 6.
6	**Check around the CR Unit** Remove the CR Unit and check that there is no dirt on the bottom surface (p. 580).	Go to step 7	Clean the CR bottom surface. Note: Be careful not to touch the nozzle surface.
7	**Check the PW sensor** 1. A55 PW Sensor Shutter Check (p. 214) 2. A30 PW Sensor shutter Solenoid (p. 212) 3. B49 PW Sensor Correct (p. 270)	Go to step 8	☐ If trouble is occurred in "1","2" Replace the PW sensor ☐ In the "3" Select and enter an appropriate value from the adjustment pattern
8	**Check the PG** Check the PG with the thickness gauge and check that it is within the specified value range (1.35 ±0.05 mm).	Contact to Service support	Perform the PG Adjustment (p. 265).

COLOR DEVIATION

- Symptom
  - Colors are completely different (1)
  - Another color is mixed creating a gradation (2)
  - Color is slightly different (3)

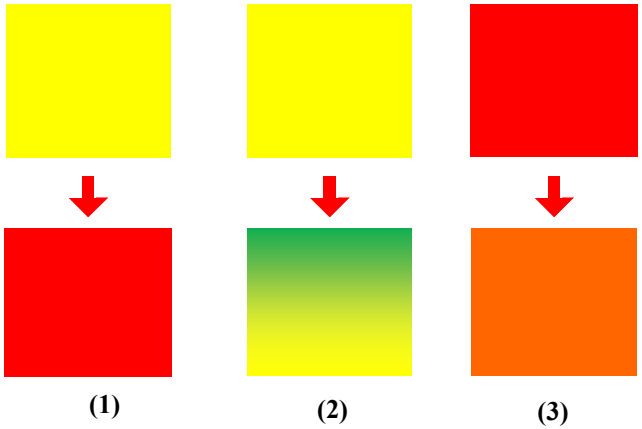


Figure 6-10. Print smudges

- Cause
  - Different comparison conditions
  - Scanner abnormal condition
  - Paper type
  - Printer Settings
  - FW failure
  - Print Head failure
  - Maintenance Unit failure
  - Air bubbles in the Ink tube

☐ Troubleshooting

Step	Check and measure	YES	No
1	**Check the conditions** Check that any conditions below the lowest limits are the same when comparing colors in two or more different printouts. ☐ Light source of comparison location, printer, paper, print settings, and print date and time ☐ Paper type: [Basic Settings] > [Paper Type] ☐ Ink density: [Utilities] > [Extended Settings] > [Print Density].	☐ When conditions are the same Go to Step 2	☐ When the conditions differ The cause is highly likely to be not a failure but one of the following. Different light source, color gamut unique to device, paper, ink density, aging variation
2	**Check whether printing or copying** Check whether the symptom occurs with printing or with copying.	☐ Occurs with printing and copying. Go to step 3	☐ Occurs with copying only Refer to ADF/SCANNER TROUBLE (→P. 175).
3	**Check the paper** 1. Check whether or not the front and back sides of the paper match. 2. Check whether or not the result is the same even when printing on plain paper.	Go to step 4	Print on appropriate paper.
4	**Check the settings** 1. Check whether or not the firmware is the latest version. 2. Check that the paper settings are appropriate.	Go to step 5	• Update the firmware. • Change the settings
5	**Check the nozzle check pattern** Print nozzle check patterns and check whether there are nozzles missing or deflection. Nozzle condition is excellent? ☐ Nozzle check pattern print method is belows. ■ Normal menu (User Menu) • [Setting] ⇒ [Maintenance] ⇒ [Print Head Nozzle Check] ■ Service Support Mode • B32 Nozzle Check Pattern (p. 267)	Go to step 6	Nozzles missing in several places • Nozzles missing rank • Obtain the information of cleaning 1 to 5 from the service status sheet (p. 812) and execute head cleaning according to the nozzle missing state check matrix table. If nozzle missing is not improved, refer to Nozzles Missing (→P. 172). If the symptom continues to occur, go to step 6.

Step	Check and measure	YES	No
6	**Check the Maintenance Unit** Check the following point about the Maintenance Unit. (Execute “CR Unlock Power Off2” from the ”Service Support mode (p. 100)” in advance to release the CR lock before checking the Maintenance Unit. Maintenance Unit is correct condition? 1. Check the cap parts • Check that the cap surfaces are not dirty. • Hold the CR belt with a hand and move the CR to the home position and visually check that the nozzle surfaces are capped properly. 2. Check the wiper parts • Check that there is not soiling or damage to the wiper parts • With the cap sliders drawn to the right side, rotate the PF gears by hand and check that the wipers move up and down	Go to step 7	☐ When cap/wiper is dirty • Cleaning the cap surface / wiper part ☐ When capping failure of the nozzle surface is confirmed • Replace the Maintenance Unit.(p. 504) ☐ When the wiper part breakage / wiper operation failure is confirmed • Replace th Maintenance Unit.(p. 504) If nozzle missing is not improved after performing the above, go to Step 7.
7	**Check the ink tubes** Visually check that air bubbles have not collected in the ink tubes. If there are parts where the color is unmistakably pale in the supply system ink tubes, air bubbles may have collected.	Go to step 8	Execute strong head cleaning and then check that the bubbles have been removed from inside the tubes
8	**Replace the Print head** If the symptom is not resolved even after performing the steps above, replace the print head.	Replace the print head (p. 552).	

BLANK PRINTOUT (BLANK PAPER EJECTED)

☐ Symptom

Blank paper is printed when printing.

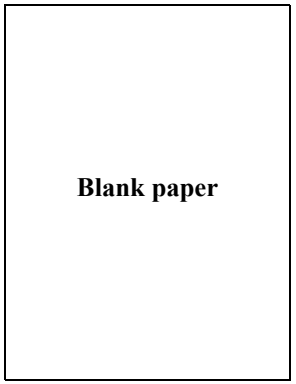


Figure 6-11. Blank Printout (Blank Paper Ejected)

☐ Cause

- Paper (Used paper, heavy paper)
- Print Settings
- Network trouble
- Feed/retard rollers failure
- Maintenance Unit (caps/wipers)
- Ink Supply Unit (tube, pump, air release valve, ink end sensor)
- Main Board failure
- Head FFC failure
- Print Head failure

☐ Troubleshooting

Step	Check and measure	YES	No
1	**Check the operation when blank pages are ejected (point: whether blank pages ejected or blank pages printed)** Check whether the machine begins the print operation (CR moves right and left multiple times) or not.	☐ Begins print operation (CR moves) Go to step 6	☐ Does not begin print operation (CR does not move) Go to step 2
2	**Check the paper** Check whether or not using paper that is thick such as paper that has already been printed on. Check whether or not the paper size and edge guide position are appropriate.	Go to step 3	☐ Change the paper. ☐ Set the edge guide of paper cassette correctly.
3	**Check the settings** Check whether or not the paper settings of the main unit and driver are appropriate. Check whether or not blank paper parts are included in the print data.	Go to step 4	Change the settings
4	**Check the network.** If the data does not arrive for 5 or more minutes after the print command, blank paper is ejected due to a timeout error. Check whether or not blank print is occur by internal printing (status sheet, etc.).	Go to step 5	If printing wirelessly, check whether prints with a wired connection.
5	**Check the feed/retard rollers.** Check whether or not the feed/retard rollers are attached correctly and whether or not the surfaces are dirty.	Go to step 6	If the rollers are not attached appropriately, reattach them. Replace the rollers if necessary when damaged or the symptom is not resolved by cleaning the surfaces.
6	**Check the nozzle check pattern** Print nozzle check patterns and check whether there are nozzles missing or deflection. Nozzle condition is excellent? ☐ Nozzle check pattern print method is belows. ■ Normal menu (User Menu) • [Setting] ⇒ [Maintenance] ⇒ [Print Head Nozzle Check] ■ Service Support Mode • B32 Nozzle Check Pattern (p. 267)	Go to step 7	Nozzles missing in several places • Nozzles missing rank • Obtain the information of cleaning 1 to 5 from the service status sheet (p. 812) and execute head cleaning according to the nozzle missing state check matrix table. If nozzle missing is not improved, refer to Nozzles Missing (→P. 172). If the symptom continues to occur, go to step 7.
7	**Check the main board.** Check that there is continuity of the head circuit fuses (F700 and F701) on the main board.	Go to step 8	Replace the main board (p. 493).
8	**Check the head FFC.** Visually check the FFC terminals to make sure they are not bent up or damaged.	Go to step 9	Replace the head FFC (p. 480).
9	**Replace the print head** If the symptom is not resolved even after performing the steps above, replace the head.	Replace the print head (p. 552).	

STACKABILITY POOR

- Symptom
  - Paper is output with the leading edge curled.
  - Alignment property of paper is poor, and varies vertically and horizontally.

Figure 6-12. Stackability poor

- Cause
  - Environment
  - Paper
  - Print settings
  - Output tray

☐ Troubleshooting

Step	Check and measure	YES	No
1	**Check the stacker position** Check that the stacker is attached correctly.	Go to step 2	Reattach the stacker correctly.
2	**Check the paper** • Check that the paper is within the specifications (64 g/m^2 or more). • Check that the paper is long grain. • Check that the paper is stored appropriately. • Check that the operating environment is appropriate.	Go to step 3	Explain that the cause is due to external factors and advise the customer to change the paper/environment. Or go to step 4
3	**Check the settings** • Check whether or not the paper settings of the driver and main unit are appropriate. • Check whether or not the print density is appropriate.	Go to step 4	1. Correct the settings. 2. Lower the print density.
4	**Check the output guide position** Check whether or not the output guides are raised for the paper for which stackability is poor.	Go to step 5	Change the output guide height with the output guide lever.
5	**Output tray** Check whether or not the output tray/guide is dirty or damaged	Contact service support	Clean if dirty. If scratched, damaged, etc, replace the output tray if necessary (p. 396).

RULED-LINE DEVIATION AND LINES NOT SMOOTH

- Symptom
  - Printed lines are not smooth.
  - Lines printed in double in parts (steps 1 and 2)
  - Color deviation of part of mixed colors (steps 1 and 2)

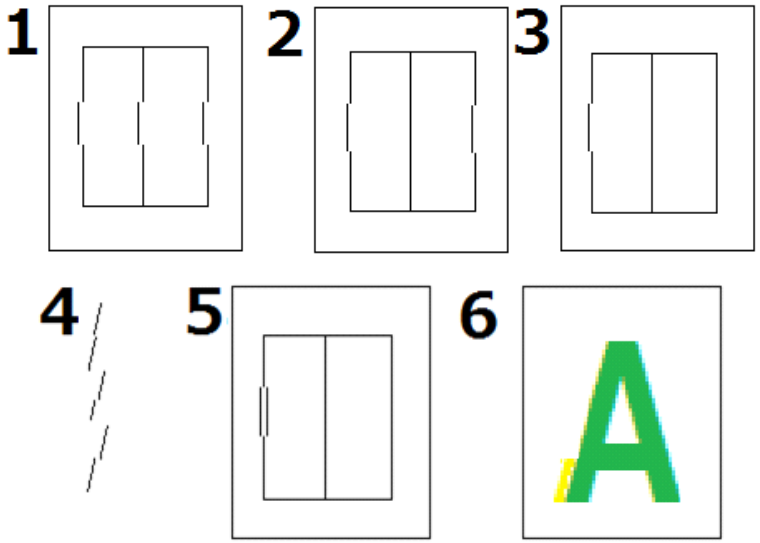


Figure 6-13. Ruled-Line Deviation And Lines Not Smooth

- Cause
  - Paper state
  - Print Settings
  - CR scale reading failure
  - Foreign matter on CR scanning lines
  - Overload when CR operation
  - Adjustment value failure
  - PG right and left difference

☐ Troubleshooting

Step	Check and measure	YES	No
1	**Check the paper** Check that the paper surface is flat.	Go to step 2	Print using standard paper.
2	**Check the settings** • Check that the paper settings are appropriate. • Check that the print quality setting is set to standard or to give priority to quality.	Go to step 3	Correct the settings. If the print quality setting is set to give priority to speed, change it to standard or to give priority to quality.
3	**Check the CR scale** Visually check the CR scale to confirm that it is not dirty or damaged. (Perform the following item from service support mode) • B21 CR Scale Check (p. 266)	Go to step 4	Replace the CR scale (p. 566).
4	**Check the CR operation** Execute "CR Unlock Power Off2" of the service support mode to release the CR. 1. Move the CR left and right while holding the belt and check that it moves smoothly. 2. Check that there is no foreign mater on or damage to the CR shaft, CR guide frames, and CR ribs. 3. Check that the CR belt is not damaged or worn out.	Go to step 5	Clean and apply grease if necessary.
5	**Check the Bi-D Adjustment value** Print adjustment patterns and check that the adjustment values are not deviated. (Perform the following items from service support mode) ☐ When lines are offset overall 1. B46 Bi-D Adjust 2. B48 Bi-D Band Adjust ☐ When the center of the image is correct but both edges of the image (width of about 10 mm) are offset (image 2) even after performing the above 1. B45 PTS Acc / Dec. Adjust	Go to step 6	Enter an appropriate value from the adjustment pattern
6	**Check the Head Angular Adjustment value** (Perform the following item from service support mode) 1. Execute [B43 Head Angular Adjustment Mech] and adjust the CR angular while viewing the printed patterns. 2. After CR mechanism adjustment is completed, execute [B44 Head Angular Adjustment Soft-A],[B69 Head Angular Adjustment Soft-B] and adjust the remaining difference.	Go to step 7	1. Refer to the print patterns and perform CR angular adjustment. 2. Enter an appropriate value from the adjustment pattern
7	**Check the PG** Check the PG with the thickness gauge and check that it is within the specified value range (1.35 ±0.05 mm).	Contact to service support.	perform the PG Adjustment (p. 265)

PAPER DAMAGED OR BENT

- Symptom
  - Printed paper is damaged or bent

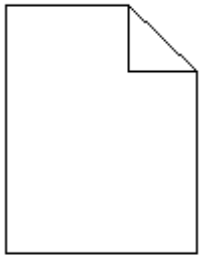


Figure 6-14. Paper Damaged or Bent

Points for if bent when duplex printing		
Timing	**Way in which bent**	**Cause**
Bent by pulling out after printing one side	Bent for one side	SMAP driven roller Foreign object in path Flap
Bent after printing second side	Bent for second side	CR EJ holder

- Cause
  - Environment
  - Paper
  - Feed path foreign object
  - Flap failure
  - EJ holder
  - PG value abnormal
  - Ink density excessive
    etc.

☐ Troubleshooting

Step	Check and measure	YES	No
1	**Check the operating environment** Check that the operating environment is within the specifications.	Go to step 2	Recommend using in an appropriate environment.
2	**Check the paper** • Check that there is no damage to the paper before it pases through. • Check that the paper is in an appropriate state (no curling). • Check that using suitable paper (not paper already used for printing). *: When, for example, A4 paper is used cut to A5 size, the long grain becomes the short grain so there is a tendency for edges to bend easily.	Go to step 3	Use suitable paper. Use the rubbing avoidance mode. *: If the symptom continues even after using the rubbing avoidance mode, refer to the avoidance measures.
3	**Check the feed path** • Check that there is no damage to or foreign object on the feed path. • Check that the movement of the flap is smooth (returns to original position due to its own weight after being pushed).	Go to step 4	Remove the foreign object and then clean. If flap damaged or abnormal, contact the service support
4	**Check the points for if bent when duplex printing** If bent when duplex printing, compare the conditions with those in the points table.	Go to step 5	Clean the driven roller. * You can raise the driven roller a little to make cleaning easier by executing [Settings] > [Printer Cleaning] > [Remove Scraps of Paper].
5	**Check the EJ holder** ☐ Check that the jagged part of the EJ holder rotates normally. ☐ Check that there are no cuts or other damage locally on the EJ roller surface. ☐ Execute the following while looking at the EJ holder/roller from the front when the output tray has been removed. (Perform the following item from service support mode) • A11 PF Motor/SMAP Sensor	Go to step 6	Replace the Star Wheel Assy.
6	**Check the PG** Check the PG with the thickness gauge and check that it is within the specified value range (1.35 ±0.05 mm).	Contact Service support.	Perform the PG Adjustment(p. 265).
Avoidance measures	**If the symptom continues even in the rubbing avoidance mode** 1. Reduce the print density (default is -20 for duplex, but -5 or -10 from that). 2. Increase the drying time. 3. Make sure that a high density image does not come at the trailing edge of the first side (rotate, change the print order, etc.).		

DOUBLE FEEDING

- Symptom
  - Multiple paper sheets are output at the same time.

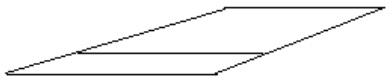


Figure 6-15. Double Feeding

- Cause
  - Environment
  - Paper
  - Settings
  - Retard unit

☐ Troubleshooting

Step	Check and measure	YES	No
1	**Check the operating environment** Check that the operating environment is within the specifications.	Go to step 2	Recommend using in an appropriate environment.
2	**Check the paper** • Check that using suitable paper (not paper already used for printing, paper). • Check that the paper guide positions are appropriate. • Check that the paper edges are aligned in the cassette.	Go to step 3	Use suitable paper.
3	**Check the settings** Check that the paper setting size and actual paper size match.	Go to step 4	Change the settings
4	**Check the retard unit** • Check that the retard roller is attached appropriately (tabs and locked) and not worn out. • Rotate the retard roller and check that there is a load.	Contact Service support.	Replace the retard roller (p. 717).

ABNORMAL SOUND

- Symptom
  - Sound which is normally not emitted from the printer can be heard

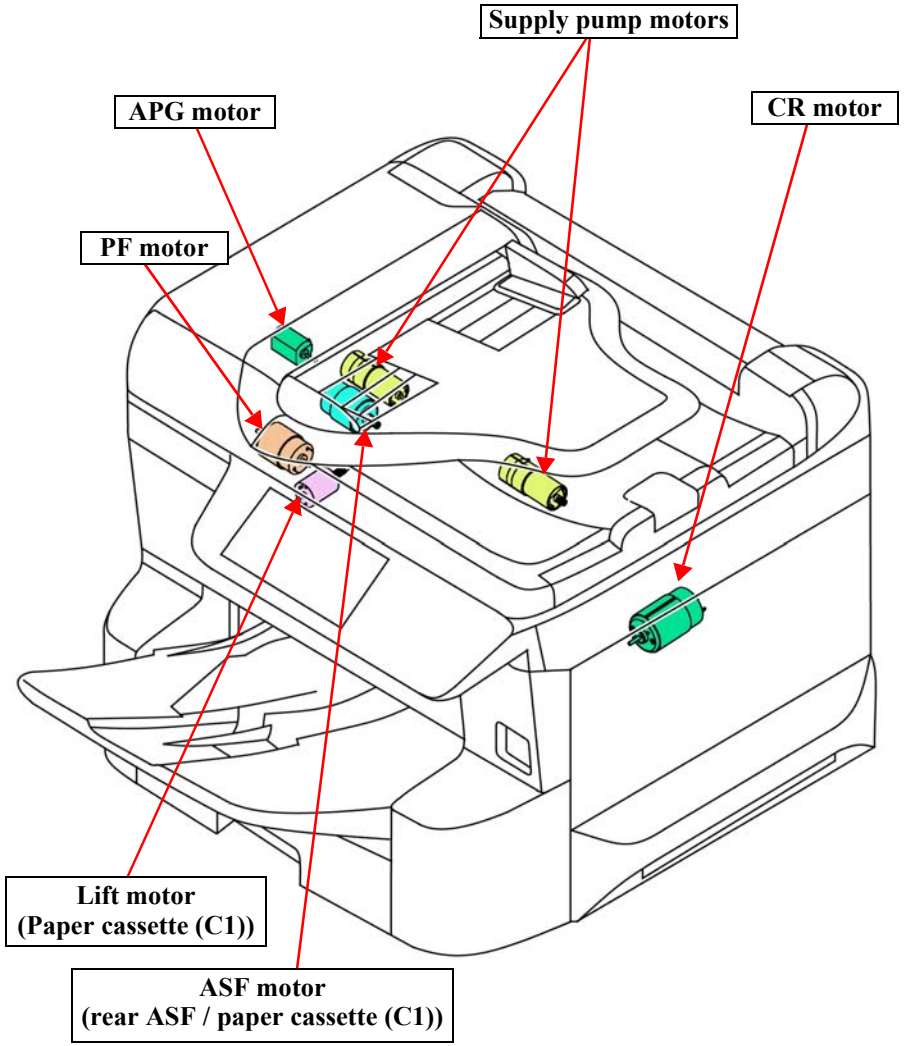


Figure 6-16. Abnormal Sound

- Cause
  - Gear part on cassette side
  - Lift motor gear box
  - ASF motor gear box
  - Rear ASF
  - APG gear box
  - Retard roller
  - CR operation
  - Insufficient grease for roller shaft and grounding contact point
  - NIP release solenoid
  - Maintenance Unit
  - Supply pump

  etc.

☐ Troubleshooting

Timing of abnormal sound	Category	Frequency	How to check	Measure
Before printing	Hopper system operation sound?	Always when cassette removed and inserted	Perform the following items from “Individual Action Check” of service support mode. ■ A17 Lift Motor/Sensor(1st) ■ A18 Lift Motor/Sensor(2nd) ■ A19 Lift Motor/Sensor(3rd) ■ A20 Lift Motor/Sensor(4th)	• Apply grease to gear shaft part on cassette side. • Replace lift motor Assy.
	Rear ASF system	Always temporarily when rear feeding	Perform the following items from “Individual Action Check” of service support mode. ■ A13 ASF Motor(1st) ■ A31 RASF Solenoid	• Replace the ASF Drive Assy. (p. 638). • Replace the Rear ASF Unit. (p. 629).
	ASF motor related	(When printing first sheet)	Perform the following items from “Individual Action Check” of service support mode. ■ A13 ASF Motor (1st) ■ A14 ASF Motor(2nd) ■ A15 ASF Motor(3rd) ■ A16 ASF Motor(4th)	Replace the ASF Drive Assy. (p. 638).
	APG	Immediately before printing	Perform the following item from “Individual Action Check” of service support mode. ■ A12 APG Move Check	• Check the state of the APG gear train gears (no broken teeth, etc.) • Replace the APG Drive Assy. (p. 542). *: Gear box is on the left of the back side. *: Take care that there is no phase shift when removing and attaching the gear box.
	Retard Roller	Immediately before printing	Visually check the retard roller shape (no uneven wear, etc.).	Replace the retard roller.(p. 638). *: If the retard roller becomes unevenly worn, the friction coefficient will decrease and the roller will not rotate.

Timing of abnormal sound	Category	Frequency	How to check	Measure
During printing	CR system	CR operation	Perform the following item from "Individual Action Check" of service support mode. ■ A10 CR Motor	• When sound is output by moving the CR: Check whether there is a foreign object, and if there is, remove it. Clean the CR rib, shaft, and guide frame and then apply grease to them. • When sound is always output when CR is reversed: Check whether there is a foreign object, and if there is, remove it. Check that the CR belt tension is appropriate. Check that fixing of the CR motor is appropriate.
	PF system	Always when printing	Perform the following item from "Individual Action Check" of service support mode. ■ A11 PF Motor/SMAP Sensor	☐ Abnormal sound from left side of main unit • Insufficient grease on SMAP roller or EJ roller ground contact point: Apply grease. • Check that the PF timing belt tension is appropriate. • Check that a rattling sound is not output at the gear fixing E-ring. If there is rattling, change the orientation. • Teeth knocking due to gear backlash: Apply grease to the idler gear shaft. ☐ Abnormal sound from right side of main unit • Abnormal sound from PF gear train gears: Check the state of the gears (whether or not tilted, etc.). If problem, reattach or replace them. • When driving that is supposed to be off is connected: Check that movement of the maintenance unit is smooth. *: If necessary, replace the corresponding part.
	NIP Release Solenoid	Temporarily always only when feeding (single sound)	Perform the following item from "Individual Action Check" of service support mode. ■ A32 Nip Release Solenoid/Sensor	Check that the solenoid is fixed appropriately. If necessary, replace the NIP release solenoid.(p. 652). *: This part is not installed in Hopkins and is installed only in Hopkins 2, so in the case of changing models from the previous model, note that this may not be a failure but may have been pointed out because a change in the operation sound was noticed.
	ASF motor related	(When print multiple sheets)	Perform the following items from "Individual Action Check" of service support mode. ■ A13 ASF Motor (1st) ■ A14 ASF Motor(2nd) ■ A15 ASF Motor(3rd) ■ A16 ASF Motor(4th)	Replace the ASF Drive Assy.(p. 638).

Timing of abnormal sound	Category	Frequency	How to check	Measure
Between pages	NIP release solenoid	Temporarily always only when feeding (single sound)	Perform the following item from “Individual Action Check” of service support mode. ■ A32 Nip Release Solenoid	• Check that the solenoid is fixed appropriately. • If necessary, replace the NIP release solenoid.(p. 652). *: This part is not installed in Hopkins and is installed only in Hopkins 2, so in the case of changing models from the previous model, note that this may not be a failure but may have been pointed out because a change in the operation sound was noticed.
	ASF motor related	(When print multiple sheets)	Perform the following items from “Individual Action Check” of service support mode. ■ A13 ASF Motor (1st) ■ A14 ASF Motor(2nd) ■ A15 ASF Motor(3rd) ■ A16 ASF Motor(4th)	Replace the ASF Drive Assy.(p. 638).
When not printing	PF system	When CL suction	Perform the following items from service support mode. ■ C03 CL1	• Check the pump operation sound immediately after executing cleaning. • If necessary, replace the Maintenance Unit
When RIPS and front cover closed	IS system	Every time when cover closed	Perform the following items from “Individual Action Check” of service support mode. ■ A21 Supply Pump Motor0 ■ A22 Supply Pump Motor1	Replace the supply pump.(p. 504).

6.3 Individual Action Check Function

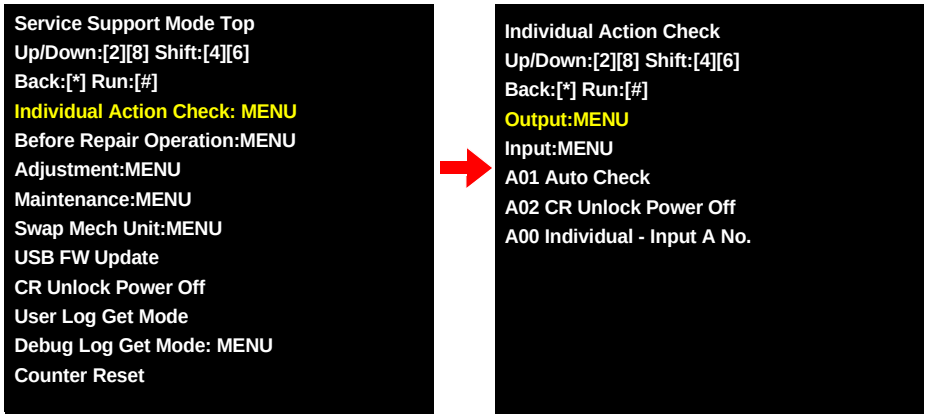
☐ Overview

The individual action check is a mode to check whether the various motors, sensors, and other parts are operating normally so that service personnel can investigate the cause of an error on site when there is a service call, etc. and its purpose is to reduce the downtime for servicing on site.

With regard to electrical components such as motors, sensors, and solenoids, this function can operate each of them individually so it can be used to narrow down the cause of a failure.

☐ How to start the individual action mode

1. Start the printer in the service mode. (Refer to 5.1 Service Support Mode)
2. Select “Individual Action Check: MENU” from the service mode menu.
3. Select each check item from the “Individual Action Check” menu to perform the checks of the individual actions of the motors, sensors, and solenoids.



Service Mode Startup Screen Individual Action Check Menu Screen

Figure 6-17. Service Support Mode Screens

☐ Precautions for startup (error display)

The error specifications of the individual action mode differ from those of a normal startup as whether the individual action of each motor, sensor, and solenoid is acceptable or not is judged so errors other than fatal errors are not displayed.

Instead of displaying errors, dedicated information is displayed in the individual action mode.
The following shows the information displayed in the individual action mode.

Table 6-6. List of information displayed in the individual action mode

Error type		Main unit display	Description	Occurrence timing
Fatal error		Fatal_Error Code:XXXXXXX	Motor related error for which motor control is judged to be unstable	Any time
Information	No cassette error	APG_Error	Displayed when APG phase detection load in the APG move check.	During APG move check
		C1_Nothing	Displayed when the paper cassette (1) is not loaded in the feed operation check item.	Main unit cassette Feed to eject check (single/double)
		C2_Nothing	Displayed when the paper cassette (2) is not loaded in the feed operation check item.	Additional cassette Feed to eject check (single/double)
		C3_Nothing	Displayed when the paper cassette (3) (additional cassette) is not loaded in the feed operation check item.	Additional cassette Feed to eject check (single/double)
		C4_Nothing	Displayed when the paper cassette (4) (additional cassette) is not loaded in the feed operation check item.	Additional cassette Feed to eject check (single/double)
	Hopper up/down sensor error	C1_Lift_Error	Displayed when the hopper up/down sensor (paper cassette (1)) cannot detect correctly in the feed/eject check or cassette hopper operation check.	☐ Main unit cassette Feed to eject check (single/double) ☐ Main unit hopper lifting
		C2_Lift_Error	Displayed when the hopper up/down sensor (paper cassette (2)) cannot detect correctly in the feed/eject check or cassette hopper operation check.	☐ Additional cassette Feed to eject check (single/double) ☐ Additional hopper lifting
		C3_Lift_Error	Displayed when the hopper up/down sensor (paper cassette (3)) cannot detect correctly in the feed/eject check or cassette hopper operation check.	☐ Additional cassette Feed to eject check (single/double) ☐ Additional hopper lifting
		C4_Lift_Error	Displayed when the hopper up/down sensor (paper cassette (4)) cannot detect correctly in the feed/eject check or cassette hopper operation check.	☐ Additional cassette Feed to eject check (single/double) ☐ Additional hopper lifting

Table 6-6. List of information displayed in the individual action mode

	Error type	Main unit display	Description	Occurrence timing
Information	No paper error	C1_Paper_Out	Displayed when there is no paper loaded in the paper cassette (1) in the feed/eject check item.	Main unit cassette Feed to eject check (single/double)
		C2_Paper_Out	Displayed when there is no paper loaded in the paper cassette (2) in the feed/eject check item.	Additional cassette Feed to eject check (single/double)
		C3_Paper_Out	Displayed when there is no paper loaded in the paper cassette (3) in the feed/eject check item.	Additional cassette Feed to eject check (single/double)
		C4_Paper_Out	Displayed when there is no paper loaded in the paper cassette (4) in the feed/eject check item.	Additional cassette Feed to eject check (single/double)
		RASF_Paper_Out	Displayed when there is no paper loaded in the rear tray in the feed/eject check item.	Rear tray Feed to eject check (single/double)
	Paper jam error (Not reached PE)	Paper_Jam_1	Displayed when the paper did not reach the main unit PE in the feed/eject check.	Main unit/additional cassettes and rear tray Feed to eject check (single/double)
	Paper jam error (PE sensor does not turn OFF)	Paper_Jam_2	Displayed when the main unit PE sensor could not detect the paper trailing edge in the feed/eject check.	Main unit/additional cassettes and rear tray Feed to eject check (single/double)
	Paper jam error (Reverse failure, not reached PE)	Paper_Jam_3	Displayed when the paper did not reach the main unit PE after double reverse feeding in the feed/eject check.	Main unit/additional cassettes Feed to eject check (single/double)
	Paper jam error (Not reached main unit feed sensor)	Paper_Jam_4	Displayed when the paper did not reach the main unit feed sensor in the feed/eject check.	Additional cassette Feed to eject check (single/double)
	Paper jam error (NF)	C1_NF	Displayed when the paper did not reach the main unit feed sensor when feeding from paper cassette (1).	Main unit cassette Feed to eject check (single/double)
		C2_NF	Displayed when the paper did not reach the main unit feed sensor when feeding from paper cassette (2).	Additional cassette Feed to eject check (single/double)
		C3_NF	Displayed when the paper did not reach the main unit feed sensor when feeding from paper cassette (3).	Additional cassette Feed to eject check (single/double)
		C4_NF	Displayed when the paper did not reach the main unit feed sensor when feeding from paper cassette (4).	Additional cassette Feed to eject check (single/double)

Table 6-6. List of information displayed in the individual action mode

	Error type	Main unit display	Description	Occurrence timing
Information	Paper jam error (Stack collapsed)	C1_DF	Displayed when the stack is judged to have collapsed when feeding paper from paper cassette (1).	Main unit cassette Feed to eject check (single/double)
		C2_DF	Displayed when the stack is judged to have collapsed when feeding paper from paper cassette (2).	Additional cassette Feed to eject check (single/double)
		C3_DF	Displayed when the stack is judged to have collapsed when feeding paper from paper cassette (3).	Additional cassette Feed to eject check (single/double)
		C4_DF	Displayed when the stack is judged to have collapsed when feeding paper from paper cassette (4).	Additional cassette Feed to eject check (single/double)
	Cassette pull out instruction	Pull_Out_The Cassette	Displayed when the paper cassette is inserted when performing the lift motor/lift phase sensor operation check.	Lift motor/lift phase sensor operation check

☐ How to perform individual action checks

There are the following two ways to perform individual action checks so select one of the ways to perform the checks.

- Select a check item from the list to execute the check. (Input system parts and output system parts)
- Enter the program number provided for each check item to execute the check

Table 6-7. Check Item List (General)

Type	Program No.	Check item	Screen display	Description	Judgment method
General	A01	Auto Check Individual Action	Auto Check Individual Action	Automatically checks the printer internal state together with the initial operation and displays the mechanical states determined from the check as the results on the panel. ☐ Prerequisites for implementation ■ Set the one paper to each paper tray. ☐ Items checked in auto check 1. Runaway check of various motors (Is there unintended operation?) 2. Connection state of consumables and other parts 3. Whether or not jammed paper remaining 4. Operation check of various motors 5. Check of various sensors 6. Initial operation 7. Judgment and display of mechanical state	The check results are displayed on the panel LCD.

Table 6-8. Check Item List (Output system)

Type	Program No.	Check item		Screen display	Description	Judgment method
Output system	A10	CR Motor		CR Motor	Moves the CR unit back and forth to perform a CR motor failure check.	1. Visually check that the CR action is smooth. 2. Check that the CR motor sound is not abnormal.
	A11	PF Motor/SMAP Sensor		PF Motor/SMAP Sensor	Drives the PF motor for approximately 2 seconds to perform a PF motor failure check. Inspection of the SMAP phase sensor is performed automatically while the PF motor is being driven.	☐ PF motor Check that the PF motor sound is not abnormal. ☐ SMAP phase sensor The inspection result is displayed on the screen after the check finishes.
	A12	APG Move Check		APG Move Check	Drives the APG motor and performs APG switching to check the APG motor operation.	Visually check that the CR unit and CR shaft are operating as follows. ☐ Check operation 1. Lift the CR shaft from the PG1 state (PG is at narrowest) to the PG7 state (PG is at widest) and then set it to the release state on the paper guides. 2. Cancel the release state on the paper guides and lower the CR shaft from PG7 to PG1.
	A13	ASF Motor	ASF Motor (1st)	ASF Motor (1st)	Drives each ASF motor for approximately 2 seconds to perform an ASF motor failure check.	Check that the ASF motor sound is not abnormal.
	A14		ASF Motor (2nd)	ASF Motor (2nd)		
	A15		ASF Motor (3rd)	ASF Motor (3rd)		
	A16		ASF Motor (4th)	ASF Motor (4th)		

Table 6-8. Check Item List (Output system)

Type	Program No.	Check item		Screen display	Description	Judgment method
Output system	A17	Lift Motor/ Lift Phase Sensor	Lift Motor/Lift Phase Sensor (1st)	Lift Motor/Sensor (1st)	Check that the lift motor and lift phase sensor have not failed by operating the motor and changing the on/off state of the sensor.	☐ Lift motor Check that the lift motor sound is not abnormal. ☐ Lift phase sensor Check that the display changes according to the inserted/pulled out state of the paper cassette. ■ Paper cassette inserted state The "Pull_Out_The Cassette" message appears on the panel LCD. ■ Paper cassette pulled out state The lift motor operation starts.
	A18		Lift Motor/Lift Phase Sensor (2nd)	Lift Motor/Sensor (2nd)		
	A19		Lift Motor/Lift Phase Sensor (3rd)	Lift Motor/Sensor (3rd)		
	A20		Lift Motor/Lift Phase Sensor (4th)	Lift Motor/Sensor (4th)		
	A21	Supply Pump Motor 0		Supply Pump Motor 0	Drives the supply pump motor to perform a supply pump failure check.	Check that the supply pump motor sound is not abnormal.
	A22	Supply Pump Motor 1		Supply Pump Motor 1		
	A30	PW Sensor Shutter Solenoid		PW Sensor Shutter Solenoid	Operates the PW sensor shutter solenoid to perform the PE sensor shutter solenoid failure check.	Check the operation sound of the PW sensor shutter solenoid and check that the PE sensor shutter solenoid is operating.
	A31	RASF Solenoid		RASF Solenoid	Operates the rear ASF solenoid to perform the rear ASF solenoid failure check.	Check that the rear ASF solenoid is operating as follows. (The check operation is executed in the following sequence.) 1. Check the operation of the rear ASF solenoid visually and by its sound. 2. Check that the LD roller rotates. 3. After the LD roller rotates, check from the sound that the motor drive one way clutch is idling due to the one way clutch.
	A32	Nip Release Solenoid / Sensor		Nip Release Solenoid / Sensor	Operates the nip release solenoid to perform the nip release solenoid and nip release solenoid sensor failure check.	1. Check that the solenoid is operating both visually and by its sound. 2. Whether or not the nip release sensor is switched ON/OFF normally is displayed on the panel LCD.

Table 6-9. Check Item List (Input system)

Type	Program No.	Check item		Screen display	Description	Judgment method
Input system	A40	ALL Sensor Check		ALL Sensor Check	Accesses each sensor to check the ON/OFF of the sensor for each type of driving and sequence.	Manually switch the target sensor ON/OFF and check that the sensor state displayed on the panel LCD changes. Regarding the detail of All sensor check, refer to "All Sensor Check Items (p. 215)".
	A41	Feed/Eject Check (Paper pass check)	Single - Cassette1 Check - Feed/Eject	Single - Cassette 1	Check that the various sensors related to the main unit cassette have not failed and actually pass paper through and check the ease of feeding and that sensor output is not abnormal.	The check results are displayed on the panel LCD.
	A42		Single - Cassette2 Check - Feed/Eject	Single - Cassette 2		
	A43		Single - Cassette3 Check - Feed/Eject	Single - Cassette 3		
	A44		Single - Cassette4 Check - Feed/Eject	Single - Cassette 4		
	A45		Rear Tray Check - Feed/Eject	Rear Tray		
	A46		Double - Cassette1 Check - Feed/Eject	Double - Cassette 1		
	A47		Double - Cassette2 Check - Feed/Eject	Double - Cassette 2		
	A48		Double - Cassette3 Check - Feed/Eject	Double - Cassette 3		
	A49		Double - Cassette4 Check - Feed/Eject	Double - Cassette 4		

Table 6-9. Check Item List (Input system)

Type	Program No.	Check item		Screen display	Description	Judgment method
Input system	A50	Feed/Eject Sensor Check	Sensor Check - Cassette1	Sensor Check - Cassette 1	Check that the various sensors related to the main unit cassette have not failed and actually pass paper through and check the ease of feeding and that sensor output is not abnormal.	The setting state of the current paper cassette is displayed on the panel LCD. Check that the panel display changes to match the paper cassette state depending on insertion or pulling out of the paper cassette, movement of the edge guides, and whether or not there is paper.
	A51		Sensor Check - Cassette2	Sensor Check - Cassette 2		
	A52		Sensor Check - Cassette3	Sensor Check - Cassette 3		
	A53		Sensor Check - Cassette4	Sensor Check - Cassette 4		
	A54		Sensor Check - RASF	Sensor Check - RASF		
	A55	PW Sensor Shutter Check		PW Shutter Check	Check that there is no problem with the operation of the shutter that is attached to the CR for reducing the amount of mist on the PW sensor.	The check results are displayed on the panel LCD.
	A56	APG Sensor Check		APG Sensor Check	Check that the APG phase sensor has not failed by changing the on/off state of the sensor and checking whether the sensor is normal or abnormal.	The check results are displayed on the panel LCD.
	A57	Temp. and hum. Sensor Check		Temp. and hum. Sensor	Check that the temperature and humidity sensors are operating normally.	1. Check the output values of the temperature and humidity sensors. (If there is a sensor error, use the following values as a guide for making a judgment.) ■ Error judgment guide • Broken wire : 0°C or lower • Short : 60°C or higher 2. Touch the temperature and humidity sensors with a hand and check the change of the output values.
	A58	Ink End Sensor Check		Ink End Sensor Check	Check the ink end sensor state with ink present.	Check that the sensor state on the panel LCD changes as a result of moving the ink end sensor lever.
Auxiliary functions	A02	CR Unlock Power Off		CR Unlock Power Off	Turns off the power from the CR unlock state.	---

☐ All Sensor Check Items

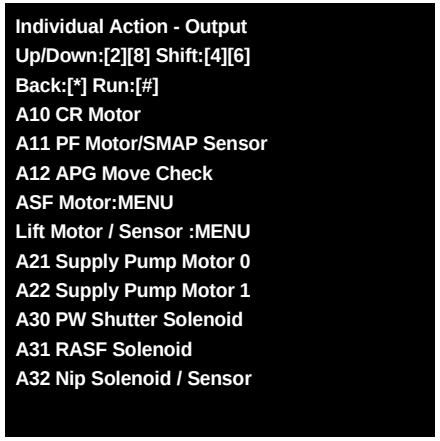
Table 6-10. All Sensor Check Items

Category	Display	Applicable Sensor	Confirmation method
Main	FcvSn	Front Cover Open/Closed Sensor	Confirm the state of sensor is changing by opening/closing the corresponding cover.
	RcvSn	Rear Cover Open Sensor	
	PESn	PE Sensor	Confirm the state of sensor is changing by pushing the PE sensor by paper etc.
	NpSn	Intermediate Nip Release Sensor	Confirm the state of sensor is changing by installing/Removing the Duplex Unit.
	FeSn	Feed Sensor (Main Product side)	Confirm the state of sensor is changing by moving the Feed Sensor Lever.
Ink	InkBK	Ink End Sensor (BK)	Confirm the state of sensor is changing by moving the Ink End Sensor Lever. * When moving the Ink End Sensor Lever, make sure not to damage the Buffer.
	InkMG	Ink End Sensor (Magenta)	
	InkCY	Ink End Sensor (Cyan)	
	InkYE	Ink End Sensor (Yellow)	
Cassette1	Bin	Cassette Detection Sensor (C1)	Confirm the state of sensor is changing by installing /removing the paper cassette (C1).
	Pap	Paper Detection Sensor (C1)	Confirm the state of sensor is changing by changing the paper set condition of paper cassette (C1).
	Hop	Hopper Up/down Sensor (C1)	Confirm the state of sensor is changing by installing /removing the paper cassette (C1)
	Siz	Cassette paper size sensor (1),(2) _ (C1)	Confirm the state of sensor is changing by moving the Edge Guide of paper Cassette(C1).
	PESn	PE Sensor	Confirm the state of sensor is changing by pushing the PE sensor by paper etc.
	FeSn	Feed Sensor (Main Product side)	Confirm the state of sensor is changing by moving the Feed Sensor Lever.
Cassette2	Bin	Cassette Detection Sensor (C2)	Confirm the state of sensor is changing by installing /removing the paper cassette (C2).
	Pap	Paper Detection Sensor (C2)	Confirm the state of sensor is changing by changing the paper set condition of paper cassette (C2).
	Hop	Paper Detection Sensor (C2)	Confirm the state of sensor is changing by installing /removing the paper cassette (C2)
	Siz	Cassette paper size sensor (1),(2) _ (C2)	Confirm the state of sensor is changing by moving the Edge Guide of paper Cassette(C1).
	PESn	PE Sensor	Confirm the state of sensor is changing by pushing the PE sensor by paper etc.
	FeSn	Feed Sensor (Option Cassette side)	Confirm the state of sensor is changing by moving the Feed Sensor Lever.
	JamCv	Jam Processing Cover Sensor	Confirm the state of sensor is changing by opening/closing the corresponding cover.
Rear	PaSn	Paper Detection Sensor (Rear ASF Unit)	Confirm the state of sensor is changing by setting the paper to Rear ASF Unit.
	PESn	PE Sensor	Confirm the state of sensor is changing by pushing the PE sensor by paper etc.

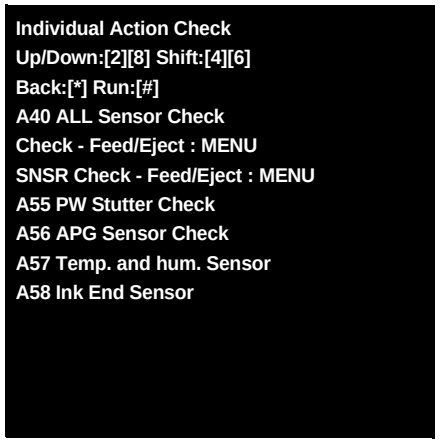
☐ How to check

SELECT A CHECK ITEM FROM THE LIST TO EXECUTE THE CHECK. (INPUT SYSTEM PARTS AND OUTPUT SYSTEM PARTS)

1. Select “Output: MENU (output system parts)” or “Input: MENU (input system parts)” from the individual action check mode menu screen.
2. Select the target check items from the corresponding menu to execute the checks.



Output: MENU (Output System)

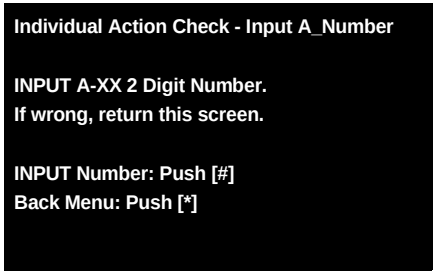


Input: MENU (Output System)

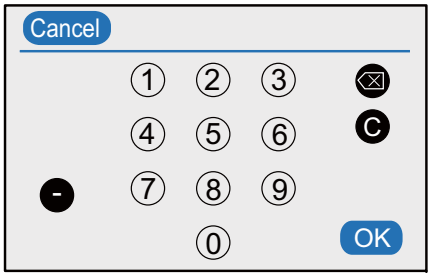
Figure 6-18. Service Support Mode Screens

ENTER THE PROGRAM NUMBER PROVIDED FOR EACH CHECK ITEM TO EXECUTE THE CHECK.

1. Select “A00 Individual -Input A Number” from the individual action check mode menu.
2. To enter a number from the state of the Individual Action Check - Input A_Number menu screen displayed, press the [*] button to display the program number input screen. To return to the previous menu screen, press the [#] button.
3. When the program number input screen appears, refer to the check item list (P. 213) and then enter the program number of the corresponding check item and press the [OK] button.
   (Example: In the case of the CR motor check, enter “10”.)
   * Enter a number of two digits following A of the program number.



Individual Action Check - Input A_Number Menu Screen



Program No. Input Screen

Figure 6-19. Service Support Mode Screens

6.4 Fax Troubleshooting

6.4.1 Outline of the FAX Troubleshooting

This material describes the information related to “Reports/Logs”, “Error Codes”, “Service Parameters”, “Basic information”, and “Troubleshooting” based on these information that can be used to solve the problems related to FAX.

6.4.2 Reports/Logs related to FAX

6.4.2.1 FAX Communication Log

A history report of sent and received 30 fax jobs.

Settings are available for Display, Auto or Manual Print (every 30/time/off).

Codes of communication error are not displayed on the report by default To display the error codes, set [Report Format] to [Detail].

☐ Output Procedure

Manual	[FAX] ⇒ [(Menu)] ⇒ [FAX Report] ⇒ [FAX Log] = Select [Print]
Auto	[Setup] ⇒ [General Setting] ⇒ [FAX Settings] ⇒ [Report Settings] ⇒ [FAX Log Auto Print] = [Off] / [On (Every 30)] / [On (Time)]

☐ Output Settings

Report Format	[Setup] ⇒ [General Setting] ⇒ [FAX Settings] ⇒ [Report Settings] ⇒ [Report Format] = [Simple] / [Detail]

☐ Output Sample

PX-M7070FX

EPSON
EXCEED YOUR VISION

(1) ファクス通信管理レポート

PAGE. 001/001
2017.01.11 11:05

(2) 名前 : エプソン販売株式会社 日野事業所
ファクス : 042 555 1234

(3)

受付番号	日付	時刻	種別	相手先番号	通信時間	枚数	通信結果
0733	12.28	17:28	受信		00:24	001	OK
0734	12.28	17:29	受信		00:25	001	OK
0735	12.28	17:30	受信		00:24	001	OK
0736	12.28	17:30	受信		00:24	001	OK
0737	12.28	17:31	受信		00:24	001	OK
0738	12.28	17:34	受信		00:23	001	OK
0740	12.28	18:27	受信	0353211231	00:16	001	OK
0741	12.28	18:28	受信	0353211231	00:16	001	OK
0742	12.28	18:28	受信	0353211231	00:16	001	OK
0743	12.28	18:29	受信	0353211231	00:18	001	OK
0744	12.28	18:29	受信	0353211231	00:16	001	OK
0745	12.28	18:30	受信	0353211231	00:17	001	OK
0746	12.28	18:35	受信		00:23	001	OK
0747	12.28	18:35	受信		00:24	001	OK
0748	12.28	18:36	受信		00:24	001	OK
0749	12.28	18:37	受信		00:24	001	OK
0750	12.28	18:38	受信		00:25	001	OK
0751	12.28	18:42	受信		00:24	001	OK
0753	12.29	11:02	送信(カラー)	0355551111	00:59	001	OK
0755	12.29	11:31	送信	0355551111	00:32	001	OK
0756	12.29	11:32	受信(カラー)	0353211231	00:15	000	エラー 826
0757	12.29	11:33	受信	0353211231	00:15	000	エラー 826
0758	12.29	11:35	受信	0353211231	00:15	000	エラー 826
0759	12.29	11:36	送信	0355551111	00:31	001/001	OK
0761	12.29	11:44	受信(カラー)	0353211231	00:56	000	エラー 410
0762	12.29	11:45	送信	0355551111	00:28	001	OK
0756	12.29	11:32	受信	0353211231	00:00	000	停電
0757	12.29	11:33	受信	0353211231	00:00	000	停電
0758	12.29	11:35	受信	0353211231	00:00	000	停電
0767	12.29	14:01	受信	0353211231	01:12	000	エラー 410

(1)	Title	Report name
	PAGE	Number of pages to be reported (number of pages/total number of pages)
	Date /Time	Printed time (yyyy.mm.dd hh:mm)
(2)	Name	Sender's name registered to the product
	Fax	Sender's fax number registered to the product
(3)	Receipt No.	Job number Common to other reports and job management. This helps to identify the job.
	Date / Time	Starting time of communication
	Type	Sending/Receiving/Polling Sending/Polling Reception/ PC Sending/Forwarding
	ID	See "Indications of destination number"
	Duration	mm:ss
	Pages	Sending from memory: Number of pages of communication succeeded/total number of pages Direct sending/reception: Number of pages of communication succeeded
	Result	☐ Succeeded: OK ☐ Failed: Error details (Line Busy, No answer, Communication Error Line is not connected/Incorrect port connection/ Cancel, etc.) Error xxx (Report Format = only when set to Detail)

☐ Indications of destination number (in priority order)

Sender (Send/Polling Recive)(*3)	1. Registered name in the contact list 2. Dialed telephone number 3. Destination fax ID (*1)
Receiver (Receive/Polling Send)(*3)	1. Sender's telephone number (when notifying number with the caller ID)(*2) 2. Destination fax ID (*1)

NOTE 1 : Usually the destination fax ID signals (CSI/TSI/CIG) are registered with numbers (telephone number is used in most cases). If these are registered with text, the registered text are displayed as they are. When registering in this product, select [Setup] ⇒ [General Settings] ⇒ [FAX Settings] ⇒ [Basic Settings] ⇒ [Header] ⇒ [Your Phone Number] (number, space, or + only).

2 : For a product with Caller ID, the Destination fax ID is displayed when the caller ID is enabled ([Fax settings] > [Basic settings] > [Caller ID display]), and the sender notifies its telephone number. If the notified telephone number has been registered in the contact list, the registered name is displayed on the panel of the receiver. However, the telephone number is used for fax log.
When a fax is sent without notification, the destination fax ID is displayed.

3 : Usual settings are Sending/Polling Reception for sender, Receiving/Polling sending for receiver. However if Manual send/Manual receive is enabled, these settings may be reversed. In addition, if a fax is sent with [Connected telephone] or [On hook dial] and Manual Send/Manual Receive is turned on, the "destination fax ID" is always displayed.

Example)

Case	Indications of destination number
When receive a fax through caller ID line, then response with connected telephone and perform Manual Send;	Sender is displayed. However, "sender's telephone number" is displayed other than "destination fax ID".
When send a fax with a connected telephone and perform Manual Send;	Receiver is displayed. However, "destination fax ID" is displayed other than the dialed telephone number.
When send a fax with on hook dial (Contact list/Direct dial)	Receiver is displayed. However, "destination fax ID" is displayed other than the registered name in the list or dialed telephone number.

6.4.2.2 Protocol trace

A detailed report for the previous sent or received fax.

Settings are available for Manual Print, or Auto Print after communication by changing the RAM Edit.

If a communication does not start until send/receive operation (when it did not enter Phase B after Phase A), the log is displayed as a blank space.

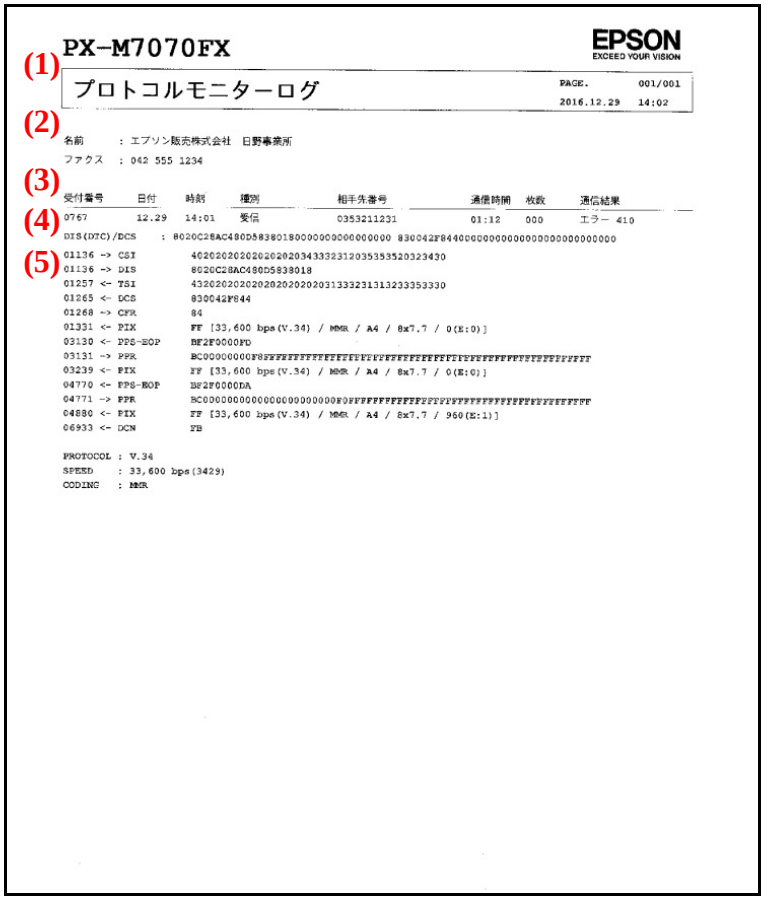
☐ Output Procedure

Manual	[FAX] ⇒ [(Menu)] ⇒ [FAX Report] ⇒ [Protocol trace] = Select [Print]
Auto	Use Fax parameter Setting mode #006 to automatically print the log for every communication. See “Communication Protocol trace” in Service Parameter List.

☐ Output Setting

Save / Print error only	Use FAX parameter setting mode #005 to save and print error communication only. See ”Communication Protocol trace” in Service Parameter List.
Auto	Use Fax parameter Setting mode #007 to save one log/ save three log/ print the Protocol trace. See “Communication Protocol trace” in Service Parameter List.

☐ Output Sample



(1)	**Title etc.**	Same as FAX log
(2)	**Name, Fax**	Sender’s name registered to the product
(3)	**Receipt No. ~ Communication result**	Logs of the received faxes. Description is same as Fax log.
(4)	**DIS(DTC) / DCS**	Refer to “How to use DIS(DTC) / DCS” (p.258)
(5)	**Command / Response Log**	Refer to “How to use Command/Response log” (p.260).

- Viewpoint of DIS(DTS)/DCS

Before starting communication, faxes communicate their own functions on the sending side and the receiving side, and then determine the communication function and speed.
The receiving side fax machine transmits its own function to the sending side fax machine by the DIS signal.
The sending fax machine receives the DIS signal from the receiving fax machine and can use the information on the sending side and the receiving side.
After selecting the maximum function set by the transmission side, you can check the communication mode selected by the DCS signal

By checking the information of DIS (DTC), the contents of the capability of the receiving side fax can check the communication mode selected by the sending side fax by checking the information of the DCS.

The protocol monitor log is recorded and printed on only one sheet by one communication.
If the protocol becomes long due to communication of a plurality of pages and it does not fit on one page, the head protocol log is deleted and only the last protocol log is recorded and printed.

Fax communications are created according to ITU, and the main ITUs involved are T30. and T4.

DIS (DTC) DCS reads out the content of FIF (facsimile information field) by referring to the bit allocation table of DIS (DTC) / DCS.

☐ Ability bit table of DIS (DTC)

To refer to the bit allocation table and data, rearrange the following high order bits for every 2 bytes of data.

■ Example of DIS 8020C28AC480D5838018 FCS=80 FIF=**20 C2 8A** C4 80 D5 83 80 18

hex	2				0				C				2				8				A			
bin	0	0	1	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	1	1	0	1	0
bit no.	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9	24	23	22	21	20	19	18	17

bit no.		DIS/DTC	data	Content
1	1	Accumulation exchange Internet facsimile simple mode (TTC standard JT-T37)	0	
	2	On hold	0	
	3	Real time Internet facsimile (TTC standard JT-T38)	0	
	4	Third generation mobile communication network	0	
	5	On hold	0	
	6	ITU-T Recommendation V.8 ability	1	Function enabled
	7	Frame size 0=256 Octet priority 1=64 Octet priority	0	ECM frame size=256
	8	On Hold	0	
2	9	Transfer of facsimile document	0	No standard for polling transmission
	10	Receive fax operation	1	Ability
	11	Data Signal Speed 0000=2.4kbps V.27terFB 0010=Unused 0001=Unused 0011=Unused 0100=V.27ter 0100=On hold 0101=On hold 0111=On hold 1000=V.29 1010=Unused 1001=Unused 1001=Unused 1100=V.27ter,V29 1110=Unused 1101=V.27ter,V29,V17 1111=On hold	0	V.27terFB *When the V8 mode (S-G3) starts, this bit becomes invalid (0000).
	12		0	
	13		0	
	14		0	
	15	Line density (delicate FINE) R8 x 7.7 l/mm or 200 x 200 dpi	1	Ability
	16	Encoding method (MR)	0	Ability
3	17	Recording width ability 00=A4 10=A4/B4 01=A4/B4/A3 11=Invalid	0	A4/B4/A3
	18		0	
	19	Ability to record length 00=A4(297mm) 10=A4(297mm) and B4(364mm) 01=No limit 11=Invalid	0	No limit
	20		1	
	21	The receiver's minimum scanning time capability 000=20/20ms 100=5/5ms 101=40/20ms 001=40/40ms 011=10/5ms 111=0/0ms 010=10/10ms 110=2-/10,s	1	20/20ms
	22		1	
	23		1	
	24	Extended field	1	Extension

■ Example of DIS 8020C28AC480D5838018 FCS=80 FIF=20 C2 8A **C4 80 D5** 83 80 18

hex	C				4				8				0				D				5			
bin	1	1	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	1	0	1	0	1	0	1
bit no.	32	31	30	29	28	27	26	25	40	39	38	37	36	35	34	33	48	47	46	45	44	43	42	41

bit no.		DIS/DTC	data	Content
4	25	On hold	0	
	26	Uncompressed mode	0	
	27	Error correction mode (ECM)	1	Ability
	28	Set to 0	0	
	29	On hold	0	
	30	On hold	0	
	31	Encoding method (MMR T.6)	1	Ability
	32	Extended field	1	Extended
5	33	Invalid field signal capability	0	
	34	Multiple Polling Capability (DIS) Multiple polling instructions (DIC)	0	
	35	Polling sub-address capability (DIS) PSA Polling sub -address transmission (DTC)	0	
	36	Encoding method (T.43)	0	
	37	Plain interleave	0	
	38	32 k ADPCM speech coding (TTC JT-G726)	0	
	39	Hold for using the extended audio encoded.	0	
	40	Extended field	1	Extended
6	41	Line density (high delicate / S-FINE) R8 x 15.4 l/mm	1	Ability
	42	Line density(300) 300 x 300 dpi	0	
	43	Line density (Ultrahigh delicate / E-FINE) R16 x 15.4 l/mm or 400 x 400 dpi	1	Ability
	44	Inch system resolution selection	0	
	45	Milli-system resolution selection	1	Milli-system resolution selection
	46	Minimum scan line time capability at high linear density 0:T15.4=T7.7 1:T15.4=1/2 T7.7	0	
	47	Selected professional ability (DIS) Select polling sending (DTC)	1	Ability
	48	Extended field	1	Extended

■ Example of DIS 8020C28AC480D5838018 FCS=80 FIF=20 C2 8A C4 80 D5 **83 80 18**

hex	8				3				8				0				1				8			
bin	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
bit no.	56	55	54	53	52	51	50	49	64	63	62	61	60	59	58	57	72	71	70	69	68	67	66	65

bit no.		DIS/DTC	data	Content
7	49	Sub-address Ability	1	Ability
	50	Password / sending identification ability (DIS) Password sending (DTC)	1	Ability
	51	Preparation for data file transfer (polling)	0	
	52	On hold	0	
	53	Binary file transfer (BFT)	0	
	54	Document transfer mode (DTM)	0	
	55	EDIFACT transfer mode (EDI)	0	
	56	Extended field	1	Extended
8	57	Basic transfer mode (DTM)	0	
	58	On hold	0	
	59	Preparation for transferring (polling) documents in character / mixed mode	0	
	60	Character mode	0	
	61	On hold	0	
	62	mixed mode	0	
	63	On hold	0	
	64	Extended field	1	Extended
9	65	Processable Mode 26	0	
	66	Digital network capability	0	
	67	Full duplex /half duplex capability 0:Half duplex control 1: Half duplex/full duplex control	0	
	68	Encoder mode (JPEG)	1	Ability
	69	Full color mode	1	Ability
	70	Set to 0	0	
	71	12 bit pixel / element	0	
	72	Extended field	1	Extended

■ Example of DIS 8020C28AC480D5838018 FCS=80 FIF=20 C2 8A C4 80 D5 83 80 18

hex								
bin	0	0	0	0	0	0	0	0
bit no.	80	79	78	77	76	75	74	73

bit no.		DIS/DTC	data	Content
10	73	No sub-sampling (1:1:1)		
	74	Nonstandard irradiation light		
	75	Non-standard color gamut range		
	76	North American(215.9 ×279.4 mm) letter capacity		
	77	North American (215.9 × 355.6 mm) legal ability		
	78	Coding mode (JBIG single layer sequential coding T.85) basic ability		
	79	Coding mode (JBIG single layer sequential coding T.85) Optional L = 0 ability		
	80	Extended field		

☐ Ability bit table of DCS

To refer to the bit allocation table and data, rearrange the following high order bits for every 2 bytes of data.

■ Example of DCS 830042F844 FCS=83 FIF=**00 42 F8** 44

hex	0				0				4				2				F				8			
bin	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	1	1	1	0	0	0
bit no.	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9	24	23	22	21	20	19	18	17

bit no.		DIS/DTC	data	Content
1	1	Accumulation exchange Internet facsimile simple mode (TTC standard JT-T37)	0	
	2	On hold	0	
	3	Real time Internet facsimile (TTC standard JT-T38)	0	
	4	Third generation mobile communication network	0	
	5	On hold	0	
	6	Invalid	0	
	7	Invalid	0	
	8	On hold	0	
2	9	Set to 0	0	No polling transmission standard
	10	Received fax data	1	Ability
	11	Data signal speed 0000=2.4kbps V.27ter 0010=Invalid 0001=14.4kbps V.17 0011=On hold 0100=4.8kbps V.27ter 0100=Invalid 0101=12kbps V.17 0111=On hold 1000=9.6kbps V.29 1010=On hold 1001=9.6kbps V.17 1001=On hold 1100=7.2kbps V.29 1110=On hold 1101=7.2kbps V.17 1111=On hold	0	V.27terFB *When the V8 mode (S-G3) starts, this bit becomes invalid (0000).
	12		0	
	13		0	
	14		0	
	15	Line density (delicate FINE) R8 x 7.7 l/mm or 200 x 200 dpi	1	R8 x 7.7 l/mm
	16	Encoding method (MR)	0	
3	17	Recording width ability 00=A4(297mm) 10=A4/B4 01=A4/B4/A3 11=Invalid	0	A4
	18		0	
	19	Ability to record length 00=A4(297mm) 10=A4(297mm) and B4(364mm) 01=No limit 11=Invalid	0	No limit
	20		1	
	21	The receiver's minimum scanning time (Line density = Std/Fine) 000=20/20ms 100=5/5ms 101=40/20ms 001=40/40ms 011=10/5ms 111=0/0ms 010=10/10ms 110=20/10ms	1	0ms
	22		1	
	23		1	
	24	Extended field	1	Extended

■ Example of DCS 830042F844 FCS=83 FIF=00 42 F8 **44**

hex	4				4																			
bin	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
bit no.	32	31	30	29	28	27	26	25	40	39	38	37	36	35	34	33	48	47	46	45	44	43	42	41

bit no.		DIS/DTC	data	Content
4	25	On hold	0	
	26	Uncompressed mode	0	
	27	Error correction mode (ECM)	1	ECM
	28	Frame size 0= 256 oct 1=-64 oct	0	Frame size 256 oct
	29	On hold	0	
	30	On hold	0	
	31	Encoding method (MMR T.6)	1	MMR
	32	Extended field	0	Non Extended
5	33	Invalid field signal capability		
	34	Set to 0		
	35	Set to 0		
	36	Encoding method (T.43)		
	37	Plain interleave		
	38	32 k ADPCM audio coding (TTC JT-G726)		
	39	Hold for using the extended audio encoded		
	40	Extended field		
6	41	Line density (high delicate / S-FINE) R8 x 15.4 l/mm		
	42	Line density(300) 300 x 300 dpi		
	43	Line density (Ultrahigh delicate / E-FINE) R16 x 15.4 l/mm or 400 x 400 dpi		
	44	Select resolution type 0: inch system resolution 1:milimater resolution		
	45	unused		
	46	unused		
	47	Set to 0		
	48	Extended field		

■ Example of DCS 830042F844 FCS=83 FIF=00 42 F8 44

hex																								
bin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
bit no.	56	55	54	53	52	51	50	49	64	63	62	61	60	59	58	57	72	71	70	69	68	67	66	65

bit no.		DIS/DTC	data	Content
7	49	Send Sub-address		
	50	Sending function identification sending		
	51	Set to 0		
	52	On hold		
	53	Binary file transfer (BFT)		
	54	Document transfer mode (DTM)		
	55	EDIFACT transfer mode (EDI)		
	56	Extended field		
8	57	Basic transfer mode (DTM)		
	58	On hold		
	59	Set to 0		
	60	Character mode		
	61	On hold		
	62	mixed mode		
	63	On hold		
	64	Extended field		
9	65	Processable Mode 26		
	66	Digital network capability		
	67	Full duplex / half duplex capability 0:half duplex control 1:full duplex control		
	68	Encoder mode (JPEG)		
	69	Full color mode		
	70	Huffman code table for preferential use		
	71	12 bit pixel / element		
	72	Extended field		

■ Example of DCS 830042F844 FCS=83 FIF=00 42 F8 44

hex								
bin	0	0	0	0	0	0	0	0
bit no.	80	79	78	77	76	75	74	73

bit no.		DIS/DTC	data	Content
10	73	No sub-sampling (1:1:1)		
	74	Nonstandard irradiation light		
	75	Non-standard color gamut range		
	76	North American(215.9 ×279.4 mm) letter capacity		
	77	North American (215.9 × 355.6 mm) legal ability		
	78	Coding mode (JBIG single layer sequential coding T.85) basic ability		
	79	Coding mode (JBIG single layer sequential coding T.85) Optional L = 0 ability		
	80	Extended field		

☐ How to use command/response log
The following explains the T.30 Protocol commands/responses in fax log.
Communication procedure can be checked in details.

Table 6-11. Commands/responses log_ Sample Example (Type = Sending)

Time (10ms)	Direction	Commands/ responses name	Data	Description
01136	->	CSI	4020202020202020203433323120353535203234 30	Received a caller subscriber ID (numeric ID). The value of sender's number registered in the receiver is transmitted. The number is entered with ASCII character codes. (Same as TSI) FCF=40 FIF=0202020202020203433323120353535203234 30 (ASCII character codes 20=space(S), 30 to 39=0 to 9, 2b=+) ASCII conversion >"SSSSSSSS1234S555S240" If the order is reversed, >"042 555 1234 "
01136	->	DIS	8020C28AC480D5838018	Received a digital identification signal. (receiving capability)
01257	<-	TSI	4320202020202020202020313332313132333533 30	Sent a transmitting subscriber ID (numeric ID). The value of sender's number registered in the sender is transmitted. The number is entered with ASCII character codes. (Same as CSI) FCF=43 FIF=2020202020202020202031333231313233353330 (ASCII character codes 20=space (S), 30 to 39=0 to 9, 2b=+) ASCII conversion >"SSSSSSSSSS1321123530" If the order is reversed, >"0353211231 "
01265	<-	DCS	830042F844	Received a digital identification signal. (Sending mode).
	<-	TCF		Sent a training signal (V17/V29/V27ter only)
01268	->	CFR	84	Received a confirmation for receive signal.
01331	<-	PIX	FF [33,600 bps(V.34) /MMR / A4 / 8x7.7 / 0(E:0)]	Received the 1st page of image signal. The communication status is described within [ ]. Communication speed (Protocol) : 33.6kbps(V.34) Encoding method : MMR Paper width : A4 Resolution : 8x7.7 (Fine) Number of line (number of error line): 0(E:0) * when ECM = OFF

Table 6-11. Commands/responses log_ Sample Example (Type = Sending)

Time (10ms)	Direction	Commands/ responses name	Data	Description
03130	<-	PPS-EOP	BF2F0000FD	Received a end of procedure signal (the 1st page finished without next page). FCF=BF2F?FIF=0000FD (00=1st page, 00=1st block, FD=254 frames) If the number of frame exceeds 256, separates the page with PPS-NULL to send. The frame size of PPS-NULL is always FF. PPS-MPS is a signal of ECM mode. MPS is used in non-ECM mode.
03131	->	PPR	BC00000000F8FFFFFFFFFFFFFFFFFFFFFFFFFF FFFFFFFFFFFFFFFFFFFFFFFFFFFF	Since there was an error in received PIX, specifies the error frame and requests retransmission. (A signal of ECM mode) How to specify the error frame: Regard FFFF as one unit to represent 1 to 16 frames. 16 sets of FFFF mean 256 frames in total. Since 254 frames were sent, entry 1 to the 255th to 256th frame. Entry 1 to the reception error frame. The request starts from 0000 0000 F8FFF FFFF. This means that 35 frames (1st to 35th) are succeeded, and 259 frames (the 36th to 254th) are required to retransmit.
03239	<-	PIX	FF [33,600 bps(V.34) / MMR / A4 / 8x7.7 / 0(E:0)]	Received a frame retransmission request for the 1st page of image signal. Communication status is described within [ ]. Communication speed (Protocol) :33.6kbps(V.34) Encoding method : MMR Paper width : A4 Resolution : 8x7.7 (Fine) Number of line (number of error line) : 0(E:0) *. when ECM = OFF
04770	<-	PPS-EOP	BF2F0000DA	Received a end of procedure signal (the 1st page finished without next page). FCF=BF2F?FIF=0000DA (00=1st page, 00=1st block, DD = 219 frames)
04771	->	PPR	BC0000000000000000000000F0FFFFFFFFFFFF FFFFFFFFFFFFFFFFFFFFFFFFFFFF	Since there was an error in received PIX, specifies the error frame and requests retransmission. (A signal of ECM mode) How to specify error frames: Regard FFFF as one unit to represent 1 to 16 frames. 16 sets of FFFF mean 256 frames in total. Entry 1 to the reception error frame. The request starts from 0000 0000 0000 0000 0000 00F0 FFFF. This means that 57 frames (36th to 92nd) are succeeded, and 162 frames (the 93rd to 254th) are required to retransmit.

Table 6-11. Commands/responses log_ Sample Example (Type = Sending)

Time (10ms)	Direction	Commands/ responses name	Data	Description
03239	<-	PIX	FF [33,600 bps(V.34) / MMR / A4 / 8x7.7 / 960(E:1)]	Received the 1st page of image signal. Communication status is described within [ ]. Communication speed (Protocol) :33.6kbps (V.34) Encoding method : MMR Paper width : A4 Resolution : 8x7.7 (Fine) Number of line (number of error line) : 960(E:1) ⇒ An error occurs after receiving the 960th line.
06612	<-	DCN	FB	The communication became impossible due to the error. It ended in failure by receiving a disconnect command from the sender.
PROTOCL			V.34	Displays the protocol set when starting communication (V.34/V.17/V.29)
SPEED			33.600Bps (3429)	Displays the speed of the last communication. Symbol rates are shown in ()
CODING			MMR	Displays the encoding method set when starting communication (MMR/MR/MH)

☐ Outline of the Command Response Log

Table 6-12. Outline of the command response log

Item	Content
Time (10ms)	The time when sent/received the signal. The difference of both time means the time of the signal. Example) 02467 -> PIX 03289 -> PPS-MPS 03289 – 02467 = 822 x 10 ms = approx. 8.2 s (time of image signal)
Direction	Sending or Receiving direction for signals. This differs from that of the sending or receiving in fax communication. When sending a fax, signals (including image signal) and response signal become sending and receiving respectively. These are reversed when receiving a fax.
Command/Response Name	Defined in the first 2 digits or 4 digits of data in the FCF (Facsimile Control Field). See “1.4.5.2 Abbreviation list of fax communication (fax recommendation T.30)”.
Data	Data is composed of FCF (Facsimile Control Field) and FIF (Facsimile Information Field). The first 2 digits (8 bits) or 4 digits (16 bits) stands for FCF, the latter means FIF. Example 1) 03289 -> PPS-MPS?BF4F000031 FCF=BF4F=PPS-MPS FIF=00=PC (page counter) page 1 (0x00 to 0xFF=0 to 255= add 1 to make it 1 to 256 pages) 00=BC(block counter) Block in the page is 1 (0x00 to 0xFF=0 to 255= add 1 to make it 1 to 256 blocks) 31=FC(flame counter) number of frame 50 (0x00 to 0xFF=0 to 255=add 1 to make it 1 to 256 frames) 1 block consists of 256 frames. If the number of frame exceeds 256,separates the page with PPS-NULL to send. Example 2) PPS-NULL BF00xxxxFF FCF=BF00 FIF=FIF of the first PPS-NULL in the 1st page:0000FF=1st page, 1st block, 256th frame FIF=FIF of the 2nd PPS-NULL in the 1st page:0001FF=1st page, 2nd block, 256th frame FIF=FIF of the first PPS-NULL in the 2nd page:0100FF=2nd page, 2nd block, 256th frame

6.4.2.3 FAX Function Check Report

Self check of Fax function is available.

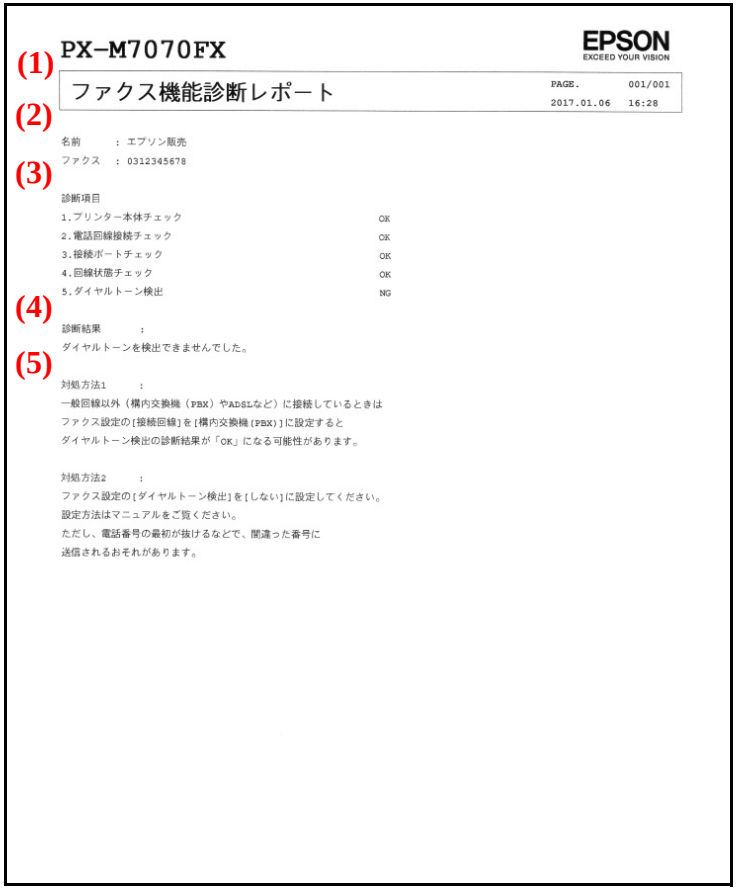
Perform Fax Function Check to check the basic items of fax function and line connection.

☐ Check Procedure

Manual	[FAX] ⇒ [(Menu)] ⇒ [FAX Settings] ⇒ [Check FAX Connection] = Perform the check, then select [Print] to print the result.

NOTE : Remote check is also available using FAX Utility.

☐ Output Sample



(1)	**Title etc.**	Same as FAX log.
(2)	**Name, Fax**	Same as FAX log.
(3)	**Check Items**	For the description of check item, see “Fax Function Check Operation flow”. “5. Dial Tone Detection” is also checked even when it is disabled in Fax Settings.
(4)	**Status**	Displays the check result.
(5)	**Solution**	Displays the remedy.

6.4.3 FAX Error Code

6.4.3.1 Overview

There are 2 types of error codes; 1) job's error codes that are displayed in job history, 2) Fax communication's error codes that are shown in fax report.

	Job's error code	Error Codes related to FAX
Display position	Displayed in job history.	Displayed in fax related report (such as fax log, communication result report).
Unit	Job	Fax Communication
Target	All jobs (Fax/Scan/Copy/Print)	Fax job only
Format	A 3 digit number	Text or 3 alphanumeric characters
Remark	Before starting fax communication (Phase A, line connected): The same contents of job and fax communication are displayed with different codes. After starting fax communication (Phase B or later): "Failure 202" is displayed for all jobs, "communication procedure error" is shown in fax communication.	

6.4.3.2 Error code list

Error Code		Error description	TX/RX	Phase
Result of communication report	Job history			
No tone	Failure 203			
Speaking	Failure 204			
No response	Failure 205			
Port inversion	Failure 206			
No circuit connection	Failure 207			
012	Failure 202	Received document length exceeds the set value	TX	C
212	Failure 202	(Modem): Data sending end error	RX/TX	
220	Failure 202	An MCF is not sent after receiving data	RX	D
400	Failure 202	T1 timer timeout	TX	B
401	Failure 202	Received a DCN after sending DCS.	TX	B
402	Failure 202	Received a DCN during sending the phase B.	TX	B
403	Failure 202	Receiver dose not have polling sending capability.	RX (POL)	B
404	Failure 202	No response after sending DCS.	TX	B
405	Failure 202	Fall back is not possible in sending.	TX	B
406	Failure 202	A DCN is sent after receiving DCS/ DTC.	RX/TX (POL)	B
407	Failure 202	No response or received a DCN after sending Postcommand.	TX	D

Error Code		Error description	TX/RX	Phase
Result of communication report	Job history			
408	Failure 202	Received a RTN.	TX	D
409	Failure 202	Received a PIN.	TX	D
410	Failure 202	Received a DCN during receiving phase D.	RX	D
411	Failure 202	Received a DCN after sending DTC.	RX (POL)	B
412	Failure 202	Cannot receive DSN after sending FTT.	RX	B
414	Failure 202	No response after sending DTC.	RX (POL)	B
415	Failure 202	No document for polling sending.	TX (POL)	B
416	Failure 202	Cannot receive Postcommand	RX	D
417	Failure 202	Sent RTN	RX	D
420	Failure 202	T1 timer timeout	RX	B
422	Failure 202	Settings of DIS/DTC are disabled.	TX	B
427	Failure 202	Received a DCN after sending DIS	RX	B
433	Failure 202	(Modem): Frame length error	RX/TX	B,D
434	Failure 202	(Modem): Frame wait timeout	RX/TX	B,D
436	Failure 202	Received a DCN after sending CFR/ FTT	RX	C
438	Failure 202	A DCN is sent after receiving DCS/ DTC.	RX/TX (POL)	B

Error Code		Error description	TX/RX	Phase
Result of communication report	Job history			
459	Failure 202	Training error occurs when receiving PIX.	RX	C
490	Failure 202	Number of error line exceeds the limit value when receiving PIX.	RX	C
494	Failure 202	(Modem): Timeout during EOL	RX	C
495	Failure 202	Carrier disconnection during receiving phase D	RX	C
496	Failure 202	(Modem): Data sending start error	TX	B,C
501	Failure 202	(V.34) Modem inconsistency error	V.34 RX/TX	B
502	Failure 202	(V.34) Primary channel end error	V.34 RX/TX	C
503	Failure 202	(V.34) Control channel end error	V.34 RX/TX	B,C,D
504	Failure 202	(V.34) Polling sending request is rejected in step V.8	RX (POL)	B
505	Failure 202	(V.34) Rejected the polling sending request in step V.8	TX (POL)	B
540	Failure 202	(ECM) No response or received a DCN after sending CTC	TX	D
541	Failure 202	(ECM) No response or received a DCN after sending EOR	TX	D
542	Failure 202	(ECM) No response or received a DCN after sending RR	TX	D
543	Failure 202	(ECM) T5 timer timeout	TX	D
544	Failure 202	(ECM) Sent DCN after sending EOR.	TX	D
550	Failure 202	(ECM) (Modem): Timeout between frames	RX	C

Error Code		Error description	TX/RX	Phase
Result of communication report	Job history			
554	Failure 202	(ECM) An ERR is sent after receiving EOR.	TX	D
580	Failure 202	The receiver dos not have F code (password) capability.	TX	B
582	Failure 202	The receiver (polling sending) does not have F code (password) capability.	RX (POL)	B
826	Failure 202	SUB/SID or SEP/PWD does not match.	RX/TX (POL)	B

6.4.4 FAX Service Parameter

To support by country or trouble, this product is equipped with the service parameters in addition to user mode parameters.

Start the “FAX Maintenance Mode” from the special mode to change settings with the service parameters.

6.4.4.1 Outline of setting change in FAX Maintenance Mode

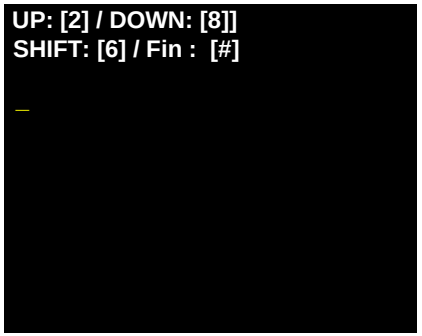
The following shows the procedure for settings change in FAX Maintenance Mode.

1. Enter “FAX Parameter Mode”.
2. Start “FAX Parameter Settings”.
3. Select the item to be changed, then input the value.
4. Press the [Power] button to turn off the power.

6.4.4.2 Parameter changing procedure

1. Star the “FAX Maintenance Mode”.

   1-1. From Power Off Condition, push the [#] button and [Power] button until the message is displayed on Panel LCD.



   1-2. Input the ID Number by the following operation method.

CAUTION

☐ **Make sure not to change the parameter before identifying the phenomenon and cause of the trouble.**

Make sure to identify the phenomenon and cause of the trouble before changing the parameter. Otherwise, the essential trouble may be hidden that result in recurrence the trouble or cause of another problem.

According to the explanation in 6.7.6.1 Basics of FAX troubleshooting (p.281), perform in the following procedure.

- Step1: Check the symptom
- Step2: Identify the cause
- Step3: Correction

When the identification of the cause is difficult, check the symptom as accurately as possible to acquire setting information of the product, then inquire at support center.

☐ **Initialize the FAX Service Parameter Setting**

When you want to initialize the FAX Service parameter only, [FAX Parameter Mode] → Select [FAX All Data Initial].

■Operation method

- Number input (move in ascending order) : [2] button
- Number input (move in descending order) : [8] button
- Input digit shift : [6] button
- Execute : [#] button

CHECK POINT

Enter “72730” when starting the FAX Maintenance Mode.

1-3. Push the [#]button after input the ID number, and confirm that following screen is displayed on panel LCD.

```
UP: [2] / DOWN: [8]]
SHIFT: [6] / Fin :  [#]

*****

OK:FIN  Retry:SHIFT
```

1-4. Push the [#]button on confirmation screen, and confirm that "Authentication Mode" is started.

```
Authentication Mode
  Run:[#] / Select:[2][8]


1. FAX Support Mode
2. FAX Maintenance Mode
```

1-5. Select the "FAX Maintenance Mode", and push the [#] button.

```
Authentication Mode
  Run:[#] / Select:[2][8]


1. FAX Support Mode
2. FAX Maintenance Mode
```

2. Start the "FAX Parameter Settings"

2-1. Select the "FAX Parameter Setting", and push [#] button.

```
FAX Maintenance Mode
 Run:[#] / Select:[2][8]


1. Line Measurement Mode
2. FAX Parameter Settings
```

2-2. Following screen is displayed on Panel LCD.
Waiting until the screen is changed. (About 1 minute)

```
Preparing the selected Mode


Please Wait
```

```
 FAX Parameter Setting

[000]
000 PARAMLIST PRINT
001 RAMEDIT PRINT
002 ---
003 ---
004 ---
005 PTCL LOG ON ERROR
006 PTCL LOG AUTO PRINT
007PTCL LOG MULTI SAVE
008 ---
009 ---

Select: [0-9] or [:]] / Enter:[#]
```

3. Select the changing item, and enter the setting number.

   Enter the number of changing item (3 digit), and push the [#] button.

CHECK POINT

- **If "---" is displayed on the right side of the number of changing number (3 digit), it is an item with no parameter assignment.**
- **There are the following two types of setting change items, and the changing method is different.**
  - **Parameter of selection type :Select Setting value**
  - **Parameter of input type : Enter Setting value**

  Regarding detail of changing method, refer to the next pages.

☐ Example of setting change in selection type parameter

■ Initial setting value of "DIAL TONE DETECT" is changing from [On] to [Off] condition.

1. Input the applicable item's number(060), and push the [#]button.

Input number

```
FAX Parameter Setting

[060]
060 DIAL TONE DETECT
061 DT DET TIME
062 DT OFF IGNR TIME
063 DT OFF IGNR TIME (PBX)
064 DT OFF PRE-PAUSE TIME
065 ---
066 ---
067 ---
068 ---
069 ---

Select:[0-9] or [*] / Enter:[#]
```

2. Setting change screen is displayed.
   Select the "01. Off" by [*]button, and push the [#]button.

Current state

Selection items

```
FAX Parameter Setting

060 DIAL TONE DETECT
Current:    On


Select New Value
[00]
00. On
01. Off


Select:[0-9] or[*] / Enter:[#]
```

3. The following complete message is displayed.
   when changing the parameter setting continuously, push the [#] button and move to the parameter select screen.
   When finish the parameter setting, push the [Power] button and turn off the printer.

Value after change

```
FAX Parameter Setting

060 DIAL TONE DETECT
Current:     Off


Parameter is set

Back to Parameter List: [#]
Finish: [Power]
```

☐ Example of setting change in input type parameter

■ Initial setting value of "TX SIGNAL LEVEL" is changing from [-10dBm] to [-15dBm].

1. Input the applicable item's number, and push the [#]button.

Input number

```
FAX Parameter Setting

[120]
120 TX SIGNAL LEVEL
121 RX SIGNAL DET LEVEL
122 TX EQUALIZER
123 RX EQUALIZE
124 ---
125 ---
126 ---
127 ---
128 ---
129 ---

Select:[0-9] or [*] / Enter:[#]
```

2. Setting change screen is displayed.
   Input the setting value (15) by number key, and push the [#]button.

Current state

Input setting value

Settable range of setting value

```
FAX Parameter Setting
120 TX SIGNAL LEVEL
Current:      10 [-dBm]

Input New Value

[ 15]  ( 0  -  15 )

Input: [0-9] / Set:[#]
```

3. The following complete message is displayed.
   when changing the parameter setting continuously, push the [#] button and move to the parameter select screen.
   When finish the parameter setting, push the [Power] button and turn off the printer.

Value after change

```
FAX Parameter Setting
120 TX SIGNAL LEVEL
Current:      15[-dBm]

Parameter is set

Back to Parameter List:[#]
Finish: [Power]
```

6.4.4.3 FAX Service Parameter Table

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
000	PARAMLIST PRINT	On Off	Off		
001	RAMEDIT	On Off	Off		
002	---				
003	---				
004	---				
005	PTCL LOG ON ERROR	On Off	Off		When set to ON, only the protocol monitor log of the communication error is saved.
006	PTCL LOG AUTO PRINT	On Off	Off		When set to on, the protocol monitor log is automatically printed after communication.
007	PTCL LOG MULTI SAVE	On Off	Off		When set to on, up to three protocol monitor logs are saved. Available in combination with errors.
008	---				
009	---				
010	IR DETECT LEVEL	13~60	13	Vrms	Minimum call signal detection level It is possible to avoid troubles by changing the setting value in the case where the call signal is erroneously detected due to the influence of noise. However, if the set value is set too high, it is impossible to detect the calling signal itself, so caution is required. NTT line standard for call signal detection is 75 (65 to 83) Vms, but generally ONU of PBX / optical line is lower than this standard. When changing this value, the ringing signal is measured with an oscilloscope, the ringing signal can be detected and no noise is detected. It is necessary to search for set values. [Supplement] Conversion formula of effective value and call signal value measured by oscilloscope Rms value
011	IR DET FRQ MIN	11~21	12	Hz	Set the lower limit value / upper limit value of the ringing signal detection frequency. In the case of connection line PSTN, the initial value is detected in the range of 12 to 66 Hz
012	IR DET FRQ MAX	27~80	66	Hz	

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
013	IR DET FRQ MIN (PBX)	11~21	11	Hz	Set the lower limit value / upper limit value of the ringing signal detection frequency. In the case of connection line PBX, the initial value is detected in the range of 11 to 80 Hz
014	IR DET FRQ MAX (PBX)	27~80	80	Hz	
015	IR ON TIME MIN	9~30	15	x10ms	Minimum time to recognize call signal ON If it is shorter than this time, it does not judge it as a call signal and does not answer incoming call. (The ringing tone sounds when ON at 80 ms)
016	IR ON TIME MAX	50~80	80	x100ms	Maximum time to recognize call signal ON If it is longer than this time, it does not judge it as a call signal and does not answer incoming call.(The ringing tone sounds)
017	IR OFF TIME MIN	6~10	10	x100ms	Call signal off confirmation time When the calling signal OFF time longer than this setting is detected, the calling signal is counted as 1 time. Do not count if the off interval is shorter than this. Reference value for connection line PSTN.
018	IR OFF TIME MAX	40~125	40	x100ms	If the off time is longer than this, it is judged that the call signal has disappeared. The call signal count is reset, the calling display disappears
019	IR OFF TIME MIN (PBX)	300~1000	600	ms	Call signal off confirmation time When the calling signal OFF time longer than this setting is detected, the calling signal is counted as 1 time. Reference value when connection count = PBX
020	RING DETECT COUNT	0~15	1	times	Linked with [number of times of call] of fax setting
021	---				
022	---				
023	---				
024	---				
025	---				
026	---				
027	---				
028	---				
029	---				

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
030	DIAL TYPE	Tone 10PPS 20PPS	Tone		Linked with [Dial type] of fax setting
031	DIAL PAUSE TIME	1~255	30	x100ms	Used to register a fax number in the address book. Changing the pause waiting time to enter with the pause button.
032	FAX SIGNAL WAIT TIME	1~255	55	sec	This function changes when the response of the partner fax is slow and exceeds the response waiting time. It is the same effect as putting a pose with a pause button after dialing.
033	BROADCAST INTVAL TIME	1~65536	6	sec	When executing multiple destination sequential broadcasting, if it is only sending set it short. If you also want to receive, leave a longer interval to set incoming calls longer. Change "038 JOB INTERVALTIME" by a set.
034	REDIAL INTERVAL	0~15	3	min	Linked with [Automatic Redial Interval] of fax setting
035	REDIAL COUNT	0~15	3	times	Linked with [Number of automatic redials] of fax setting
036	FORWARD RETRAY INTERVAL	0~255	0	min	In the fax to folder / fax to mail transfer, the transfer retry period and number setting when a transfer error occurs (server side power off). ☐ Setting Example • FORWARD RETRY INTERVAL = 30 • FORWARD RETRY COUNTER = 144 Retry 144 times with 30 minute cycle Continue retry for 3 days ☐ Precautions for setting When multiple transfer destinations are set, one transfer job is in a retry wait state due to an error Other jobs are not executed until the retry waiting job is completed (remain in the execution waiting state)
037	FORWARD RETRAY COUNT	0~255	0	times	
038	JOB INTERVAL TIME	1~65536	6	sec	In the case of an environment where a plurality of transmission jobs are always accumulated as execution waiting jobs, If you only send, set it to shorter. If you also want to receive, leave a longer interval to set incoming calls longer.
039	---				
040	DTMF HI SIG LVL	0~15	8	-dBm	Adjustment of sending level of DTMF transmission (high group frequency)

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
041	DTML LO SIG LVL (DIF)	+2.0dB ~ -5.5dB	-2.0dB		Adjustment of sending level of DTMF transmission (low group frequency) Difference from high group frequency ☐ Example High group frequency transmission level = -8dBm Difference in low group frequency transmission level= -2dBm → Low group frequency transmission level= -10dBm
042	DTML SEND TIME	5~25	10	x10ms	Transmission time of high group frequency DTMF transmission. Adjusting inter-digit pause time. Dial speed can be increased by decreasing set value. However, too late may cause dial tone false detection, incorrect connection. Do not set it shorter than 70-70 ms. Make sure to perform dial confirmation test after change to confirm that there is no incorrect connection.
043	DTMF INTER-DIGIT TIME	5~25	12	x10ms	
044	---				
045	---				
046	---				
047	---				
048	---				
049	---				
050	TONE DETECT LEVEL	28~43	28	-dBm	Share with dial tone / busy tone.
051	TONE DET FRQ MIN	24~38	30	x10Hz	
052	TONE DET FRQ MAX	47~67	50	x10Hz	
053	TONE DET FRQ MIN (PBX)	245~350	245	Hz	
054	TONE DET FRQ MAX (PBX)	470~670	670	Hz	
055	---				
056	---				
057	---				
058	---				
059	AUTO LINE CHECK	On Off	On		If there is no problem with telephone line or telephone line connection, set to off when [automatic line check function] false detection [line unconnected] or 'line reverse insertion' error occurs.

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
060	DIAL TONE DETECT	On Off	On		
061	DT DET TIME	5~25	10	x100ms	In the initial setting, if the dial tone is detected for 1000 ms, it is judged that there is a dial tone. *The dial tone detection waiting time is fixed at 10s.
062	DT OFF IGNR TIME	5~28	28	x100ms	The dial tone off time of this set value is regarded as a dial tone continuation. ‘Connection line = PSTN
063	DT OFF IGNR TIME (PBX)	50~280	280	ms	The dial tone off time of this set value is regarded as continuation of dial tone. ‘Connection line = PBX
064	DT OFF PRE-PAUSE TIME	20~2550	30	x100ms	When dial tone detection = OFF, pause of this setting value is entered before dialing.
065	---				
066	---				
067	---				
068	---				
069	---				
070	BUSY TONE DETECT	On Off	On		
071	BT DET ON TIME MIN	5~65	40	x10ms	Minimum time to recognize busy tone signal on. Shorter than this time does not judge it to be a busy tone.
072	BT DET ON TIME MAX	30~100	60	x10ms	Maximum time to recognize busy tone signal on. Longer than this time does not judge it as a busy tone.
073	BT DET OFF TIME MIN	4~65	40	x10ms	Busy tone signal off confirmation time. Upon detecting the busy tone signal off time longer than this setting, the number of busy tone signals is counted as one.
074	BT DET OFF TIME MAX	30~100	60	x10ms	If the OFF time is longer than this, it is judged that the busy tone signal has disappeared. (Busy tone signal count is reset)
075	BT DET COUNT	2~4	4	times	
076	---				
077	---				
078	---				

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
079	---				
080	TCF CHECK	Normal Long	Normal		Level of judgment of line training. If you make it long, more train the line situation. (It makes fall back easier)
081	CED-DIS INTERVAL	75ms 1sec	75ms		Set the signal interval time between the CED signal and the DIS signal selected at incoming call. To disable the echo suppressor overseas communication, set it to 1s.
082	REMOTE RX DET TIME	1~255	3	x10ms	Adjust detection time of remote reception push signal.
083	ERROR LINE MODE	Rate Line	Rate		Switching of error judgment mode of No-ECM reception. Select number of error lines or error line rate.
084	ERROR LINE NUM	0 line 64 line 128 line 192 line 256 line 1024 line 2048 line	0 line		If this setting value is exceeded during reception, judge that the error is over and turn off the line. * "0 line" operates with internal initial value = "128 line".
085	ERROR LINE RATE	0% 5% 10% 15% 20%	0%		If this setting value is exceeded during reception, judge that the error is over and turn off the line. * "0 %" operates with internal initial value = "10 %".
086	---				
087	---				
088	---				
089	---				
090	RX COLOR SUPPORT	Disable A4 A4/B4 A4/B4/A3	A4/B4/A3		Use this when you want to disable color reception. (Disable) Drop the color reception capability bit from the DIS signal sent at the incoming call. Since the transmitting side has no color receiving ability, color transmission is not performed. When you enable "A4" "A4 / B4" "B4 / A3" "A3" paper with fax, reduction color reception capability bit from DIS signal sent at incoming call.

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
091	RX PAPER WIDTH	A4 A4/B4 A4/B4/A3	Auto		Regardless of the paper size set in the apparatus, It is used when you want to specify the paper width to receive fax fixed. When changed, the receiving sheet width capability bit of the DIS signal to be sent at the time of incoming call changes. ☐ Example of use ■ When sending an A3 / B4 document on the sender side, judge whether to transmit with A3 / B4 width or reduced size by looking at the receiving paper width capability bit of the DIS signal of the receiver. When the receiving sheet width capability bit = A 4, the image is reduced / cut to A 4 and transmitted. ■ A3 / B4 paper is not set on the device, but fax reception is done with A3 / B4 and received as electronic data of A3 / B4 size by external memory save / transfer (Used when split printing is performed in full scale with substitution output)
092	RX MAX LENGTH	1~65536	650		When the received original length exceeds this set value, the reception is forcibly terminated.
093	---				
094	---				
095	---				
096	---				
097	---				
098	---				
099	---				
100	REDUCT/CUTOUT SEND	Reduction Send CutOut Send LEFT CutOut Send CENTER CutOut Send Right	Reduction Send		Process setting when the transmission document width differs from the recording width of the receiver at the time of transmission ■ Reduction Send = Reduction and sending ■ CutOut Send LEFT = Cut the Left end, and sending on original size. ■ CutOut Send CENTER = Cut the both end, and sending on original size. ■ CutOut Send Right = Cut the Right end, and sending on original size.
101	V.29 EP TONE	On Off	Off		When sending V299600 / 7200 bps, add an echo suppressor tone. It is used when a communication error has occurred due to the influence of line echo of overseas communication.
102	1ST DIS IGNORE	On Off	Off		Ignore the first DIS at the time of transmission and receive from the second DIS.

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
103	RTC (EOL x12)	On Off	Off		Select RTC signal [EOL × 6 / EOL × 12] at the end of the PIX signal (switch from high speed to low speed)
104	---				
105	---				
106	---				
107	---				
108	---				
109	---				
110	COMM MONITOR	Until Detect Always	Until Detect		☐ Until Detect The monitor turns on when sending out and turns off when it detects a facsimile signal. ☐ Always The monitor is always on. Since it is possible to listen to the signal at fax communication from the monitor speaker, it is used at the time of investigation of image defect trouble. After troubleshooting confirmation, remember to return to original.
111	MODEM MODE	V.27ter V.17 V.29 V.34	V.34		Linking with communication mode of fax setting V.34 requires ECM
112	CODING	MH MR MMR	MMR		MMR requires ECM
113	ECM	On Off	On		It is linked with error correction (ECM) of fax setting. When ECM = OFF, V34 / MMR / color communication becomes invalid.
114	SIGNAL INTERVAL	100 ms 200 ms 300 ms	100 ms		Procedure Adjust signal time between signals. When an error occurs in communication procedure due to line echo / delay etc.
115	---				
116	---				
117	---				
118	---				
119	---				

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
120	TX SIGNAL LEVEL	0~15	10	-dBm	If communication data error occurs, adjustment will improve symptoms.
121	RX SIGNAL DET LEVEL	-48 dBm -43 dBm -38 dBm -33 dBm	-43dBm		When a communication data error occurs, if the line noise is high, it is improved by lowering the sensitivity (-43 dBm → -38 dBm, -33 dBm)
122	TX EQUALIZER	0 dB 1.8 dB 3.6 dB 7.2 dB	0 dB		When a sending error occurs due to poor line characteristics.
123	RX EQUALIZER	0 dB 1.8 dB 3.6 dB 7.2 dB	3.6 dB		When there is a reception error due to poor line characteristics.
124	---				
125	---				
126	---				
127	---				
128	---				
129	---				
130	TX SPEED	2400 bps 4800 bps 7200 bps 9600 bps TC7200 bps TC9600 bps 12000 bps 14400 bps	14400 bps		Setting transmission start speed in V17 / V29 / V27ter mode.
131	RX SPEED	2400 bps 4800 bps 7200 bps 9600 bps TC7200 bps TC9600 bps 12000 bps 14400 bps	14400 bps		Setting the reception start speed of V17 / V29 / V27ter mode.

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
132	V.34 TX SPEED	2400 bps 4800 bps 7200 bps 9600 bps 12000 bps 14400 bps 16800 bps 19200 bps 21600 bps 24000 bps 26400 bps 28800 bps 31200 bps 33600 bps	33600 bps		Setting transmission start speed of V34 mode.
133	V.34 RX SPEED	2400 bps 4800 bps 7200 bps 9600 bps 12000 bps 14400 bps 16800 bps 19200 bps 21600 bps 24000 bps 26400 bps 28800 bps 31200 bps 33600 bps	33600 bps		Setting the reception start speed of V34 mode.
134	V.34 TX SYM RATE	2400 sym/s 2743 sym/s 2800 sym/s 3000 sym/s 3200 sym/s 3429 sym/s	2743 sym/s		Setting the transmission symbol rate of V34 mode
135	V.34 RX SYM RATE	2400 sym/s 2743 sym/s 2800 sym/s 3000 sym/s 3200 sym/s 3429 sym/s	2743 sym/s		Setting the reception symbol rate of V34 mode.

Table 6-13. FAX Service Parameter Table

No.	Parameter Name	Setting Range	Initial value	Unit	Remark
136	---				
137	---				
138	---				
139	---				

6.4.5 Fax related user special parameters.

In this product, special parameters are prepared for the following users.

FAX to PC FAX to Memory	☐ Emergency ejection of received fax document When a facsimile received document becomes unprintable due to a malfunction of the printer function, the fax reception original file can be urgently taken out. ■ FAX to PC Install FAX Utility on a PC connected to the product via USB or network, and take out fax received original file using PC - FAX reception function. ■ FAX to Memory Remove the FAX received document to the USB external memory connected to the product.

6.4.5.1 Emergency ejection of fax reception document (FAX to PC)

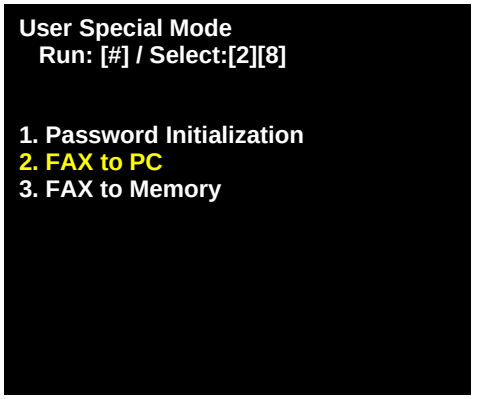
Using the PC FAX reception function, urgently remove the received original document file (.PDF) that can not be printed.
PC fax reception can be taken out by both USB / network.
The original file of fax reception is deleted from the product after transfer.

☐ Work Procedure

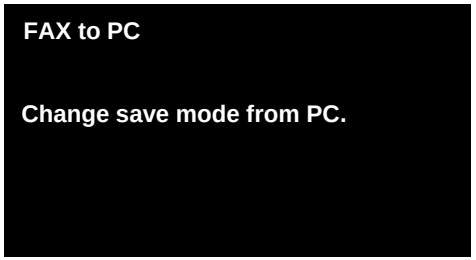
1. Start “User Special Mode”.
   1-1. Turn off the power of the printer once, hold down the # button and press and hold the power switch.
   Long press until the following message appears on the panel LCD.
   1-2. Enter the ID number and activate "User Special Mode".

When using "user special mode", confirm the ID number to the Service Support.

2. Press the [2] and [8] buttons, select "FAX to PC" from the menu and press the [#] button to execute.

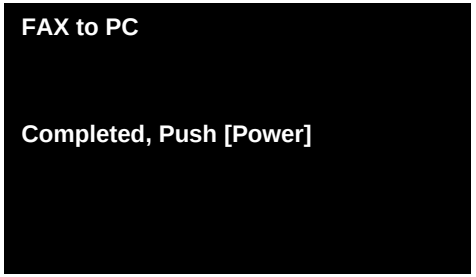


3. When the following screen is displayed, execute setting of PC FAX reception from PC with USB or network connection with product.



4. After PC FAX reception setting is completed, "Ready" is displayed and transfer is started.

5. When the transfer is completed, the following message is displayed. Press the [Power] button to turn off the product.



CAUTION

After the transfer of the received original file is completed, Turn on the power again and turn off PC FAX reception

6.4.5.2 Emergency ejection of received fax documents (FAX to Memory)

Using the USB memory, urgently remove fax received original file (.PDF) that can not be printed.

The received fax document file is transferred to the "¥ EPFAX RCV" folder of the USB memory. (Folders are automatically generated)
The fax receiving document is deleted from the product after transfer.

☐ Work Procedure

1. Start “User Special mode”.

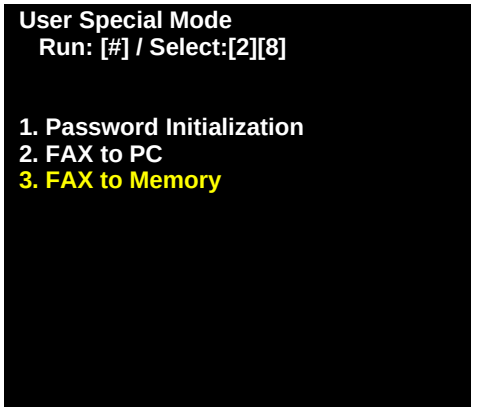
   1-1. Turn off the power of the printer once, hold down the # button and press and hold the power switch.
   Long press until the following message appears on the panel LCD.

   1-2. Enter the ID number and activate "User Special Mode".

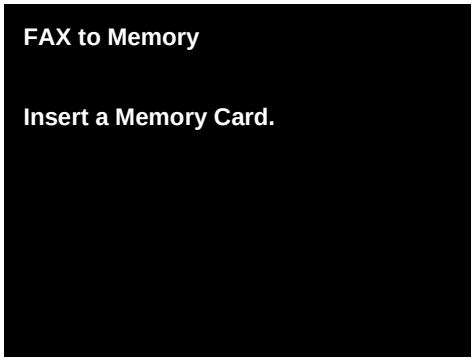
CHECK POINT

When using "user special mode", confirm the ID number to the Service Support.

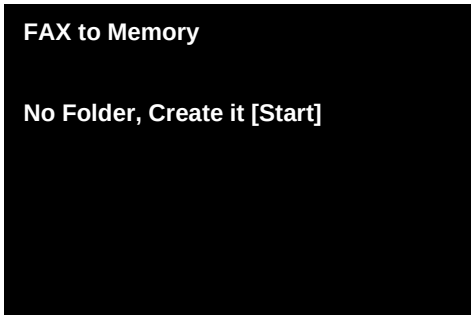
2. Press the [2] and [8] buttons, select "FAX to Memory" from the menu and press the [#] button to execute.



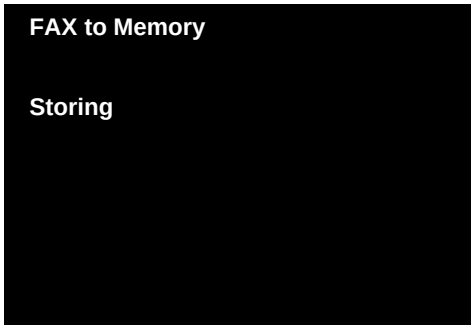
3. When the following message is displayed on the screen, connect the USB memory to the product.



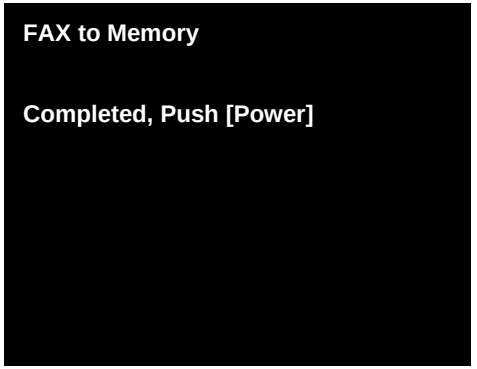
4. When the USB memory is detected, the following message is displayed, so press the [#] button to create the folder.
(If this folder already exists in USB memory, this screen will be skipped)



5. “Storing” is displayed and transfer is started.



6. When the transfer is completed, the following message is displayed on the screen.
Press the "Power" button to turn off the product.



6.4.6 Fax related troubleshooting

6.4.6.1 Fax troubleshooting basics

To troubleshoot fax troubleshooting with the following steps.

☐ Troubleshooting basic step

- Step 1: Accurately grasp and identify trouble symptoms.
- Step 2: Investigate the trouble error and specify the cause.
- Step 3: Correct the problem.

In particular, step 1 is very important.
Fax related troubles occur not only in the trouble caused by the own machine, but also due to troubles caused by the partner machine, troubles caused by the telephone line, troubles caused by usage, and the like occur in a combined manner.
When trouble occurs, hear the customer trouble content / situation well

"Who is in trouble with what?"
"What is in trouble?"
"How can you satisfy our customers?"

Accurately understanding and identify.
Thereafter, step 2 is performed, and the process proceeds to step 3.
If troubleshooting in step 3 is skipped by skipping steps 1 and 2, the original trouble will not be known.
As a result, it may cause trouble recurrence and another trouble to be induced.

☐ Troubleshoot basic step details

Step 1: Accurately understand and identify trouble symptoms.
In this step we check 5 points.
1. What is the symptom of the trouble? ■ Who is reporting the trouble? (User, administrator, communication partner of the printer) ■ What kind of error code / error message are occurring? (Communication management report, job history, protocol monitor log) ■ What kind of trouble is occurring? (Please understand concretely that you can not transmit, can not receive, can not send and receive, or the received image is dirty) Example) Can not sending → I can dial, but it can not connect with the other party. Communication is started with the other party but communication error occurs. Communication is possible but the image is dirty
2. Where is the trouble occurring? ■ Occurred in printer, occurred in application, occurred in specific PC. ■ Printer / PC of customer site, printer of customer office, equipment of customer's communication partner.
3. When will the trouble occur? ■ When has it occurred? ■ Is it occurring at a specific time? ■ Frequency of occurrence (always occurring, about once in 10 times). ■ Before trouble occurrence of environment. ■ Has the environment changed before the problem occurred? (Firm update, replacing ink cartridge, changed telephone line, moved the installation location)
4. What kind of operations and conditions will cause trouble? ■ When trouble occurs, is it always the same operation? ■ Does the problem occur only when a specific event occurs? ■ Does the same problem occur with another device or another destination communication?
5. Can you reproduce the trouble? ■ Has the same trouble occurred also at the service base? ■ Does the same problem occur with multiple devices and users? ■ Can the trouble be reproduced by a specific operation or a specific opponent?

Step 2: Determine the cause by investigating the error of the trouble.	
	When a fax related error occurs, it is not only displayed on the panel but also recorded as a log / report. Refer also to these logs / reports and investigate and identify the cause of the trouble. ■ Survey and collect communication management reports, protocol monitor logs, and job history displays. (Enable error code to be displayed by setting “report format” of communication management report to “detailed information”) ■ In outgoing trouble / communication trouble, in "PCM RECORDER" communication recording and incoming trouble, “Measure the call signal on the oscilloscope” is done. ■ Investigate the cause based on the survey results. ■ It is essential to understand the phase of facsimile transmission / reception in the investigation of fax communication error. Investigate with reference to logs / reports as to whether each phase error of transmission / reception is somewhere. ■ Ask the smart charge center as necessary
Step 3: Resolve the problem	
	If the cause can be identified, implement the countermeasure. Depending on the cause content, it can be restored by changing the setting of the user / service parameter.

6.4.6.2 Equipment information necessary for fax trouble report.

If it is difficult to identify the cause of the problem, contact the smart charge center for the following information.

- ☐ Symptom report of trouble
  (6.4.6.1 Fax troubleshooting basics by referring to basic step 1 of fax troubleshooting.)
- ☐ Device setting information
  (Please see below for contents.)

Report /Log name	Remark	Print Procedure
Fax function setting list		“FAX” → “Menu” → “Report” → “Print” → “FAX function setting list”
Communication management report	Print with report type = “detailed information”. When symptoms rarely occur, automatically print and acquire multiple sheets.	“FAX” → “Menu” → “Report” → “Print” → “Communication management report". ■ Report format “Setup” → “System administration setting” → “Fax setting” → “Output setting” → “Report format” → “Detailed information”. ■ Auto print “Setup” → “System administration setting” → “Fax setting” → “Output setting” → “Communication management report automatic printing”→ "On (every 30 items)"
Protocol log	Logs that are experiencing trouble symptomatic errors are preferred.	“FAX” → “Menu” → “Report” → “Print” → “Protocol log”
Printer information sheet		“Setup” → “Printing main body status sheet” → “Printer information sheet”
Consumables information sheet		“Setup” → “Printing main body status sheet” → “Consumables information sheet”
Usage history sheet		“Setup” → “Printing main body status sheet” → “Specification history sheet”
Epson status sheet	Network status sheet	“Setup” → “Network information” → “Check network information” → “Print”
Sending document, sample of received document	Communication time is slow, picture quality is bad, etc	

6.4.6.3 Troubleshooting from fax function diagnosis

By conducting fax function diagnosis for diagnosis of trouble, it is possible to diagnose basic items of fax function, line connection.

When an error is displayed in the fax function diagnosis report, the following the method are implemented.

Diagnosis result	Judgment contents	Measure
An error was found in the printer.	Main base, fax based communication problem	■ As hardware defects are considered, repair or product exchange (initial failure) is carried out.
It is not properly connected to the telephone line.	When the modem on hook of the equipment, the voltage of the LINE port was less than the specified value.	■ Confirm that the telephone line jack and the LINE port of the equipment are properly connected with the modular cable. → The stuffing of the modular cable is broken. If contact failure or disconnection, exchange cable. ■ Calculate the line voltage with a tester. (DC 48V at normal time) ■ Connect the external telephone to the telephone line jack without going through the device and check whether telephone reaction, incoming call, and call can be made normally. → If there is an abnormality in the telephone line, ask the telephone line contractor for confirmation.
The modular cable is connected to the EXT port.	When the modem on hook of the equipment, the voltage of the LINE port was the specified value, but if it is set to the off hook, it becomes less than the specified voltage value of the LINE port (When multiple modems are on hook, the EXT port is disconnected.)	■ Make sure that the modular cable from the telephone line jack is connected to the LINE and the module cable from the external telephone (if connected) is connected to the EXT. → If the external telephone is connected to the telephone line in reverse, correctly connect it again. port.
Line connection is unstable.	The on-hook phone was measured and it was below the specified value.	■ When a splitter is connected, in case of separation, connect the telephone line and the device directly and re-connect the fax function. ■ If it is connected to the TA, check if it improves by restarting TA.
No dial tone is detected.	can not detect the dial tone.	■ If you hear sound and intermittent sound by pressing the "on hook" button, set the connection line to "private branch exchange (PBX)" and perform the diagnostic test again. ■ You hear a continuous tone sound by pressing the “On Hook” button, but set “Dial tone detection” to “OFF” when the tone is small.

6.4.6.4 Troubleshooting from error code

The trouble can be specified to some extent by the error code of the communication management report.

CHECK POINT

In order to display the error code in the communication management report, it is necessary to make the following setting.

- ☐ **[Setup] → [System administration settings] → [Fax settings] → [Output settings] → [Report format] = [Detailed information]**

☐ Phase A trouble (calling system)

Error code display	Judgment contents	Measure
No tone	Dial tone can not be detected when dialing.	■ Connect the phone and check whether the dial tone from the switchboard is heard, continuous tone or intermittent tone. ■ Check if it is PSTN line or PBX line. In case of PBX line, change connection line setting to PBX and check again. If you can hear the dial tone but can not detect it , record it and check the signal and adjust the detection method in [FAX Maintenance Mode]. At this time, the [OFF] setting of dial tone detection has a risk of false detection. Avoid as much as possible.
Port back push	Before calling (on hook) there was a line voltage but the line voltage was gone when calling (off hook).	■ Check whether the LINE port and the EXT port are connected in reverse or check the telephone connection
No circuit connection	No line voltage from before transmission	■ Make sure that the telephone line is properly connected to the LINE port. ■ Connect the phone and check if you can dial by dialing or dialing a dial tone. Check the line voltage with a tester. (48 V DC at on-hook)
Busy	Busy tone is detected when dialing	■ Check if the phone number is wrong. ■ Check whether another signal is erroneously detected as a busy tone. In case of erroneous detection Confirm the signal that is erroneously detected by recording, and set the busy tone detection function to "OFF" in [FAX Maintenance Mode]. Or adjust the detection method.
No reply	I can not detect the fax number from the other machine after dialing.	■ Make sure that the phone number is wrong. ■ Confirm that the fax signal is coming back from the other party.

☐ Phase B to D trouble

Error code display	Judgment contents	Measure
Error ×××	A communication error occurred after line connection.	■ Output the communication management report and check the error occurrence status. In a fax machine that uses a subscribed telephone line, communication errors may occur if the status of the picked up telephone line is bad, and if it is re-communicated by automatic redial, it will grab a good telephone line and send it normally. Since a communication management report is necessary for trend survey, a communication management report is automatically printed. Have the customer keep it. Have the customer keep it. ■ By outputting the communication protocol monitor log at the time of error occurrence, it is possible to investigate where an error occurred in the communication. In “FAX Maintenance Mode”, set “error only” “automatic printing” as necessary. ■ Check the error occurrence status by acquiring the recording data of the communication at the time of error occurrence

CHAPTER

7

REPAIR WORK

7.1 Adjustment and Inspection Work

7.1.1 Caution of repair the product

Immediately after powering off the printer, electricity is stored in the electric circuit of printer.
If you disassemble the printer in this state, the electricity circuit might short circuit.
Therefore, make sure to perform the following operation of releasing the stored electricity before disassembling the printer.

☐ Procedure

1. Power Off the printer, and disconnect the AC Cable form printer.
2. Push the Power button until Power LED is turned off.

CAUTION

The Power LED lights for a few seconds when the power supply button is pushed.
Make sure to push the Power button until Power LED is turned off.
(When power LED is turned off, this operation is finished)

Figure 7-1. Releasing method of the stored electricity

7.1.2 Tools

The following tools and jigs are required for repairing the printer.

☐ **Tools**

Name	Availability	EPSON Part Code	Remarks
(+) Phillips screwdriver #1	O	---	
(+) Phillips screwdriver #2	O	---	
(+) Phillips screwdriver #2	O	---	Shaft length 250 mm or more
(+) Stubby screwdriver	O	---	Total length 47 mm or less
Flathead Precision screwdriver	O	---	
Torque screwdriver	O	---	
Tweezers	O	---	
Longnose pliers	O	---	
Cleaning stick	O	1709718	
Tape	O	---	Secure the cover open sensor (adjustment)
Scale	O	---	Adjustment

☐ **Jigs**

Name	Availability	EPSON Part Code	Remarks
Thickness Gauge	O	---	
Teflon tape	O	1706715	
LEAK TESTER SHEET FRONT	O	1684353	

Note 1 : Some of the tools listed above are commercially available.
2 : EPSON provides the tools listed with EPSON part code

7.2 Adjustment and Inspection Work

7.2.1 Adjustment and Inspection Overview

This product has adjustments and inspections that are performed by mechanically adjusting and inspecting the printer mechanisms (mechanical adjustments and inspections), and adjustments and inspections that are performed by using an adjustment program (software adjustments and inspections). The adjustment program is incorporated into the main unit of this product, and each adjustment menu can be used by starting the product in the service support mode. This section explains the adjustments, inspections, and maintenance required during repair work.

- Adjustment and inspection types
  - Mechanical adjustments and inspections

    Items to be physically adjusted and inspected on the product main unit.
  - Software adjustments and inspections (service support mode)
    - Individual part preparation before repair
      Perform the work for parts that require preparatory work prior to performing part replacement (repair work).
    - After unit repair operation mode (five main parts)
      Sequentially display the required adjustment items for part replacement. Only the five main parts (print head, ink supply unit, ink system, main board, and rear ASF unit) are supported.
    - Individual adjustment mode
      Used to individually select and execute the adjustment items. Perform adjustment in this mode for parts other than the five main parts.
  - Maintenance (service support mode)

    Used to perform maintenance operations such as ink filling and cleaning.

7.2.2 Adjustment and Inspection List

☐ Mechanical adjustments and inspections

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Reference
Adjustment	PG Adjustment	---	Set the clearance of the gap between the nozzle surface of the print head and the platen to an appropriate amount.	---	Place a thickness gauge in the specified location and then move the carriage unit over the thickness gauge and check the clearance.	☐ Thickness gauge. ☐ Teflon tape	P. 284
Inspection	Leak Check	---	To prevent ink leaks, make sure there is no ink leaking from the joints of the print head and ink supply unit ink tubes.	---	When the ink supply unit ink tubes are attached to the print head, insert the leak check jig and determine whether or not there is a leak by whether or not ink adheres to it.	---	P. 285

☐ Software adjustments and inspections

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
Initial settings	Head ID Input	B10	Input the ID incorporating the correction values for print head production variations.	---	Select "B10 Head ID Input" from the service support mode menu and execute the item. (Auto input) After the ID is input, check that the correct print head ID has been written in the same menu.	---	P. 286
	Initialization the PW Sensor (VPW / VH_Low2)	B14	Reset the deterioration correction counter for the corresponding part.	---	Execute "B14 VPW / VH_Low2" from the service support mode menu.	---	P. 287
	Counter Reset	B16	Reset the deterioration correction counter for the corresponding part.	---	Select "B16 Counter Reset" from the service support mode menu and execute the corresponding counter reset.	---	P. 287

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
Inspection (mechanical)	APG Move Check	B20	In order to check the assembly state when replacing APG related parts, check that there is no operation load abnormality and whether the APG stops at the specified position when switching the APG.	---	Select "B20 APG Move Check" from the service support mode menu and execute the item, and then visually check that the APG switching operation performs the specified movement.	---	P. 343
	CR Scale Check	B21	Check that there are no speed variations or organic variations in the CR operation due to damage or deterioration of the CR scale surface.	---	Select "B21 CR Scale Check" from the service support mode menu and execute the item.	---	P. 344
	PW Sensor Shutter Move	B22	Check that the shutter for reducing the amount of mist on the PW sensor is operating normally.	---	Select "B22 PW Sensor Shutter Move" from the service support mode menu and execute the item.	---	P. 344
	PE Sensor Check	B23	For poor assembling detection when replacing the PE sensor part, pass paper through and check that the chattering after detection of the paper trailing edge by the PE sensor stops within the set time.	Paper type: Plain paper Size: A4 Paper source: Paper cassette (1)	Select "B23 PE Sensor Check" from the service support mode menu and execute the item.	---	P. 345
	Temp/hum. Sensor Check	B24	Check that the temperature and humidity sensors are operating normally.	---	Select "B24 Temp/hum. Sensor Check" from the service support mode menu and execute the item, and then determine whether or not the sensor operation is normal or abnormal based on the displayed temperature and humidity information.	---	P. 345
	Nip Solenoid/Sensor	B25	Check that the solenoid for releasing the nip for the purpose of reducing paper skew is operating normally.	---	Select "B25 Nip Solenoid/Sensor" from the service support mode menu and execute the item.	---	P. 346

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
Inspection (printing)	Nozzle Noise Check	B26	Check that an abnormal signal that will cause a Nozzle diagnostic function problem is not occurring as a result of a part failure or poor assembling.	---	Select "B26 Nozzle Noise Check" from the service support mode menu and execute the item.	---	P. 347
	Nozzle Rank Categorize	B27	Set the rank for setting the optimal judgment threshold value of each nozzle to ensure Nozzle diagnostic function detection accuracy.	---	Select "B27 Nozzle Rank Categorize" from the service support mode menu and execute the item.	---	P. 347
	Nozzle Detect Check	B28	Check that Nozzle diagnostic function is operating normally.	---	Select "B28 Nozzle Detect Check" from the service support mode menu and execute the item.	---	---
	CHK Pattern Print (A4)	B29	Print check patterns to check that there is no problem with the final print quality.	Paper type: Plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4) or rear tray)	Select "B29 CHK Pattern Print (A4)" from the service support mode menu and execute the item to print the check patterns.	---	P. 348
	CHK Pattern Print (A3)	B33	Print check patterns to check that there is no problem with the final print quality.	Paper type: Plain paper Size: A3 Paper source: Any (paper cassette (1) to paper cassette (4) or rear tray)	Select "B33 CHK Pattern Print (A3)" from the service support mode menu and execute the item to print the check patterns.	---	P. 348
	RGB Pattern Print	B30	Print patterns for checking the banding level of each color.	Paper type: Plain paper Size: A4, Letter Paper source: Any (paper cassette (1) to paper cassette (4) or rear tray)	Select "B30 RGB Pattern Print" from the service support mode menu and execute the item to print the banding level check patterns.	---	P. 351
	Ruled Line Pattern	B31	Print patterns to check for ruled line deviation.	Paper type: Plain paper Size: A3 Paper source: Paper cassette (1)	Select "B31 Ruled Line Pattern" from the service support mode menu and execute the item to print the ruled line deviation check patterns.	---	P. 353
	Nozzle Check Pattern	B32	Print patterns for checking for missing nozzles.	Paper type: Plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4) or rear tray)	Select "B32 Nozzle Check Pattern" from the service support mode menu and execute the item to print the nozzles missing check patterns.	---	P. 355

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
Adjustment (mechanical)	CR Motor Correct	B40	Measure product variations to set the appropriate correction values. Also, make a pass/fail judgment by calculating whether or not the operation load is within the expected range from the motor current value.	---	Automatically measure the correction value and perform the operation load check by selecting " B40 CR Motor Correct" from the service support mode menu and executing the item.	---	P. 290
	PF Motor Correct	B41		---	Automatically measure the correction value and perform the operation load check by selecting "B41 PF Motor Dispersion Correct" from the service support mode menu and executing the item.	---	P. 290
	C1 ASF/LIFT Correct	B42		---	Automatically measure the correction value and perform the operation load check by selecting "B42 C1 ASF/LIFT Correct" from the service support mode menu and executing the item.	---	P. 290
	C2 ASF/LIFT Correct	B66		---	Automatically measure the correction value and perform the operation load check by selecting "B66 C2 ASF/LIFT Correct" from the service support mode menu and executing the item.	---	P. 290
	C3 ASF/LIFT Correct	B67		---	Automatically measure the correction value and perform the operation load check by selecting "B67 C3 ASF/LIFT Correct" from the service support mode menu and executing the item.	---	P. 290
	C4 ASF/LIFT Correct	B68		---	Automatically measure the correction value and perform the operation load check by selecting "B68 C4 ASF/LIFT Correct" from the service support mode menu and executing the item.	---	P. 290

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
Adjustment (print adjustment)	Head angular Adj. Mech	B43	Mechanically correct the print offset due to part product variations and tilting at the time of print head attachment.	Paper type: Photo matte paper Size: A4 Paper source: Rear tray	Select "B43 Head angular Adj. Mech" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then perform adjustment by turning the adjustment dial provided on the carriage unit.	---	P. 291
	Head angular Adj. Soft-A	B44	Use software to correct the vertical or horizontal tilting that occurs at the time of print attachment.	Paper type: Business plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4) or rear tray)	Select "B44 Head angular Adj. Soft-A" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Head angular Adjustment Soft menu.	---	P. 295
	Head angular Adj. Soft-B	B69	Use software to correct the vertical or horizontal tilting that occurs at the time of print attachment.	Paper type: Business plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4) or rear tray)	Select "B44 Head angular Adj. Soft-B" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Head angular Adjustment Soft menu.	---	P. 295
	PTS Acc./Dec. Adjust	B45	Correct the impact offset caused by a difference in the speed of the low-speed part and acceleration/ deceleration part of the CR.	Paper type: Plain paper, business plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4))	Select "B45 PTS Acc./Dec. Adjust" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the PTS Acc. And Bec. Adjust menu.	---	P. 298

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
Adjustment (print adjustment)	Bi-d Adjust	B46	Use software to correct the print timing for aligning the print position between the outward path and return path when bidirectional printing.	Paper type: Plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4))	Select "B46 Bi-d Adjust" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Bi-d Adjust menu.	---	P. 304
	PTS Position Adjust	B47	Use software to correct the print timing for reducing the bidirectional offset of the paper edge when printing using a specific PG value.	Paper type: Plain paper, business plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4))	Select "B47 PTS Position Adjust" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the PTS Position Adjust menu.	---	P. 307
	Bi-d Band Adjust	B48	Use software to correct the print timing for aligning the print position between the outward path and return path when bidirectional printing in band feed mode.	Paper type: Business plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4)	Select "B48 Bi-d Band Adjust" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Bi-d Band Adjust menu.	---	P. 310
	PW Sensor Correct	B49	Use software to correct the offset due to sensor characteristics and attachment variations.	Paper type: Photo matte paper Size: A4 Paper source: Rear tray	Select "B49 PW Sensor Correct" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the PW Sensor Correct menu.	Ruler	P. 313

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
Adjustment (print adjustment)	Print Start Pos. FASF	B50	Use software to correct the print timing so that the main scanning direction print start position becomes the target value.	Paper type: Plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4)	Select "B50 Print Start Pos. FASF" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Print Start Pos. FASF menu.	Ruler	P. 316
	Print Start Pos. RASF	B51		Paper type: Plain paper Size: A4 Paper source: Rear tray	Select "B51 Print Start Pos. RASF" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Print Start Pos. RASF menu.	Ruler	P. 316
	PE Adjust FASF	B52	Use software to correct the paper detection position offset caused by variations in the PE sensor attachment position and print head position.	Paper type: Plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4)	Select "B52 PE Adjust FASF" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the PE Adjust FASF menu.	Ruler	P. 319
	PE Adjust RASF	B53		Paper type: Plain paper Size: A4 Paper source: Rear tray	Select "B53 PE Adjust RASF" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the PE Adjust RASF menu.	Ruler	P. 319
	Feed Adjust	B54	Use software to correct the variation in the actual feed amount of paper caused by production variations of the PF/EJ rollers.	Paper type: Photo matte paper Size: A4 Paper source: Rear tray	Select "B54 Feed Adjust" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Feed Adjust menu.	---	P. 322

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
Adjustment (print adjustment)	Band Feed Adjust	B55	Correct the paper feed error that occurs due to mechanical variations or media feed characteristics in band feed mode.	Paper type: Plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4) or rear tray)	Select "B55 Band Feed Adjust" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Band Feed Adjust menu.	---	P. 325
	A - B Band Adjust	B65	Correct the amount of paper feed to match the ink impact state of actual printing.	Paper type: Plain paper, business plain paper Size: A4, Letter Paper source: Any (paper cassette (1) to paper cassette (4) or rear tray)	Select "B65 A-B Band Adjust" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the A-B Band Adjust menu.	---	P. 328
Simple adjustment	PTS Acc./Dec. Adjust (S)	B61	Correct the impact offset caused by a difference in the speed of the low-speed part and acceleration/deceleration part of the CR. Perform adjustment in only a specific adjustment area and perform automatic calculation for other than that area to determine the correction value.	Paper type: Plain paper, business plain paper Size: A4 Paper source: Paper cassette (1)	Select "B61 PTS Acc/Dec. Adjust (S)" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the PTS Acc./Dec. Adjust (S) menu.	---	P. 331
	Bi-D Adjust (S)	B62	Use software to correct the print timing for aligning the print position between the outward path and return path when bidirectional printing. Perform adjustment in only a specific adjustment area and perform automatic calculation for other than that area to determine the correction value.	Paper type: Plain paper Size: A4 Paper source: Paper cassette (1)	Select "B62 Bi-D Adjust (S)" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Bi-D Adjust (S) menu.	---	P. 334
	Bi-D Band Adjust (S)	B63	Use software to correct the print timing for aligning the print position between the outward path and return path when bidirectional printing in band feed mode. Perform adjustment in only a specific adjustment area and perform automatic calculation for other than that area to determine the correction value.	Paper type: Plain paper Size: A4 Paper source: Paper cassette (1)	Select "B63 Bi-D Band Adjust (S)" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Bi-D Band Adjust (S) menu.	---	P. 337

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
Simple adjustment	Band Feed Adjust (S)	B64	Correct the paper feed error that occurs due to mechanical variations or media feed characteristics in band feed mode. Perform adjustment in only a specific adjustment area and perform automatic calculation for other than that area to determine the correction value.	Paper type: Plain paper Size: A4 Paper source: Any (paper cassette (1) to paper cassette (4)	Select "B64 Band Feed Adjust (S)" from the service support mode menu and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Band Feed Adjust (S) menu.	---	P. 340
Preparation work before repair	Print Head	B90	Judge whether or not the print head needs to be replaced when missing nozzles, unstable discharge, or misalignment discharge occurs. If replacement is required, perform the preparation required for replacement.	---	Select "B90 Print Head" from the service support mode menu and execute the item.	---	P. 360
	I/S Unit	B91	Perform the operation required before replacing the ink supply unit because of an ink supply unit failure.	---	Select "B91 I/S Unit" from the service support mode menu and execute the item.	---	P. 361
	Maintenance Unit	B92	Perform the operation required before replacing the ink system.	---	Select "B92 Maintenance Unit" from the service support mode menu and execute the item.	---	P. 361
After unit repair operation mode (five main parts)	Head Replace Seq	B80	Sequentially display the adjustments required after print head replacement.	---	Select "B80 Head Replace Seq" from the service support mode menu and execute the item to perform the adjustments required after print head replacement.	---	P. 362
	I/S Unit Replace Seq	B81	Sequentially display the adjustments required after ink supply unit replacement.	---	Select "B81 I/S Unit Replace Seq" from the service support mode menu and execute the item to perform the adjustments required after ink supply unit replacement.	---	P. 363

Adjustment name		Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
After unit repair operation mode (five main parts)	MainteUnit Replace Seq	B82	Sequentially display the adjustments required after Maintenance Unit replacement.	---	Select "B82 MainteUnit Replace Seq" from the service support mode menu and execute the item to perform the adjustments required after Maintenance Unit replacement.	---	P. 363
	RASF Unit Replace Seq	B83	Sequentially display the adjustments required after rear tray replacement.	---	Select "B83 RASF Unit Replace Seq" from the service support mode menu and execute the item to perform the adjustments required after rear tray replacement.	---	P. 364
	Main Board Replace Seq	B84	Sequentially display the adjustments required after main board replacement.	---	Select "B84 Main Board Replace Seq" from the service support mode menu and execute the item to perform the adjustments required after main board replacement.	---	P. 364
Routine Maintenance Menu	Routine Maintenance After Adjustment	B70	Sequentially display the adjustments required after performing the Routine Maintenance.	---	Select “B70 After Adjustment” from the service support menu and execute the item to perform the adjustment required after performing the Routine maintenance.	---	
	Routine Maintenance Display Setting	B71	Change the Display setting of Routine Maintenance warning.	---	Select “B71 Display Setting” from the service support menu.	---	

☐ Maintenance

Adjustment name			Program No.	Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Adjustment procedure details
Maintenance functions	Ink filling	Head Ink Fill	C01	Fill the print head and ink channels with ink to enable printing. (Perform this after print head replacement.)	---	Select "Ink Fill" from the service support mode menu and execute the item to check the discharge state with the nozzle check patterns.	---	P. 357
		Initial Fill	C02	Fill the print head and ink channels with ink to enable printing. (Perform this after replacement of the ink supply path parts between the RIS unit and print head.)	---		---	P. 357
	Head Cleaning	CL1	C03	Perform this to recover from missing dots or print defects of the print head.	---	Select a head cleaning item from the service support mode menu and execute the item to check the discharge state with the nozzle check patterns.	---	P. 357
		CL2	C04					
		CL3	C05					
		Strong CL	C06					
		Refresh CL	C07					
	Ink Discharge	Head Ink Discharge	C08	Discharge ink to release the pressure applied to the ink inside the supply path from the head for the purpose of preventing ink leaks after print head replacement. (However, this is not required after normal print head replacement.)	---	Select "C08 Head Ink Discharge" from the service support mode menu and execute the item.	---	P. 358
		Supply Ink Discharge	C09	Discharge the ink inside the supply path from the ink supply unit to the print head and replace it with air.	---	Select "C09 Supply Ink Discharge" from the service support mode menu and execute the item.	---	P. 358
		Suction Pump Ink Discharge	C10	Discharge the waste ink remaining in the suction pump (ink system).	---	Select "C10 Suction Pump Ink Discharge" from the service support mode menu and execute the item.	---	P. 358

7.2.3 Adjustment and Inspection List

The following table lists the adjustment items depending upon the parts being replaced. When you remove or replace multiple parts, refer to adjustment items for all of those parts. Furthermore, if there are multiple adjustment items for a replaced part, be sure to carry them out in the priority order indicated in the table.

CHECK POINT

Meaning of the marks used in the tables on the following pages are as follows.
○: Required only when replacing
◎: Required when removing and/or replacing
---: No adjustment is required

Table 7-1. Adjustment Correspondence Table

Priority order	Relevant parts / Adjustment item	Duplex Print Assy	Power Supply Unit	ASF Drive Assy	APG Drive Assy	APG Motor Assy	PW Drive Shutter	PF Drive Assy	Rear ASF Unit	Lift Drive Assy	Main Board	Maintenance Unit	Nip Release Solenoid	Nip Release Lever, etc.	Nip Release Sensor	Paper Guide Upper Assy	Star Wheel Assy	Print Head	Ink Supply Unit	humidity Sensor	CR Motor Assy	CR Scale	CR Unit	PW Sensor	Option Frame Right Assy
1	PG Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	-	-
2	Leak Check	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	◎	-	-	-	-	-	-
3	Head ID Input	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-	-	-
4	Head Ink Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Supply Ink Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Suction Pump Ink Discharge	-	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Head Ink Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	-	-	-	-	-	-	-
	Initial Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	-	-	-	-	-	-
6	Counter Reset - PF/EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	○	-	-	-	-	-	-	-	-
7	Counter Reset - ASF	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Counter Reset - Rear Tray	-	-	-	-	-	-	-	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Counter Reset - Routine Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Initialization the PW Sensor (VPW / VH_Low2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	○	-
11	PW Sensor Correct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	◎	-
12	CR Motor Correct	-	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-	○	-	-
13	PF Motor Correct	-	○	-	-	-	-	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	ASF/LIFT Correct	-	○	○	-	-	-	-	-	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○
15	APG Move Check	-	-	-	◎	◎	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	CR Scale Check	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	-	◎	◎	-	-
17	PW Sensor Shutter Move	-	-	-	-	-	◎	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	○	-
18	PE Sensor Check	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Temp./hum. Sensor Check	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-
20	Nip Release Solenoid / Sensor	-	-	-	-	-	-	-	-	-	-	-	◎	◎	◎	-	-	-	-	-	-	-	-	-	-
21	Nozzle Noise Check	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-	-	○	-	-	-	-	◎	-	-
22	Nozzle Rank Categorize	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-	-	○	-	-	-	-	◎	-	-

Table 7-1. Adjustment Correspondence Table

Priority order	Adjustment item \ Relevant parts	Duplex Print Assy	Power Supply Unit	ASF Drive Assy	APG Drive Assy	APG Motor Assy	PW Drive Shutter	PF Drive Assy	Rear ASF Unit	Lift Drive Assy	Main Board	Maintenance Unit	Nip Release Solenoid	Nip Release Lever, etc.	Nip Release Sensor	Paper Guide Upper Assy	Star Wheel Assy	Print Head	Ink Supply Unit	humidity Sensor	CR Motor Assy	CR Scale	CR Unit	PW Sensor	Option Frame Right Assy
23	Nozzle Detect Check	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-	-	○	-	-	-	-	◎	-	-
24	Head Angular Adj. Mech	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	-	-	◎	-	-
25	Head Angular Adj. Soft-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	-	-	-	-	◎	-	-
26	Head Angular Adj. Soft-B									-															
27	PTS Acc./Dec. Adjust (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	-	-	-	-	◎	-	-
28	PTS Acc./Dec. Adjust	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎*	-	-	-	-	◎*	-	-
29	Bi-D Adjust (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	-	-	-	-	◎	-	-
30	Bi-D Adjust	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎*	-	-	-	-	◎*	-	-
31	PTS Position Adjust	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Bi-D Band Adjust (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	-	-	-	-	◎	-	-
33	Bi-D Band Adjust	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎*	-	-	-	-	◎*	-	-
34	Print Start Pos. FASF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-	-	◎	◎	-
35	Print Start Pos. RASF	-	-	-	-	-	-	-	◎	-	-	-	-	-	-	○	-	-	-	-	-	-	◎	◎	-
36	PE Adjust FASF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	PE Adjust RASF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	Feed Adjust	○	-	-	-	-	-	-	-	-	-	-	-	-	-	○	○	-	-	-	-	-	-	-	-
39	Band Feed Adjust (S)	○	-	-	-	-	-	-	-	-	-	-	-	-	-	○	○	◎	-	-	-	-	-	-	-
40	Band Feed Adjust	○	-	-	-	-	-	-	-	-	-	-	-	-	-	○*	○*	◎*	-	-	-	-	-	-	-
41	A-B Band Adjust	○	-	-	-	-	-	-	-	-	-	-	-	-	-	○	○	◎	-	-	-	-	-	-	-
42	CHK Pattern Print	◎	-	-	-	-	-	-	◎	-	-	-	-	-	-	◎	◎	◎	-	-	-	-	◎	◎	-
43	RGB Pattern Print	◎	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	◎	◎	-	-	-	-	◎	◎	-
44	Ruled Line Pattern	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	◎	-	-	-	-	◎	◎	-

*: Perform the adjustments of the full version for a user who uses special paper.

7.2.4 Adjustment and Inspection Details

7.2.4.1 Mechanical Adjustments and Inspections

PG ADJUSTMENT

CHECK POINT

- **The standard value of the PG is as shown below.**
  1.35±0.06 mm
- **Perform PG adjustment with the PG at the minimum (PG1) before attaching the CR scale.**

CAUTION

Do not touch the CR scale during PR adjustment.

- Tools to use
  - Thickness gauge for PG adjustment
  - Teflon tape (part code: 1684353)
- Adjustment flow

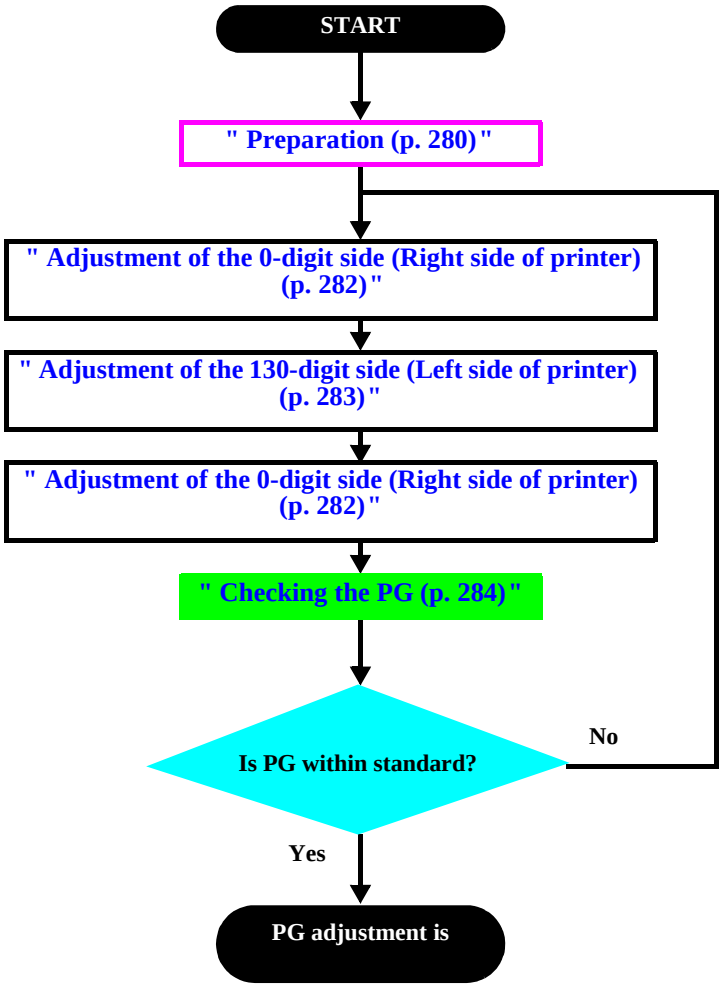


Figure 7-2. PG Adjustment Flow

☐ Preparation

■ Preparing the thickness gauge

CAUTION

- **The print head of this product has a structure with an integrated print head cover and print head nozzle surface. Therefore, if the thickness gauge touches the nozzle surface in the same way as when performed with the conventional procedure, the nozzle surface of the print head may be damaged.**
- **When performing the PG adjustment or PG check, be sure to affix Teflon tape (thickness: 0.08 mm) to the thickness gauge (1.00 mm) that you will use for the adjustment or check to prevent damage to the nozzle surface of the print head.**
- **When affixing Teflon tape to the thickness gauge, make sure no air or foreign matter enters between the thickness gauge and tape.**

■ Procedure for affixing Teflon tape

1. Clean the surfaces of the thickness gauge using alcohol, and make sure there is no dirt or contamination on the surfaces.
2. Affix Teflon tape to the thickness gauge (1.00 mm) as shown below.

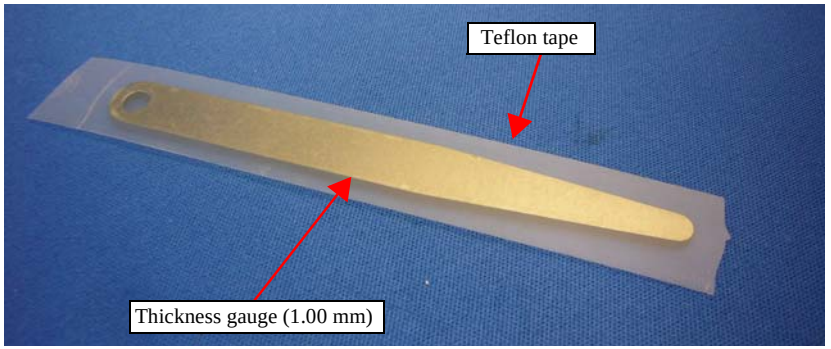


Figure 7-3. Preparing Thickness Gauge (1)

3. Fold the excess portions of Teflon tape along the edges of the thickness gauge, and trim the portions at about the center in the thickness direction of the sides.
4. Make sure there are no tears or burrs on the affixed Teflon tape. Preparation of the thickness gauge is finished.

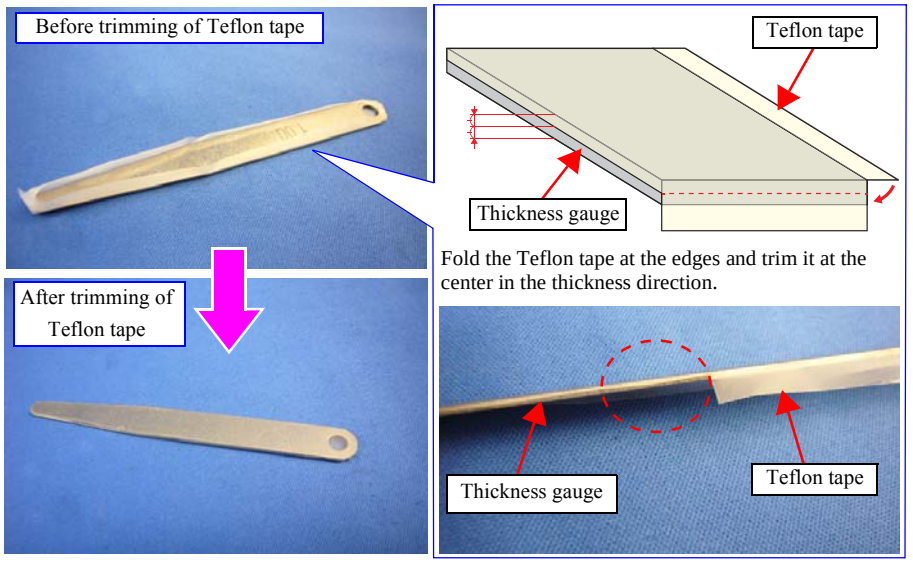


Figure 7-4. Preparing Thickness Gauge (2)

■ Preparing the product

1. Remove the ink supply cover (BK) and ink supply cover (CL).
2. Remove the inner sub cover (BK) and inner sub cover (CL).

■ Checking the APG position

Check that the APG position is [PG1].

- How to check

"1" of the CR bearing is at the bottom.

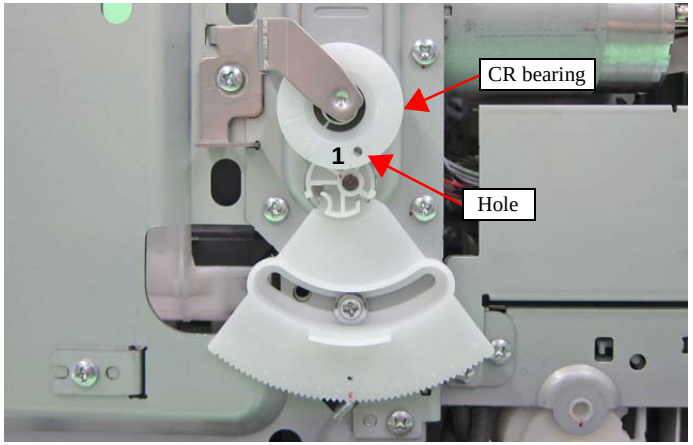


Figure 7-5. Checking APG Position

☐ PG adjustment procedure

CAUTION

When performing PG adjustment, observe the following points.

- **Move the CR unit left and right by holding the top of the CR timing belt.**
- **Be careful not to damage the nozzle surface of the print head with the thickness gauge.**
- **When making the print head touch the thickness gauge, be careful not to let the print head run onto the thickness gauge.**

■ Adjustment of the 0-digit side (Right side of printer)

1. Remove the two fixing screws of the PG adjustment cam positioned on the left and right of the printer.

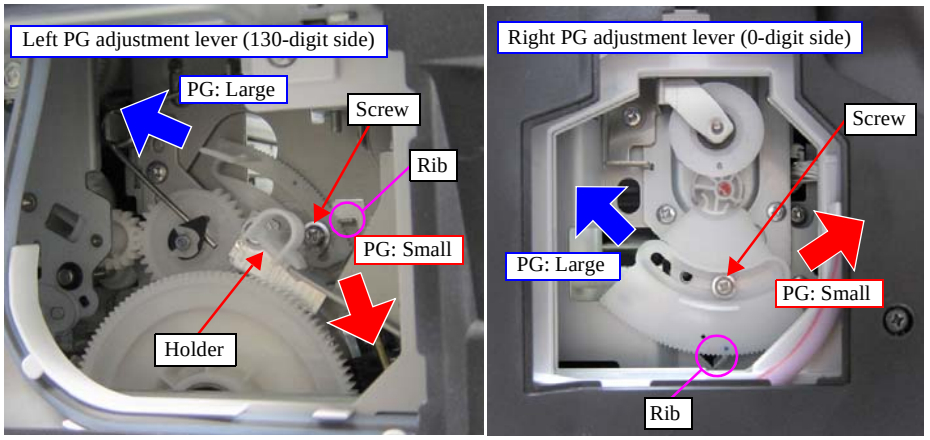


Figure 7-6. PG Adjustment Cam

2. Move the CR unit to the center of the printer, and place the 1.40 mm thickness gauge (1.32 mm thickness gauge + 0.08 mm Teflon tape) at position A shown in **Figure 7-7**.

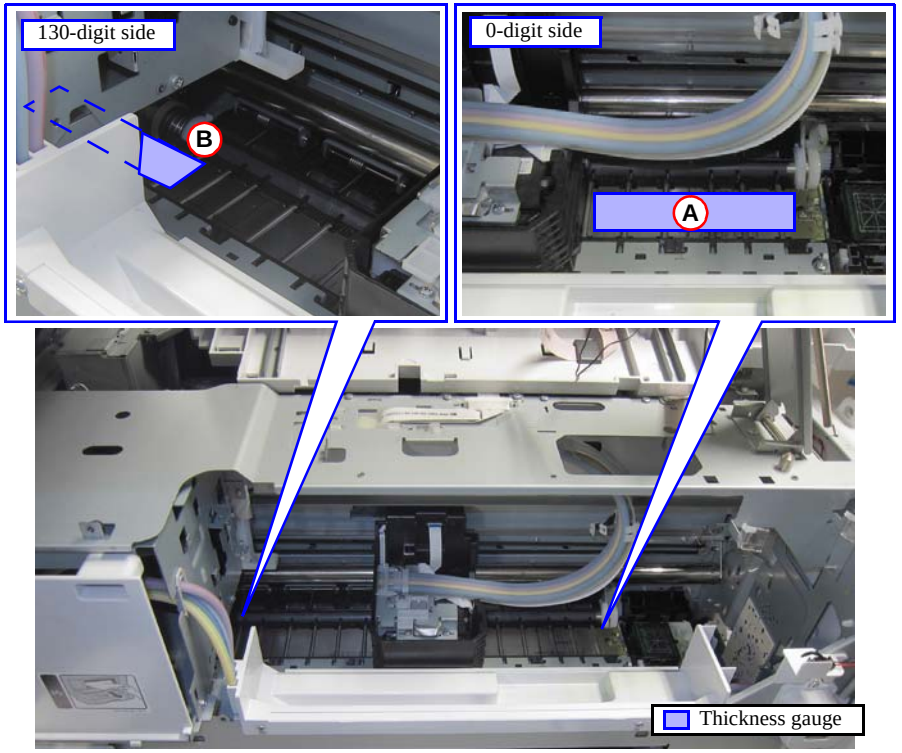


Figure 7-7. Placement of Thickness Gauge

3. Move the CR unit to the thickness gauge and check whether or not the nozzle surface of the print head touches the thickness gauge.
   - If touches the thickness gauge: Proceed to step 4.
   - If does not touch the thickness gauge: Perform the adjustment in the procedure below.

   3-1. Move the CR unit to the center part of the printer, and move the PG adjustment cam on the 0-digit side by one notch (**Figure 7-6**) in the "-" direction.

   3-2. Move the CR unit to the thickness gauge again and check whether or not the nozzle surface of the print head touches the thickness gauge.
   - If touch the thickness gauge: Proceed to step 4.
   - If does not touches the thickness gauge: Move the CR unit to the center part of the printer, and repeat the work of **Step 3-1** to **Step 3-2** until the nozzle surface touches the thickness gauge.

4. Move the CR unit to the center part of the printer, and place the 1.31 mm thickness gauge (1.23 mm thickness gauge + 0.08 mm Teflon tape) at position A shown in **Figure 7-7**.

5. Move the CR unit to the thickness gauge and check whether or not the nozzle surface of the print head touches the thickness gauge.
   - If does not touch the thickness gauge: End adjustment.
   - If touches the thickness gauge: Perform the adjustment in the procedure below.

   5-1. Move the CR unit to the center part of the printer, and move the PG adjustment cam on the 0-digit side by one notch (**Figure 7-6**) in the "+" direction.

   5-2. Move the CR unit to the thickness gauge again and check whether or not the nozzle surface of the print head touches the thickness gauge.
   - If does not touch the thickness gauge: End adjustment
   - If touches the thickness gauge: Move the CR unit to the center part of the printer, and repeat the work of **Step 5-1** to **Step 5-2** until the nozzle surface does not touch the thickness gauge.

■ Adjustment of the 130-digit side (Left side of printer)

1. Move the CR unit to the center of the printer, and place the 1.41 mm thickness gauge (1.33 mm thickness gauge + 0.08 mm Teflon tape) at position B shown in **Figure 7-7**.

2. Move the CR unit to the thickness gauge and check whether or not the nozzle surface of the print head touches the thickness gauge.
   - If touches the thickness gauge: Proceed to step 3.
   - If does not touch the thickness gauge: Perform the adjustment in the procedure below.

   2-1. Move the CR unit to the center part of the printer, and move the PG adjustment cam on the 0-digit side by one notch (**Figure 7-6**) in the "-" direction.

   2-2. Move the CR unit to the thickness gauge again and check whether or not the nozzle surface of the print head touches the thickness gauge.
   - If does not touch the thickness gauge: End adjustment.
   - If touches the thickness gauge: Move the CR unit to the center part of the printer, and repeat **Step 2-1** to **Step 2-2** until the nozzle surface touches the thickness gauge.

3. Move the CR unit to the center of the printer, and place the 1.31 mm thickness gauge (1.23 mm thickness gauge + 0.08 mm Teflon tape) at position B shown in **Figure 7-8**.

4. Move the CR unit to the thickness gauge and check whether or not the nozzle surface of the print head touches the thickness gauge.
   - If does not touch the thickness gauge: End adjustment.
   - If touches the thickness gauge: Perform the adjustment in the procedure below.

   4-1. Move the CR unit to the center part of the printer, and move the PG adjustment cam on the 0-digit side by one notch (**Figure 7-6**) in the "+" direction.

4-2. Move the CR unit to the thickness gauge again and check whether or not the nozzle surface of the print head touches the thickness gauge.

- If does not touch the thickness gauge: End adjustment
- If touches the thickness gauge: Move the CR unit to the center part of the printer, and repeat the work of **Step 4-1** to **Step 4-2** until the nozzle surface does not touch the thickness gauge.

CAUTION

After adjusting the 0-digit side and 130-digit side in accordance with the adjustment procedure, adjust the 0-digit side again.

☐ Checking the PG

1. Move the CR unit to the center part of the printer.
2. Place the 1.31 mm thickness gauge (1.23 mm thickness gauge + 0.08 mm Teflon tape) at the position shown in **Figure 7-8**.

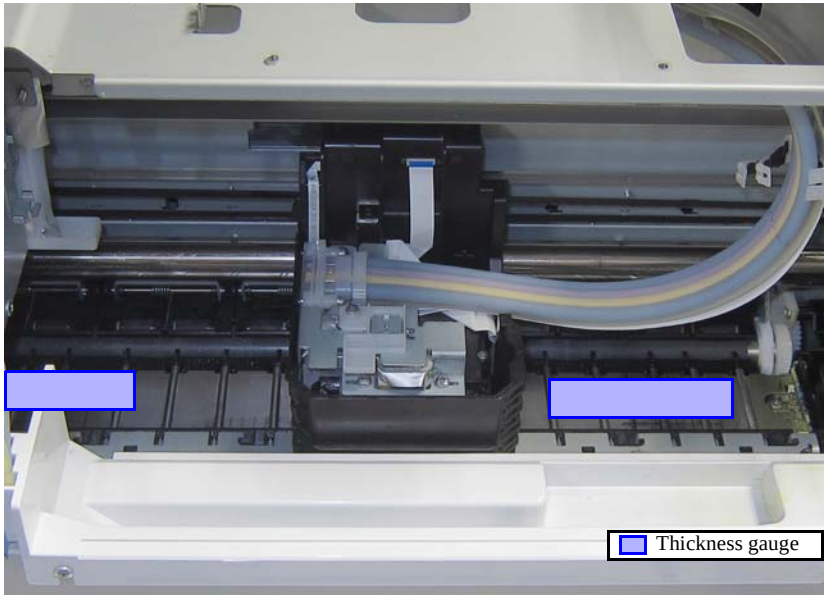


Figure 7-8. Checking the PG

3. Move the CR unit to the thickness gauge and check that the nozzle surface of the print head does not touch the thickness gauge.
   If it touches the thickness gauge, the PG is narrower than the standard value so adjust the PG (adjust the 0-digit side and adjust the 130-digit side).
4. Move the CR unit to the center part of the printer, and place the 1.41 mm thickness gauge (1.33 mm thickness gauge + 0.08 mm Teflon tape) at the position shown in **Figure 7-8**.
5. Move the CR unit to the thickness gauge and check that the nozzle surface of the print head touches the thickness gauge.

INK LEAK CHECK

An ink leak check is required when disconnecting the ink supply unit from the print head.
The judgment method of the ink leak check is described below.

CHECK POINT

Leak check jigs (PET chips for leak check) need to be attached during the part replacement work.
For the procedure to attach the leak check jigs, refer to P. 538 and P. 561.

☐ Leak check procedure

1. Pull out the PET chips for the leak check.

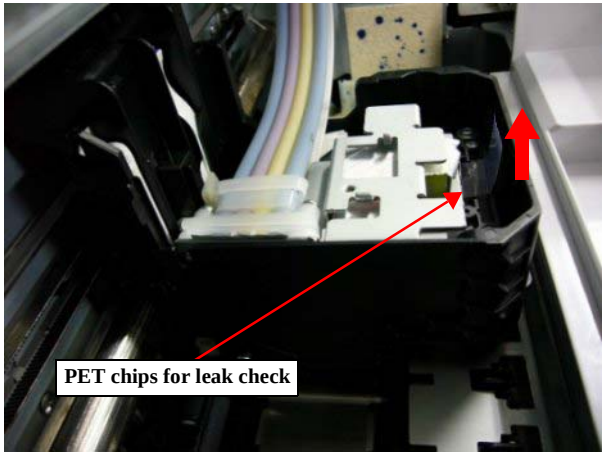


Figure 7-9. Leak Check Procedure (1)

2. Check the ink adherence state on the cloudy surface of the PET chips to determine whether or not there is an ink leak.

■ Judgment criterion of leak check
Check whether or not ink is adhered at a position of 2 mm or more from the leading edge of the cloudy surface of the PET chips. (Consider the result to be a fail if any of the two PET chips for the leak check does not pass the check.)

- Pass (no ink leak)
  When ink adherence is less than 2 mm from the leading edge of the PET chip
- Fail (ink leak)
  When ink adherence is 2 mm or more from the leading edge of the PET chip

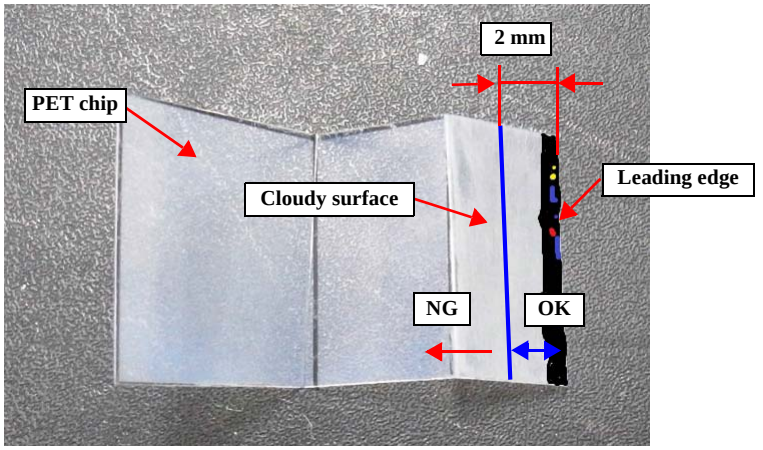


Figure 7-10. Judgment Criterion of Leak Check

CHECK POINT

If the result is determined to be a fail (ink leak), refer to "Print Head *(p. 559)*" and perform the ink check again.

7.2.4.2 Software Adjustment Menu (Service Support Mode [Program in Main Unit])

INITIALIZE MENU

☐ **Head ID Input (Head ID Input (B10))**

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Head ID Input".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "10".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Mech Ready / Initialize : MENU**" from the Individual Adjustment menu.

3-3. Select "**B10 Head ID Input**" from the Initialize menu.

4. The Head ID Input menu appears.

5. Press the [2] button. Head ID input is executed. (To not execute it, press the [8] button to return to the Initialize menu)

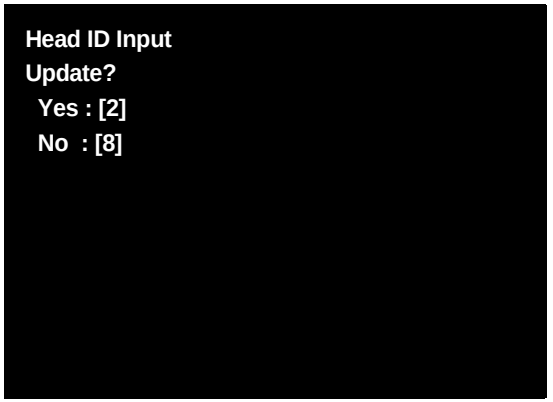


Figure 7-11. Head ID Input Screen

☐ Initialization the PW Sensor (VPW / VH_Low2 (B14))

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "PW Sensor Reset".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD.
Enter program number "14".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Mech Ready / Initialize : MENU**" from the Individual Adjustment menu.

3-3. Select "**B14 VPW / VH_Low2**" from the Initialize menu.

4. Initializing is executed and the Initialize menu reappears.

☐ Counter Reset (B16 Counter Reset)

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Counter Reset".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD.
Enter program number "16".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Mech Ready / Initialize : MENU**" from the Individual Adjustment menu.

3-3. Select "**B16 Counter Reset**" from the Initialize menu.

4. The Counter Reset menu appears.

5. Select the applicable counter by pressing the [2][8] button, and executed by pushing the [6] button.
   (To not execute it, press the [8] button to return to the Initialize menu.)

> **CHECK POINT**
> **Items that can be counter reset are as follows.**
> - **PF/EJ Counter**
> - **ASF Counter**
> - **RASF Counter**
> - **InkSystem Counter (Routine Maintenance Counter)**

```
B16 Counter Reset

Please select the counter.

  PF/EJ Counter        0
  ASF Counter          0
  RearASF Counter      0
  InkSystem Counter    0

SELECT: [2][8]
Reset:[6]              Back:[*]
```

Figure 7-12. Counter Reset Screen (1)

6. An initialization screen of the selected counter is displayed.
   Push the[2]button, and initialize the Counter.

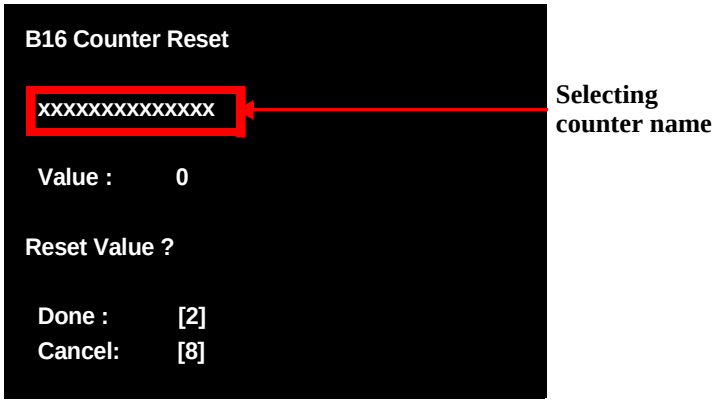


Figure 7-13. Counter Reset Screen (2)

7. Confirm that the counter in the counter reset menu is "0".

SOFTWARE ADJUSTMENT (MECHANICAL) MENU

☐ **Motor Dispersion Correct**
(B40 CR Motor Correct /B41 PF Motor Correct/
B42 C1 ASF/LIFT Correct/B66 C2 ASF/LIFT Correct/
B67 C3 ASF/LIFT Correct/B68 C4 ASF/LIFT Correct)

CHECK POINT

ASF/LIFT motor dispersion correction needs to be performed in the state with the paper cassette pulled out, so pull out the paper cassette before performing correction.

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Counter Reset".

CHECK POINT

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD.
Enter program number "40", "41","42","66","67" or "68".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Mech check :MENU**" from the Individual Adjustment menu.

3-3. Select the motor to correct from the Mech Check menu.

- CR motor: **B40 CR Motor Correct**
- PF motor: **B41 PF Motor Correct**
- C1 ASF/LIFT motor:**B42 C1 ASF/LIFT Correct**
- C2 ASF/LIFT motor:**B66 C2 ASF/LIFT Correct**
- C3 ASF/LIFT motor:**B67 C3 ASF/LIFT Correct**
- C4 ASF/LIFT motor:**B68 C4 ASF/LIFT Correct**

4. The correction and motor cycle check results are displayed after correction ends.

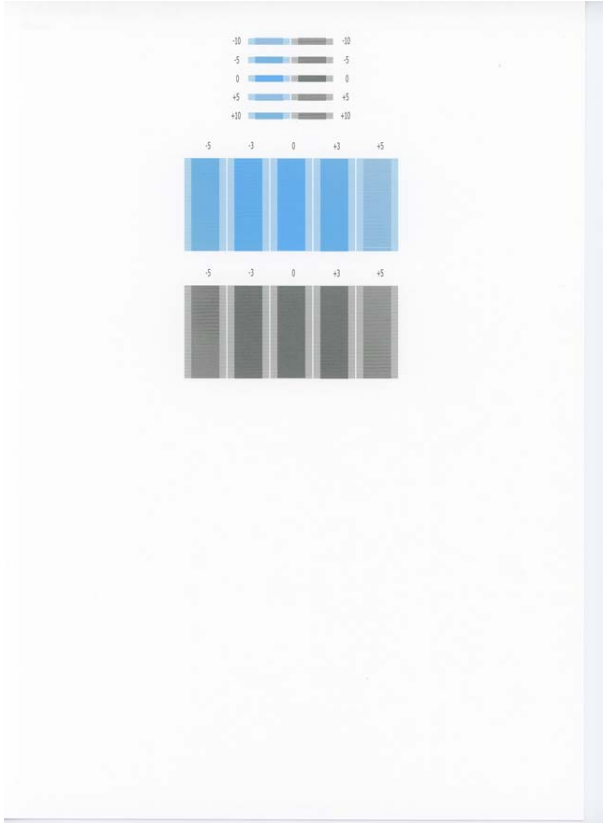
SOFTWARE ADJUSTMENT (PRINT ADJUSTMENT) MENU

☐ Head angular Adjustment Mech (B43)

■ Paper and feed tray

- Paper size:A4
- Paper type:Photo matte paper
- Paper feed tray:Rear tray

■ Adjustment pattern



■ Judgment
Make adjustments so that the spacing between the pattern lines when the adjustment value is “0” becomes equal.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select “**Adjustment: MENU**” from the service support mode top menu.
3. Select “Head angular Adjustment Mech”.

CHECK POINT

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select “**B00 Adjustment - Input B Number**” from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number “43”.

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select “**Individual Adjustment: MENU**” from the Adjustment menu.

3-2. Select “**Printing Adjustment**” from the Individual Adjustment menu.

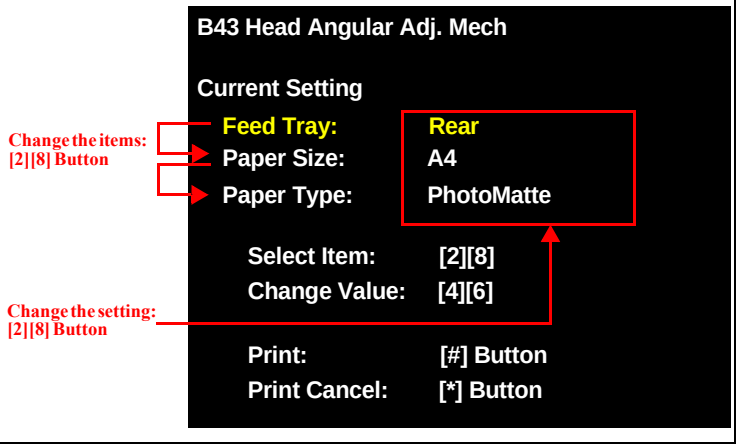
3-3. Select “**B43 Head Angular Adj. Mech**” from the Printing Adjust menu.

4. The Head angular Adjustment Mech menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
   Check the adjustment pattern and check the adjustment value for which the line spacing is the most equal.

CHECK POINT

The following two types of patterns are printed in the adjustment pattern.

- ☐ **Coarse adjustment pattern**
  The adjusted value is printed by five steps (-10, -5, 0, +5, +10).
- ☐ **Detail adjustment pattern**
  The adjusted value is printed by three steps (-5, -3, 0, +3, +5).

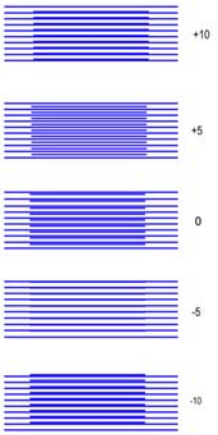


Figure 7-14. Adjustment Pattern (Coarse adjustment pattern)

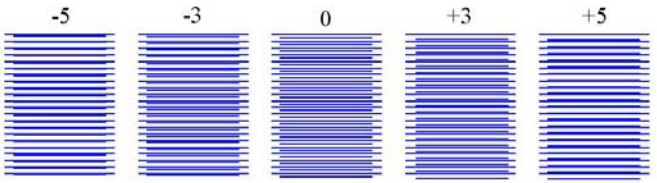


Figure 7-15. Adjustment pattern (Detail adjustment pattern)

8. Perform the Adjustment.

CAUTION

If the tape of the front cover open sensor comes off during the adjustment, make sure that the CR unit is securely fixed because it moves to the home position and is dangerous

8-1. A confirmation screen appears. Press the [2] button. The carriage unit moves to the maintenance position. (To not perform adjustment, press the [8] button.)

```
B43 Head Angular Adj. Mech
Execute Head Adjustment?

Execute:  [2]
Cancel  : [8]
```

Figure 7-16. Confirmation Screen

8-2. Turn the four print head fixing screws counterclockwise by 90 degrees to loosen them.

8-3. Turn the adjustment dial based on the adjustment value confirmed in **Step 7**.

CHECK POINT

The adjustment dial adjustment method is as follows.

- **Clockwise (CW) : "+" direction**
- **Counterclockwise (CCW) : "−" direction**

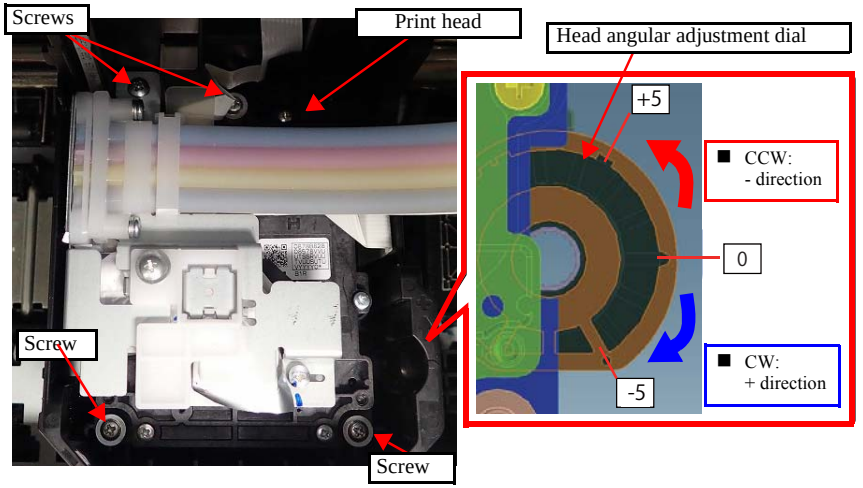


Figure 7-17. Print Head Fixing Screws

8-4. Tighten the four fixing screws.

8-5. A confirmation screen appears. Press the [#] button.

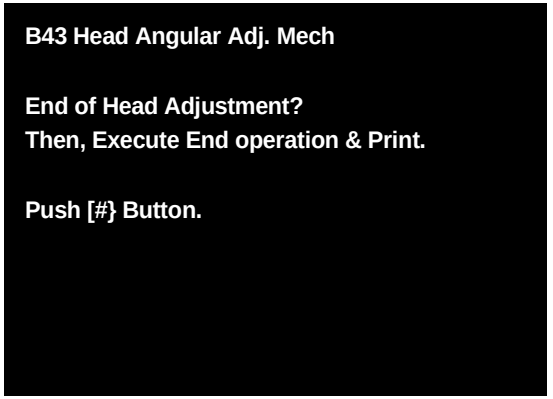


Figure 7-18. Confirmation Screen

8-6. Print the adjustment pattern again and check that the lines of the adjustment pattern of "0" are the most equal.

- When equal:
  Press the [2] button to end adjustment.
- When not equal:
  Press the [8] button and go to **Step 8-7**.

8-7. Perform steps **Step 8-1** to **Step 8-2** and turn the adjustment dial one graduation in the deviation direction.

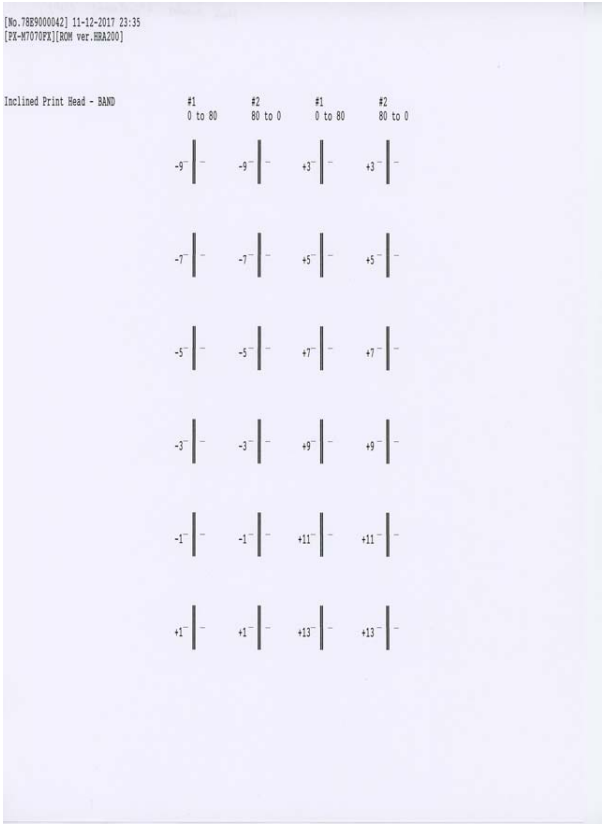
8-8. Perform steps **Step 8-4** to **Step 8-6** to check the adjustment pattern. Repeat this procedure until the lines of the adjustment pattern of “0” become equal.

☐ B44 Head angular Adj. Soft-A

■ Paper and feed tray

- Paper size:A4
- Paper type:Business plain paper
- Paper feed tray:Paper cassette (1) to paper cassette (4) or rear tray

■ Adjustment pattern



■ Judgment
From among the printed patterns, select the pattern where the above and below lines are the straightest.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Head angular Adjustment Soft".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "44".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust:MENU**" from the Individual Adjustment menu.

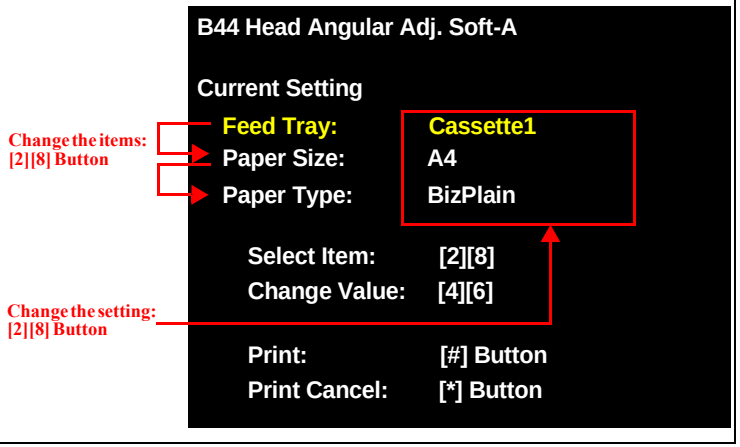
3-3. Select "**B44 Head angular Adj. Soft-A**" from the Printing Adjust menu.

4. The Head Angular Adj. Soft-A menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

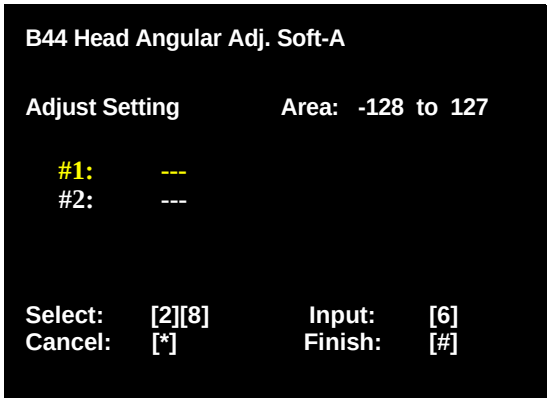
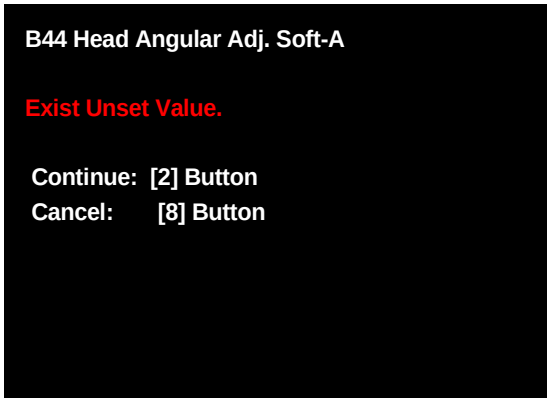


Figure 7-19. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #2) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)

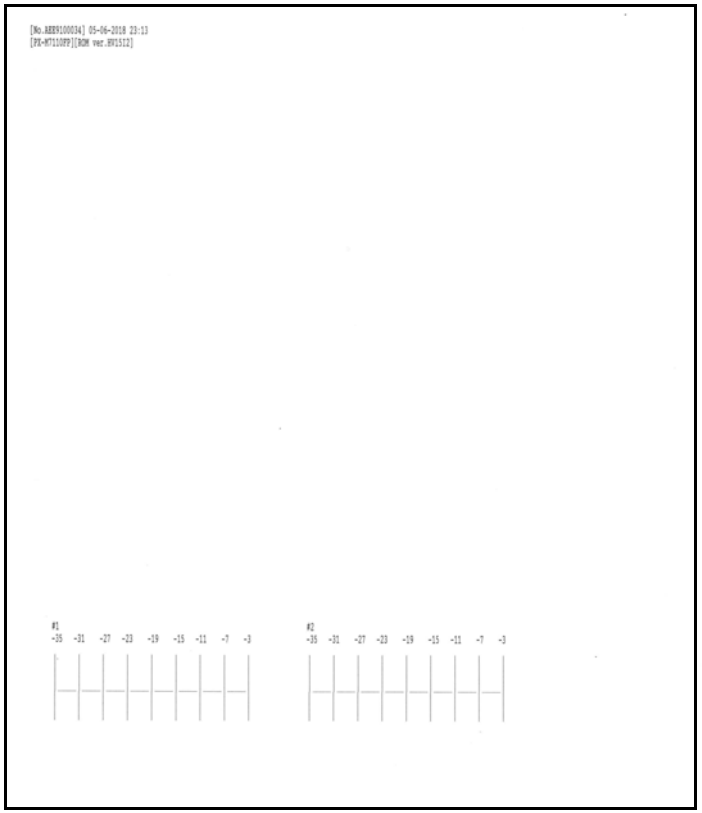


☐ B69 Head angular Adj. Soft-B

■ Paper and feed tray

- Paper size:A4
- Paper type:Business plain paper
- Paper feed tray:Paper cassette (1) to paper cassette (4) or rear tray

■ Adjustment pattern



■ Judgment
From among the printed patterns, select the pattern where the above and below lines are the straightest.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Head angular Adjustment Soft".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "69".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust:MENU**" from the Individual Adjustment menu.

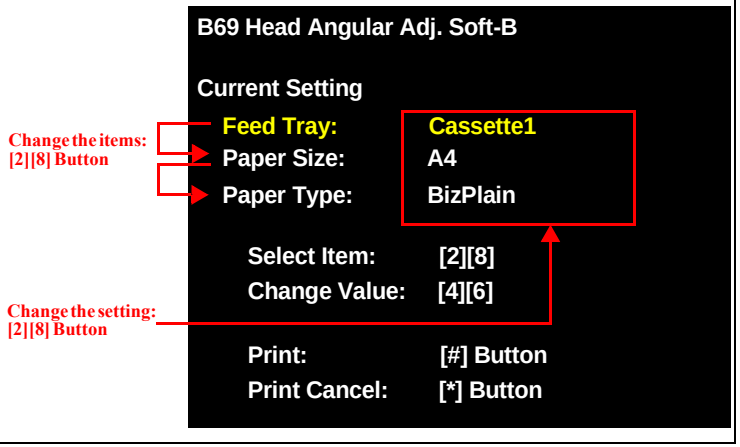
3-3. Select "**B69 Head angular Adj. Soft-B**" from the Printing Adjust menu.

4. The Head Angular Adj. Soft-Bt menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

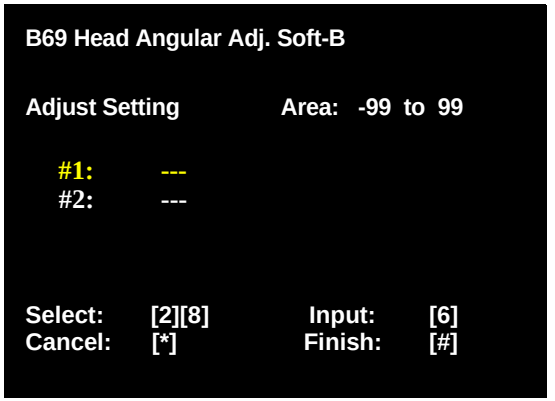
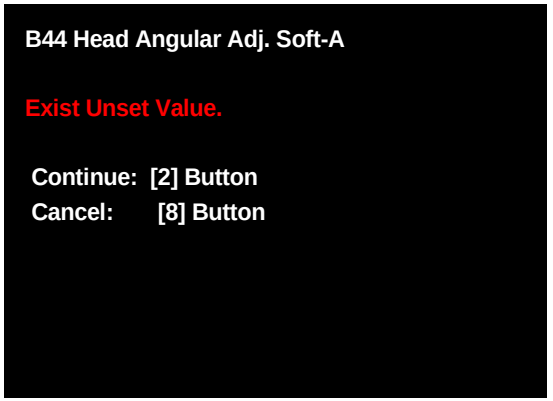


Figure 7-20. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #2) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)

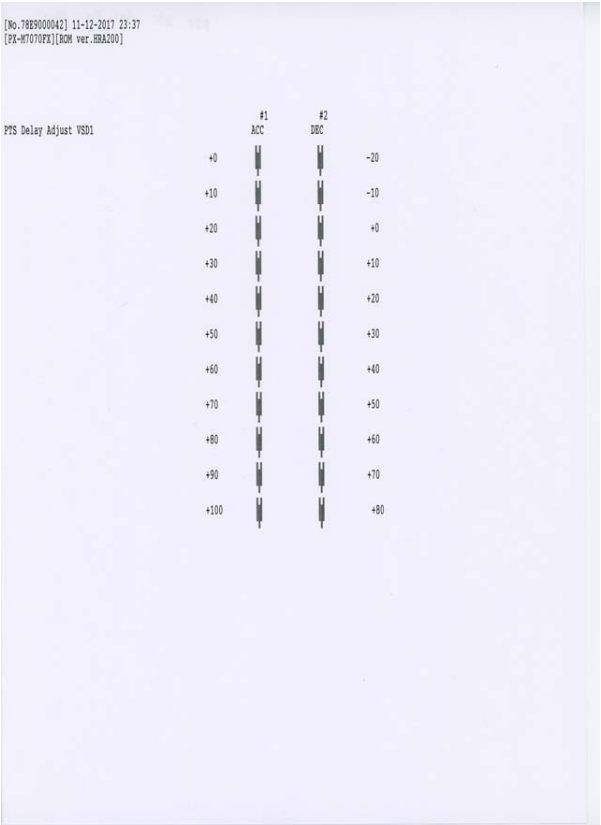


☐ B45 PTS Acc./Dec. Adjust

■ Paper and feed tray

- Paper size:A4
- Paper type:Plain paper, Business plain paper
- Paper feed tray:Paper cassette (1) to paper cassette (4)

■ Adjustment pattern



■ Judgment
Select the pattern for which there is no gap and overlapping of the left and right patterns.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "PTS Acc./Dec. Adjust".

CHECK POINT

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "45".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust: MENU**" from the Individual Adjustment menu.

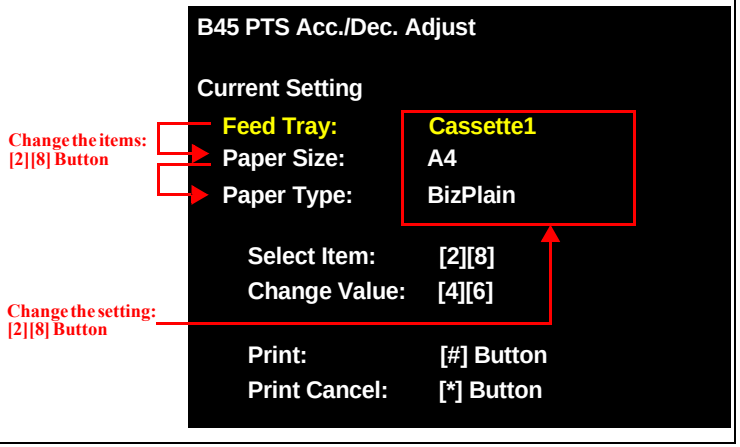
3-3. Select "**B45 PTS Acc./Dec. Adjust**" from the Printing Adjust menu.

4. The B45 PTS Acc./Dec. Adjust menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

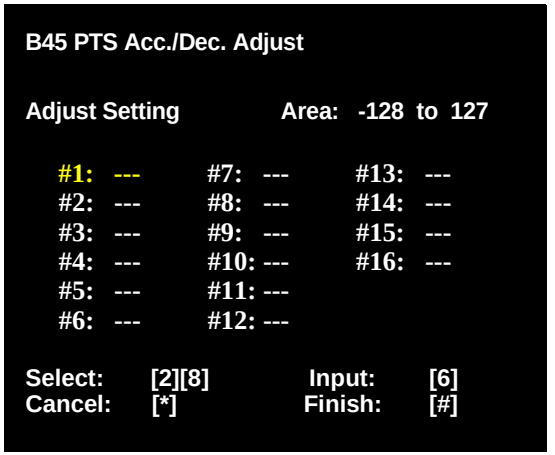
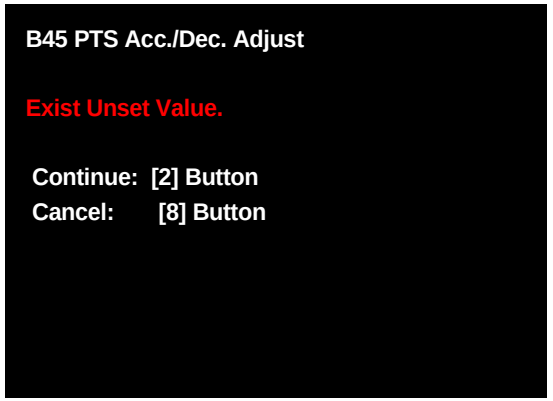


Figure 7-21. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #16) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)

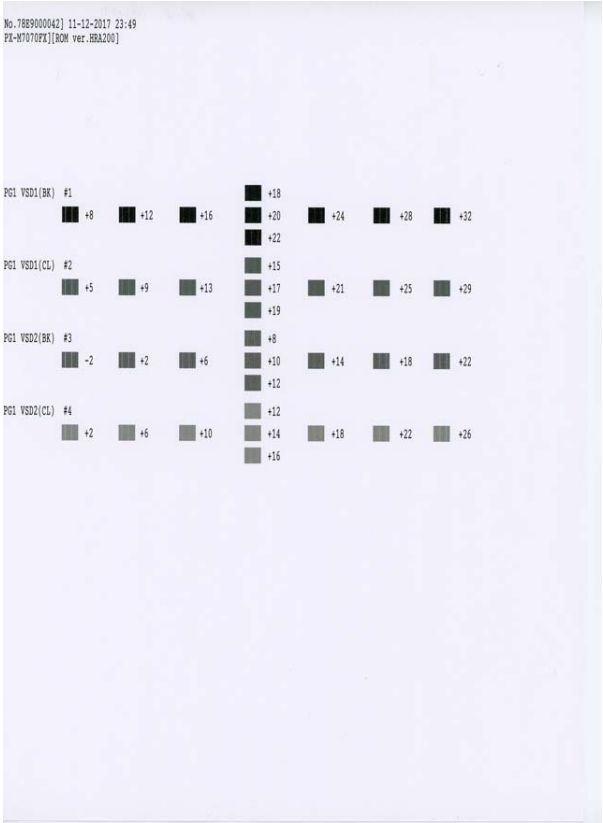


☐ Bi-d Adjust (B46)

■ Paper and feed tray

- Paper size:A4
- Paper type:Plain paper
- Paper feed tray:Paper cassette (1) to paper cassette (4)

■ Adjustment pattern



■ Judgment
Select the pattern for which there is no gap and overlapping of the left and right patterns.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Bi-d Adjust".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "46".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust:MENU**" from the Individual Adjustment menu.

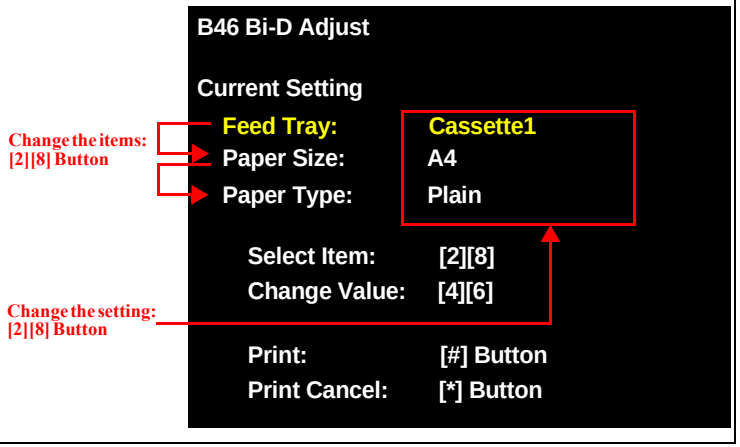
3-3. Select "**B46 Bi-d Adjust**" from the Printing Adjust menu.

4. The Bi-d Adjust menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

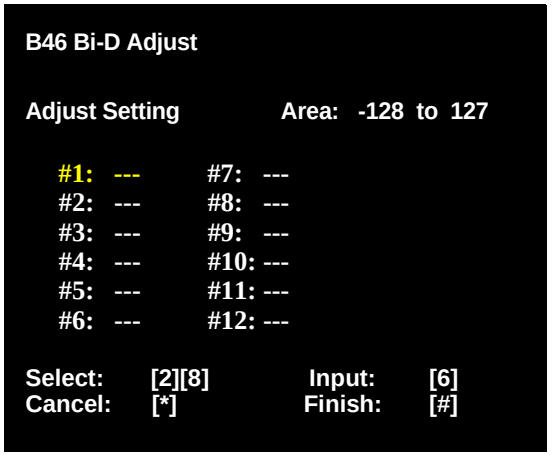
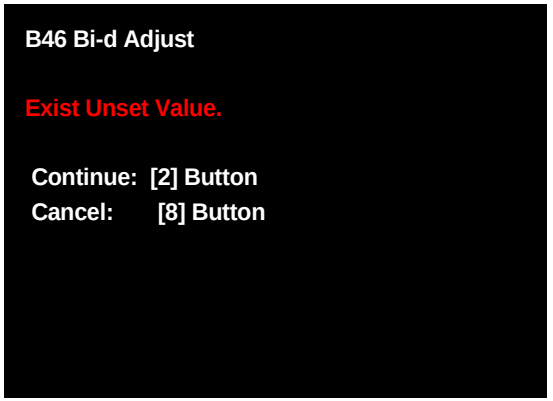


Figure 7-22. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #12) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)

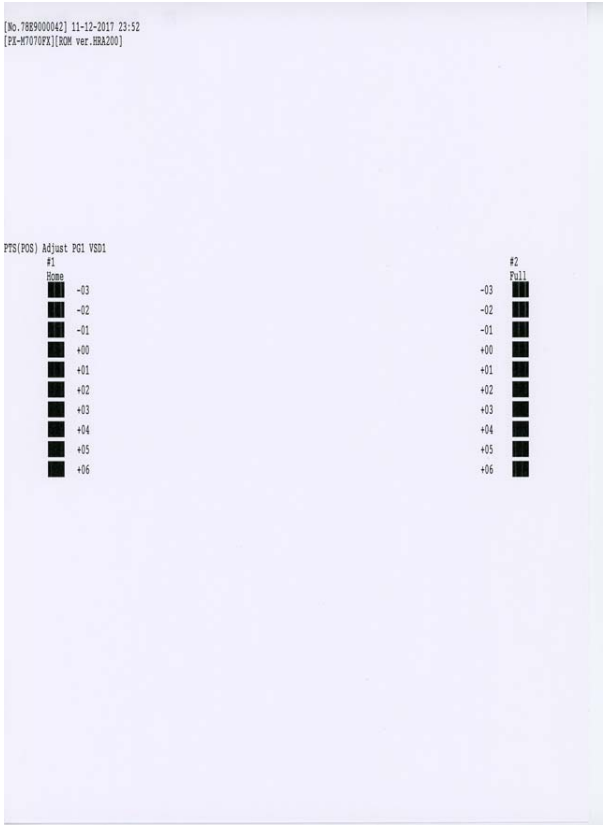


☐ B47 PTS Position Adjust

■ Paper and feed tray

- Paper size:A4
- Paper type:Business plain paper, plain paper
- Paper feed tray:Paper cassette (1) to paper cassette (4)

■ Adjustment pattern



■ Judgment
Select the pattern for which there is no gap and overlapping of the left and right patterns.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "PTS Position Adjust".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "47".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust: MENU**" from the Individual Adjustment menu.

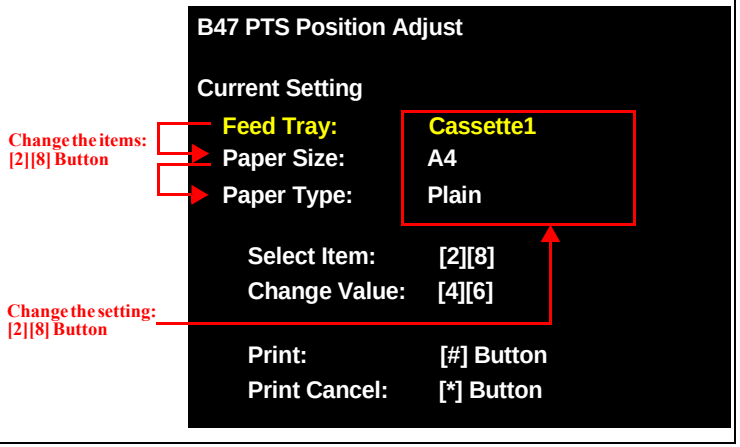
3-3. Select "**B47 PTS Position Adjust**" from the Printing Adjust menu.

4. The PTS Position Adjust menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

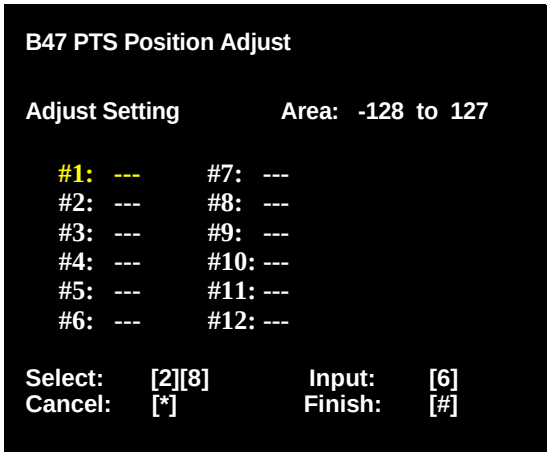
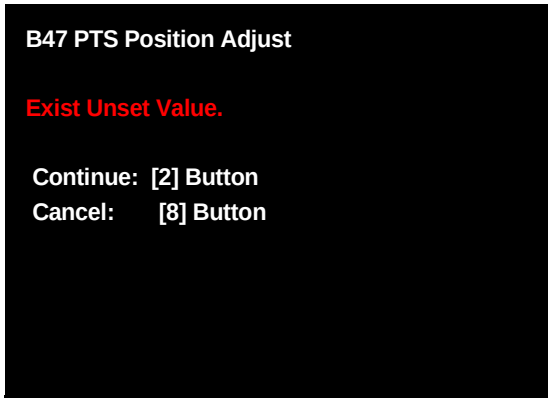


Figure 7-23. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #12) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)

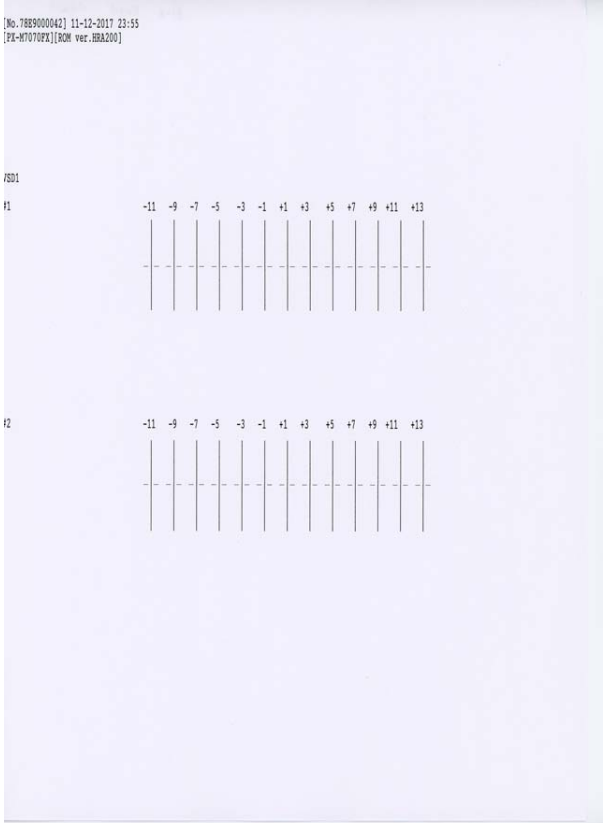


☐ B48 Bi-d Band Adjust

■ Paper and feed tray

- Paper size:A4
- Paper type:Business plain paper, plain paper
- Paper feed tray:Paper cassette (1) to paper cassette (4)

■ Adjustment pattern



■ Judgment
From among the printed patterns, select the pattern where the above and below lines are the straightest.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Bi-d Band Adjust".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "48".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust: MENU**" from the Individual Adjustment menu.

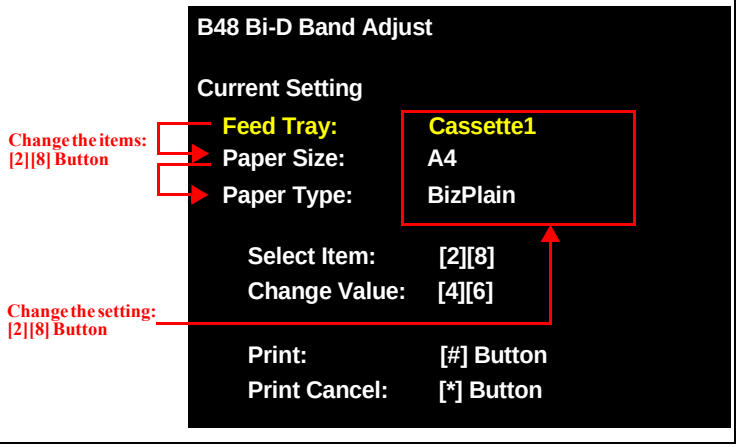
3-3. Select "**B48 Bi-d Band Adjust**" from the Printing Adjust menu.

4. The Bi-d Band Adjust menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

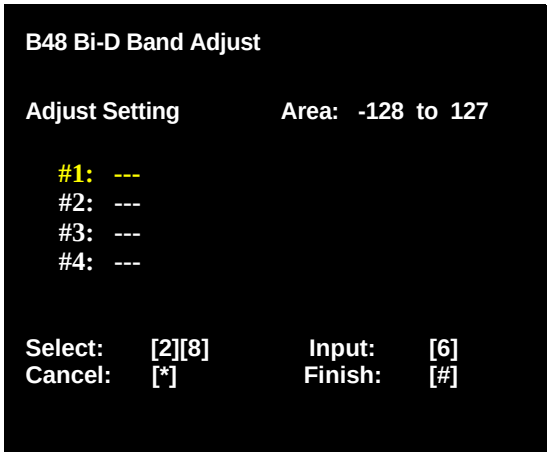
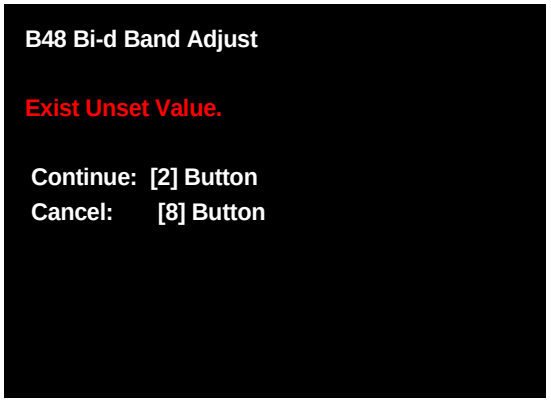


Figure 7-24. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #4) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)



☐ B49 PW Sensor Correct

■ Paper and feed tray

- Paper size:A4
- Paper type:Photo matte paper
- Paper feed tray:Rear tray

■ Adjustment pattern

■ Judgment

From the stepped patterns printed on the bottom, top, left, and right edges of the paper, select the numerical value that is 5 mm from the edge of the paper for each of them.

■ Adjustment procedure

> **CAUTION**
> **Make sure to perform the initialization PW sensor before performing the PW Sensor Correct.**

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "PW Sensor Correct".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "49".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust:MENU**" from the Individual Adjustment menu.

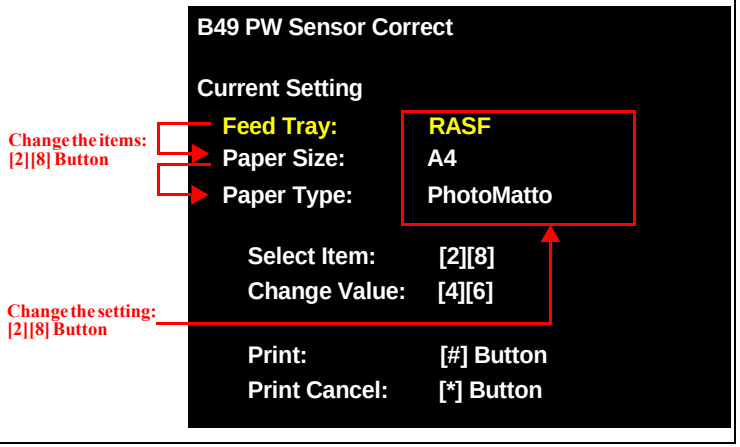
3-3. Select "**B49 PW Sensor Correct**" from the Printing Adjust menu.

4. The PW Sensor Correct menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

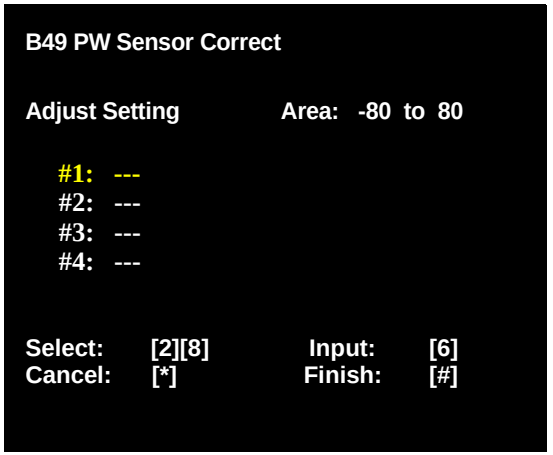
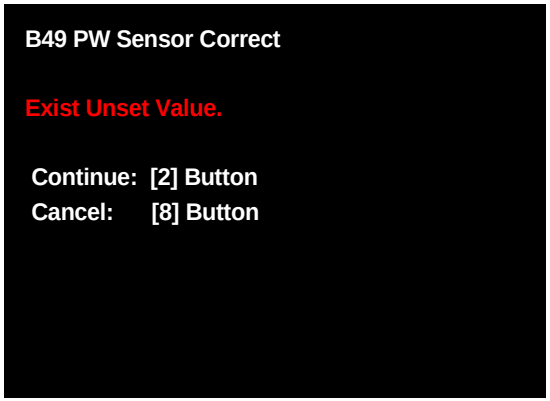


Figure 7-25. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #4) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)

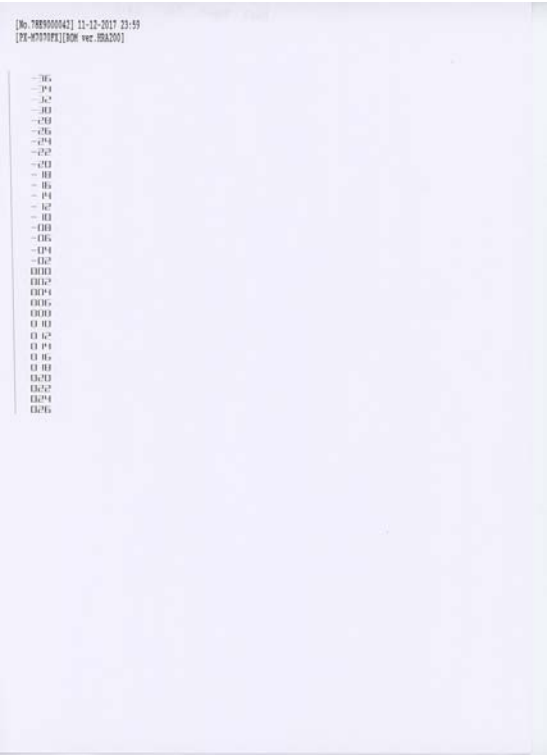


☐ B50 Print Start Pos. FASF / B51 Print Start Pos. RASF

■ Paper and feed tray

- Paper size:A4
- Paper type:Plain paper
- Paper feed tray:Front paper feed: Paper cassette (1) to cassette (4)
  Rear paper feed : Rear tray

■ Adjustment pattern



■ Judgment
From the stepped pattern printed on the left edge of the paper, select the numerical value that is 5 mm from the edge of the paper.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Print Start Pos. Adjust".

CHECK POINT

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "50","51".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust: MENU**" from the Individual Adjustment menu.

3-3. Select the paper feed direction from the Printing Adjust menu.

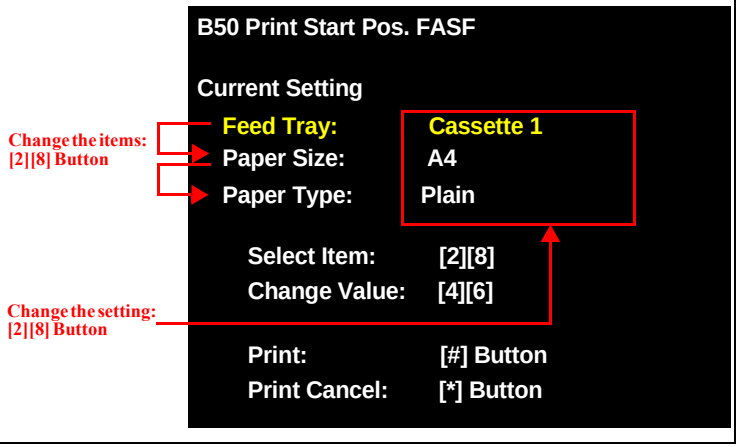
- Front paper feed:**B50 Print Start Pos. FASF**
- Rear paper feed:**B51 Print Start Pos. RASF**

4. The Print Start Pos. FASF or Print Start Pos. RASF menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

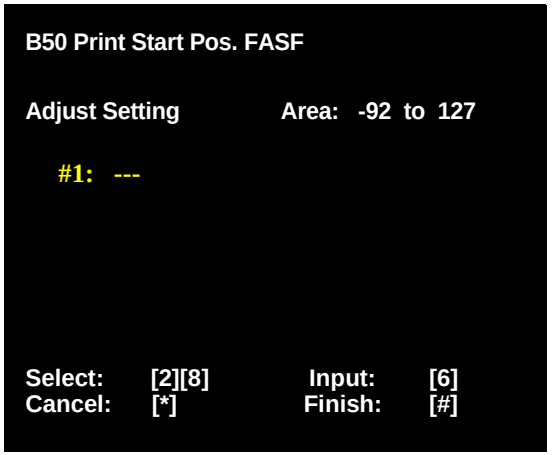
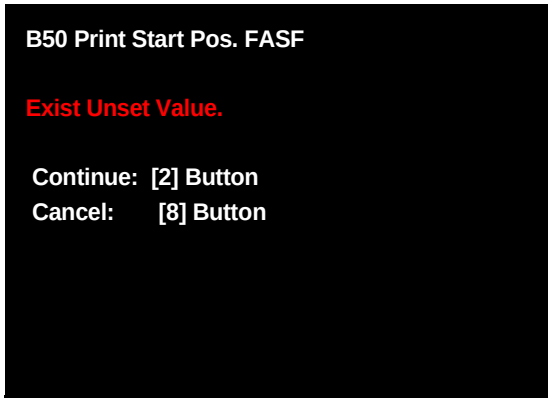


Figure 7-26. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input item (#1) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)



☐ B52 PE Adjust FASF / B53 PE Adjust RASF

■ Paper and feed tray

- Paper size:A4
- Paper type:Plain paper
- Paper feed tray:Front paper feed: Paper cassette (1) to cassette (4)
  Rear paper feed: Rear tray

■ Adjustment pattern

■ Judgment
From the stepped patterns printed on the top and bottom edges (the bottom edge is for rear paper feeding only) of the paper, select the numerical value that is 5 mm from the edge of the paper for each of them.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "PE Adjust".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "52","53".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust:MENU**" from the Individual Adjustment menu.

3-3. Select the paper feed direction from the Printing Adjust menu.

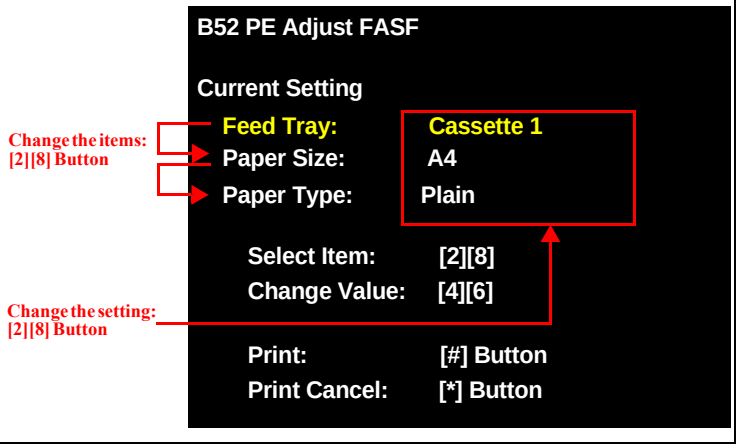
- Front paper feed:**B52 PE Adjust FASF**
- Rear paper feed:**B53 PE Adjust RASF**

4. The PE Adjust FASF or PE Adjust RASF menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

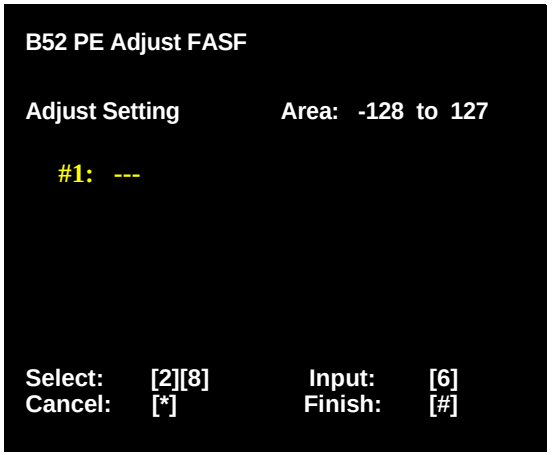
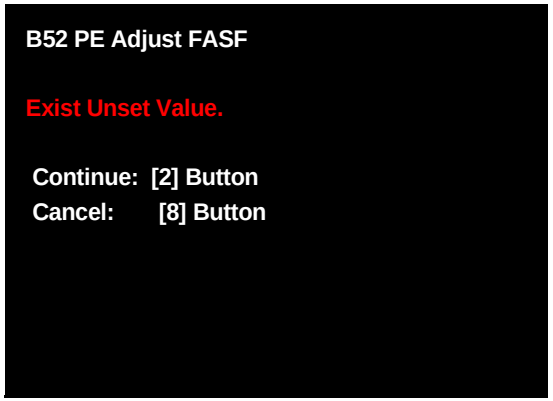


Figure 7-27. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input item (#1) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)

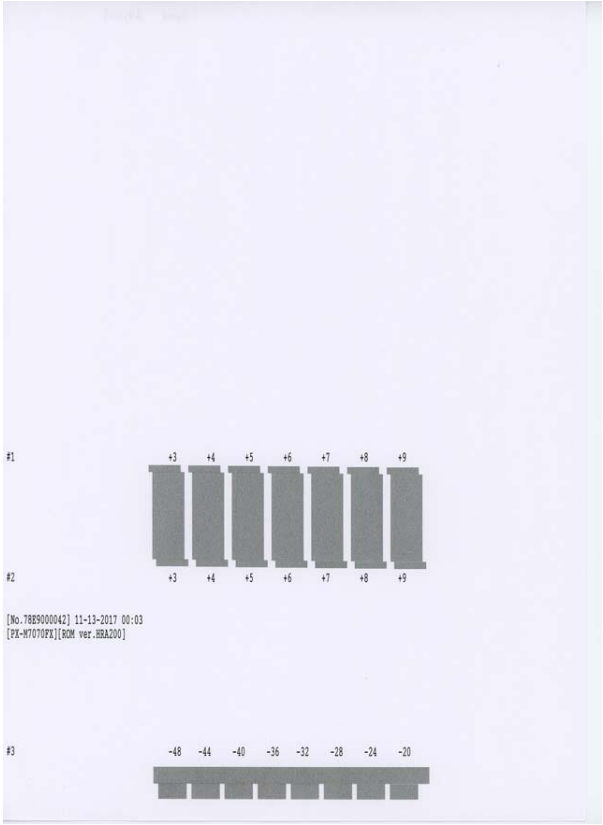


☐ B54 Feed Adjust

■ Paper and feed tray

- Paper size:A4
- Paper type:Photo matte paper
- Paper feed tray:Rear tray

■ Adjustment pattern



■ Judgment
Select the numerical value of the pattern that has no overlapping of the upper and lower blocks and the least white bands.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment MENU**" from the service support mode top menu.
3. Select "Feed Adjust".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "54".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust: MENU**" from the Individual Adjustment menu.

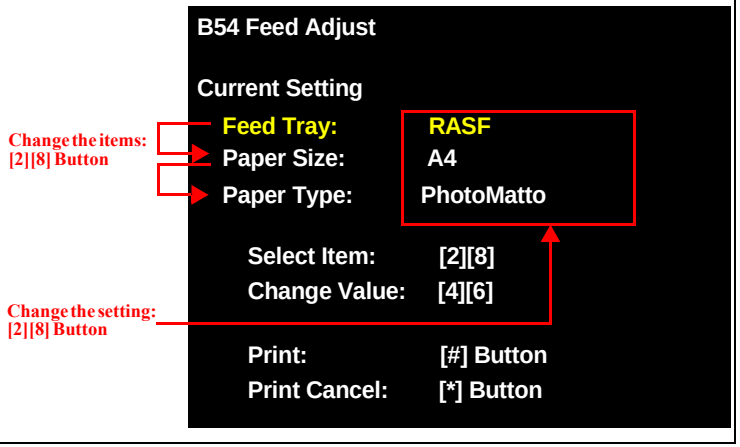
3-3. Select "**B54 Feed Adjust**" from the Printing Adjust menu.

4. The Feed Adjust menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

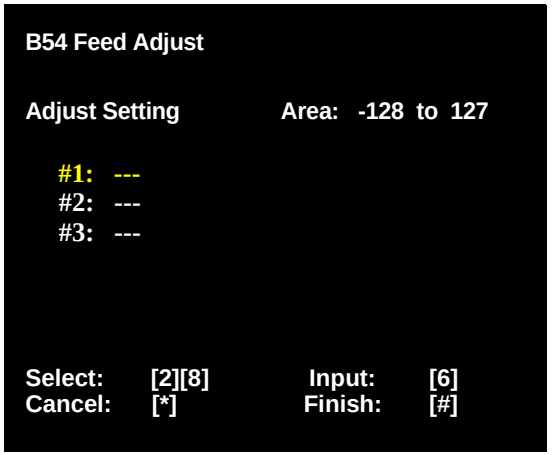
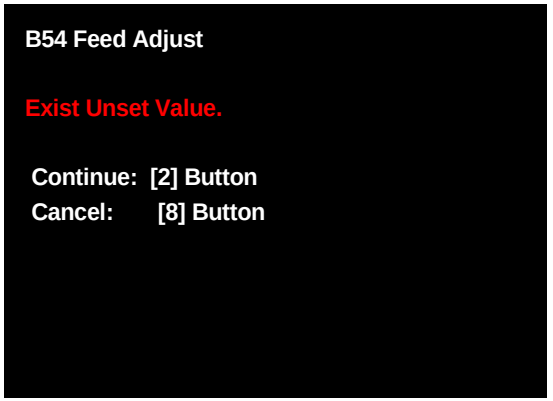


Figure 7-28. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #3) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)

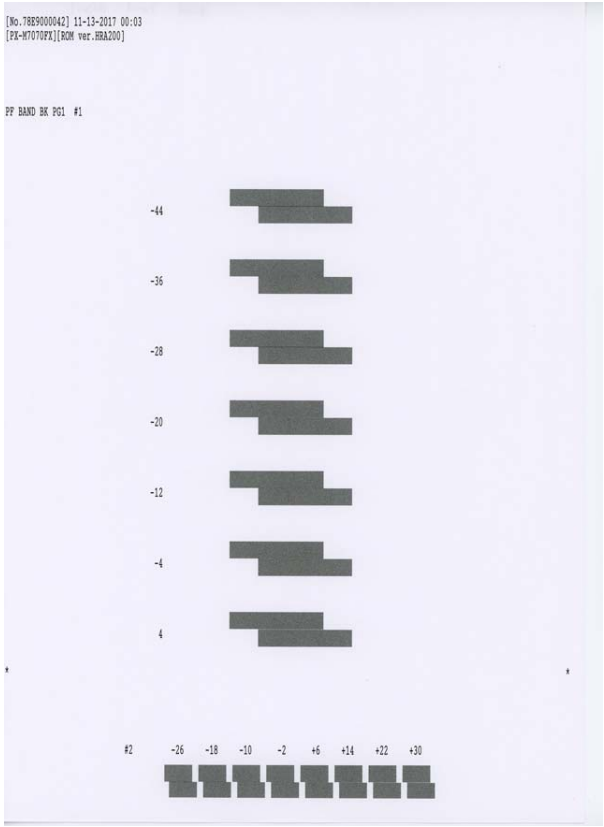


☐ B55 Band Feed Adjust

■ Paper and feed tray

- Paper size:A4
- Paper type:Plain paper
- Paper feed tray:Paper cassette (1) to paper cassette (4) or rear tray

■ Adjustment pattern



■ Judgment
Select the numerical value of the pattern that has no overlapping of the upper and lower blocks and the least white bands.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Band Feed Adjust".

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "55".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust: MENU**" from the Individual Adjustment menu.

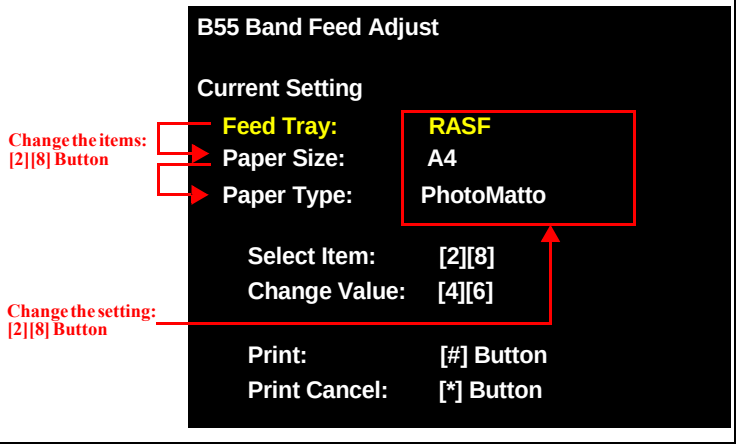
3-3. Select "**B55 Band Feed Adjust**" from the Printing Adjust menu.

4. The Band Feed Adjust menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

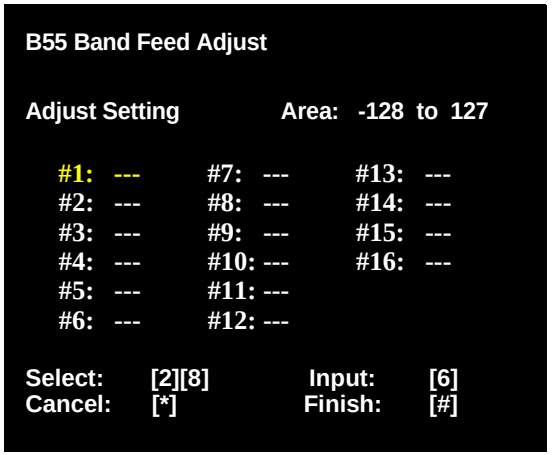
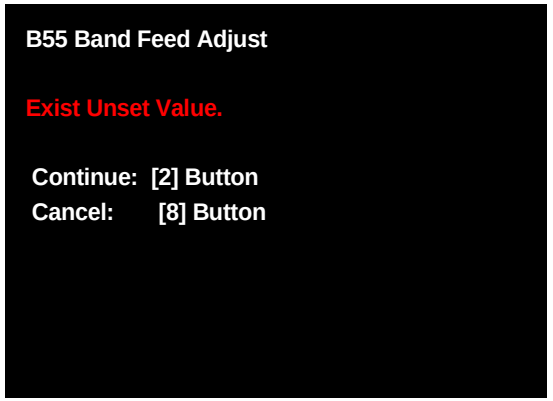


Figure 7-29. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #16) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)



☐ B65 A-B Band Adjust

■ Paper and feed tray

- Paper size:A4
- Paper type:Plain paper
- Paper feed tray:Paper cassette (1) to paper cassette (4) or rear tray

■ Adjustment pattern

■ Judgment
Select the numerical value of the pattern that has no overlapping of the upper and lower blocks and the least white bands.

■ Adjustment procedure

1. Start the service support mode.
   (Refer to "5.1 Service Support Mode" *(p. 100)*)
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "A - B BT Band Adjust".

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "65".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Adjust: MENU**" from the Individual Adjustment menu.

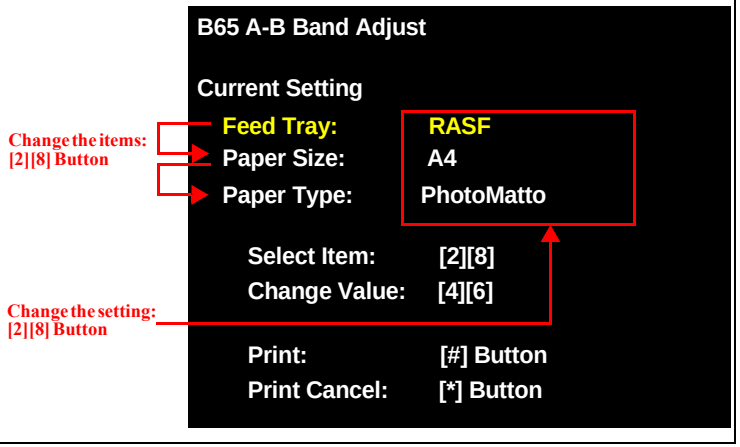
3-3. Select "**B65 A-B Band Adjust**" from the Printing Adjust menu.

4. The A-B Band Adjust menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

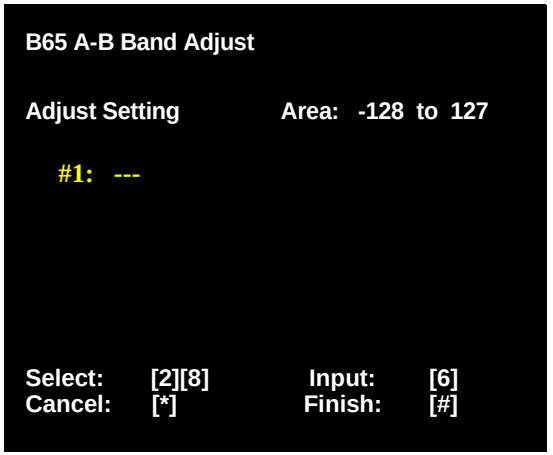
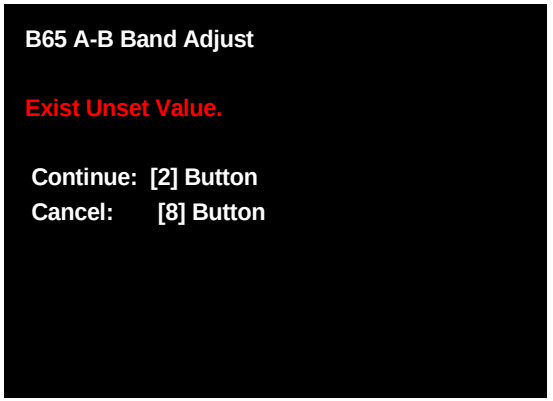


Figure 7-30. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input item (#1) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)



SOFTWARE ADJUSTMENT (SHORT ADJUSTMENT) MENU

☐ B61 PTS Acc./Dec. Adjust (S)

■ Paper and feed tray

- Paper size:A4
- Paper type:Plain paper, Business plain paper
- Paper feed tray:Paper cassette (C1) to paper cassette (C4)

■ Adjustment pattern

Same as PTS Acc./Dec. Adjust (P. 298)

■ Judgment

Select the pattern for which there is no gap and overlapping of the left and right patterns.

■ Adjustment procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "PTS Acc./Dec. Adjust (Short)".

CHECK POINT

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "61".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Short Adjustment: MENU**" from the Adjustment menu.

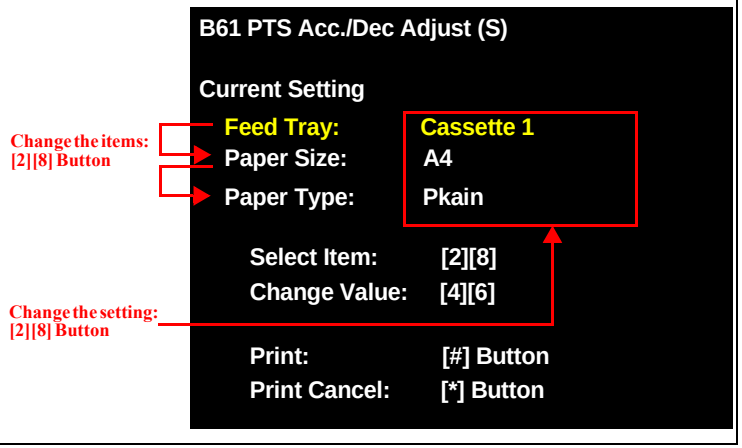
3-2. Select "**B61 PTS Acc./Dec. Adjust (S)**" from the Short Adjustment menu.

4. The PTS Acc./Dec. Adjust (S) menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.

9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

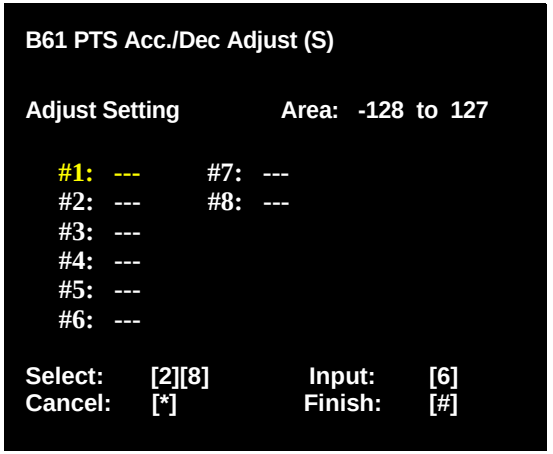
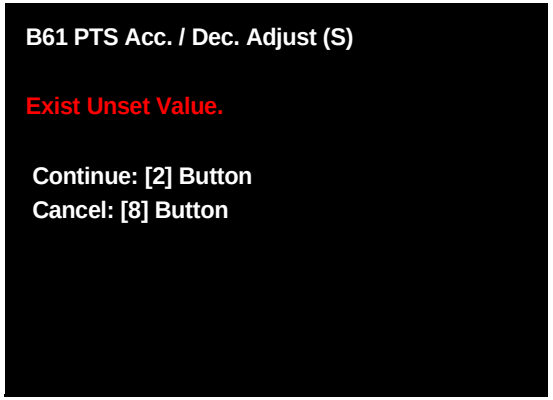


Figure 7-31. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #8) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)



☐ B62 Bi-D Adjust (S)

■ Paper and feed tray

- Paper size:A4
- Paper type:Plain paper
- Paper feed tray:Paper cassette (C1) to paper cassette (C4)

■ Adjustment pattern

Same as Bi-D Adjust (P. 304)

■ Judgment

Select the pattern for which there is no gap and overlapping of the left and right patterns.

■ Adjustment procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Bi-D Adjust (Short)".

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "62".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Short Adjustment: MENU**" from the Adjustment menu.

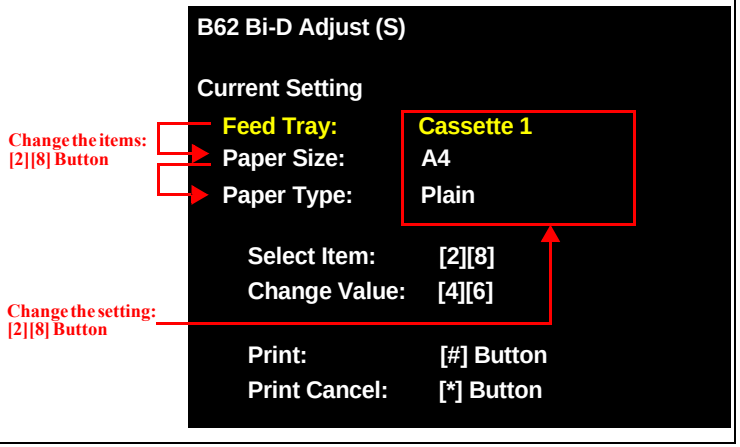
3-2. Select "**B62 Bi-D Adjust (S)**" from the Short Adjustment menu.

4. The Bi-D Adjust (S) menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

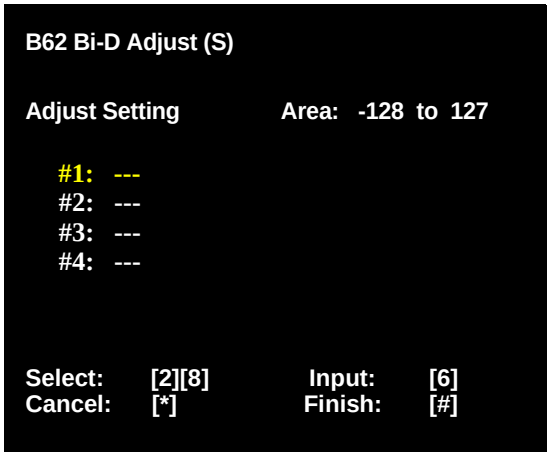
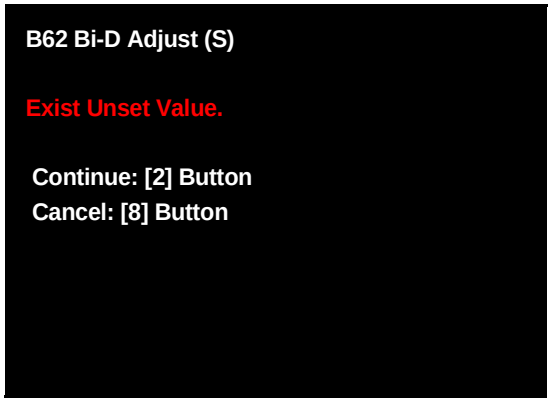


Figure 7-32. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #4) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)



☐ B63 Bi-D Band Adjust (S)

■ Paper and feed tray

- Paper size:A4
- Paper type:Business plain paper, plain paper
- Paper feed tray:Paper cassette (C1) to paper cassette (C4)

■ Adjustment pattern

Same as Bi-D Band Adjust (P. 310)

■ Judgment

From among the printed patterns, select the pattern where the above and below lines are the straightest.

■ Adjustment procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Bi-D Band Adjust (Short)".

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "63".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Short Adjustment: MENU**" from the Adjustment menu.

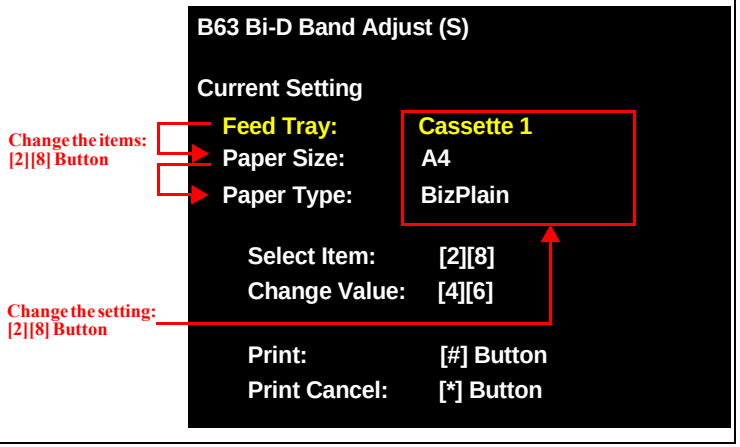
3-2. Select "**B63 Bi-D Band Adjust (S)**" from the Short Adjustment menu.

4. The Bi-D Band Adjust (S) menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

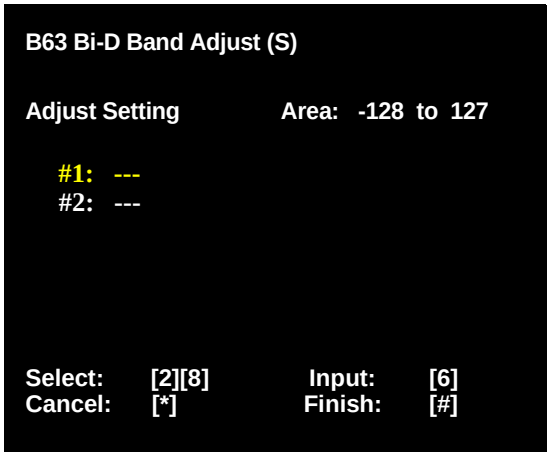
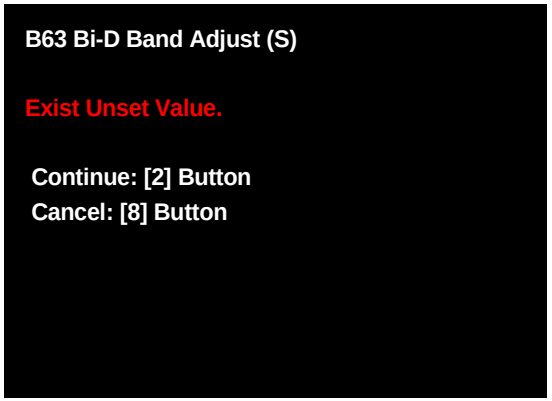


Figure 7-33. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #2) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)



☐ B64 Band Feed Adjust (S)

■ Paper and feed tray

- Paper size: A4
- Paper type: Plain paper
- Paper feed tray: Paper cassette (C1) to paper cassette (C4), rear tray

■ Adjustment pattern

Same as Band Feed Adjust (P. 325)

■ Judgment

Select the numerical value of the pattern that has no overlapping of the upper and lower blocks and the least white bands.

■ Adjustment procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Band Feed Adjust (Short)".

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "64".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Short Adjustment: MENU**" from the Adjustment menu.

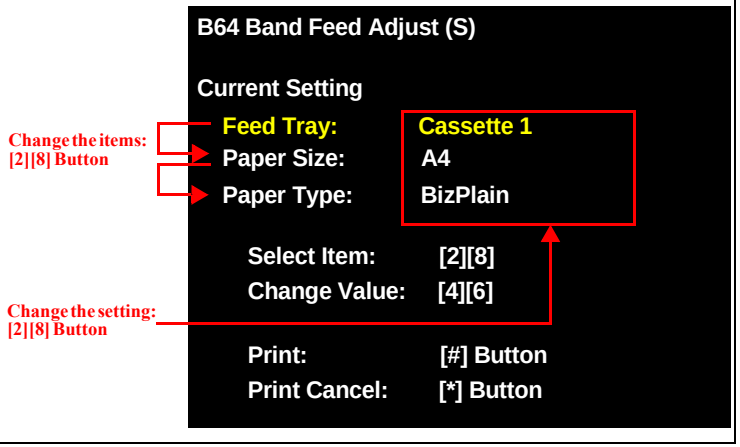
3-2. Select "**B64 Band Feed Adjust (S)**" from the Short Adjustment menu.

4. The Band Feed Adjust (Short) menu appears.
5. Load paper into the paper feed tray.
6. Press the [#] button to print the adjustment pattern.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



7. Check the adjustment pattern.
8. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
9. Enter the adjustment value.

CHECK POINT

- **Operation method is belows.**
  - **[6] button:**
    Displays the adjustment value input screen
  - **[2] button or [8] button:**
    Moves to the previous or next page of the adjustment screen.
  - **[#] button:**
    Finishes adjustment and inputs the adjustment values.
- **In the adjustment value input menu, the software number key is displayed**

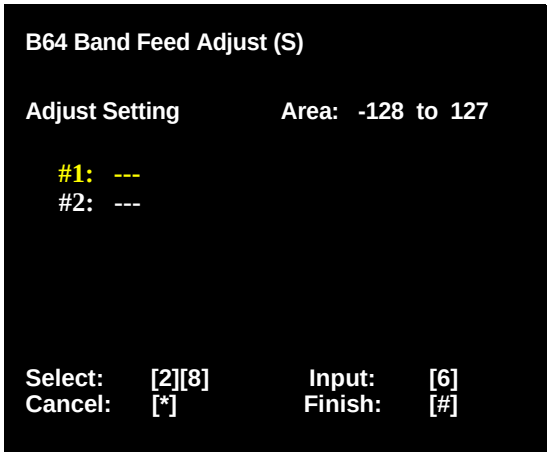
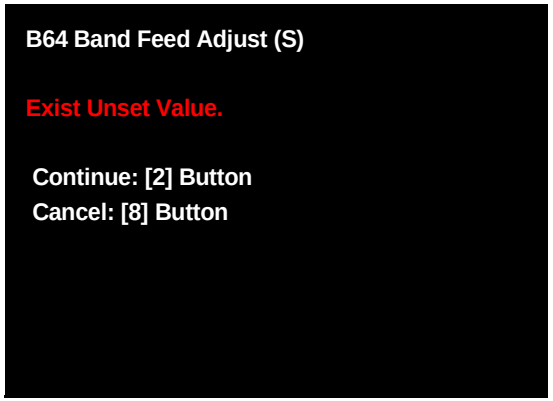


Figure 7-34. Input Screen

10. Check that an adjustment value is entered for all of the adjustment input items (#1 to #2) and then press the [#] button to end adjustment.
11. The adjustment end screen appears. Press the [#] button to return to the menu screen.

CHECK POINT

To end adjustment without entering an adjustment value, press the [#] button in the state without an adjustment value entered in the adjustment input screen to display the following screen. If you press the [8] button in the following screen, the adjustment end screen appears and you can end adjustment. (To continue adjustment, press the [2] button.)



7.2.4.3 Check Screen Inspections (Service Support Mode [Program in Main Unit])

INSPECTION (MECHANICAL OPERATION CHECKS)

☐ **B20 APG Move Check**

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "APG Move Check".

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "20".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Mech check :MENU**" from the Individual Adjustment menu.

3-3. Select "**B20 APG Move Check**" from the Mechanical Operation Check menu.

4. Visually check that the CR unit and CR shaft are operating as follows.

   4-1. The CR shaft lifts from PG1 (state with CR unit at very bottom) to PG7 (state with CR unit at very top).

   4-2. The paper guide transitions to the release state (state where raised from paper feed roller).

   4-3. The paper guide transitions to the release cancel state (state where touching paper feed roller).

   4-4. The CR shaft is lowered from PG7 to PG1.

5. Adjustment is finished if operation is performed normally. If there was something abnormal, reassemble the related parts.

☐ B21 CR Scale Check

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "CR Scale Check".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "21".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Mech check: MENU**" from the Individual Adjustment menu.

3-3. Select "**B21 CR Scale Check**" from the Mechanical Operation Check menu.

4. The check result is displayed on the panel. If NG, replace the CR scale with a new one.

☐ B22 PW Sensor Shutter Move

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "PW Sensor Shutter Move".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "22".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Mech check: MENU**" from the Individual Adjustment menu.

3-3. Select "**B22 PW Sensor Shutter Move**" from the Mechanical Operation Check menu.

4. The check result is displayed on the panel. If NG, check whether the shutter mechanism of the CR unit is assembled correctly. If there is a problem, replace the CR unit with a new one.

☐ B23 PE Sensor Check

■ Paper and feed tray

- Paper size:A4
- Paper feed tray:Paper Cassette (C1)

■ Adjustment procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "PE Sensor Check".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "23".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Mech check :MENU**" from the Individual Adjustment menu.

3-3. Select "**B23 PE Sensor Check**" from the Mechanical Operation Check menu.

4. The check result is displayed on the panel. If NG, check whether the PE sensor lever is assembled correctly. If there is a problem, replace the PE sensor lever with a new one.

☐ B24 Temp. and hum. Sensor Check

■ Inspection procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Temp. and hum. Sensor Check".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "24".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Mech check: MENU**" from the Individual Adjustment menu.

3-3. Select "**B24 Temp. and hum. Sensor Check**" from the Mechanical Operation Check menu.

■ Judgment

1. Check the output values of the temperature and humidity sensors and confirm whether or not they are normal.

> **CHECK POINT**
> **Error judgment guide is belows.**
> - **Broken wire:0 °C or less is indicated**
> - **Short:60 °C or more is indicated**

2. Touch the temperature sensor and check that there is a change to the output value.
3. If NG, check the connection state of the temperature and humidity sensors. If there is a problem, replace the temperature and humidity sensors with new ones.

☐ B25 Nip Release Solenoid / Sensor

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Nip Release Solenoid / Sensor Check".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD.
Enter program number "25".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Mech check: MENU**2 from the Individual Adjustment menu.

3-3. Select "**B25 Nip Release Solenoid / Sensor**" from the Mechanical Operation Check menu.

4. The check result is displayed on the panel. If NG, check whether the nip release solenoid lever and nip release solenoid are assembled correctly. If there is a problem, replace the nip release solenoid lever and nip release solenoid with new ones.

INSPECTIONS (PRINTING CHECKS)

☐ B26 Nozzle Noise Check

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Nozzle Noise Check".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD.
Enter program number "26".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Check: MENU**" from the Individual Adjustment menu.

3-3. Select "**B26 Nozzle Noise Check**"" from the Printing Check menu.

4. The check result is displayed on the panel. If NG, check whether the print head and head FFC are assembled correctly. If there is a problem, replace the print head and head FFC with new ones.

☐ B27 Nozzle Rank Categorize

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Nozzle Rank Categorize".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD.
Enter program number "27".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Check: MENU**" from the Individual Adjustment menu.

3-3. Select "**B27 Nozzle Rank Categorize**" from the Printing Check menu.

4. The check result is displayed on the panel. If "Error" is displayed, perform head cleaning to enable the state where all nozzles discharge ink normally.

☐ B28 Nozzle Detect Check

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Nozzle Detect Move Check".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "28".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Check: MENU**" from the Individual Adjustment menu.

3-3. Select "**B28 Nozzle Detect Check**" from the Printing Check menu.

> **CHECK POINT**
> **The check result is displayed on the panel. If "Error" is displayed, perform head cleaning to enable the state where all nozzles discharge ink normally.**

☐ B29 CHK Pattern Print (A4)

■ Paper and feed tray

- Paper size:A4
- Paper type:Plain paper
- Paper feed tray: Paper cassette (C1), rear tray

■ Adjustment procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Check Pattern".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "29".

3-3. Press the [OK] button.

B. Selecting from menu

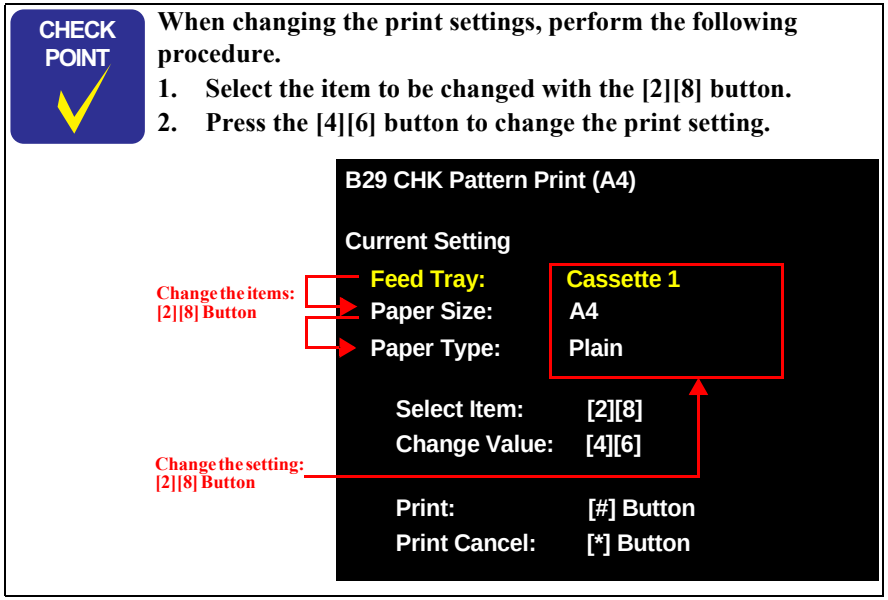
3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Check: MENU**" from the Individual Adjustment menu.

3-3. Select "**B29 CHK Pattern Print (A4)**" from the Printing Check menu.

4. Load paper into the paper feed tray.

5. Press the [#] button to print the check patterns.



6. Check the check patterns and take a measure based on the judgment procedure.

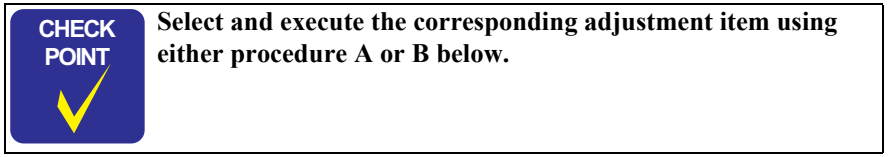
☐ B33 CHK Pattern Print (A3)

■ Paper and feed tray

- Paper size:A3
- Paper type:Plain paper
- Paper feed tray: Paper cassette (C1)

■ Adjustment procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Check Pattern".



A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "33".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Check: MENU**" from the Individual Adjustment menu.

3-3. Select "**B33 CHK Pattern Print (A3)**" from the Printing Check menu.

4. Load paper into the paper feed tray.

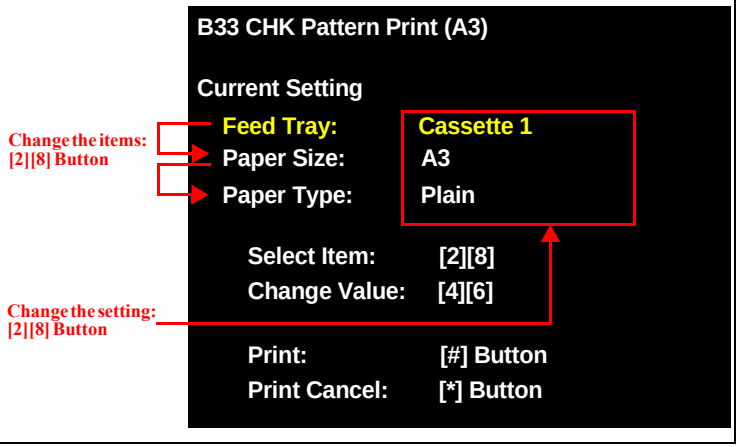
5. Press the [#] button to print the check patterns.

CHECK POINT

When changing the print settings, perform the following procedure.

1. Select the item to be changed with the [2][8] button.

2. Press the [4][6] button to change the print setting.



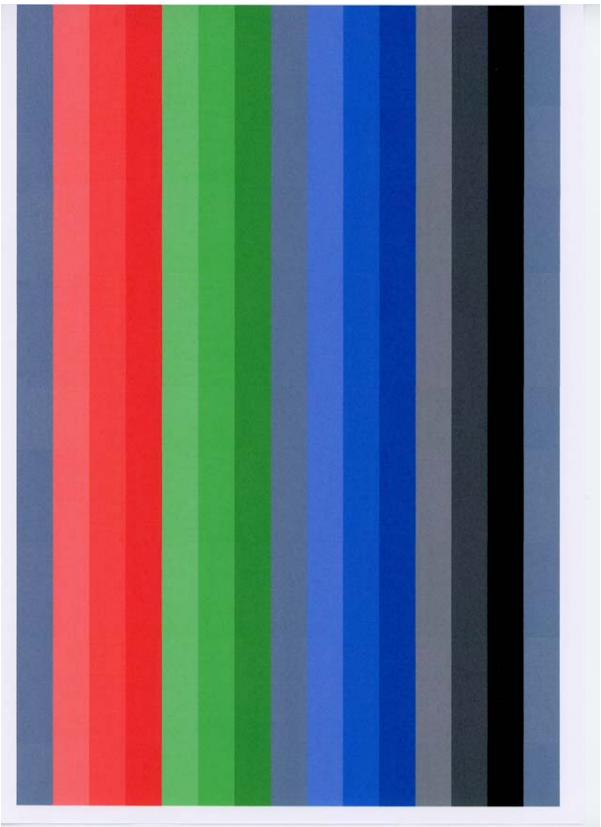
6. Check the check patterns and take a measure based on the judgment procedure.

☐ B30 RGB Pattern Printing

■ Paper and feed tray

- Paper size: A4
- Paper type: Plain paper
- Paper feed tray: Paper cassette (C1) to paper cassette (C2), rear tray

■ Check pattern



■ Judgment
Visually check the banding levels of the check pattern to confirm that there is no problem.

■ Adjustment procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "RGB Pattern".

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "30".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Check: MENU**" from the Individual Adjustment menu.

3-3. Select "**B30 RGB Pattern Printing**" from the Printing Check menu.

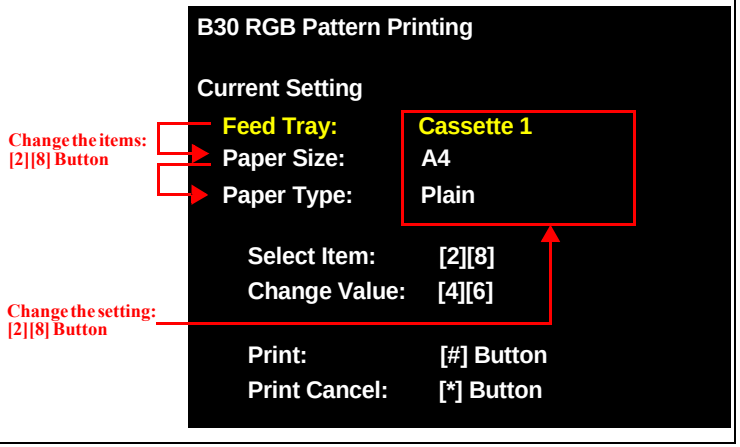
4. Load paper into the paper feed tray.

CHECK POINT

When changing the print settings, perform the following procedure.

1. Select the item to be changed with the [2][8] button.

2. Press the [4][6] button to change the print setting.



5. If NG, refer to the following table and take the corresponding measure.

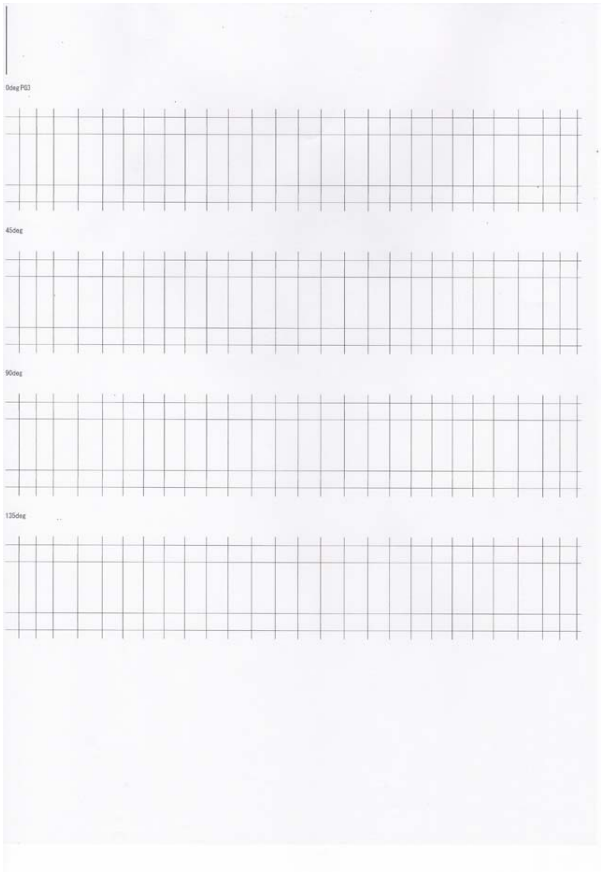
No.	Symptom	Suspected cause	Measure
1	Multiple white bands are occurring.	Nozzles missing	Perform head cleaning.
2	The banding level differs depending on the color.	LUT_POL adjustment value is incorrect.	Perform user adjustment (LUT_POL adjustment).
3	White banding or black banding is occurring over the entire pattern.	Adjustment is incorrect.	Perform band feed adjustment again.
4	White banding or black banding is occurring at the top and middle of the pattern.	Adjustment is incorrect.	Perform band feed adjustment again.
5	White banding or black banding is occurring at the bottom edge.	Adjustment is incorrect.	Perform band feed and band adjustment again.

☐ B31 Ruled Line Pattern

■ Paper and feed tray

- Paper size:A3
- Paper type:Plain paper
- Paper feed tray:Paper Cassette (C1)

■ Check pattern



■ Judgment

Visually check the check patterns to confirm that there is no ruled line offset.

■ Adjustment procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Ruled Line Pattern".

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "31".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Check: MENU**" from the Individual Adjustment menu.

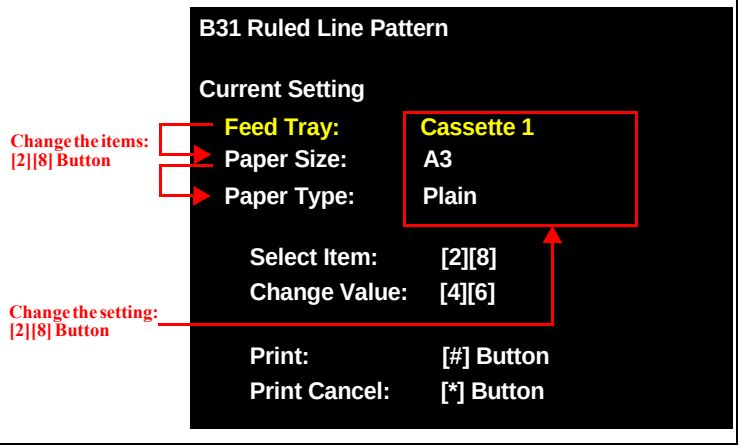
3-3. Select "**B31 Ruled Line Pattern**" from the Printing Check menu.

4. Load paper into the paper feed tray.
5. Press the [#] button to print the check patterns.

CHECK POINT

When changing the print settings, perform the following procedure.

1. Select the item to be changed with the [2][8] button.
2. Press the [4][6] button to change the print setting.



6. Check the check patterns and take a measure based on the judgment procedure.

☐ B32 Nozzle Check Pattern

■ Paper and feed tray

- Paper size: A4
- Paper type: Plain paper
- Paper feed tray: Paper cassette (C1) to paper cassette (C2), rear tray

■ Check pattern

■ Judgment
Visually check the check patterns to confirm that there are no nozzles missing

■ Adjustment procedure

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode top menu.
3. Select "Nozzle Check Pattern".

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

3-1. Select "**B00 Adjustment - Input B Number**" from the Adjustment menu.

3-2. Press the [#] button and software number key is displayed on LCD. Enter program number "32".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Individual Adjustment: MENU**" from the Adjustment menu.

3-2. Select "**Printing Check: MENU**" from the Individual Adjustment menu.

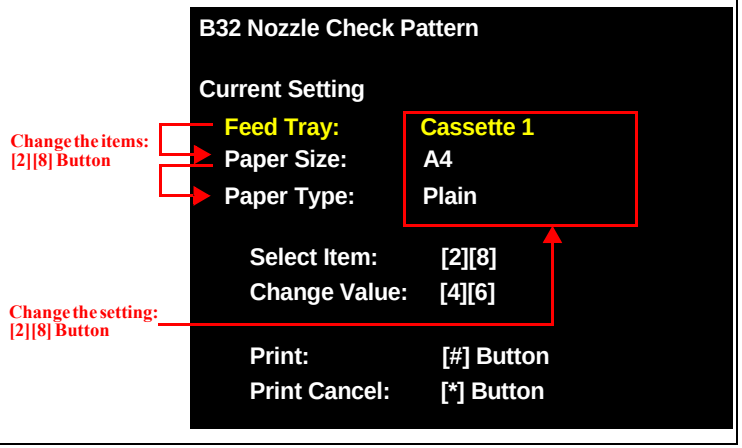
3-3. Select "**B32 Nozzle Check Pattern**" from the Printing Check menu.

4. Load paper into the paper feed tray.
5. Press the [#] button to print the check patterns.

CHECK POINT

When changing the print settings, perform the following procedure.

1. **Select the item to be changed with the [2][8] button.**
2. **Press the [4][6] button to change the print setting.**



6. If there are nozzles missing, perform cleaning.

MAINTENANCE FUNCTIONS

☐ C01 Head Ink Fill / C02 Initial Fill

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Maintenance: MENU**" from the service support mode top menu.
3. Select ink filling (Head Ink Fill or Initial Ink Fill).

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**C00 Maintenance - Input C Number**" from the Maintenance menu.

3-2. Press the [#] button and software number key is displayed on LCD.
Enter program number "01", "02".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Ink Fill: MENU**" from the Maintenance menu.

3-2. Select an item from the Ink Fill menu.

- Head Ink Fill: **C01 Head Ink Fill**
- Initial Ink Fill: **C02 Initial Fill**

☐ Head cleaning (C03/C04/C05/C06/C07)

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Maintenance: MENU**" from the service support mode top menu.
3. Select "Head Cleaning".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**C00 Maintenance - Input C Number**" from the Maintenance menu.

3-2. Press the [#] button and software number key is displayed on LCD.
Enter program number "03", "04", "05", "06", or "07".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Head Cleaning : MENU**" from the Maintenance menu.

3-2. Select the cleaning level.

- CL1 : **C03 CL1**
- CL2 : **C04 CL2**
- CL3 : **C05 CL3**
- Strong CL : **C06 Strong CL**
- Refresh CL : **C07 Refresh CL**

☐ Ink Discharge
(C08 Head Ink Discharge / C09 Supply Ink Discharge)

CAUTION

Make sure to execute the "C08 Head Ink Dischrage", "C09 Supply Ink Discharge" by the following procedure.

1. Open the Front Cover Assy.
2. Insert the folded paper to groove of Front Cover Sensor, and fix the Front Cover Sensor to close condition.

3. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
4. Select "**Maintenance: MENU**" from the service support mode top menu.
5. Remove the All Cartridge after starting the Maintenance menu.
6. Select "Ink Discharge".

CHECK POINT

Select and execute the corresponding adjustment item using either procedure A or B below.

A. Selecting by entering the program number

6-1. Select "**C00 Maintenance - Input C Number**" from the Maintenance menu.

6-2. Press the [#] button and software number key is displayed on LCD.
Enter program number "08" or "09" .

6-3. Press the [OK] button.

B. Selecting from menu

6-1. Select "**Ink Discharge: MENU**" from the Maintenance menu.

6-2. Select the part to discharge ink.

- Print head: **C08 Head Ink Discharge**
- Ink supply unit: **C09 Supply Ink Discharge**

☐ Ink Discharge
(C10 Suction pump Ink Discharge)

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Maintenance: MENU**" from the service support mode top menu.
3. Select "Ink Discharge".

> **CHECK POINT**
> **Select and execute the corresponding adjustment item using either procedure A or B below.**

A. Selecting by entering the program number

3-1. Select "**C00 Maintenance - Input C Number**" from the Maintenance menu.

3-2. Press the [#] button and software number key is displayed on LCD.
Enter program number "10".

3-3. Press the [OK] button.

B. Selecting from menu

3-1. Select "**Ink Discharge: MENU**" from the Maintenance menu.

3-2. Select "**C10 Suction Pump Ink Discharge**" from the Ink Discharge menu.

PREPARATION WORK BEFORE REPAIR

☐ B90 Print Head

This operation is necessary to performing the " Head Replace Sequence (B80)" correctly.
Make sure to perform the This operation before the print head replacement.

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Before Repair Operation:MENU**".
3. Select "**B90 Print Head**" from the Before Repair Operation menu.
4. Select whether or not to perform the print head replacement judgment (print head replacement judgment cleaning) in the Print Head screen.
   - When you wish to perform print head replacement immediately (wish to not perform the print head replacement judgment):
     Press the [2] button and go to step 7.
   - When you wish to not perform print head replacement immediately (wish to perform the print head replacement judgment):
     Press the [8] button and go to step 7.

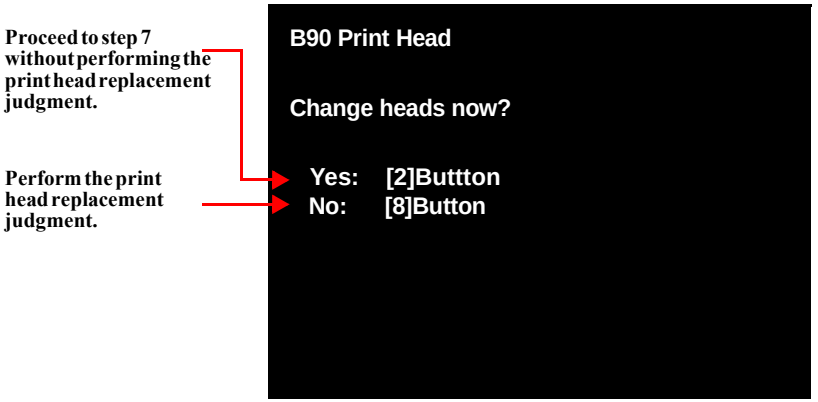


Figure 7-35. Print Head Screen (1)

5. The print head replacement judgment cleaning is performed in accordance with the nozzles missing state. Print the nozzle check pattern after replacement judgment cleaning.
6. Check the nozzle check pattern to confirm the nozzles missing state and then make a judgment of whether to replace the print head.
   - If the nozzles missing state is not resolved (state in which print head replacement is required):
     Press the [2] button and go to step 7.
   - When the nozzles missing state is resolved (state in which recovery is possible by cleaning):
     Press the [8] button to end the preparation before print head replacement.

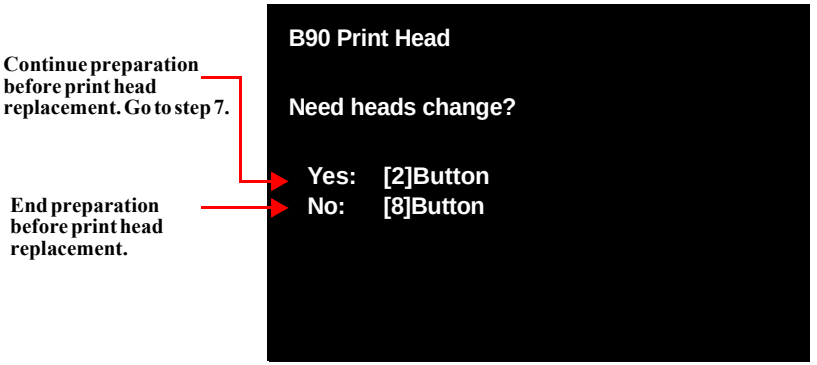


Figure 7-36. Print Head Screen (2)

7. Check that the following screen is displayed and then press the power button to turn off the power. (The power turns off in the CR unlock state.)

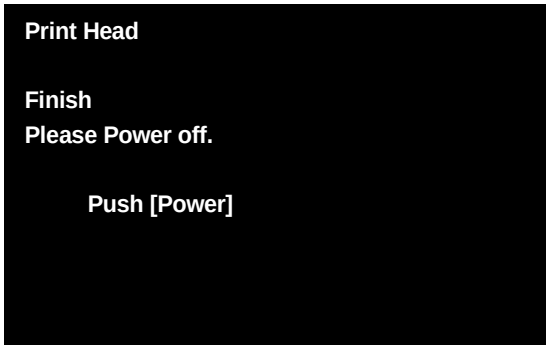


Figure 7-37. Print Head Screen (3)

☐ B91 I/S Unit

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Before Repair Operation: MENU**" from the service support mode top menu.
3. Select "**B91 I/S Unit**" from the Before Repair Operation menu.
4. Check that the following screen is displayed and then press the power button to turn off the power. (Turn off the power in the CR unlock state.)

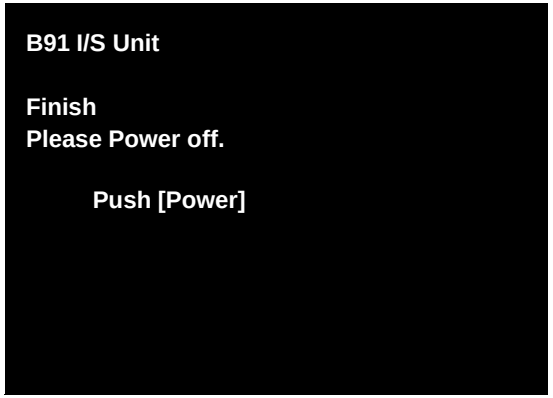


Figure 7-38. I/S Unit Screen

☐ B92 Maintenance Unit

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Before Repair Operation: MENU**" from the service support mode top menu.
3. Select "**B92 Maintenance Unit**" from the Before Repair Operation menu.
4. Press the [#] button in the following screen to discharge the ink in the exhaust pump.

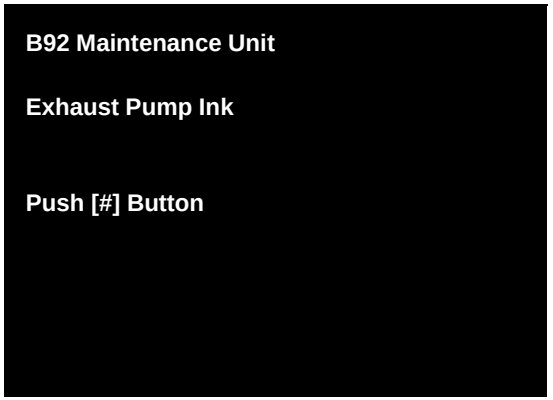


Figure 7-39. Maintenance Unit Screen (1)

5. Check that the following screen is displayed and then press the power button to turn off the power.

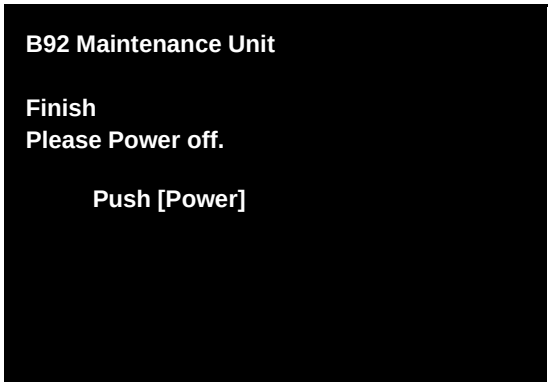


Figure 7-40. Maintenance Unit Screen (2)

AFTER UNIT REPAIR OPERATION MODE

☐ B80 Head Replace Seq

CAUTION

- **If "Preparation Work Before Repair (Print Head)" is not performed before Print head replacement, Ink charge of "After Unit Repair Operation" may do not perform correctly. Therefore, make sure to perform the "Preparation Work Before Repair (Print Head)" before Print head replacement.**
- **When "Preparation Work Before Repair (Print Head)" is not performed, perform the Ink Charge (C01 Head Ink Fill) individually from Maintenance Menu.**

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode menu.
3. Select "**After Unit Repair Operation: MENU**" from the Adjustment menu.
4. Select "**B80 Head Replace Seq**".
5. The inspections and ink filling are executed in the following sequence.
   1. Head ID Input *(p. 286)*.
   2. CR Scale Check *(p. 344)*.
   3. Nozzle Noise Check *(p. 347)*.
   4. Ink Filling *(p. 357)*.
   5. Nozzle Check *(p. 355)*.

CAUTION

- **The printer selects the Ink Fill Level (Head Ink Fill or Initial Fill) automatically by state of the "Preparation Work Before Repair (Print Head)".**
- **The case of not perform the "Preparation Work Before Repair (Print Head)", Ink fill necessity confirmation menu is displayed.**

6. After ink filling completes, adjustment is executed in the following order.
   1. Head angular Adjustment Mech *(p. 291)*.
   2. Head angular Adjustment Soft -A*(p. 295)*.
   3. Head angular Adjustment Soft-B*(p. 298)*
   4. PTS Acc./Dec. Adjust (Short) *(p. 286)*.
   5. Bi-D Adjust (Short) *(p. 334)*.
   6. Bi-D Band Adjust (Short) *(p. 337)*.
   7. Band Feed Adjust (Short) *(p. 340)*.
   8. A-B Band Adjust *(p. 328)*.
7. Perform check pattern printing, check that there is no problem, and end the adjustments for after print head replacement.

☐ B81 I/S Unit Replace Seq

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode menu.
3. Select "**After Unit Repair Operation: MENU**" from the Adjustment menu.
4. Select "**B81 I/S Unit Replace Seq**".
5. The inspections and ink filling are executed in the following sequence.
   1. Ink Filling (Initial Ink Fill) *(p. 357)*.
   2. Nozzle Check *(p. 355)*.

☐ B82 Mainte Unit Replace Seq

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode menu.
3. Select "**After Unit Repair Operation:MENU**" from the Adjustment menu.
4. Select "**B82 Mainte Unit Replace Seq**".
5. The inspections and ink filling are executed in the following sequence.
   1. Ink Filling (same as CL2) *(p. 357)*
   2. Nozzle Check *(p. 355)*

☐ B83 RASF Unit Replace Seq

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode menu.
3. Select "**After Unit Repair Operation: MENU**" from the Adjustment menu.
4. Select "**B83 RASF Unit Replace Seq**".
5. The following adjustments are performed.
   1. Counter Reset - Rear Tray *(p. 287)*
   2. Counter Reset - ASF *(p. 287)*
   3. Print Start Pos. RASF *(p. 316)*

☐ B84 Main Board Replace Seq

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode menu.
3. Select "**After Unit Repair Operation: MENU**" from the Adjustment menu.
4. Select "**B84 Main Board Replace Sequence**".
5. The following inspections are performed.
   1. Nozzle Noise Check *(p. 347)*
   2. Nozzle Detect Check *(p. 348)*

ROUTINE MAINTENANCE

☐ B70 After Adjustment

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode menu.
3. Select "**Routine Maintenance: MENU**" from the Adjustment menu.
4. Select "**B70 After adjustment**".
5. The following adjustments are performed.
   1. Counter Reset - InkSystem *(p. 288)*
   2. Ink Filling (same as CL2)*(p. 357)*
   3. Nozzle Check Pattern *(p. 355)*
   4. Counter Reset - PF/EJ *(p. 288)*
   5. Band Feed adjust (Short) *(p. 340)*

☐ B71 Display Setting

1. Start the service support mode.
   Refer to "5.1 Service Support Mode" *(p. 100)*.
2. Select "**Adjustment: MENU**" from the service support mode menu.
3. Select "**Routine Maintenance: MENU**" from the Adjustment menu.
4. Select **"B71 Display Setting" .**
5. Select the display setting (able or disable) by [2][8] button, and push [#] button.

```
B71 Dispkay Setting

Change setting of display RMC warning?

   Setting:     able

SELECT: [2][8]

OK:             [#]
Cancel:         [ *]
```

7.3 Parts/Components Location

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Left SC Cover *(p. 390)*	4	Front Right Cover *(p. 396)*	7	Panel Assy *(p. 390)*	10	---
2	Paper Guide Support *(p. 396)*	5	Front Right Housing *(p. 396)*	8	Front Cover Assy *(p. 396)*	11	---
3	Right SC Cover *(p. 390)*	6	Stacker Assy *(p. 396)*	9	---	12	---

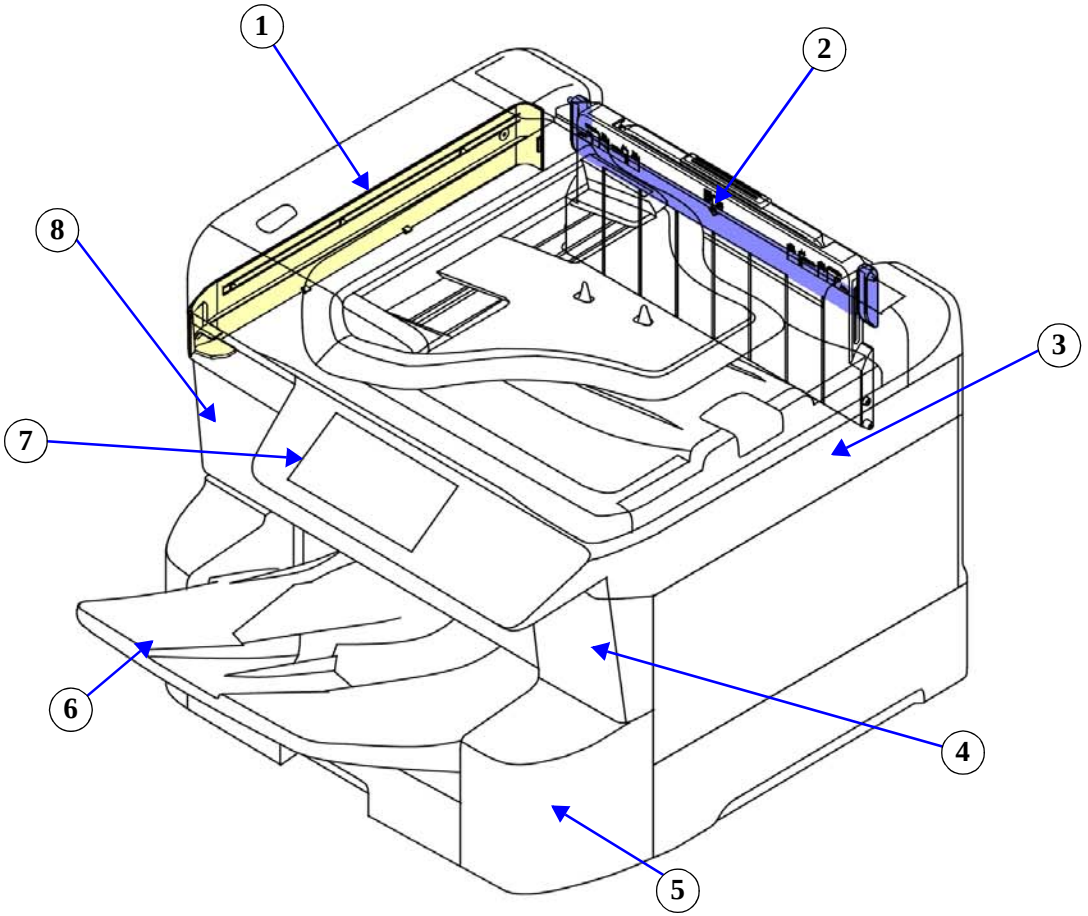


Figure 7-41. Housing (1)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Front Housing *(p. 402)*	4	Rear Case Assy *(p. 414)*	7	---	10	---
2	Paper Guide Assy *(p. 414)*	5	Front Left Housing *(p. 402)*	8	---	11	---
3	Upper Rear Housing *(p. 414)*	6	---	9	---	12	---

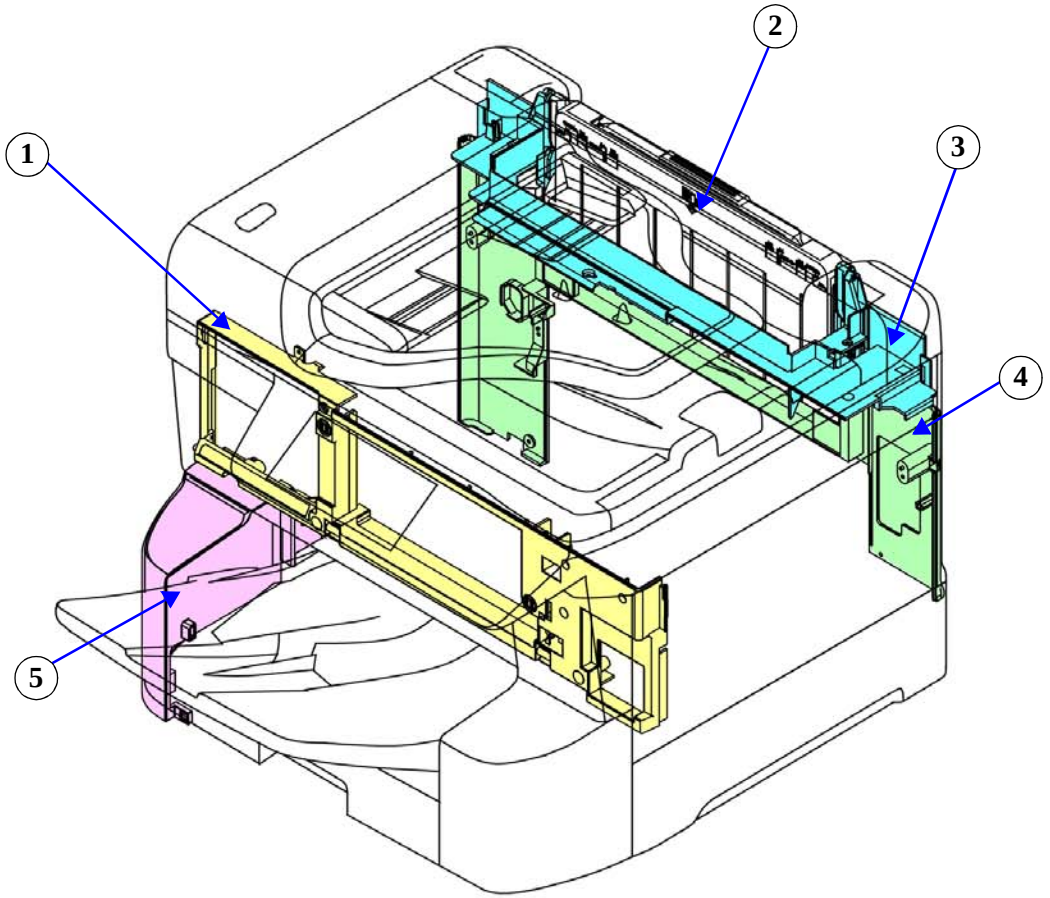


Figure 7-42. Housing (2)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Left Housing Assy *(p. 414)*	4	Paper Size Sensor Lever *(p. 402)*	7	---	10	---
2	Right Housing Assy *(p. 414)*	5	Paper Size Sensor Holder *(p. 402)*	8	---	11	---
3	Paper Size Sensor *(p. 402)*	6	---	9	---	12	---

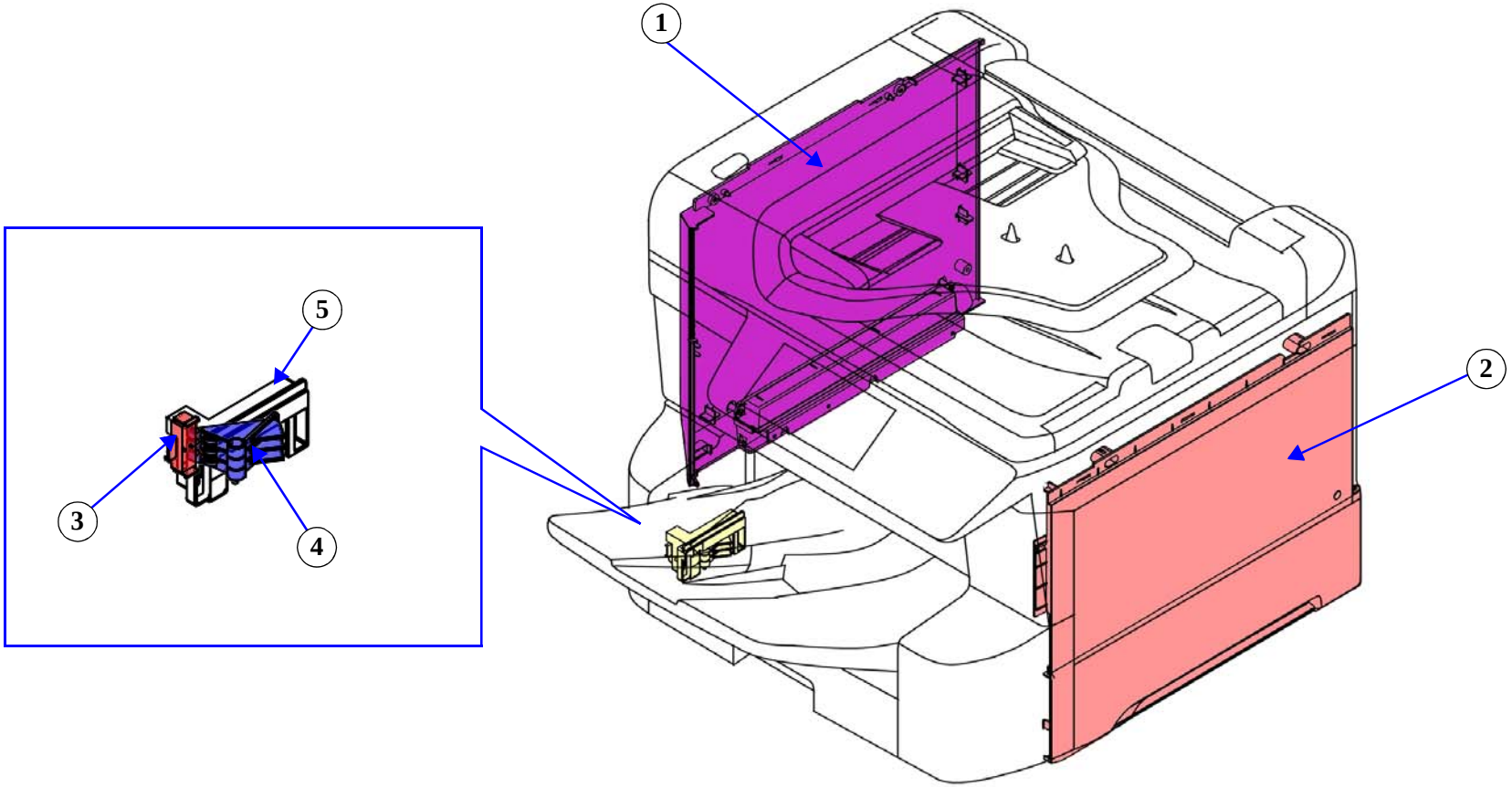


Figure 7-43. Housing (3)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	ADF Pad Assy *(p. 442)*	4	ADF Hinge *(p. 423)*	7	ADF/SCN Unit *(p. 423)*	10	---
2	ADF Pick Up Roller Assy *(p. 442)*	5	ADF Document Size Sensor *(p. 423)*	8	---	11	---
3	ADF Document Size Sensor *(p. 423)*	6	ASF Cover *(p. 442)*	9	---	12	---

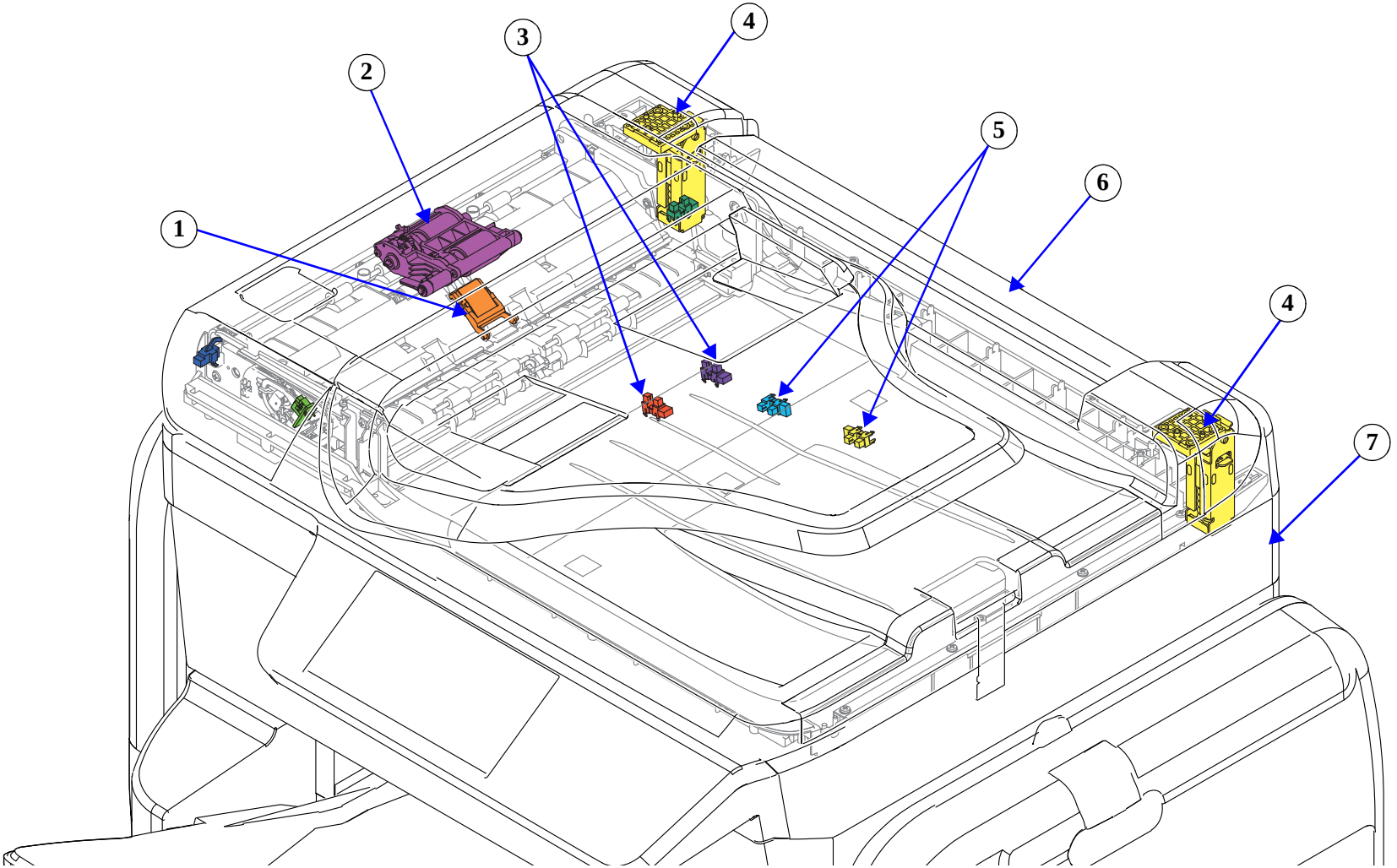


Figure 7-44. ADF/SCN (1)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Front ADF Base *(p. 449)*	4	ADF PF Support Guide *(p. 442)*	7	Rear ADF Cover *(p. 453)*	10	Document Stopper *(p. 453)*
2	Front ADF Cover *(p. 449)*	5	Rear ADF Base *(p. 453)*	8	Top ADF Document Support Assy *(p. 423)*	11	Document Mat Cover Assy *(p. 442)*
3	ADF Cover Assy *(p. 442)*	6	Screw Cover Seal *(p. 453)*	9	Right ADF Cover *(p. 453)*	12	---

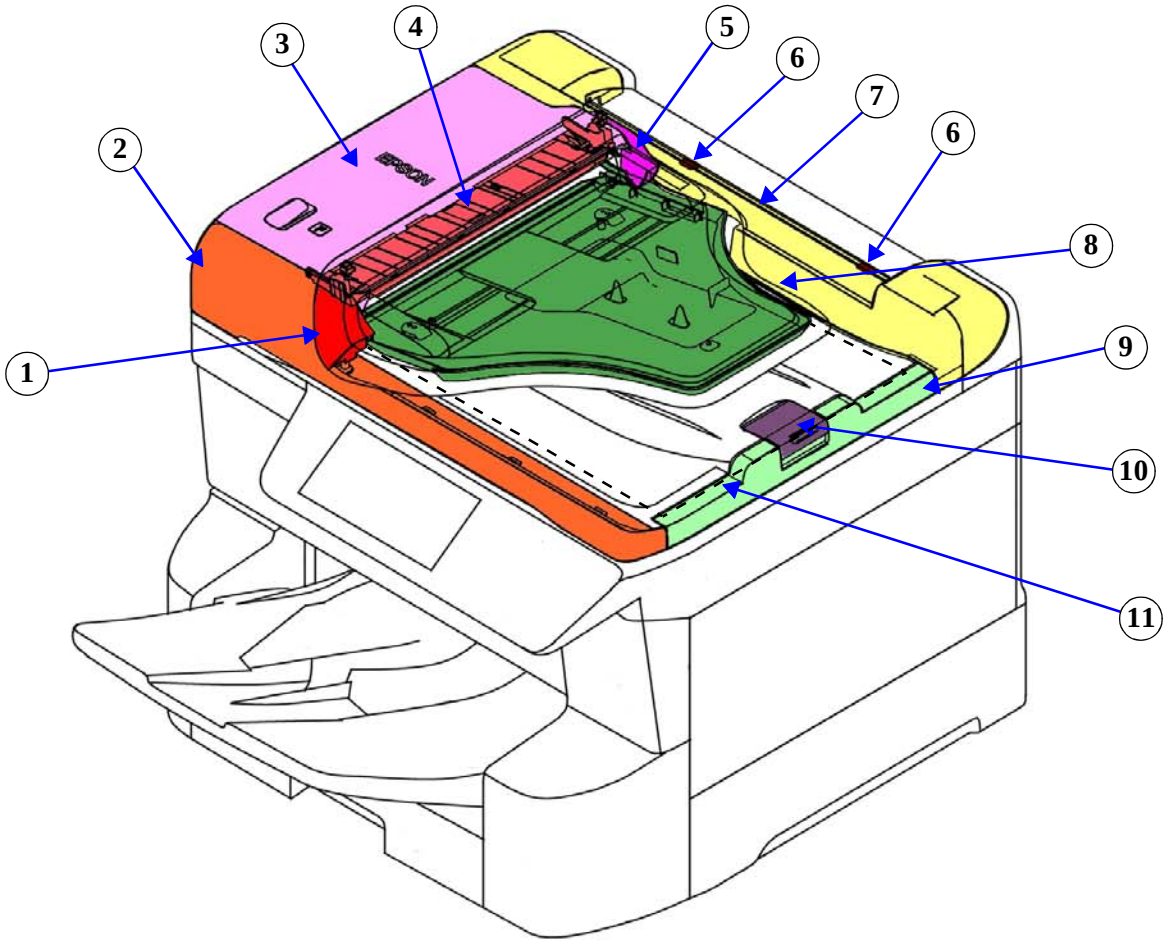


Figure 7-45. ADF/SCN (2)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Rear Left Housing *(p. 461)*	4	Lower SC Reinforcing Plate *(p. 461)*	7	---	10	---
2	Rear Right Housing *(p. 461)*	5	---	8	---	11	---
3	ADF/SCN Support Stand *(p. 461)*	6	---	9	---	12	---

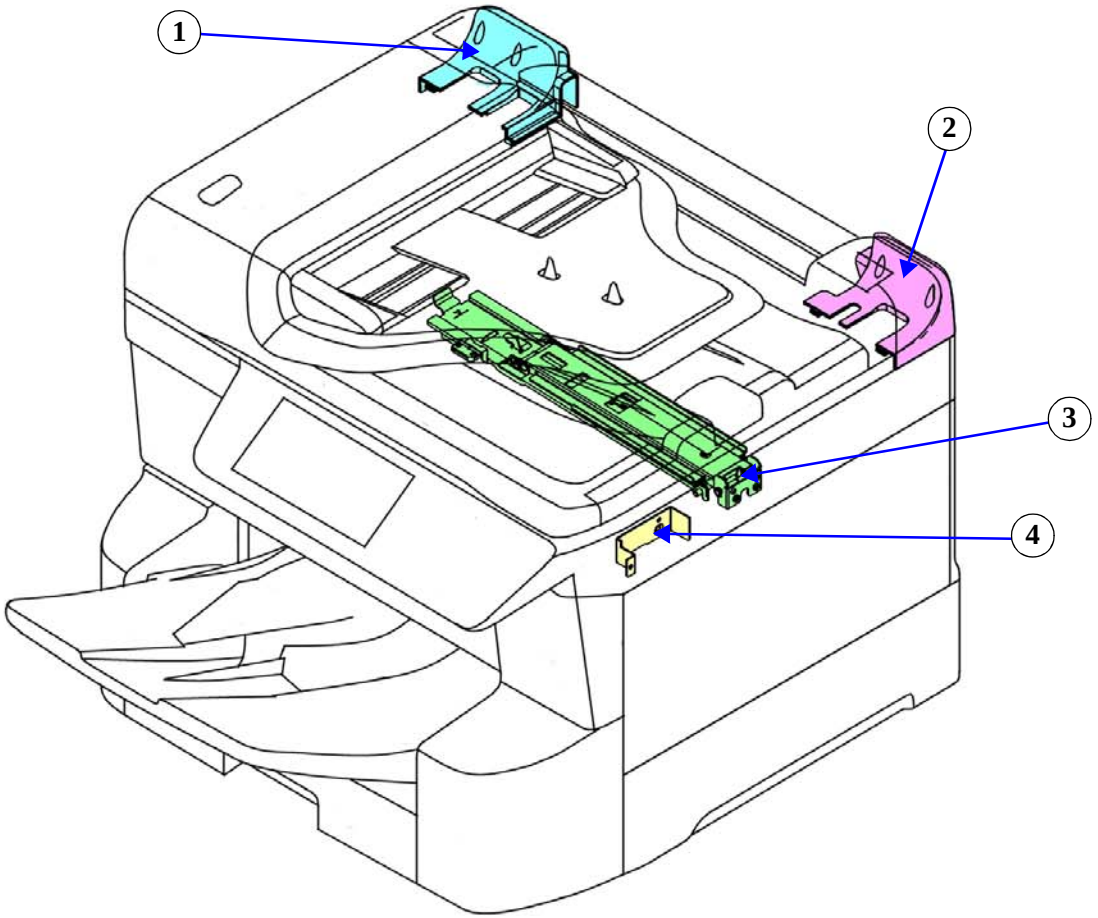


Figure 7-46. ADF/SCN (3)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Power Supply Unit *(p. 469)*	4	Wi-Fi Board *(p. 469)*	7	USB Host Assy *(p. 493)*	10	---
2	PCB Mechanism Relay Board *(p. 469)*	5	Connector Cover *(p. 469)*	8	Humidity Sensor *(p. 493)*	11	---
3	PCB Head Relay Board *(p. 469)*	6	PCB Relay CRCM Board *(p. 469)*	9	---	12	---

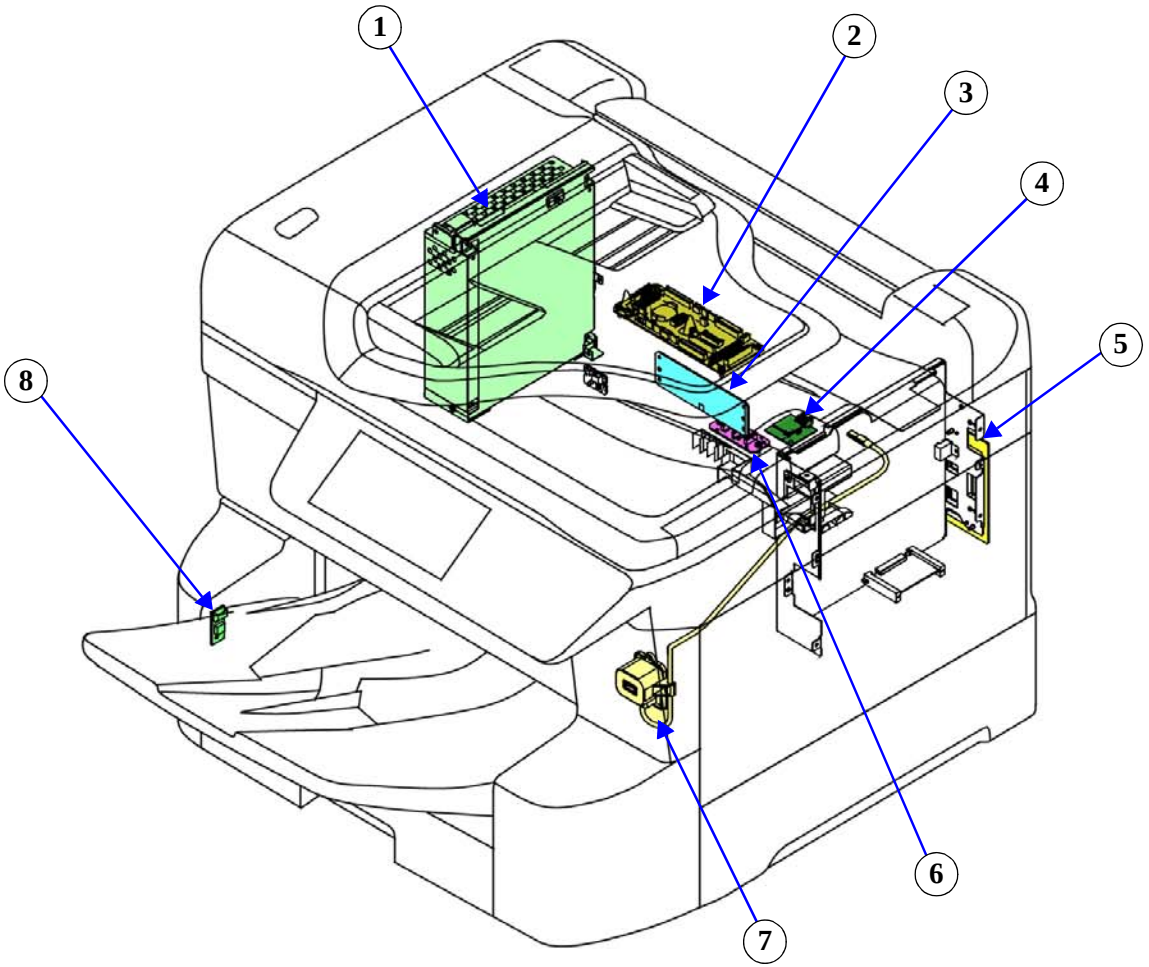


Figure 7-47. Electrical Components (1)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Main Board *(p. 480)*	4	FAX Board Assy *(p. 480)*	7	---	10	---
2	PDL Board Assy *(p. 480)*	5	PCB Rom *(p. 480)*	8	---	11	---
3	PDL SD Card *(p. 480)*	6	---	9	---	12	---

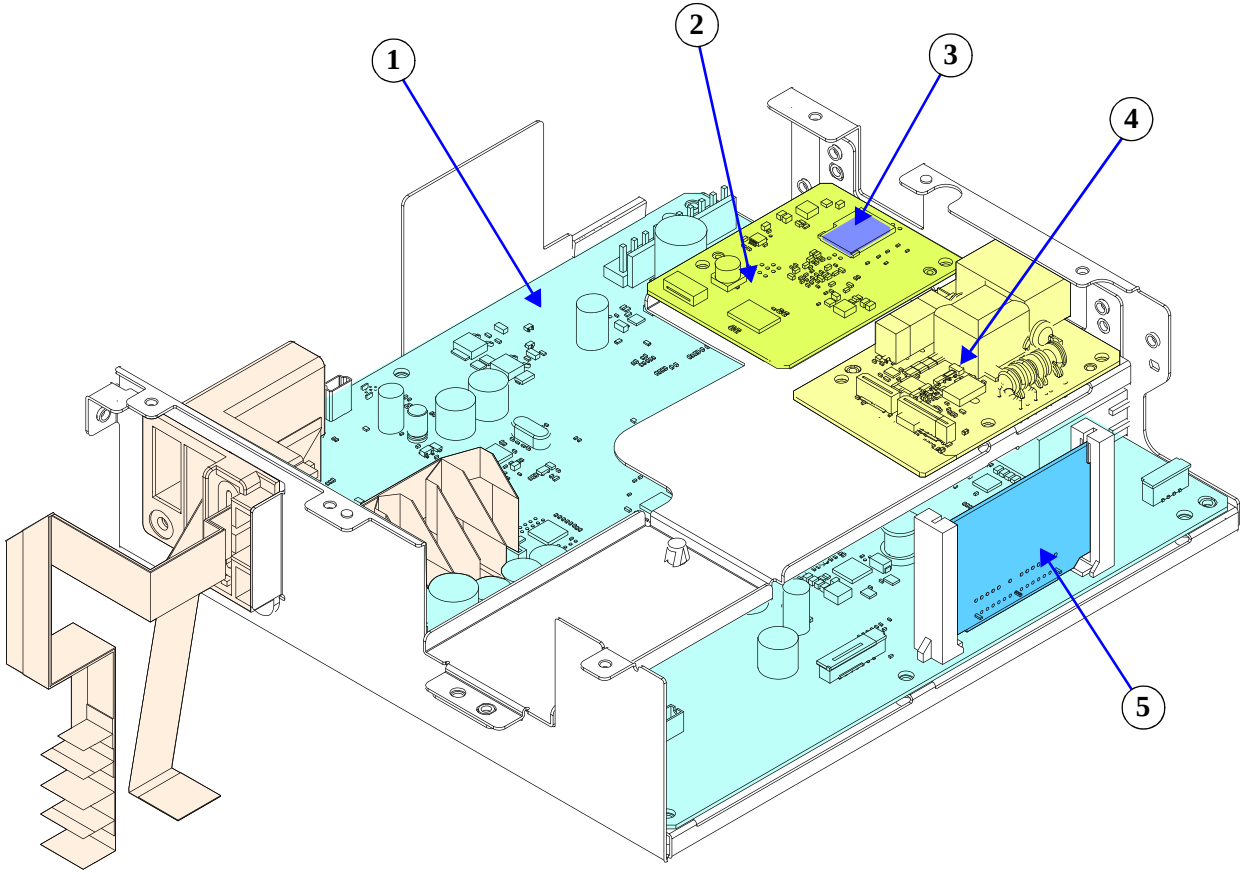


Figure 7-48. Electrical Components (2)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Ink Supply Unit *(p. 524)*	4	Decompression Pump Unit (Home side) *(p. 504)*	7	CRCM Board *(p. 524)*	10	---
2	Ink End Sensor *(p. 504)*	5	MB CSIC Assy *(p. 504)*	8	Upper Middle Housing *(p. 524)*	11	---
3	Decompression Pump Unit (Full side) *(p. 504)*	6	Maintenance Unit *(p. 504)*	9	---	12	---

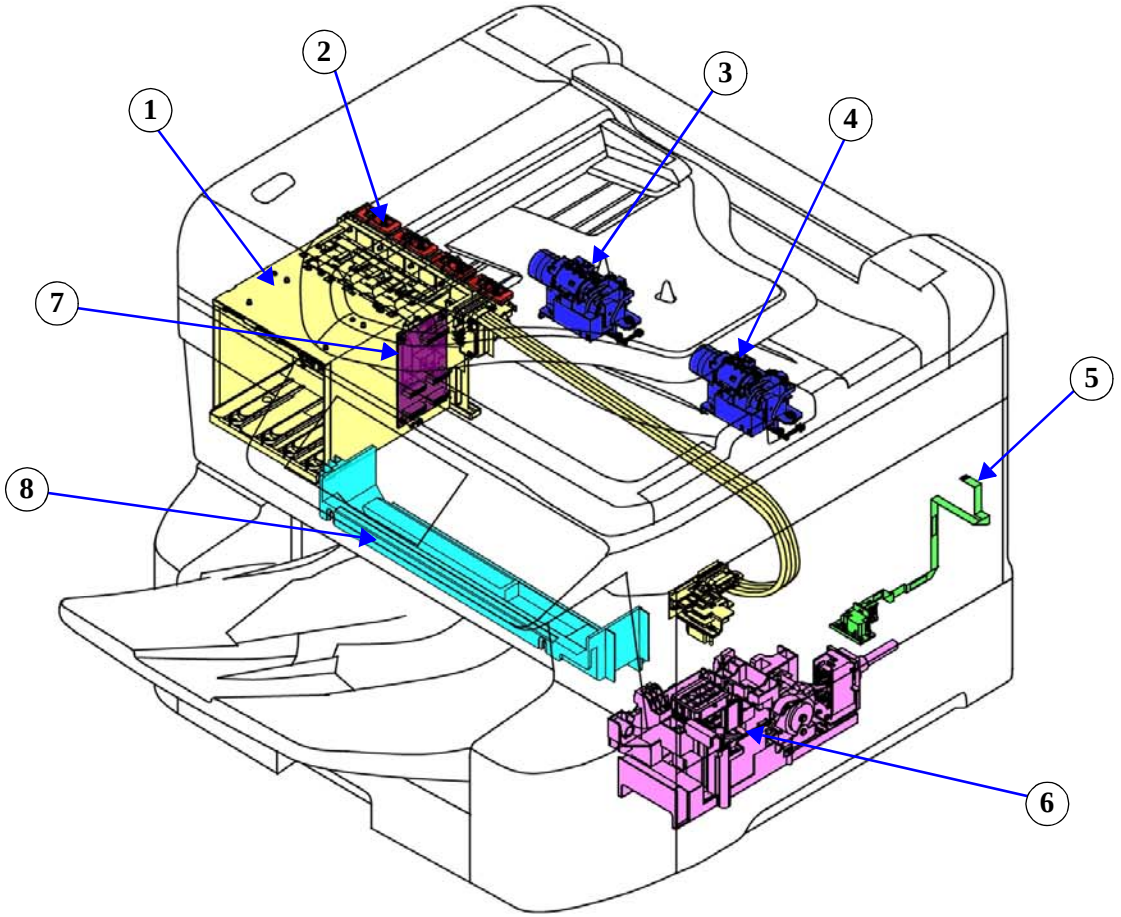


Figure 7-49. Ink System Mechanism

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	PW Drive Shutter *(p. 542)*	4	APG Motor Assy *(p. 542)*	7	CR Scale *(p. 566)*	10	Print Head *(p. 552)*
2	APG Drive Sensor *(p. 542)*	5	APG Encoder *(p. 542)*	8	CR Motor Assy *(p. 566)*	11	PW Sensor *(p. 580)*
3	APG Drive Assy *(p. 542)*	6	CR Timing Belt *(p. 580)*	9	CR Unit *(p. 580)*	12	---

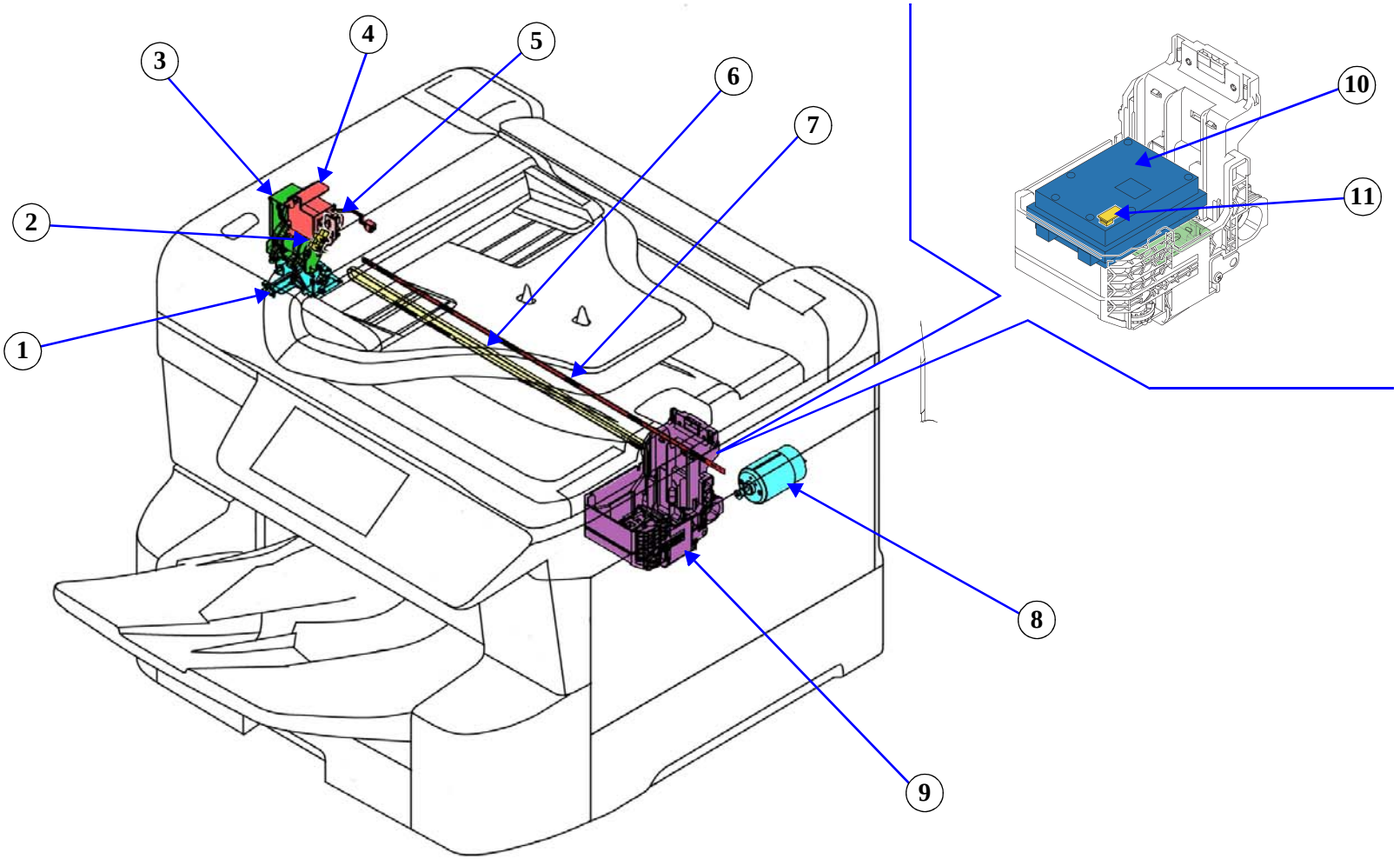


Figure 7-50. Carriage Mechanism

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Duplex Print Assy *(p. 607)*	4	Rear Band *(p. 614)*	7	---	10	---
2	Mounting Plate Assy *(p. 614)*	5	---	8	---	11	---
3	Duplex Print Cover Assy *(p. 614)*	6	---	9	---	12	---

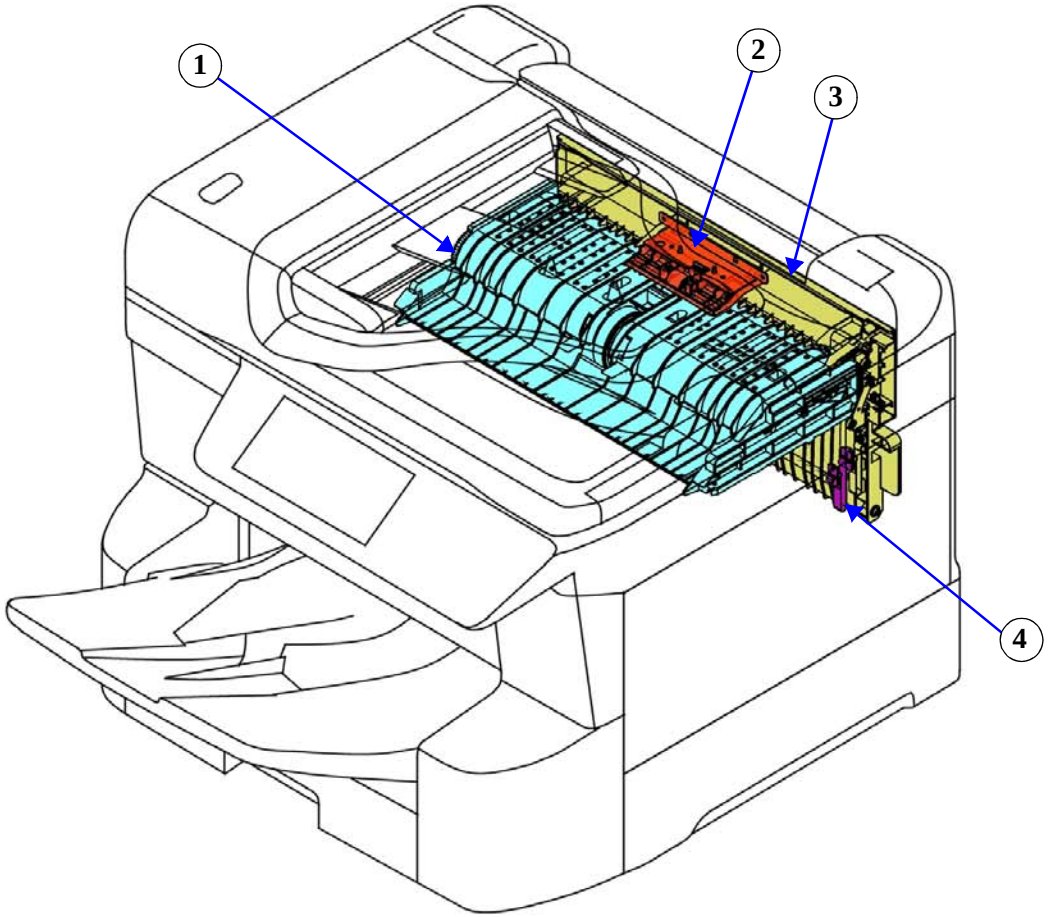


Figure 7-51. Paper Feed Mechanism (1)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Pick Up Roller *(p. 607)*	4	Middle Duplex Print Guide *(p. 607)*	7	Paper Size Sensor *(p. 607)*	10	---
2	Paper Detection Sensor *(p. 614)*	5	Feed Lever *(p. 607)*	8	---	11	---
3	Hopper Up/down Sensor *(p. 614)*	6	Feed Sensor *(p. 607)*	9	---	12	---

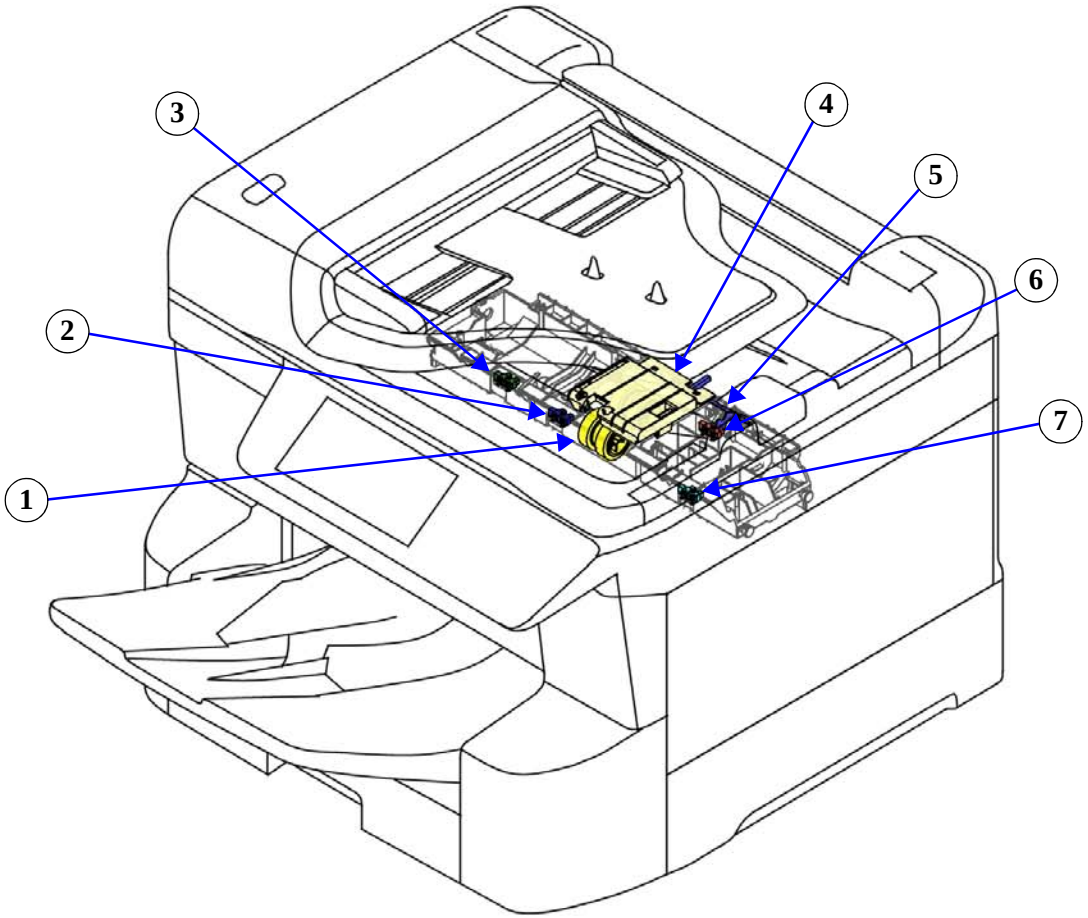


Figure 7-52. Paper Feed Mechanism (2)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	SMAP Drive Sensor *(p. 620)*	4	PF Drive Assy *(p. 638)*	7	Rear ASF Clutch Gear *(p. 629)*	10	Rear ASF Unit *(p. 629)*
2	PF Encoder Assy *(p. 620)*	5	PF Belt Tension Stopper *(p. 620)*	8	ASF Drive Assy *(p. 638)*	11	Link Lever *(p. 629)*
3	PF Timing Belt *(p. 620)*	6	ASF Encoder *(p. 638)*	9	Rear ASF Solenoid *(p. 629)*	12	Rear ASF Seat Guide *(p. 629)*

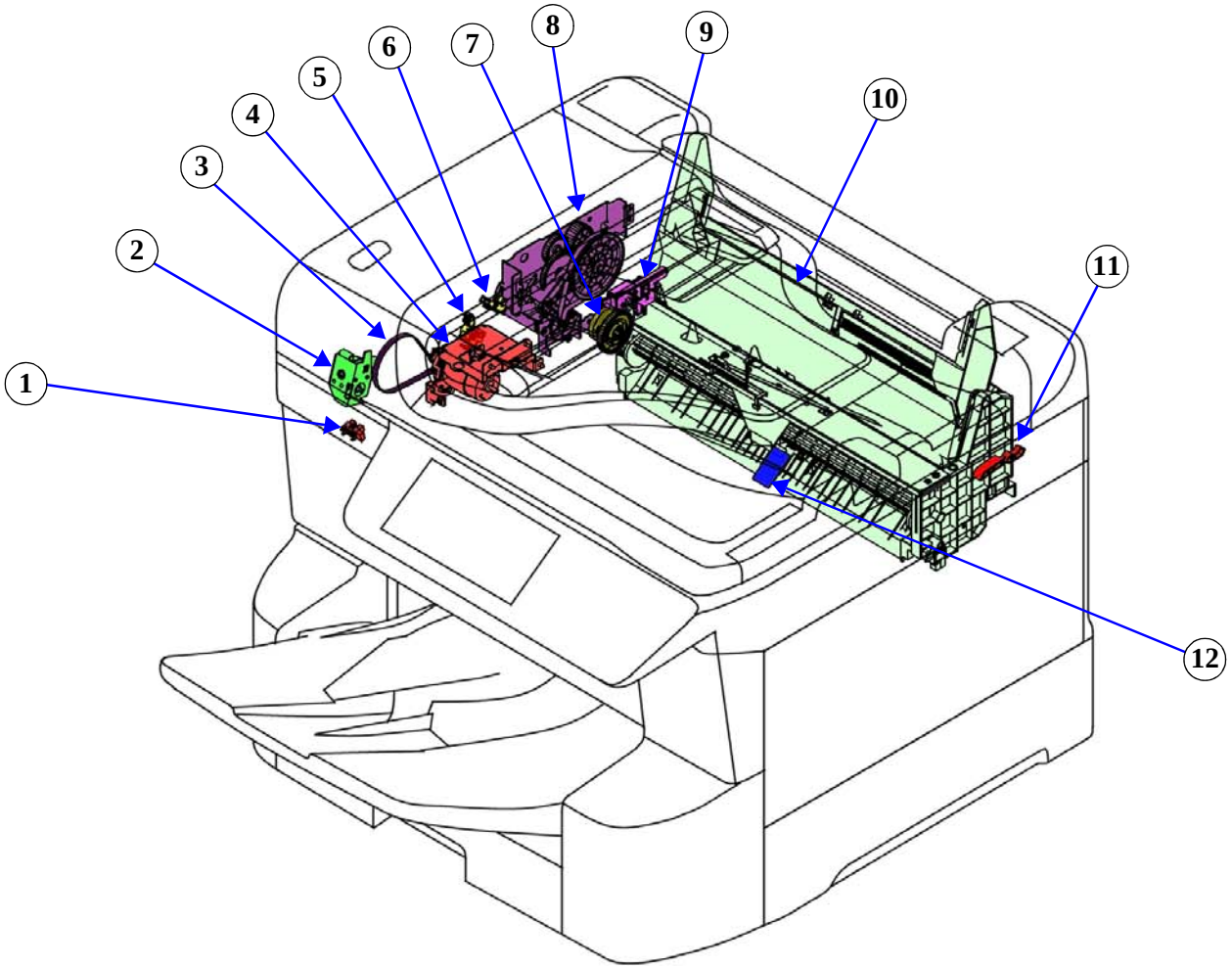


Figure 7-53. Paper Feed Mechanism (3)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Nip Release Sensor *(p. 652)*	4	Paper Jam Sensor *(p. 652)*	7	---	10	---
2	Nip Release Solenoid *(p. 652)*	5	Lift Drive Assy *(p. 695)*	8	---	11	---
3	Paper Jam Sensor Lever *(p. 652)*	6	Star Wheel Assy *(p. 673)*	9	---	12	---

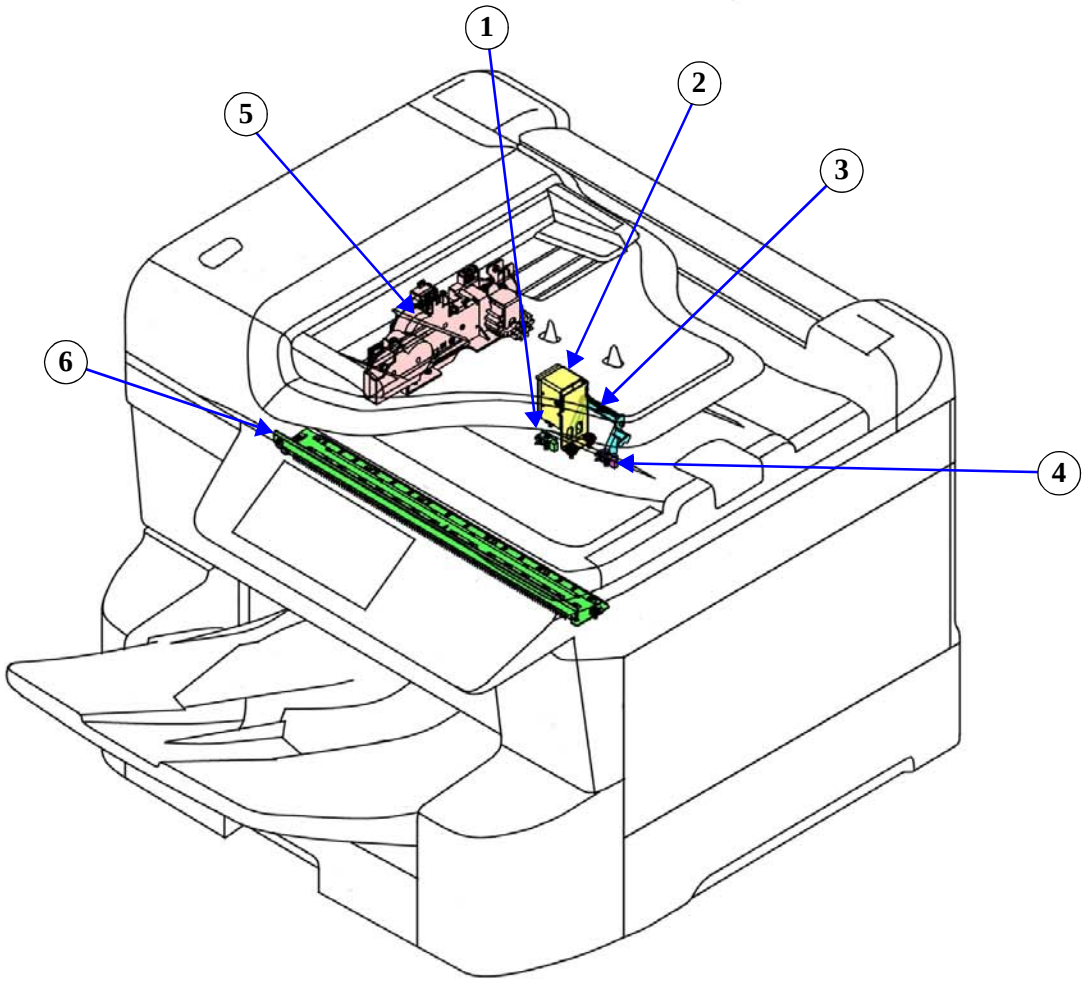


Figure 7-54. Paper Feed Mechanism (4)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Paper Guide Upper Left *(p. 673)*	4	Driven Roller *(p. 673)*	7	---	10	---
2	Paper Guide Upper Center *(p. 673)*	5	---	8	---	11	---
3	Paper Guide Upper Right *(p. 673)*	6	---	9	---	12	---

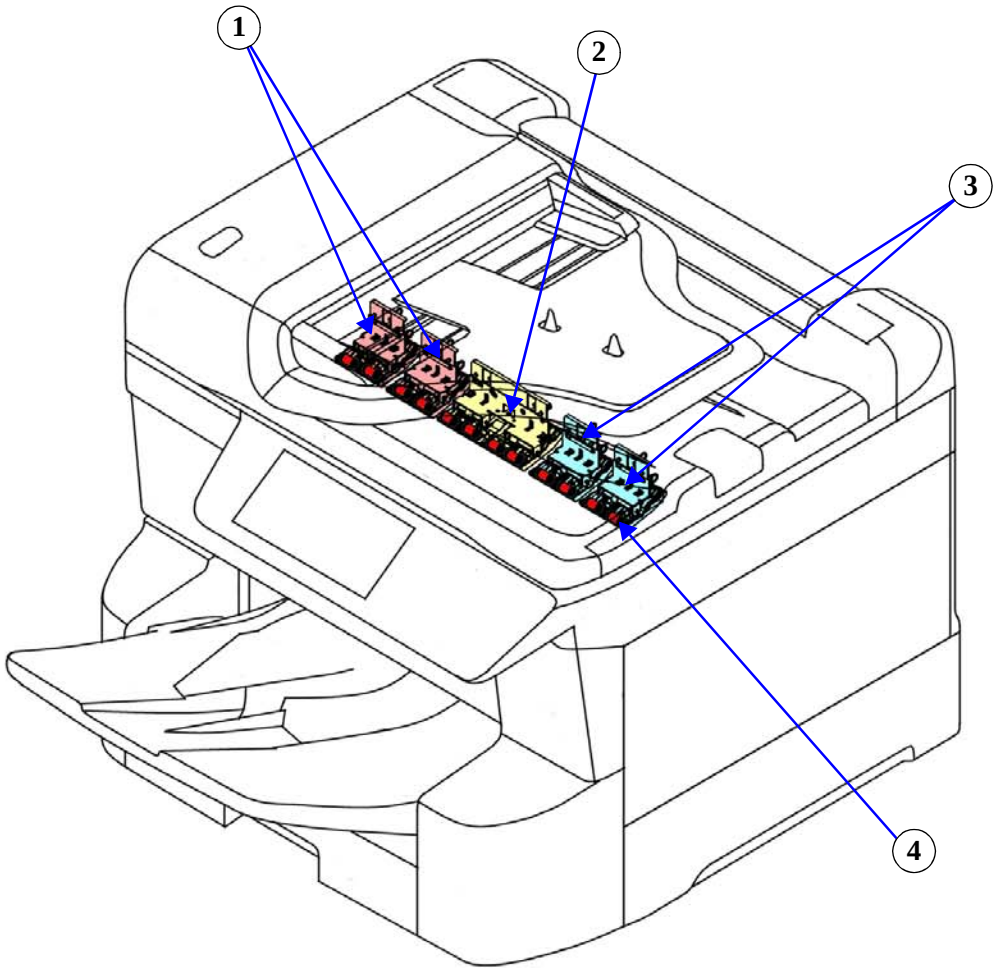


Figure 7-55. Paper Feed Mechanism (5)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Retard Roller *(p. 717)*	4	Paper Cassette *(p. 717)*	7	---	10	---
2	Retard Extension Spring *(p. 717)*	5	---	8	---	11	---
3	Paper Label *(p. 717)*	6	---	9	---	12	---

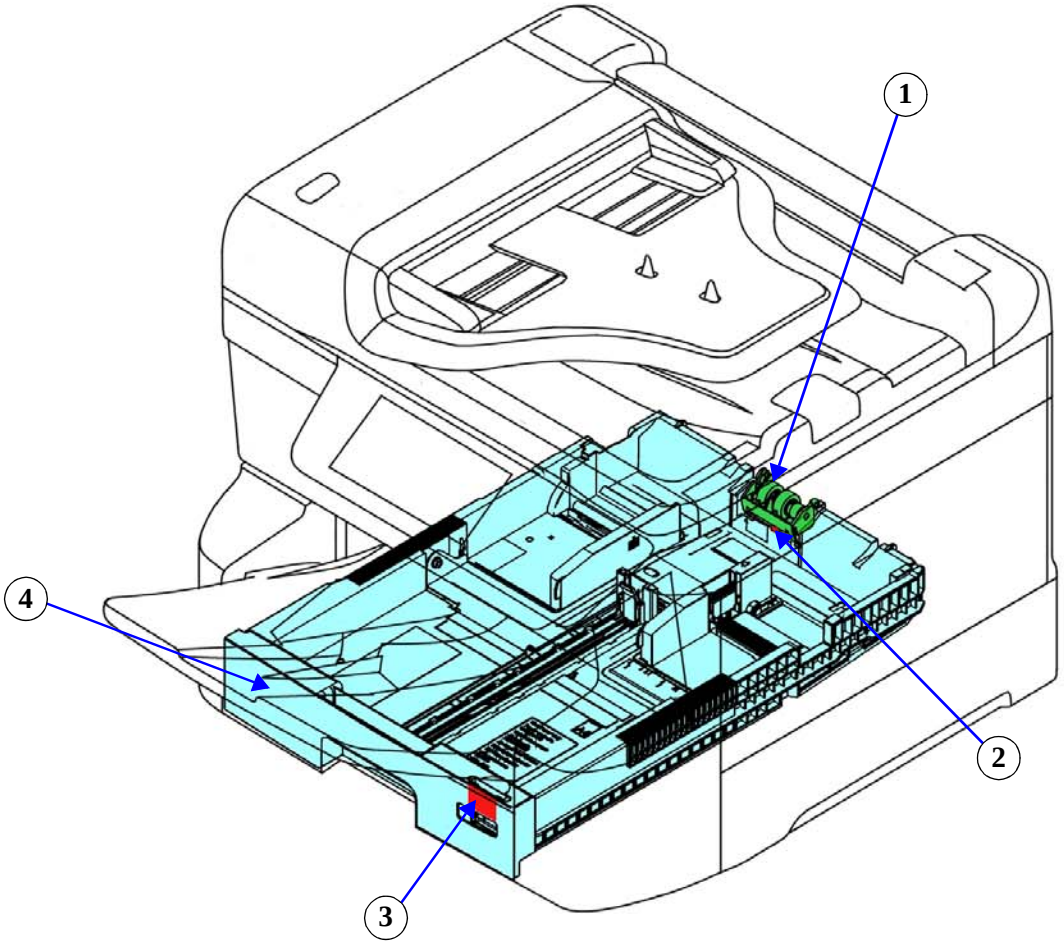


Figure 7-56. Paper Cassette

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Panel Assy *(p. 722)*	4	ASF Cover *(p. 730)*	7	---	10	---
2	Decoration Case Left *(p. 722)*	5	Decoration Case Right *(p. 722)*	8	---	11	---
3	Upper Housing *(p. 722)*	6	---	9	---	12	---

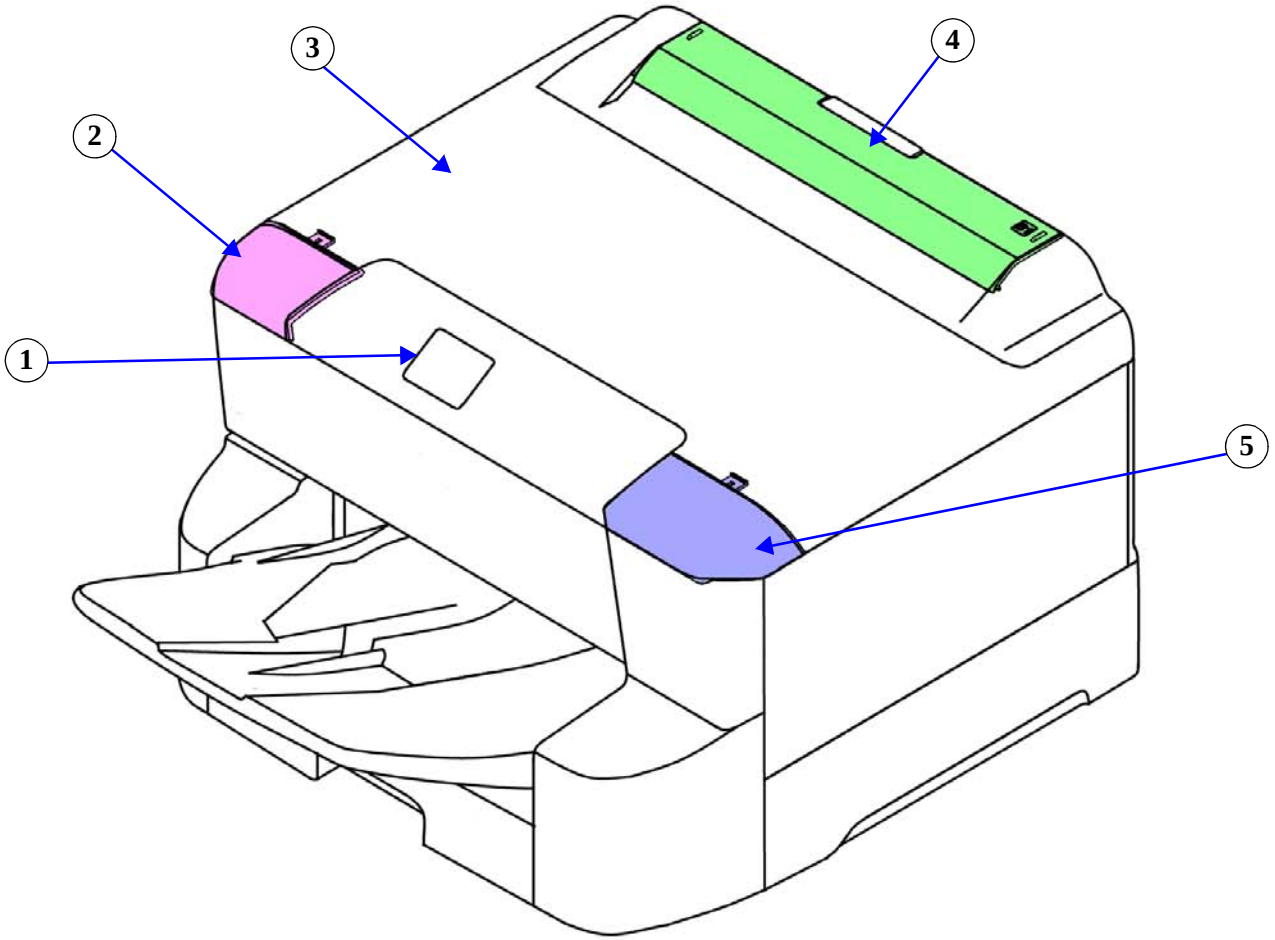


Figure 7-57. Housing (1) (WF-C8190/C8190a)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Front Housing *(p. 722)*	4	Paper Guide Hinge Support *(p. 730)*	7	---	10	---
2	Rear Case Assy *(p. 730)*	5	Paper Guide Assy *(p. 730)*	8	---	11	---
3	Paper Guide Hinge Left/Right *(p. 730)*	6	---	9	---	12	---

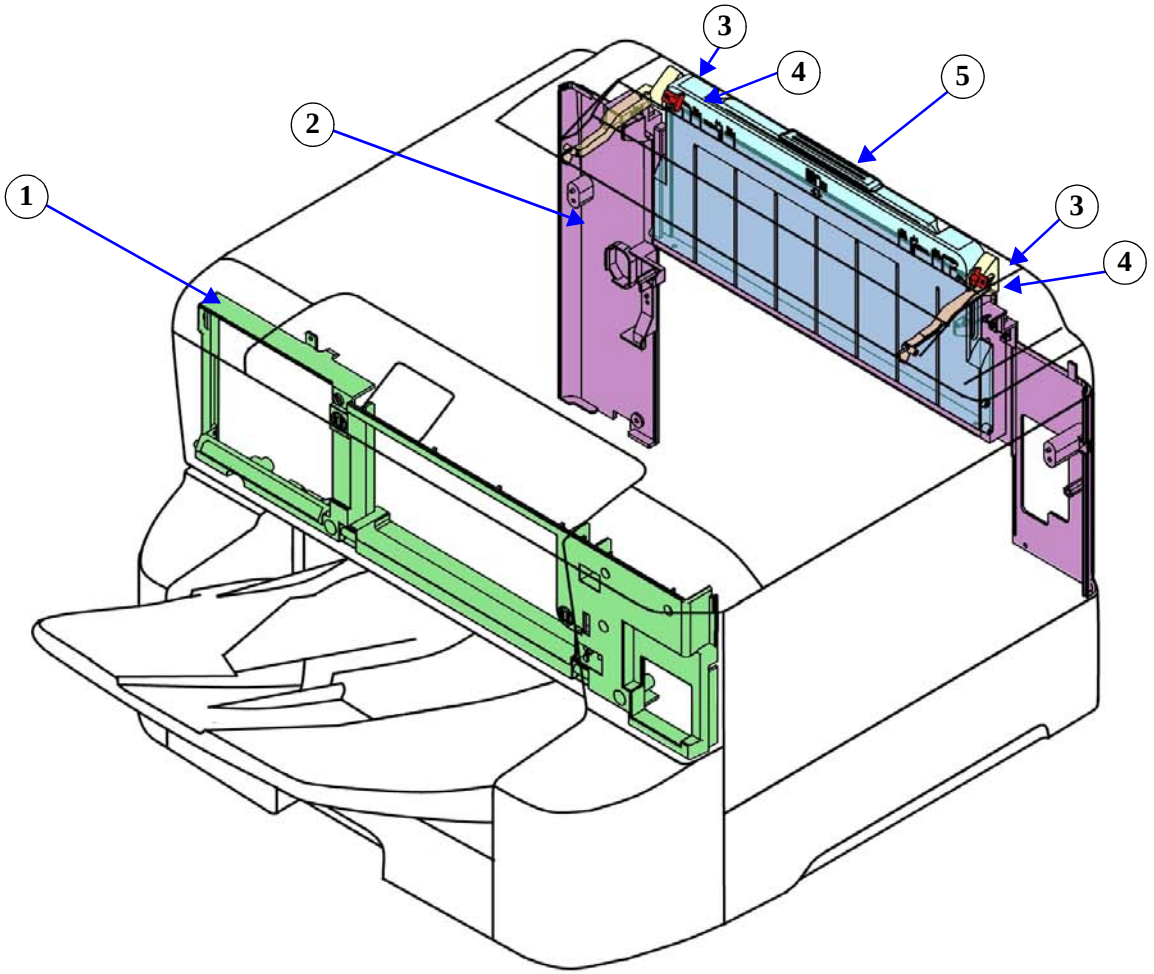


Figure 7-58. Housing (2) (WF-C8190/C8190a)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Option Rear Belt Cover *(p. 736)*	4	Option Pick Up Roller *(p. 736)*	7	Option Right Frame *(p. 747)*	10	Lower Connector *(p. 747)*
2	Vertical Roller *(p. 758)*	5	Spur Gear (with E-ring) *(p. 758)*	8	Lift Drive Gear *(p. 758)*	11	---
3	Option Rear Cover *(p. 736)*	6	Separate Roller Drive Gear *(p. 758)*	9	Upper Connector *(p. 747)*	12	---

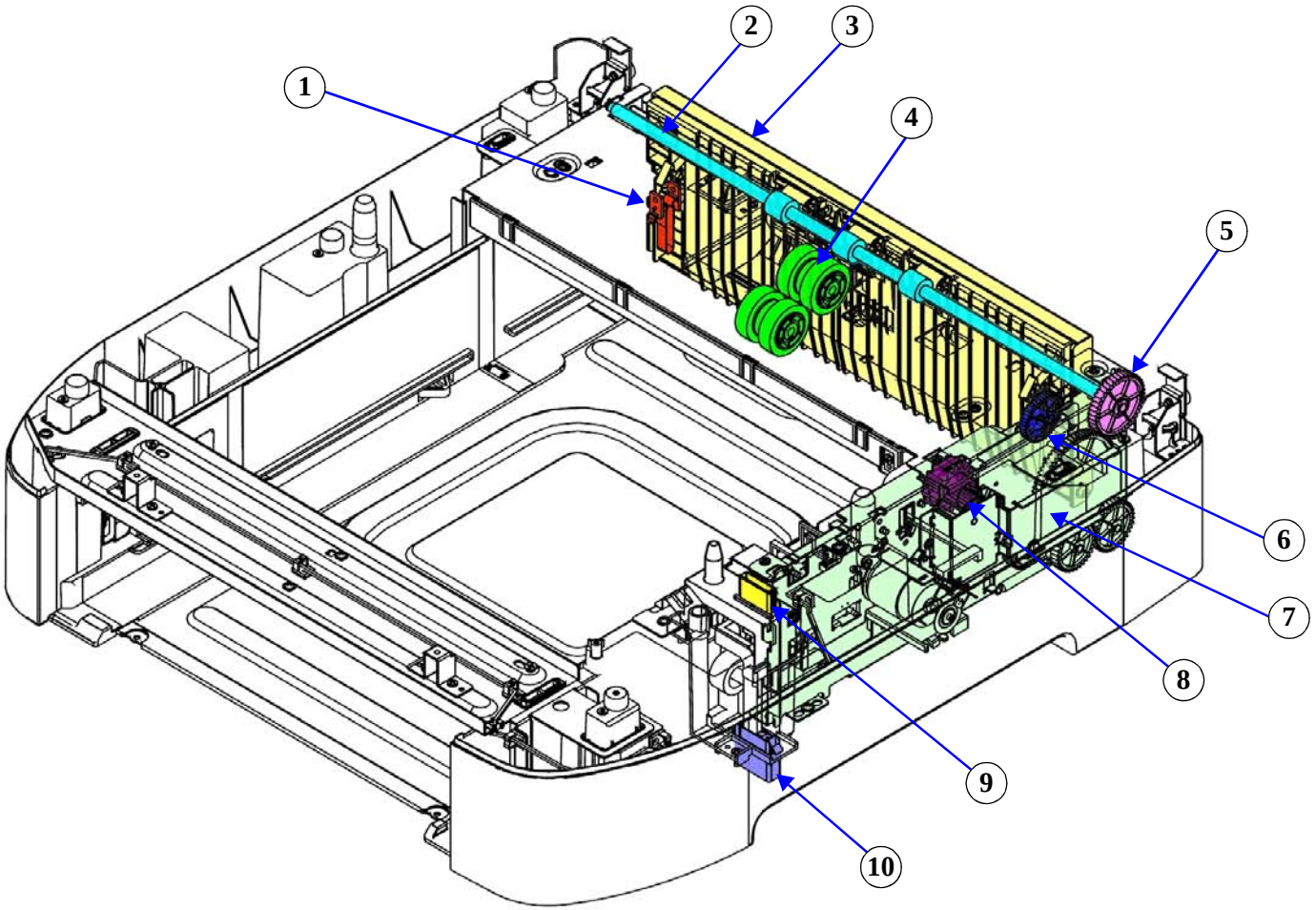


Figure 7-59. Option Cassette (1)

No.	Part/Component	No.	Part/Component	No.	Part/Component	No.	Part/Component
1	Cassette Detection Sensor Feed Sensor/ Cassette Paper Size Sensor/ Paper Detection Sensor/ Hopper Up/ down Sensor *(p. 758)*	4	Option Cassette Paper Size Sensor Holder *(p. 774)*	7	---	10	---
2	Option Feed Lever *(p. 747)*	5	Option Cassette Paper Size Sensor *(p. 774)*	8	---	11	---
3	Option Rear Cover Sensor *(p. 758)*	6	Option Cassette Paper Size Sensor Lever *(p. 774)*	9	---	12	---

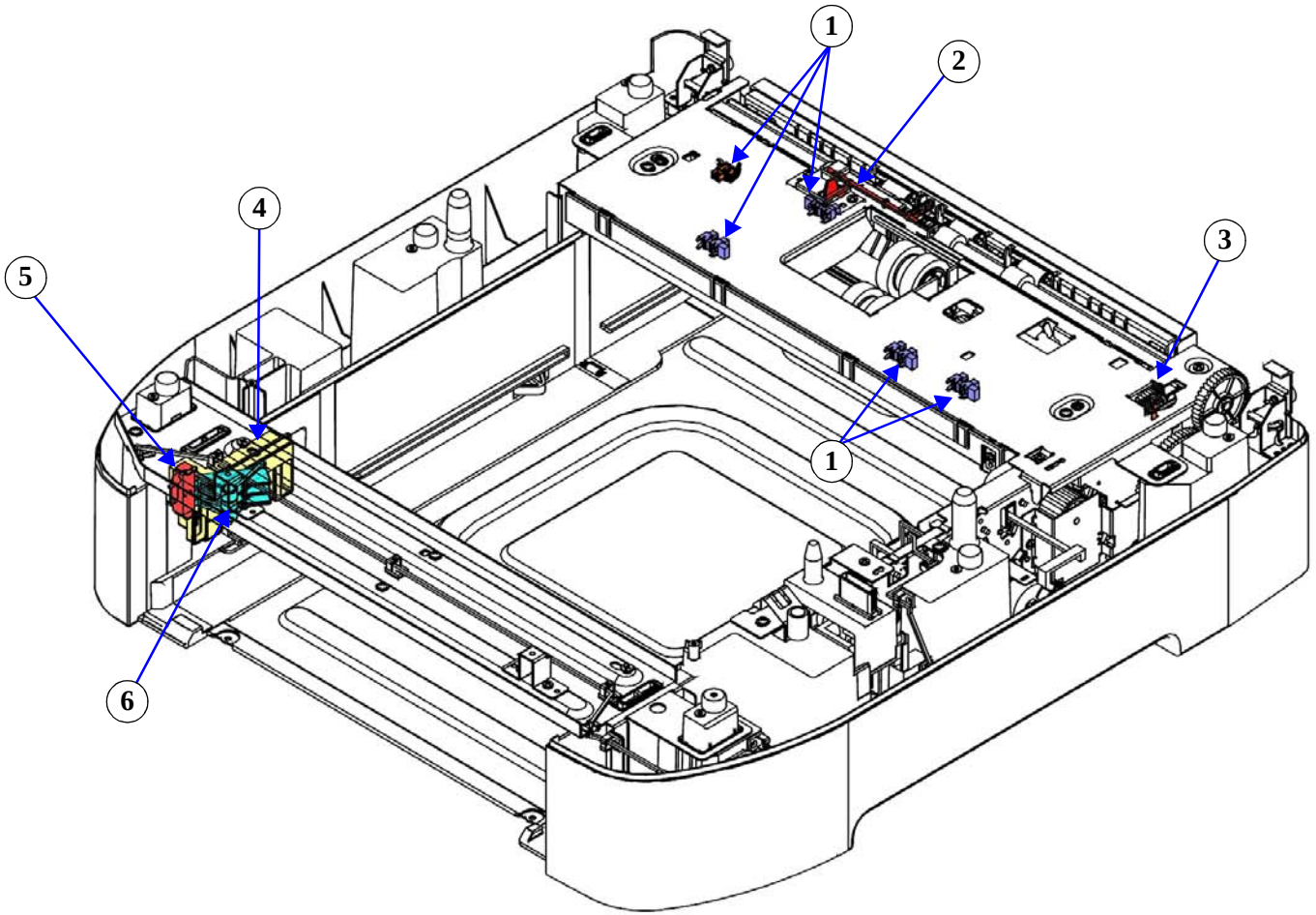


Figure 7-60. Option Cassette (2)

7.4 Repair Work

7.4.1 Preparation for servicing

7.4.1.1 Unlocking the CR Unit

CR UNLOCK METHOD BY USING SERVICE SUPPORT MODE

1. Turn on the printer by service support mode.
   (Refer to "5.1.2 Service mode startup and operating procedures" *(p. 100)*)
2. Select the “CR Unlock Power Off” from service support mode top menu.
3. Turn off the power of the printer in the CR unlock state.

MANUAL CR UNLOCK METHOD

1. Open the Front Cover Assy.
2. Move the CR Unit to direction of arrow while pushing the CR Lock Lever by hand.

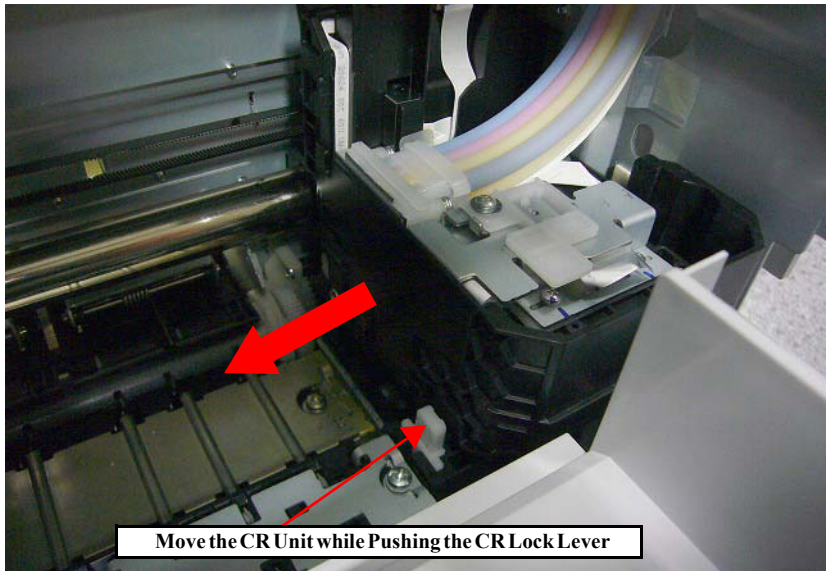


Figure 7-61. Unlocking the CR Unit (1)

7.4.1.2 Removing the Maintenance Box

1. Open the Duplex Print Cover.
2. Remove the Maintenance Box.

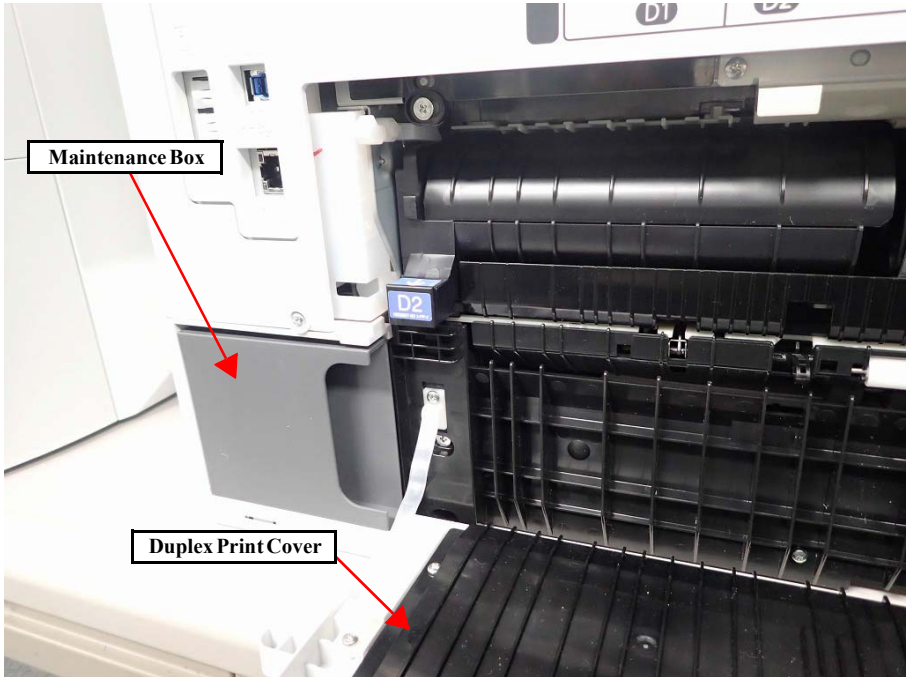


Figure 7-62. Removing the Maintenance Box

7.4.1.3 Removing the Ink Cartridge

1. Open the Front Cover Assy.
2. Push the Ink Cartridges.
3. Remove the Ink Cartridge.

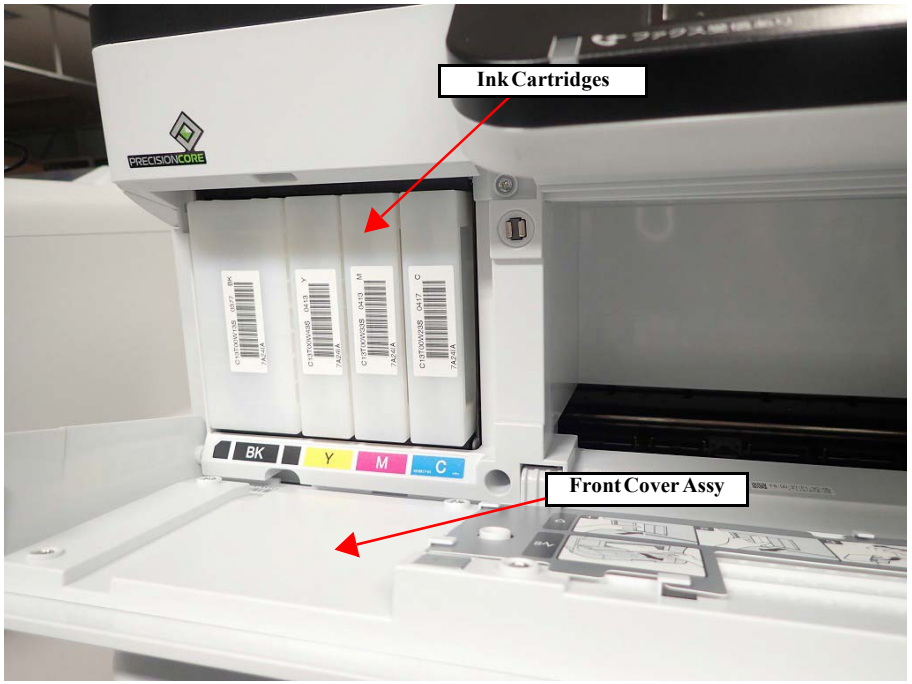
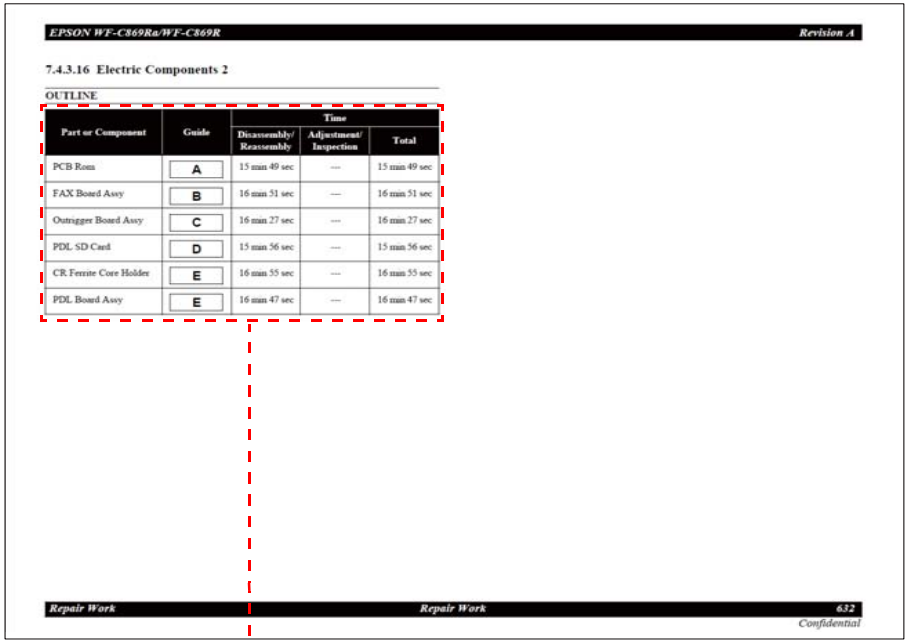


Figure 7-63. Removing the Ink Cartridge

7.4.2 How to Read This Chapter

CONTENTS EXPLANATION

☐ Section Top Page


EPSON WF-C869Ra/WF-C869R Revision A

7.4.3.16 Electric Components 2

OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
PCB Rom	A	15 min 49 sec	---	15 min 49 sec
FAX Board Assy	B	16 min 51 sec	---	16 min 51 sec
Outrigger Board Assy	C	16 min 27 sec	---	16 min 27 sec
PDL SD Card	D	15 min 56 sec	---	15 min 56 sec
CR Ferrite Core Holder	E	16 min 55 sec	---	16 min 55 sec
PDL Board Assy	E	16 min 47 sec	---	16 min 47 sec

Repair Work Repair Work 632
Confidential

Part Name/Guide

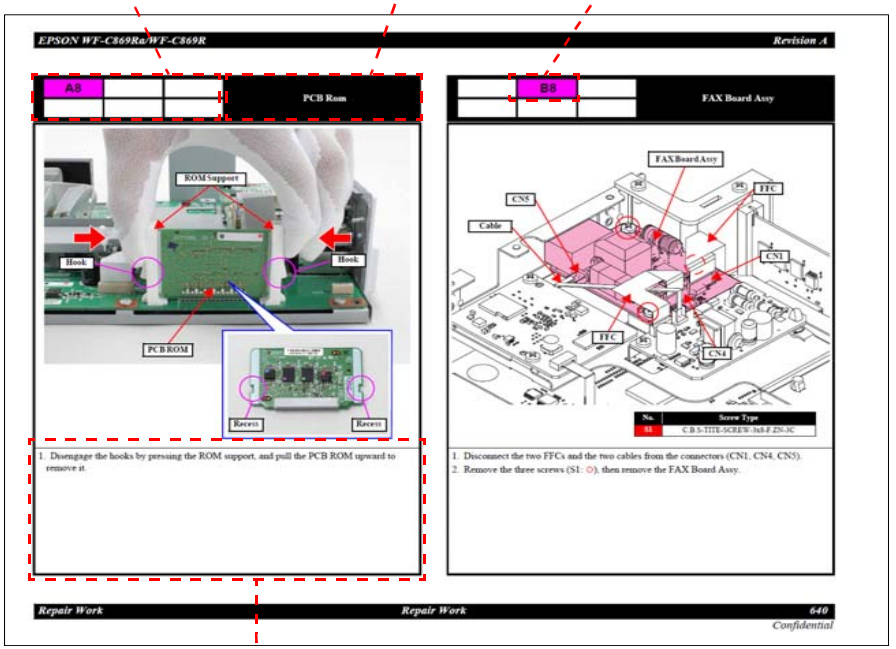
Disassembly procedure of the listed parts or components are given in the section.
The capital letters in the "Guide" column are shown in the disassembly procedure pages with a number. Follow the disassembly instructions on the pages with a capital letter for your target part in numerical order.

☐ Disassembly Procedure Page

Guide
The capital letters represent parts/ components, and the number indicates the order of disassembly.

Part or Component
Indicates a target part to be removed, or work to be performed with the instructions in this box.

Final Procedure
Pink-colored guide indicates that the disassembly of the part represented by the capital letter ends here.



Procedure

Describes the disassembly procedure.
When reassembling, follow the disassembly procedure in reverse order.

EXAMPLE FOR READING DISASSEMBLY PROCEDURE

1. Find your target part or component in the table.
2. See the Guide column, and remember the Guide (a capital letter) for the part/ component.

Example: The Guide for the PCB Rom is "A".

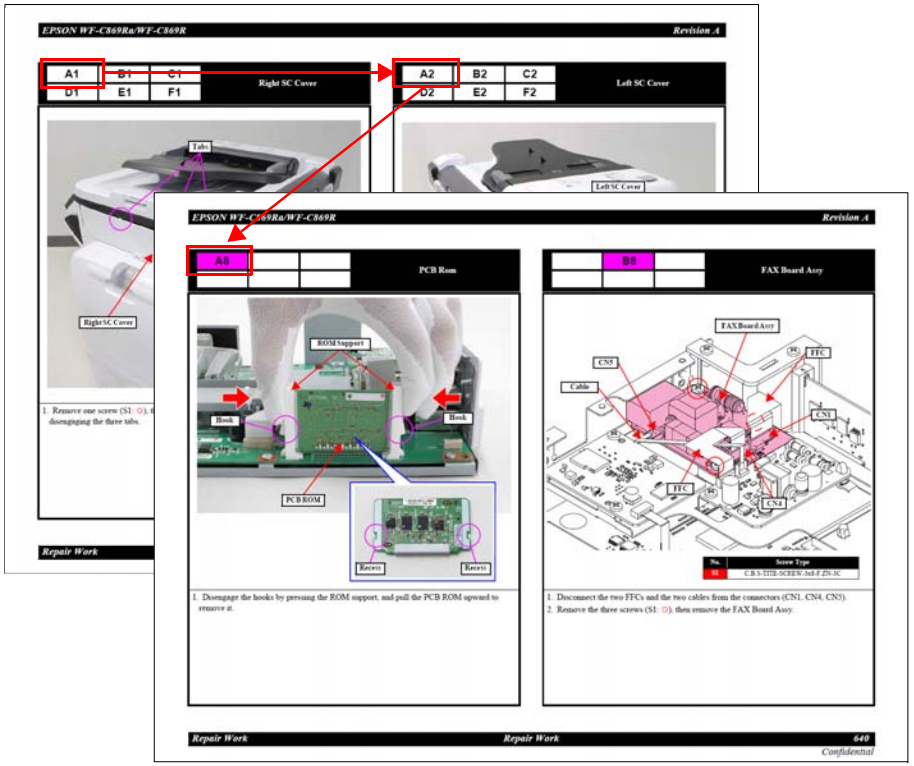
7.4.3.16 Electric Components 2

OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
PCB Rom	A	15 min 49 sec	---	15 min 49 sec
FAX Board Assy	B	16 min 51 sec	---	16 min 51 sec
Outrigger Board Assy	C	16 min 27 sec	---	16 min 27 sec
PDL SD Card	D	15 min 56 sec	---	15 min 56 sec
CR Ferrite Core Holder	E	16 min 55 sec	---	16 min 55 sec
PDL Board Assy	E	16 min 47 sec	---	16 min 47 sec

3. Find the "Guide" (the capital letter) in the disassembly procedure pages. Then follow the instructions on the pages with the Guide indication in numerical order.

Example: To remove the PCB Rom, find pages with the "A" guide. If A1, A2, A3, and A8 are found, start from the A1 page, then proceed in numerical order.



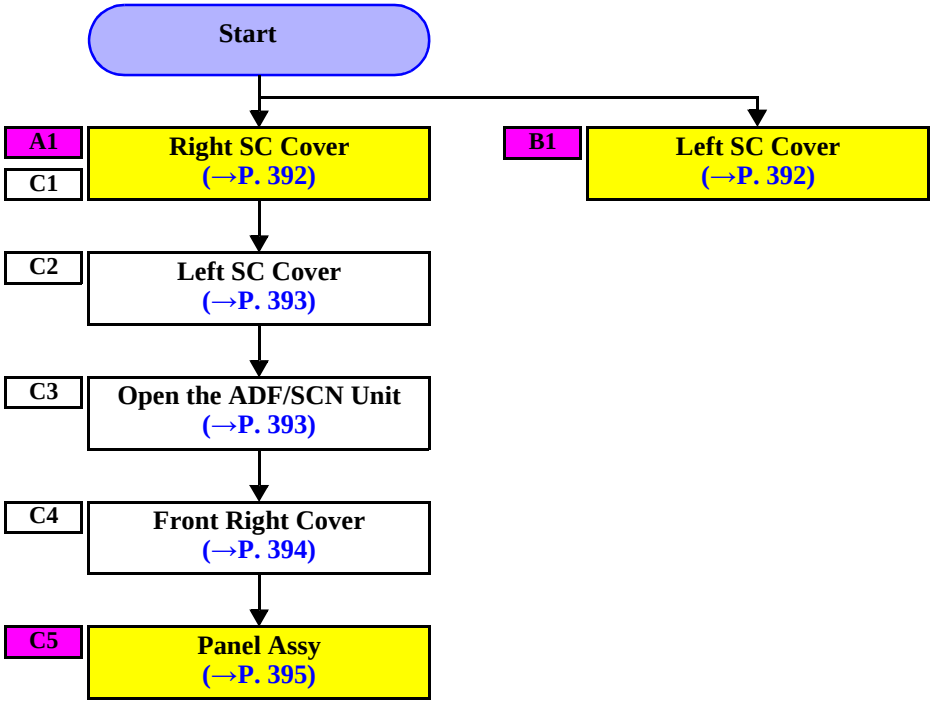
7.4.3 REPAIR WORK Details

7.4.3.1 Housing1

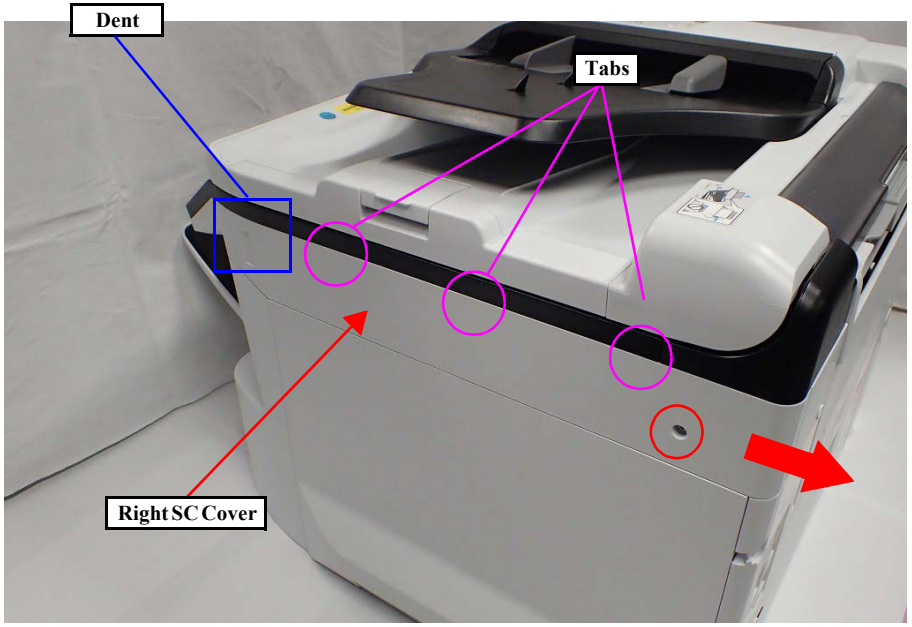
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Right SC Cover	A	39 sec	---	39 sec
Left SC Cover	B	37 sec	---	37 sec
Panel Assy	C	5min 26 sec	---	5 min 26 sec

DISASSEMBLY FLOWCHART



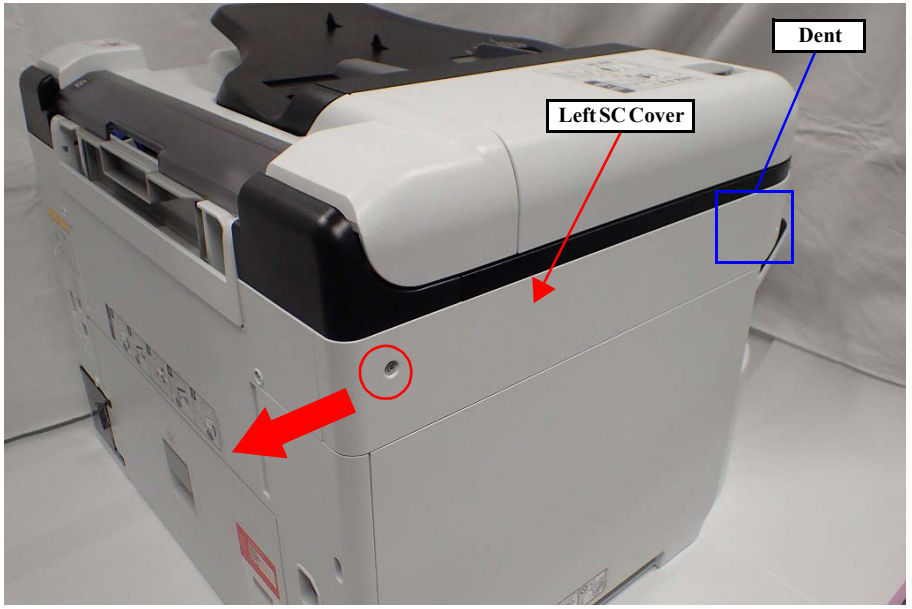
A1		Right SC Cover
C1		



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

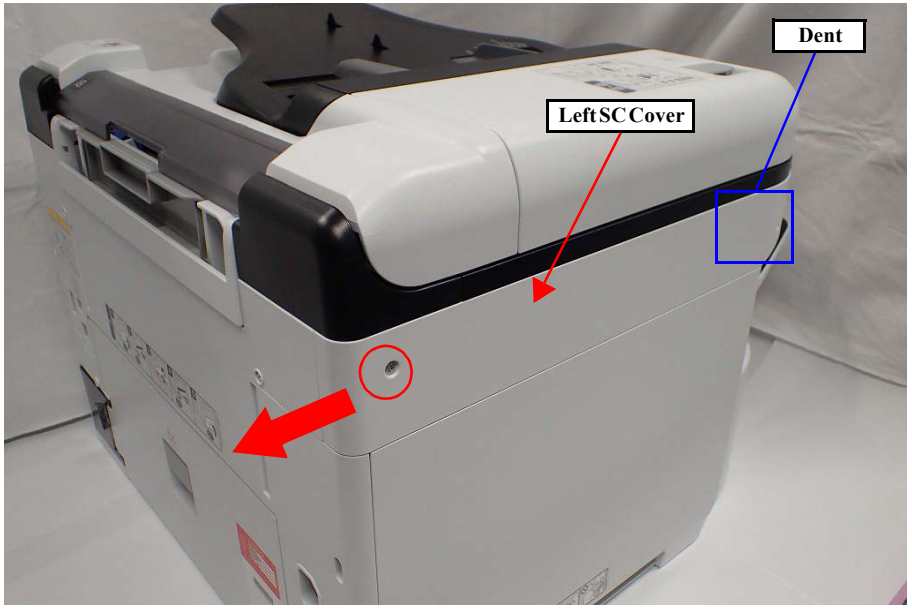
	B1	Left SC Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

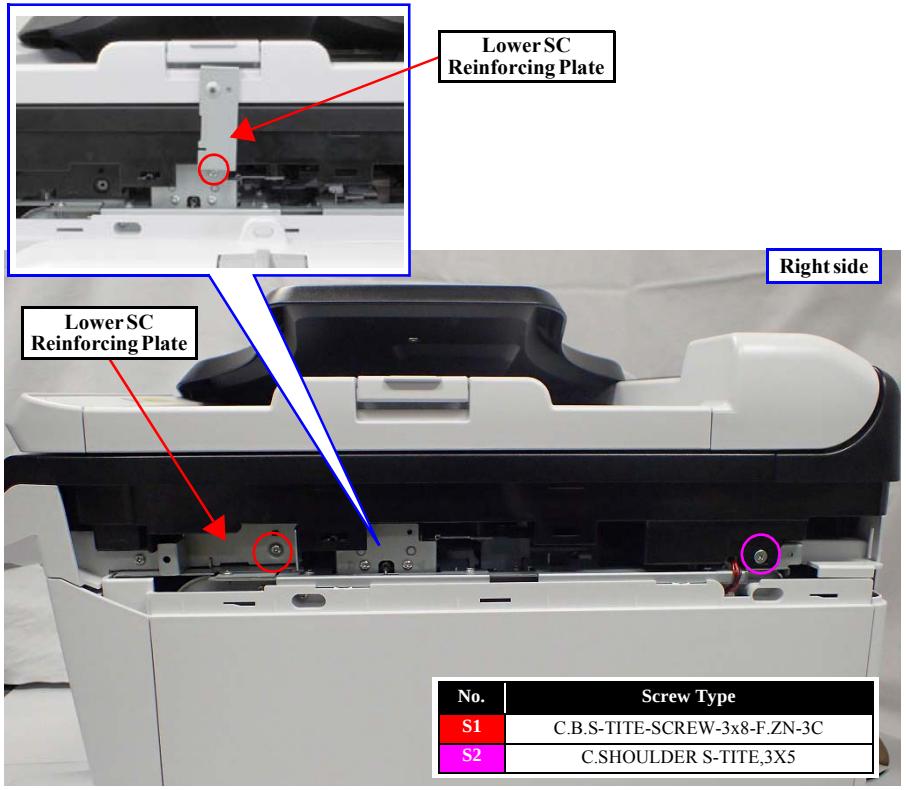
C2 Left SC Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

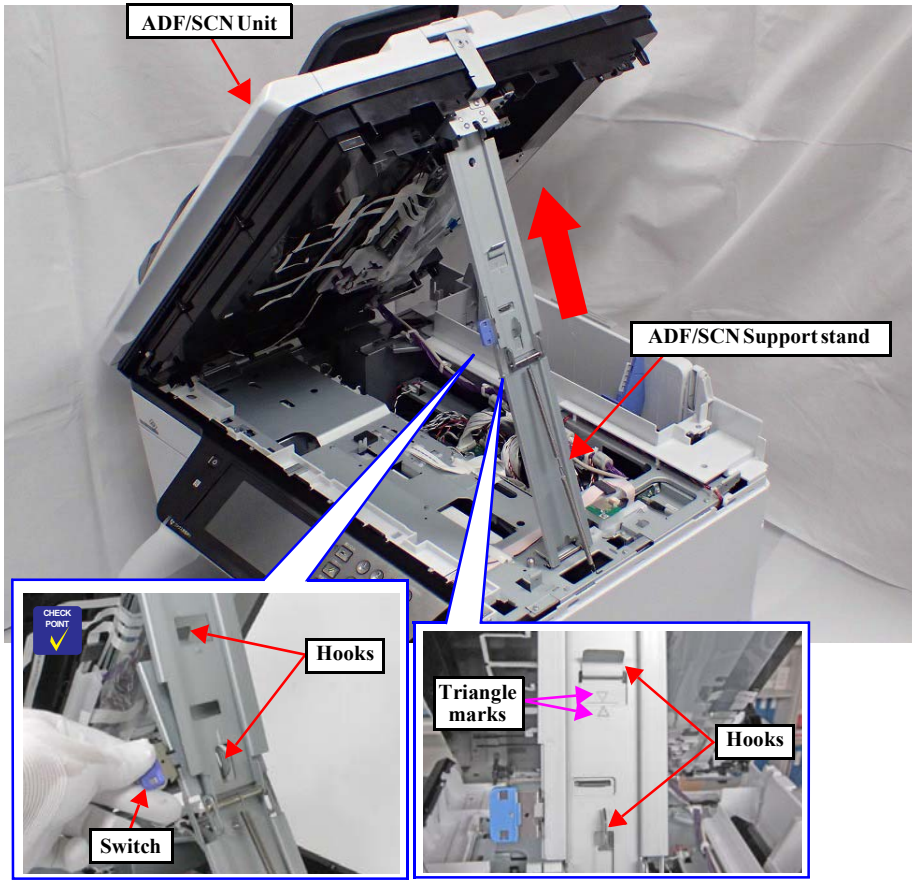
C3 Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit

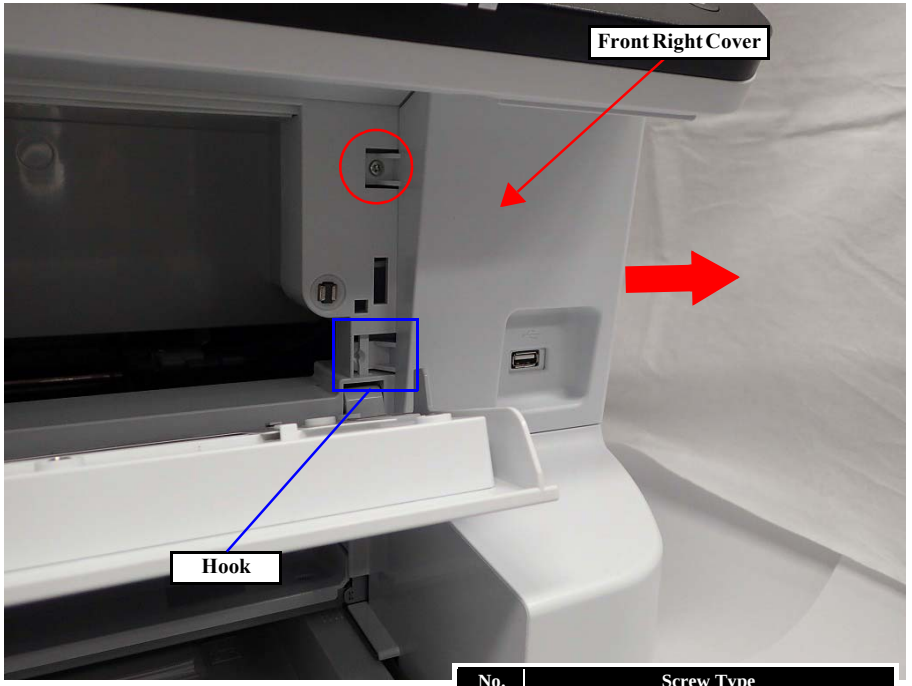


4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

		Front Right Cover
C4		

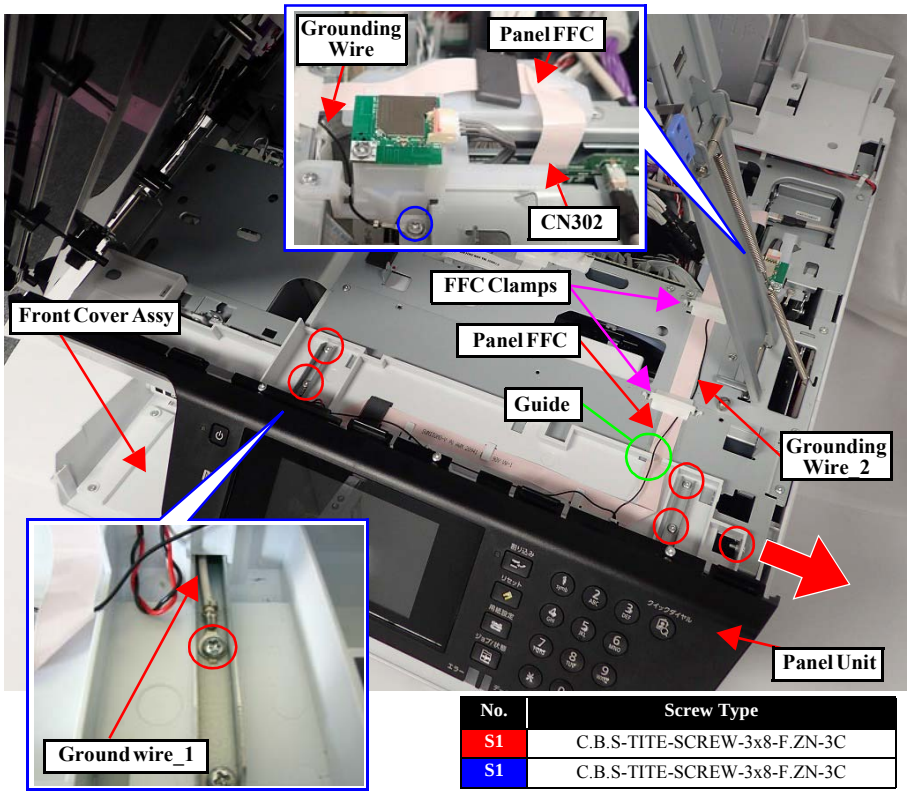


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

C5

Panel Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○).
2. Disconnect the FFC from the connector (CN302) of the Main Board.
3. Remove one screw (S1: ○), then release the grounding wire.
4. Remove the two FFC Clamps.
5. Open the front cover.
6. Slide the panel unit rightward to remove it.

REASSEMBLY

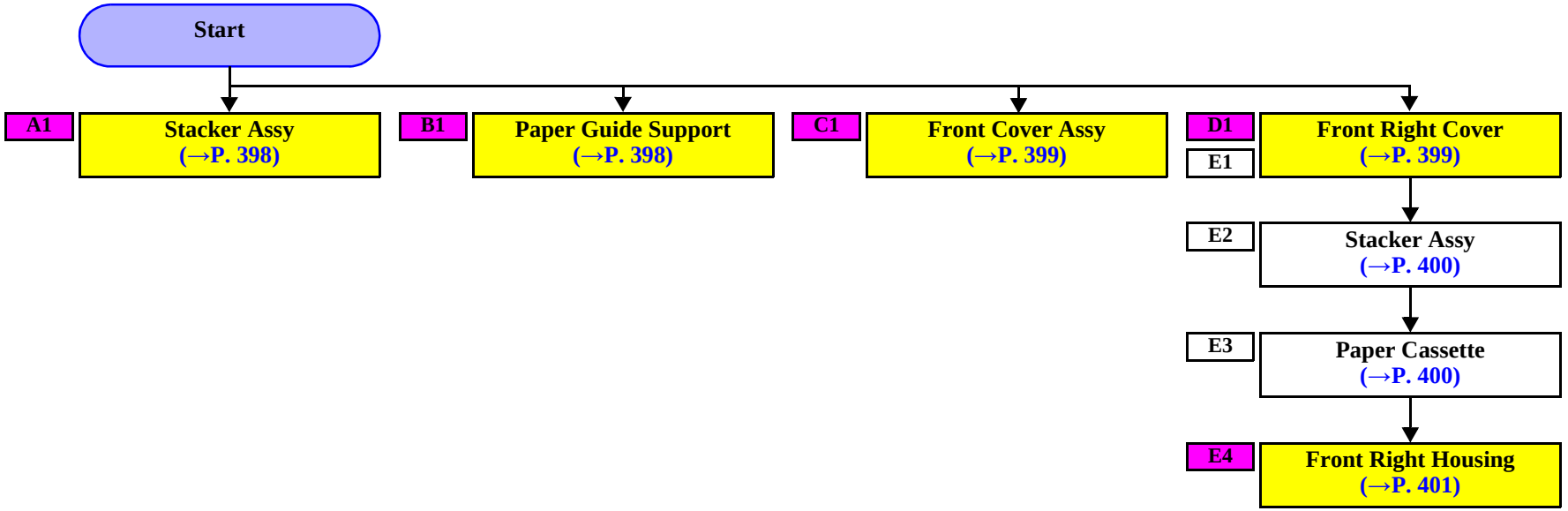
- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

7.4.3.2 Housing 2

OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Stacker Assy	A	10 sec	---	10 sec
Paper Guide Support	B	18 sec	---	18 sec
Front Cover Assy	C	36 sec	---	36 sec
Front Right Cover	D	41 sec	---	41 sec
Front Right Housing	E	1 min 53 sec	---	1 min 53 sec

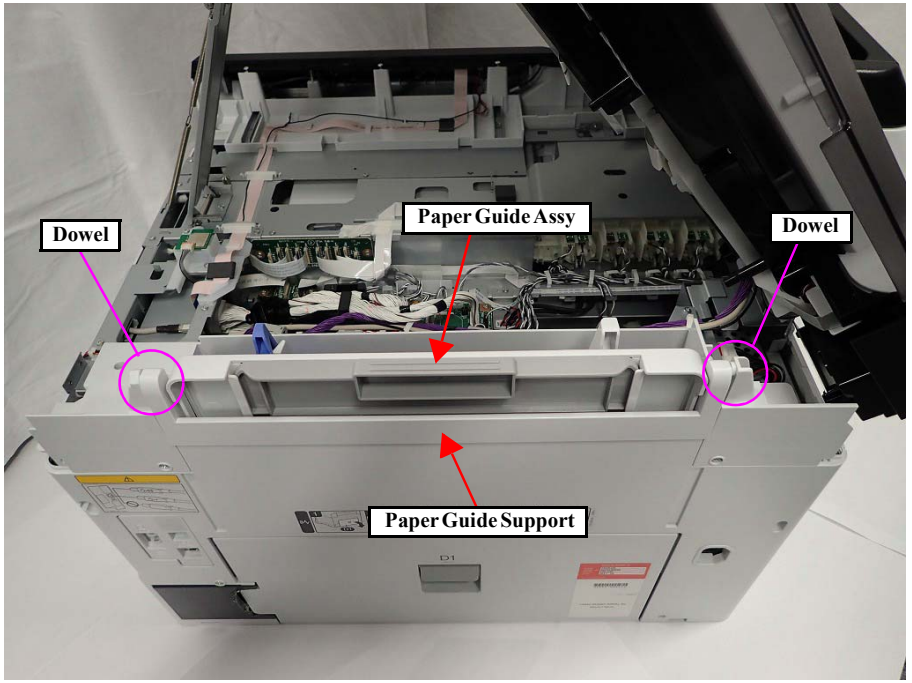
DISASSEMBLY FLOWCHART



A1			Stacker Assy

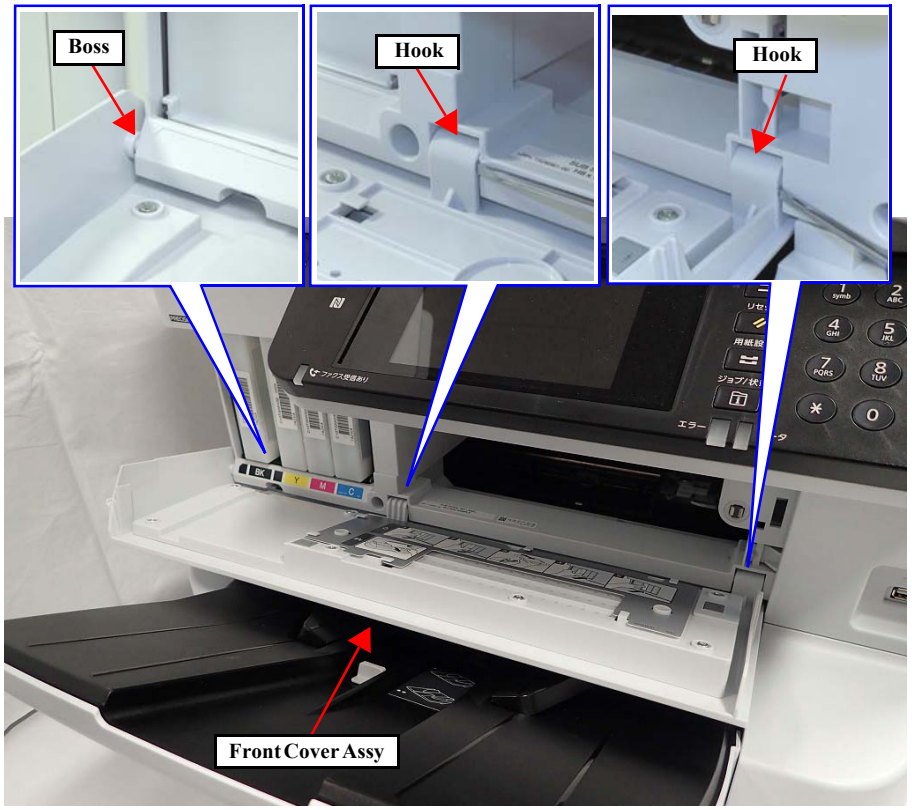
1. Remove the Stacker Assy.

	B1		Paper Guide Support



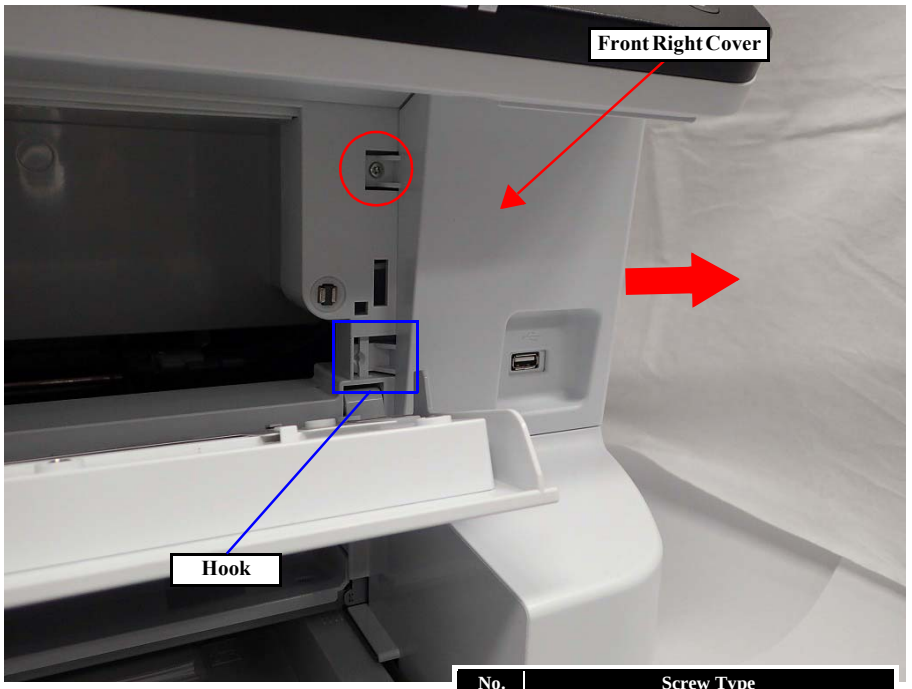
1. Pull out the Paper Guide Assy.
2. Disengage the two dowels, then remove the Paper Guide Support.

		C1	Front Cover Assy



1. Open the Front Cover Assy.
2. Disengage the boss of the Front Cover Assy.
3. Disengage the left hook using a flathead screwdriver.
4. Disengage the right hook, then remove the Front Cover Assy.

			Front Right Cover
D1	E1		



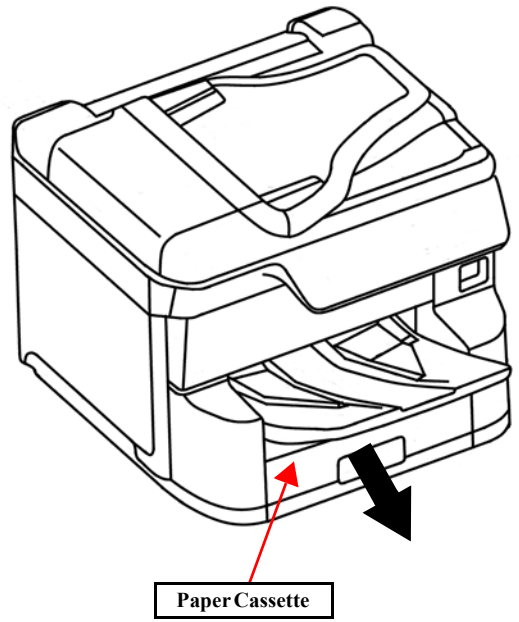
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

			Stacker Assy
	E2		

1. Remove the Stacker Assy.

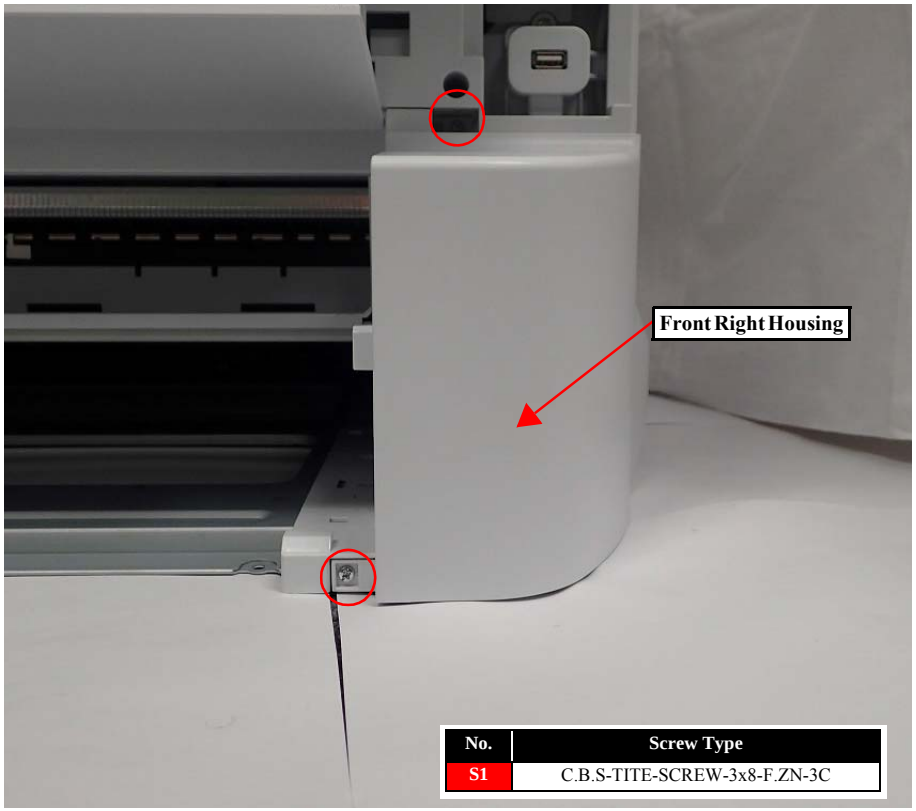
			Paper Cassette
	E3		



1. Remove Paper Cassette.

	E4	

Front Right Housing



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

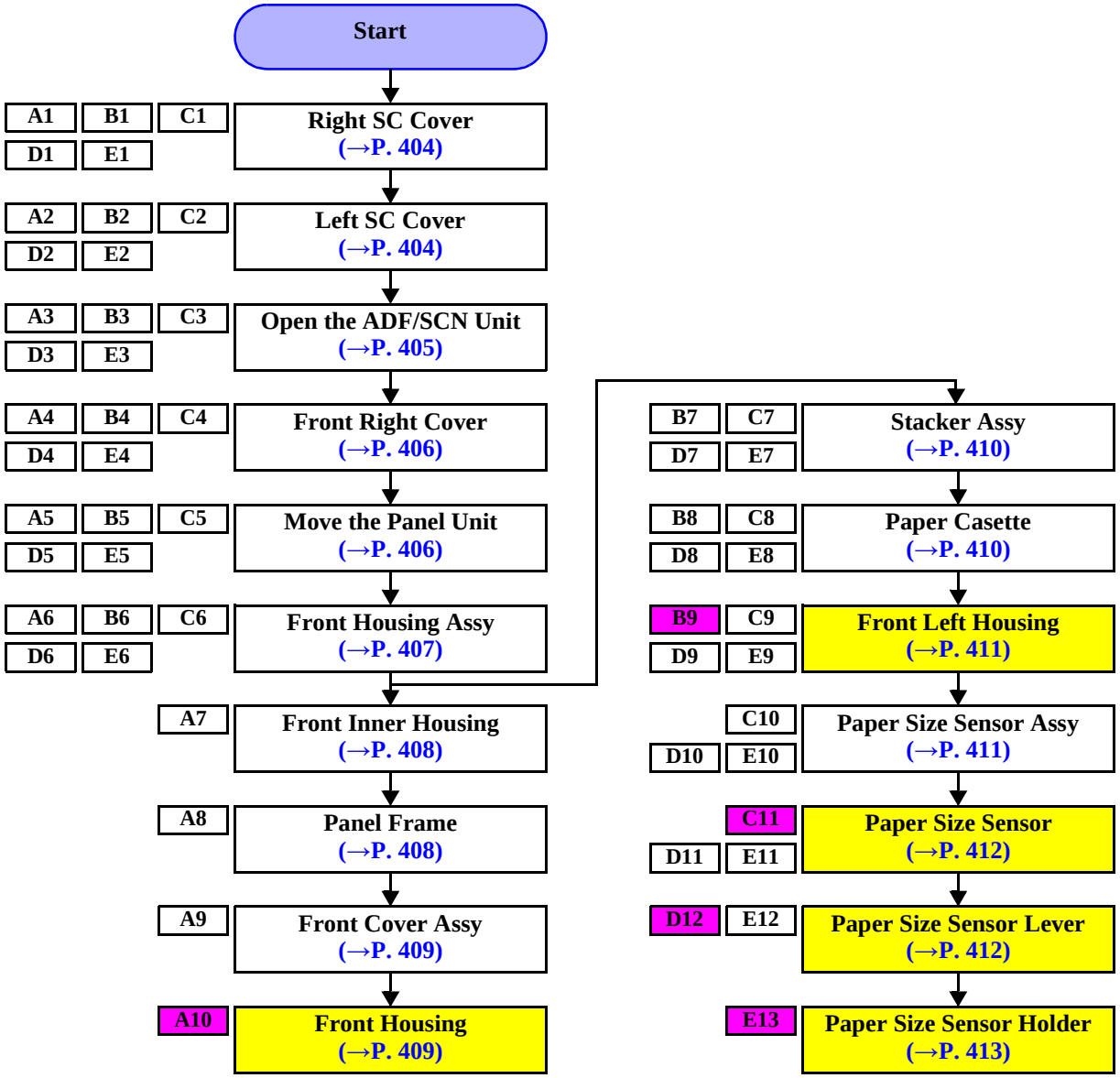
1. Remove the two screws (S1: ○), then remove the Front Right Housing.

7.4.3.3 Housing 3

OUTLINE

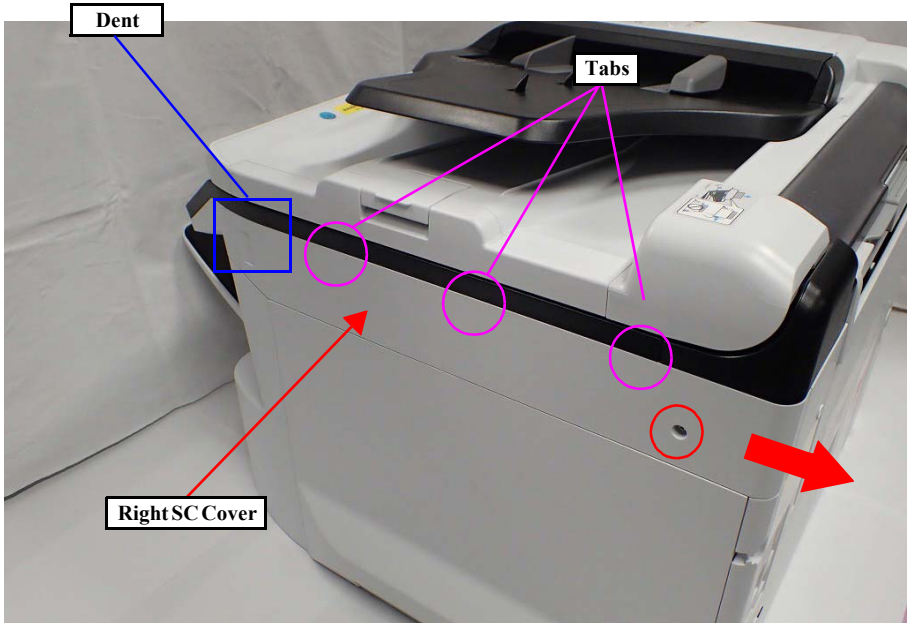
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Front Housing	A	11 min 49 sec	---	11 min 49 sec
Front Left Housing	B	9 min 12 sec	---	9 min 12 sec
Paper Size Sensor	C	10min 30 sec	---	10 min 30 sec
Paper Size Sensor Lever	D	10 min 56 sec	---	10 min 56 sec
Paper Size Sensor Holder	E	10 min 56 sec	---	10 min 56 sec

DISASSEMBLY FLOWCHART



A1	B1	C1
D1	E1	

Right SC Cover

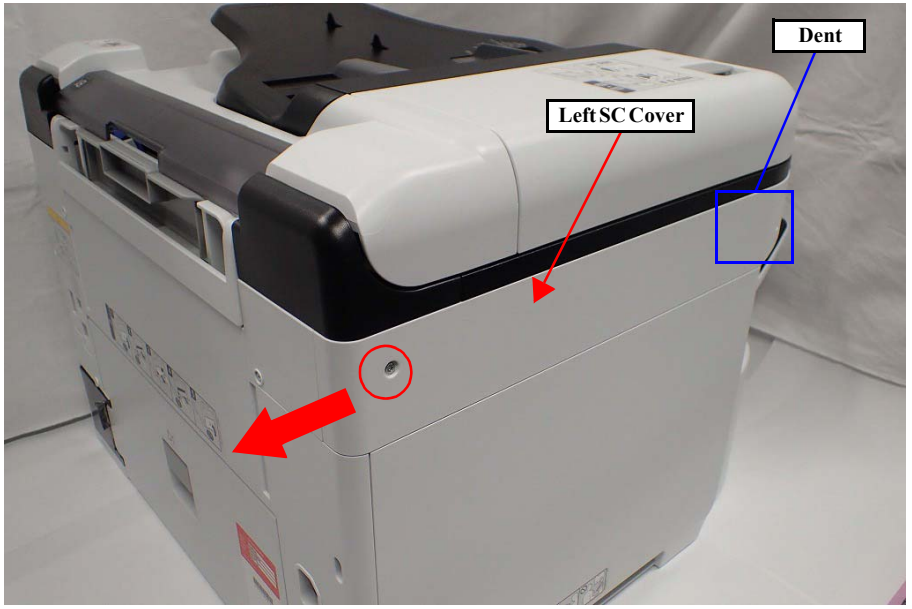


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2	C2
D2	E2	

Left SC Cover

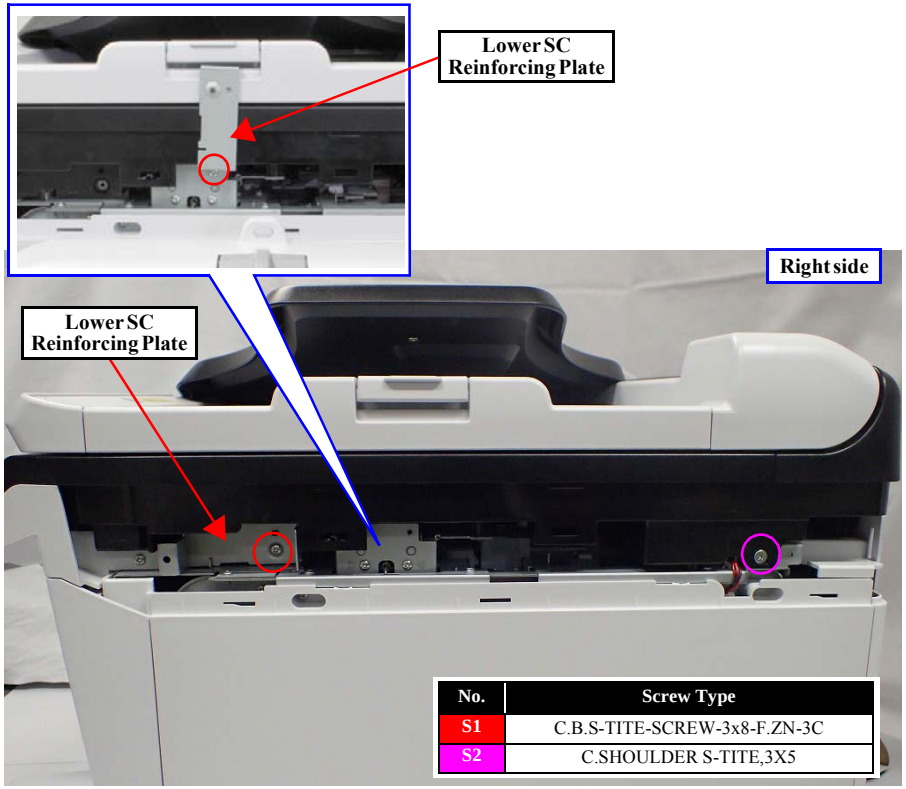


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3	C3
D3	E3	

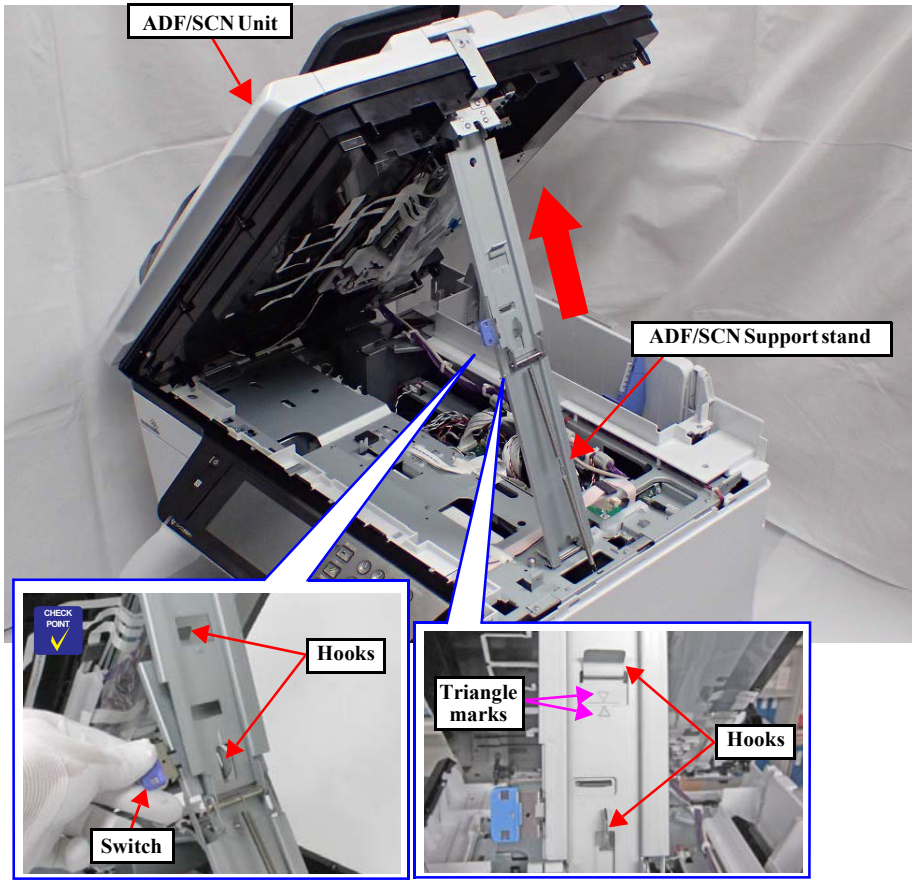
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



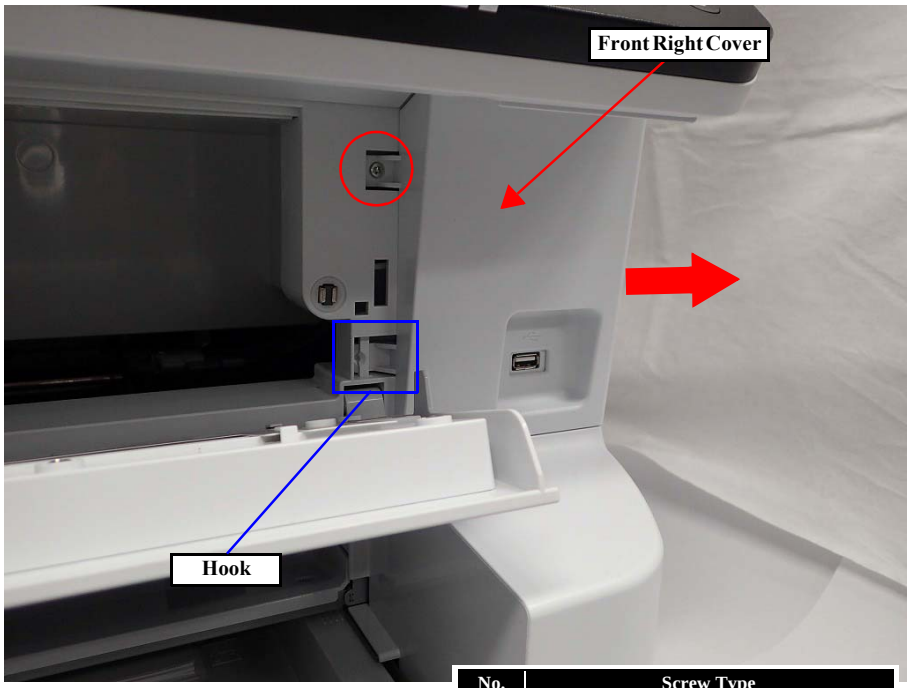
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4	C4
D4	E4	

Front Right Cover

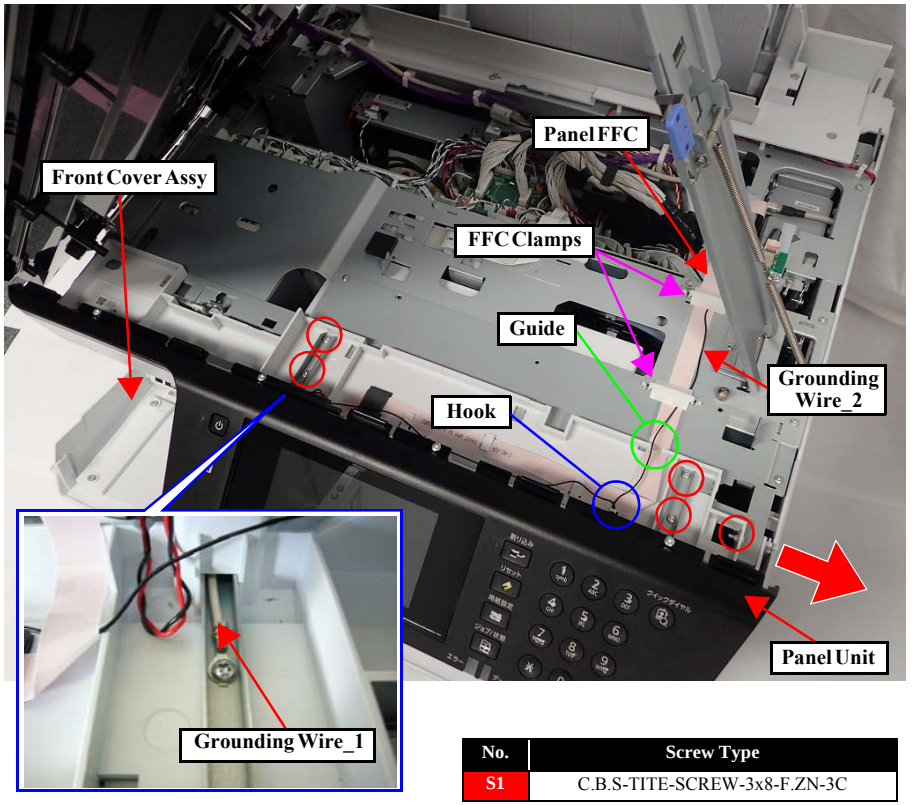


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

A5	B5	C5
D5	E5	

Move the Panel Unit



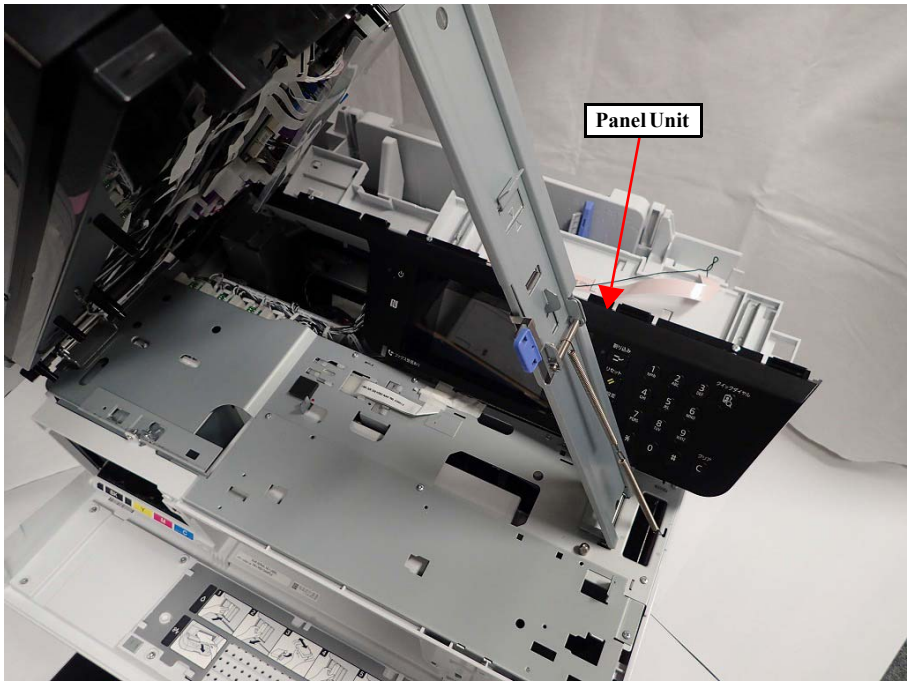
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○)
2. Remove the two FFC clamps.
3. Release the Panel FFC and the grounding wire_2 from the guide.
4. Release thgrounding wire_2 from Hook.
5. Open the Front Cover Assy.
6. Slide the panel unit rightward to remove it.

REASSEMBLY

- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

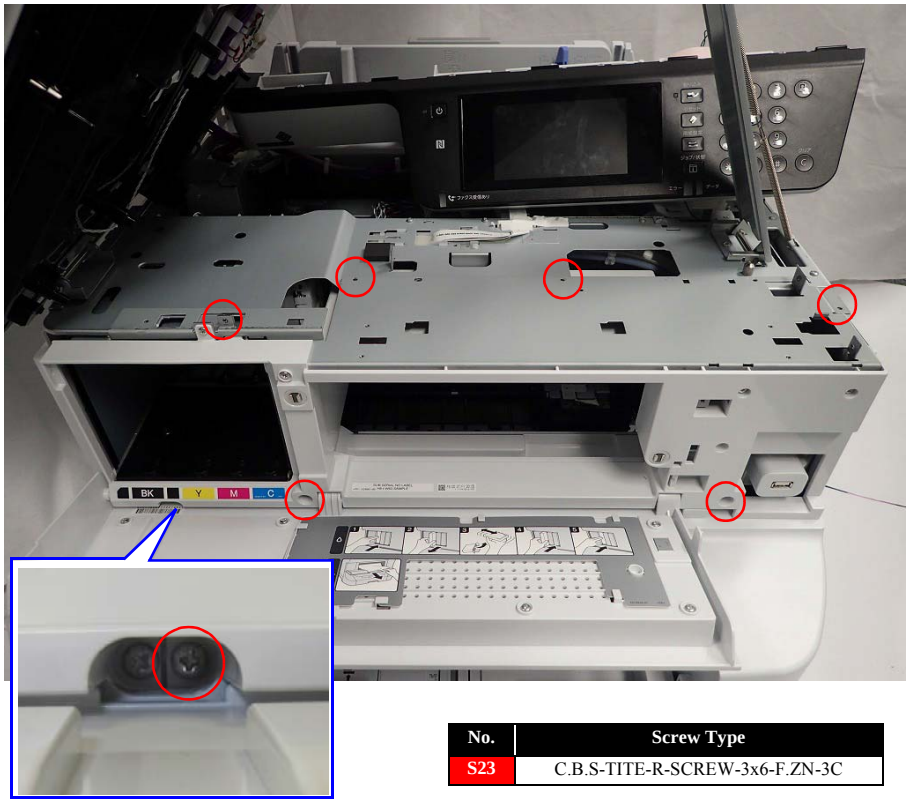
Move the Panel Unit



7. Put the panel unit at the rear side of the printer.

A6	B6	C6
D6	E6	

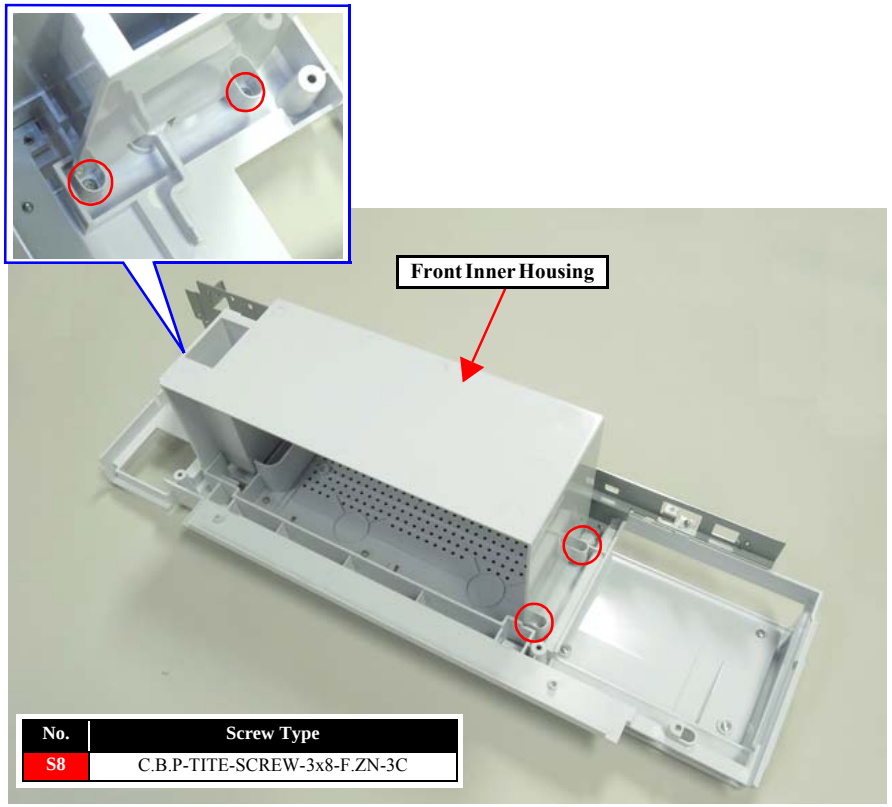
Front Housing Assy



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

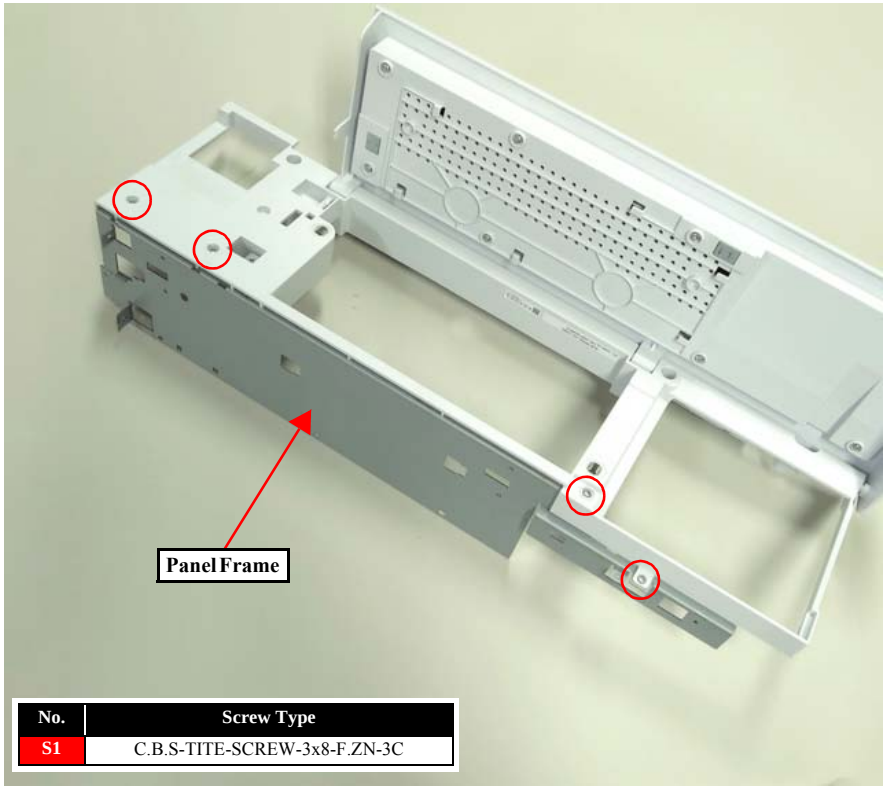
A7			Front Inner Housing



No.	Screw Type
S8	C.B.P-TITE-SCREW-3x8-F.ZN-3C

1. Remove the four screws (S8: ○), then remove the Front Inner Housing.

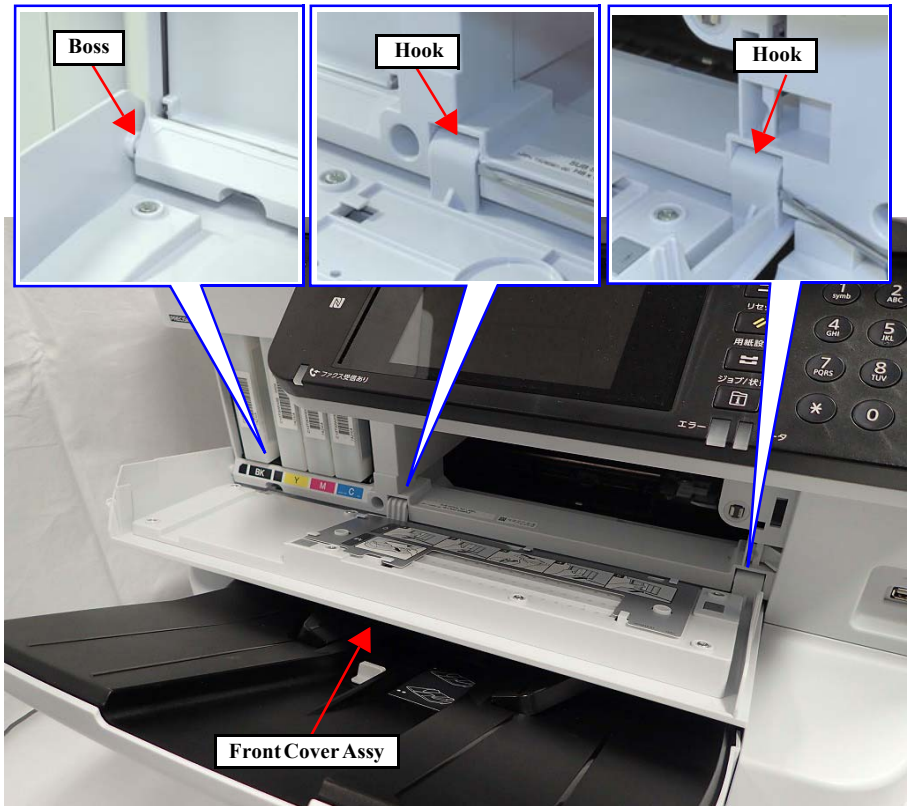
A8			Panel Frame



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

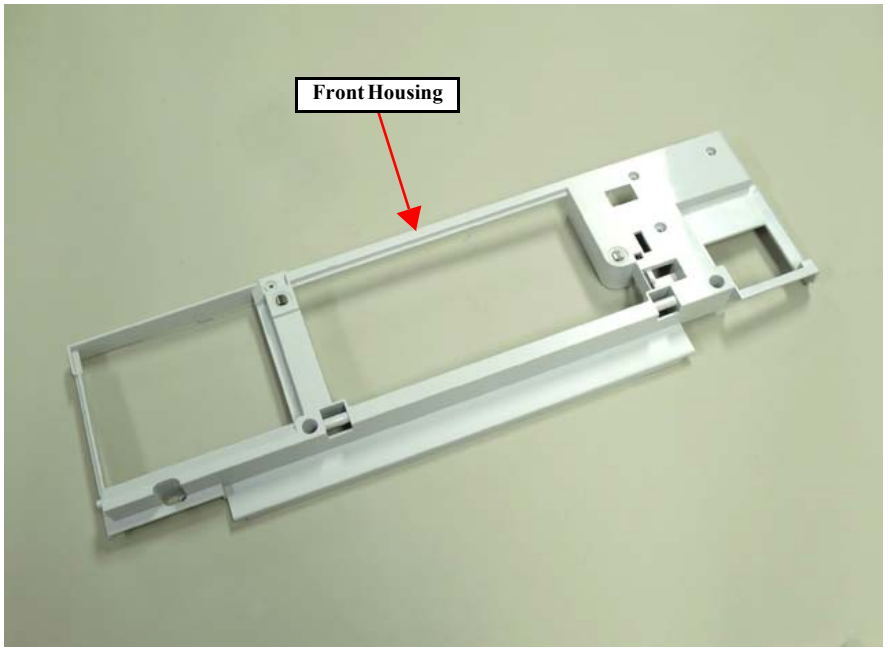
1. Remove the four screws (S1: ○), then remove the Panel Frame.

A9			Front Cover Assy



1. Open the Front Cover Assy.
2. Disengage the boss of the Front Cover Assy.
3. Disengage the left hook using a flathead screwdriver.
4. Disengage the right hook, then remove the Front Cover Assy.

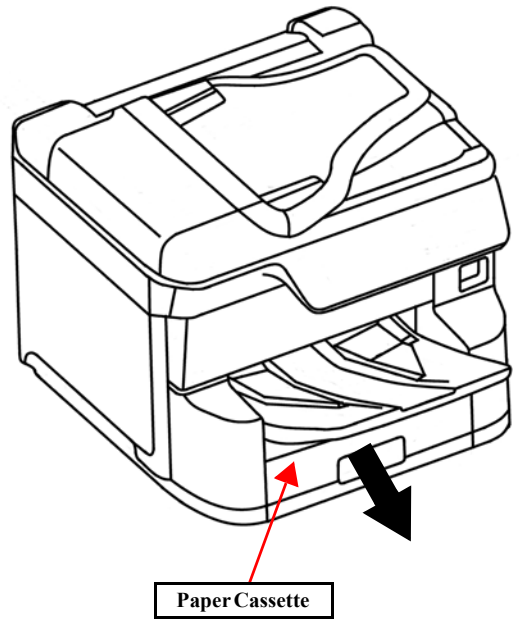
A10			Front Housing



	B7	C7	Stacker Assy
D7	E7		

1. Remove the Stacker Assy.

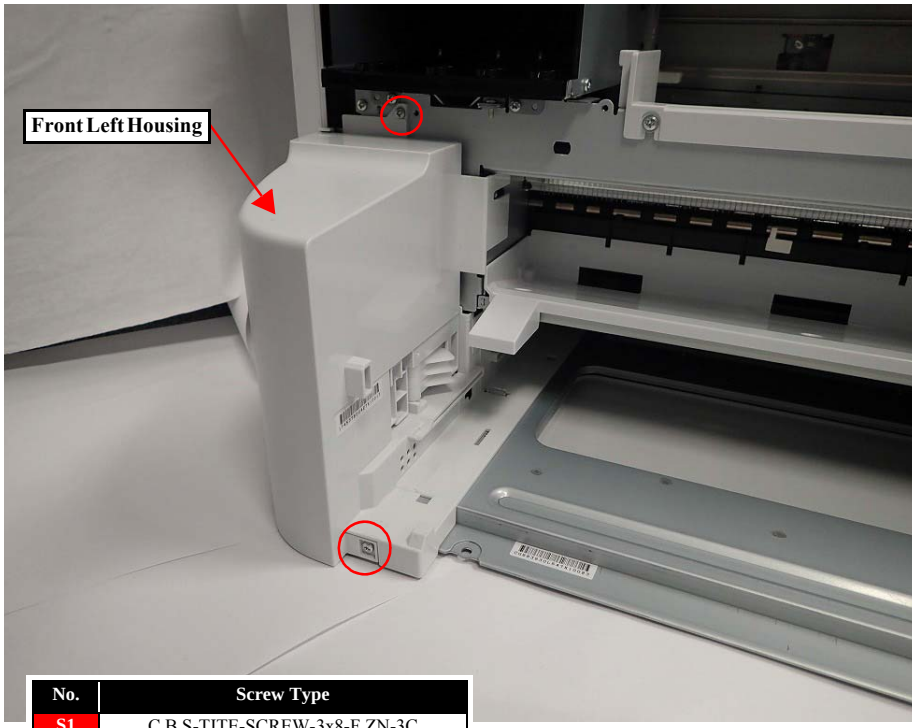
	B8	C8	Paper Cassette
D8	E8		



1. Remove Paper Cassette.

	B9	C9
D9	E9	

Front Left Housing

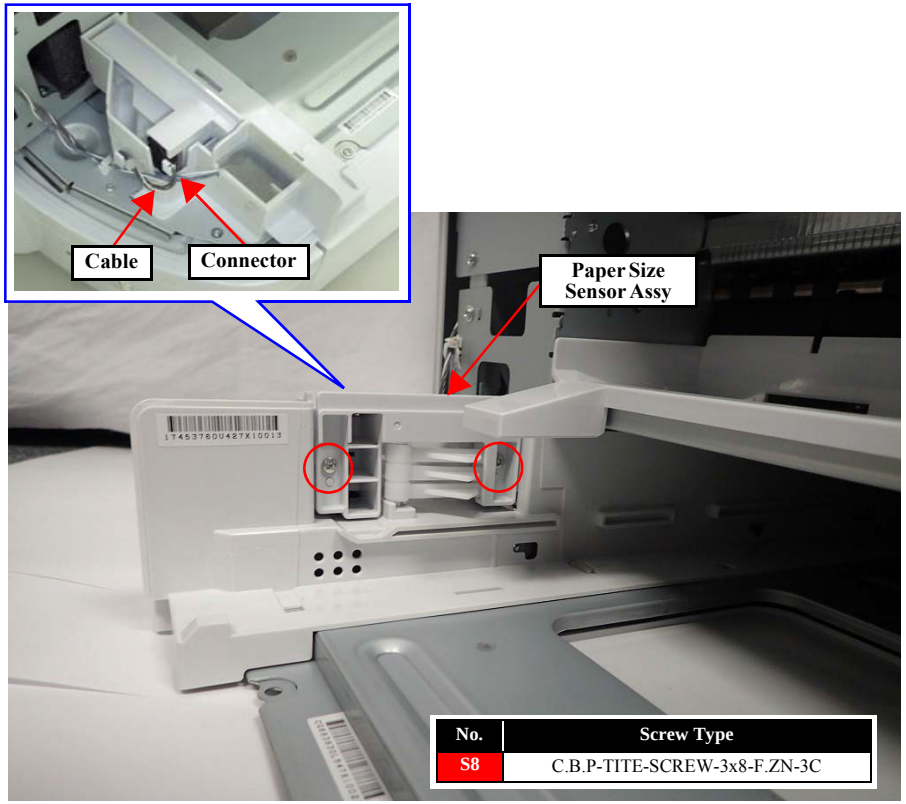


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Front Left Housing.

		C10
D10	E10	

Paper Size Sensor Assy

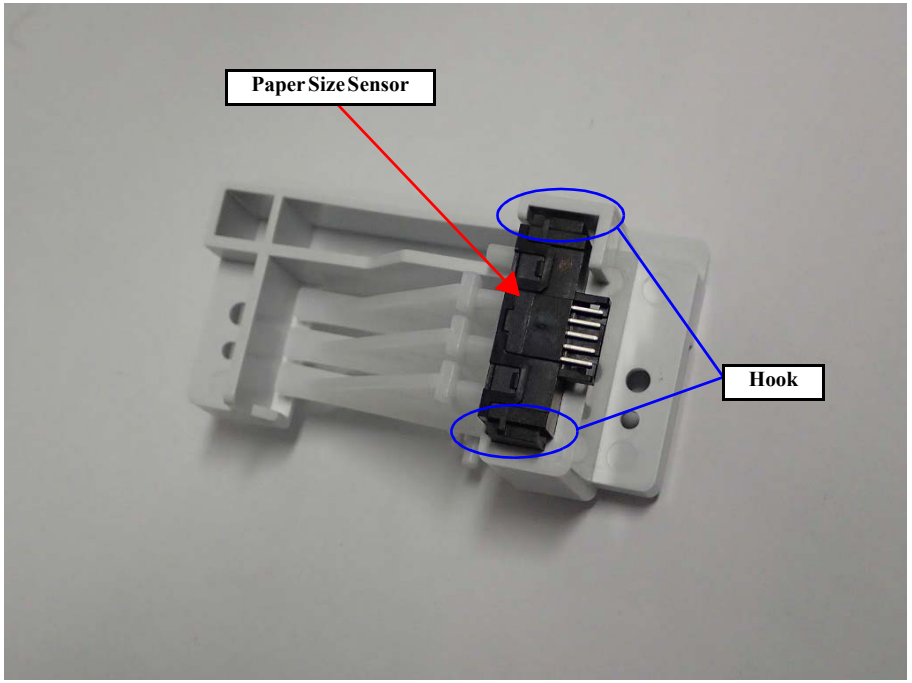


No.	Screw Type
S8	C.B.P-TITE-SCREW-3x8-F.ZN-3C

1. Remove the cable from the connector.
2. Remove the two screws (S8: ○), then remove the Paper Size Sensor Assy.

		C11
D11	E11	

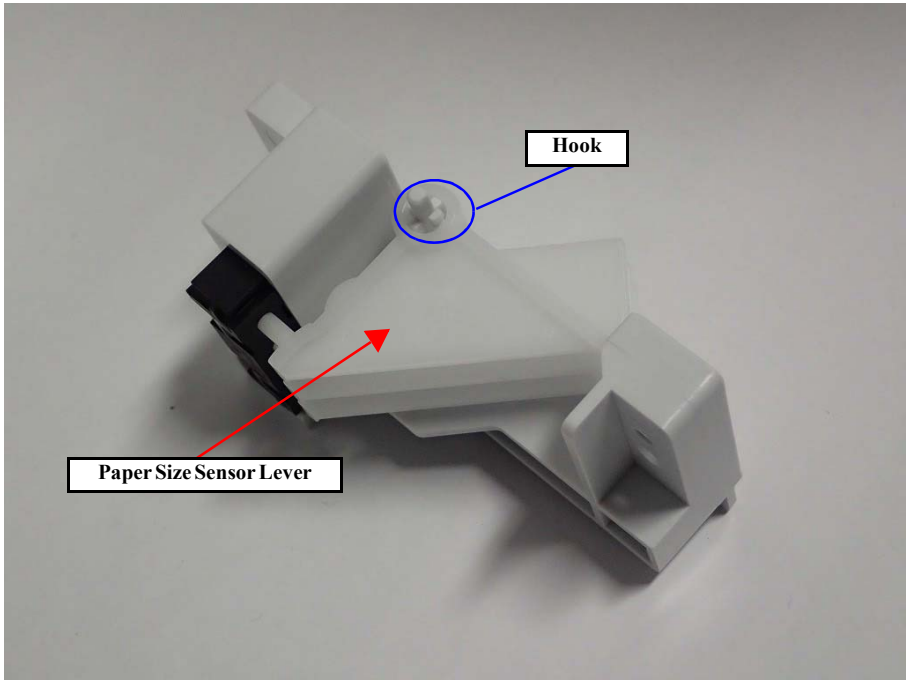
Paper Size Sensor



1. Release the hooks, then remove the Paper Size Sensor.

D12	E12	

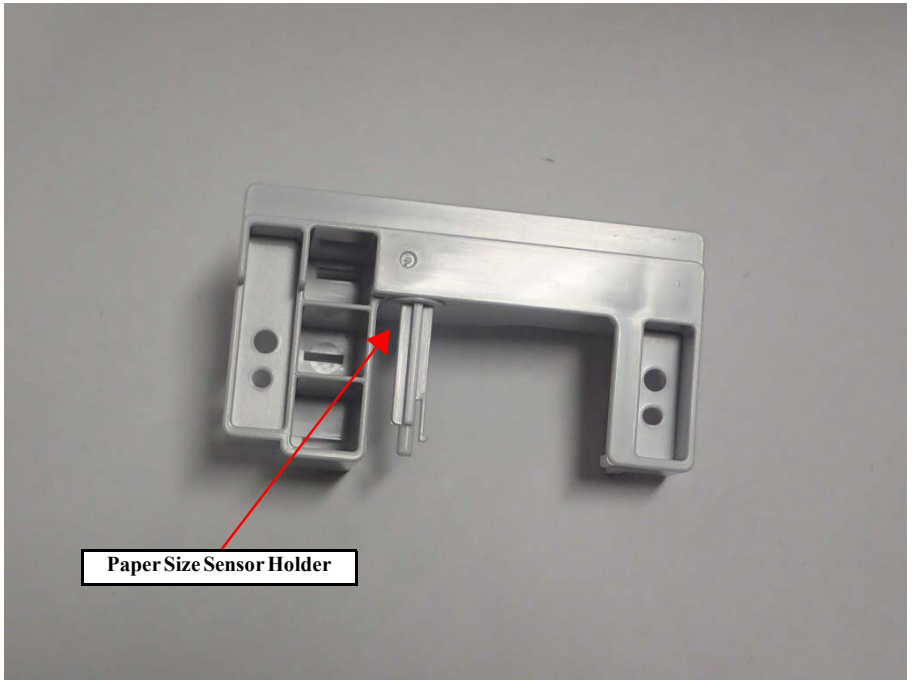
Paper Size Sensor Lever



1. Release the hooks, then remove the Paper Size Sensor Lever.

	E13	

Paper Size Sensor Holder

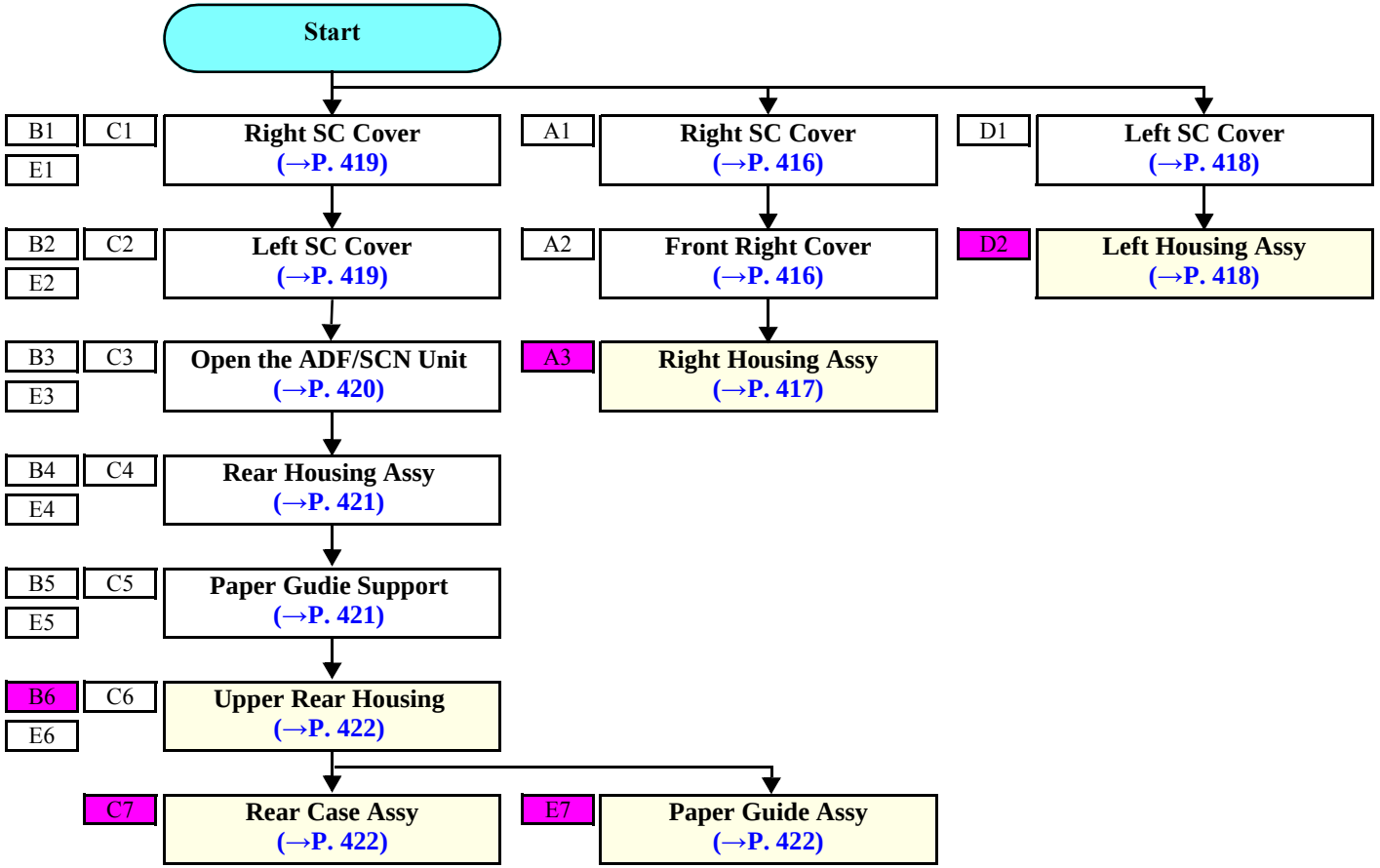


7.4.3.4 Housing 4

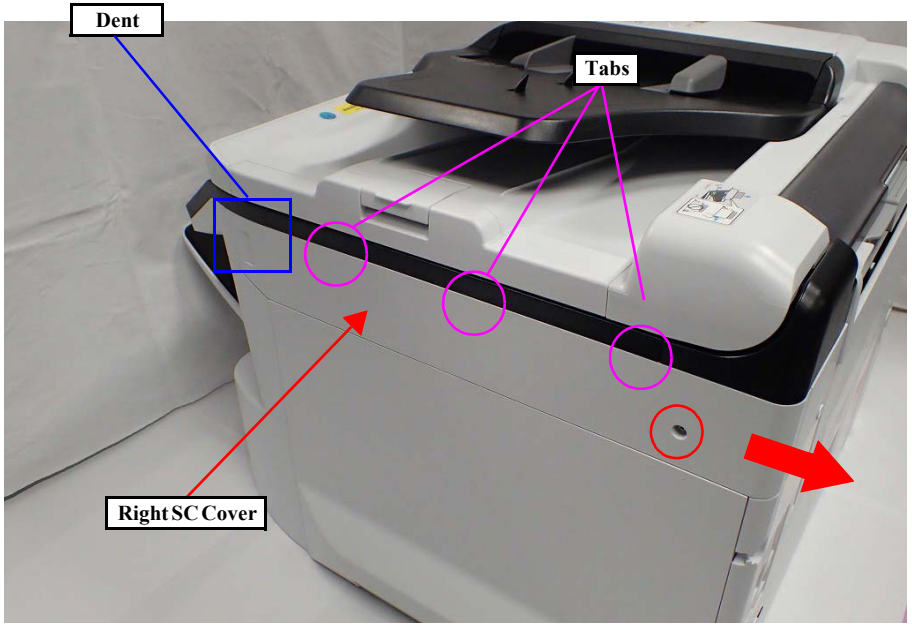
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Right Housing Assy	A	3 min 17 sec	---	3 min 17 sec
Upper Rear Housing	B	7 min 23 sec	---	7 min 23 sec
Rear Case Assy	C	7 min 32 sec	---	7 min 32 sec
Left Housing Assy	D	2 min 46 sec	---	2 min 46 sec
Paper Guide Assy	E	7 min 32 sec	---	7 min 32 sec

DISASSEMBLY FLOWCHART



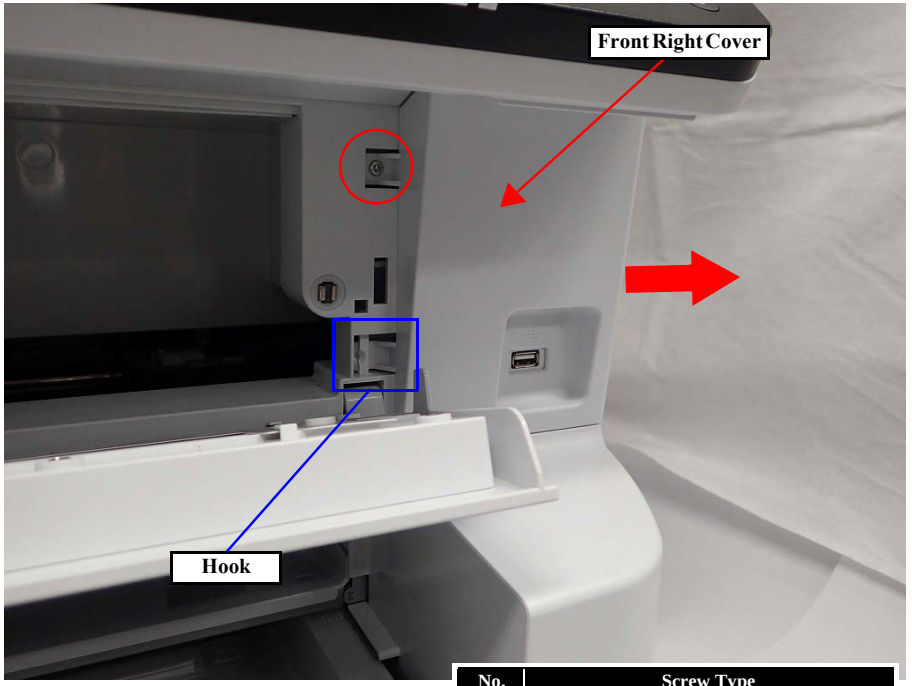
A1			Right SC Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2			Front Right Cover

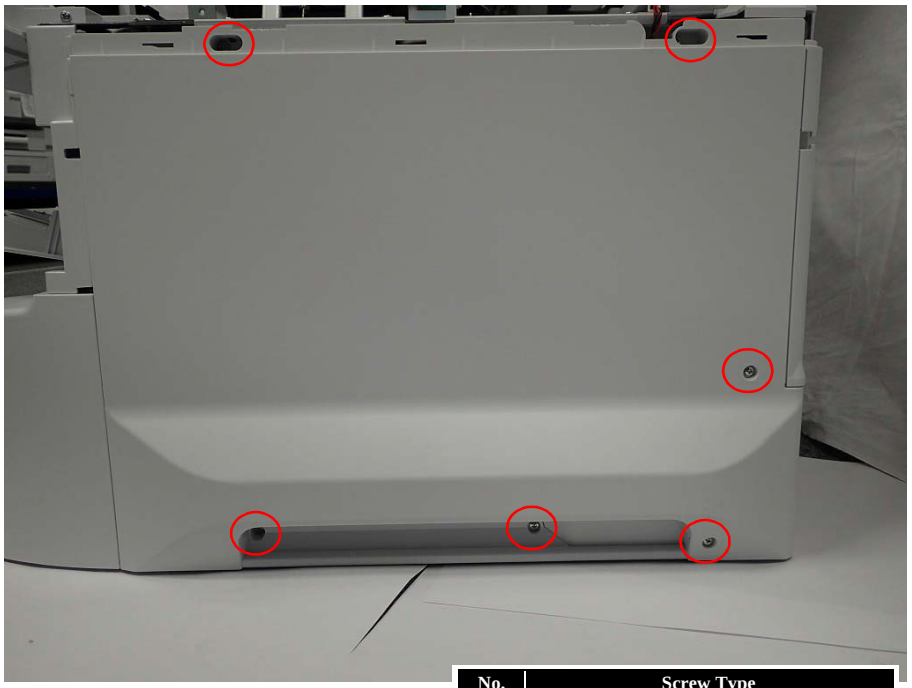


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

A3		

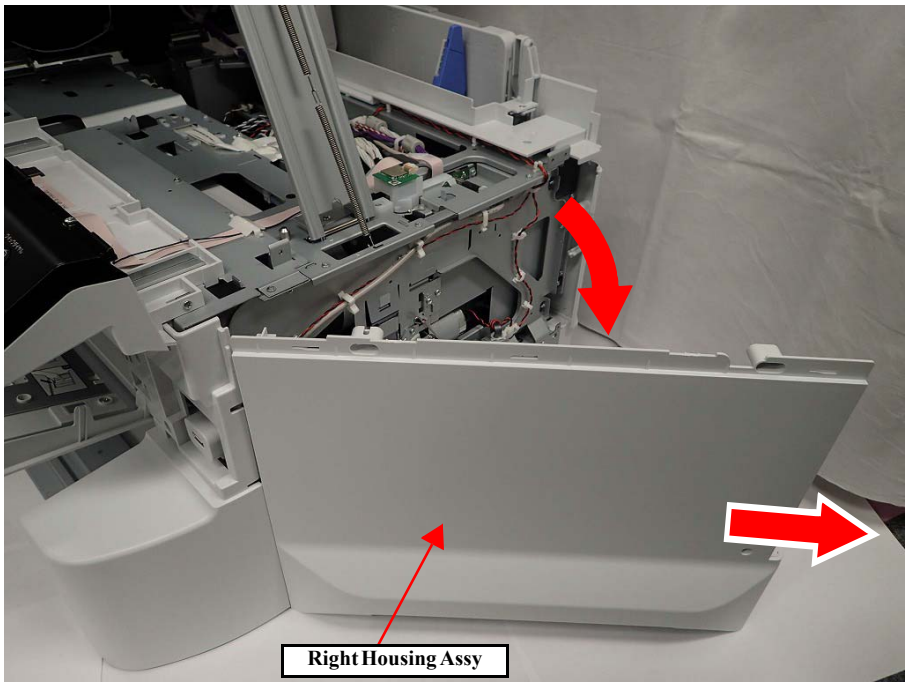
Right Housing Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

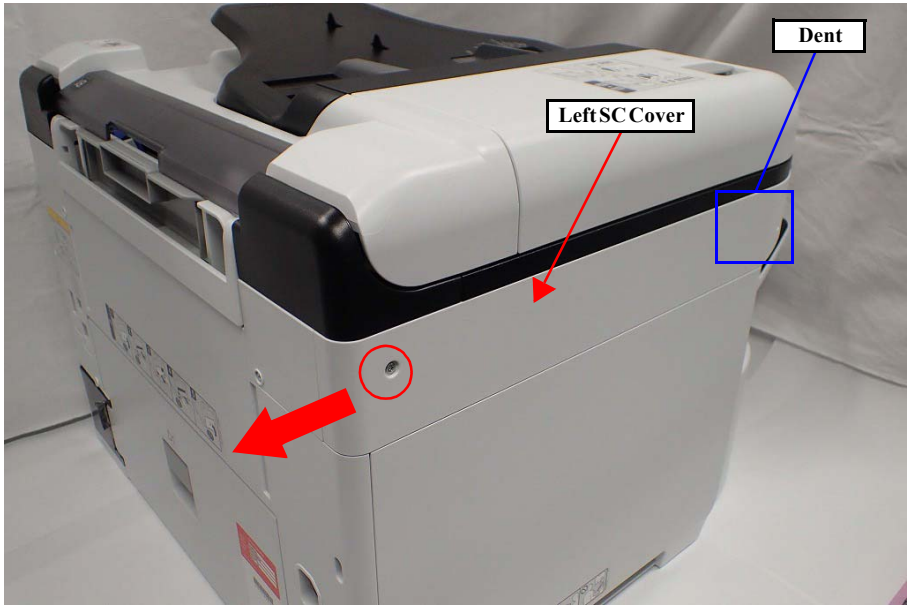
1. Remove six screw (S1: ○).

Right Housing Assy



2. Open the Rear side of Right Housing Assy like the above figure.
3. Slide the Right Housing Assy to derection of arrows in state of rear side of RIgth Housing Assy opened condition, and remove it.

			Left SC Cover
D1			



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

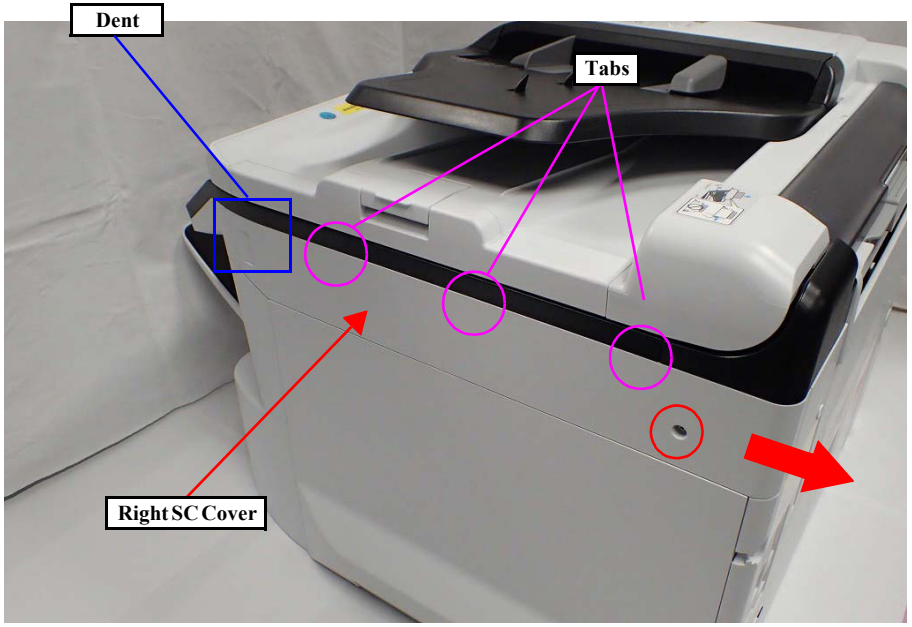
			Left Housing Assy
D2			

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screw (S1: ○), and remove the Left Housing Assy.

	B1	C1
	E1	

Right SC Cover

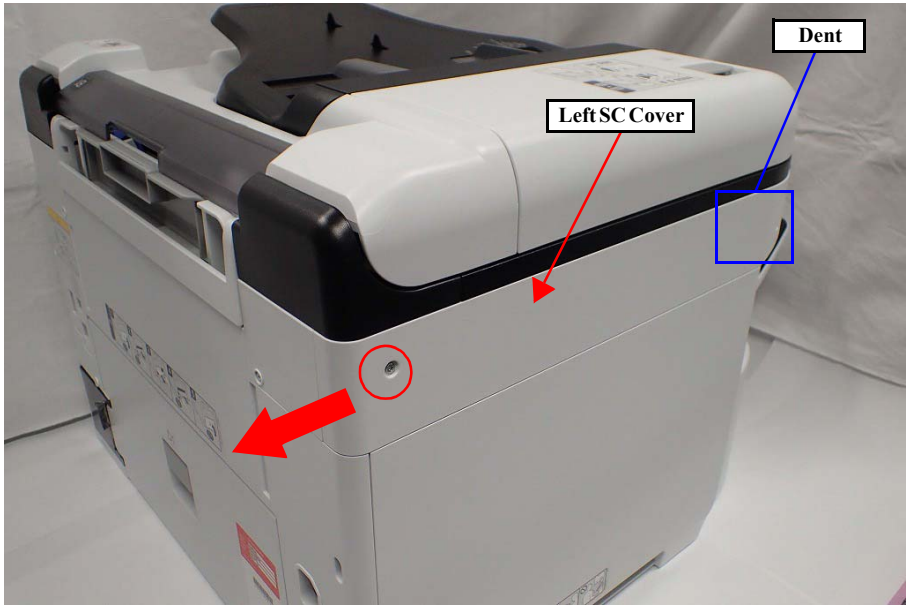


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

	B2	C2
	E2	

Left SC Cover

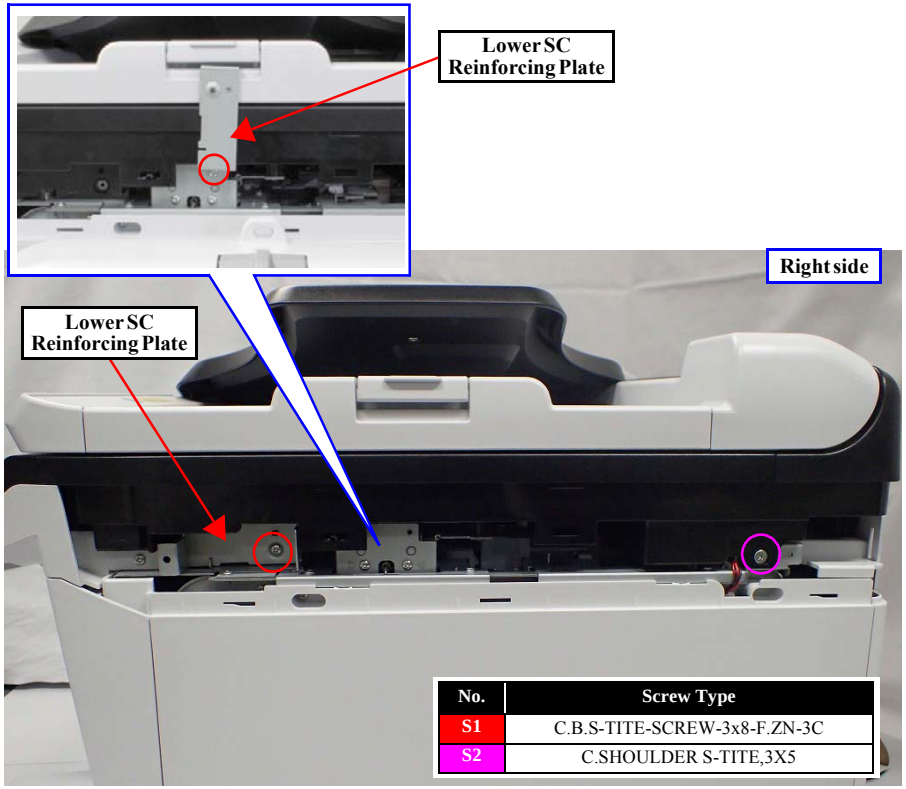


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

	B3	C3
	E3	

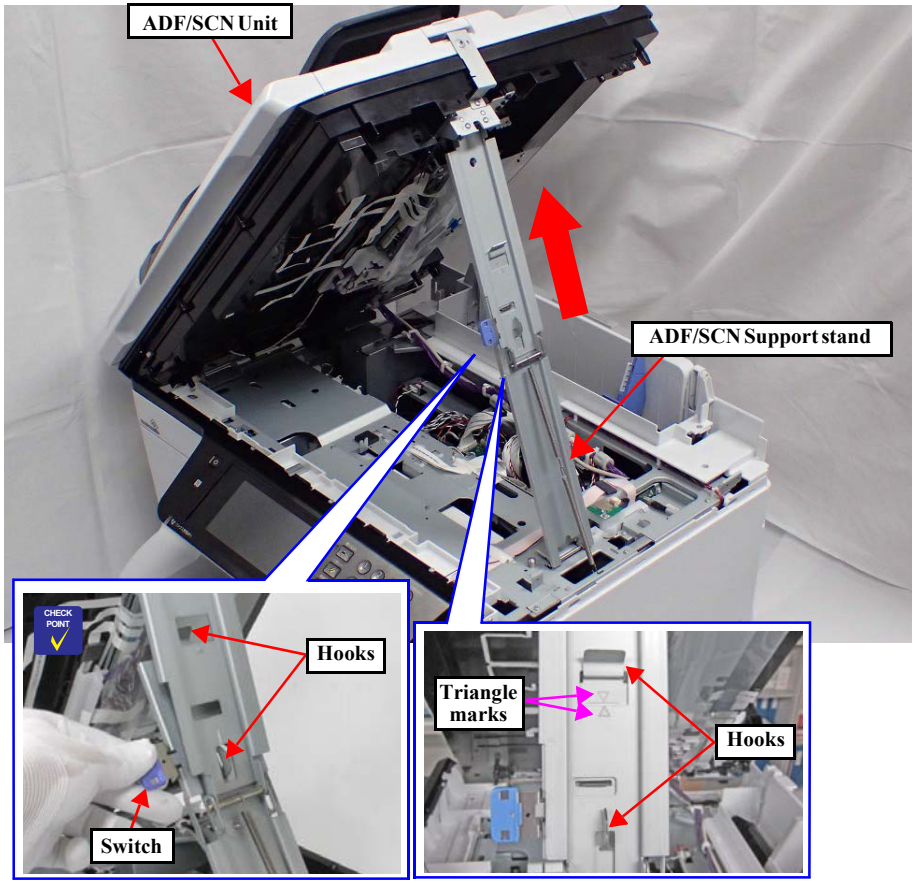
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit

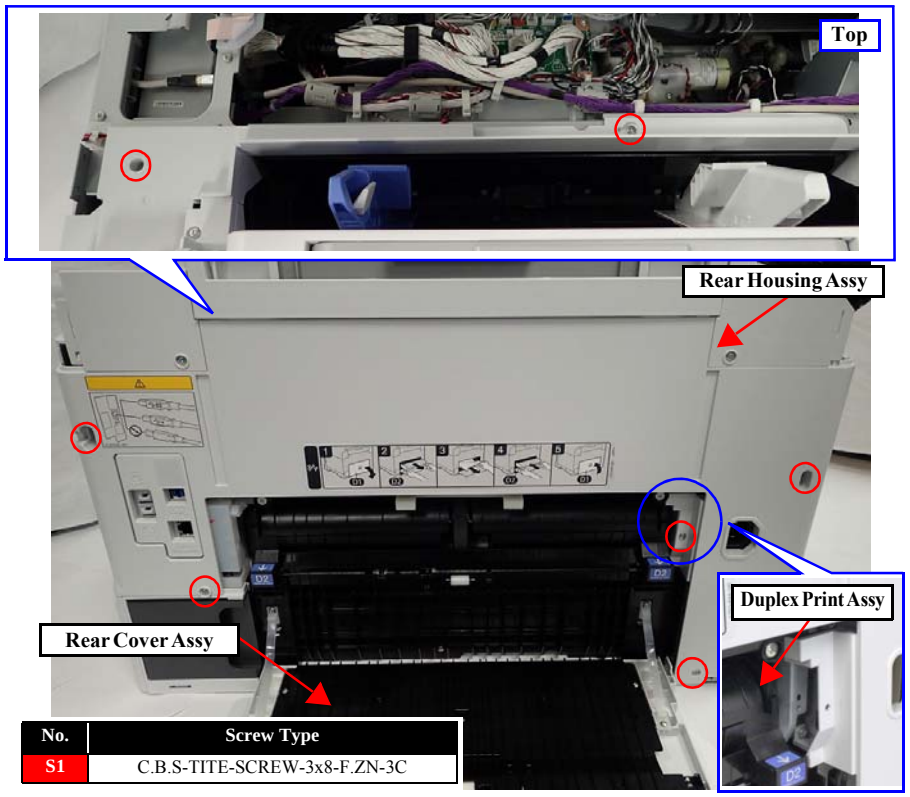


4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

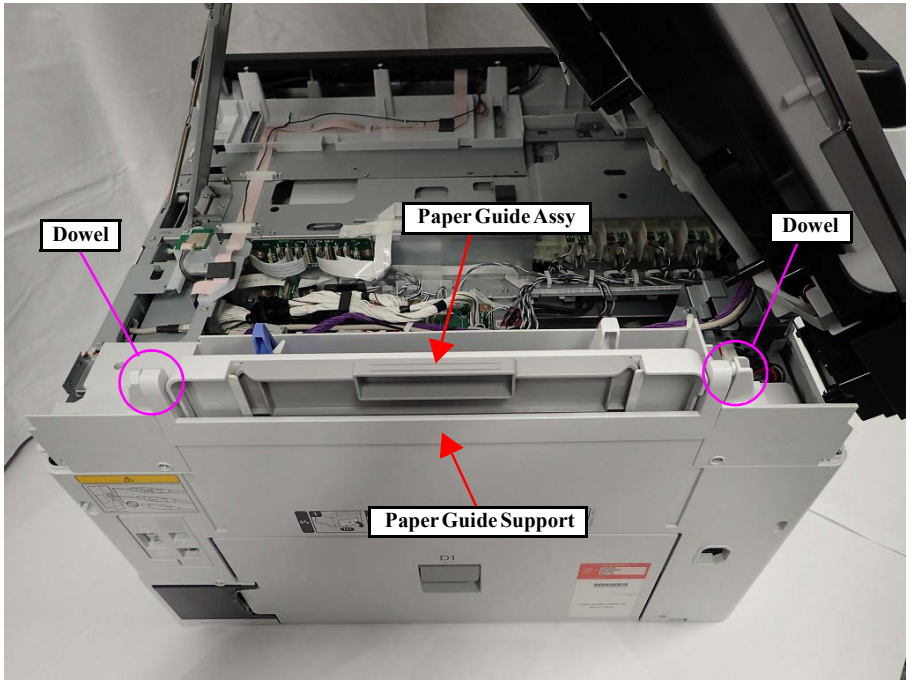
	B4	C4	Rear Housing Assy
	E4		



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

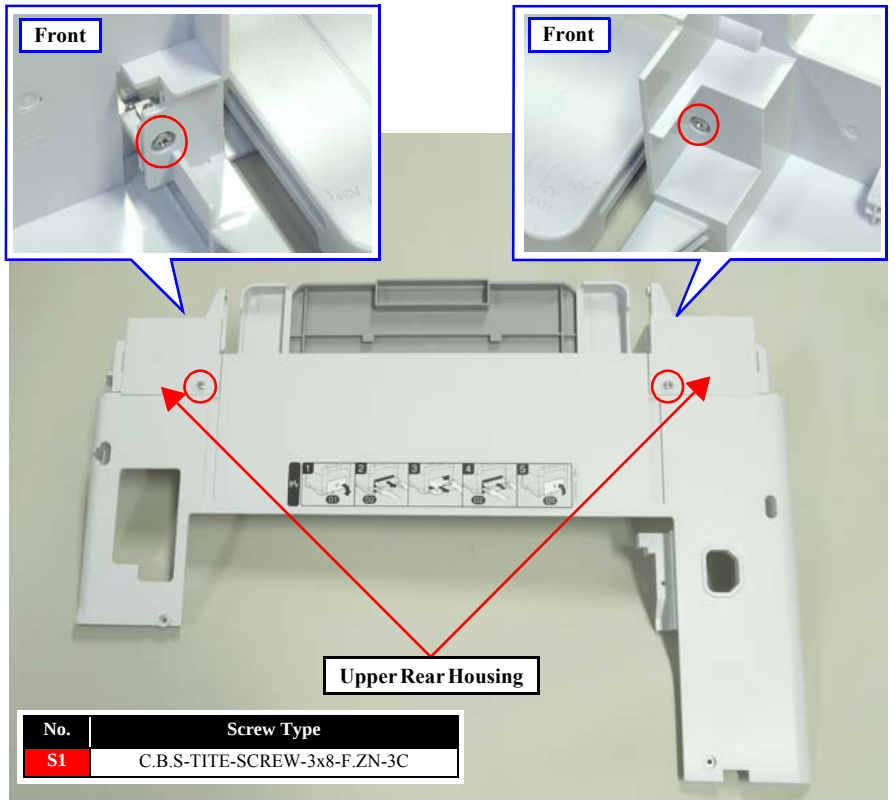
	B5	C5	Paper Guide Support
	E5		



1. Pull out the Paper Guide Assy.
2. Disengage the two dowels, then remove the Paper Guide Support.

	B6	C6
	E6	

Upper Rear Housing

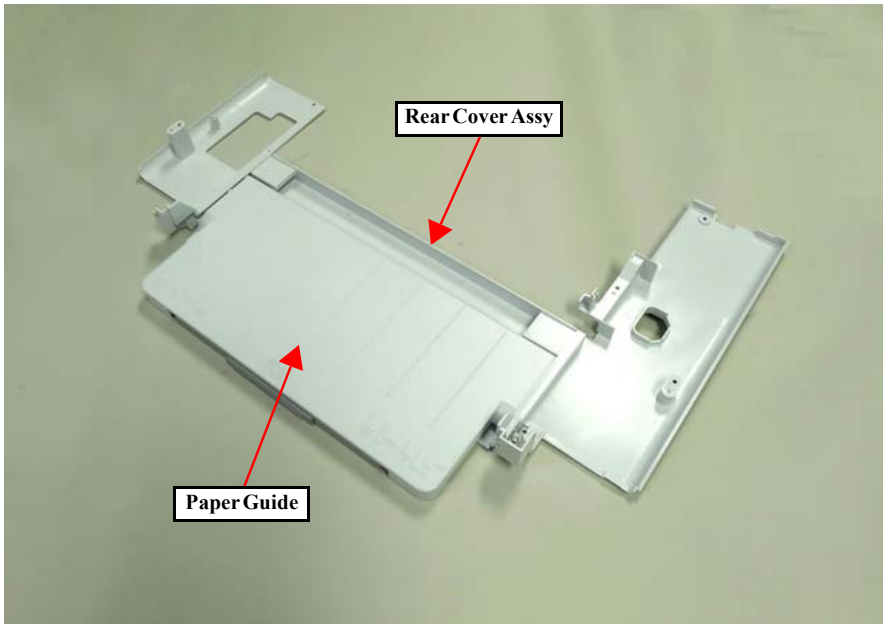


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the four screws (S1: ○), then remove the Upper Rear Housing.

		C7
	E7	

Rear Cover Assy
Paper Guide Assy



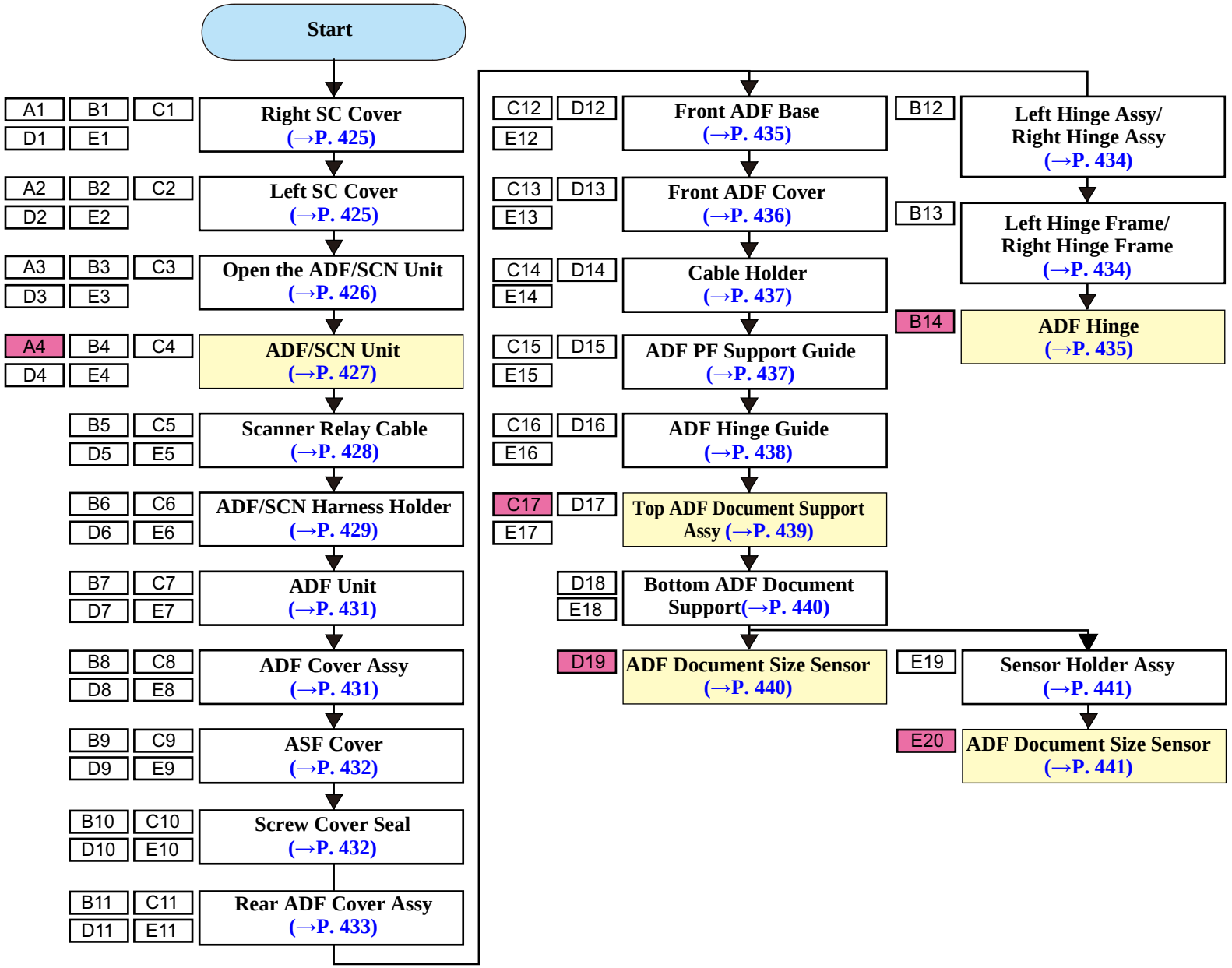
1. Remove the paper guide from the Rear Cover Assy.

7.4.3.5 ADF/SCN 1

OUTLINE

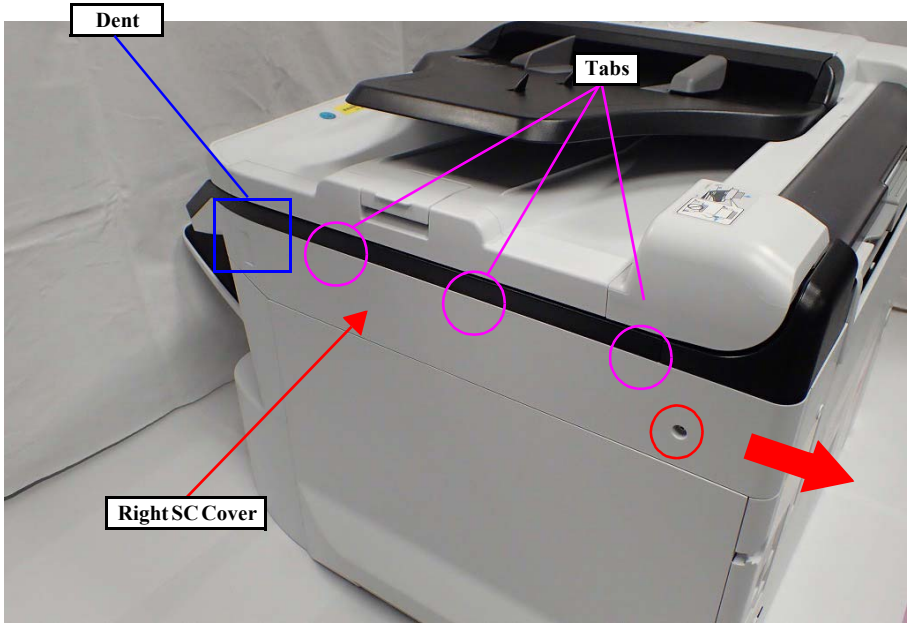
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
ADF/SCN Unit	A	5 min 51 sec	---	5 min 51 sec
ADF Hinge	B	26 min 55 sec	---	26 min 55 sec
Top ADF Document Support Assy	C	28 min 47 sec	---	28 min 47 sec
ADF Document Size Sensor	D	30 min 18 sec	---	30 min 18 sec
ADF Document Size Sensor	E	31 min 9 sec	---	31 min 9 sec

DISASSEMBLY FLOWCHART



A1	B1	C1
D1	E1	

Right SC Cover

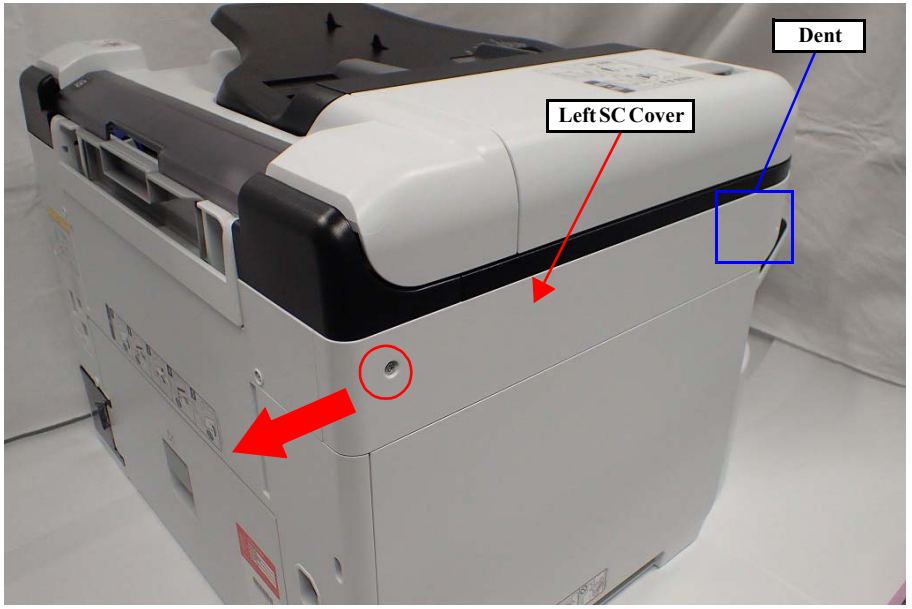


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2	C2
D2	E2	

Right SC Cover

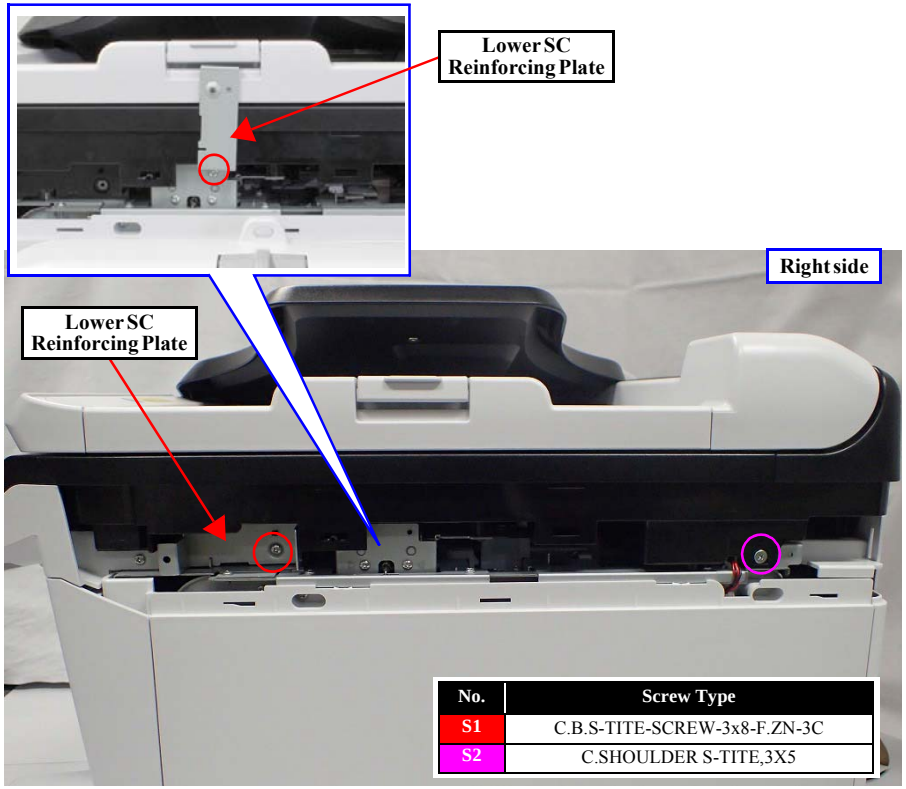


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3	C3
D3	E3	

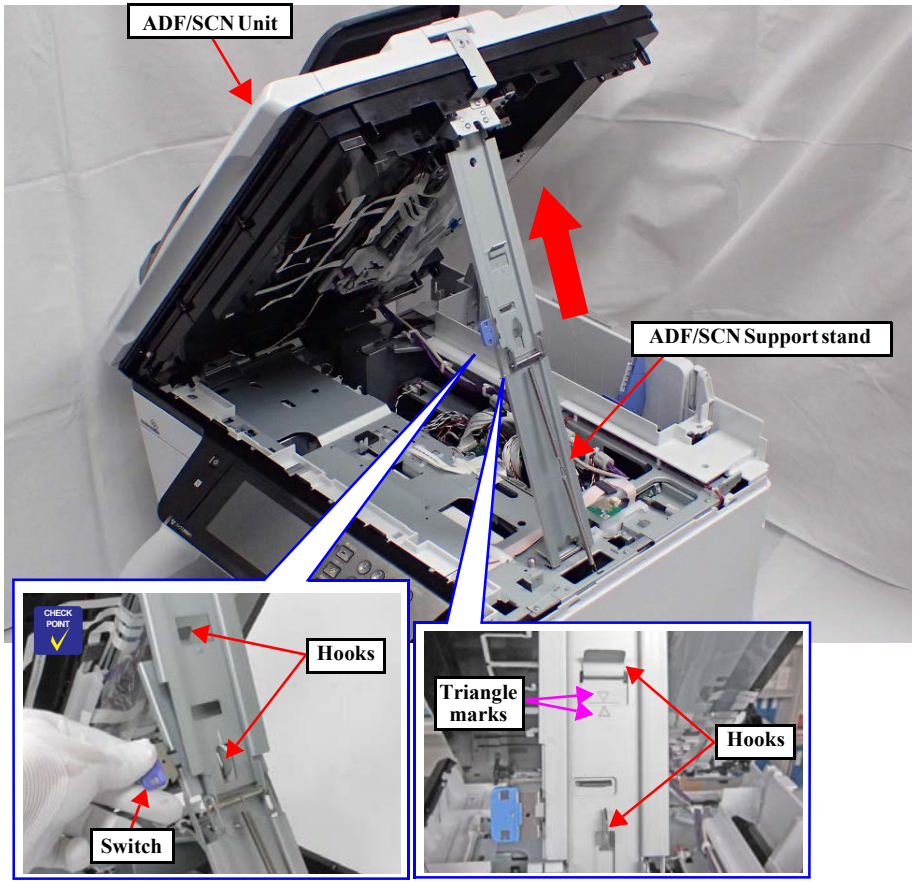
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



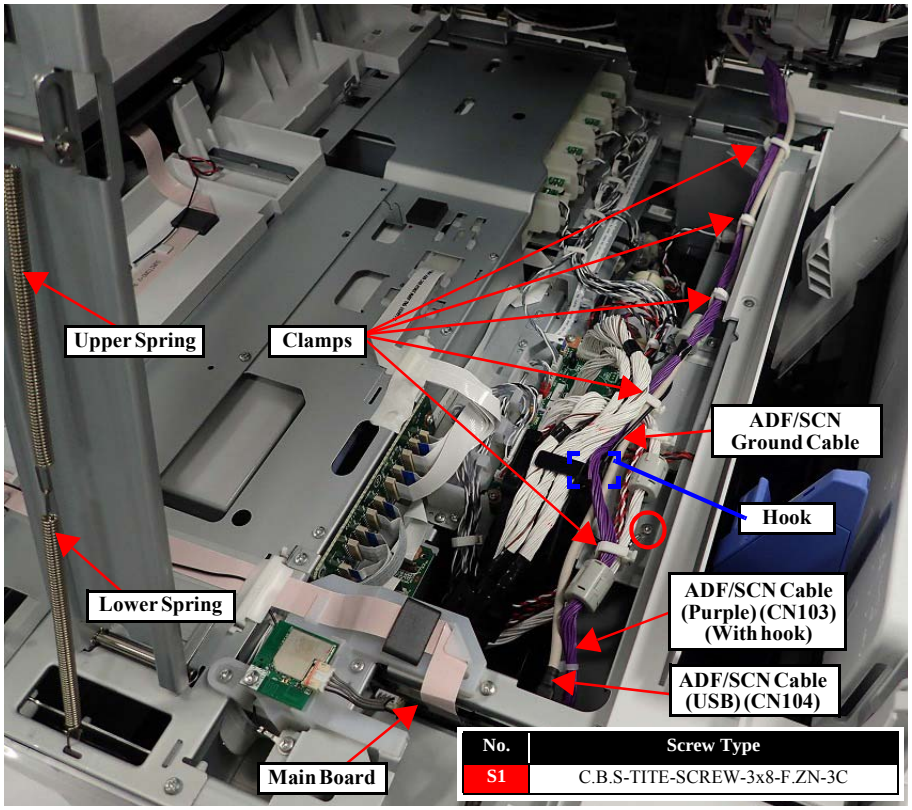
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4	C4
D4	E4	

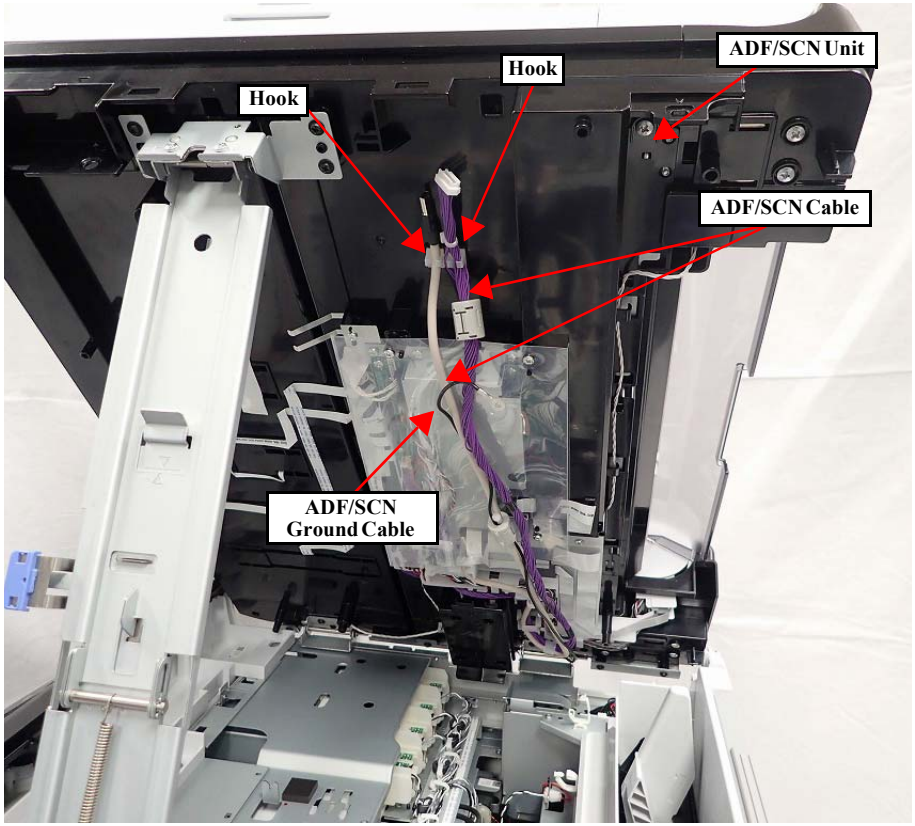
ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Separate the upper spring and lower spring.
2. Disconnect the following cables from the connector of the Main Board.
   - ADF/SCN Cable (USB) (CN104)
   - ADF/SCN Cable (Purple) (CN103) (With hook)
3. Remove one screw (S1: ○), and release the ADF/SCN ground cable.
4. Release the ADF/SCN cables and ADF/SCN ground cable from the five clamps.
5. Release the ADF/SCN cable (Purple) from hook of the Relay cable cover.

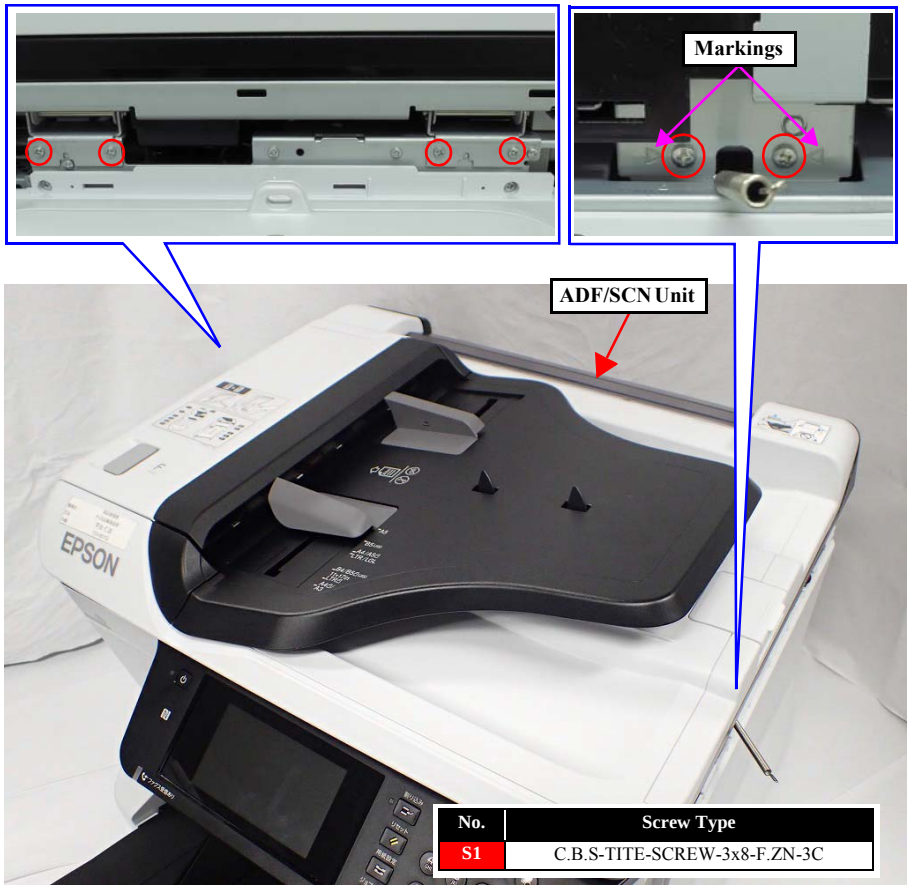
ADF/SCN Unit



6. Wrap the ADF/SCN ground cable around the ADF/SCN cable (Purple).
7. Fix the ADF/SCN Cables (ADF/SCN ground cable is wrapped condition) to two hooks.
8. Close the ADF/SCN Unit.

REASSEMBLY If the upper spring and the lower spring were separated, even if the ADF / SCN unit is fully extended, the support stand will not automatically open.

ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

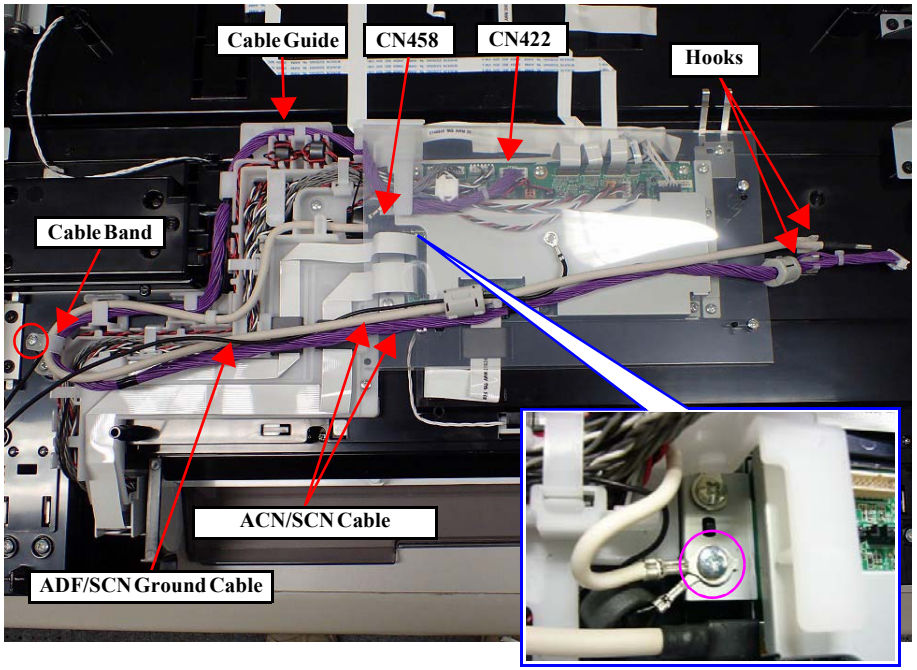
9. Remove the six screws (S1: ○).

CHECK POINT The screw to be removed is indicated by a triangle mark.

10. Pull the ADF/SCN Unit upward to remove it.

	B5	C5
D5	E5	

Scanner Relay Cable

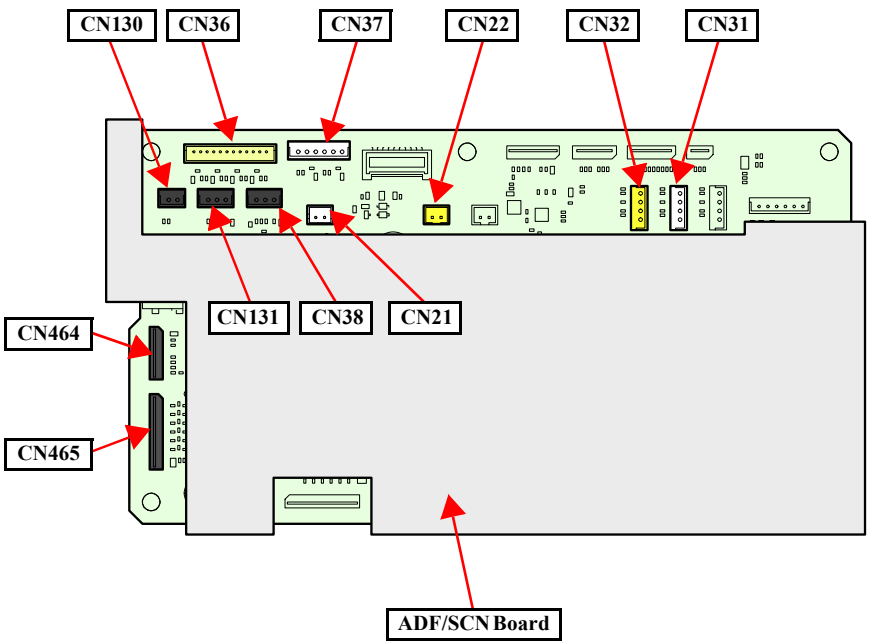


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Release the ACN/SCN Cables from the two hooks.
2. Remove the screw (S12: ○), then remove the cable band.
3. Disconnect the ACN/SCN cables from the following connectors of the ADF/SCN board.
   - ADF/SCN cable (USB) (CN458)
   - ADF/SCN cable (Purple) (CN422) (With hook)
4. Remove the screw (S1: ○), then remove the ADF/SCN ground cable.
5. Release the ACN/SCN cables and ADF/SCN ground cable from the cable guide.

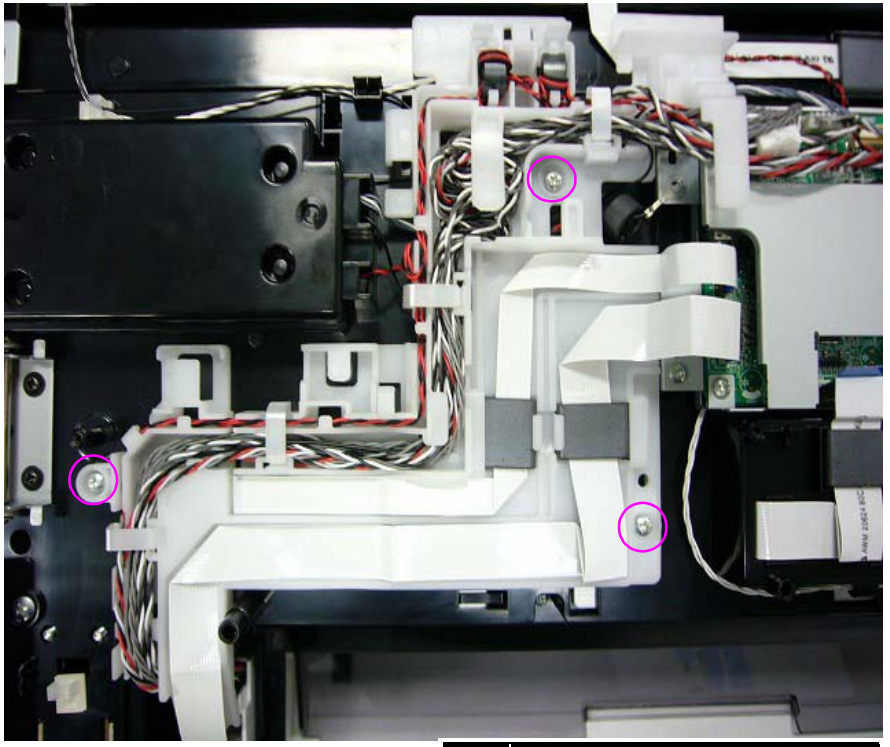
	B6	C6
D6	E6	

ADF/SCN Harness Holder



1. Remove the cables and FFCs from the connector (CN21, CN22, CN31, CN32, CN36, CN37, CN38, CN130, CN131, CN464, CN465) of the ADF/SCN Board.

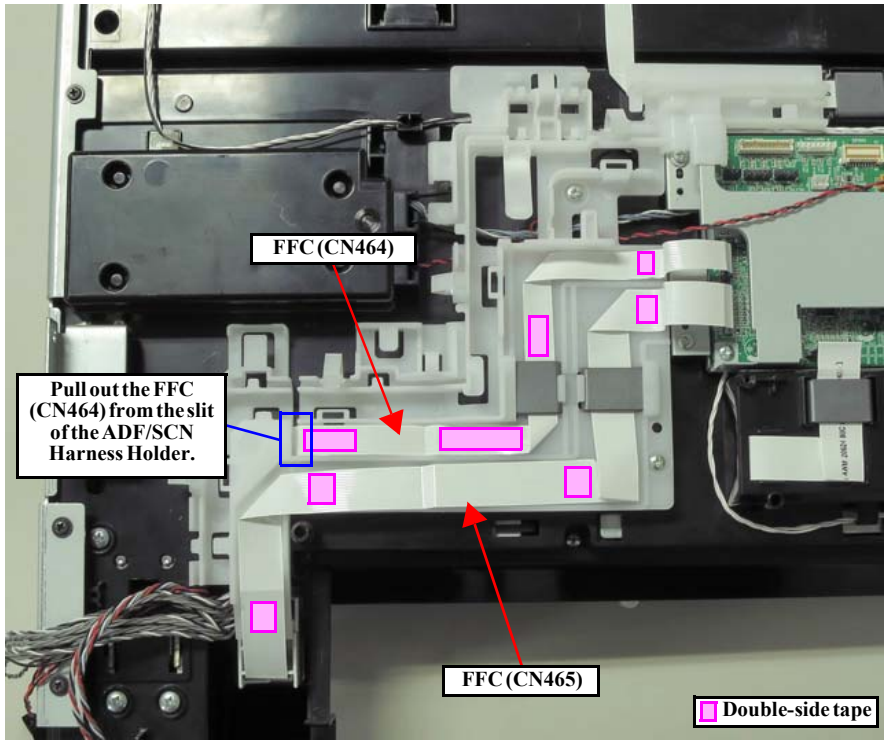
ADF/SCN Harness Holder



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

2. Remove all the cables and FFCs from the ADF/SCN Harness Holder.
3. Remove the three screws (S12: ○), then remove the ADF/SCN Harness Holder.

ADF/SCN Harness Holder

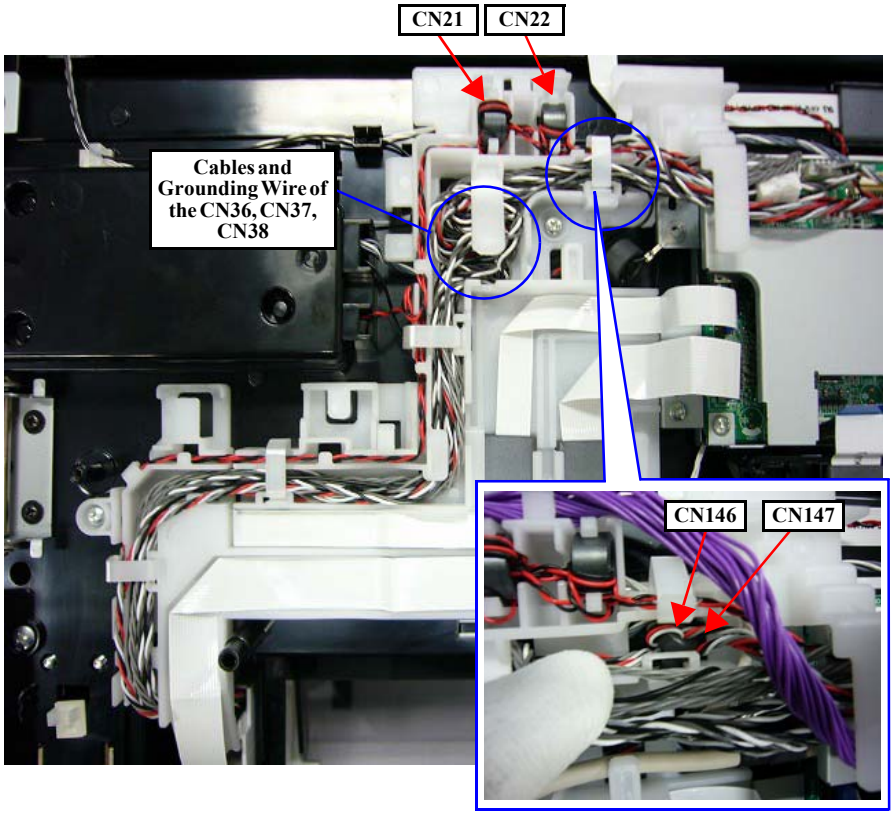


REASSEMBLY

Check the following points, and route the cables and FFCs.

- ☐ Pull out the FFC (CN464) from the slit of the ADF/SCN Harness Holder.
- ☐ Stick the FFCs with the double side tapes.

ADF/SCN Harness Holder

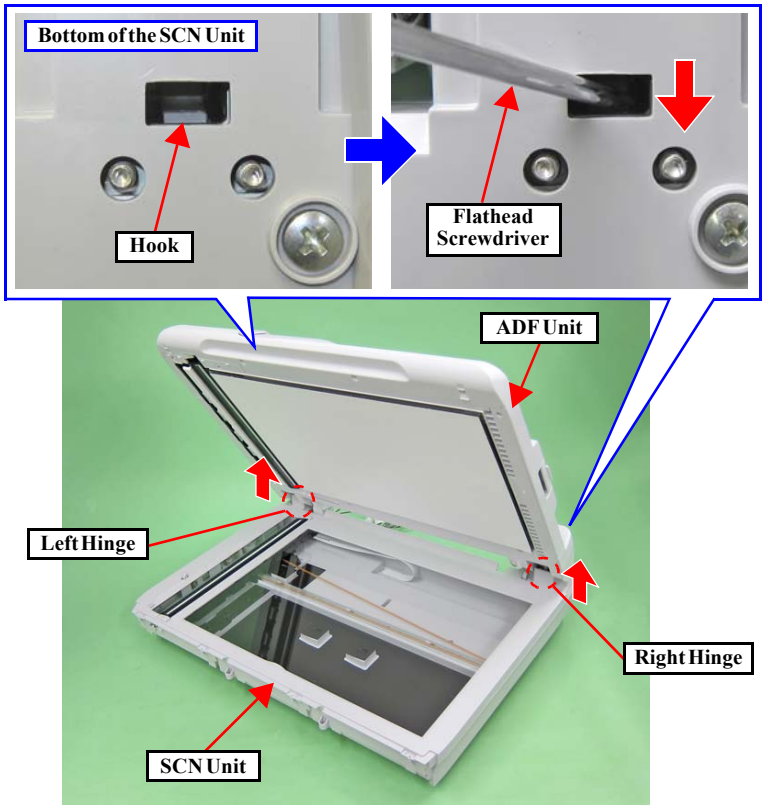


REASSEMBLY

- ☐ Set the ferrite core of each cable in the position shown above.
- ☐ Set the surplus of the cable and the grounding wire in the position shown above.

	B7	C7
D7	E7	

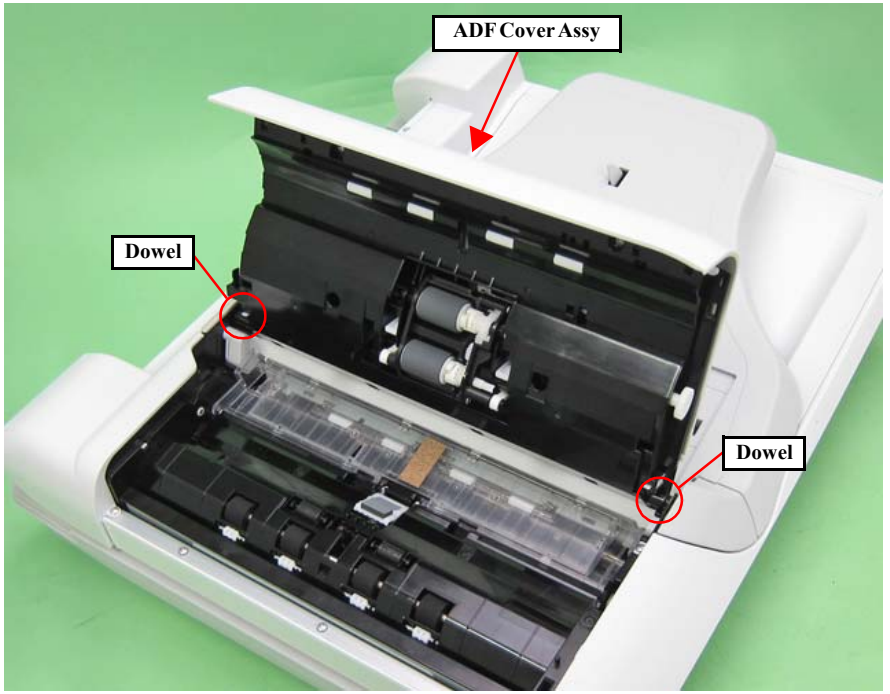
ADF Unit



4. Open the ADF Unit.
5. Pull the ADF Unit upward to remove it while pushing up the hooks fixing the left hinge and right hinge from the bottom of the SCN Unit with the flathead screwdriver.

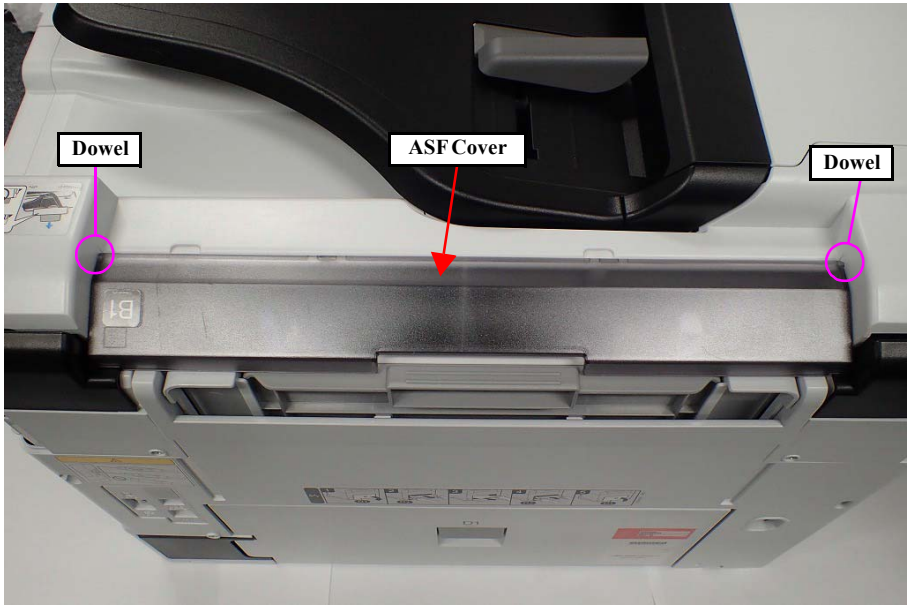
	B8	C8
D8	E8	

ADF Cover Assy



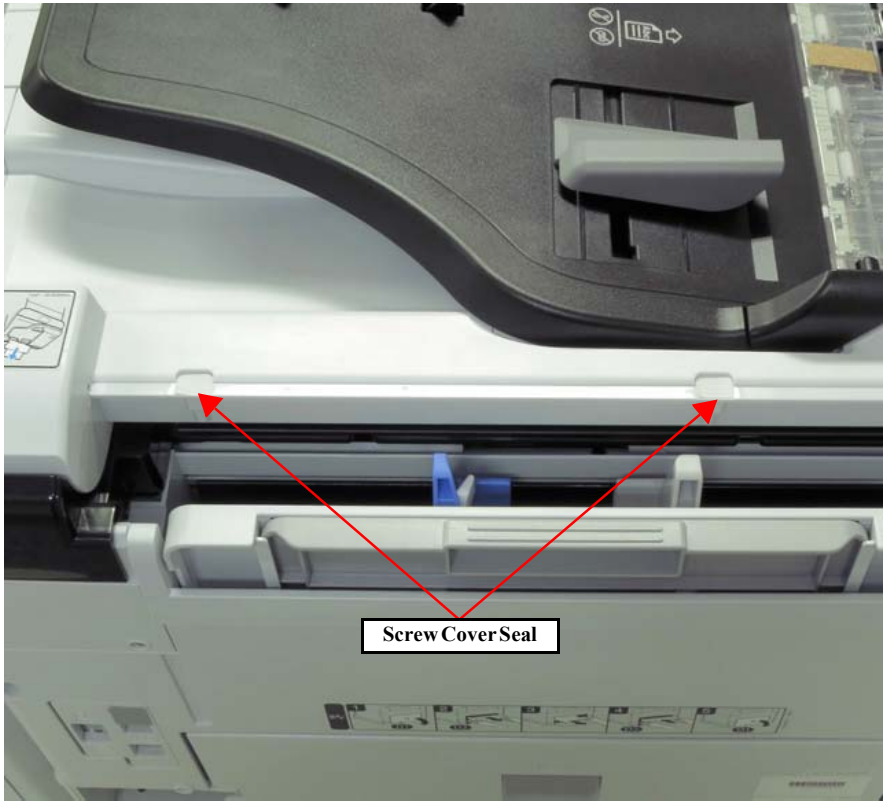
1. Disengage the two dowels, then remove the ADF Cover Assy.

	B9	C9	ASF Cover
D9	E9		



1. Disengage the two dowels, then remove the ASF Cover.

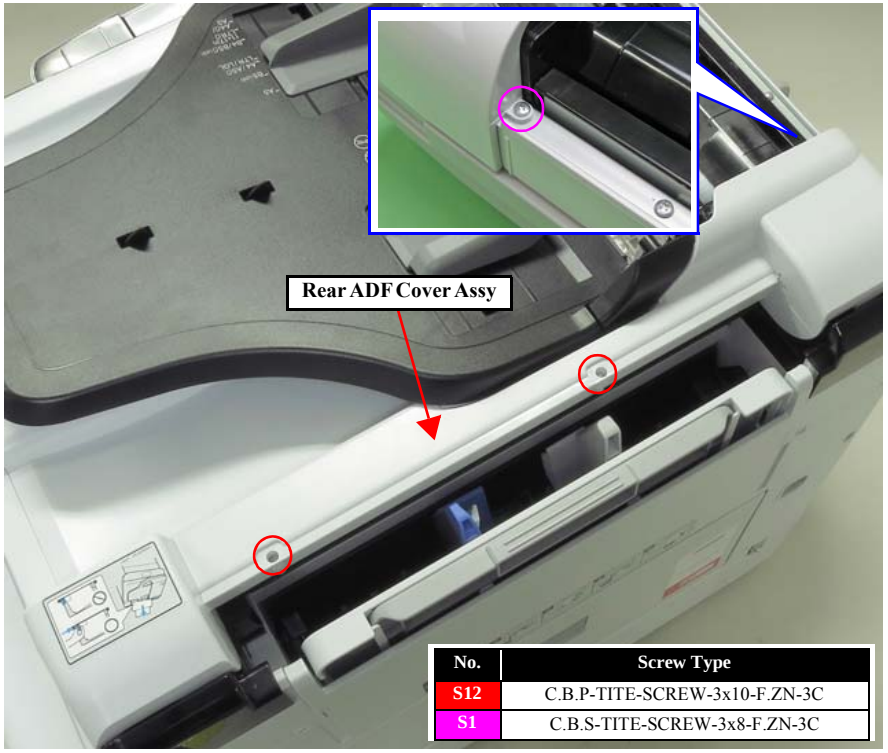
	B10	C10	Screw Cover Seal
D10	E10		



1. Remove the two Screw Cover Seals.

	B11	C11
D11	E11	

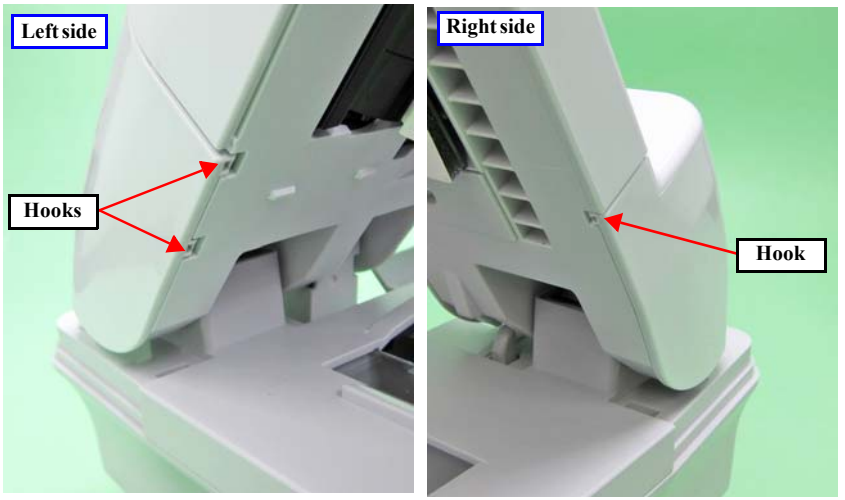
Rear ADF Cover Assy



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

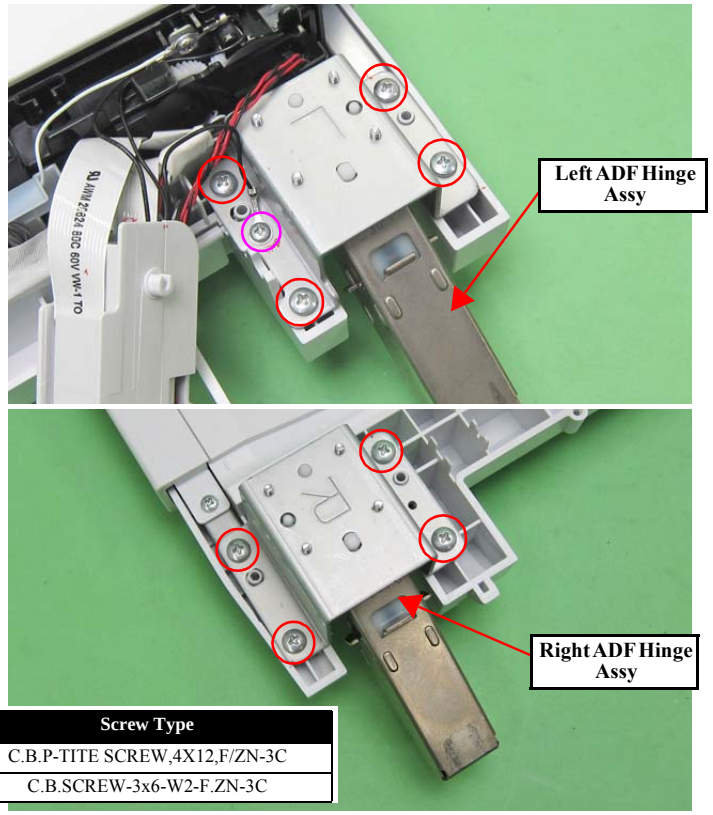
1. Remove the two screws (S12: ○) and the screw (S1: ○).

Rear ADF Cover Assy



2. Disengage the three hooks, and remove the Rear ADF Cover Assy.

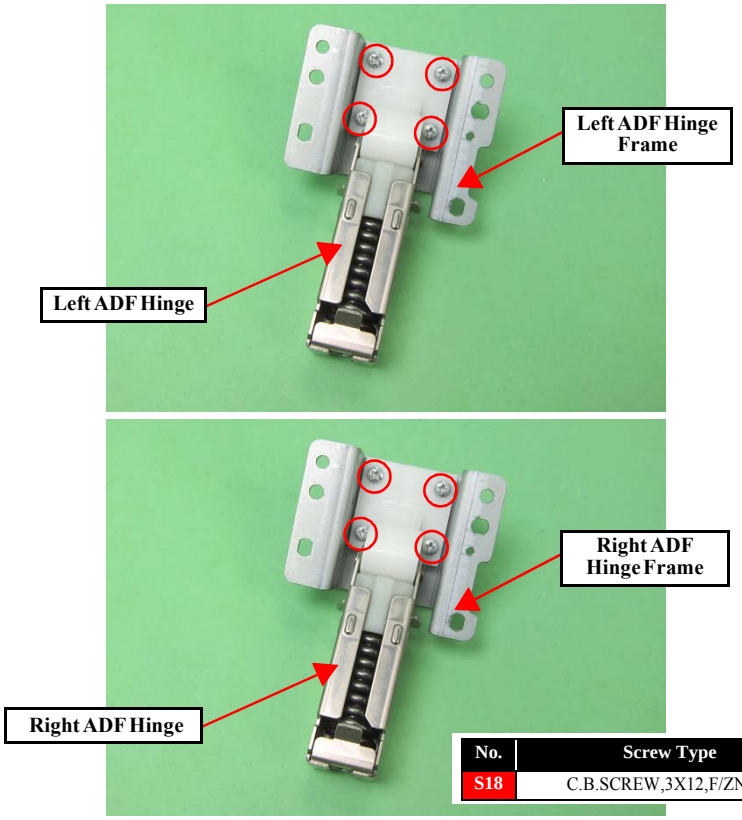
B12 Left Hinge Assy/Right Hinge Assy



No.	Screw Type
S17	C.B.P-TITE SCREW,4X12,F/ZN-3C
S16	C.B.SCREW-3x6-W2-F.ZN-3C

1. Remove the four screws (S17: ○) and the screw (S16: ○), and remove the left ADF Hinge Assy.
2. Remove the four screws (S17: ○), then remove the Right ADF Hinge Assy.

B13 Left Hinge Frame/Right Hinge Frame

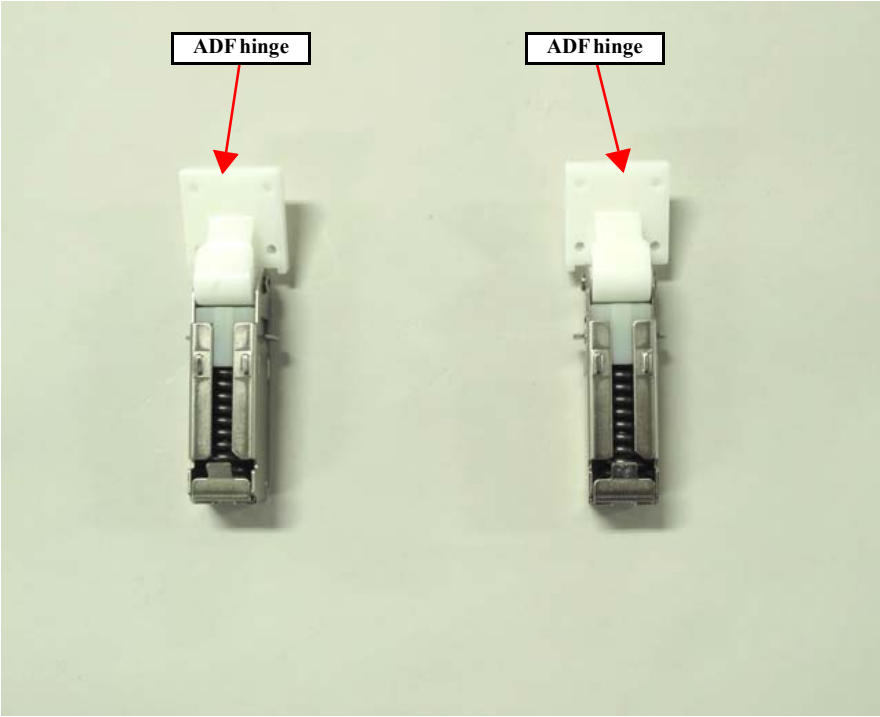


No.	Screw Type
S18	C.B.SCREW,3X12,F/ZN-3C

1. Remove the four screws (S18: ○), then remove the Left ADF Hinge Frame from the Left ADF Hinge.
2. Remove the four screws (S18: ○), then remove the Right ADF Hinge Frame from the Right ADF Hinge.

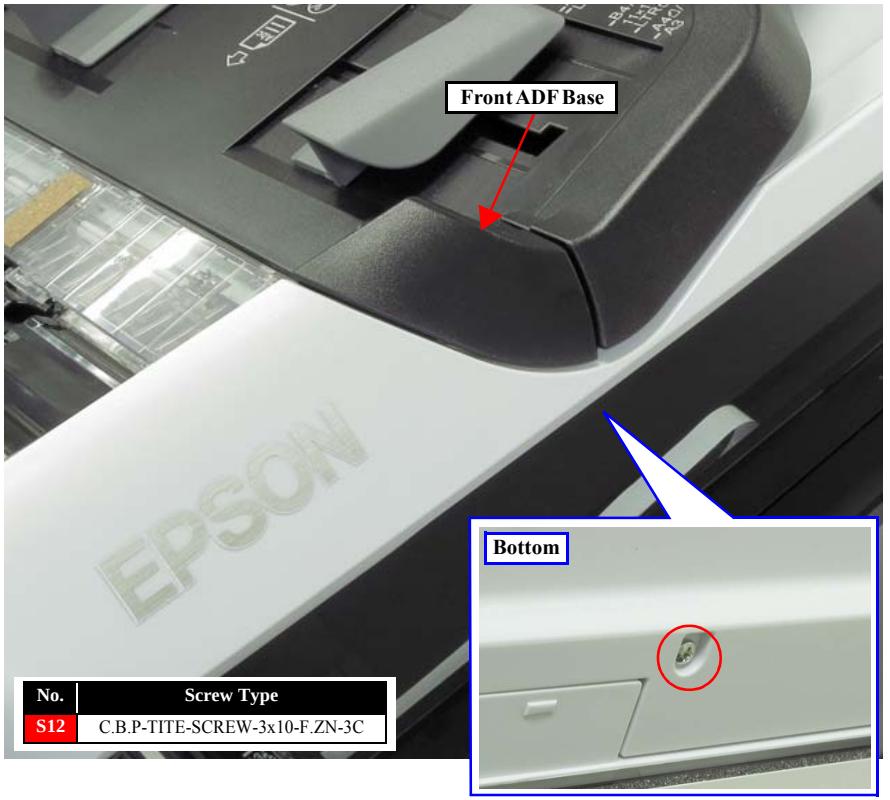
	B14	

ADF Hinge



		C12
D12	E12	

Front ADF Base

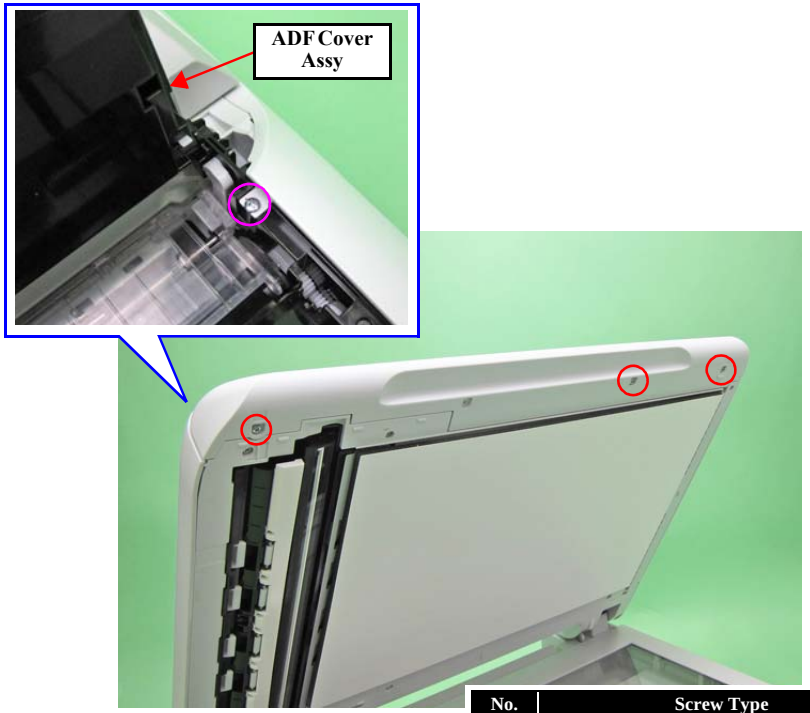


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the screw (S12: ○), then remove the Front ADF Base.

		C13
D13	E13	

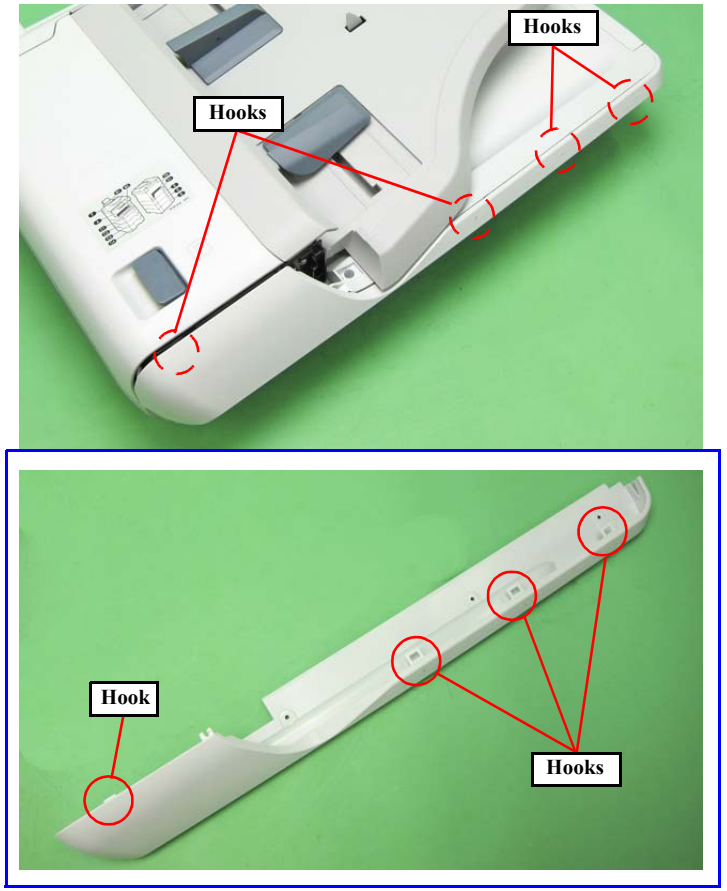
Front ADF Cover



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C
S14	C.B.P-TITE-SCREW-W2-3x10-F.ZN-3C

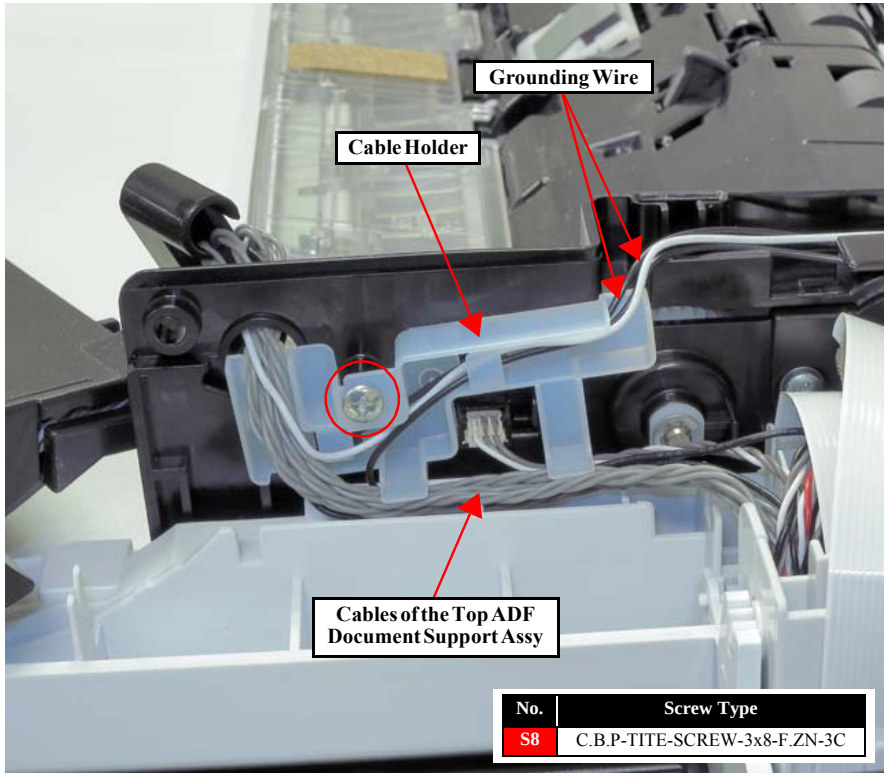
1. Remove the three screws (S12: ○) and the screw (S14: ○).

Front ADF Cover



2. Disengage the four hooks, and remove the Front ADF Cover.

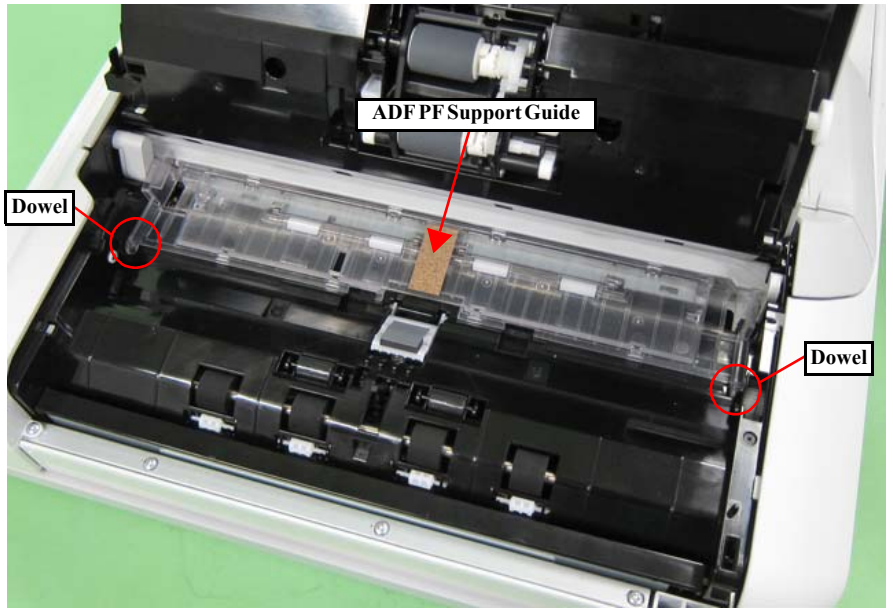
		C14	Cable Holder
D14	E14		



No.	Screw Type
S8	C.B.P-TITE-SCREW-3x8-F.ZN-3C

1. Release the cables of the grounding wire and the Top ADF Document Support Assy from the Cable Holder.
2. Remove the screw (S8: ○), then remove the Cable Holder.

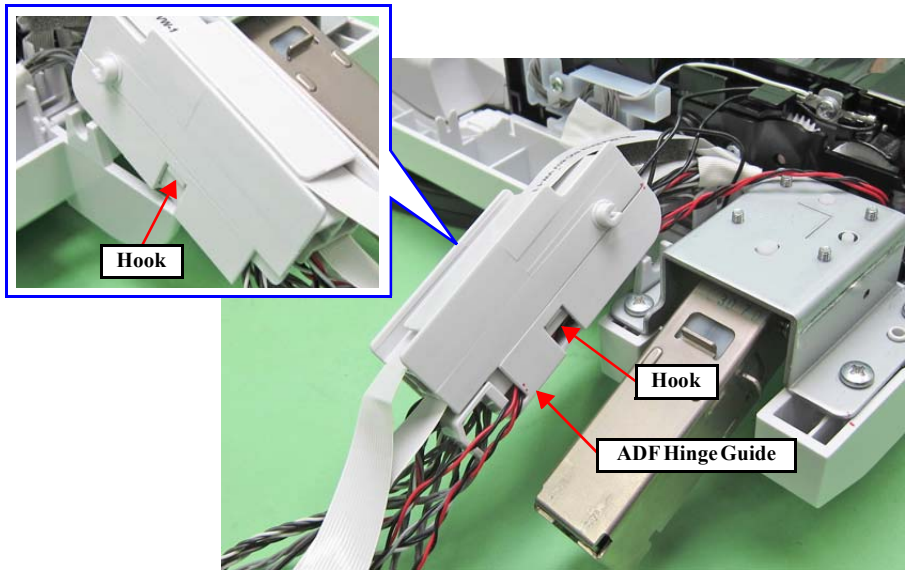
		C15	ADF PF Support Guide
D15	E15		



1. Disengage the two dowels, and then remove the ADF PF Support Guide.

		C16
D16	E16	

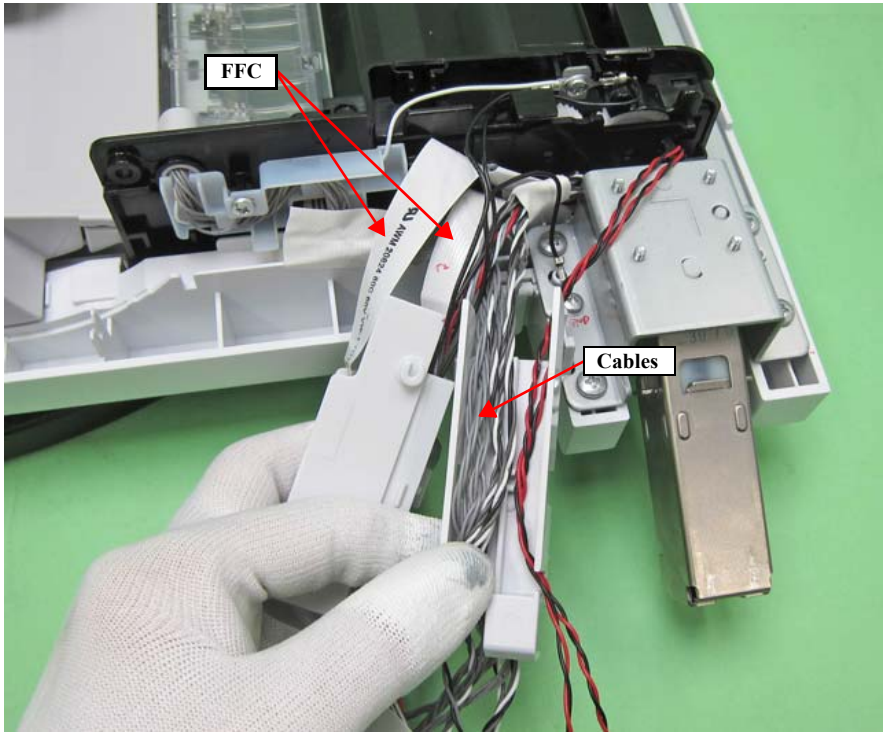
ADF Hinge Guide



1. Disengage the two hooks and separate the ADF Hinge Guide.

REASSEMBLY
- ☐ Route the cable without slackness when installing the ADF Hinge Guide.
- ☐ Take care not to catch the cables during installation.

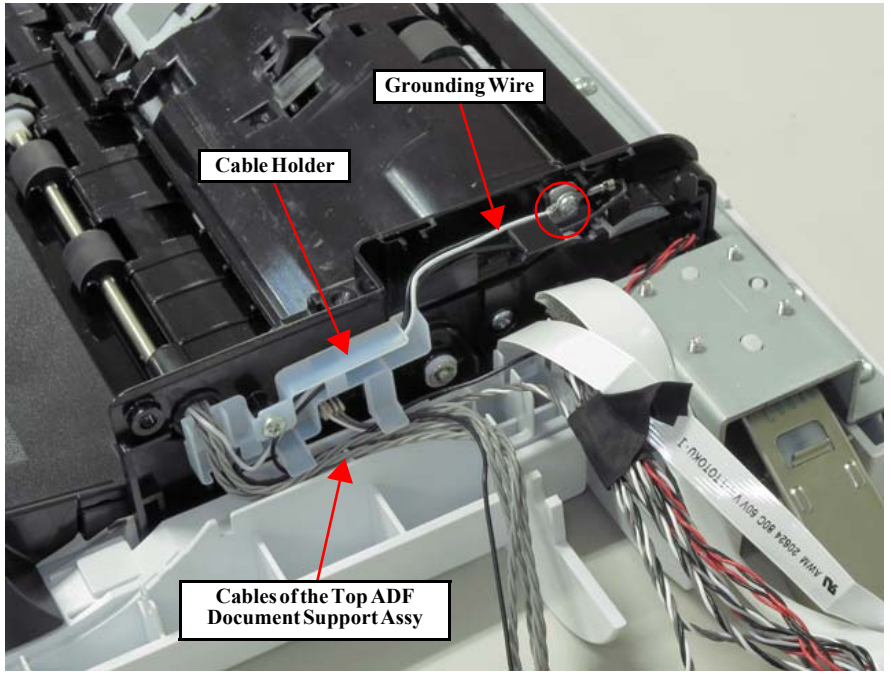
ADF Hinge Guide



2. Release the cables and FFCs from the ADF Hinge Guide.

		C17
D17	E17	

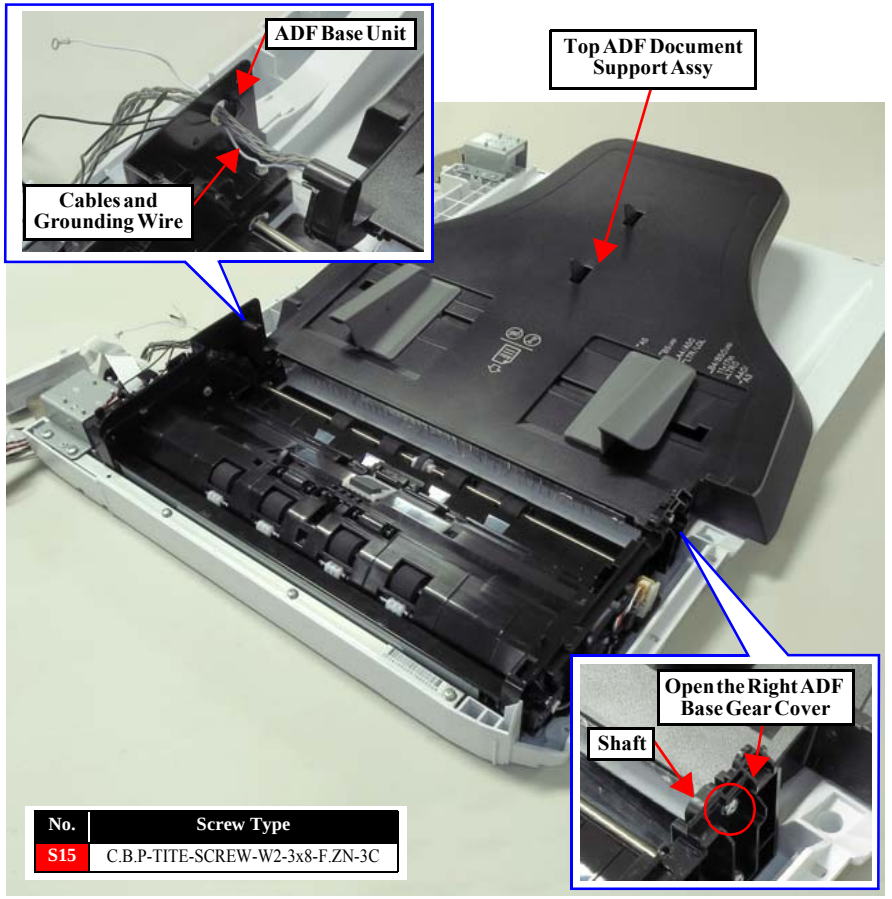
Top ADF Document Support Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Release the cables of the Top ADF Document Support Assy.
2. Remove the screw (S13: ○), then remove the grounding wire.
3. Release the cables of the grounding wire and the Top ADF Document Support Assy from the Cable Holder.

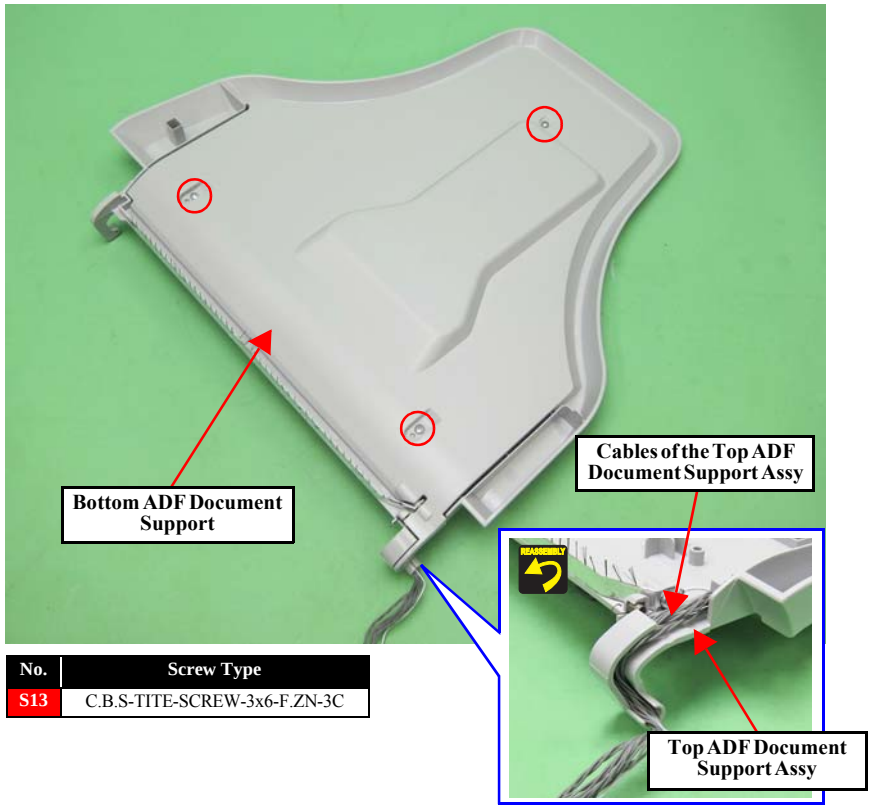
Top ADF Document Support Assy



No.	Screw Type
S15	C.B.P-TITE-SCREW-W2-3x8-F.ZN-3C

4. Remove the screw (S15: ○).
5. Remove the shaft of the Top ADF Document Support Assy from the hole of the Right ADF Base Gear Cover.
6. Pull out the cables and the grounding wire through the hole of the ADF Base Unit, and remove the Top ADF Document Support Assy.

			Bottom ADF Document Support
D18	E18		

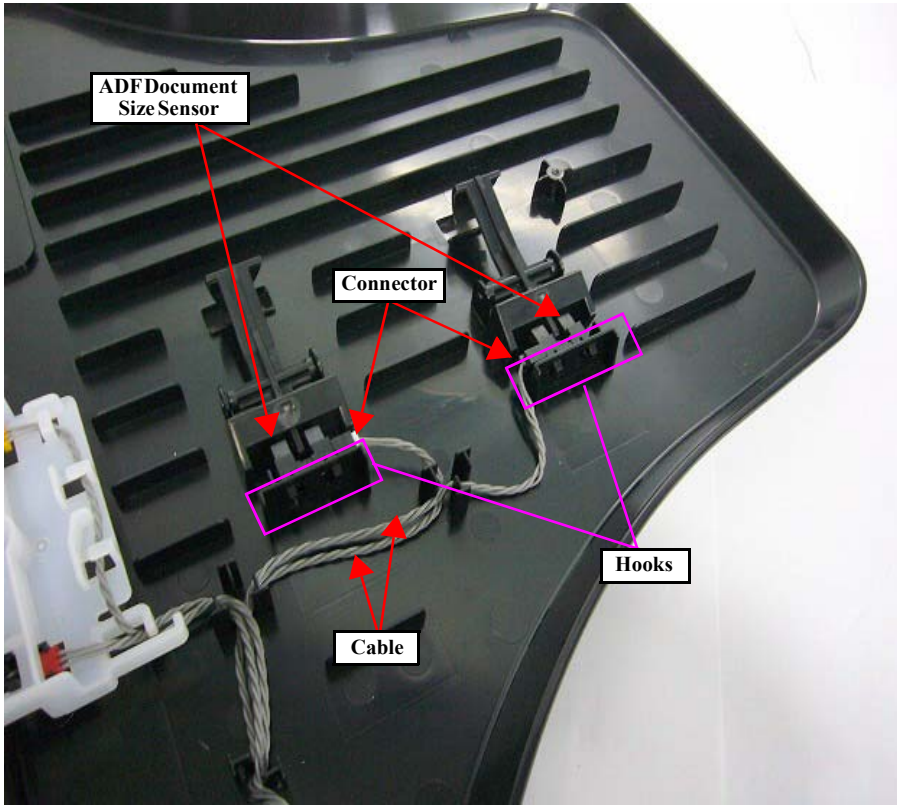


No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the three screws (S12: ○), then remove the Bottom ADF Document Support.

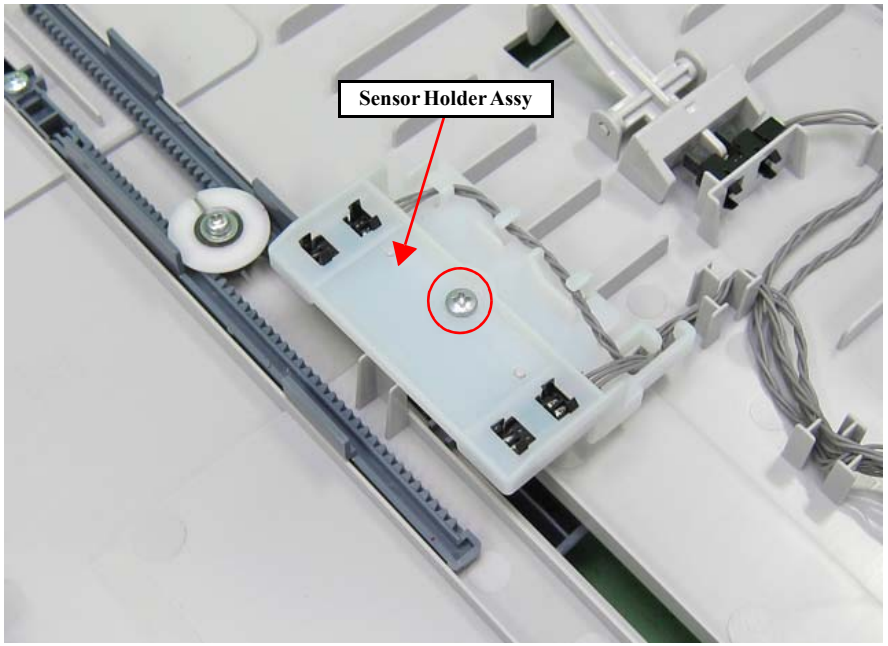
REASSEMBLY Route the cables of the Top ADF Document Support Assy through the Top ADF Document Support Assy as shown above.

			ADF Document Size Sensor
D19			



1. Disengage the four hook, then remove the two ADF Document Size Sensors.
2. Disconnect the cables from the sensor connector.

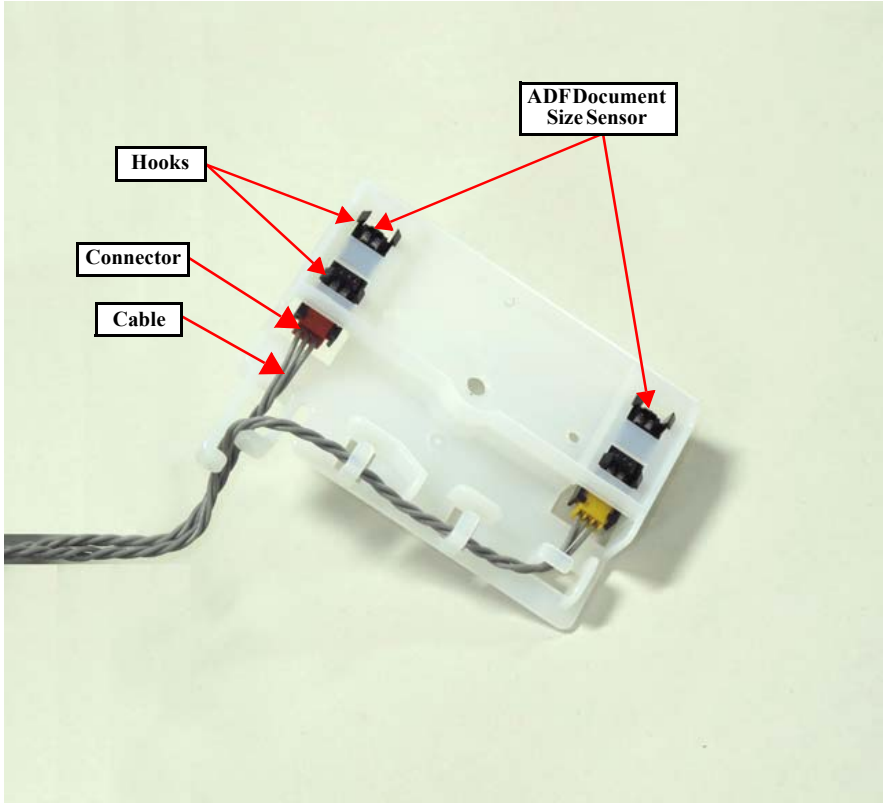
E19 Sensor Holder Assy



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the screw (S12: ○), then remove the Sensor Holder Assy.

E20 ADF Document Size Sensor



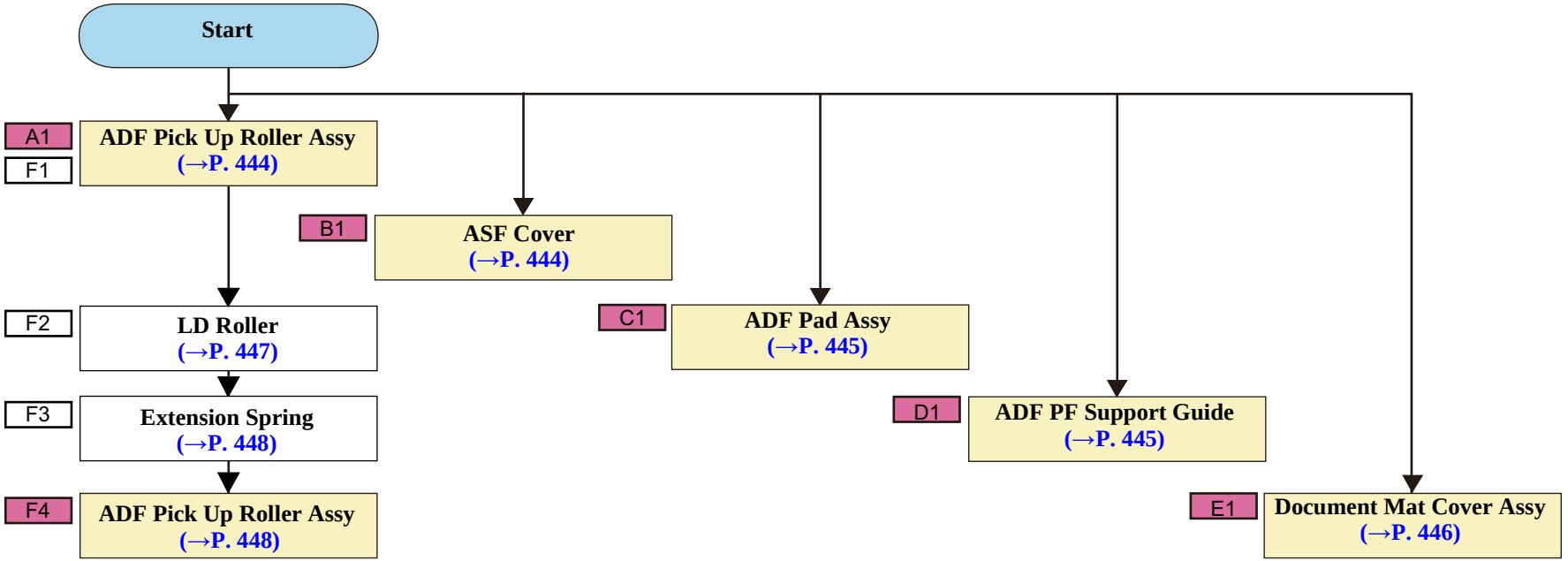
1. Disengage the four hook, then remove the two ADF Document Size Sensors.
2. Disconnect the cables from the sensor connector.

7.4.3.6 ADF/SCN 2

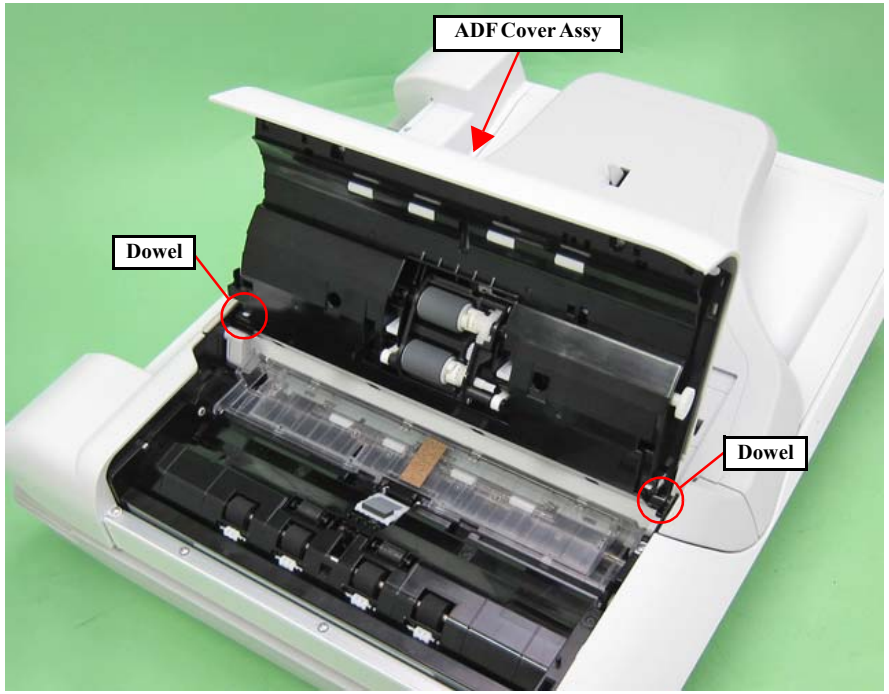
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
ADF Cover Assy	A	14 sec	---	14 sec
ASF Cover	B	25 sec	---	25 sec
ADF Pad Assy	C	19 sec	---	19 sec
ADF PF Support Guide	D	18 sec	---	18 sec
Document Mat Cover Assy	E	40 sec	---	40 sec
ADF Pick Up Roller Assy	F	1 min 5 sec	---	1 min 5 sec

DISASSEMBLY FLOWCHART

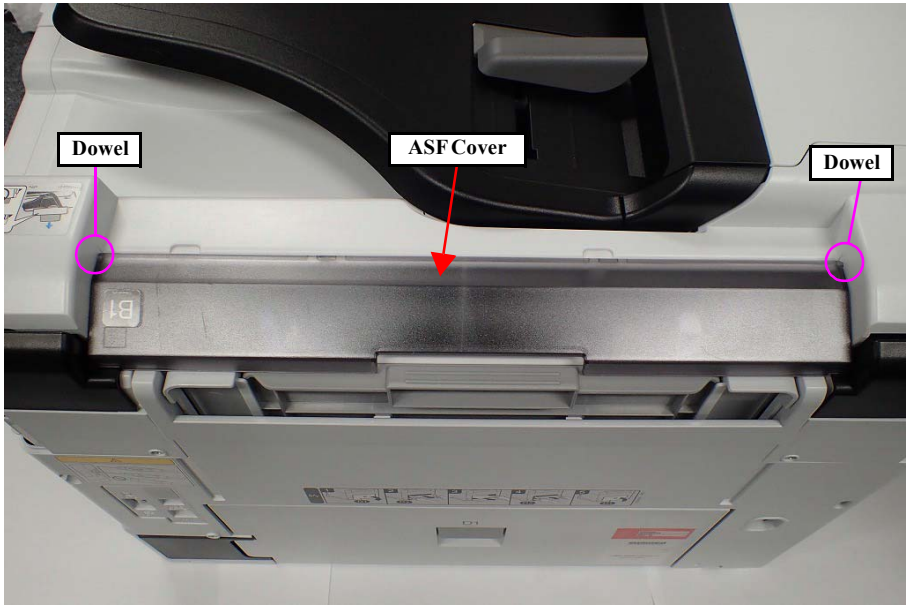


A1			ADF Cover Assy
		F1	



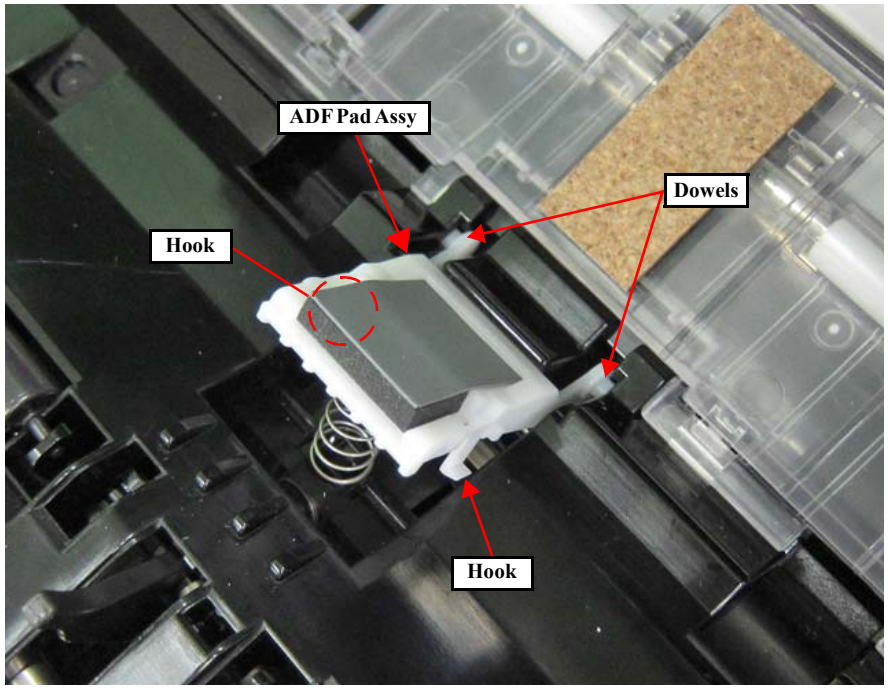
1. Disengage the two dowels, then remove the ADF Cover Assy.

	B1		ASF Cover



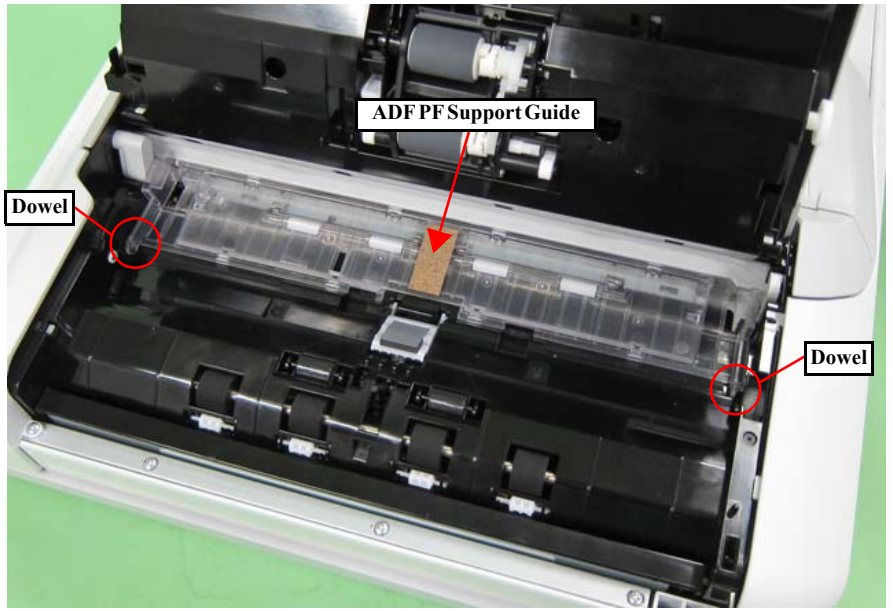
1. Disengage the two dowels, then remove the ASF Cover.

		C1	ADF Pad Assy



1. Open the ADF Cover Assy.
2. Disengage the two hooks and dowels, then remove the ADF Pad Assy.

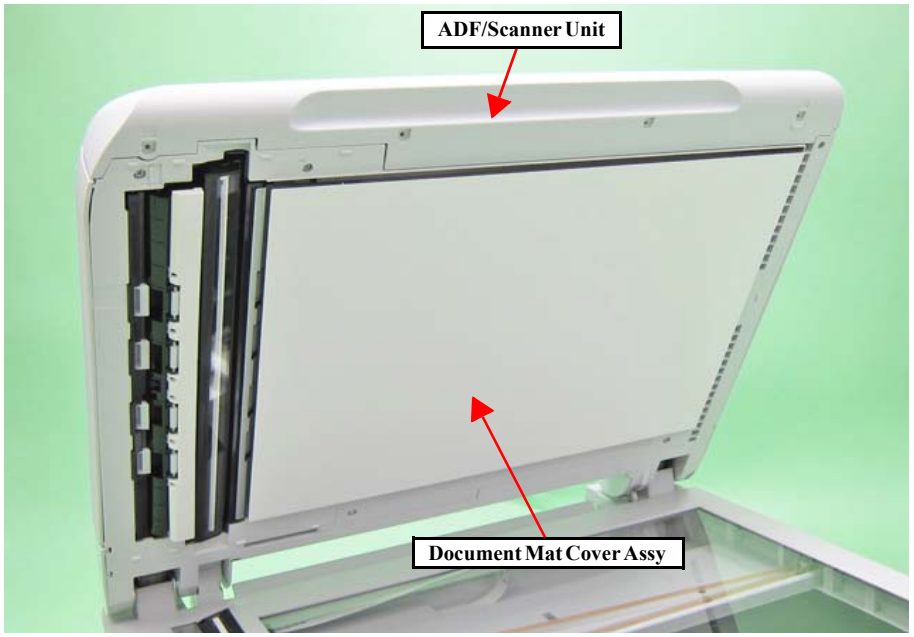
			ADF PF Support Guide
D1			



1. Disengage the two dowels, and then remove the ADF PF Support Guide.

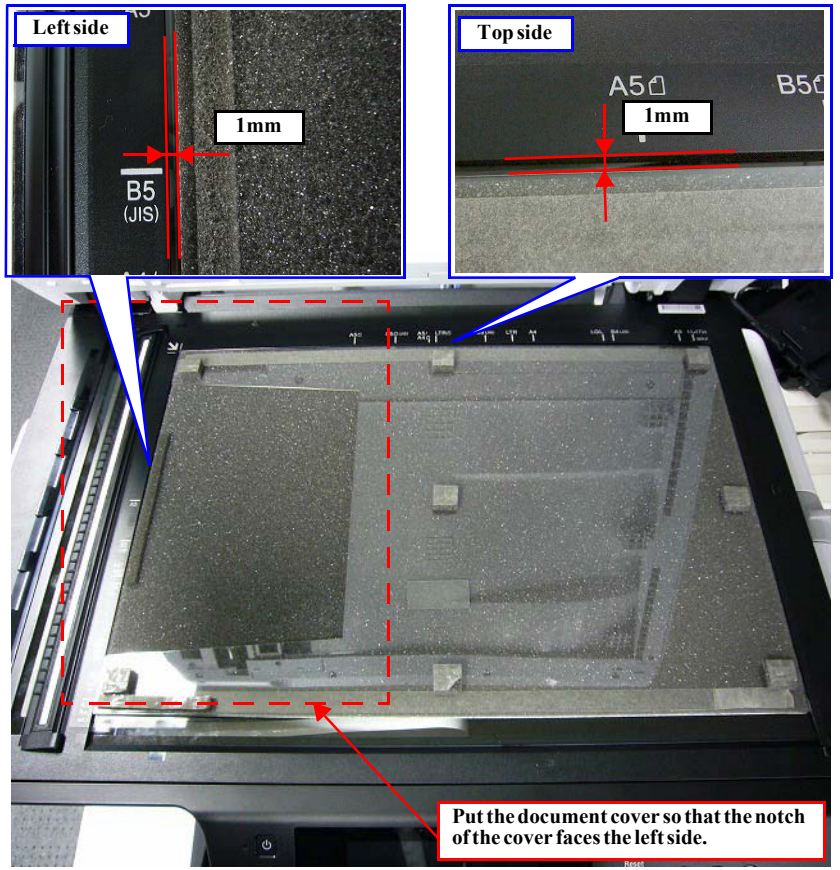
	E1	

Document Mat Cover Assy



1. Open the ADF/Scanner unit.
2. Remove the Document Mat Cover Assy.

Document MAT Cover Assy



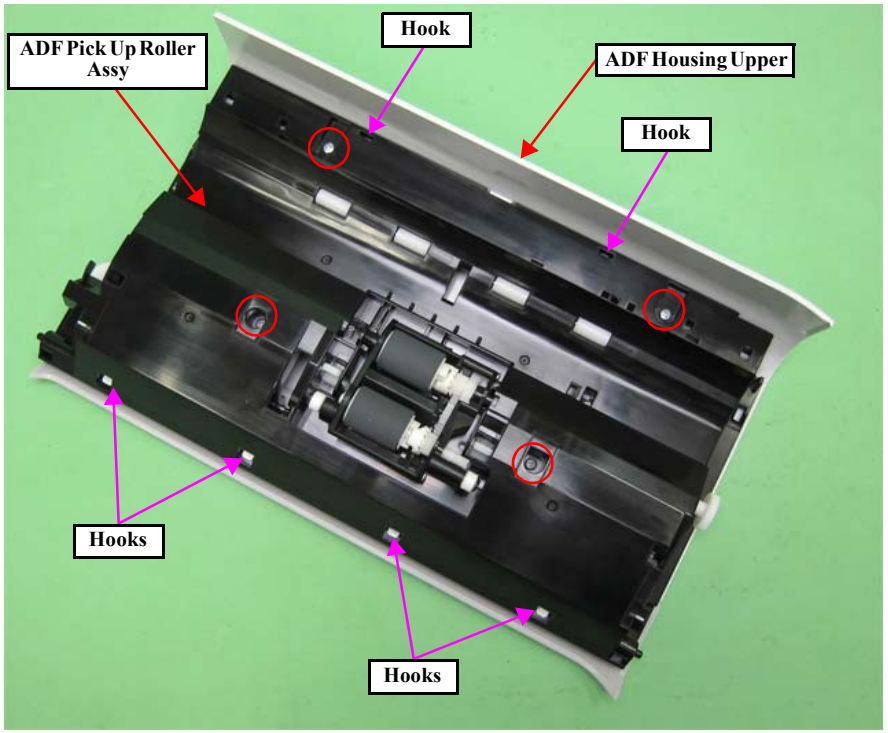
REASSEMBLY

Install the Document Mat Cover Assy in the following procedure.

1. Peel off the Protection material of Double side tape of Document MAT cover Assy.
2. Put the Document MAT cover Assy on Scanner glass.(Note the following points)
   - ☐ Put scanner mat cover Assy in the direction of the above figure.
   - ☐ Separate the top and left sides of the scanner mat cover 1 mm from the scanner glass frame.
3. Close the ADF/SCN Unit slowly, then install the ADF/SCN Document MAT cover Assy to ADF Unit.

		F2

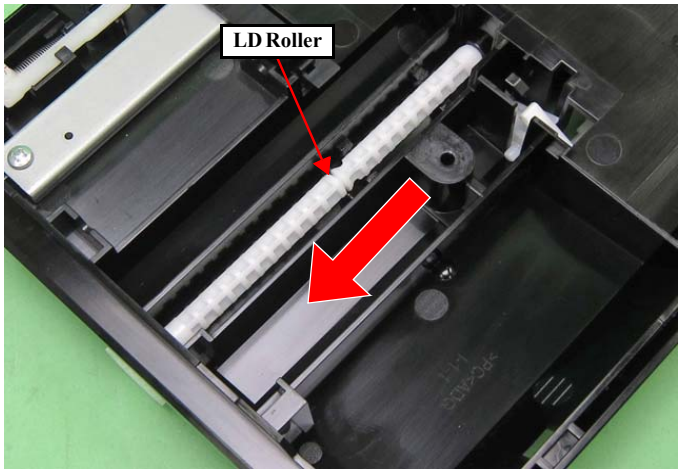
LD Roller

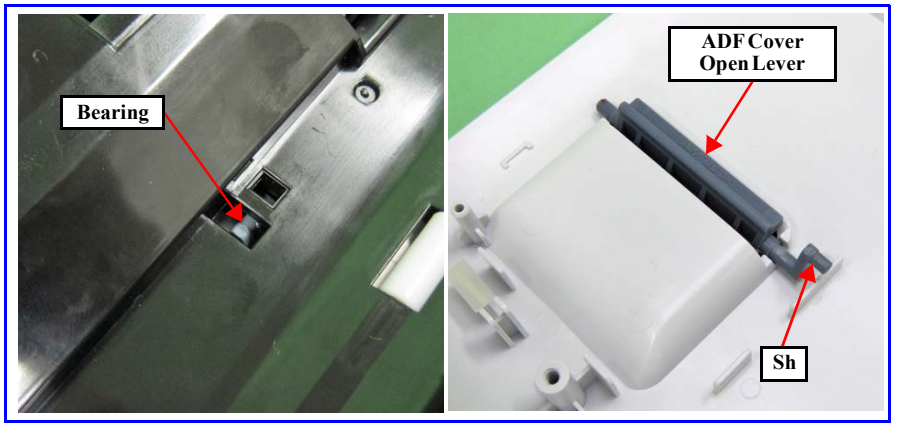


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the four screws (S12: ○).
2. Remove the ADF Pick Up Roller Assy from the six hooks of the ADF housing upper.

LD Roller

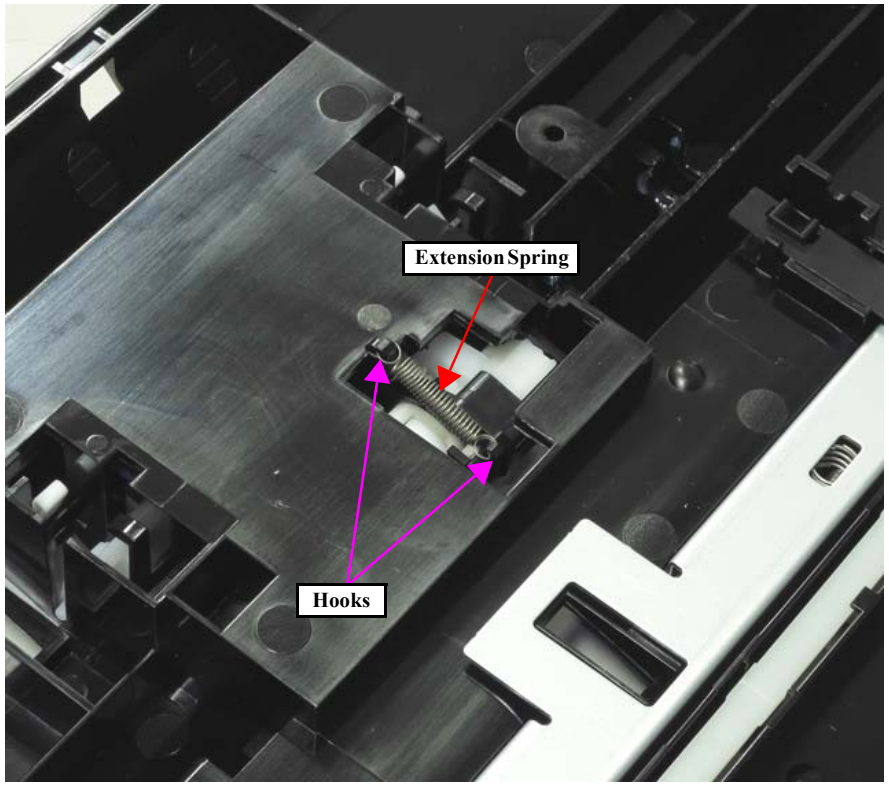




3. Extract the LD Roller in the direction of the arrow.

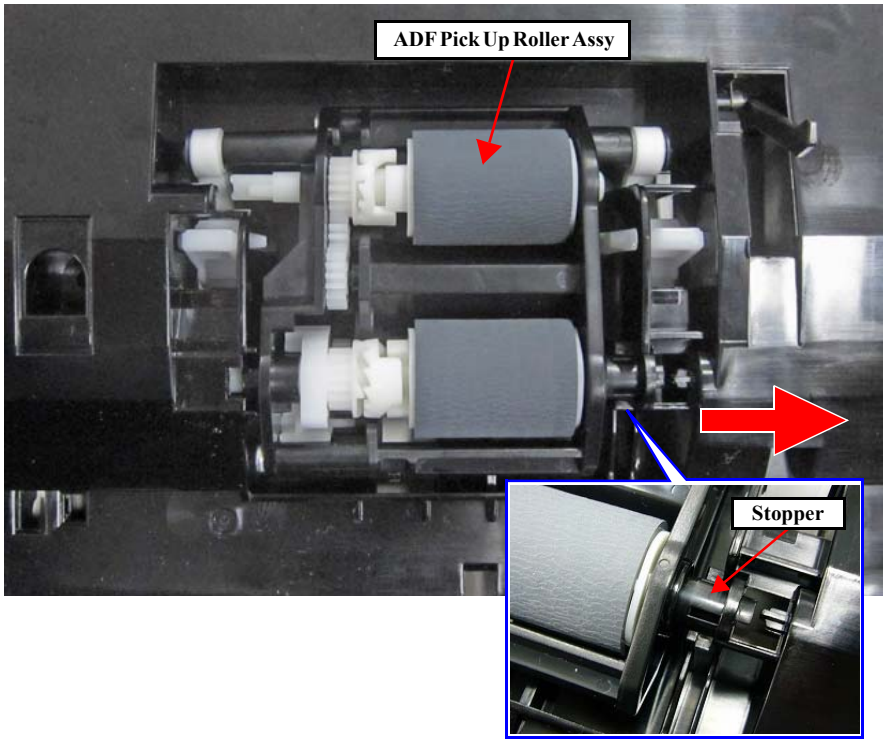
REASSEMBLY
- ☐ Set the shaft of the ADF cover open lever in the bearing.
- ☐ Confirm the behavior of the ADF Cover Open Lever after installing it.

			Extension Spring
		F3	



1. Remove the Extension Spring from the two hooks.

			ADF Pick Up Roller Assy
		F4	



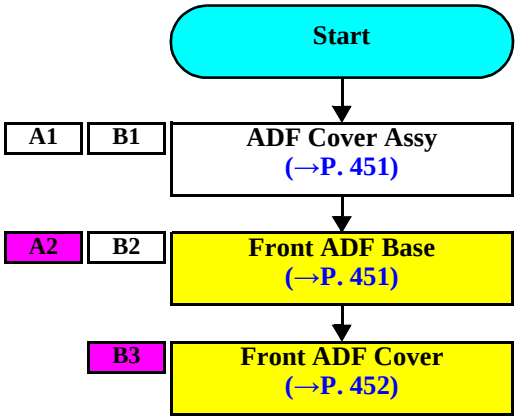
1. Slide the ADF Pick Up Roller Assy to direction of arrow while pushing down the stopper, then release the hook.
2. Remove the ADF Pick Up Roller Assy.

7.4.3.7 ADF/SCN 3

OUTLINE

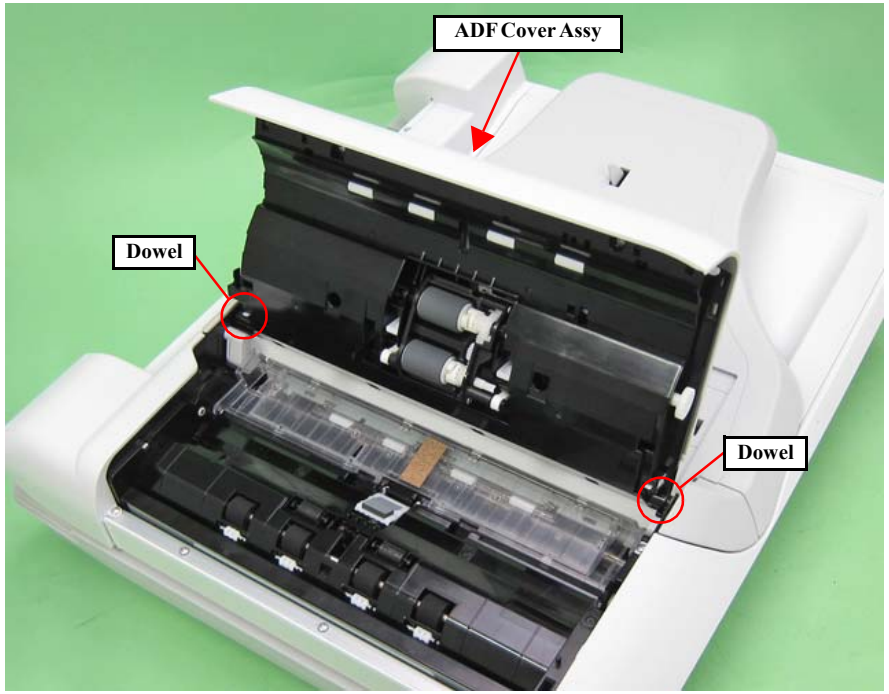
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Front ADF Base	A	39 sec	---	39 sec
Front ADF Cover	B	2 min 5 sec	---	2 min 5 sec

DISASSEMBLY FLOWCHART



A1	B1	

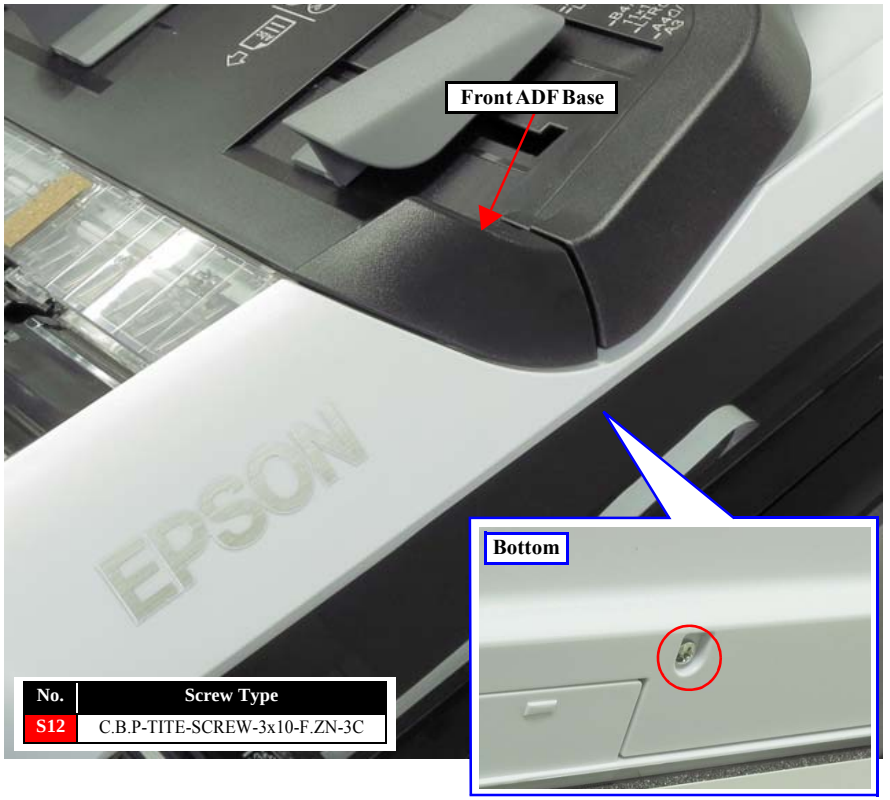
ADF Cover Assy



1. Disengage the two dowels, then remove the ADF Cover Assy.

A2	B2	

Front ADF Base

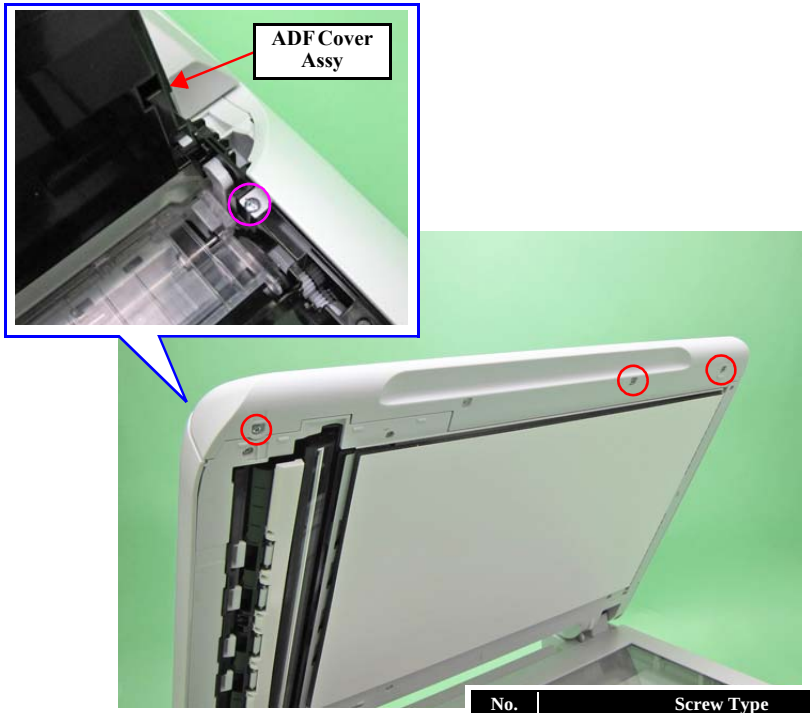


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the screw (S12: ○), then remove the Front ADF Base.

	B3	

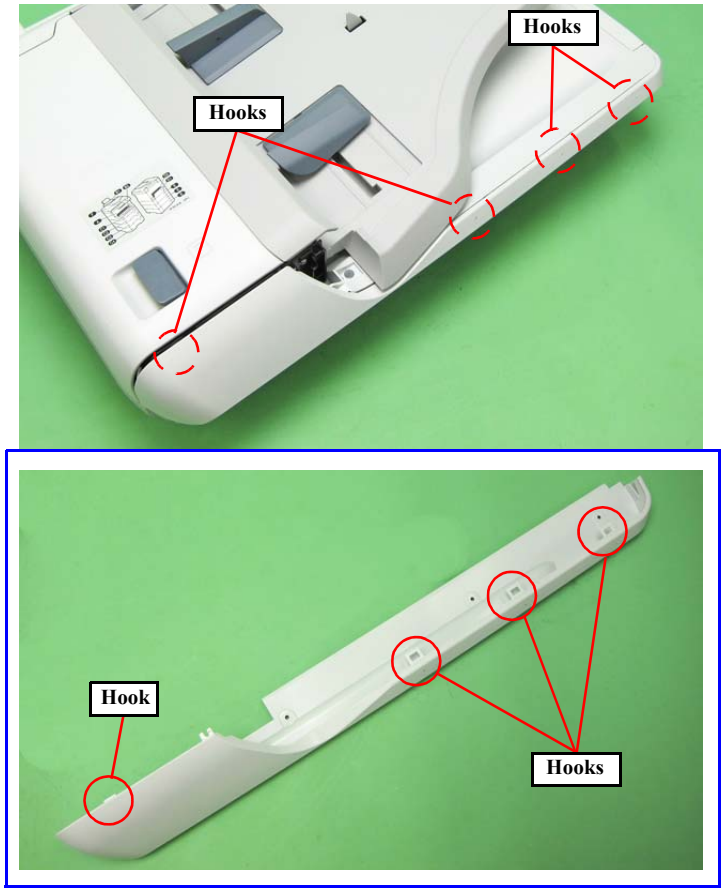
Front ADF Cover



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C
S14	C.B.P-TITE-SCREW-W2-3x10-F.ZN-3C

1. Remove the three screws (S12: ○) and the screw (S14: ○).

Front ADF Cover



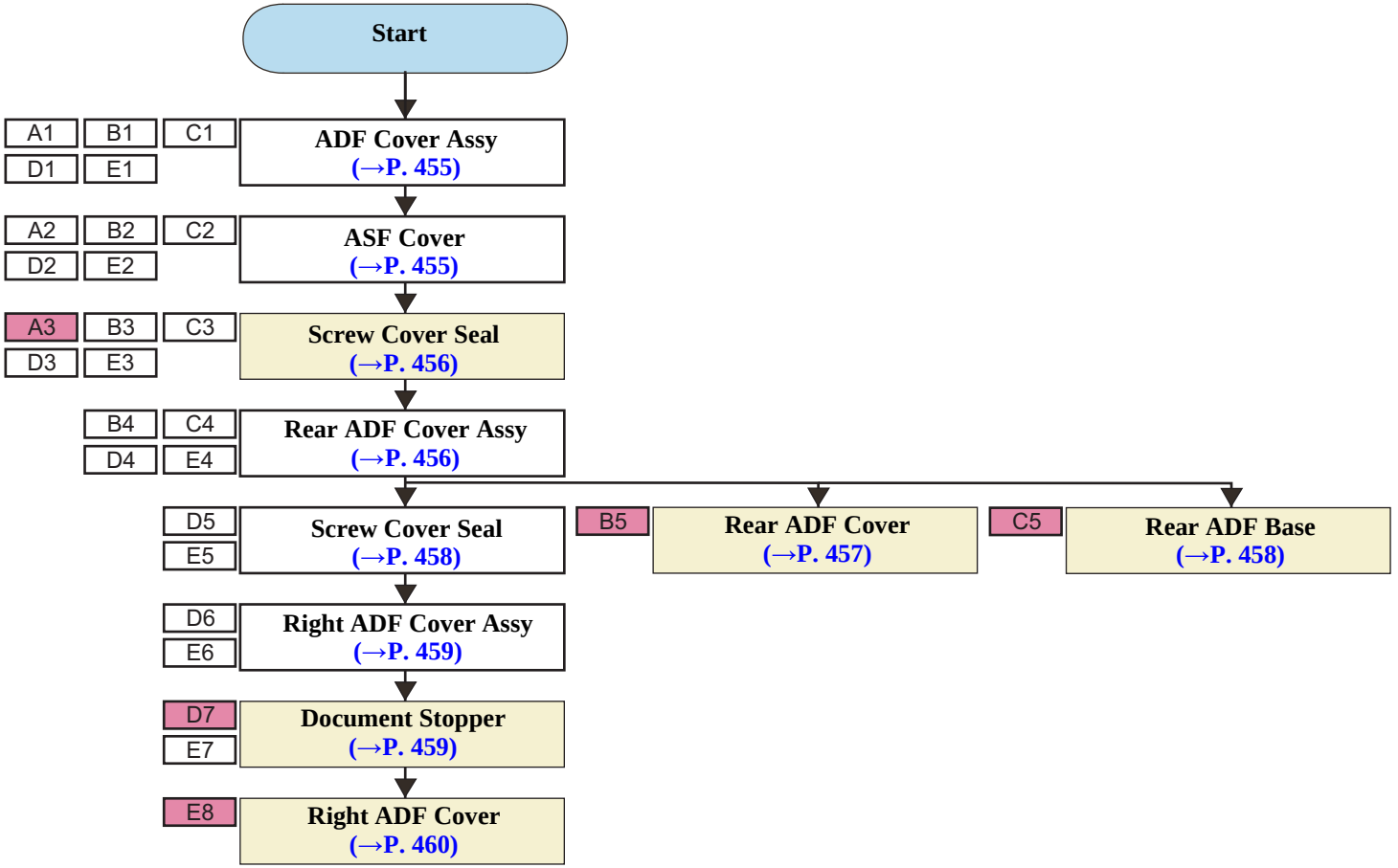
2. Disengage the four hooks, and remove the Front ADF Cover.

7.4.3.8 ADF/SCN 4

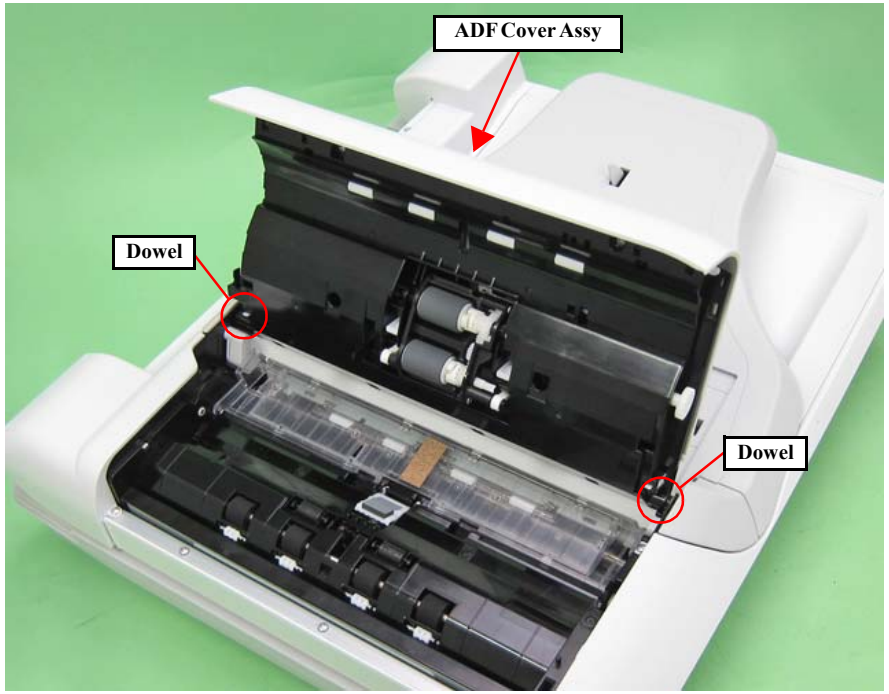
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Screw Cover Seal	A	49 sec	---	49 sec
Rear ADF Cover	B	2 min 40 sec	---	2 min 40 sec
Rear ADF Base	C	2 min 40 sec	---	2 min 40 sec
Document Stopper	D	3 min 33 sec	---	3 min 33 sec
Right ADF Cover	E	3 min 33 sec	---	3 min 33 sec

DISASSEMBLY FLOWCHART

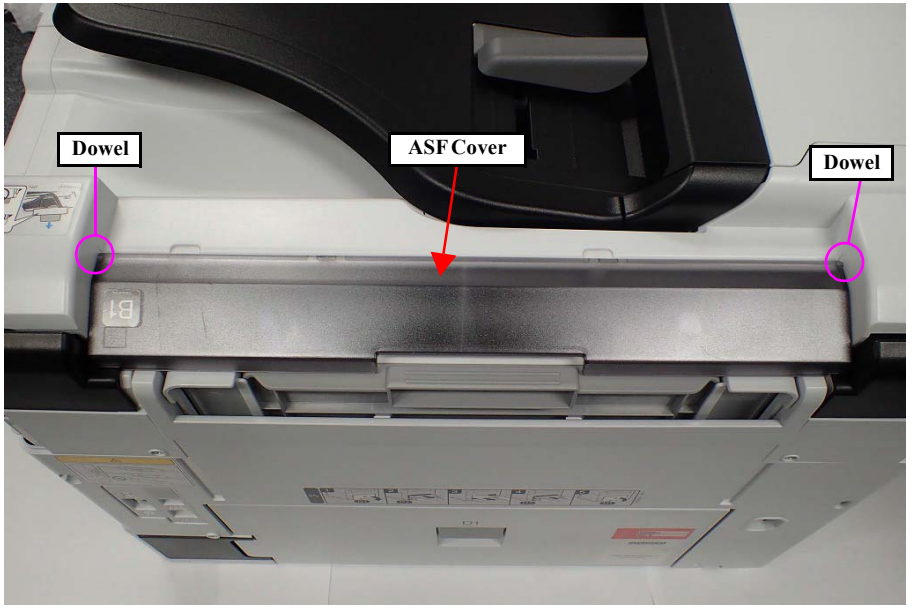


A1	B1	C1	ADF Cover Assy
D1	E1		



1. Disengage the two dowels, then remove the ADF Cover Assy.

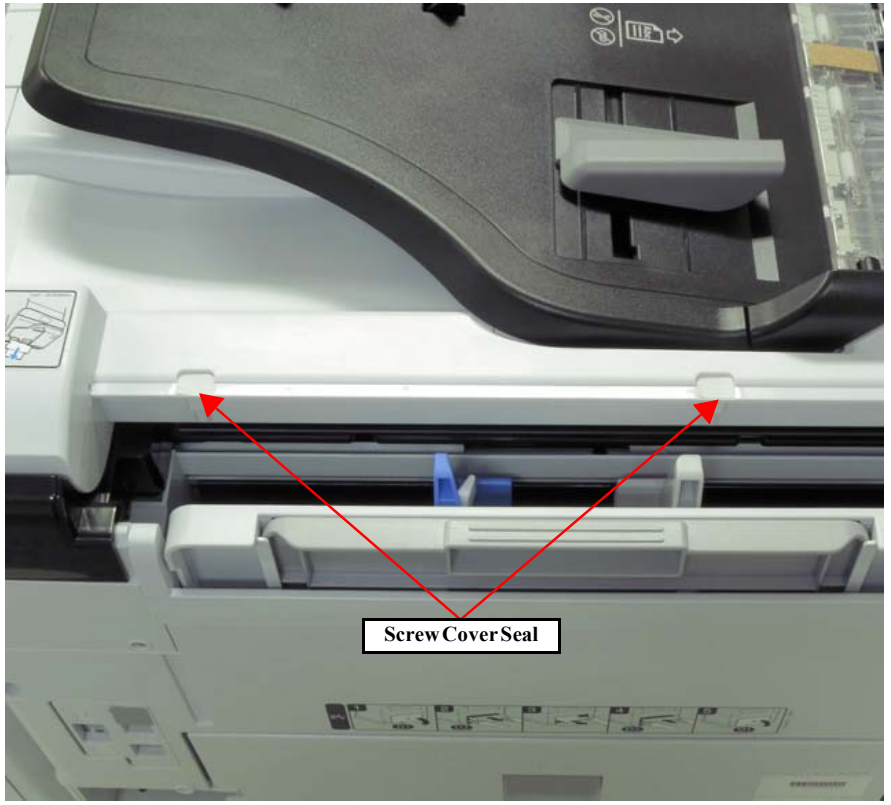
A2	B2	C2	ASF Cover
D2	E2		



1. Disengage the two dowels, then remove the ASF Cover.

A3	B3	C3
D3	E3	

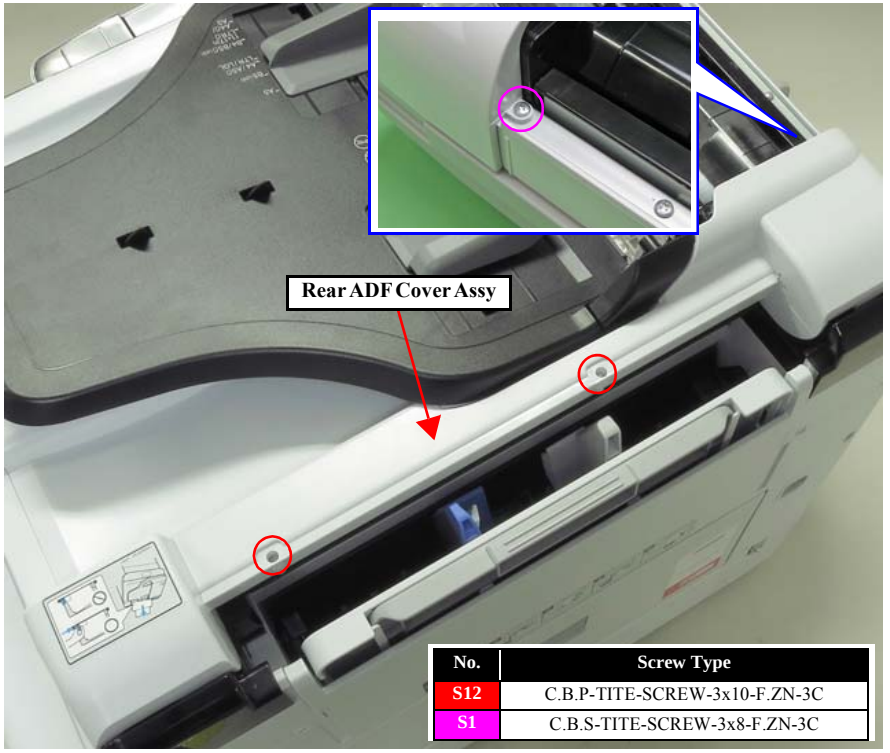
Screw Cover Seal



1. Remove the two Screw Cover Seals.

	B4	C4
D4	E4	

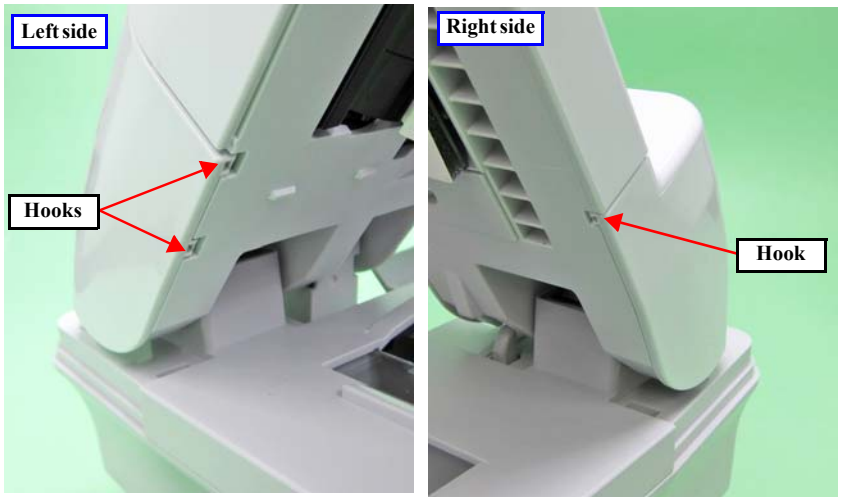
Rear ADF Cover Assy



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S12: ○) and the screw (S1: ○).

Rear ADF Cover Assy



2. Disengage the three hooks, and remove the Rear ADF Cover Assy.

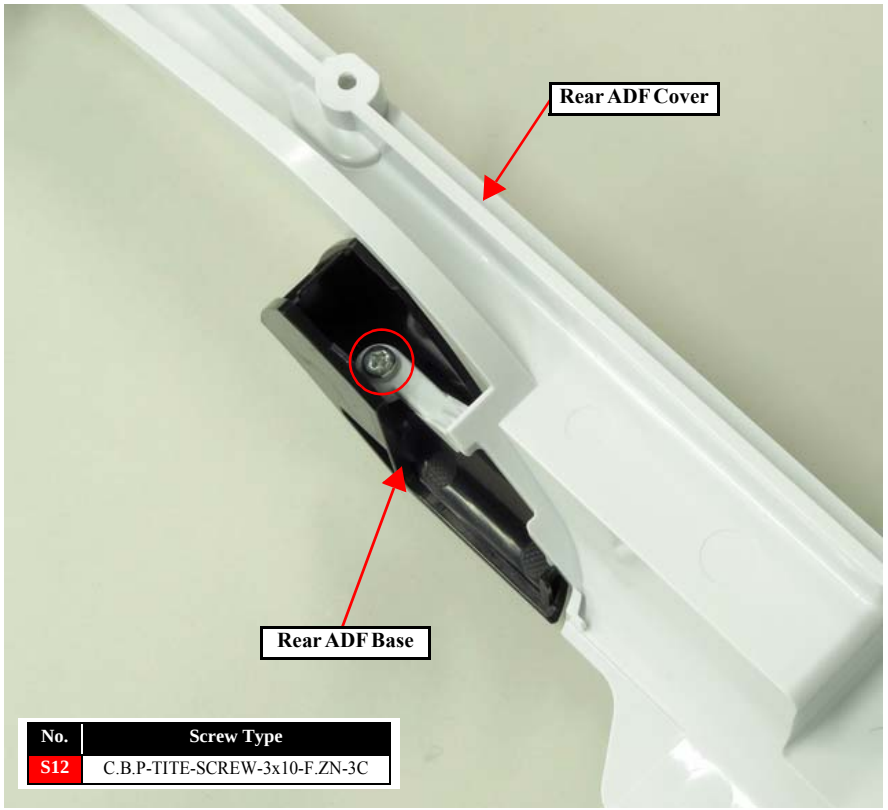
B5

Rear ADF Cover

No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the screw (S12: ○), then remove the Rear ADF Base from the Rear ADF Cover.

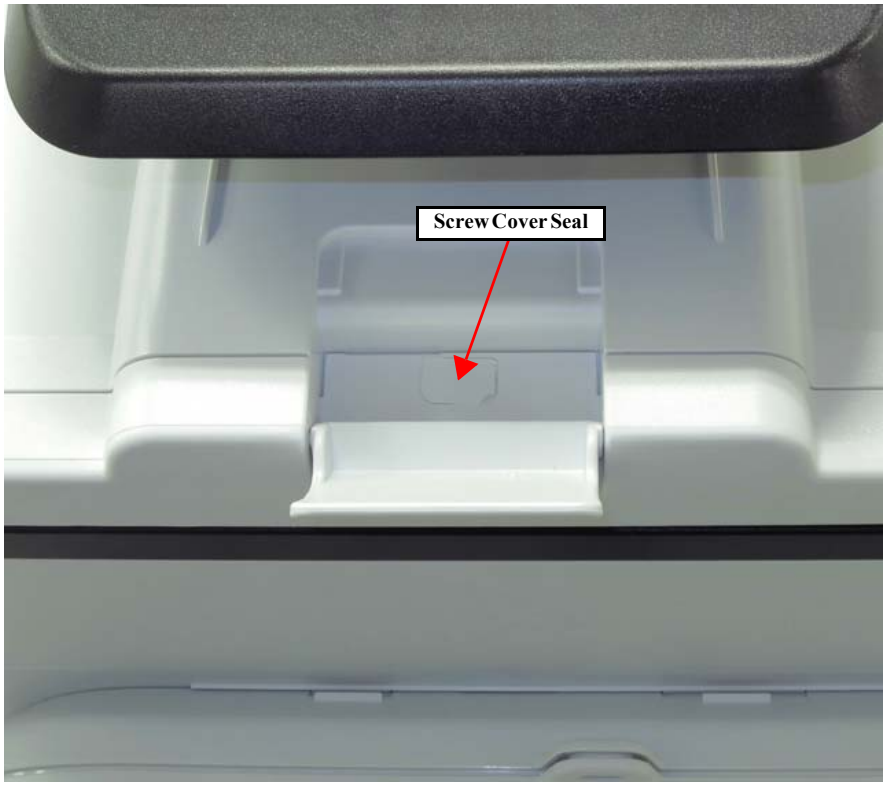
		C5	Rear ADF Base



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

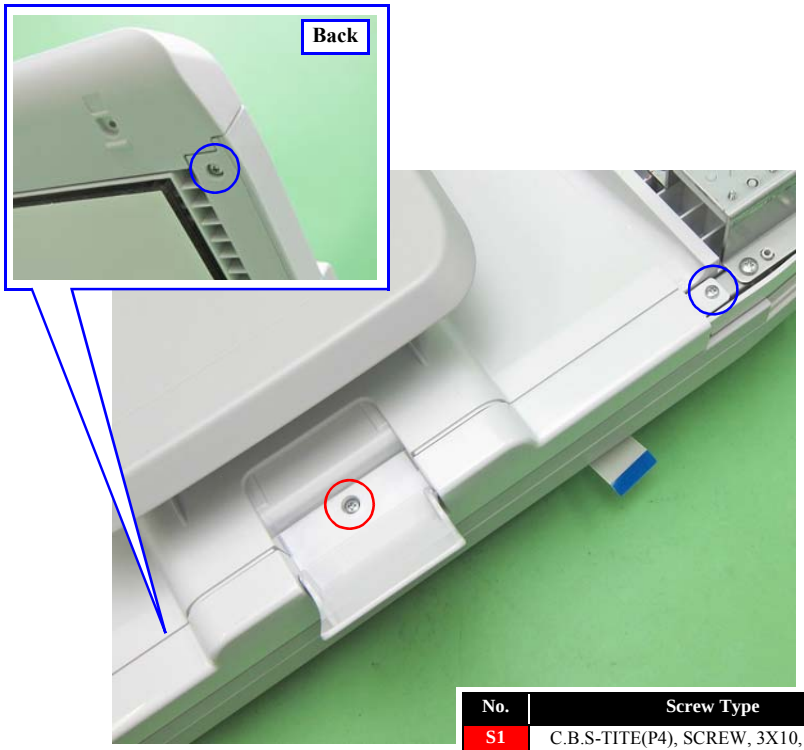
1. Remove the screw (S12: ○), then remove the Rear ADF Base from the Rear ADF Cover.

			Screw Cover Seal
	D5	E5	



1. Remove the Screw Cover Seal.

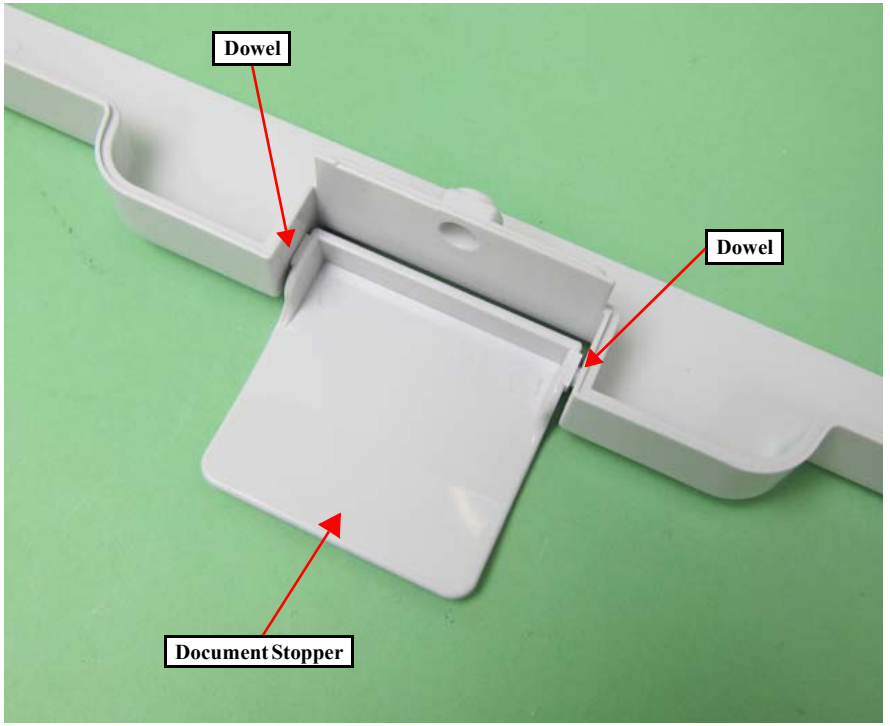
			Right ADF Cover Assy
	D6	E6	



No.	Screw Type
S1	C.B.S-TITE(P4), SCREW, 3X10, F/ZN-3C
S13	C.SHOULDER S-TITE, SCREW, 3X5

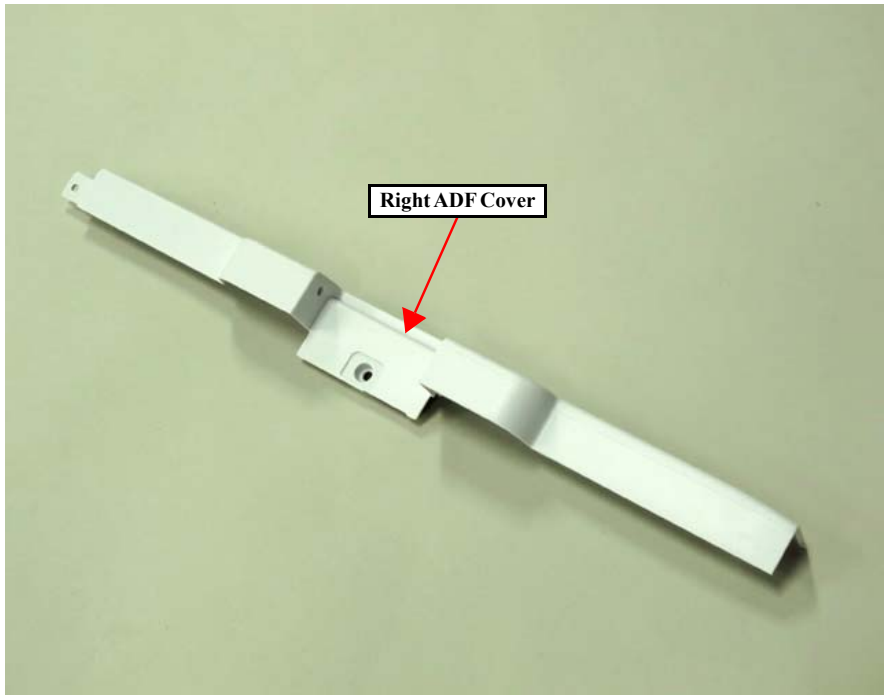
1. Remove the two screws (S1: ○) and the screw (S13: ○), then remove the Right ADF Cover Assy.

			Document Stopper
	D7	E7	



1. Disengage the two dowels, then remove the Document Stopper.

			Right ADF Cover
		E8	

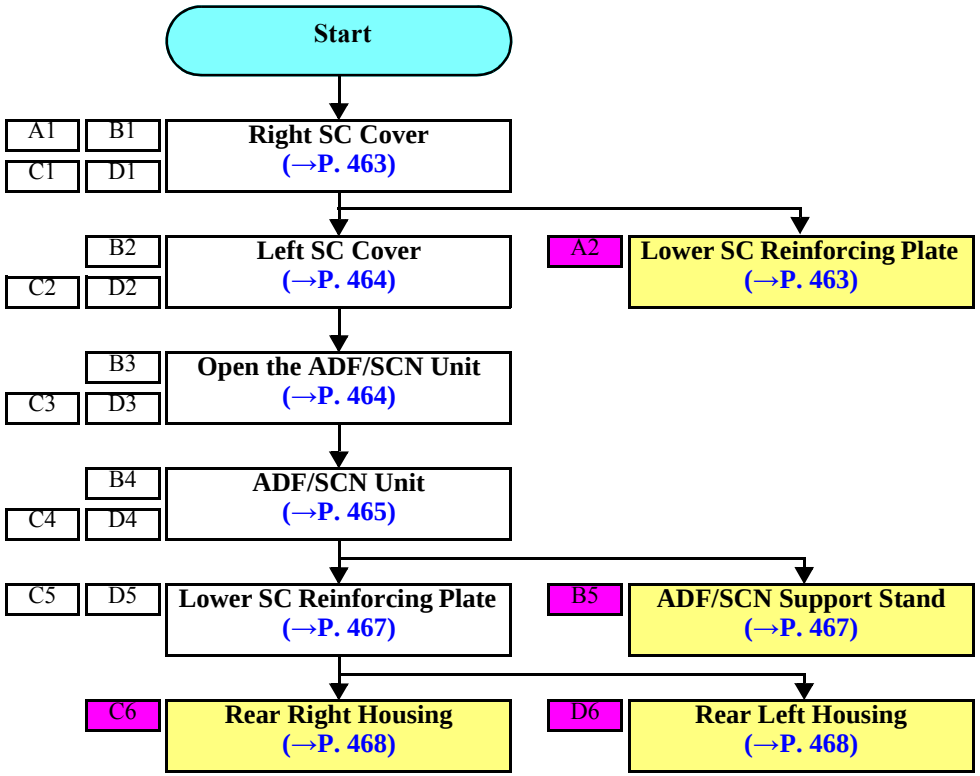


7.4.3.9 ADF/SCN 5

OUTLINE

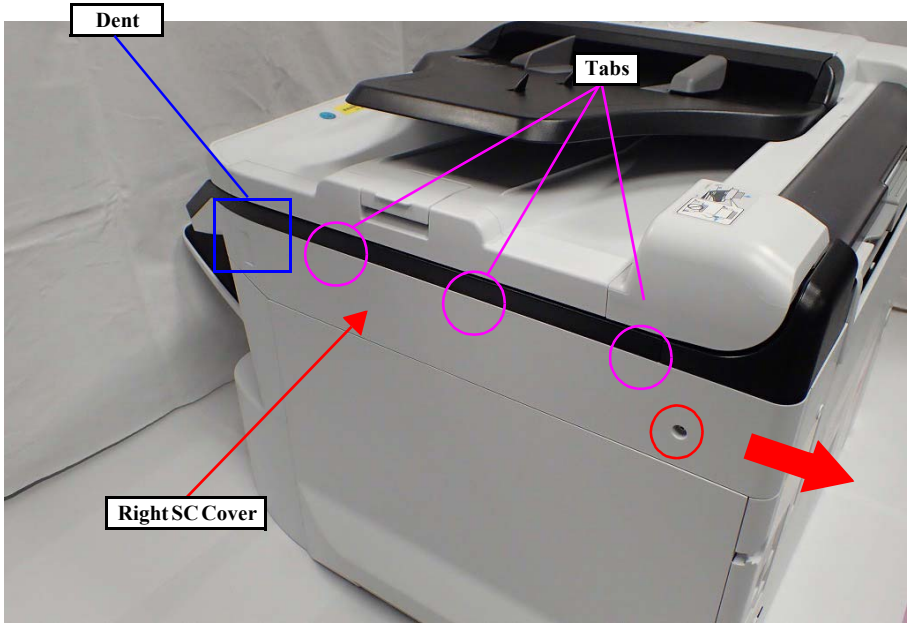
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Lower SC Reinforcing Plate	A	49 sec	---	49 sec
ADF/SCN Support Stand	B	2 min 40 sec	---	2 min 40 sec
Rear Right Housing	C	2 min 40 sec	---	2 min 40 sec
Rear Left Housing	D	3 min 33 sec	---	3 min 33 sec

DISASSEMBLY FLOWCHART



A1	B1	C1
D1		

Right SC Cover

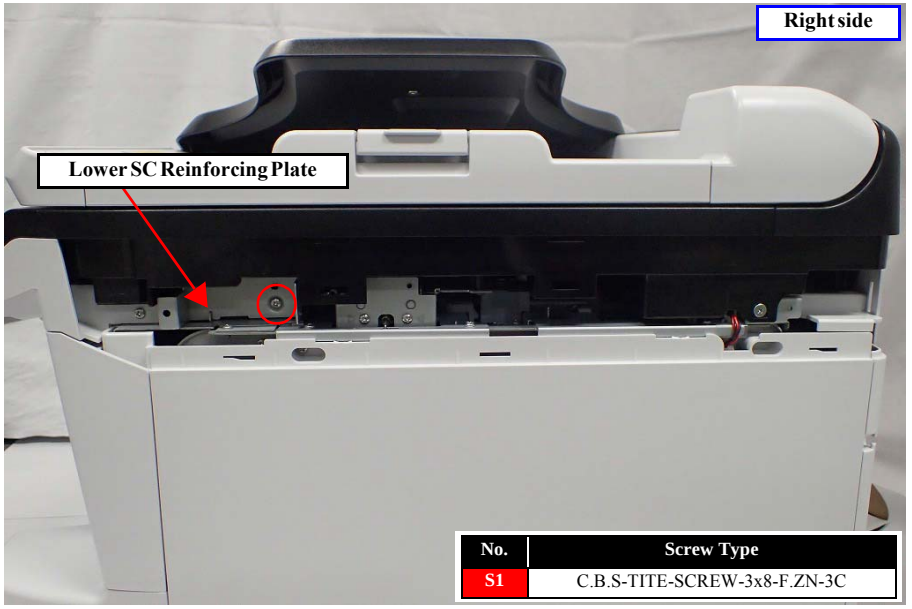


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2		

Lower SC Reinforcing Plate

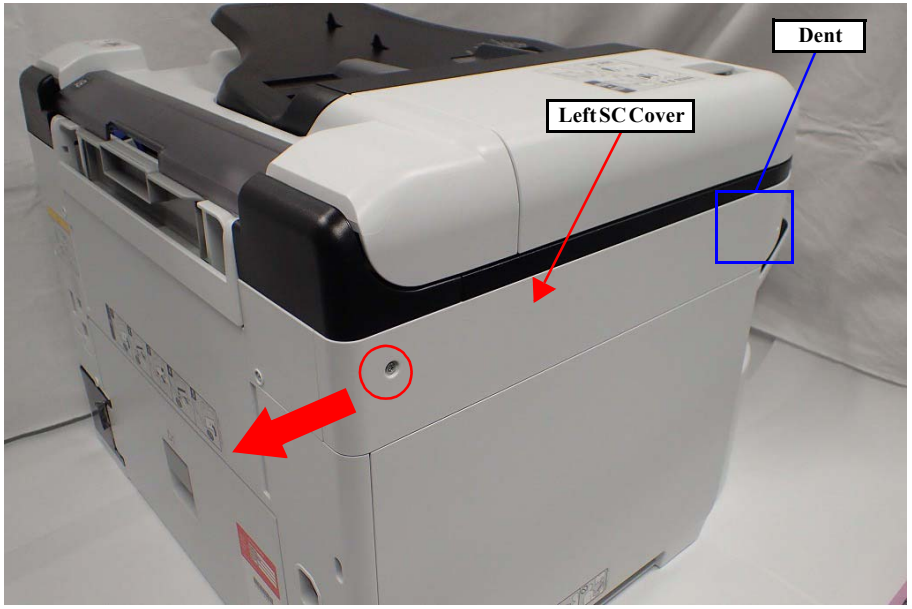


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1:○), and remove the Lower SC Reinforcing Plate.

	B2	C2
D2		

Left SC Cover

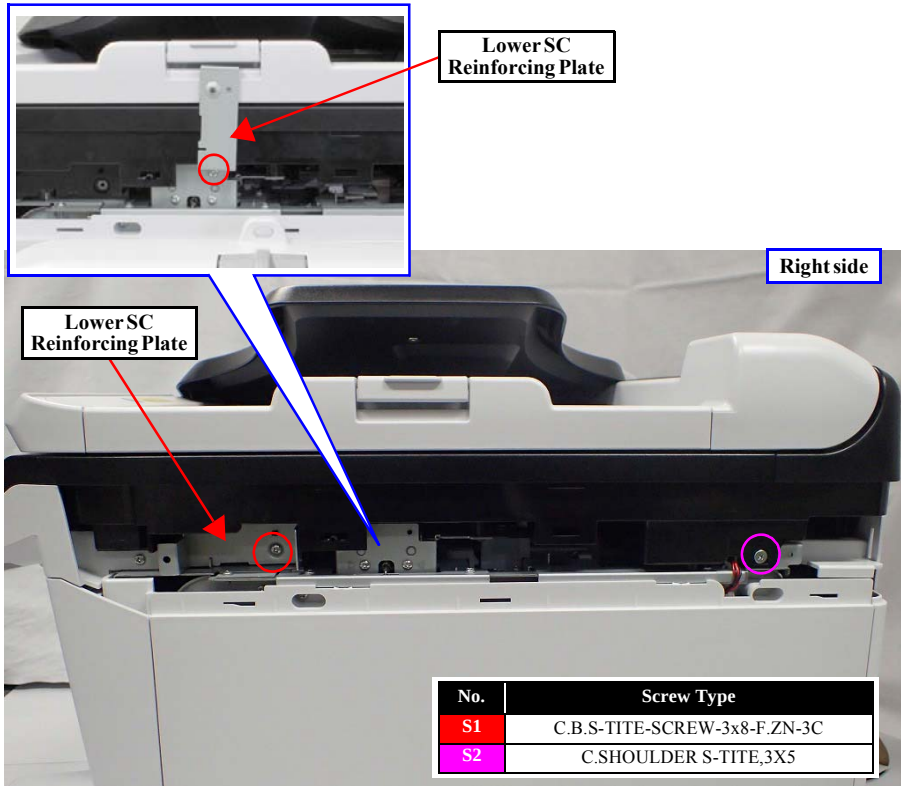


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

	B3	C3
D3		

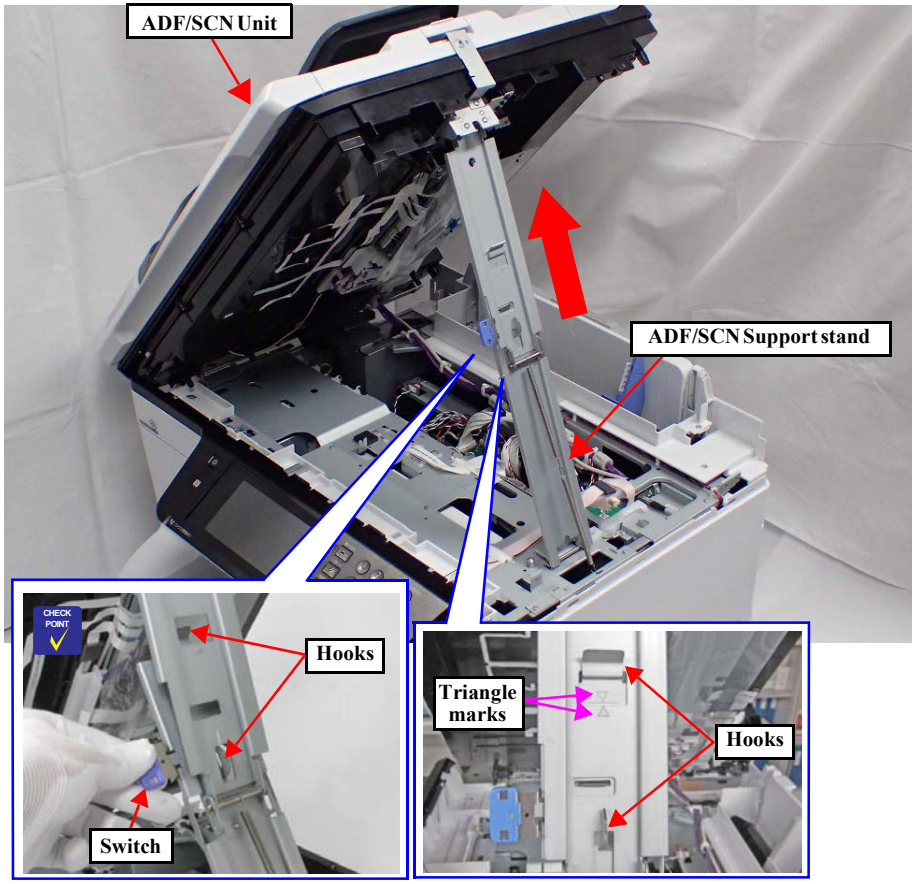
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



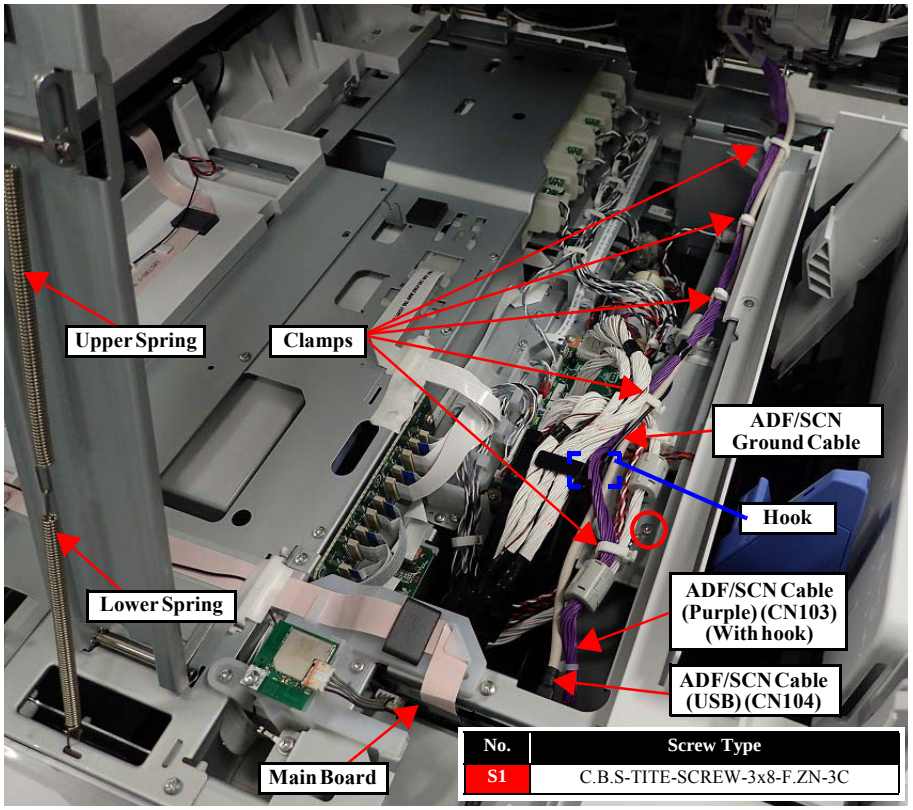
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

	B4	C4
D4		

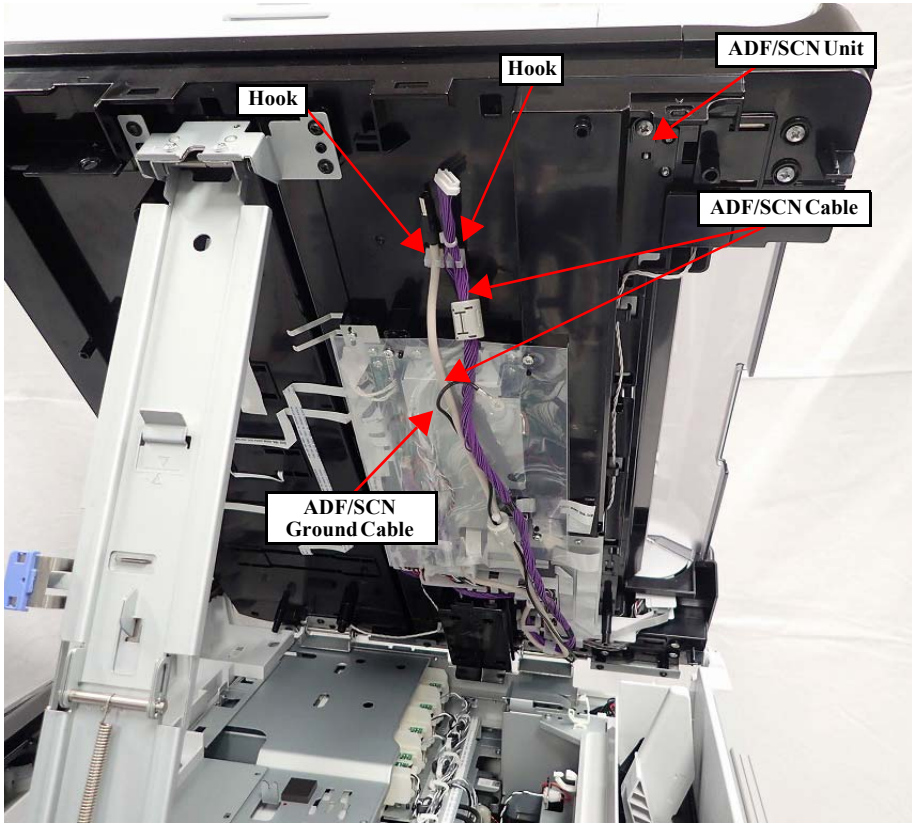
ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Separate the upper spring and lower spring.
2. Disconnect the following cables from the connector of the Main Board.
   - ADF/SCN Cable (USB) (CN104)
   - ADF/SCN Cable (Purple) (CN103) (With hook)
3. Remove one screw (S1: ○), and release the ADF/SCN ground cable.
4. Release the ADF/SCN cables and ADF/SCN ground cable from the five clamps.
5. Release the ADF/SCN cable (Purple) from hook of the Relay cable cover.

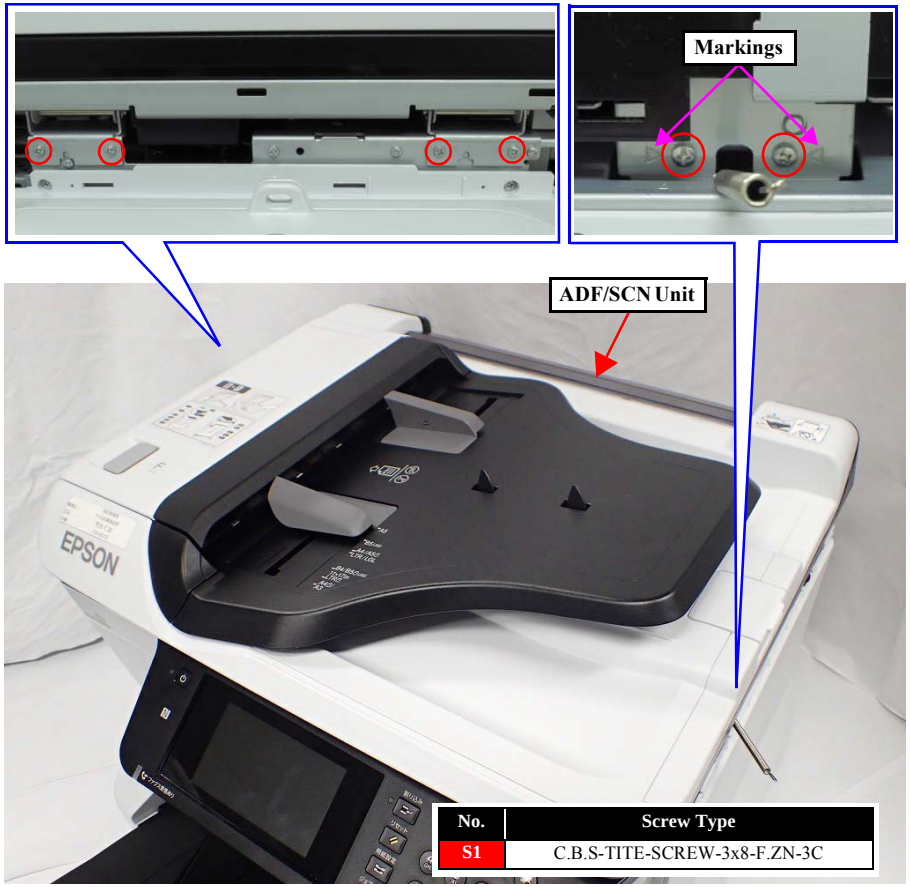
ADF/SCN Unit



6. Wrap the ADF/SCN ground cable around the ADF/SCN cable (Purple).
7. Fix the ADF/SCN Cables (ADF/SCN ground cable is wrapped condition) to two hooks.
8. Close the ADF/SCN Unit.

REASSEMBLY If the upper spring and the lower spring were separated, even if the ADF / SCN unit is fully extended, the support stand will not automatically open.

ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

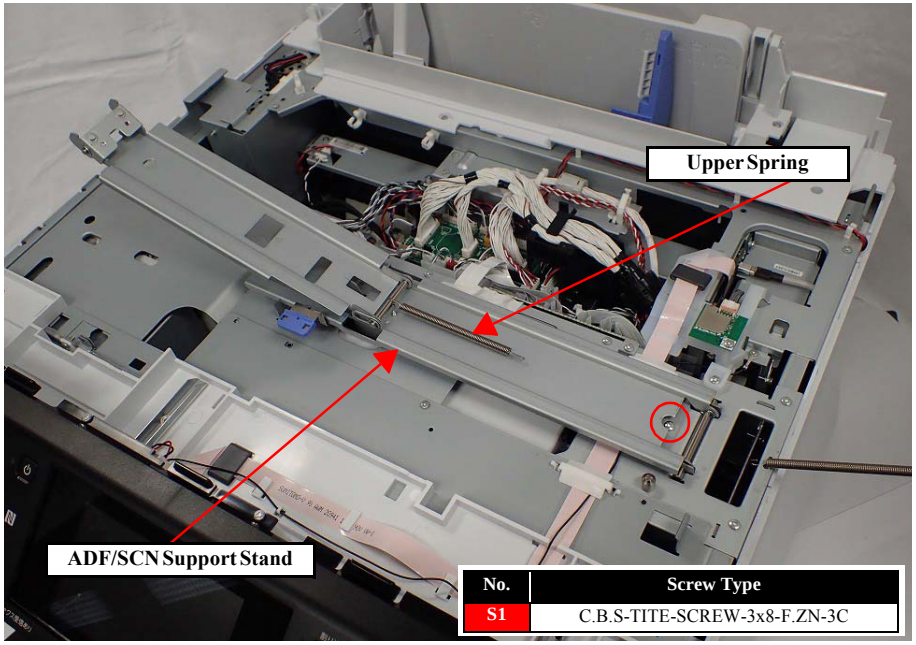
9. Remove the six screws (S1: ○).

CHECK POINT The screw to be removed is indicated by a triangle mark.

10. Pull the ADF/SCN Unit upward to remove it.

	B5	

ADF/SCN Support Stand

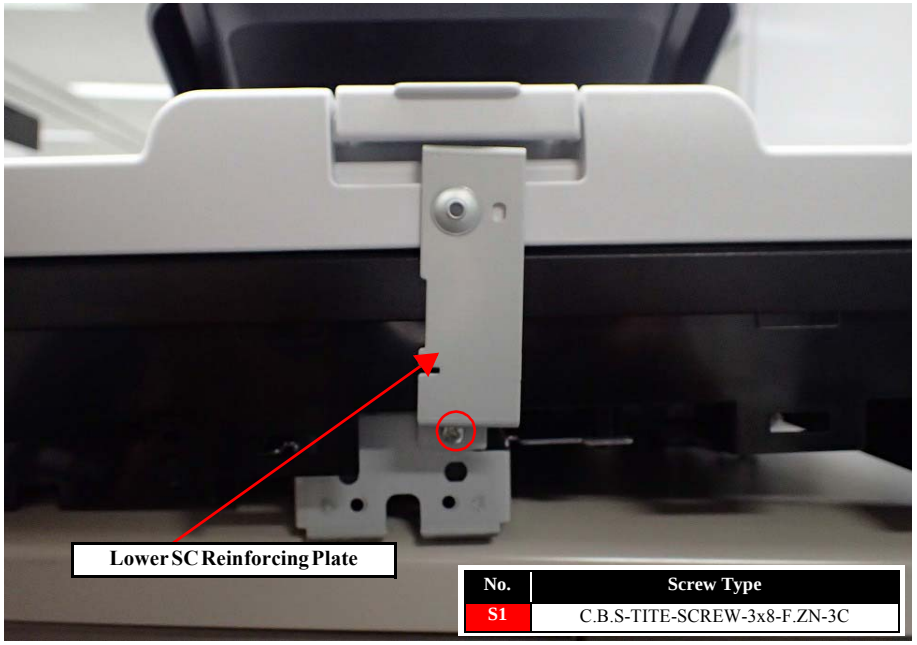


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the ADF/SCN Support Stand like the figure.
2. Remove the Upper Spring.
3. Remove one screw (S1:○), and remove the ADF/SCN Support Stand.

		C5
D5		

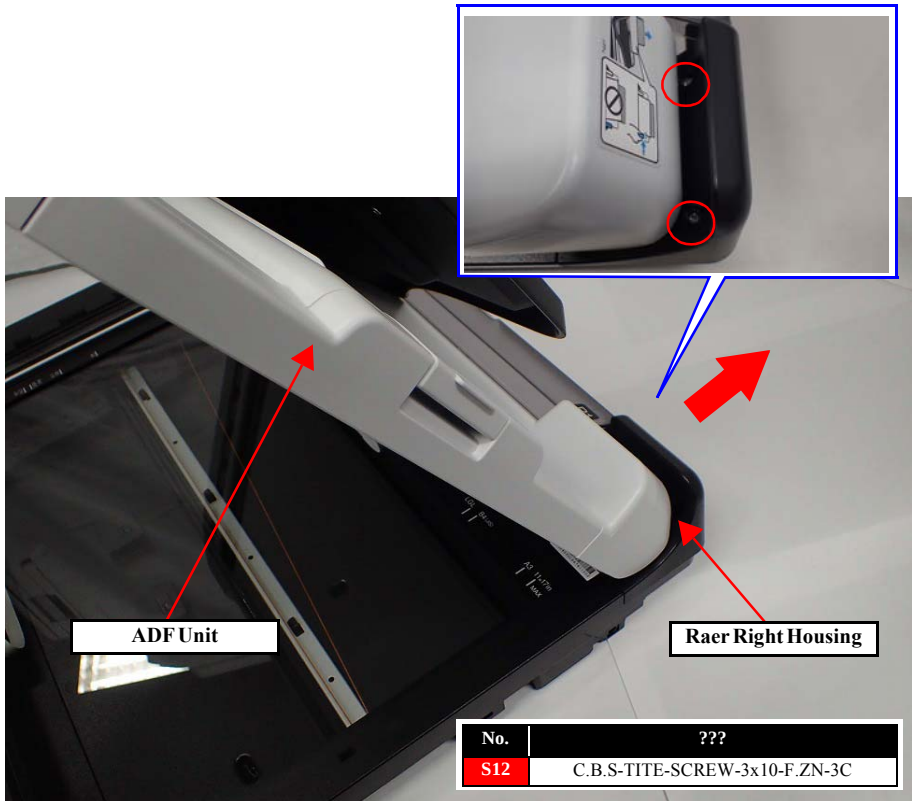
Lower SC Reinforcing Plate



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1:○), and remove the Lower SC Reinforcing Plate.

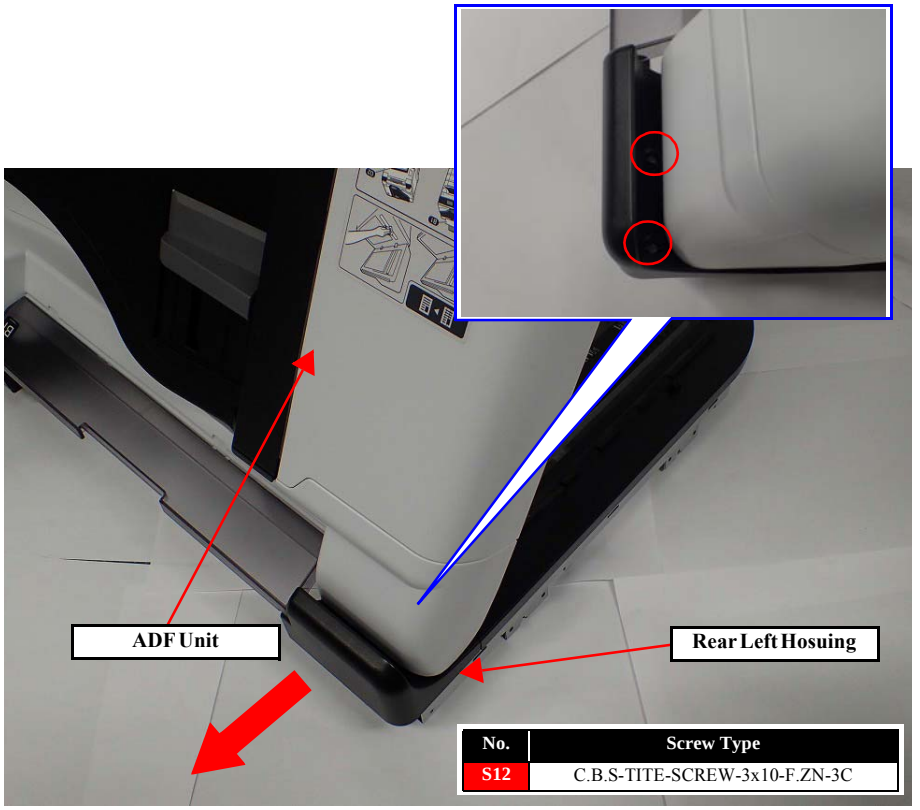
		C6	Rear Right Housing



No.	???
S12	C.B.S-TITE-SCREW-3x10-F.ZN-3C

1. Open the ADF Unit.
2. Remove two screws (S12:○).
3. Slide the Rear Right Housing to rear side, and remove it.

			Rear Left Housing
D6			



No.	Screw Type
S12	C.B.S-TITE-SCREW-3x10-F.ZN-3C

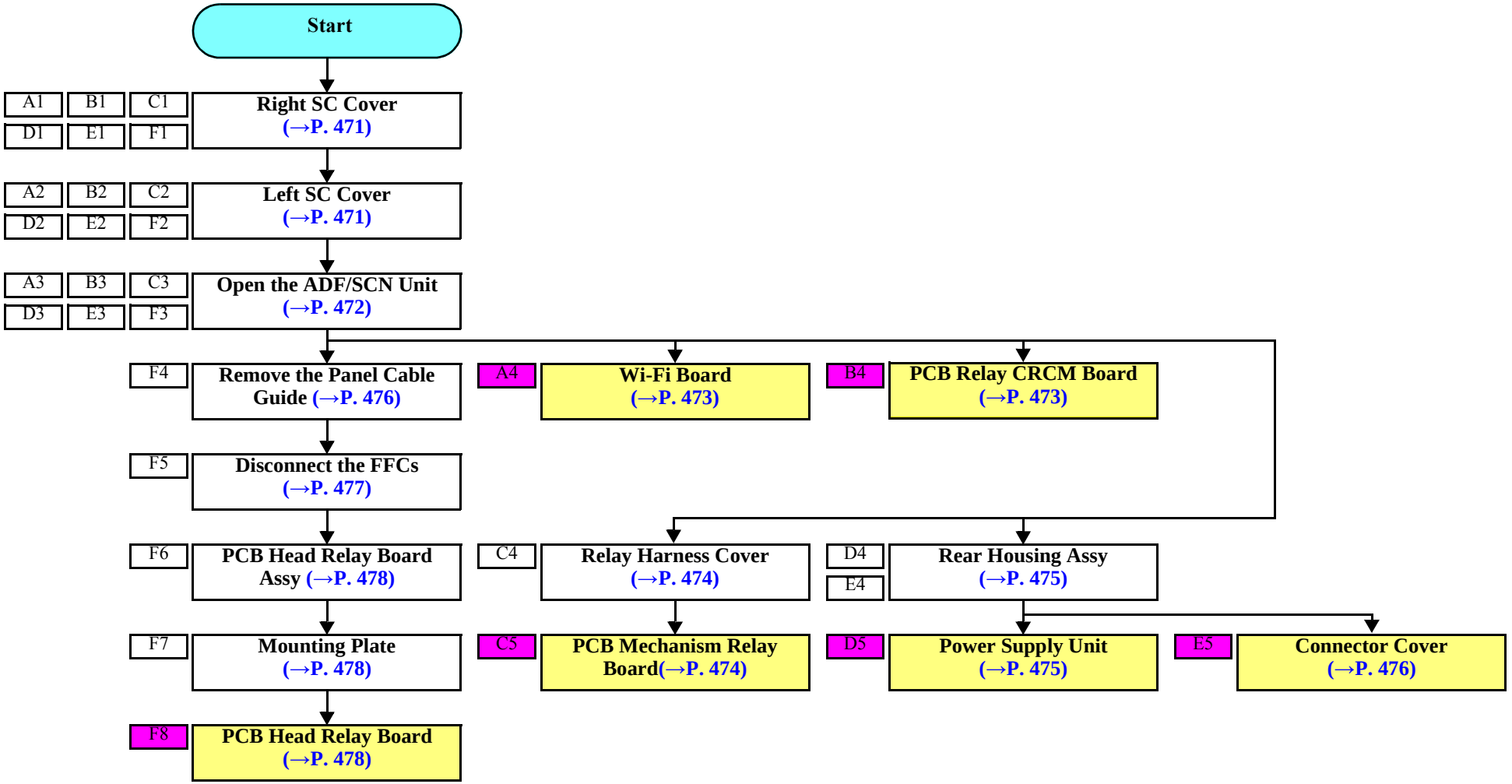
1. Open the ADF Unit.
2. Remove two screws (S12:○).
3. Slide the Rear Left Housing to rear side, and remove it.

7.4.3.10 Electric Components 1

OUTLINE

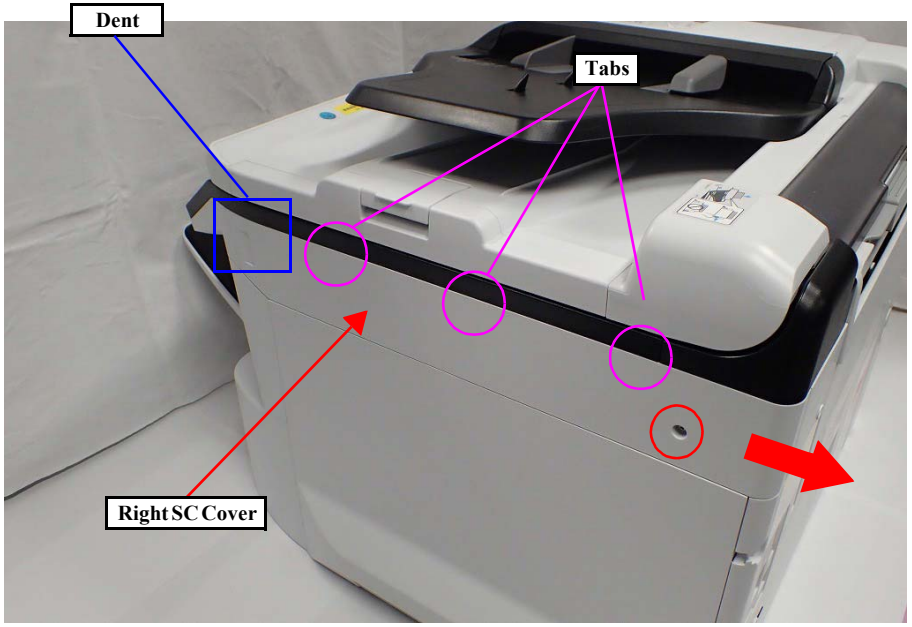
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Wi-Fi Board	A	3 min 8 sec	---	3 min 8 sec
PCB Relay CRCM Board	B	5 min 24 sec	---	5 min 24 sec
PCB Mechanism Relay Board	C	10 min 3 sec	---	10 min 3 sec
Power Supply Unit	D	6 min 59 sec	3 min 22 sec	10 min 21 sec
Connector Cover	E	5 min 55 sec	---	5 min 55 sec
PCB Head Relay Board	F	5 min 43 sec	---	5 min 43 sec

DISASSEMBLY FLOWCHART



A1	B1	C1
D1	E1	F1

Right SC Cover

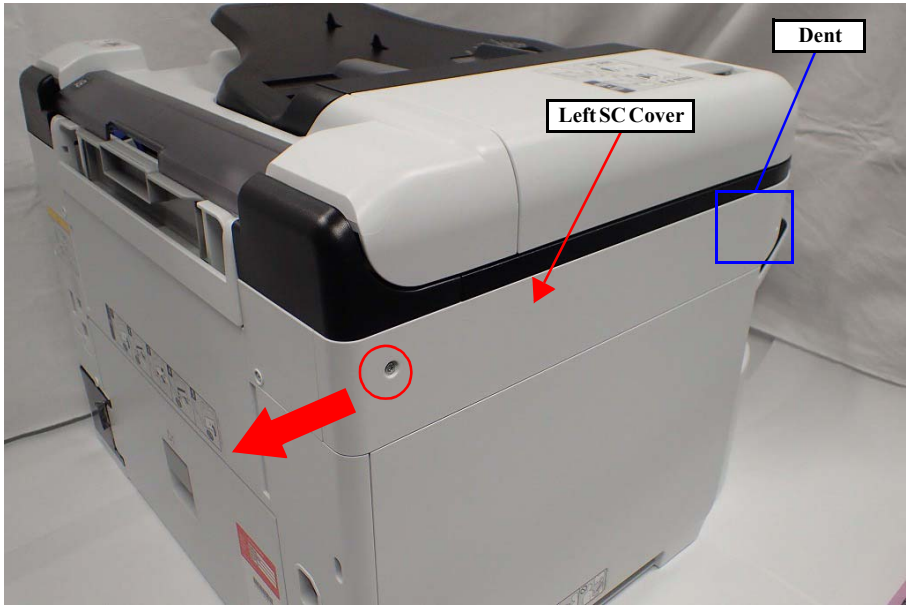


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2	C2
D2	E2	F2

Left SC Cover

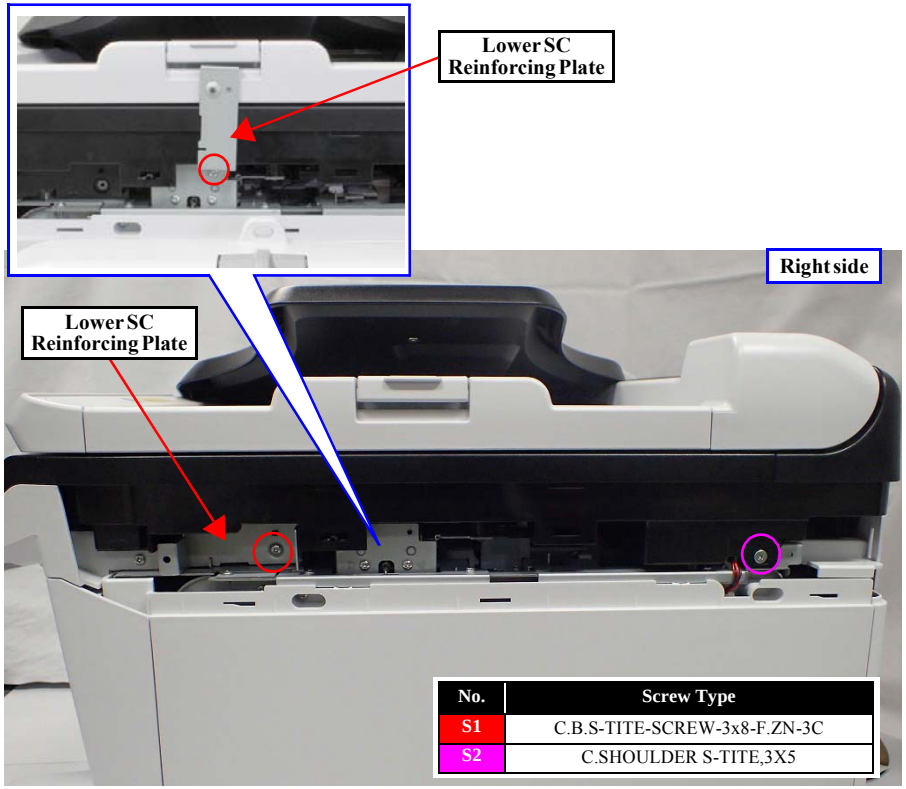


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3	C3
D3	E3	F3

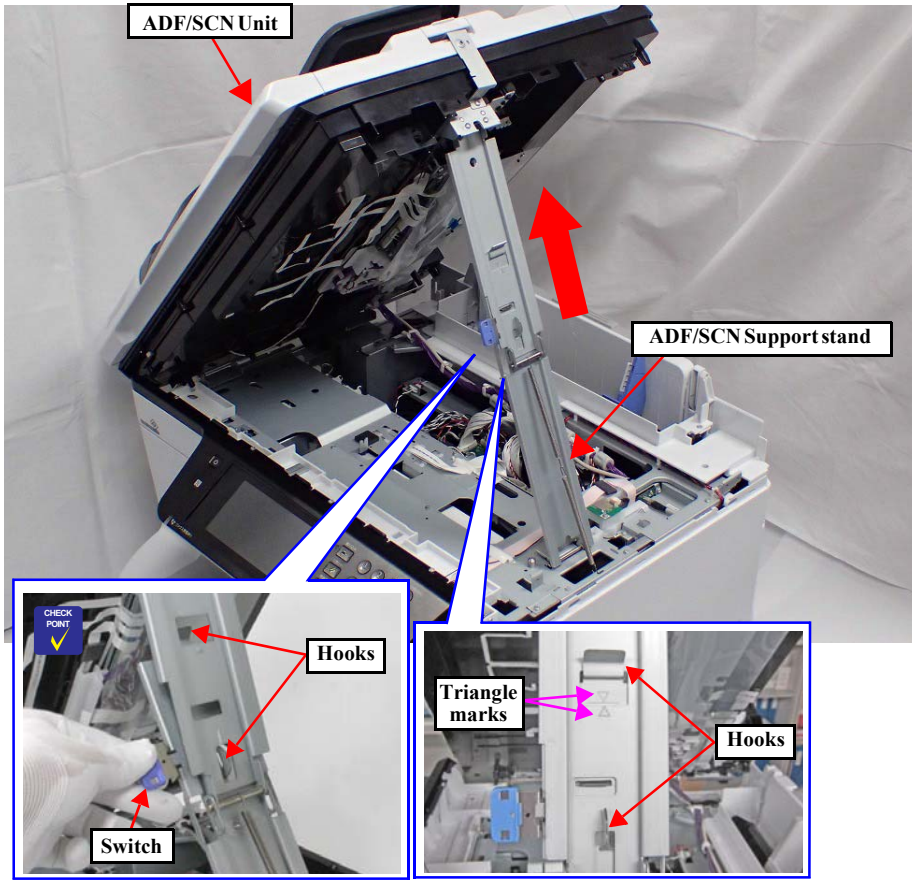
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit

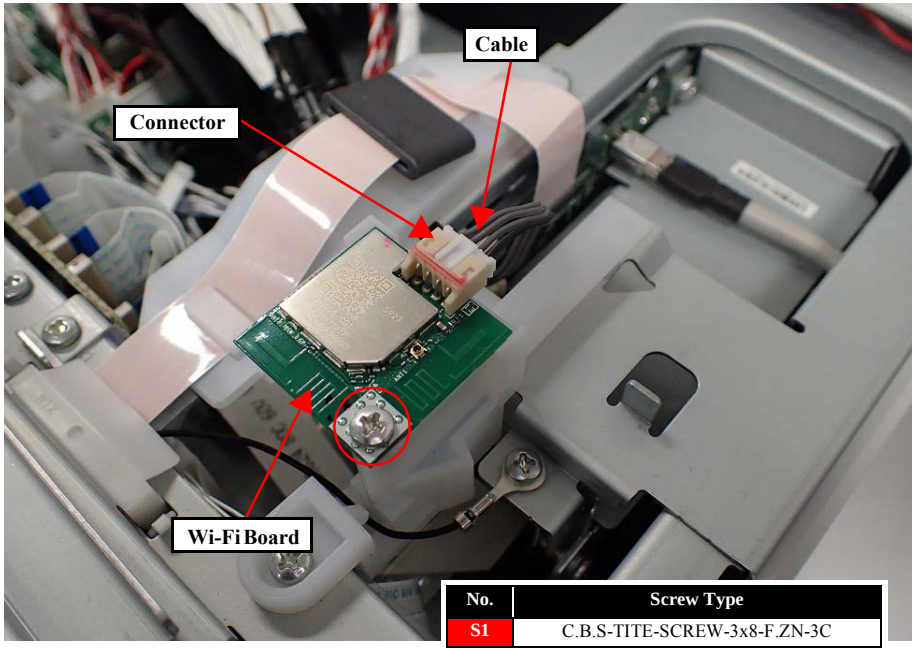


4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

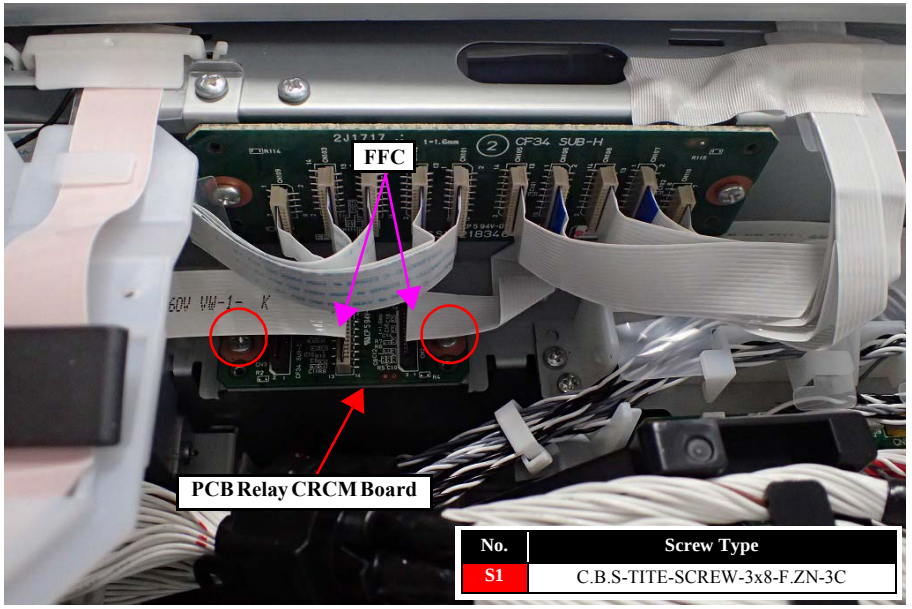
A4			Wi-Fi Board



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the cables from the connector of the Wi-Fi Board.
2. Remove the screw (S1: ○), then remove the Wi-Fi Board.

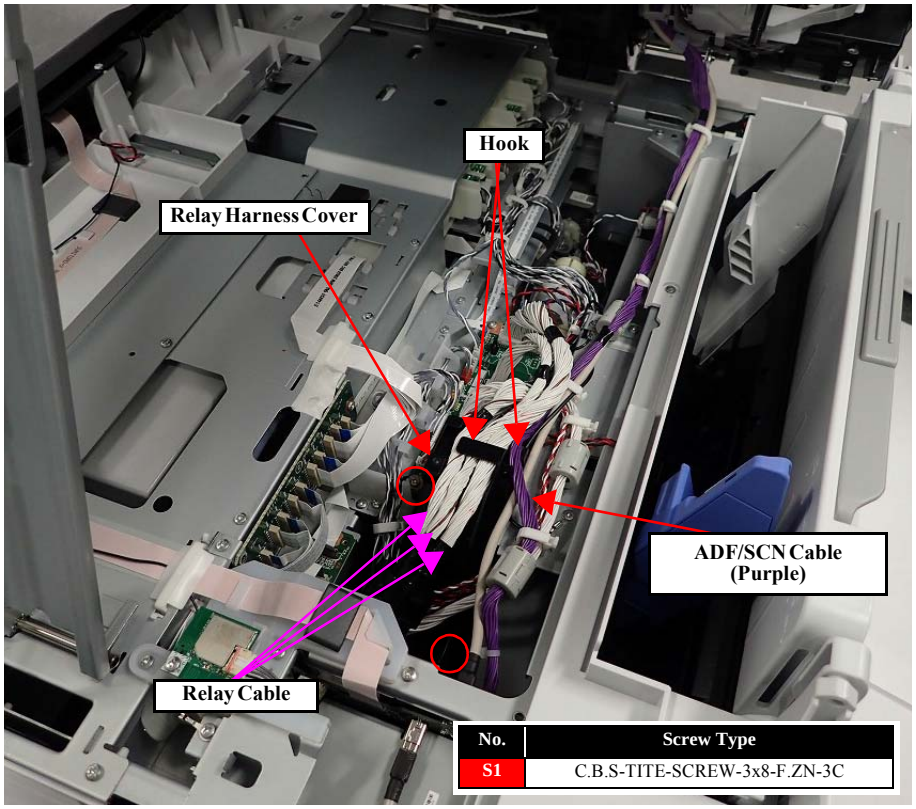
	B4		PCB Relay CRCM Board



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the two FFCs from connector of PCB Relay CRCM Board.
2. Remove two screws (S1:○), and remove the PCB Relay CRCM Board.

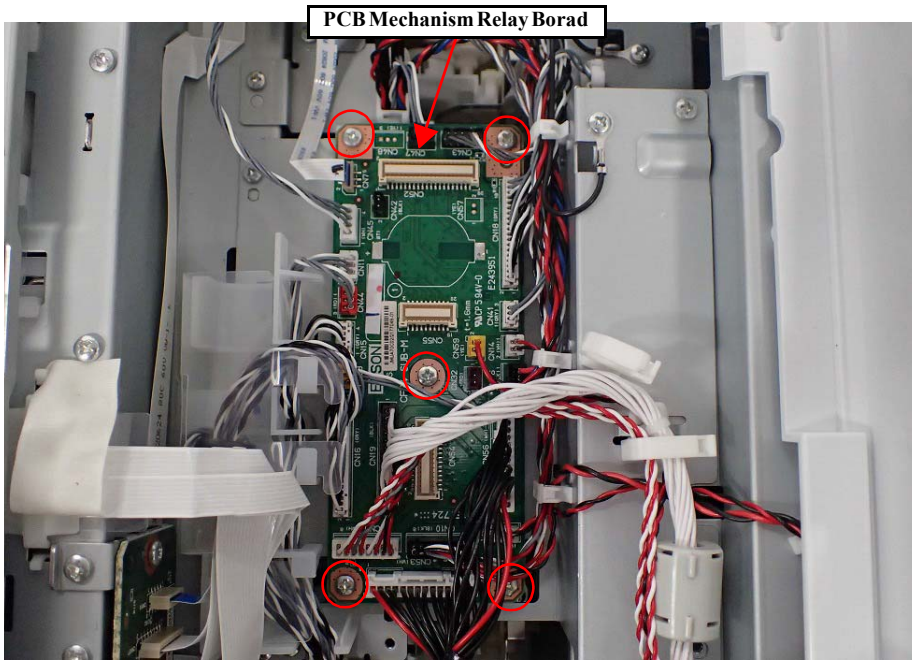
C4 Relay Harness Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Release the ADF/SCN Cable (Purple) from hook of Relay Harness Cover.
2. Release the Relay Cables(CN401, CN402, CN403) from hook of Relay Harness Cover.
3. Remove two screws (S1:○), and remove the Relay Harness Cover.

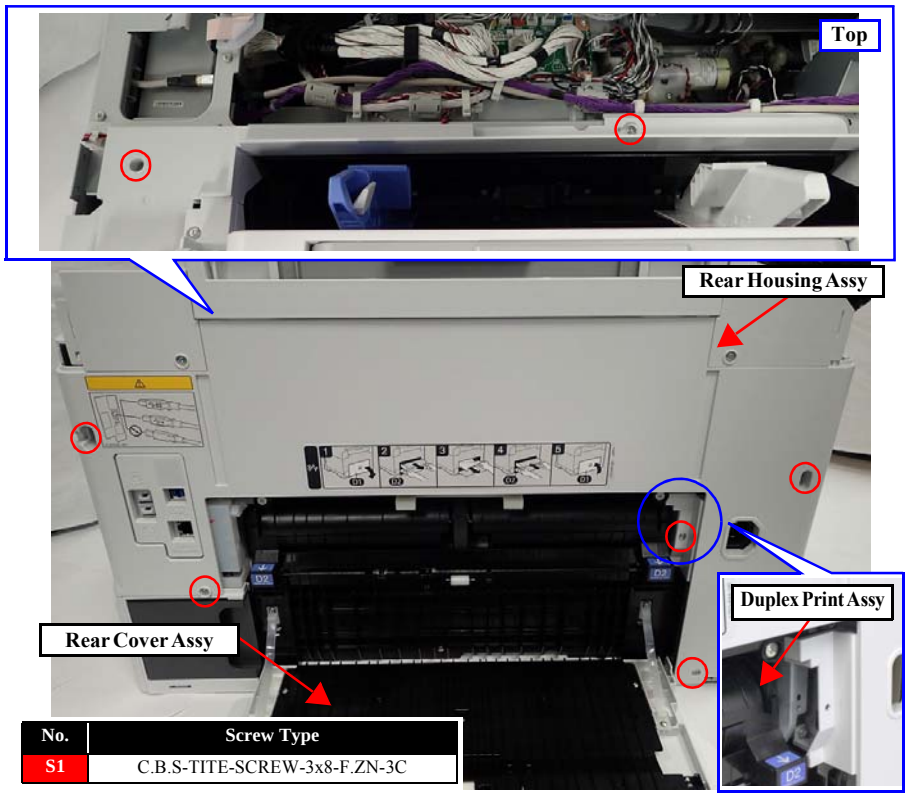
C5 PCB Mechanism Relay Board



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the All Cables and FFCs from the PCB Mechanism Relay Board.
2. Remove five screws (S1:○), and remove the PCB Mechanism Relay Board.

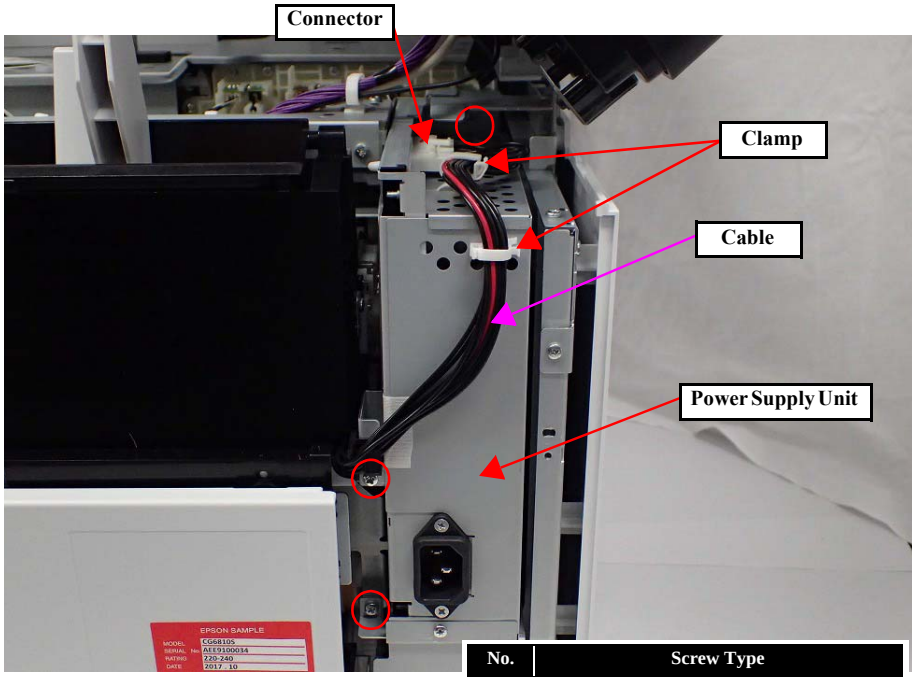
			Rear Housing Assy
D4	E4		



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

			Power Supply Unit
D5			



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

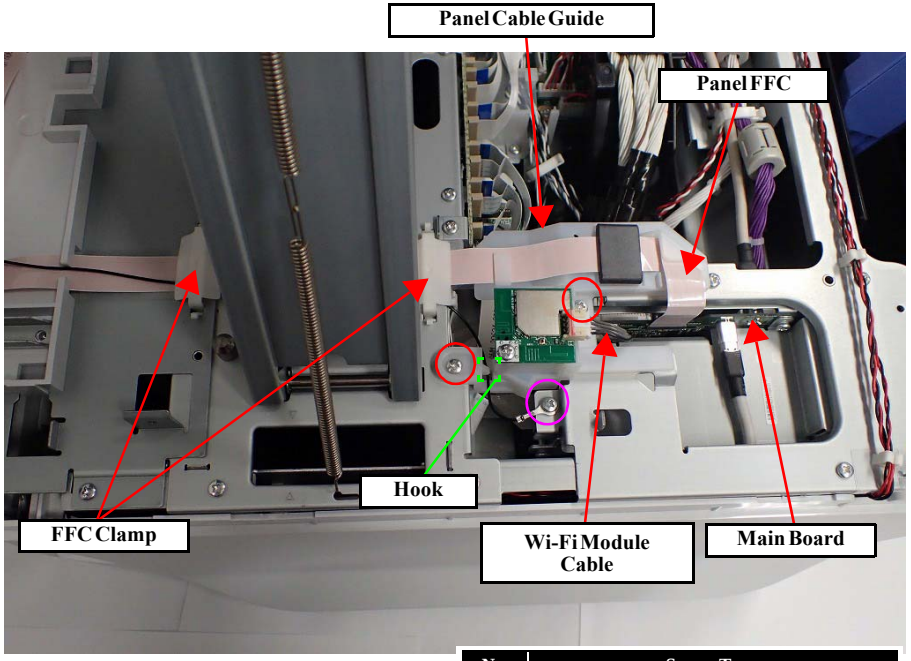
1. Release the Cable from two clamps.
2. Disconnect the cable from connector of Power Supply Unit.
3. Remove three screws (S1:○), and remove the Power Supply Unit.

E5 Connector Cover

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Connector Cover.

F4 Remove the Panel Cable Guide

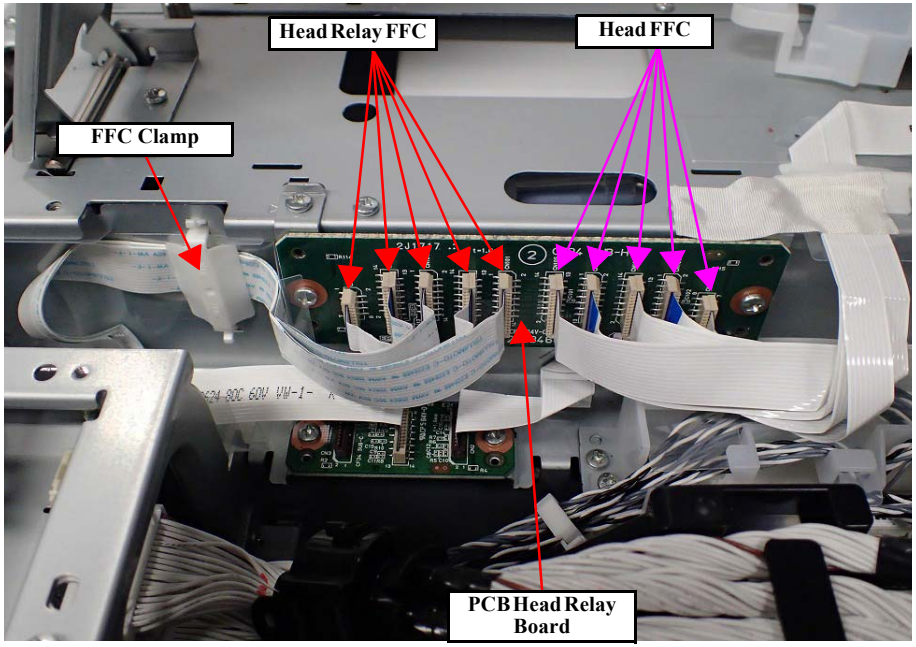


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the Panel FFC and Wi-Fi Module Cable from Main Board.
2. Remove the two FFC Clamps.
3. Remove one screw (S1:○), and release the Panel Ground Cable (2) from hook of the Panel Cable Guide.
4. Remove two screws (S1:○), and remove the Panel Cable Guide.

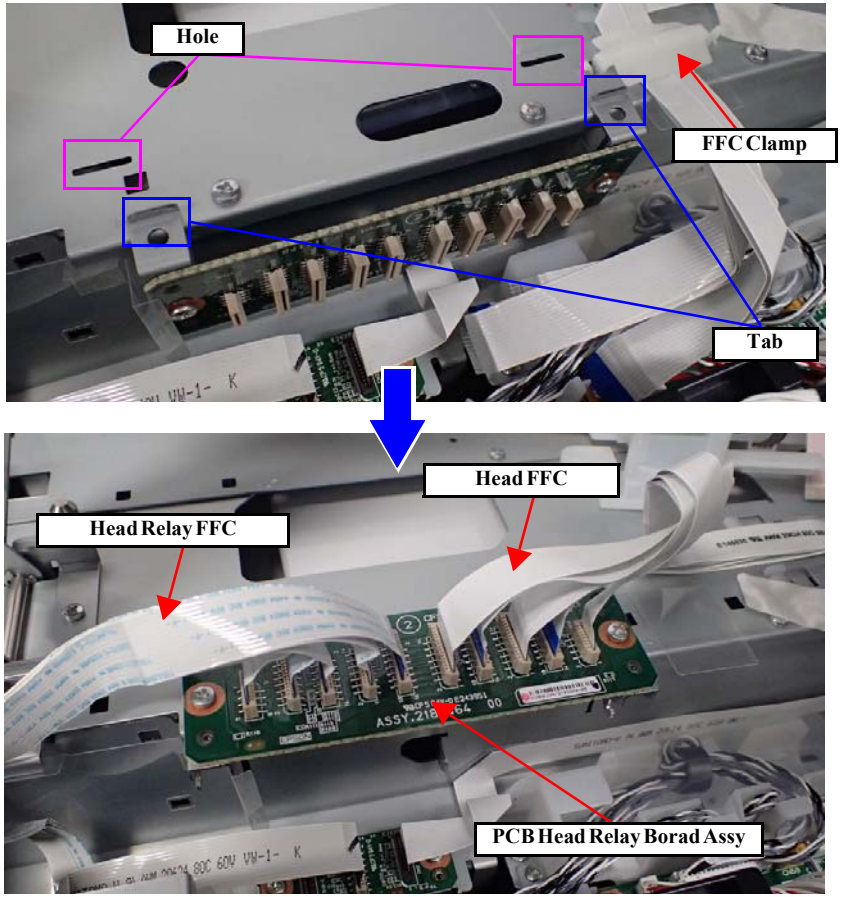
		F5

Disconnect the FFCs



1. Remove the FFC Clamp.
2. Disconnect the five Head FFCs and five Head Relay FFCs from PCB Head Relay Board.

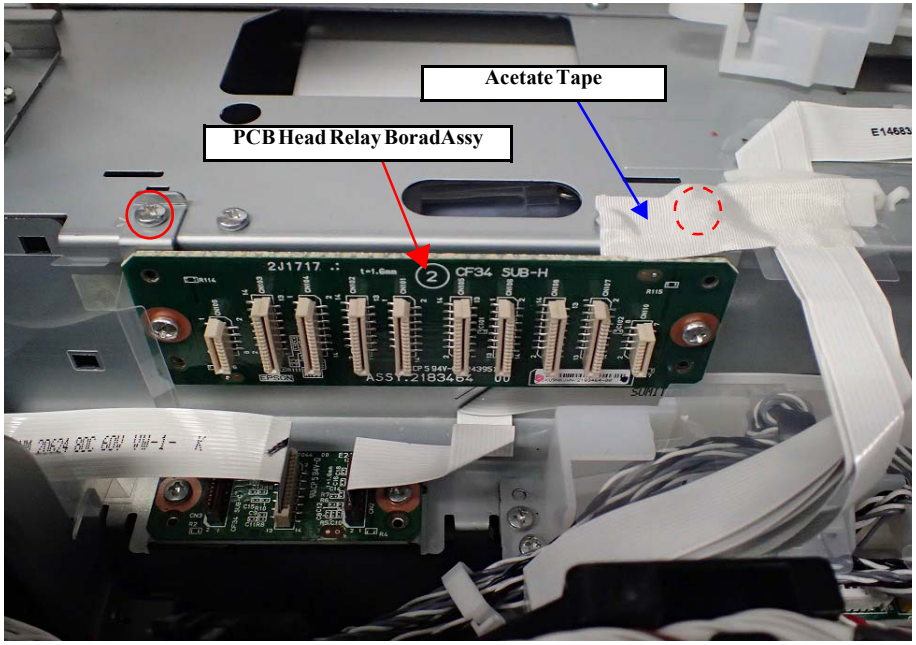
Disconnect the FFC



REASSEMBLY

Connect the Head FFCs and Head Relay FFCs by the following procedure.
1. Remove the FFC Clamp.
2. Insert the two tabs of the Frame of the relay Board Assy into the holes on the frame.
3. Connect thehead relay FFC. (Take care not to connect obliquely.)
4. Install the FFC Clamp.

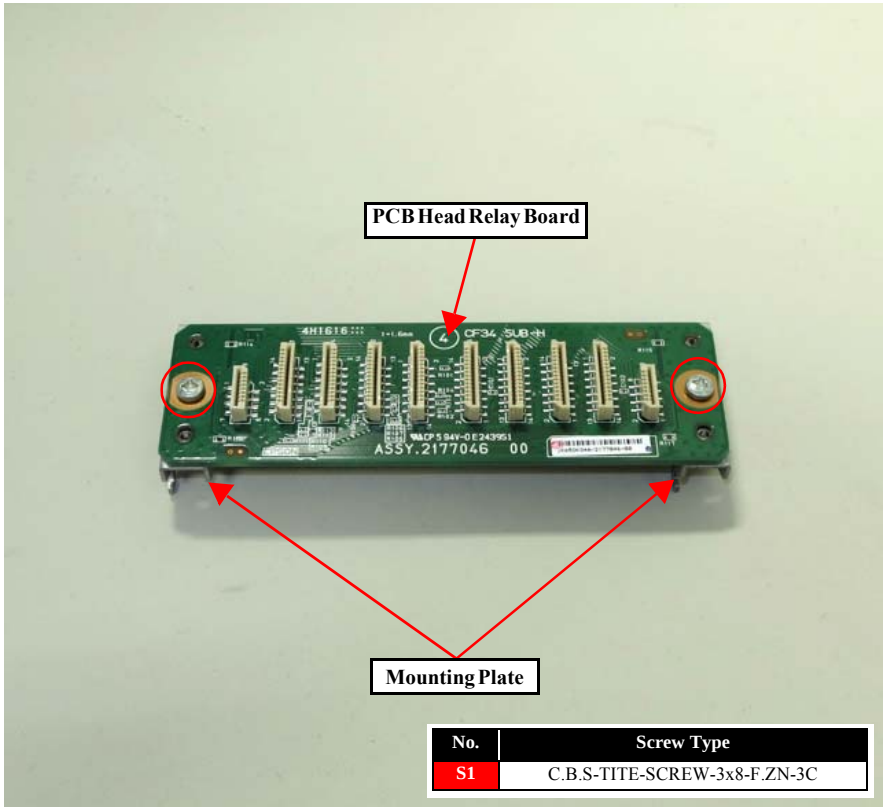
			PCB Head Relay Board Assy
		F6	



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the Acetate Tape
2. Remove two screws (S1:○), and remove the PCB Head Relay Borad Assy.

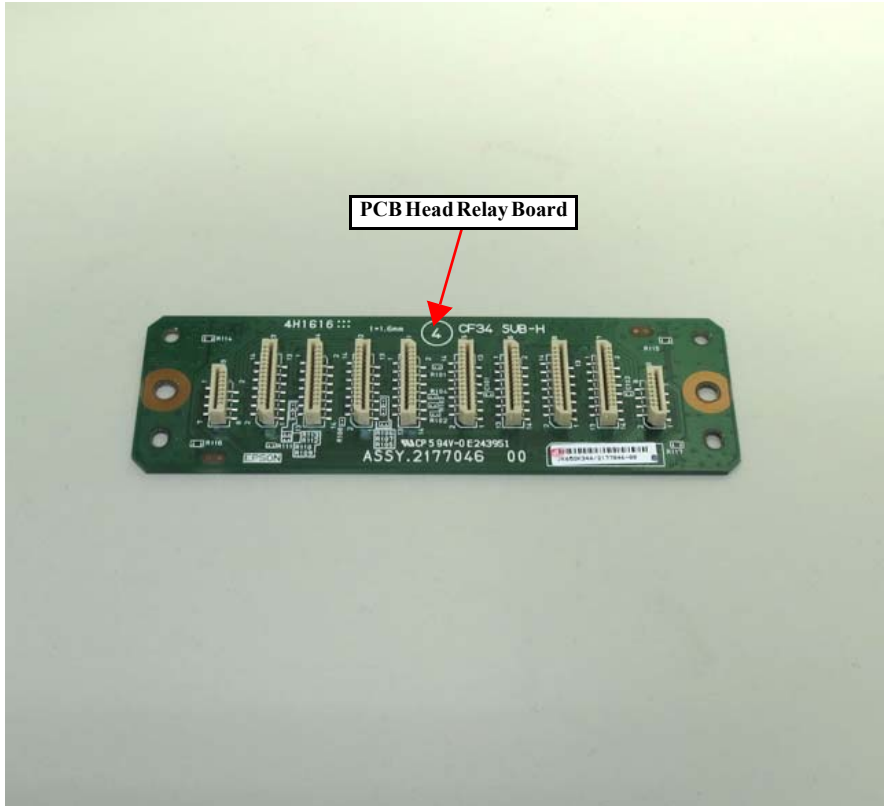
			Mounting Plate
		F7	



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the two Mounting Plates from the PCB Head Relay Board.

			PCB Head Relay Board
		F8	

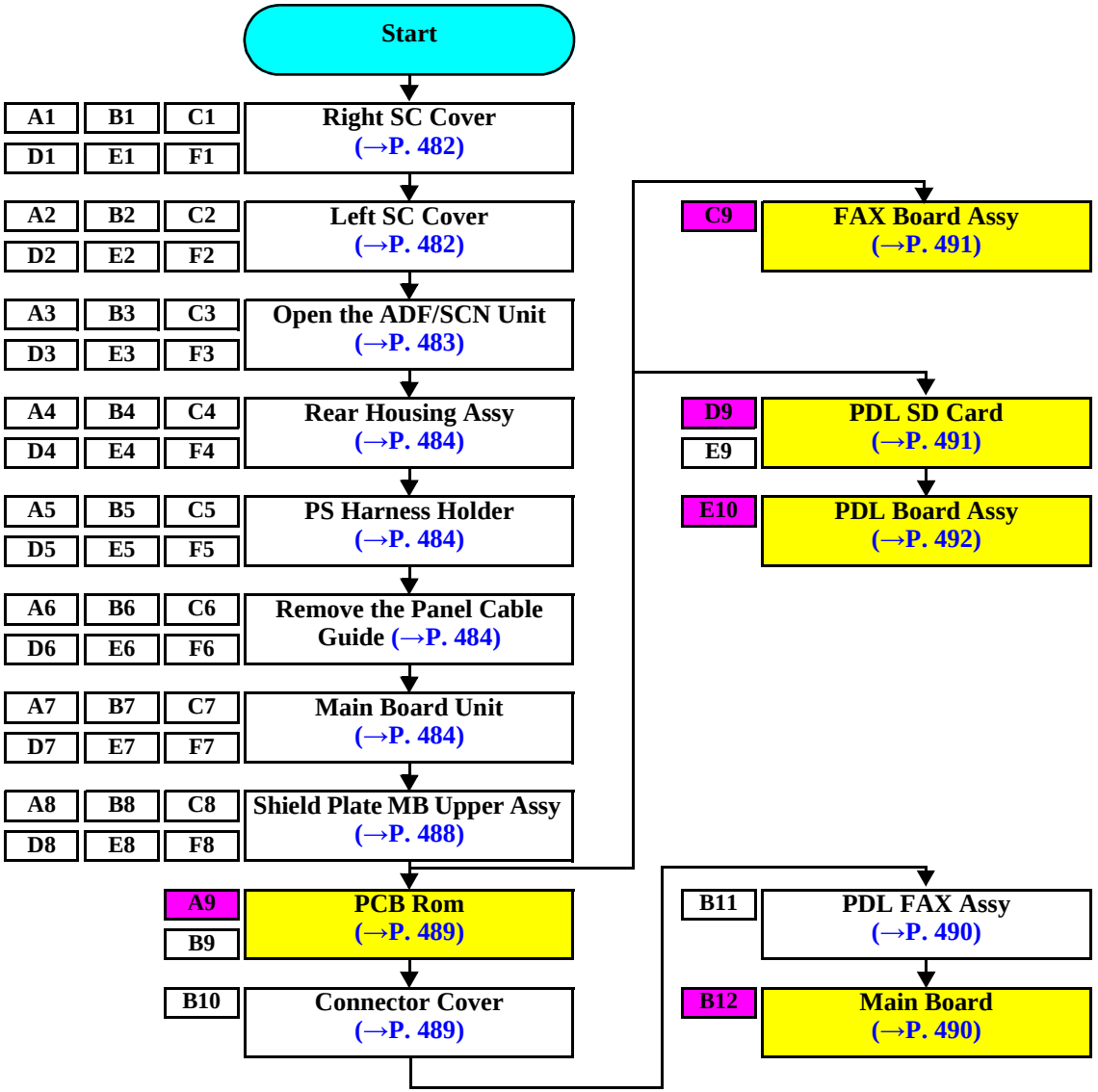


7.4.3.11 Electric Components 2

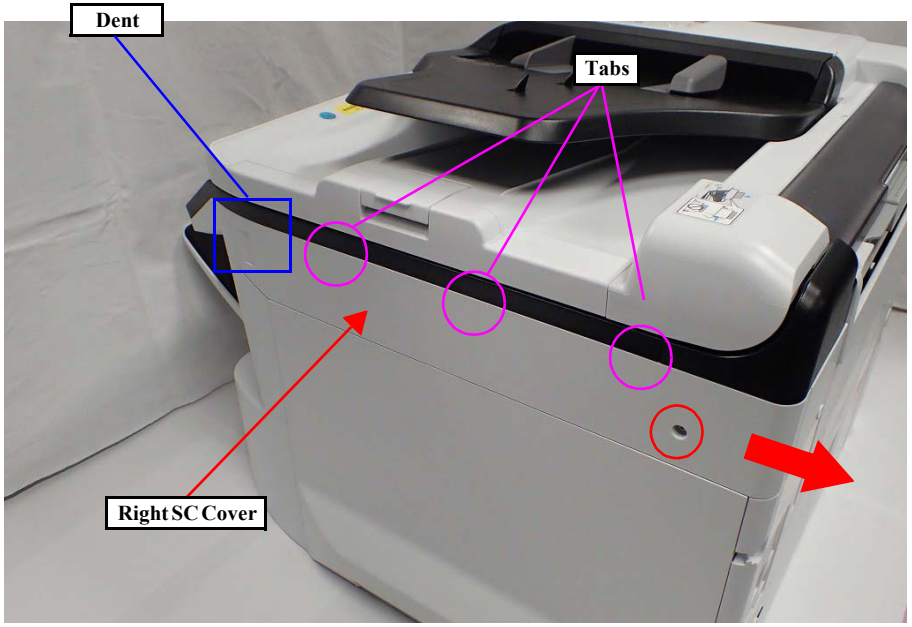
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
PCB Rom	A	17 min 3 sec	---	17 min 3 sec
Main Board	B	22 min 9 sec	---	18 min 5 sec
FAX Board Assy	C	17 min 41 sec	---	17 min 41 sec
PDL SD Card	D	17 min 10 sec	---	17 min 10 sec
PDL Board Assy	E	18 min 1 sec	---	18 min 1 sec

DISASSEMBLY FLOWCHART



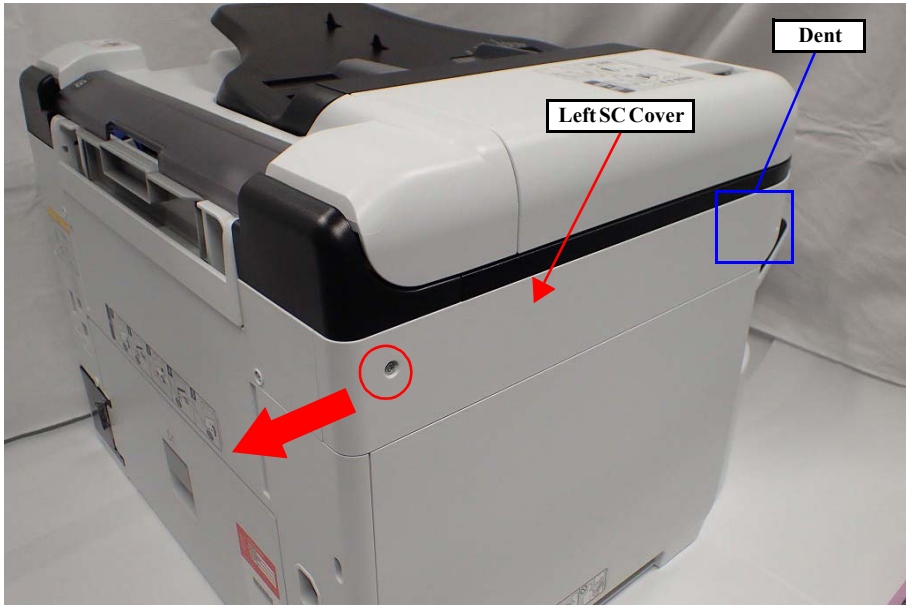
A1	B1	C1	Right SC Cover
D1	E1	F1	



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2	C2	Left SC Cover
D2	E2	F2	

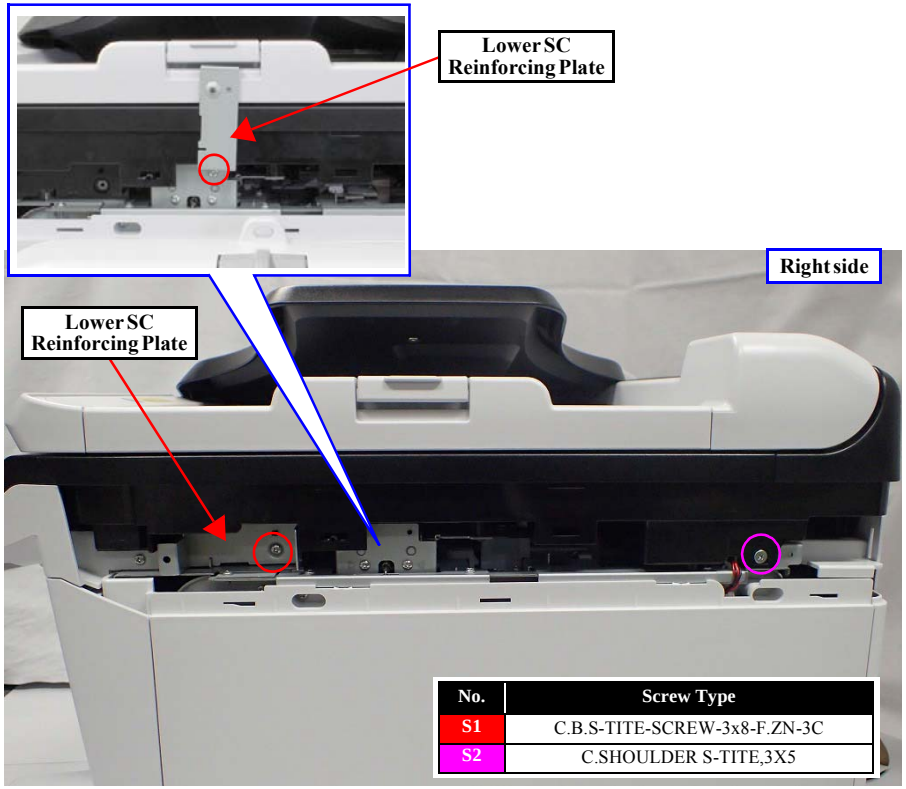


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3	C3
D3	E3	F3

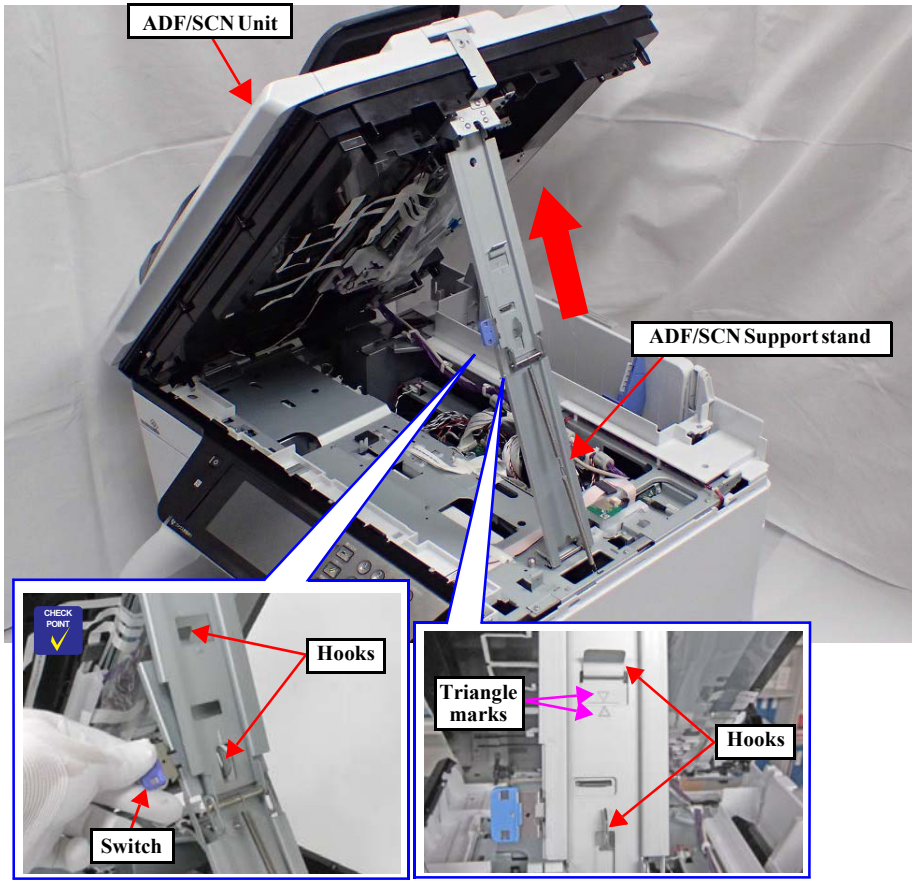
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



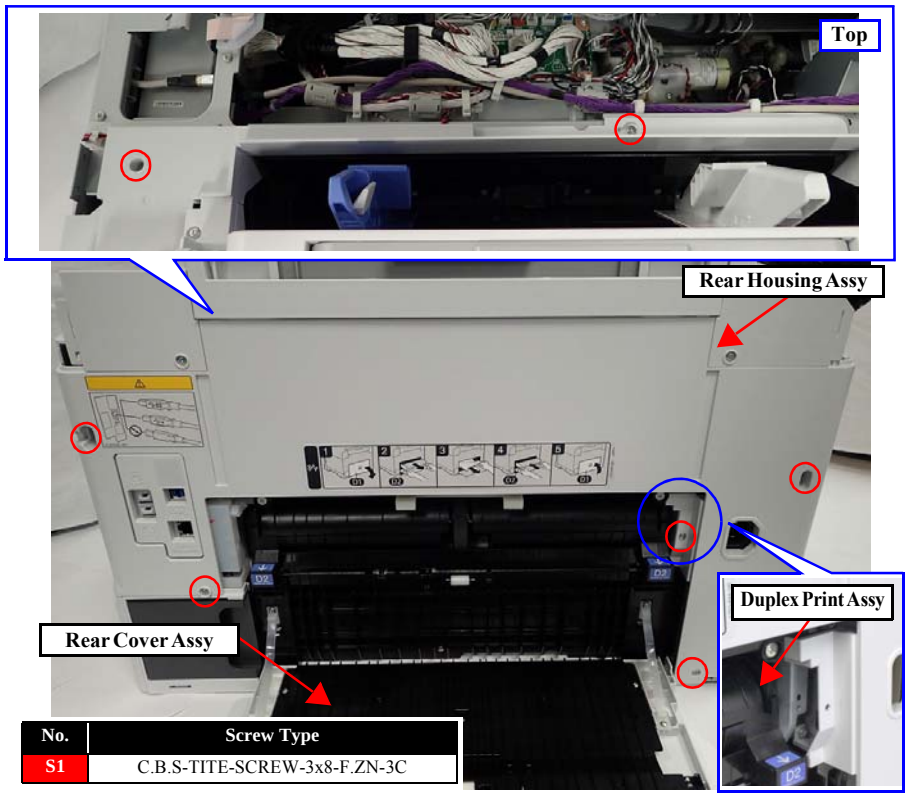
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4	C4
D4	E4	F4

Rear Housing Assy

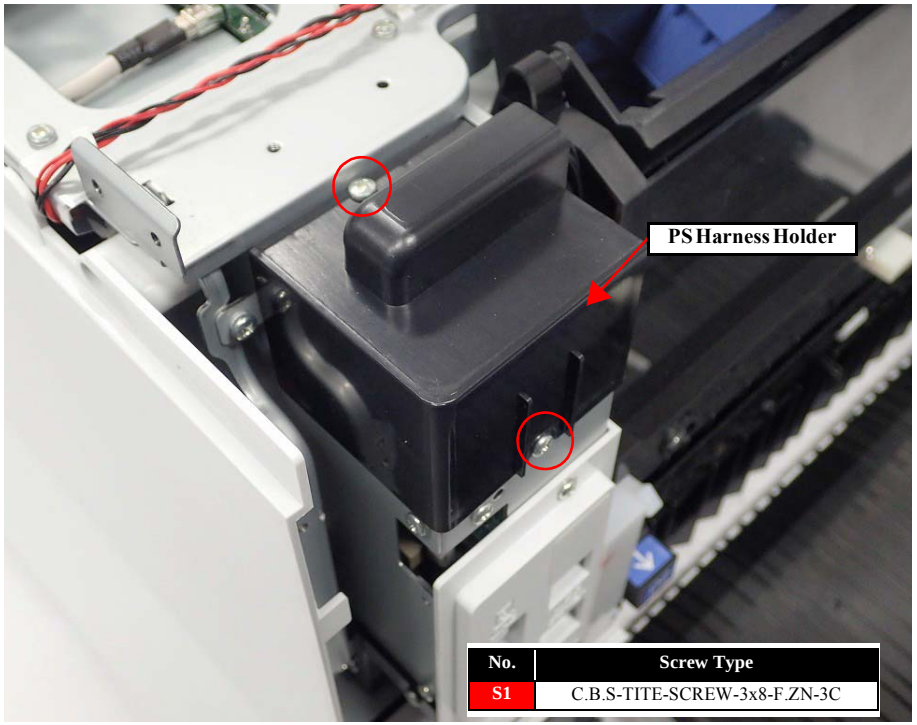


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

A5	B5	C5
D5	E5	F5

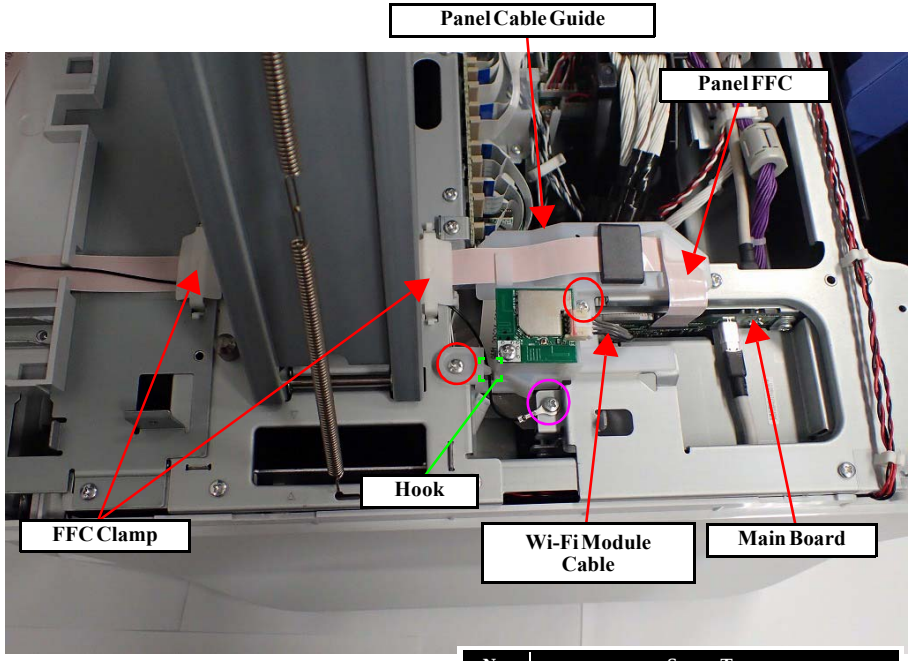
PS Harness Holder



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the PS Harness Holder.

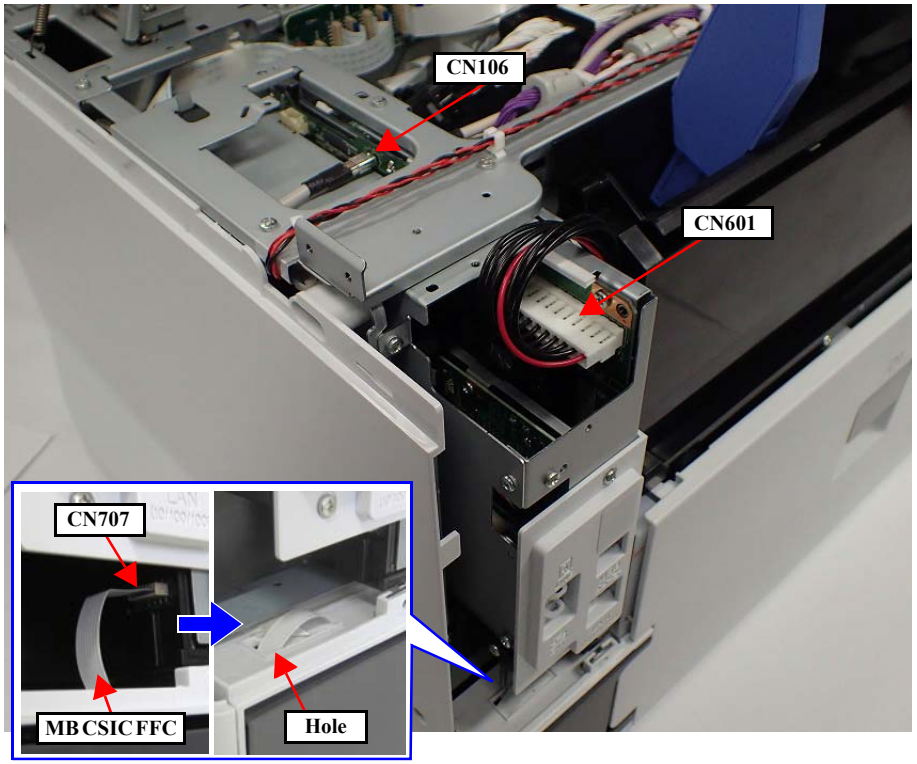
A6	B6	C6	Remove the Panel Cable Guide
D6	E6	F6	



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

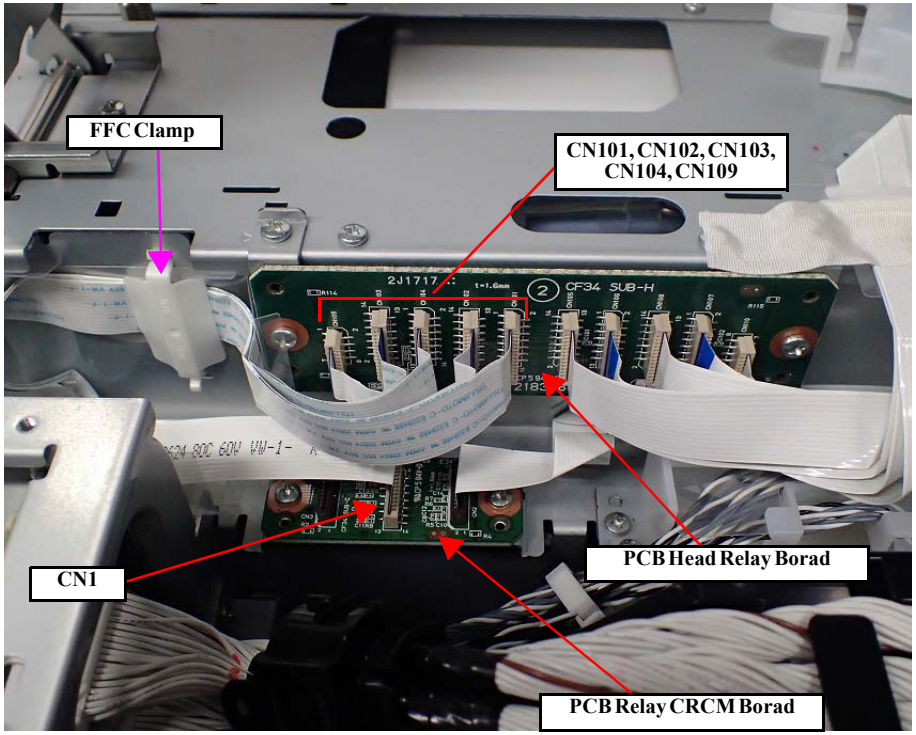
1. Disconnect the Panel FFC and Wi-Fi Module Cable from Main Board.
2. Remove the two FFC Clamps.
3. Remove one screw (S1:○), and release the Panel Ground Cable (2) from hook of the Panel Cable Guide.
4. Remove two screws (S1:○), and remove the Panel Cable Guide.

A7	B7	C7	Main Board Unit
D7	E7	F7	



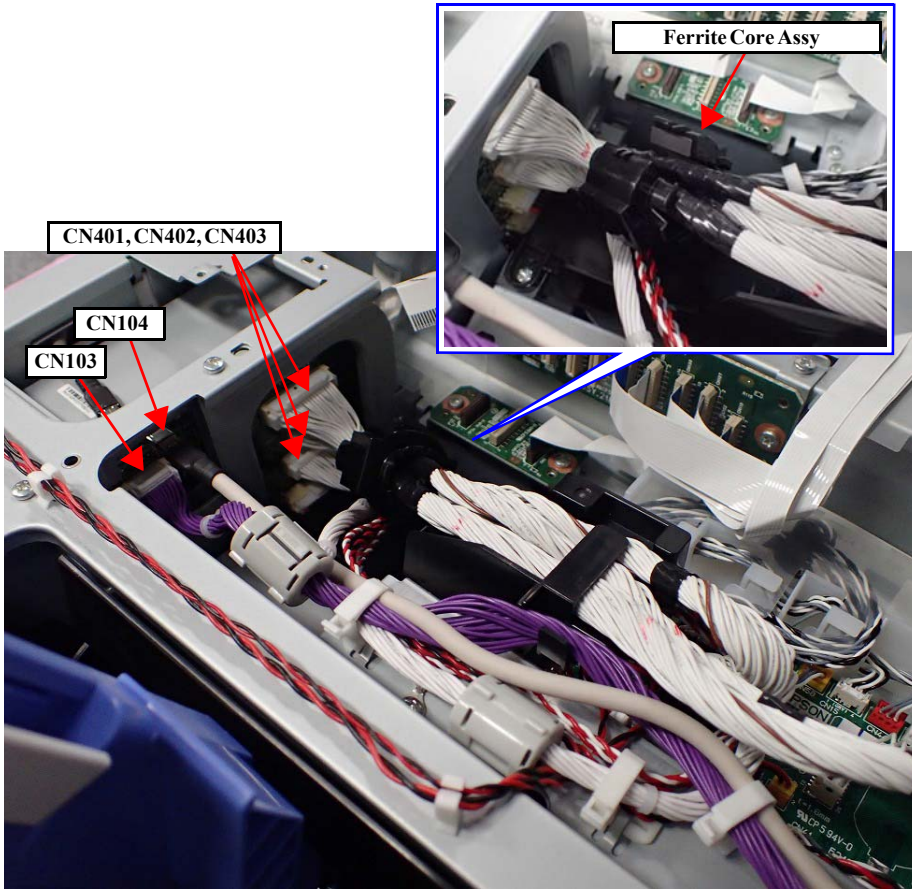
1. Disconnect the following cable/FFC from Main Borad.
   - USB Host Cable (CN106)
   - Power Supply Unit Cable (CN601)(with hook)
   - MB CSIC FFC (CN707)
2. Insert the MB CSIC FFC into hole of the housing.

Main Board Unit



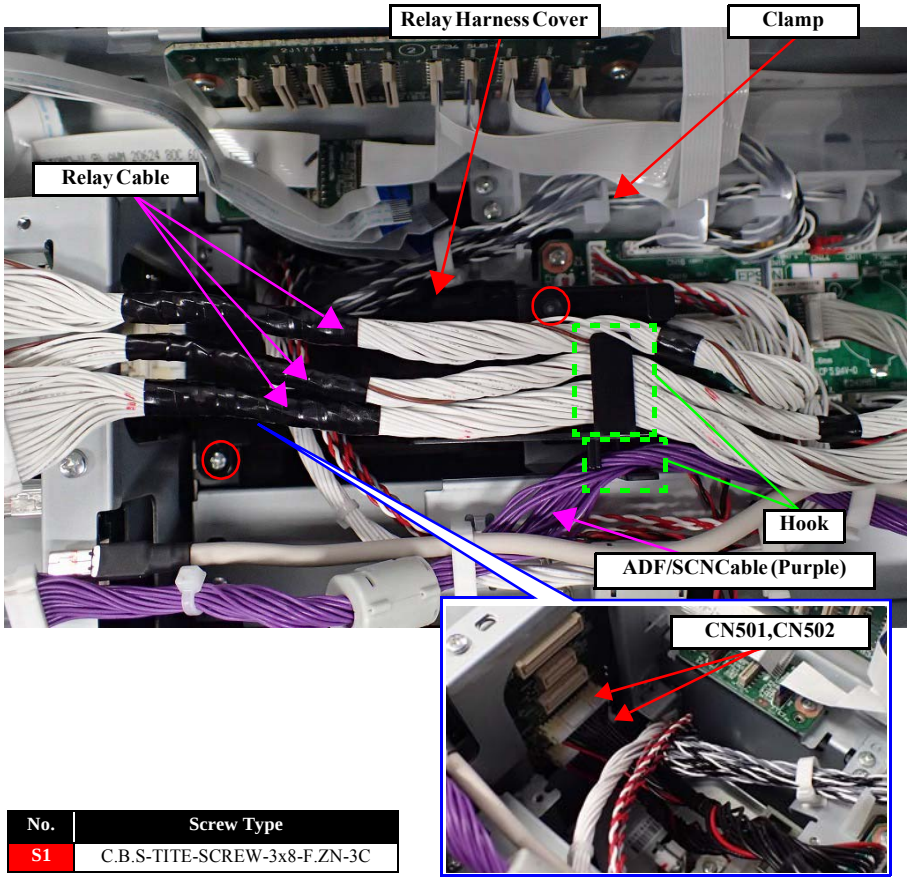
3. Remove the FFC Clamp.
4. Disconnect the Head Relay FFCs (CN101, CN102, CN103, CN104, CN109) from PCB Head Relay Board.
5. Remove the CRCM Relay FFC (CN1) from PCB Relay CRCM Borad.

Main Board Unit



6. Release teh hook of Ferrite Core Assy, and remove the Ferrite Core Assy from Relay Cables.
7. Disconnect the following cables.
   - Relay Cables (CN401, CN402, CN403) (with hook)
   - ADF/SCN Cable (USB) (CN104)
   - ADF/SCN Cable (Purple) (CN103) (with hook)

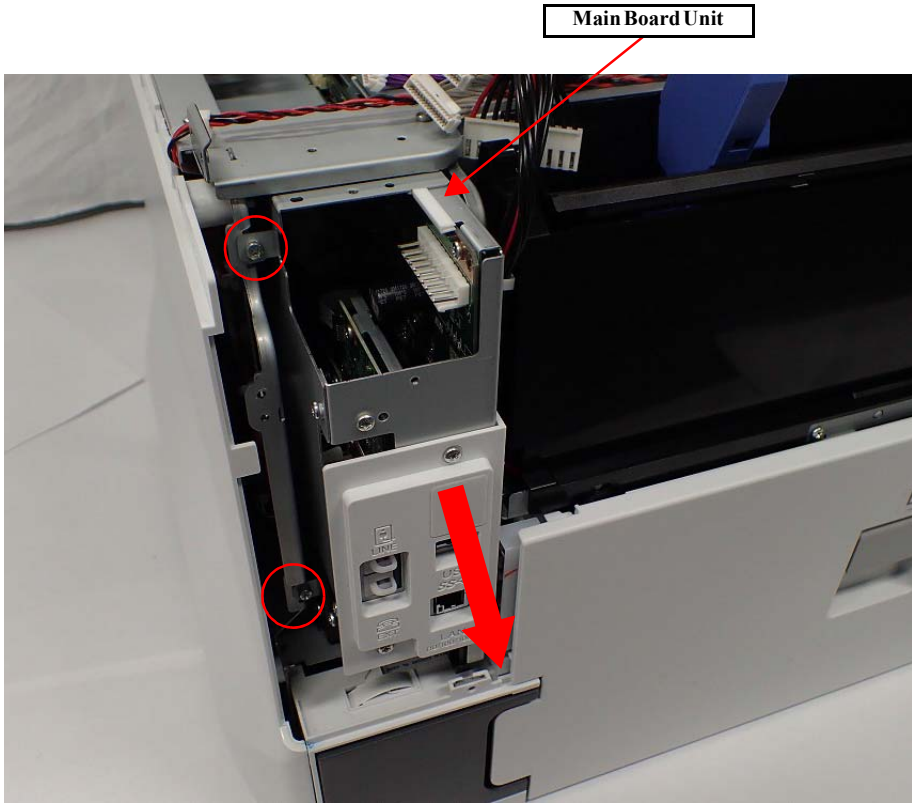
Main Board Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

8. Release the three Relay Cables and ADF/SCN Cable (Purple) from hook of the Relay Harness Cover.
9. Remove two screws (S1:○), and remove the Relay Harness Cover.
10. Disconnect the two Relay Cables (CN501, CN502) (with hook) from Main Borad.

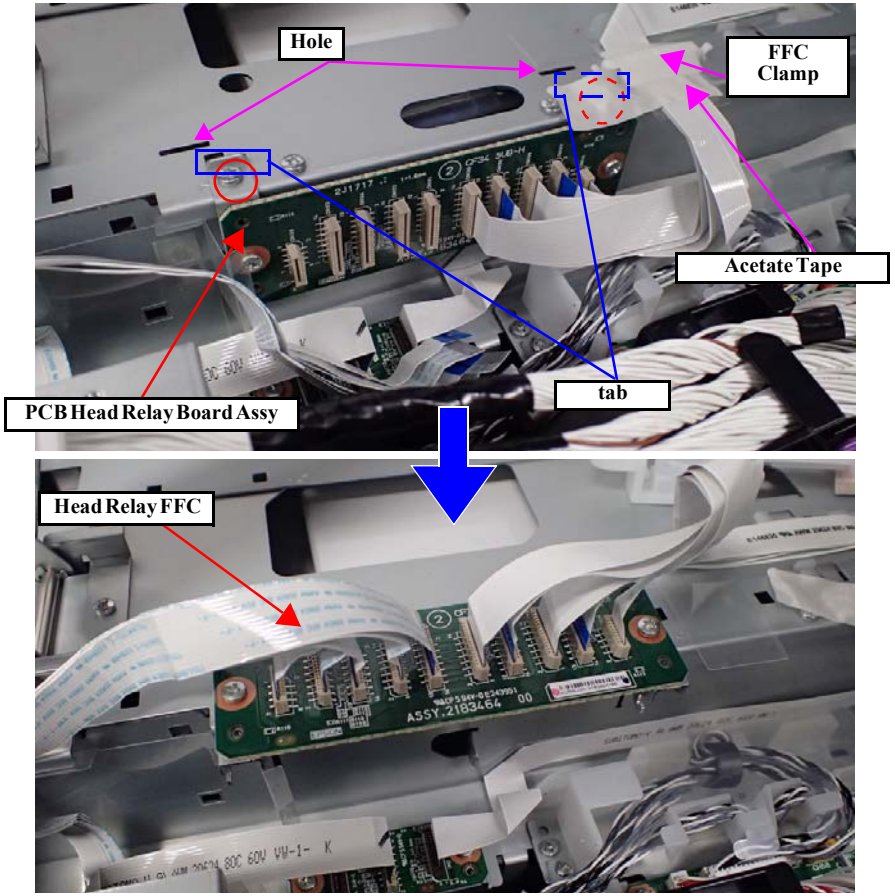
Main Board Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

11. Remove two screws (S1:○), and remove the Main Board Unit to direction of arrow.

Main Board Unit

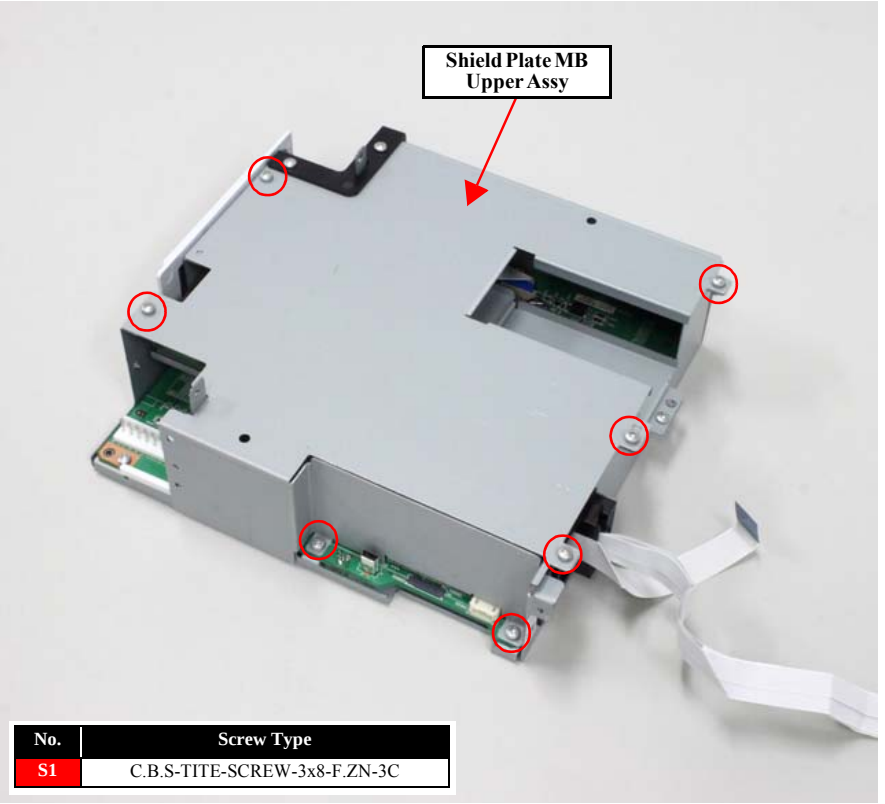


REASSEMBLY

Connect the Head Relay FFC by the following procedure.
1. Remove the FFC clamp and acetate tape.
2. Remove the two screws, then remove the PCB Head Relay Board Assy.
3. Insert the two tabs of the frame of the relay board Assy into the holes on the frame
4. Connect the head relay FFC. (Take care not to connect obliquely.)

A7	B7	C7
D7	E7	F7

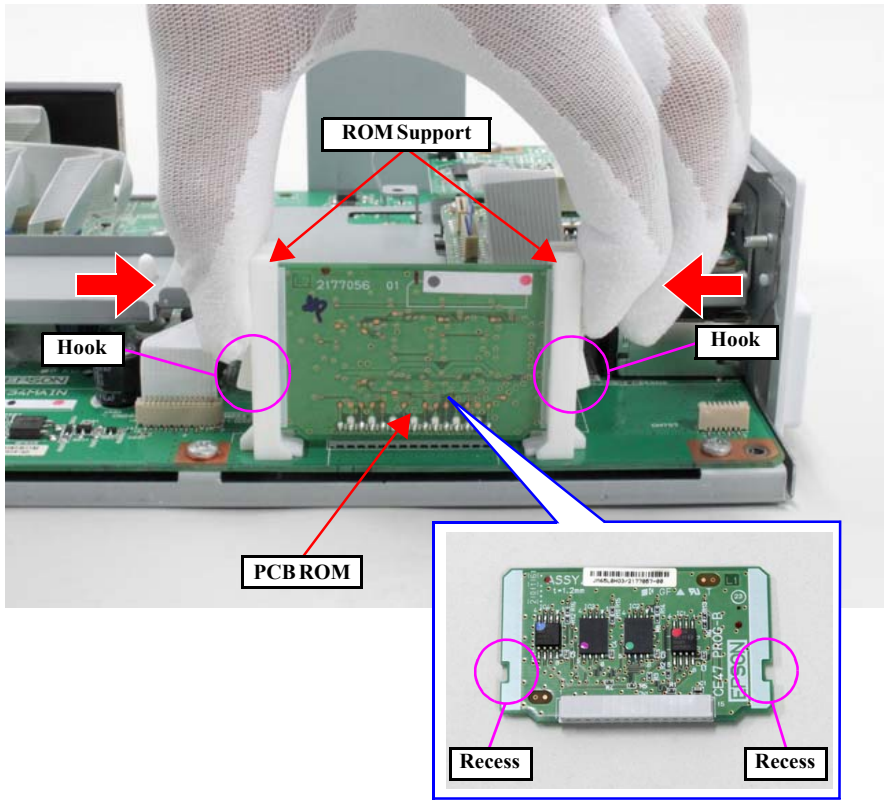
Shield Plate MB Upper Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the seven screws (S1: ○), then remove the Shield Plate MB Upper Assy.

A9	B9		PCB Rom



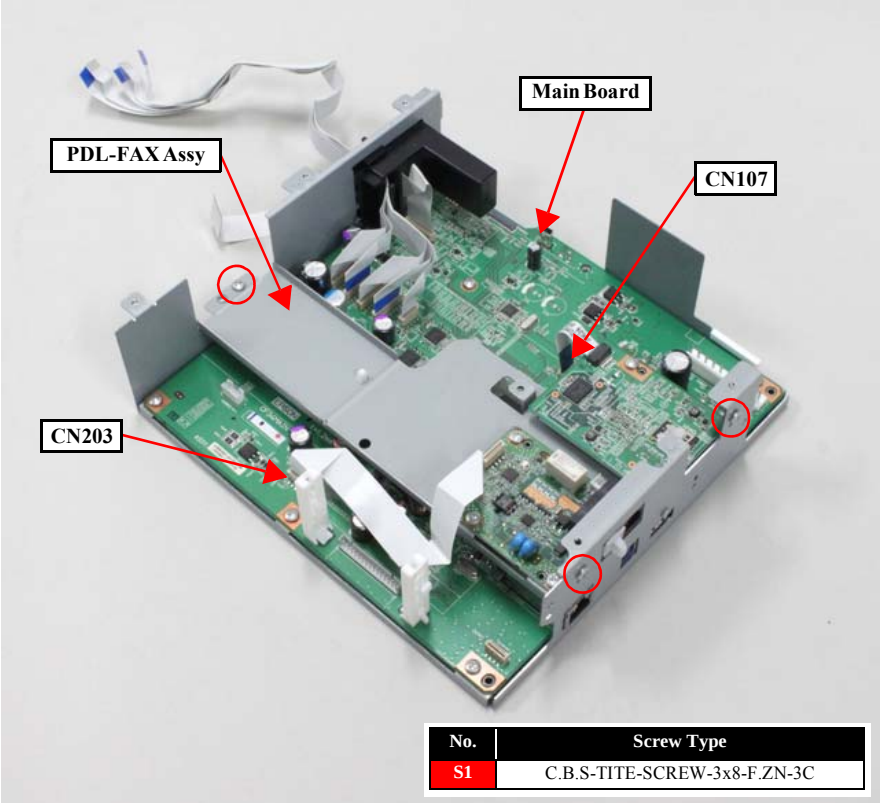
1. Disengage the hooks by pressing the ROM support, and pull the PCB ROM upward to remove it.

	B10		Connector Cover

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Connector Cover.

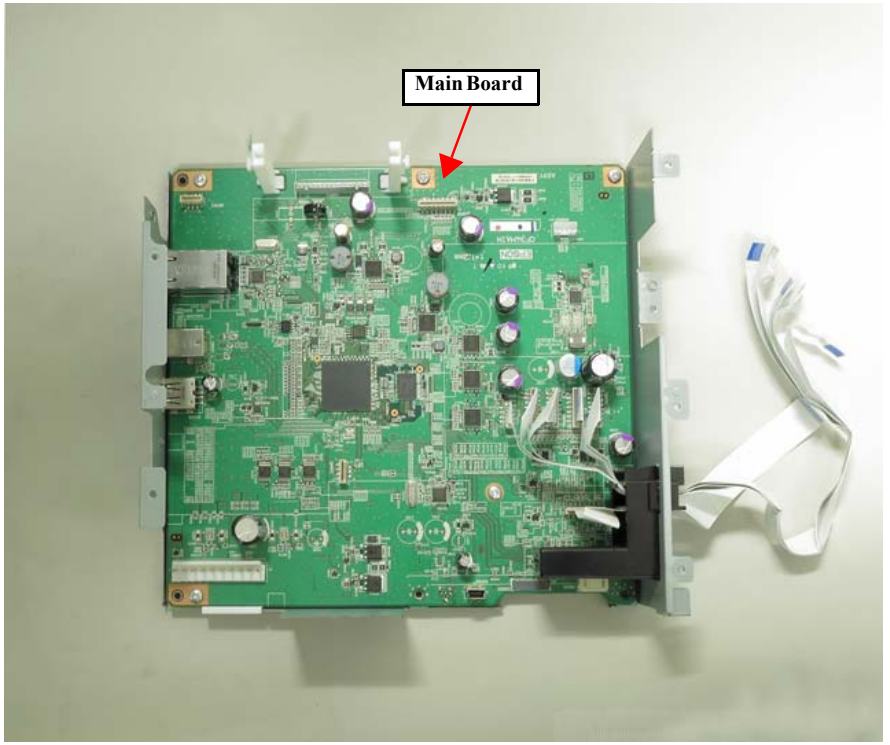
B11 PDL-FAX Assy



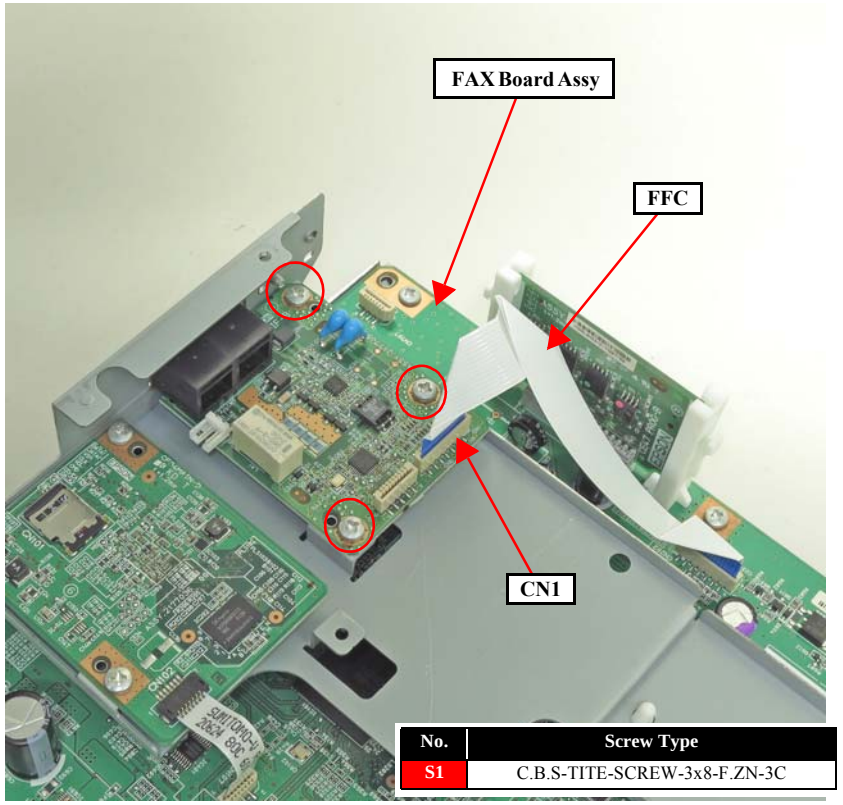
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the two FFCs from the connectors of the Main Board.
2. Remove the three screws (S1: ○), then remove the PDL-FAX Assy.

B12 Main Board



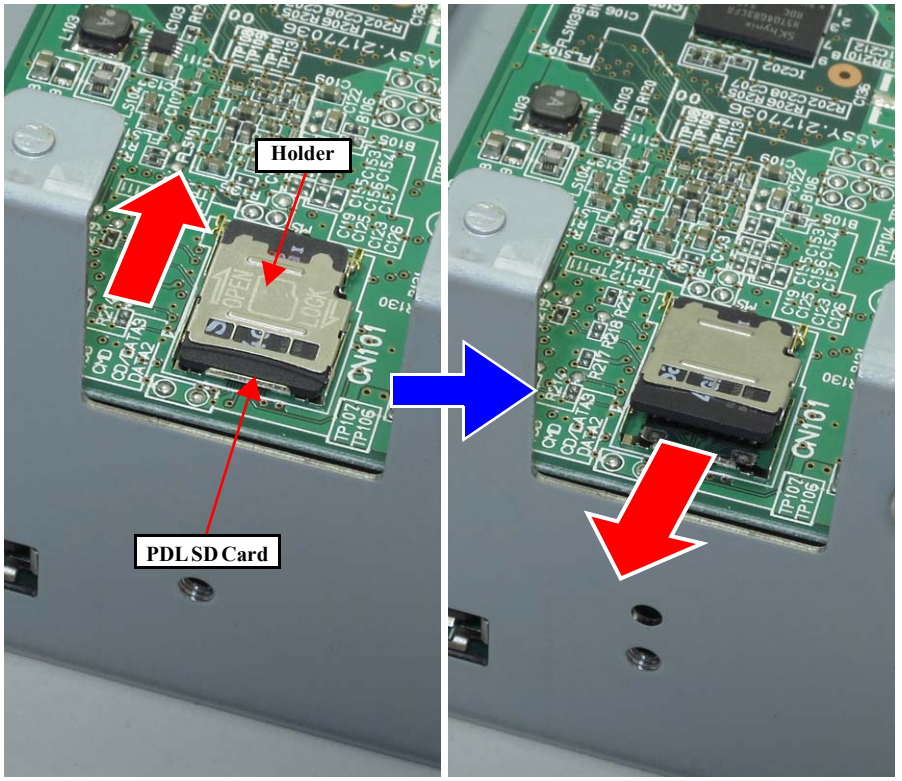
		C9	FAX Board Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the FFC from the connectors (CN1).
2. Remove the three screws (S1: ○), then remove the FAX Board Assy.

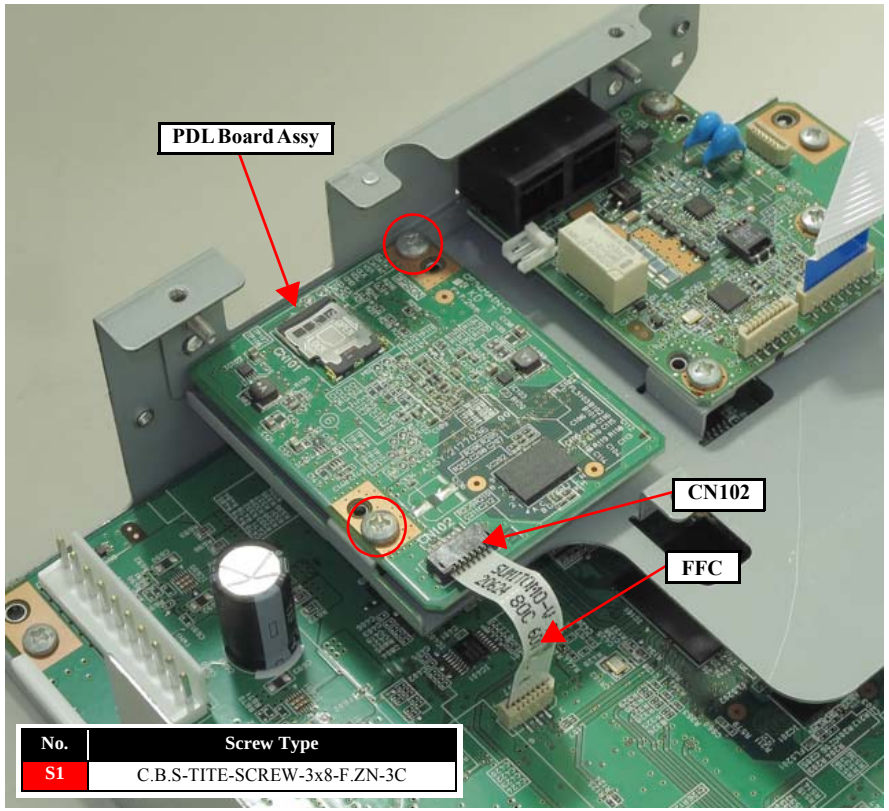
			PDL SD Card
D9	E9		



1. Slide the holder in the direction of the arrow.
2. Raise the holder, then remove the PDL SD Card.

	E10	

PDL Board Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

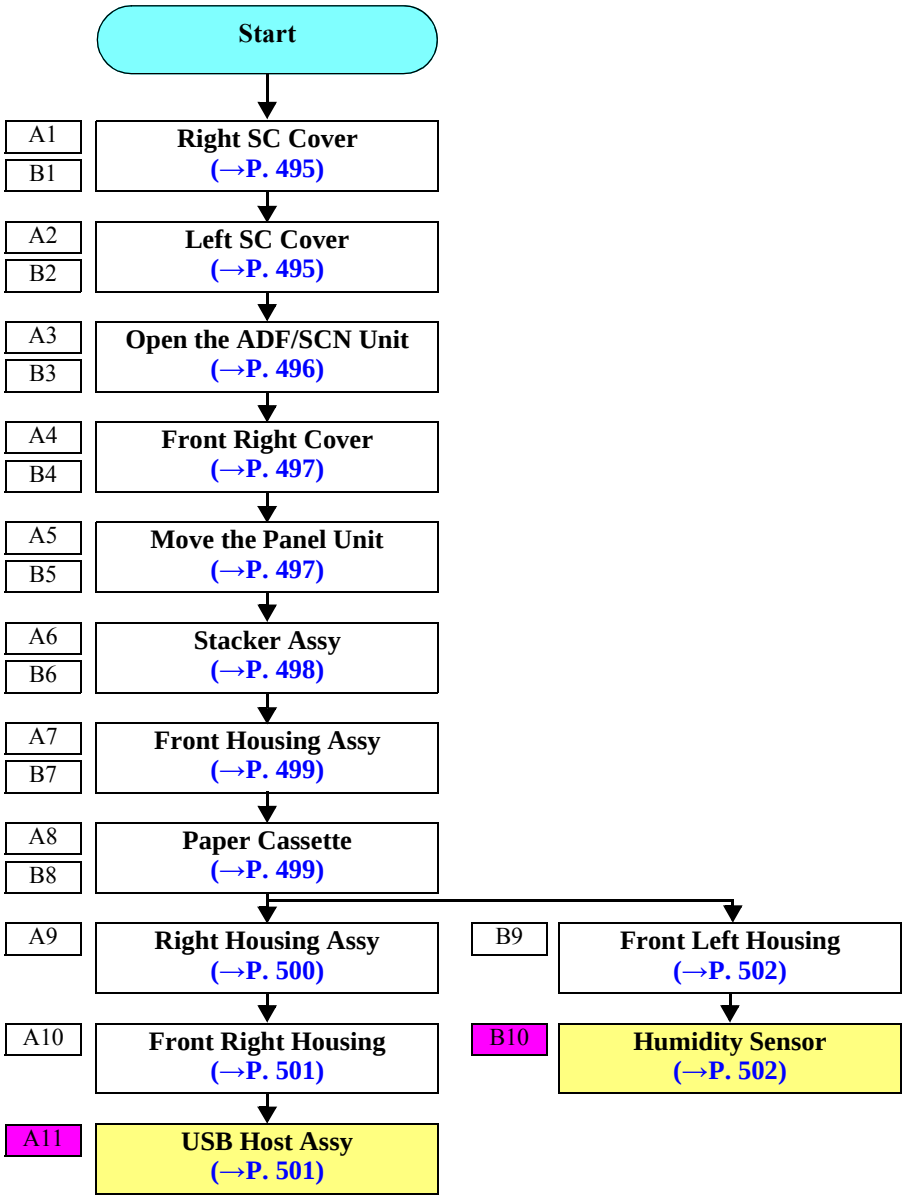
1. Disconnect the FFCs from the connectors of the PDL Board Assy.
2. Remove the two screws (S1: ○), then remove the PDL Board Assy.

7.4.3.12 Electric Components 3

OUTLINE

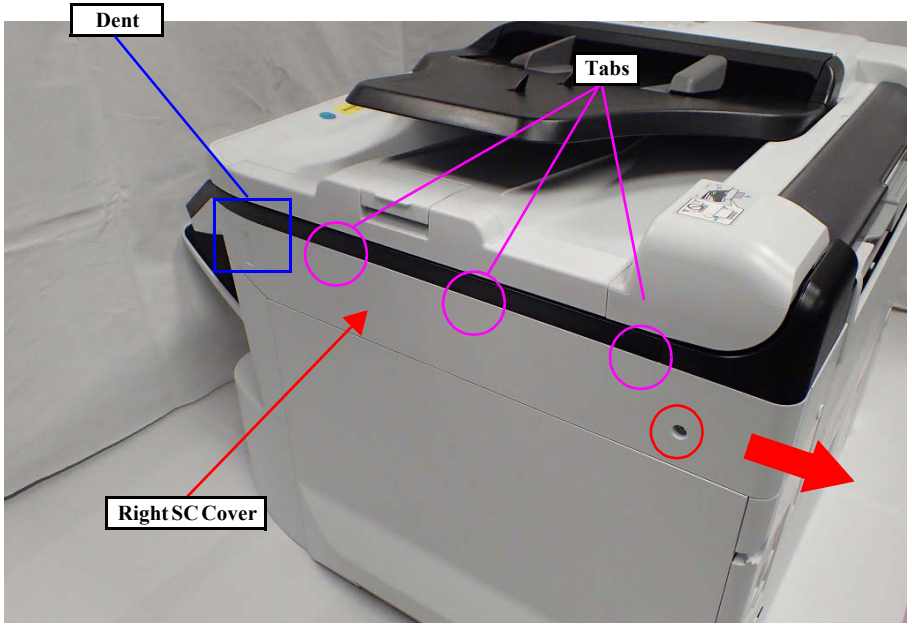
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Humidity Sensor	A	9 min 58 sec	5 sec	10 min 3 sec
USB Host Assy	B	13 min 10 sec	---	13 min 10 sec

DISASSEMBLY FLOWCHART



A1	B1

Right SC Cover

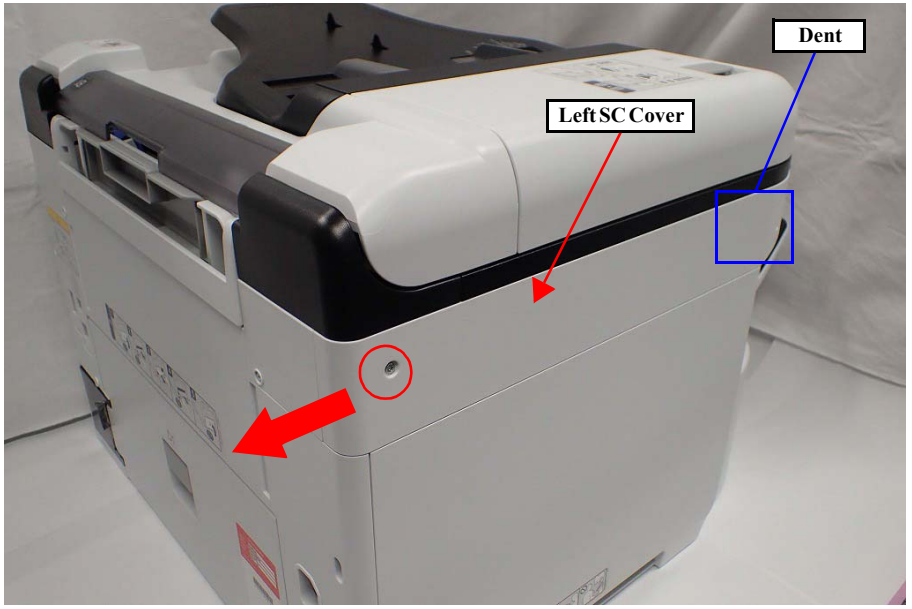


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2

Left SC Cover

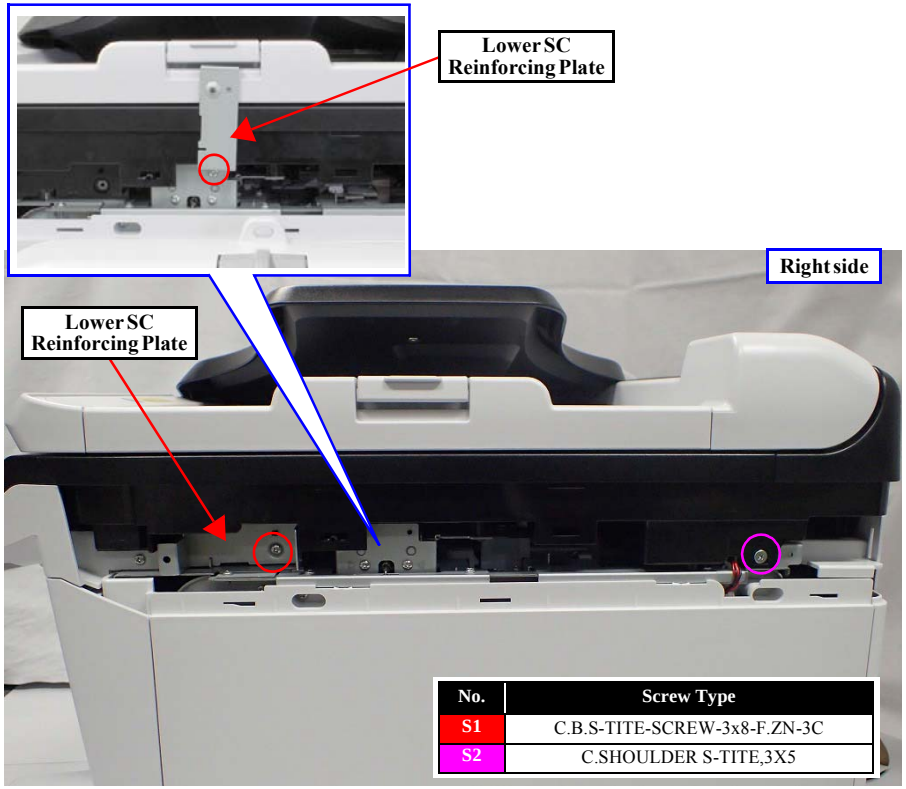


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3

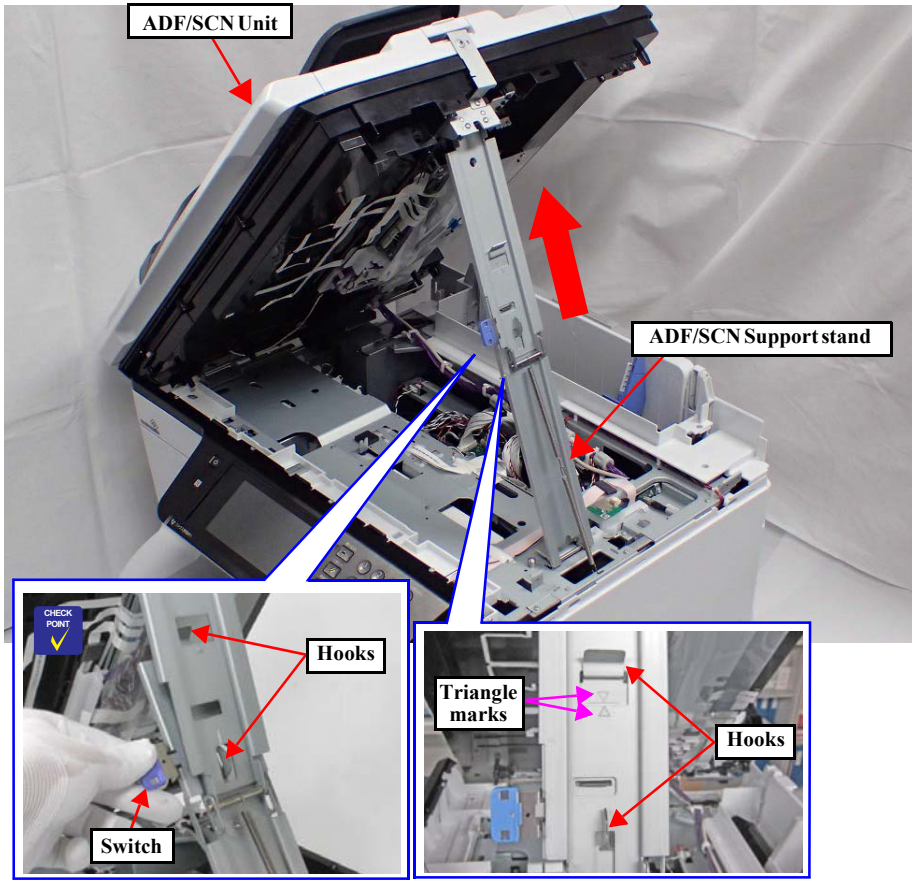
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



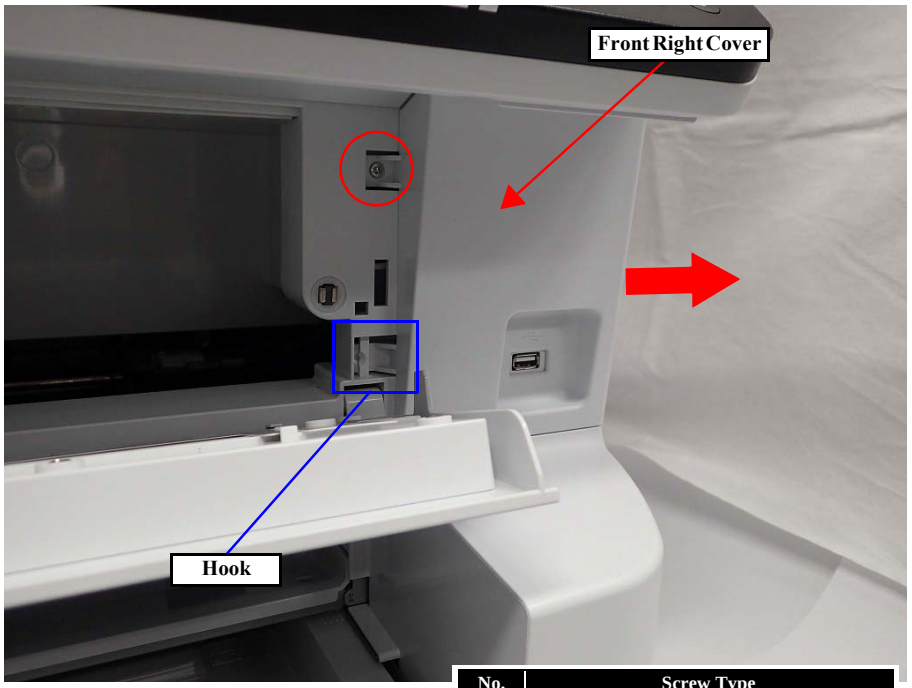
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4

Front Right Cover

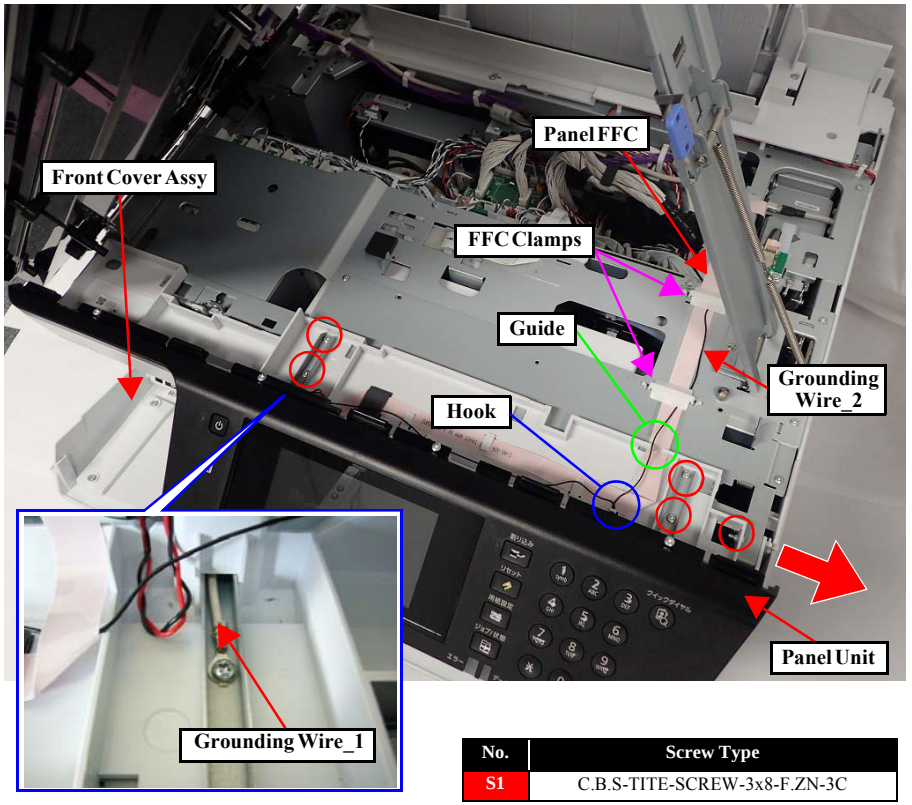


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

A5	B5

Move the Panel Assy



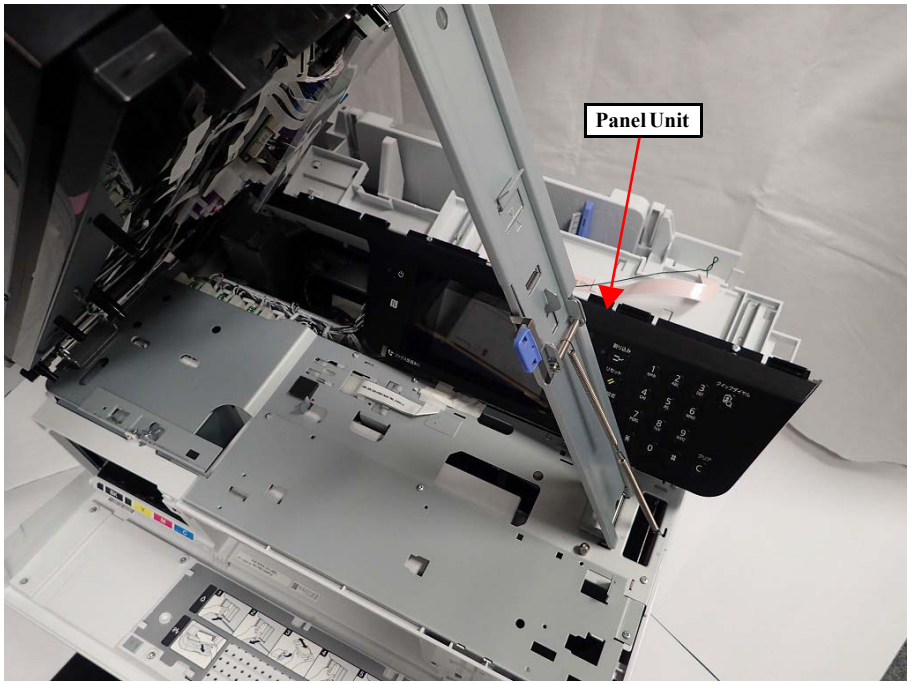
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○)
2. Remove the two FFC clamps.
3. Release the Panel FFC and the grounding wire_2 from the guide.
4. Release thgrounding wire_2 from Hook.
5. Open the Front Cover Assy.
6. Slide the panel unit rightward to remove it.

REASSEMBLY

- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

Move the Panel Unit

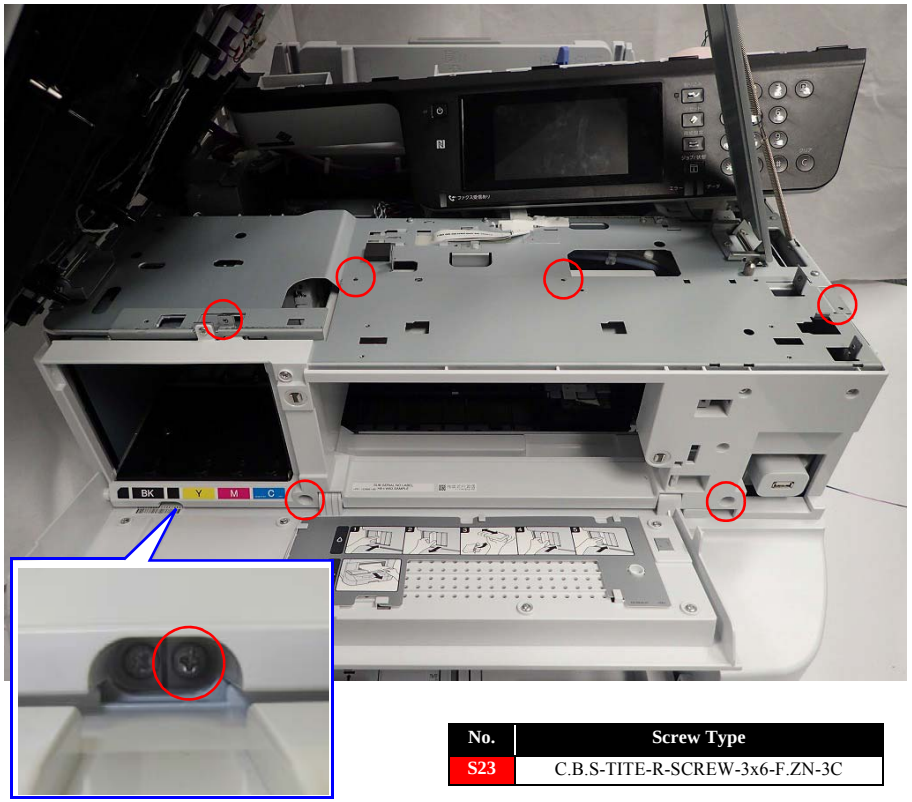


7. Put the panel unit at the rear side of the printer.

A6	B6	Stacker Assy

1. Remove the Stacker Assy.

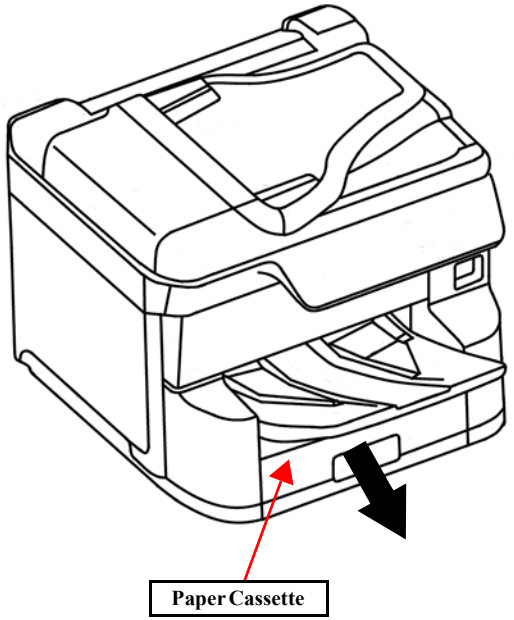
A7	B7	Front Housing Assy



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

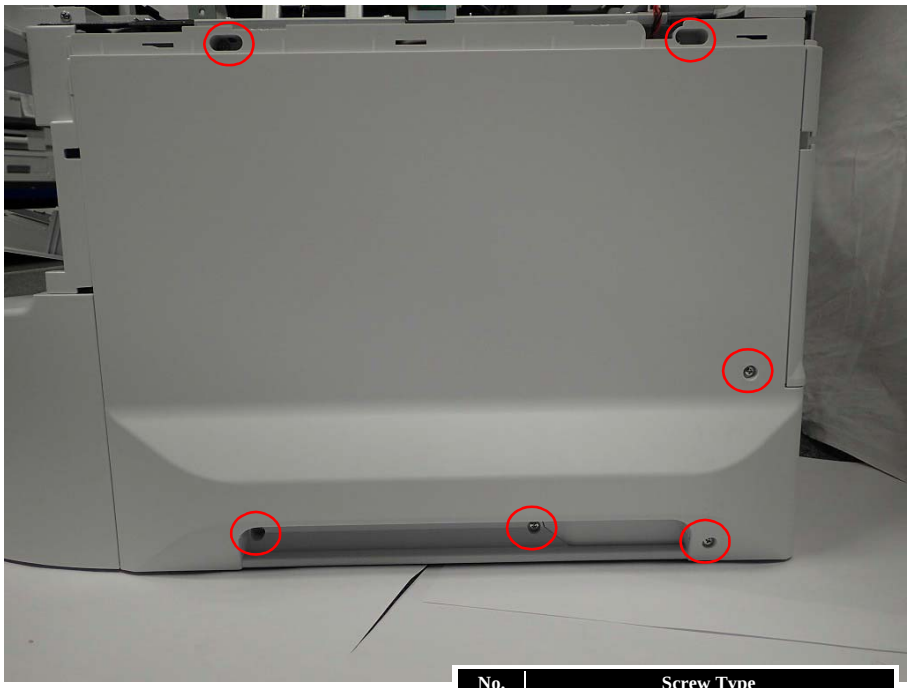
A8	B8	Paper Cassette



1. Remove Paper Cassette.

A9	

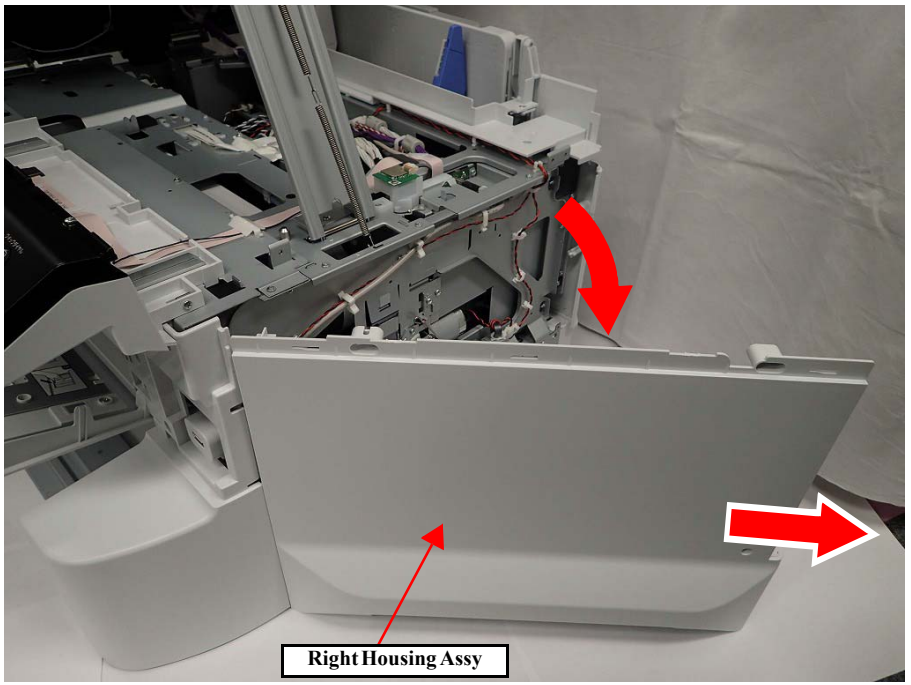
Right Housing Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

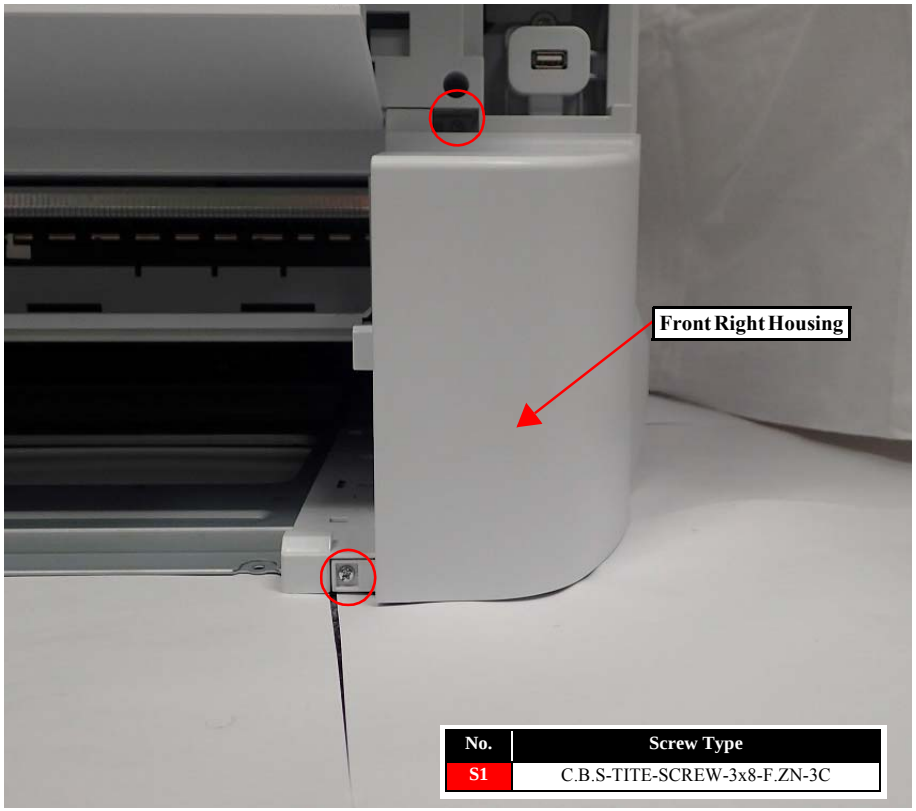
1. Remove six screw (S1: ○).

Right Housing Assy



2. Open the Rear side of Right Housing Assy like the above figure.
3. Slide the Right Housing Assy to derection of arrows in state of rear side of RIgth Housing Assy opened condition, and remove it.

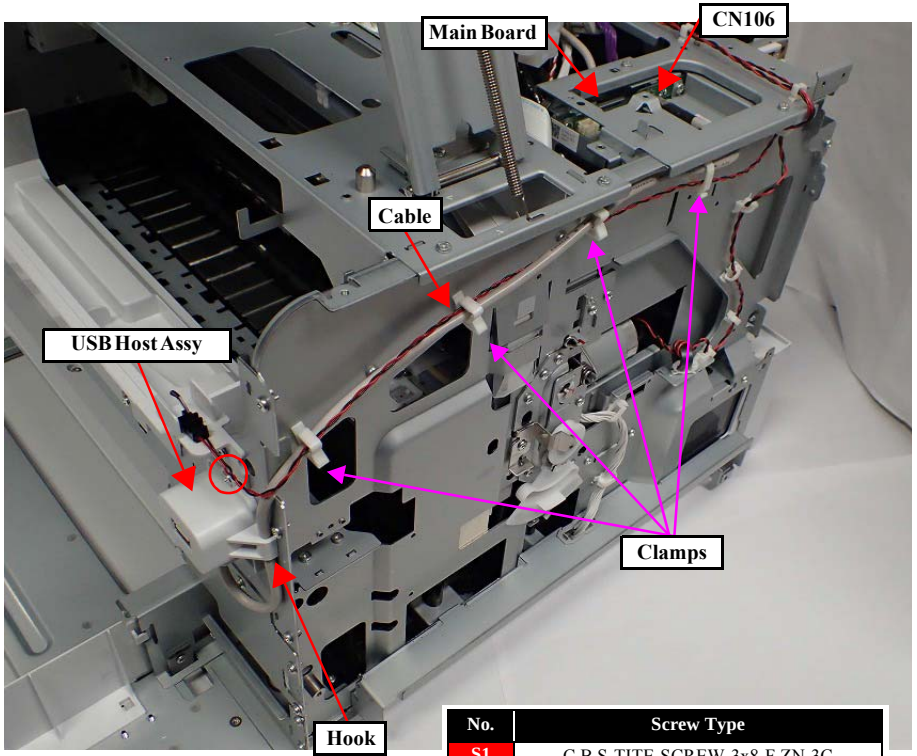
A10 Front Right Housing



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Front Right Housing.

A11 USB Host Assy

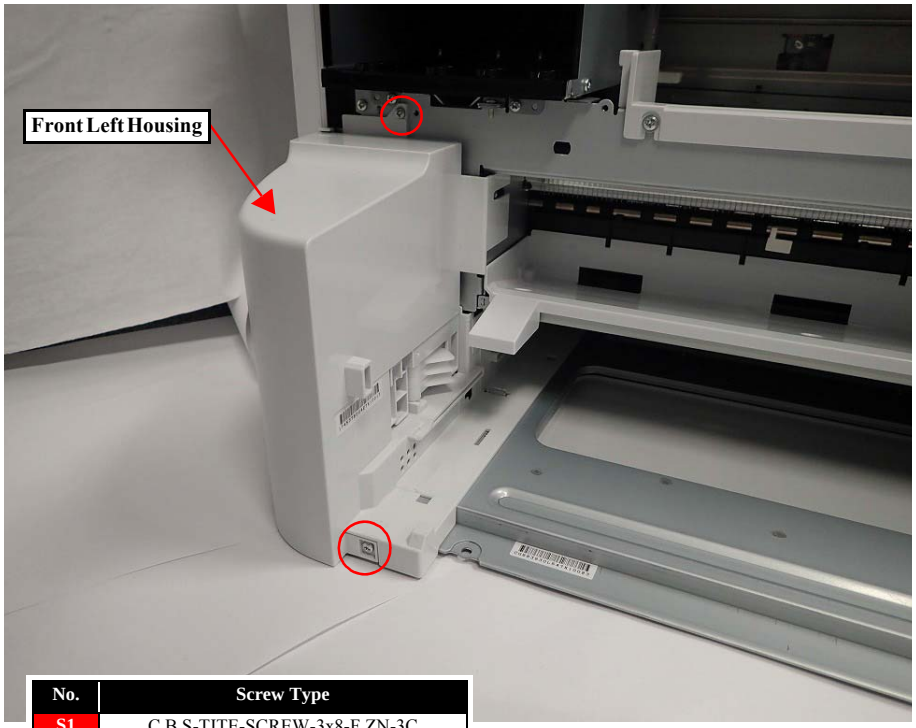


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the cable from the connector (CN106) of the Main Board.
2. Remove the screw (S1: ○).
3. Release the cable from the four clamps, then remove the USB Host Assy.

CAUTION Route the USB cable through the hook of the USB Connector Assy.

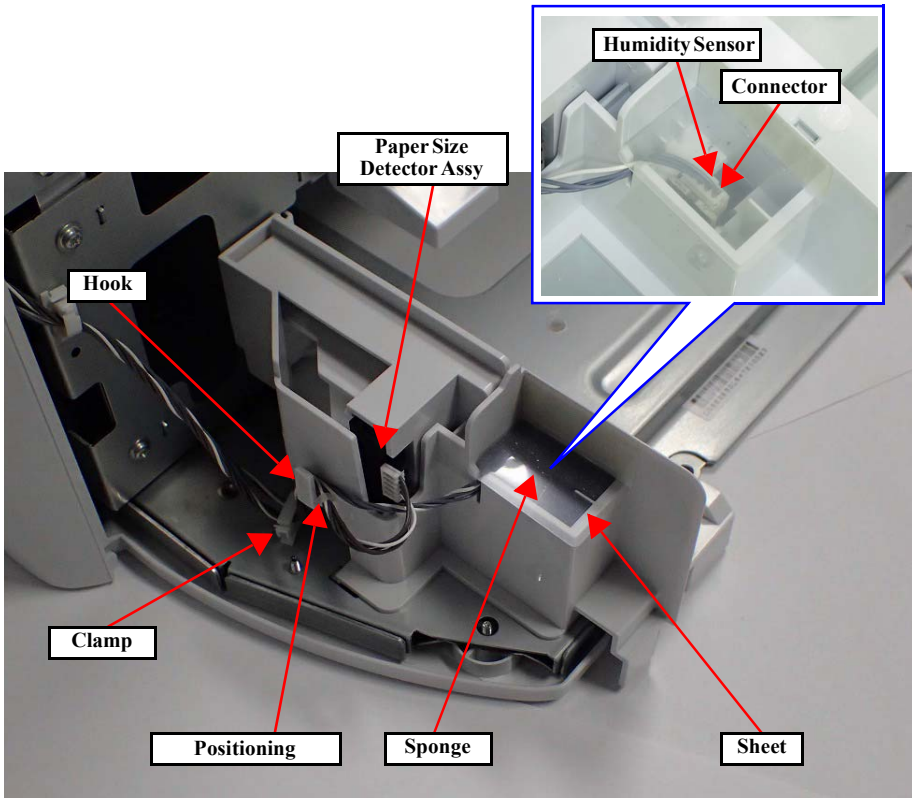
B9 Front Left Housing



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Front Left Housing.

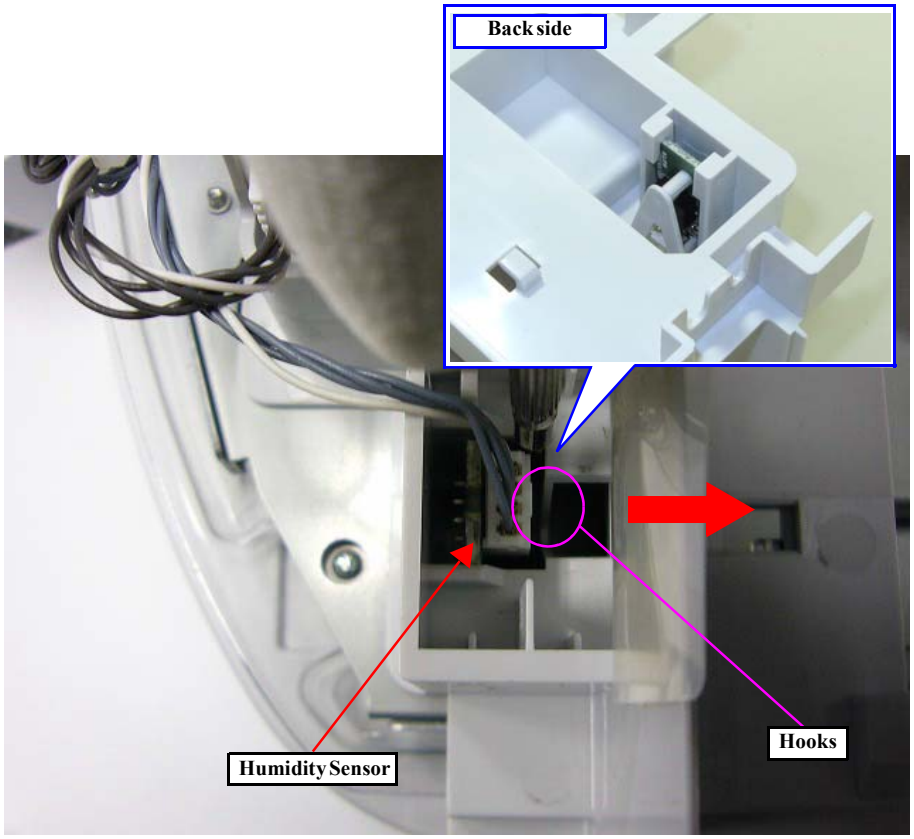
B10 Humidity Sensor



1. Turn over the sheet, then remove the sponge of the Humidity Sensor.
2. Release the cable of the Humidity Sensor and the 1st Paper Size Detector Assy from the clamp and the hook of the housing.

REASSEMBLY When routing the cable of the 1st paper size detection Assy, make sure that the positioning of the cable is in front of the hook.

Lower Left Housing Assy



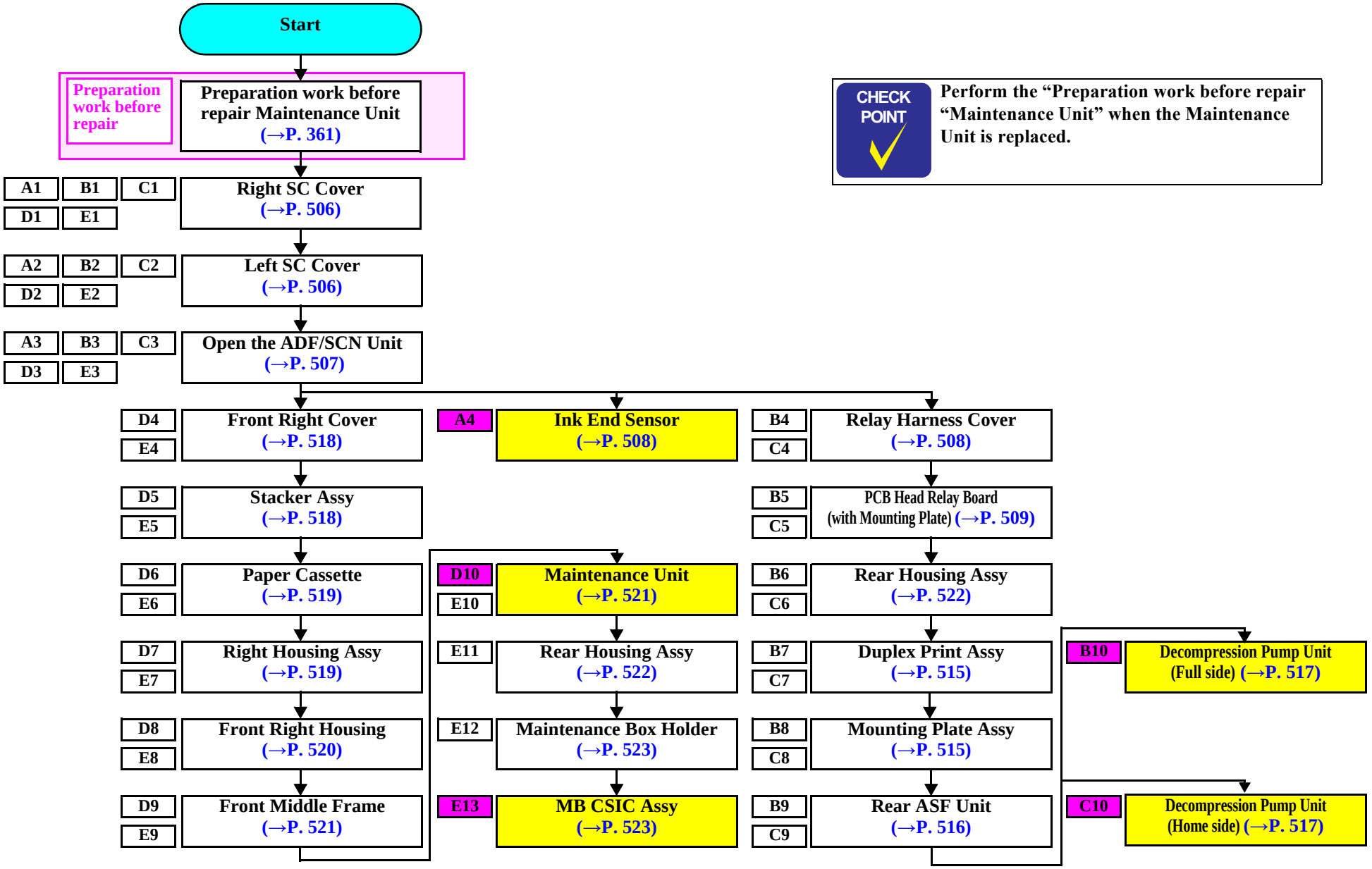
3. Remove the Humidity Sensor while pushing the fixing hook of Humidity sensor by using the small flat-head driver.
4. Disconnect the cable from Humidity sensor.

7.4.3.13 Ink System Mechanism1

OUTLINE

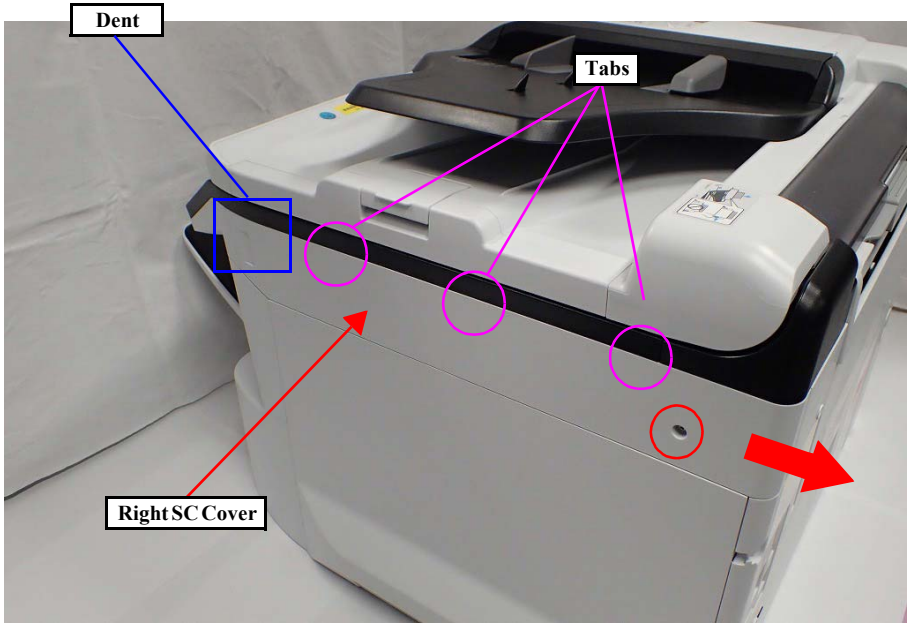
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Ink End Sensor	A	2 min 55 sec	---	2min 55 sec
Decompression Pump Unit (Full side)	C	23 min 23 sec	---	23 min 23 sec
Decompression Pump Unit (Home side)	D	23 min 19 sec	---	23 min 19 sec
Maintenance Unit	B	10 min 19 sec	7 min 57 sec	17 min 46 sec
MB CSIC Assy	E	11 min 13 sec	---	11 min 13 sec

DISASSEMBLY FLOWCHART



A1	B1	C1
D1	E1	

Right SC Cover

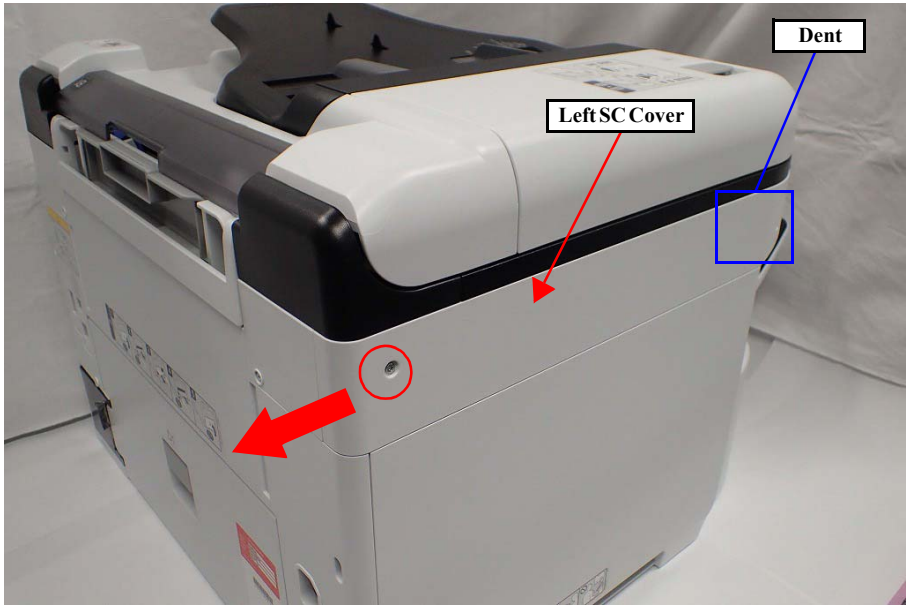


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2	C2
D2	E2	

Left SC Cover

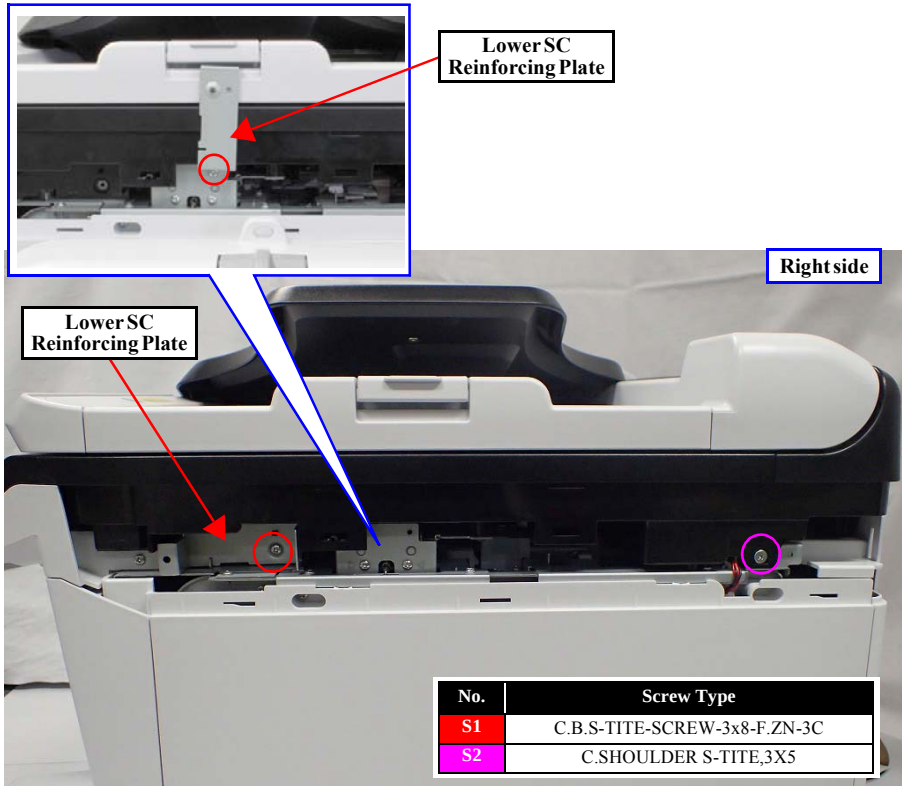


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3	C3
D3	E3	

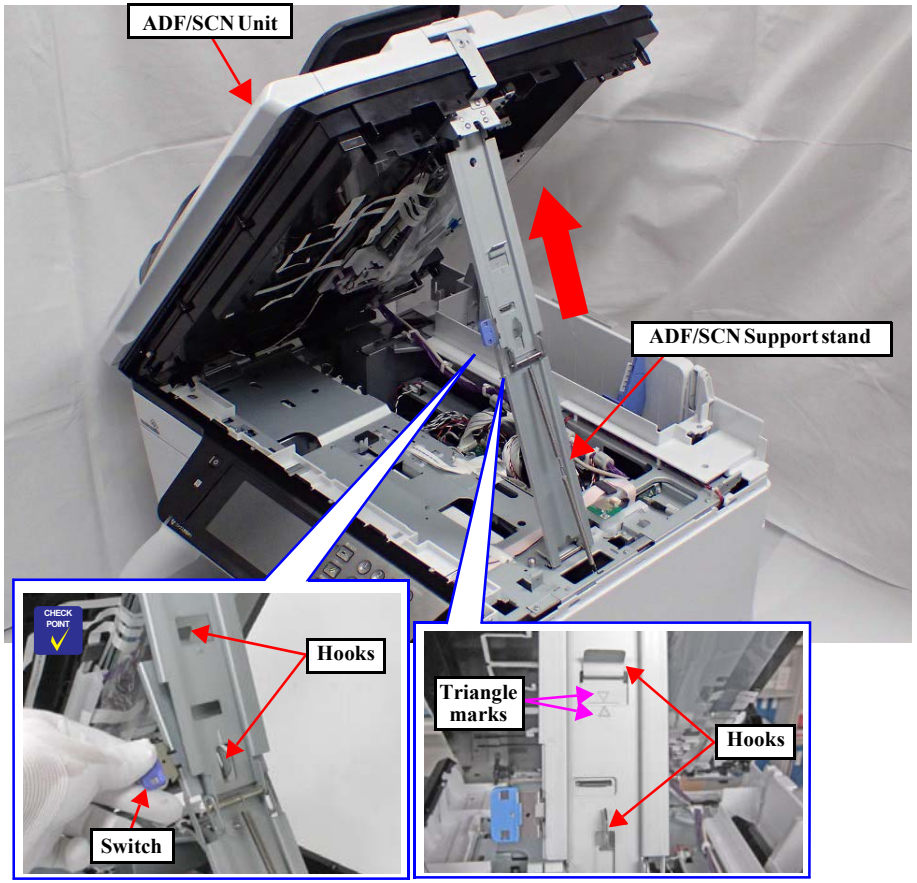
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit

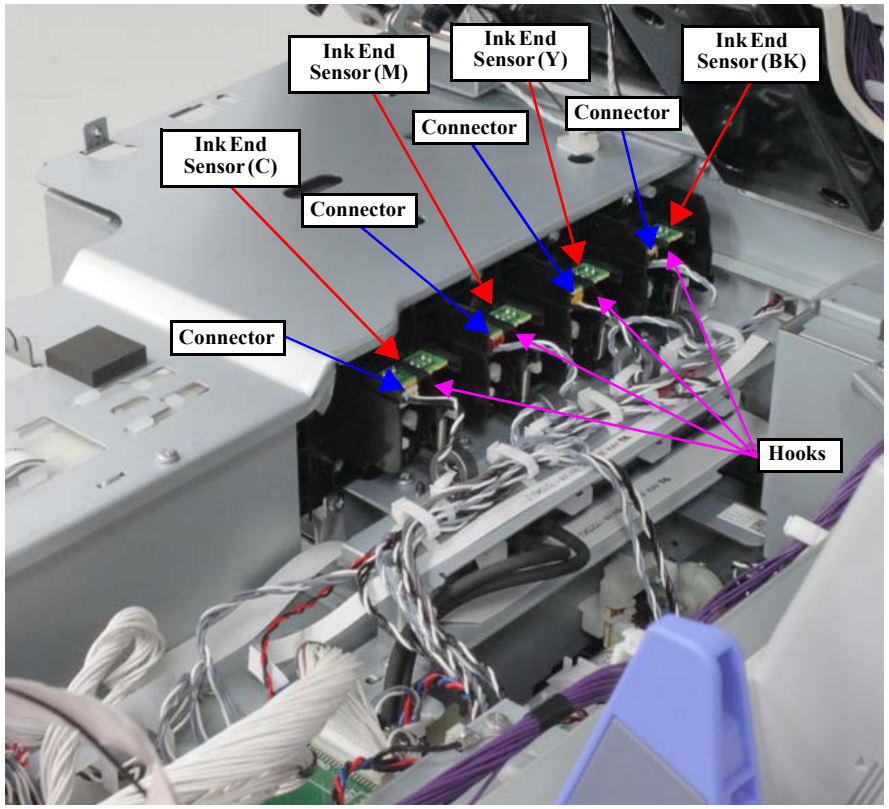


4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

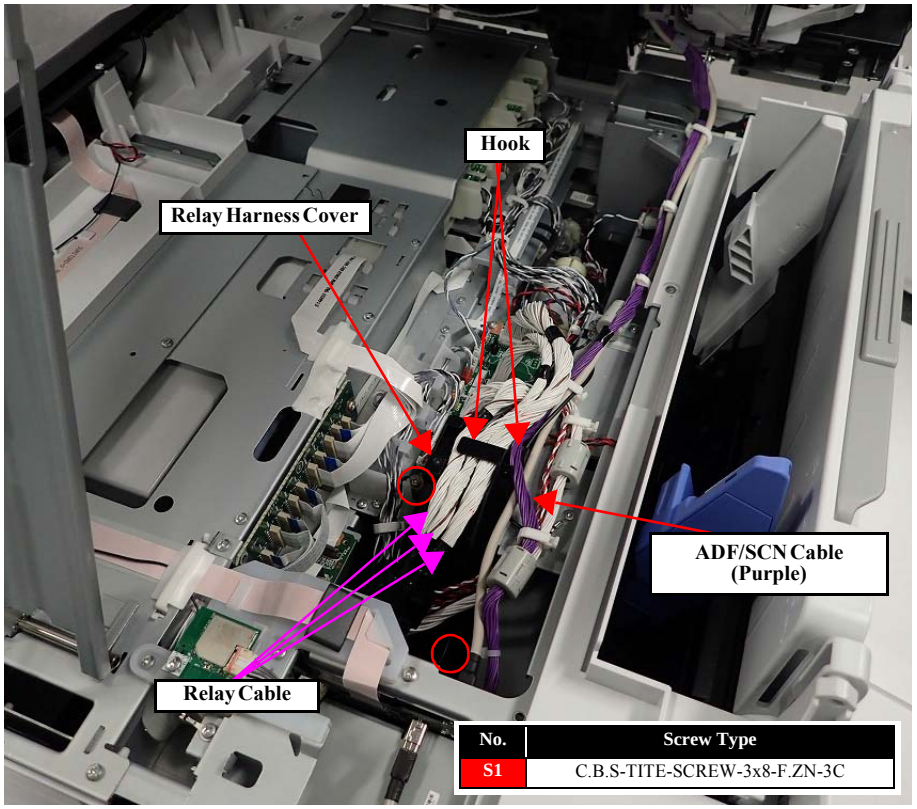
CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4			Ink End Sensor



1. Disengage the hook and remove the Ink End Sensor.
2. Disconnect the cable from the connector of the Ink End Sensor.

	B4	C4	Relay Harness Cover

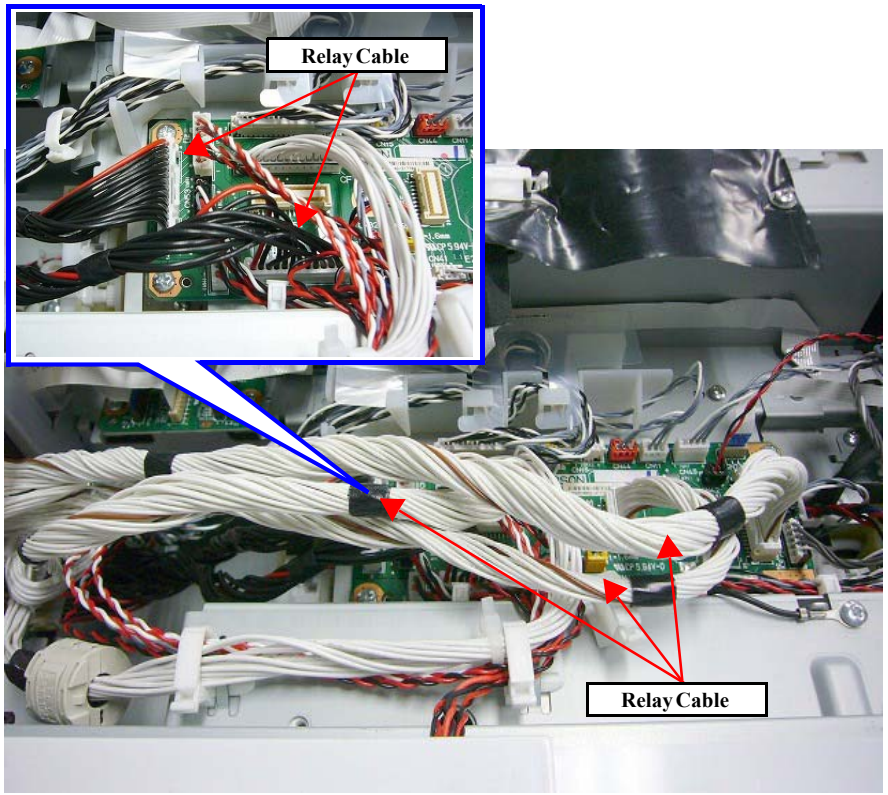


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Release the ADF/SCN Cable (Purple) from hook of Relay Harness Cover.
2. Release the Relay Cables(CN401, CN402, CN403) from hook of Relay Harness Cover.
3. Remove two screws (S1:○), and remove the Relay Harness Cover.

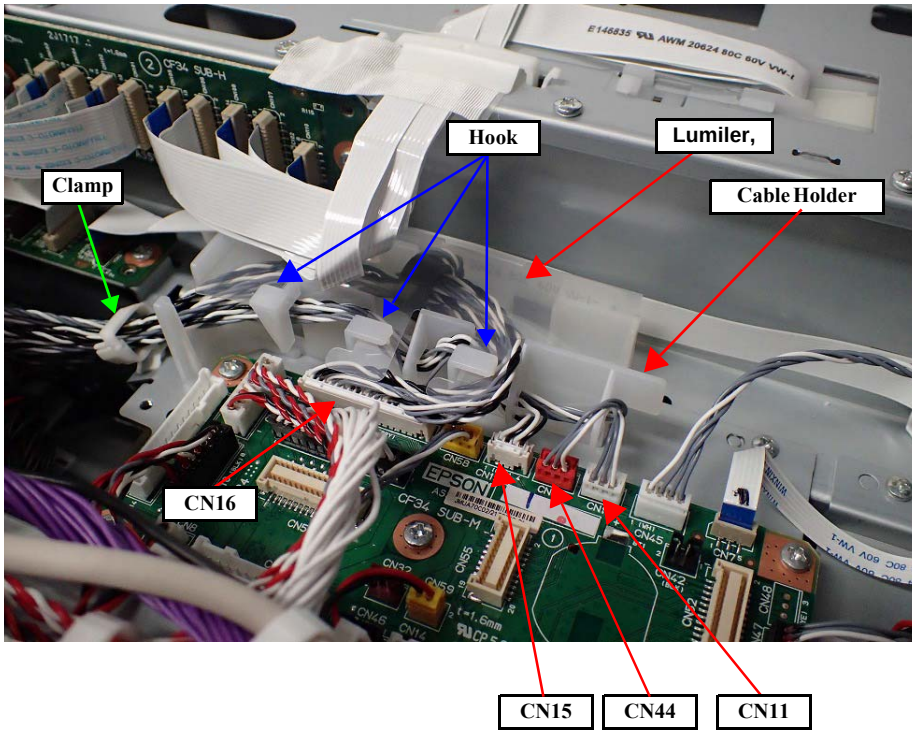
	B5	C5

PCB Head Relay Board (with Mounting Plate)



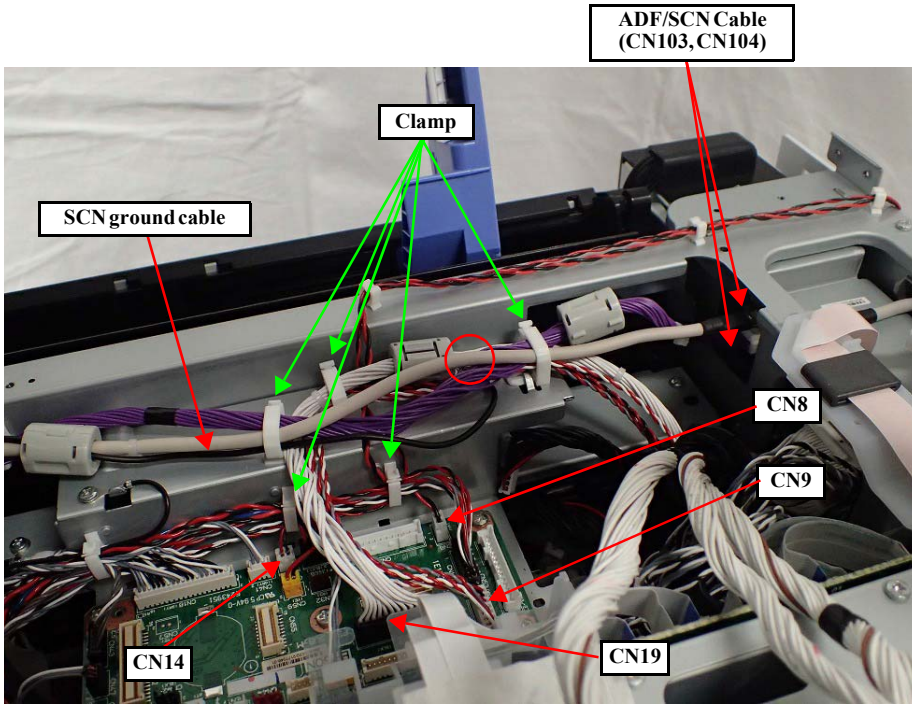
1. Disconnect the five Relay cables from the PCB Mechanism Relay Board.

PCB Mechanism Relay Board (with Mounting Plate)



2. Remove the cable of front side (around the cable holder) by the following procedure.
   - 2-1. Release the three hooks of lumiler, then open the lumiler .
   - 2-2. Release the clamp.
   - 2-3. Disconnect the four cables (CN11, CN15, CN16, CN44) from the PCB Mechanism Relay Board.
   - 2-4. Release the cable from the Cable Holder.

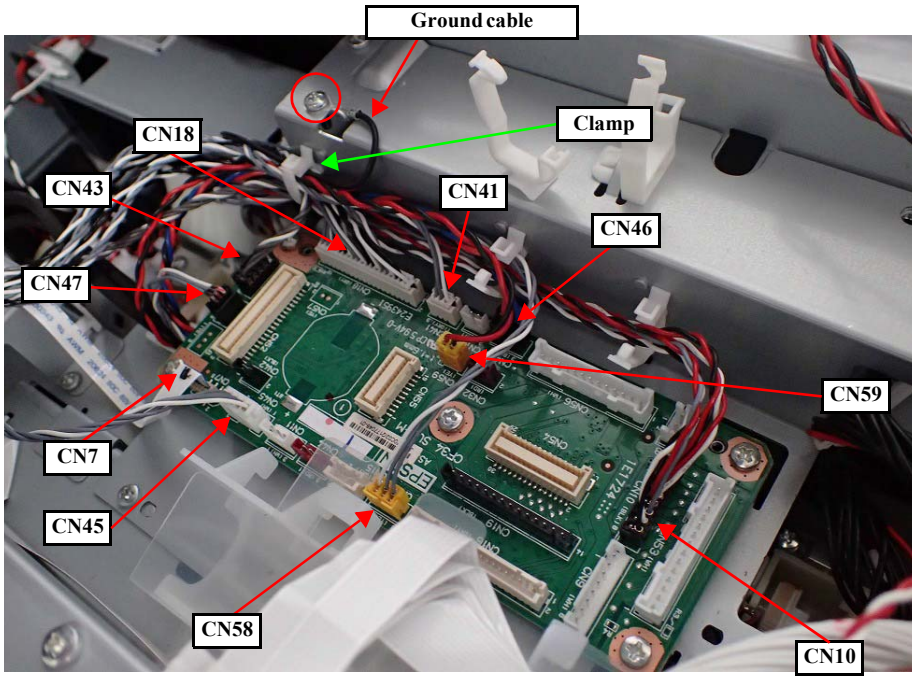
PCB Mechanism Relay Board (with Mounting Plate)



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

3. Disconnect the cables of rear side(1) by the following procedure.
   3-1. Disconnect the ADF/SCN cable from the connector (CN103, CN104) of the main board.
   3-2. Remove the screw (S1: ○), then remove the SCN ground cable.
   3-3. Release the five clamps.
   3-4. Disconnect four relay cables from connector (CN8, CN9, CN14, CN19) of the PCB Mechanism Relay Board.

PCB Mechanism Relay Board (with Mounting Plate)

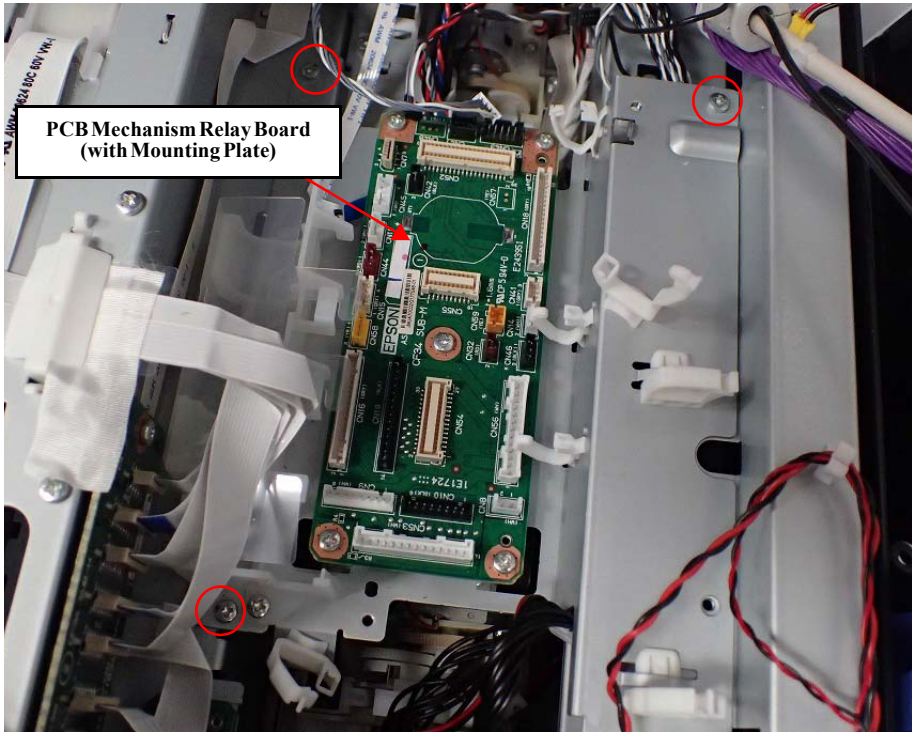


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

4. Disconnect the cables of rear side(1) by the following procedure.
   4-1. Release the cable from the clamp.
   4-2. Disconnect the nine cables and a FFC from the following connector of the PCB mechanism Relay Board.
   - CN7
   - CN41
   - CN46
   - CN58
   - CN10
   - CN43
   - CN47
   - CN59
   - CN18
   - CN45

   4-3. Remove the screw (S1: ○), then remove the Ground cable.

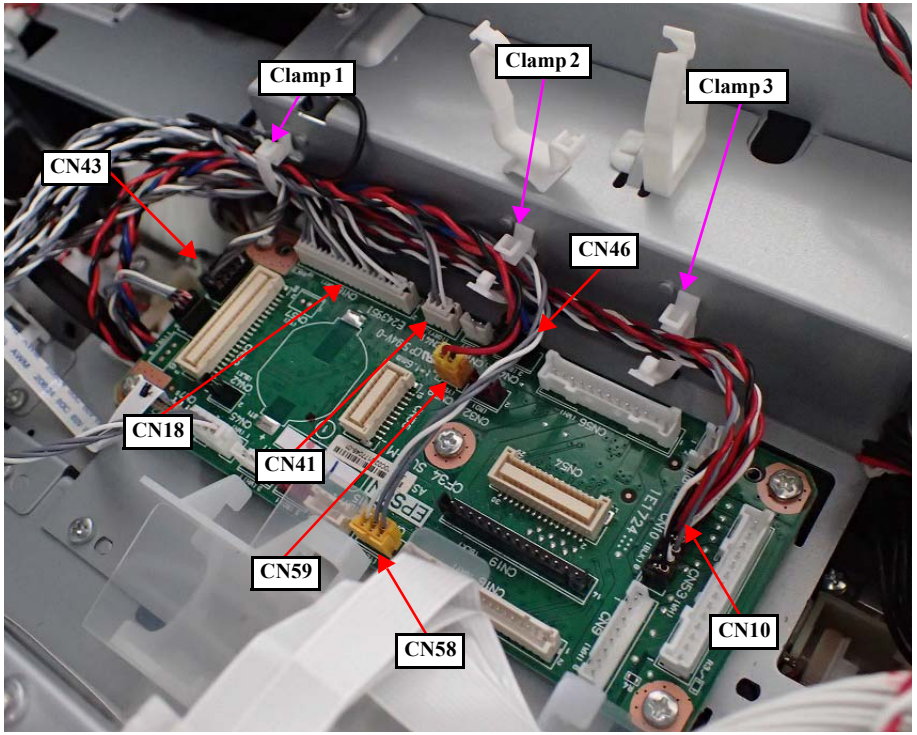
PCB Mechanism Relay Board (with Mounting Plate)



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

5. Remove the three screws (S1: ○), then remove the PCB Mechanism Relay Board (with Mounting Plate).

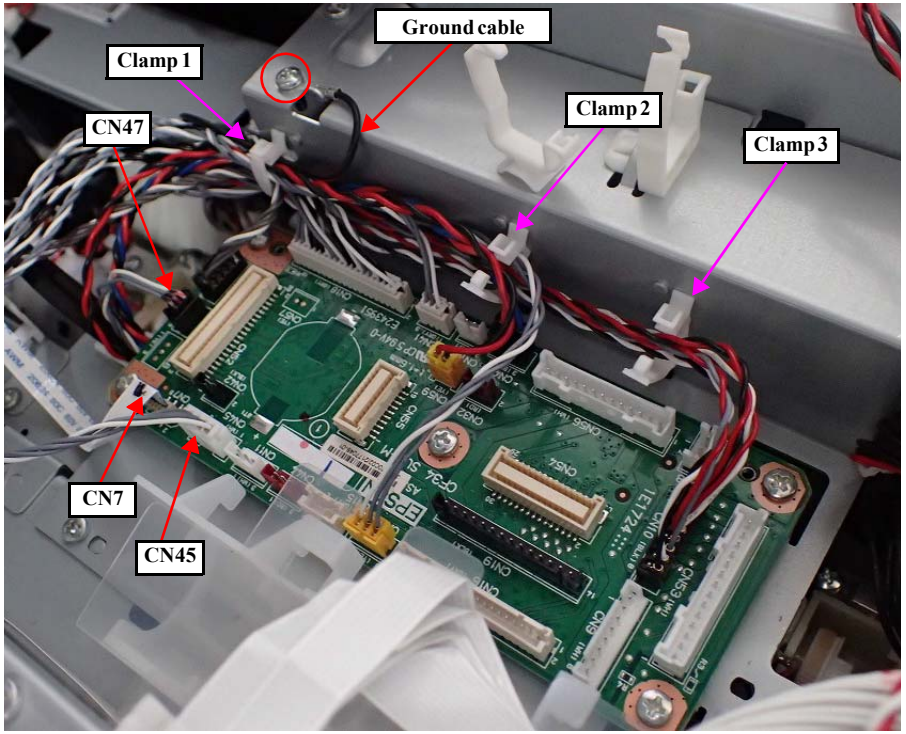
PCB Mechanism Relay Board (with Mounting Plate)



REASSEMBLY Rotate the cables by the following procedure.

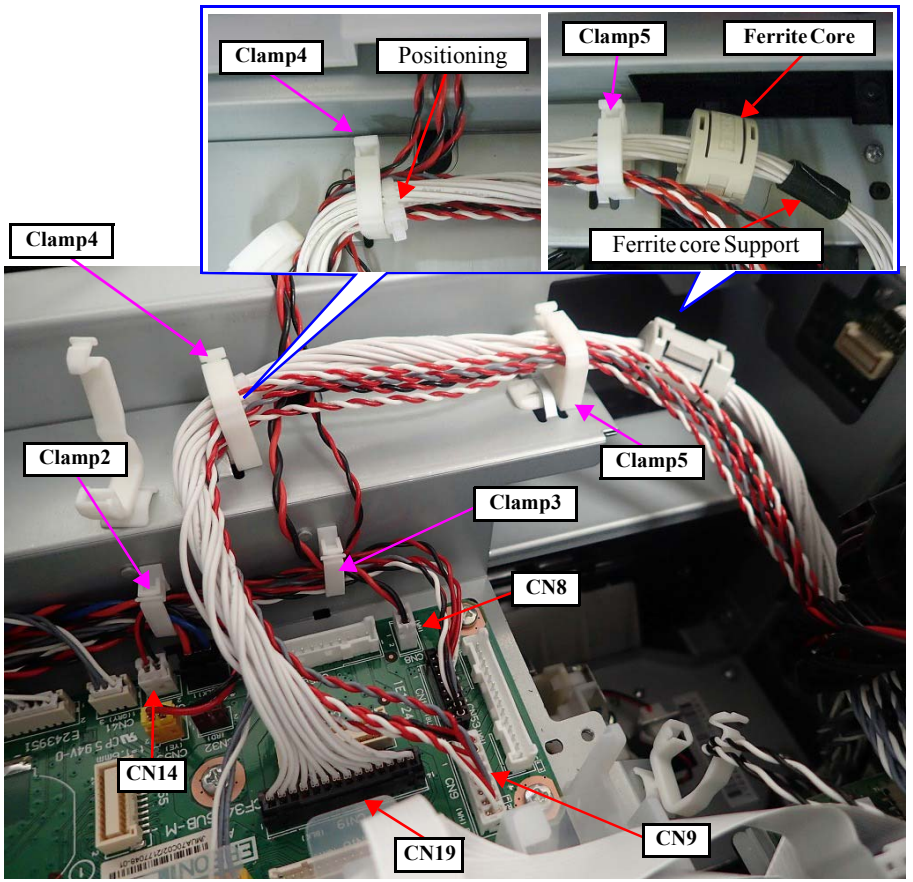
1. Route the cable to the following specified clamp, then connect the cable to PCB Mechanism Relay board.
   - ☐ Cable (CN10: Black):Clamp 3 > Clamp 2 > Clamp 1
   - ☐ Cable (CN58: Yellow):Clamp 2 > Clamp 1
   - ☐ Cable (CN59: Yellow):Clamp 2 > Clamp 1
   - ☐ Cable (CN46: Black):Clamp 2 > Clamp 1
   - ☐ Cable (CN41: White):Clamp 1
   - ☐ Cable (CN18: White):Clamp 1
   - ☐ Cable (CN43: Black):Clamp 1

PCB Mechanism Relay Board (with Mounting Plate)



2. Rotate the ground cable to clamp, then fix it by screw (S1).
3. Connect the following cable and FFC to the PCB Mechanism Relay Board.
   - ☐ FFC (CN7: White)
   - ☐ Cable (CN45: White)
   - ☐ Cable (CN47: Black)

PCB Mechanism Relay Board (with Mounting Plate)



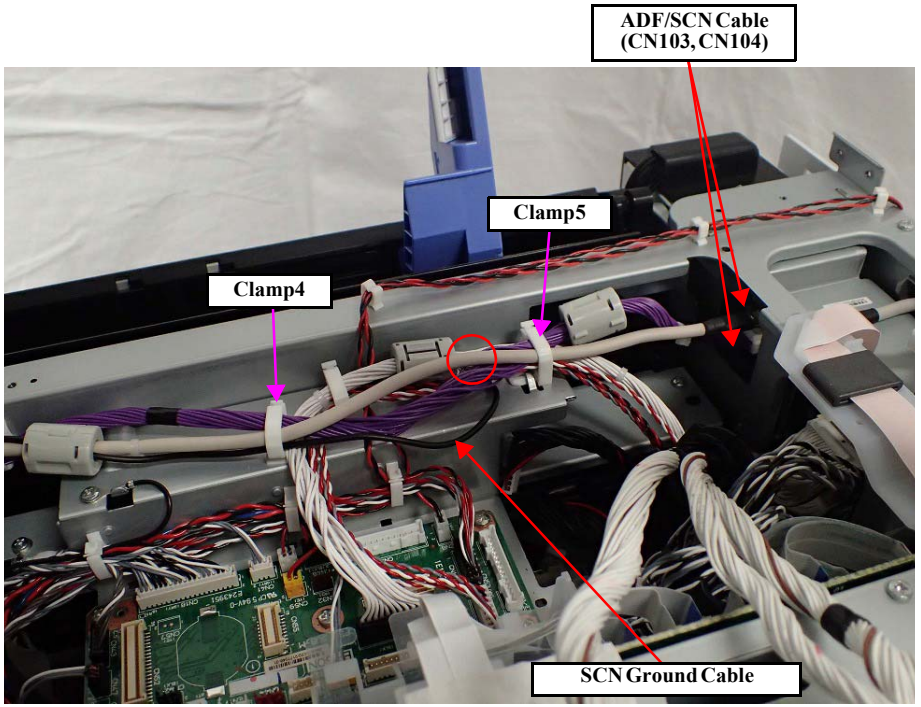
4. Route the cables to the following specified clamp, then connect the cables to the PCB Mechanism Relay Board.
   - ☐ Cable (CN14: White):Clamp 2 > Clamp 3
   - ☐ Cable (CN8: White:Clamp 3
   - ☐ Cable (CN9: White:Clamp 4 > Clamp 5
   - ☐ Cable (CN19: Black:Clamp 4 > Clamp 5

CAUTION

Note the following points when you rotate the cable (CN19).

- Set the positioning of the cable at left side (Home position side) of clamp 4.
- Set the ferrite core of the cable to between clamp5 and ferrite core support.

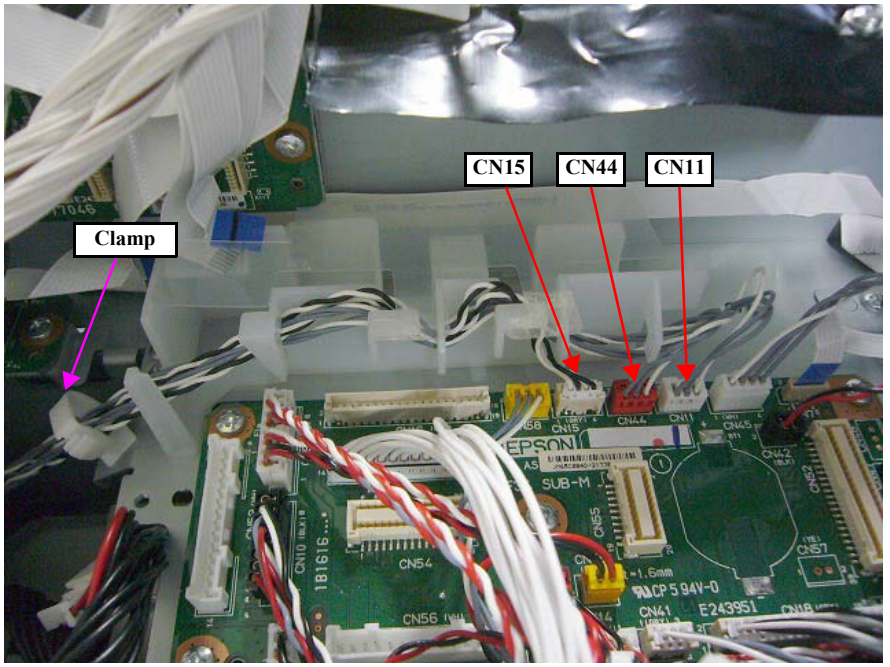
PCB Mechanism Relay Board (with Mounting Plate)



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

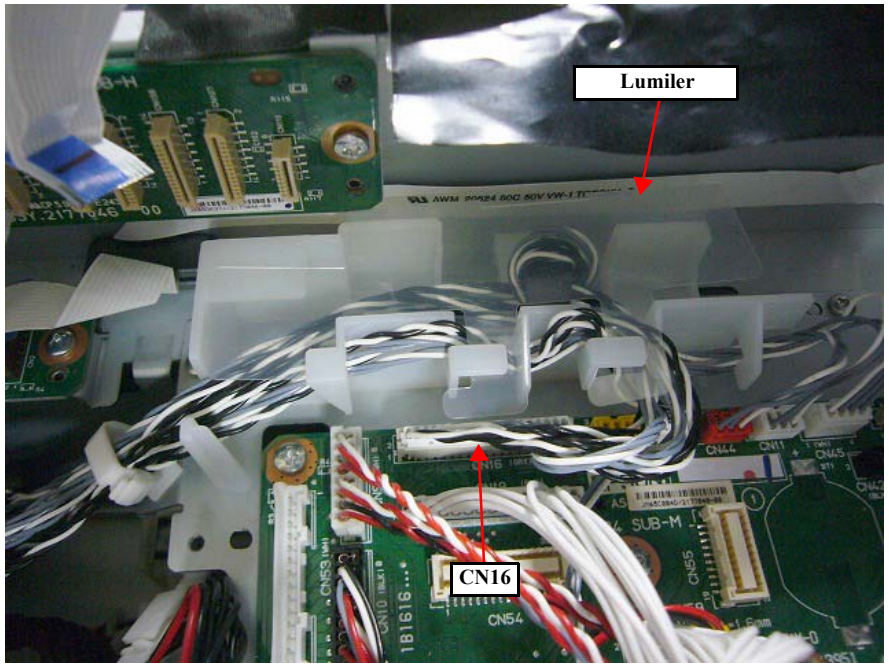
5. Connect the ADF/SCN Cables (CN103, CN104) to Main Board, and fix the these cables by clamp4 and Clamp 5.
6. Fix the SCN Ground Cable by screw (S1).
7. Fix the SCN Ground Cable by Clamp4.

PCB Mechanism Relay Board (with Mounting Plate)



8. Route the cables to Cable Holder following the above figure, then connect the cables to PCB Mechanism Relay Board.
   - ☐ Cable (CN11: White):four hooks > Clamp
   - ☐ Cable (CN44: Red):four hooks > Clamp
   - ☐ Cable (CN15: White:three hooks > Clamp

PCB Mechanism Relay Board (with Mounting Plate)

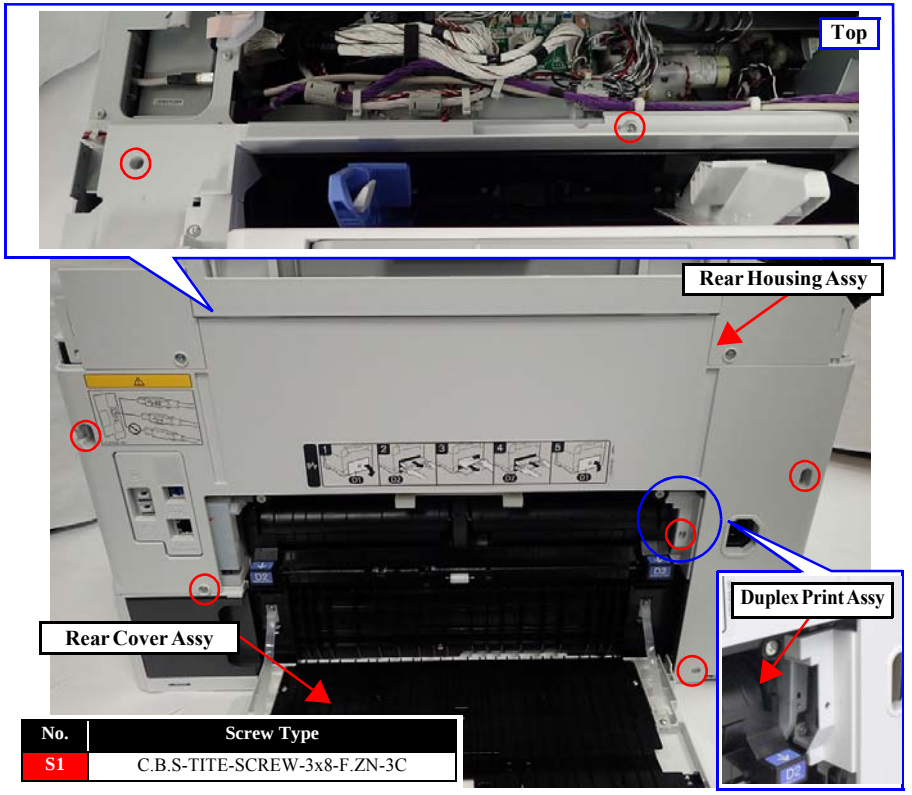


REASSEMBLY

9. Route the cable(CN16) following the above figure, then connect the cable to PCB Mechanism Relay Board.
10. Set the hook of Lumiler to Cable Holder, then fix it.
11. Connect the five relay cables to PCB Mechanism Relay Board.

	B6	C6

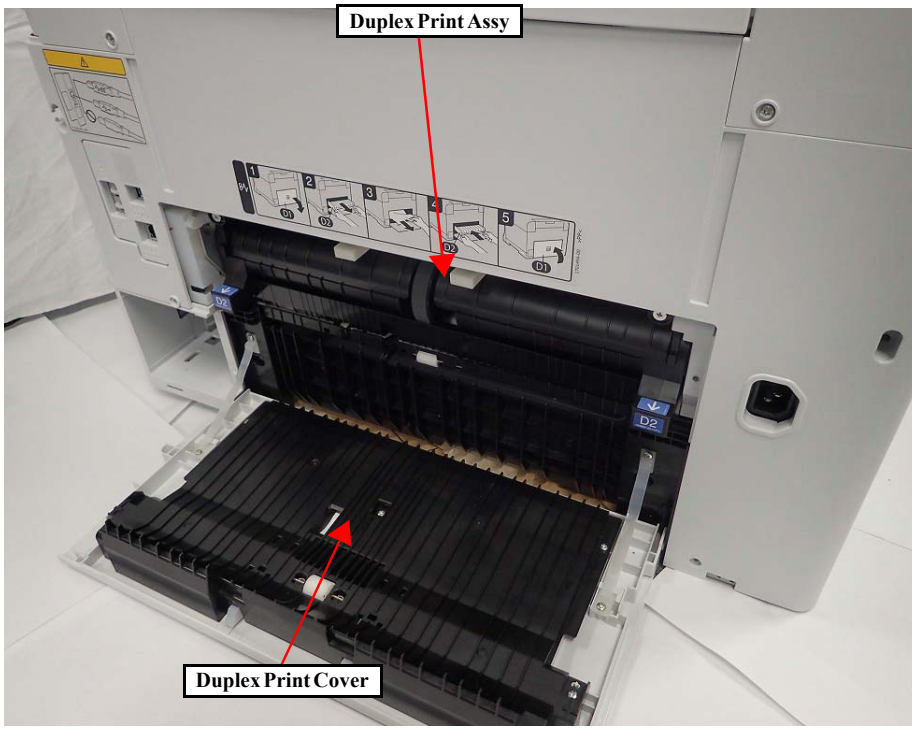
Rear Housing Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

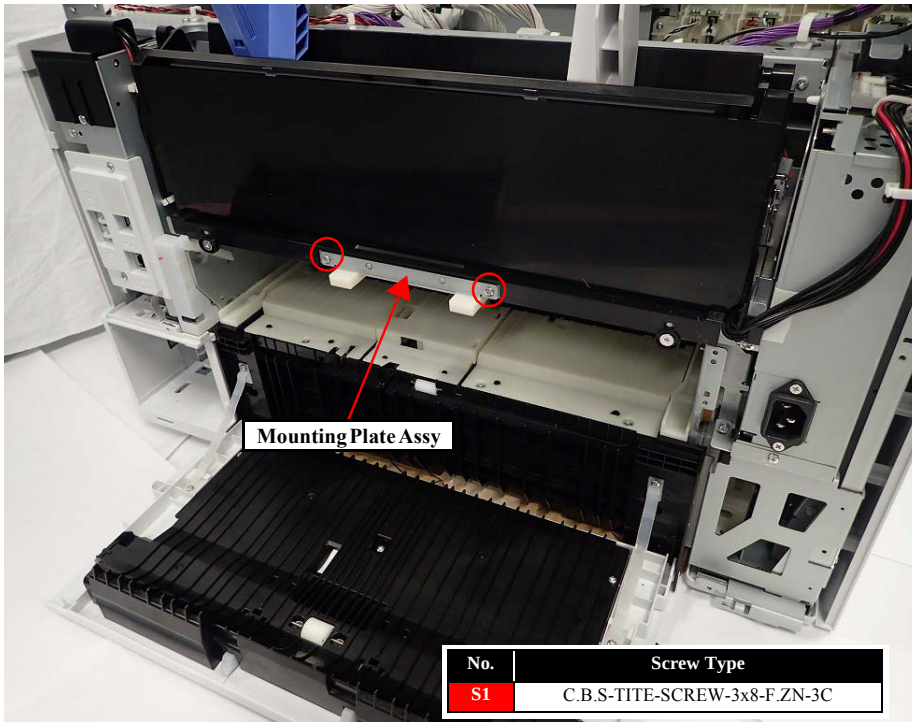
1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

	B7	C7	Duplex Print Assy



1. Open the Duplex Print Cover.
2. Remove the Duplex Print Assy.

	B8	C8	Mounting Plate Assy

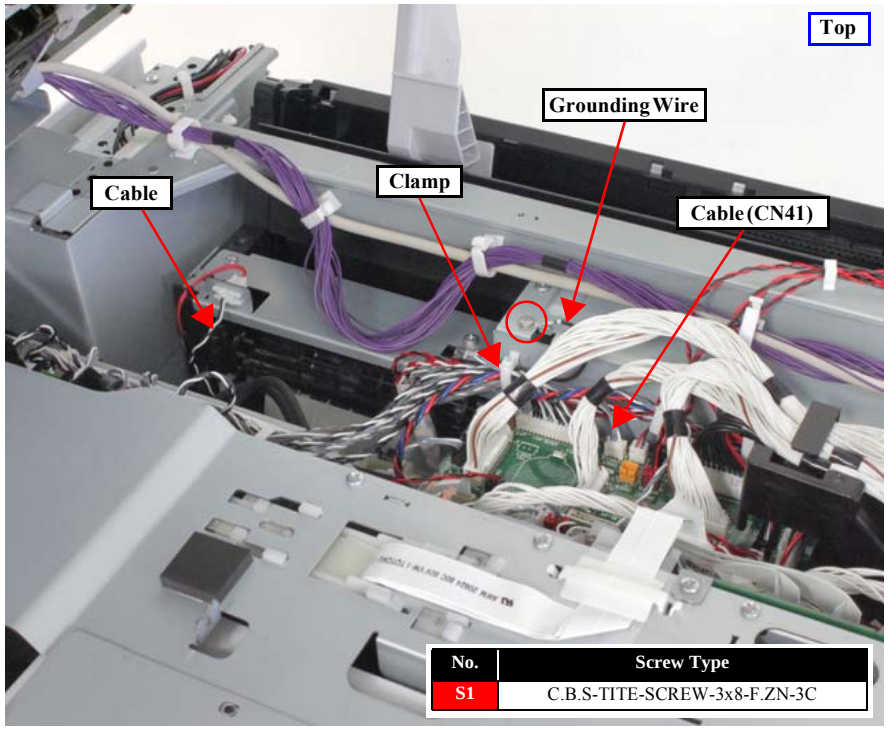


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Mounting Plate Assy.

	B9	C9

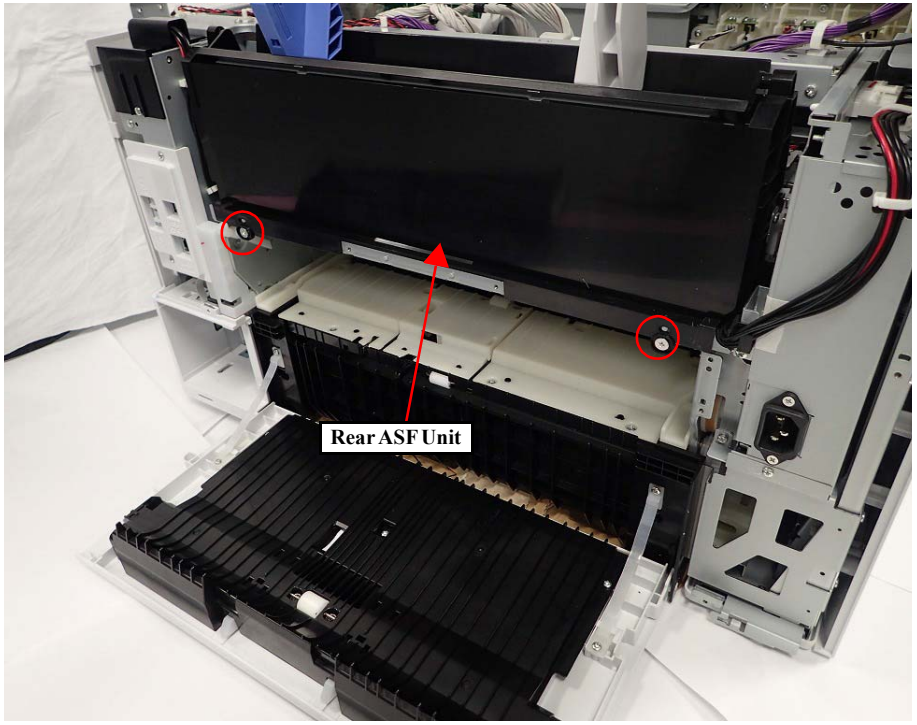
Rear ASF Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the two cables from the connectors.
2. Remove the screw (S1: ○), then release the Grounding Wire.
3. Release the cables and the grounding wire from the clamp.

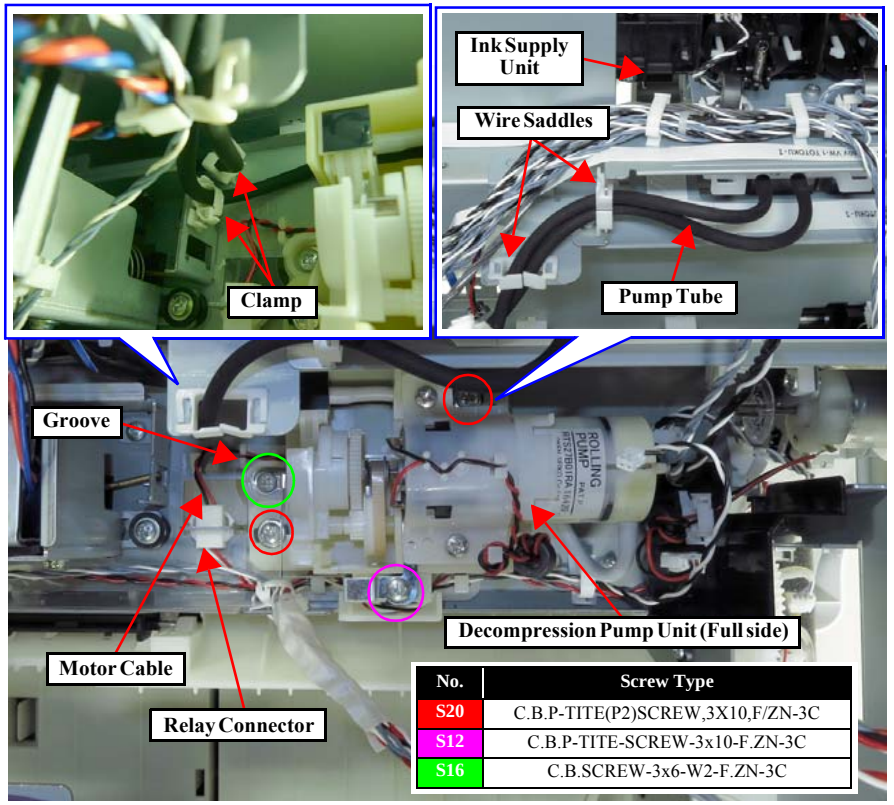
Rear ASF Unit



No.	Screw Type
S2	C.SHOULDER S-TITE,3X5

4. Remove the two screws (S2: ○), then remove the Rear ASF Unit.

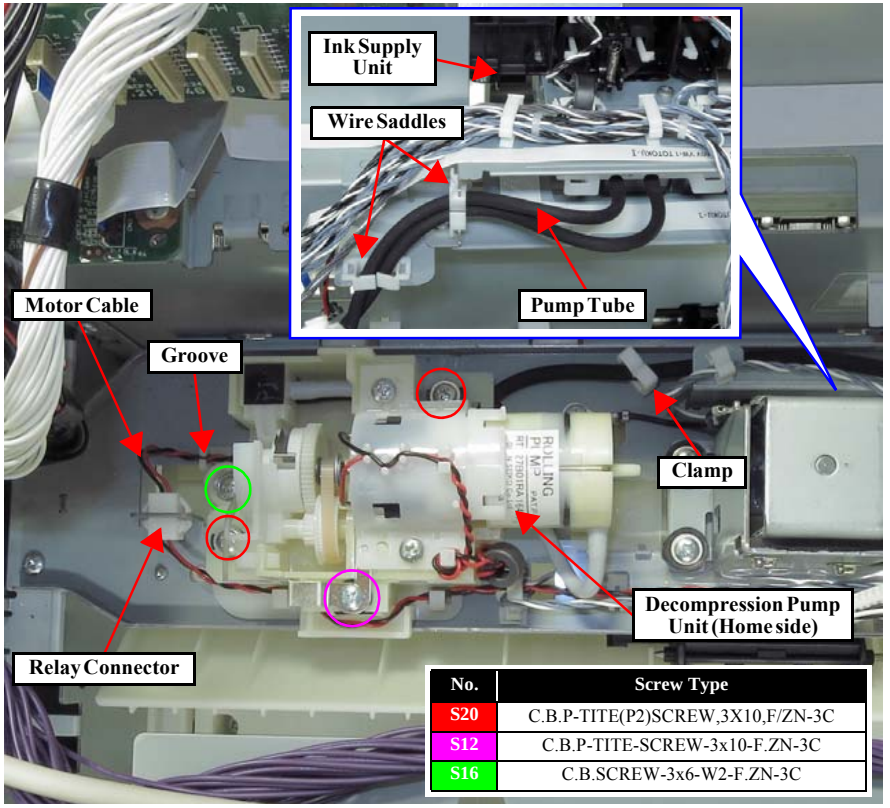
B10 Decompression Pump Unit (Full side)



No.	Screw Type
S20	C.B.P-TITE(P2)SCREW,3X10,F/ZN-3C
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C
S16	C.B.SCREW-3x6-W2-F.ZN-3C

1. Pull out the pump tube from the Ink Supply Unit.
2. Release the pump tube from the two wire saddles and the two clamps.
3. Disconnect the motor cable from the relay connector.
4. Release the cable from the groove.
5. Remove the two screws (S20: ○), the screw (S12: ○), and the screw (S16: ○), then remove the Decompression Pump Unit (Full side).

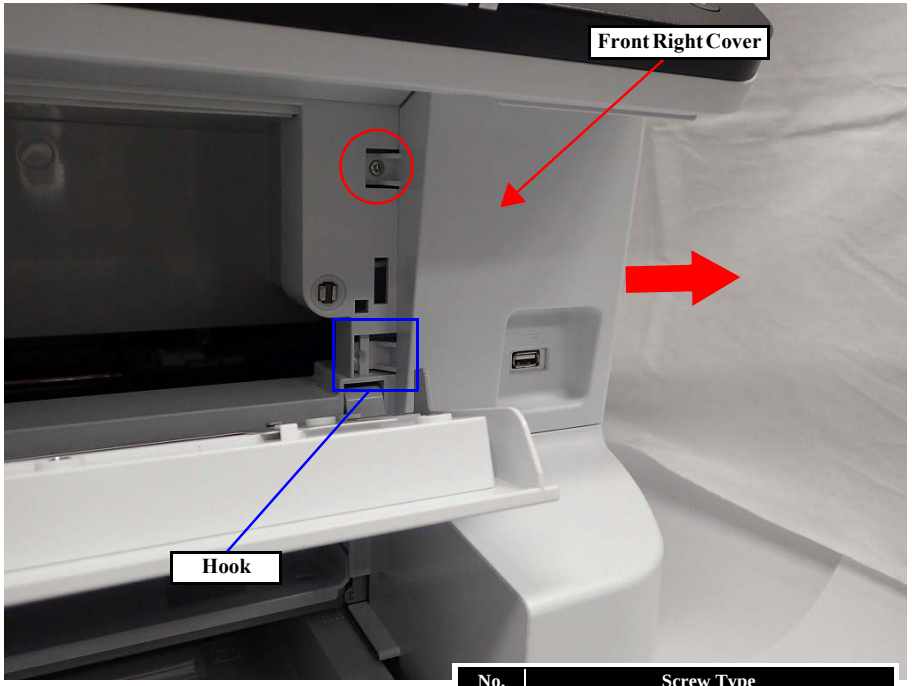
C10 Decompression Pump Unit (Home side)



No.	Screw Type
S20	C.B.P-TITE(P2)SCREW,3X10,F/ZN-3C
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C
S16	C.B.SCREW-3x6-W2-F.ZN-3C

1. Pull out the pump tube from the Ink Supply Unit.
2. Release the pump tube from the two wire saddles and the clamp.
3. Disconnect the motor cable from the relay connector.
4. Release the cable from the groove.
5. Remove the two screws (S20: ○), the screw (S12: ○), and the screw (S16: ○), then remove the Decompression Pump Unit (Home side).

			Front Right Cover
D4	E4		



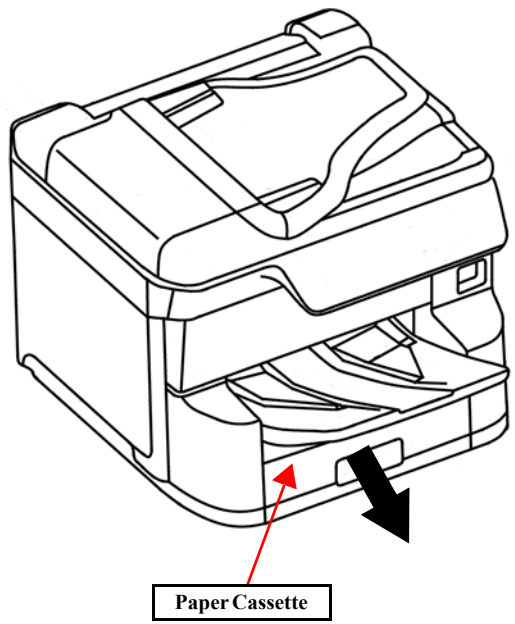
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

			Stacker Assy
D5	E5		

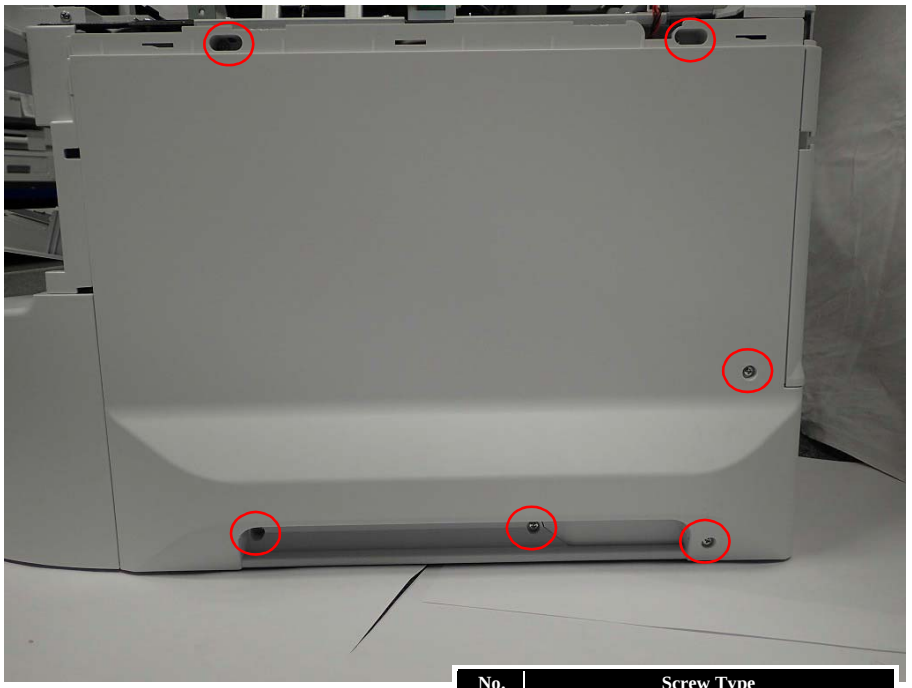
1. Remove the Stacker Assy.

			Paper Cassette
D6	E6		



1. Remove Paper Cassette.

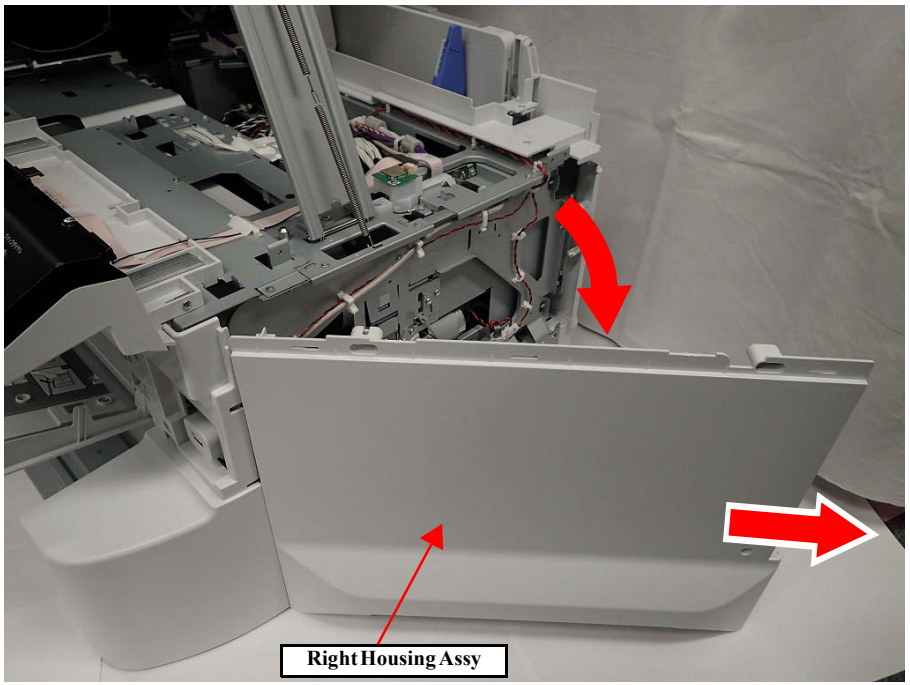
			Right Housing Assy
D7	E7		



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screw (S1: ○).

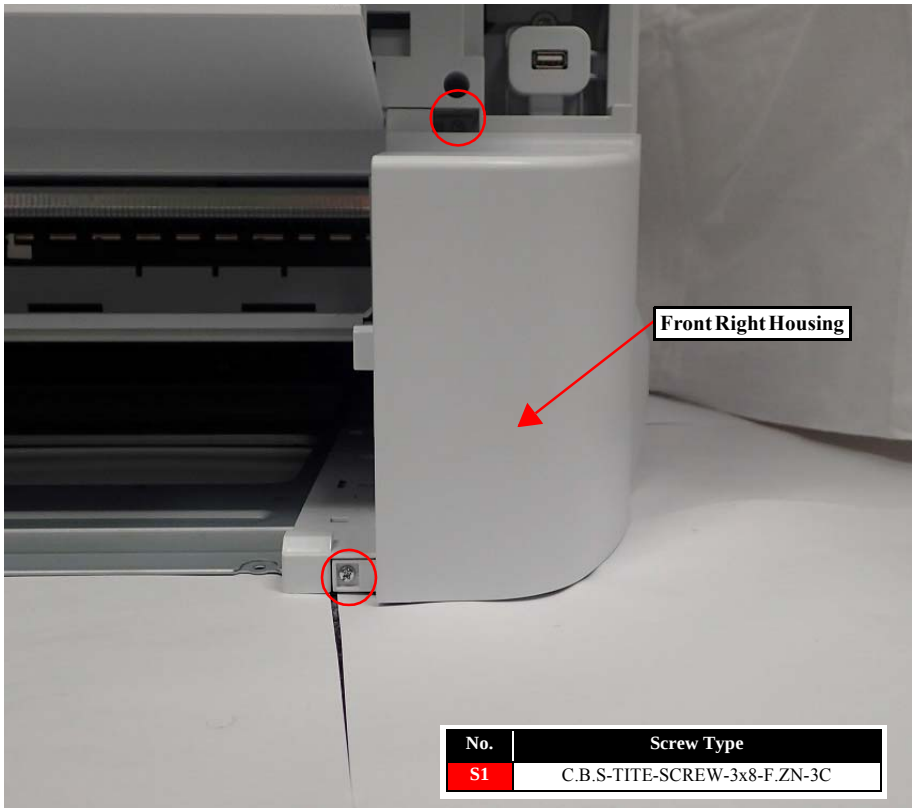
Right Housing Assy



2. Open the Rear side of Right Housing Assy like the above figure.
3. Slide the Right Housing Assy to derection of arrows in state of rear side of RIgth Housing Assy opened condition, and remove it.

D8	E8	

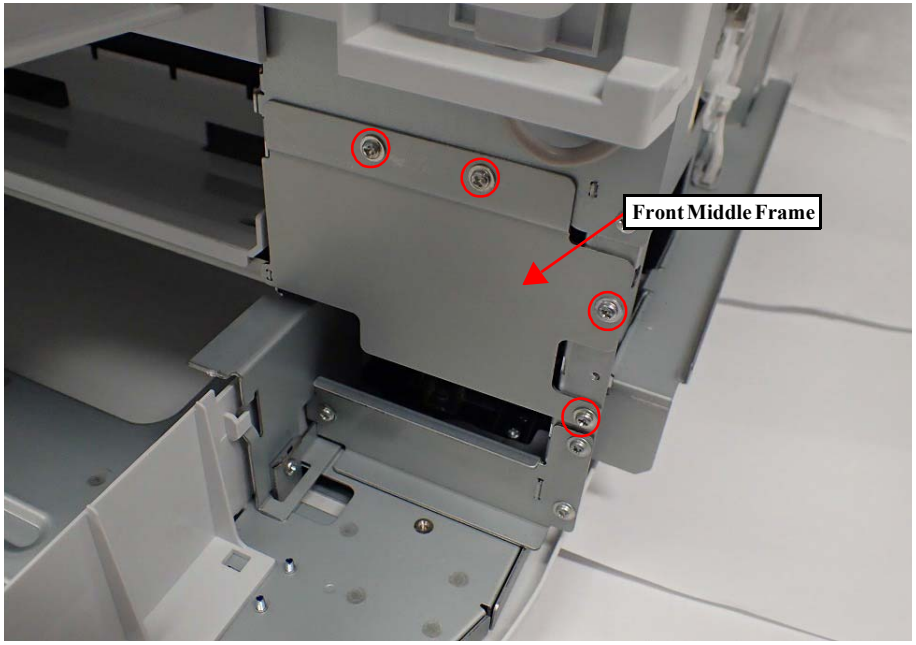
Front Right Housing



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Front Right Housing.

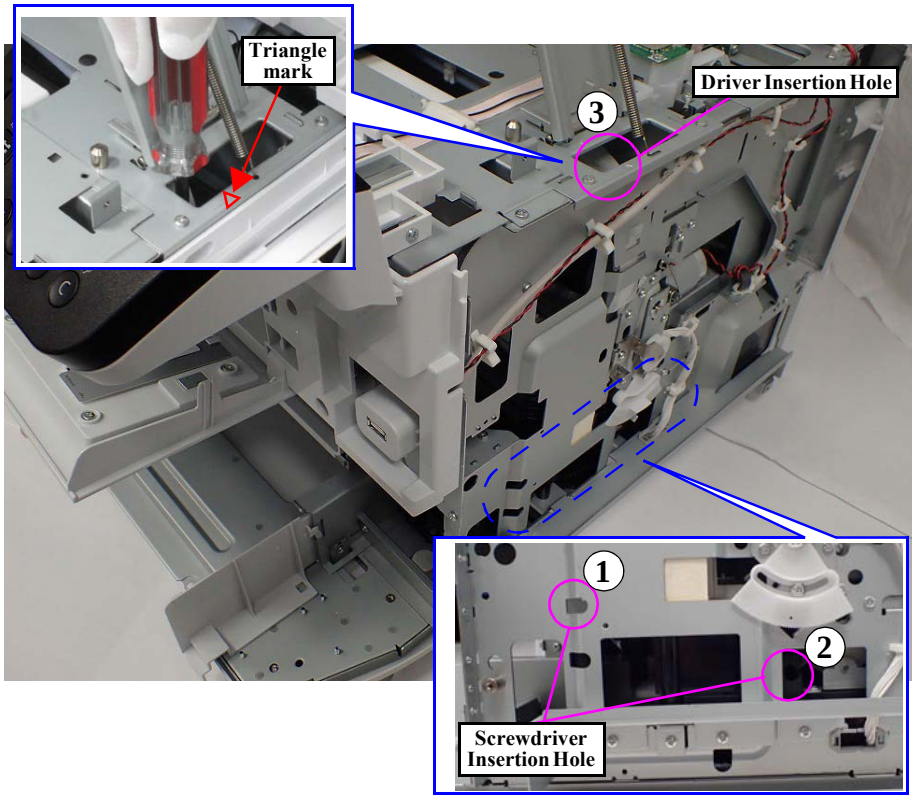
			Front Middle Frame
D9	E9		



No.	Screw Type
S7	C.C.S-TITE-SCREW-3x5-F.ZN-3C

1. Remove the four screws (S7: ○), then remove the Front Middle Frame.

			Maintenance Unit
D10	E10		



1. Insert the screwdriver into the hole and drive the three screws fixing the Maintenance Unit until run idle the screw.

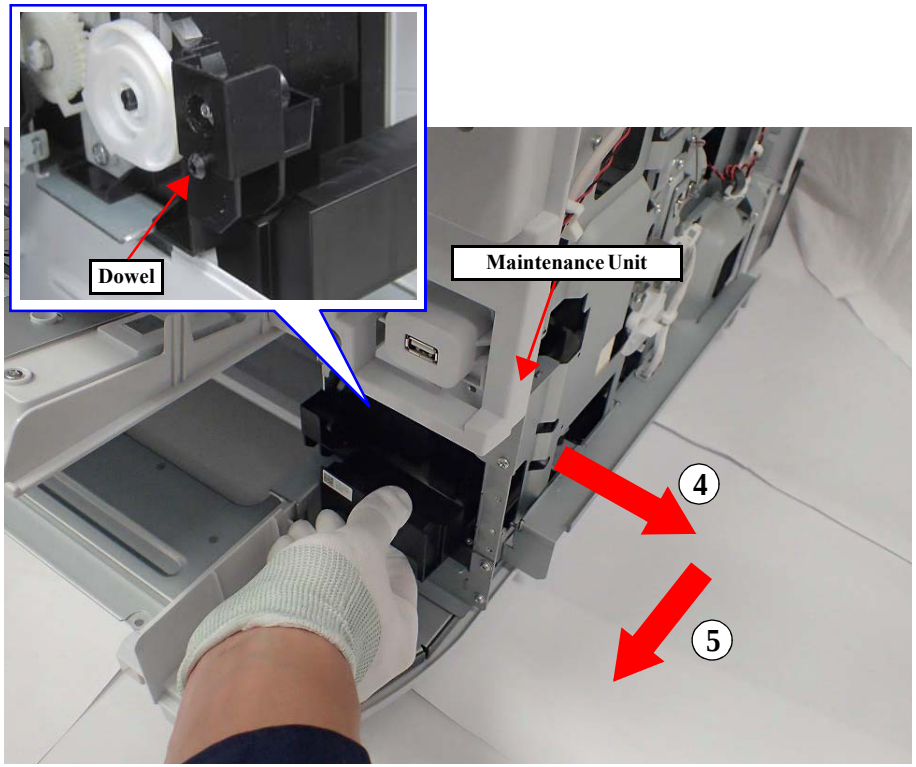
CHECK POINT

- ☐ Release the CR lock, then move the CR Unit to center before removing the Maintenance Unit.
- ☐ The screws are not removed because there is a screw clamp.
- ☐ Tighten the screw which is inside of the triangle mark.
- ☐ Use the screw driver whose shaft length is more than 25 cm to access the screw from the top.

REASSEMBLY

Tighten the screws in numerical order as shown in the picture.

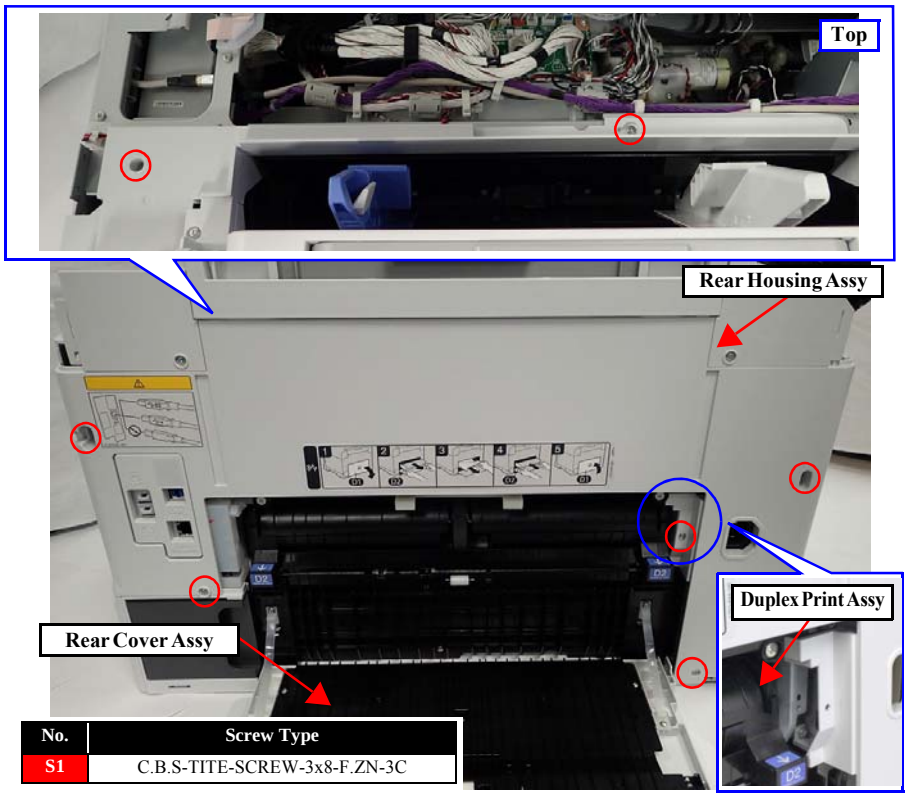
Maintenance Unit



2. Open the Duplex Print Cover.
3. Remove Maintenance Box.
4. Slide the Maintenance unit rightward, and disengage the positioning dowel.
5. Pull the Maintenance Unit forward.

	E11	

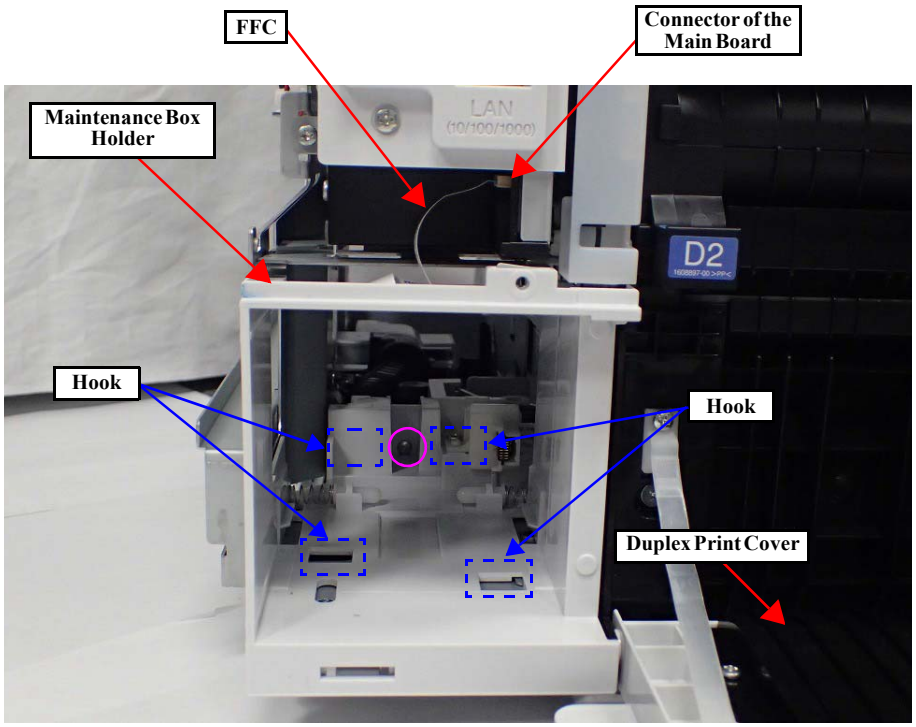
Rear Housing Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

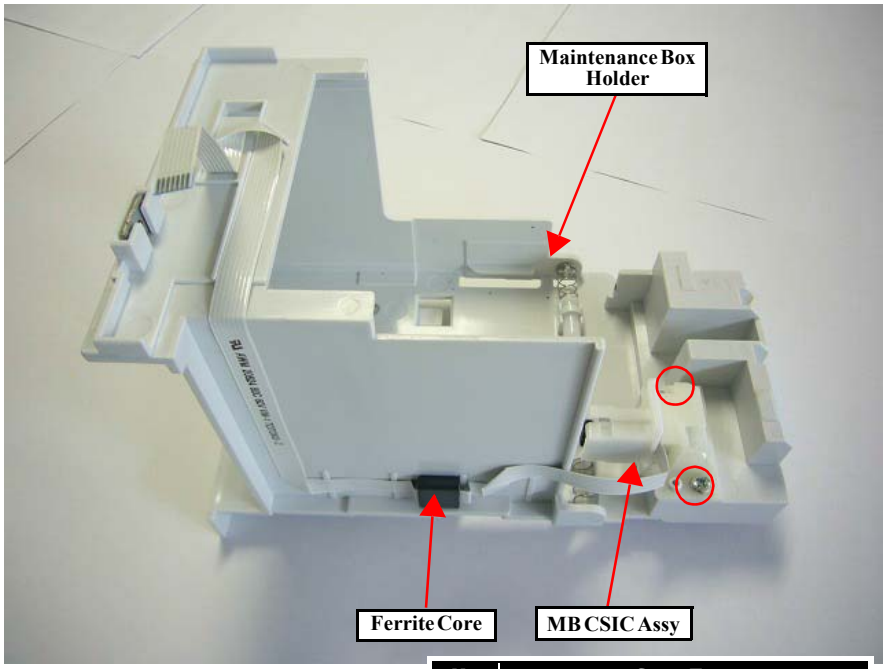
E12 Maintenance Box Holder



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the screw (S1: ○).
3. Disconnect the FFC from the connector of the Main Board.
4. Slide the Maintenance Box Holder forward to discharge the four hooks, then remove the Maintenance Box Holder.

E13 MB CSIC Assy



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

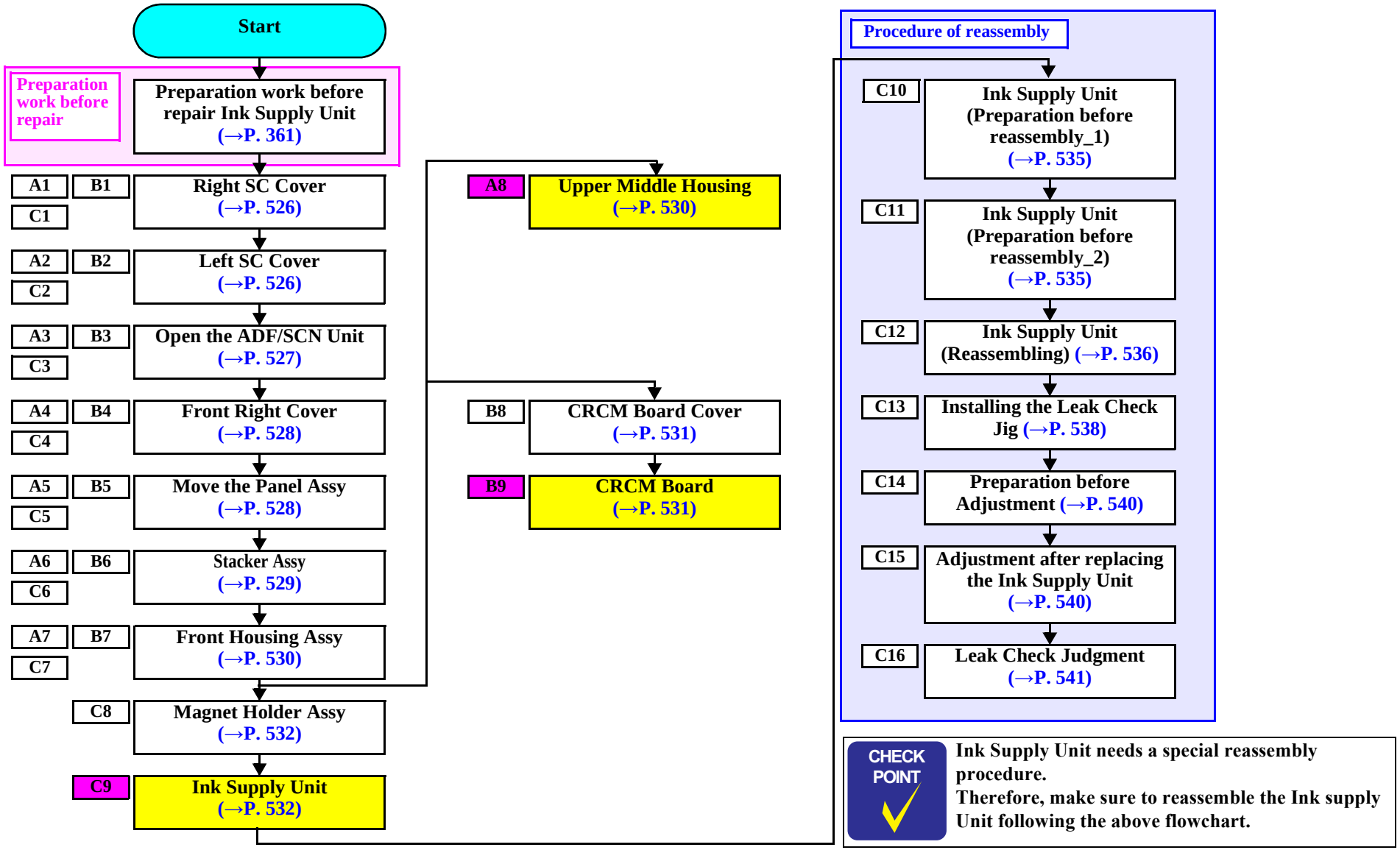
1. Remove the FFC and the ferrite core from the Maintenance Box Holder.
2. Remove the two screws (S12: ○), then remove the MB CSIC Assy.

7.4.3.14 Ink System Mechanism 2

OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Upper Middle Housing	A	11 min 15 sec	---	11 min 15 sec
CRCM Board	B	9 min 2 sec	---	9 min 2 sec
Ink Supply Unit	C	17 min 11 sec	15 min 7 sec	32 min 18 sec

DISASSEMBLY FLOWCHART

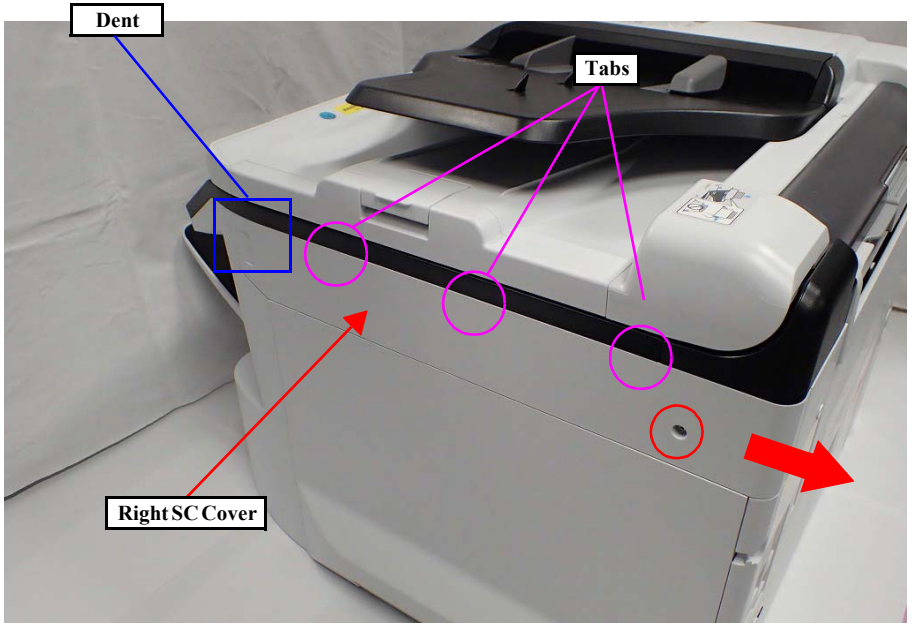


CHECK POINT

Ink Supply Unit needs a special reassembly procedure.
Therefore, make sure to reassemble the Ink supply Unit following the above flowchart.

A1	B1
C1	

Right SC Cover

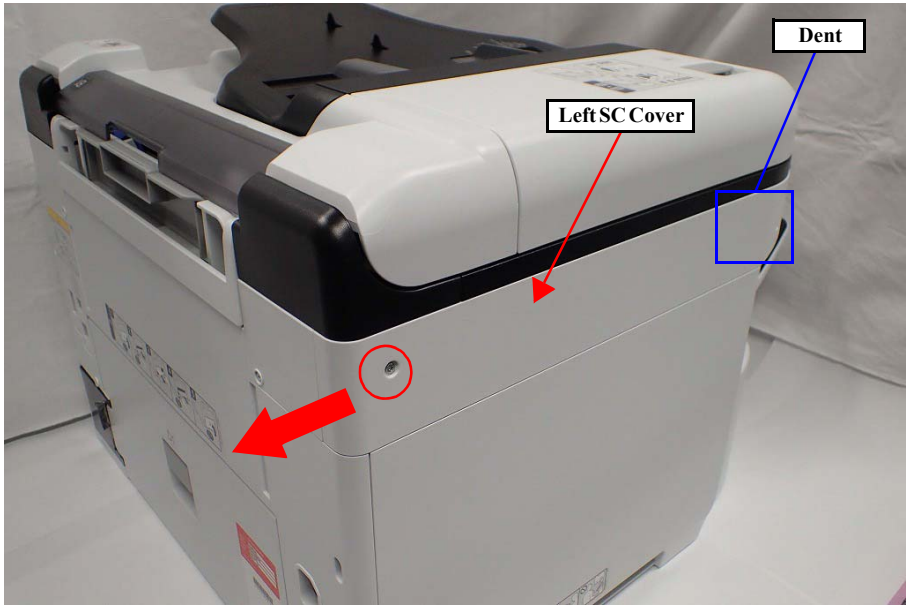


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2
C2	

Left SC Cover

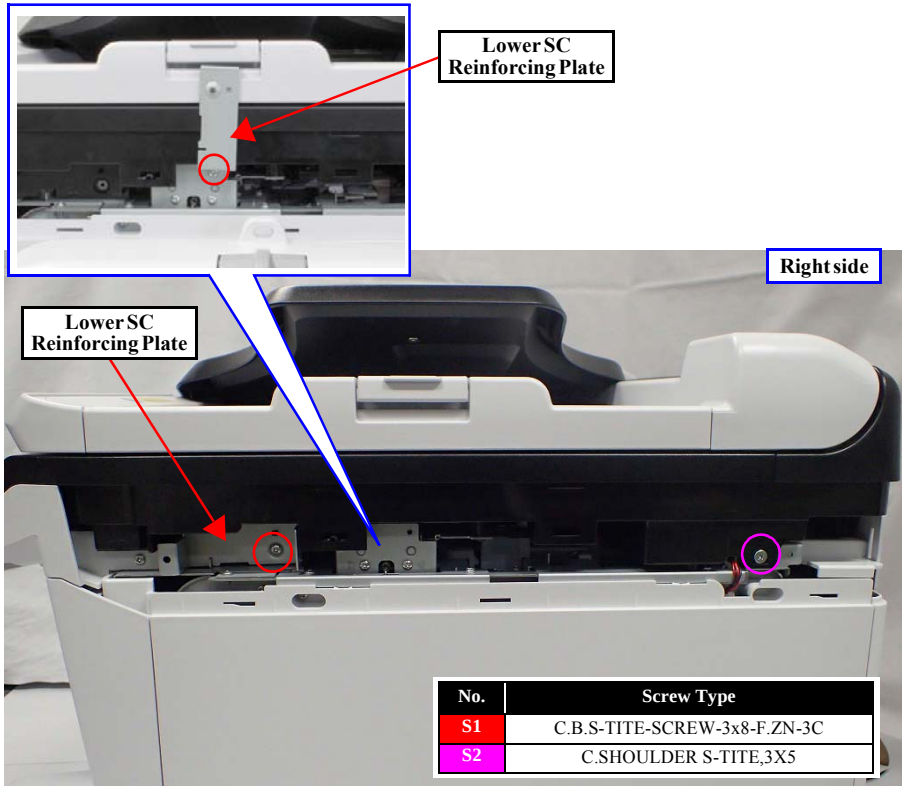


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3
C3	

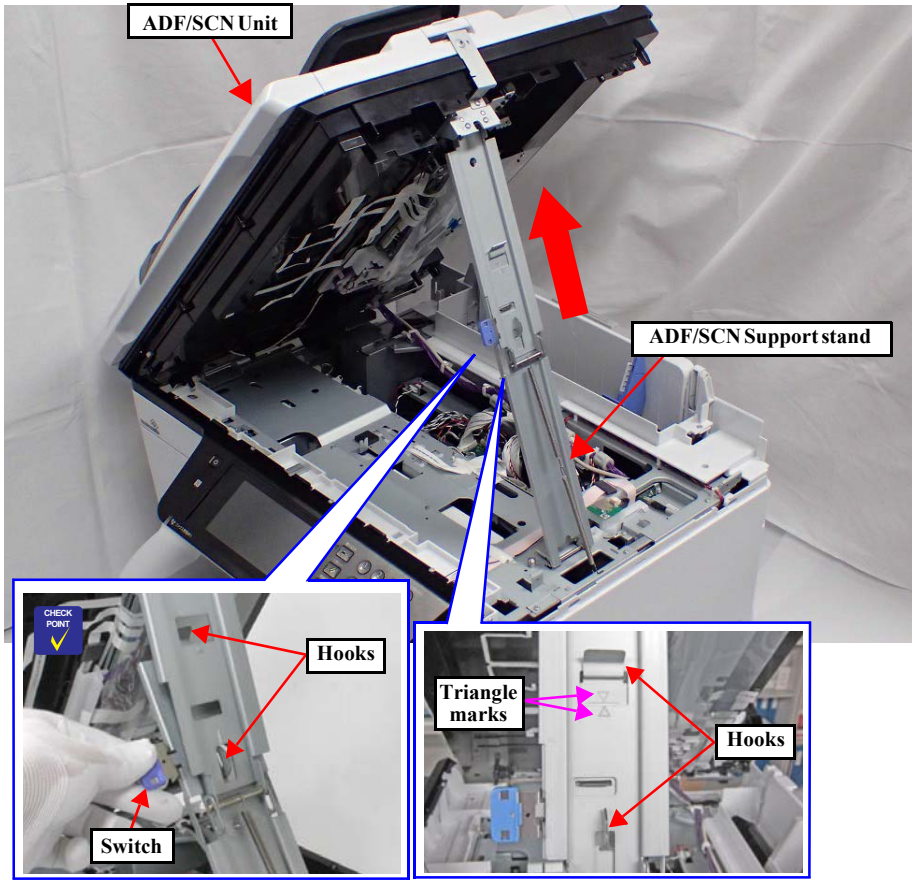
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



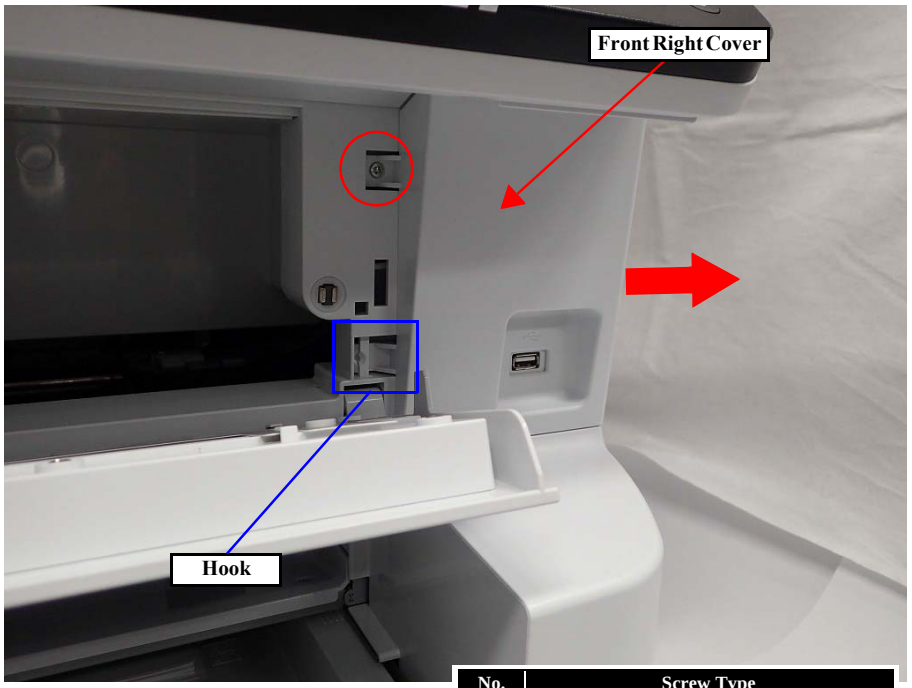
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4
C4	

Front Right Cover

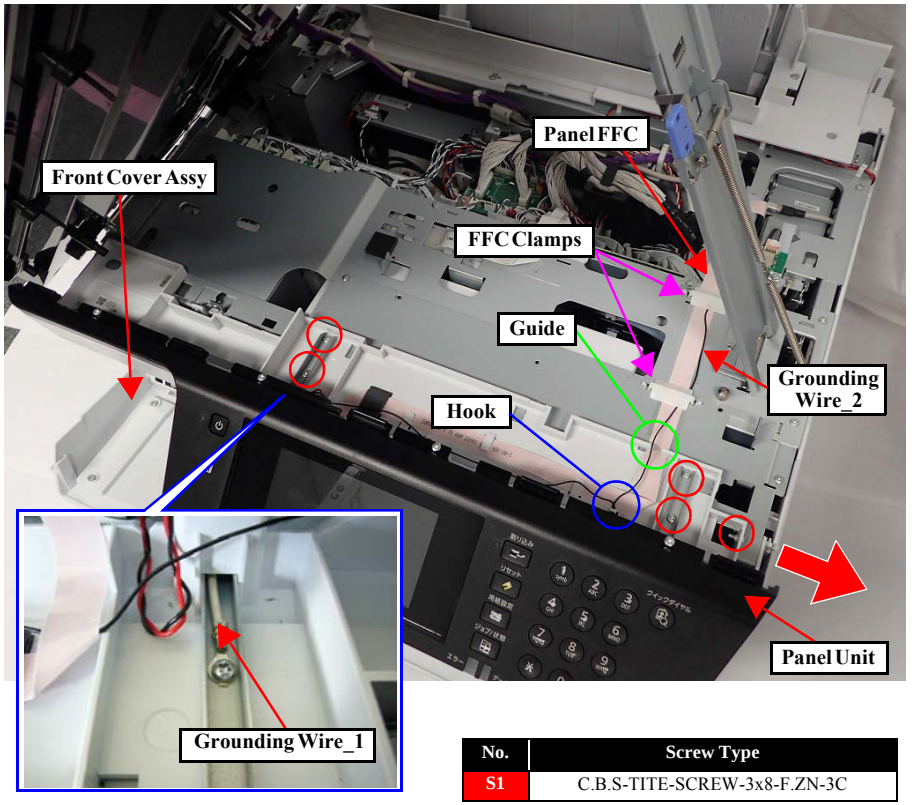


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

A5	B5
C5	

Move the Panel Assy

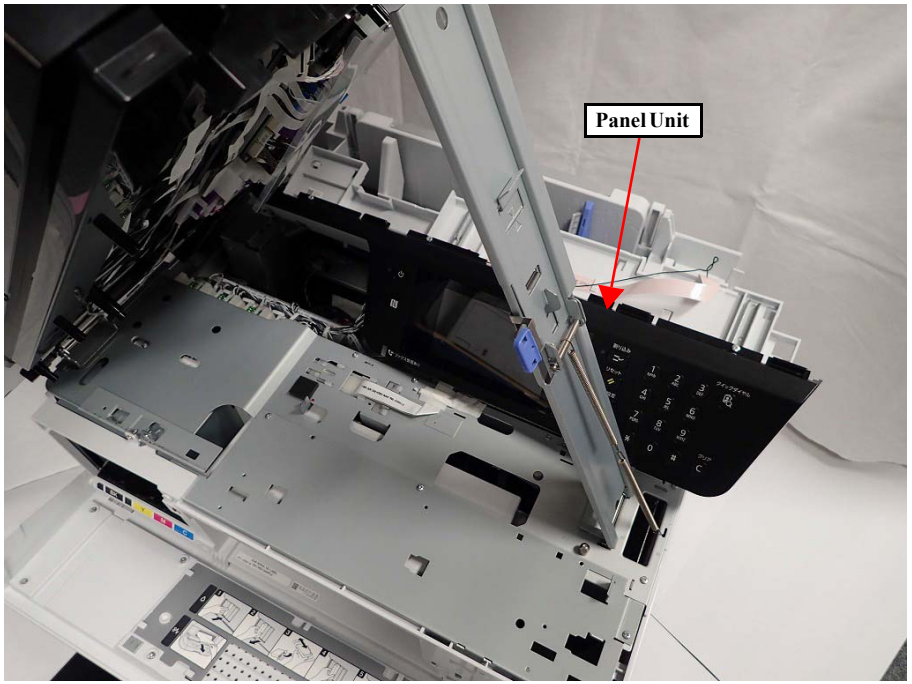


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○)
2. Remove the two FFC clamps.
3. Release the Panel FFC and the grounding wire_2 from the guide.
4. Release thgrounding wire_2 from Hook.
5. Open the Front Cover Assy.
6. Slide the panel unit rightward to remove it.

REASSEMBLY
- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

Move the Panel Unit



7. Put the panel unit at the rear side of the printer.

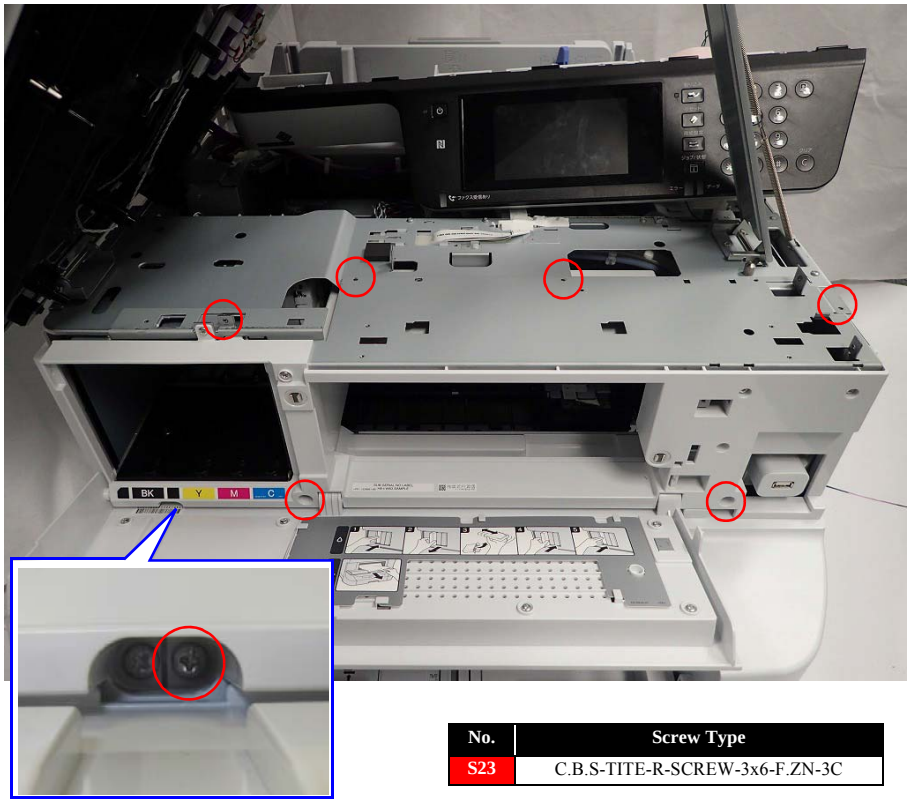
A6	B6
C6	

Stacker Assy

1. Remove the Stacker Assy.

A7	B7
C7	

Front Housing Assy

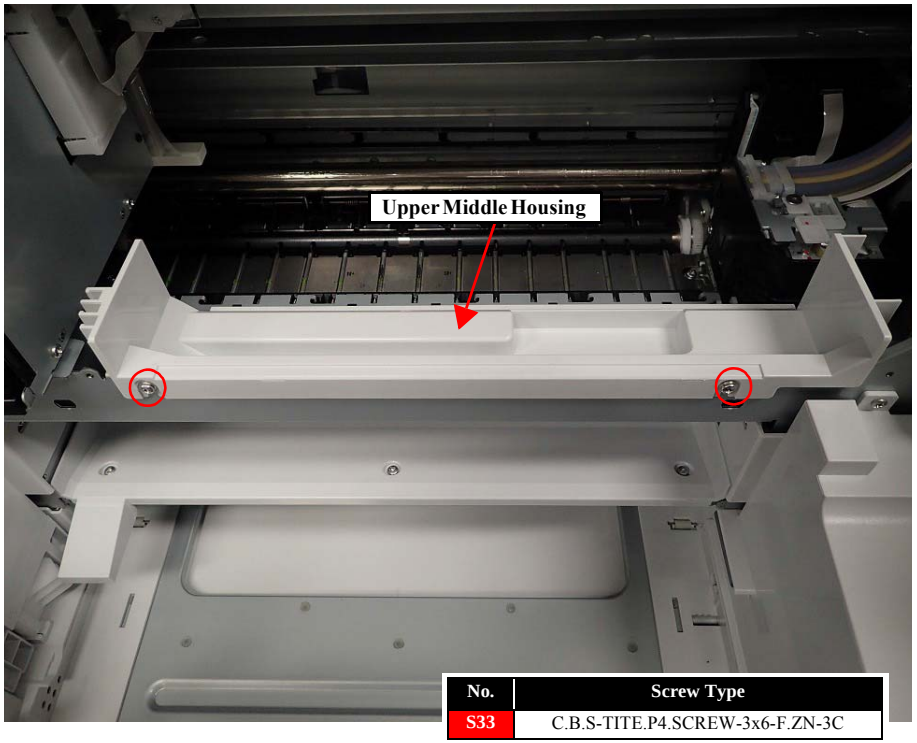


No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

A8	

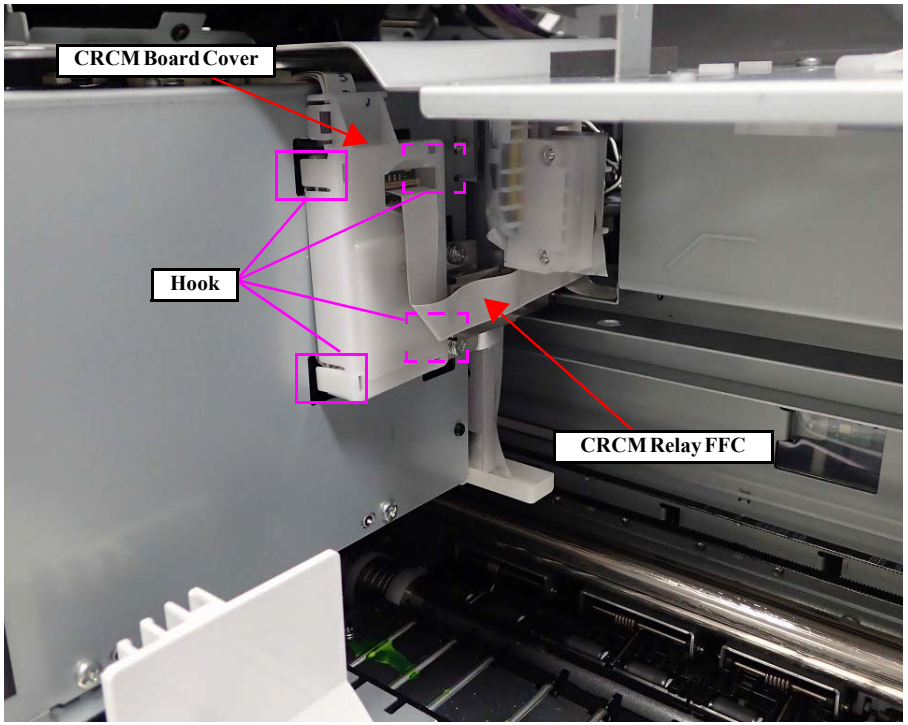
Upper Middle Housing



No.	Screw Type
S33	C.B.S-TITE.P4.SCREW-3x6-F.ZN-3C

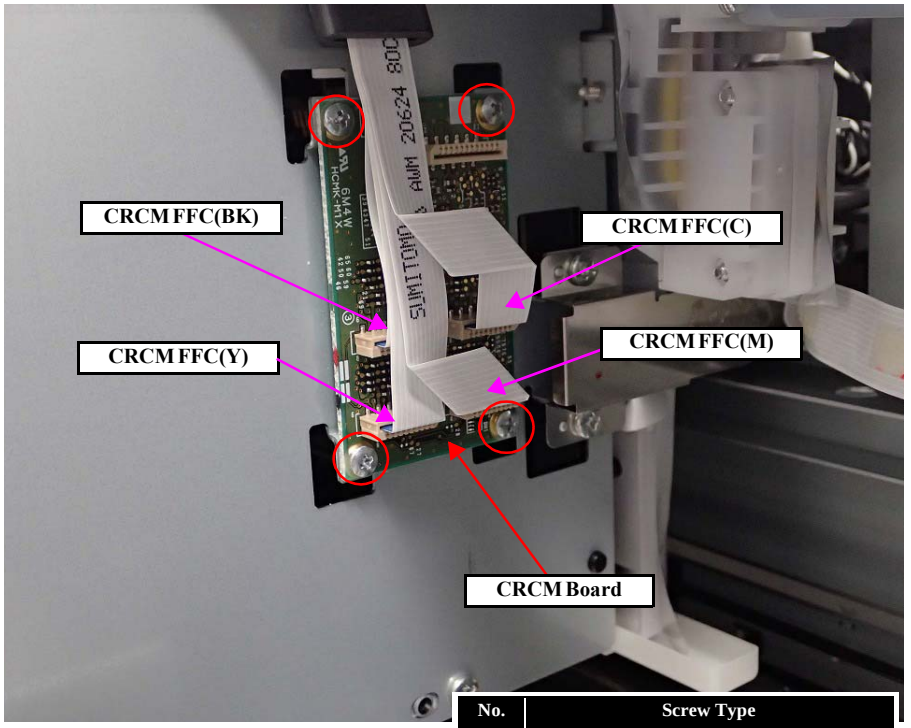
1. Remove the two screws (S33: ○), then remove the Upper Middle Housing.

B8 CRCM Board Cover



1. Disconnect the CRCM Relay FFC from CRCM Board.
2. Release the four hooks, and remove the CRCM Board Cover.

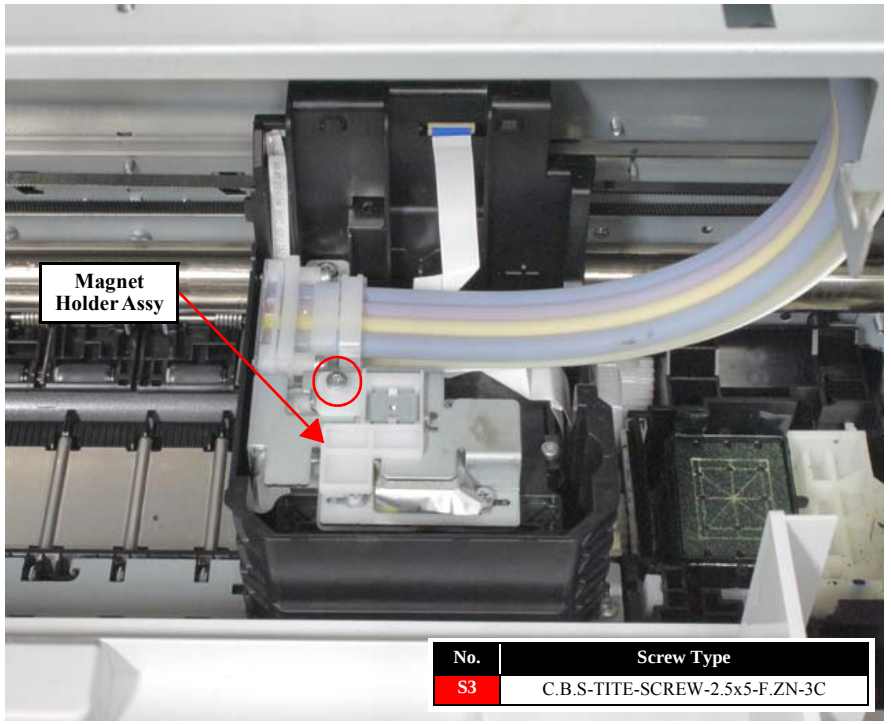
B9 CRCM Board



No.	Screw Type
S10	C.B.SCREW,2.5x4,F/ZN-3C

1. Disconnect the four CRCM FFC from CRCM Board.
2. Remove four screws (S10:○), and remove the CRCM Board.

C8 Magnet Holder Assy



No.	Screw Type
S3	C.B.S-TITE-SCREW-2.5x5-F.ZN-3C

1. Remove the screw (S3: ○), then remove the Magnet Holder Assy.

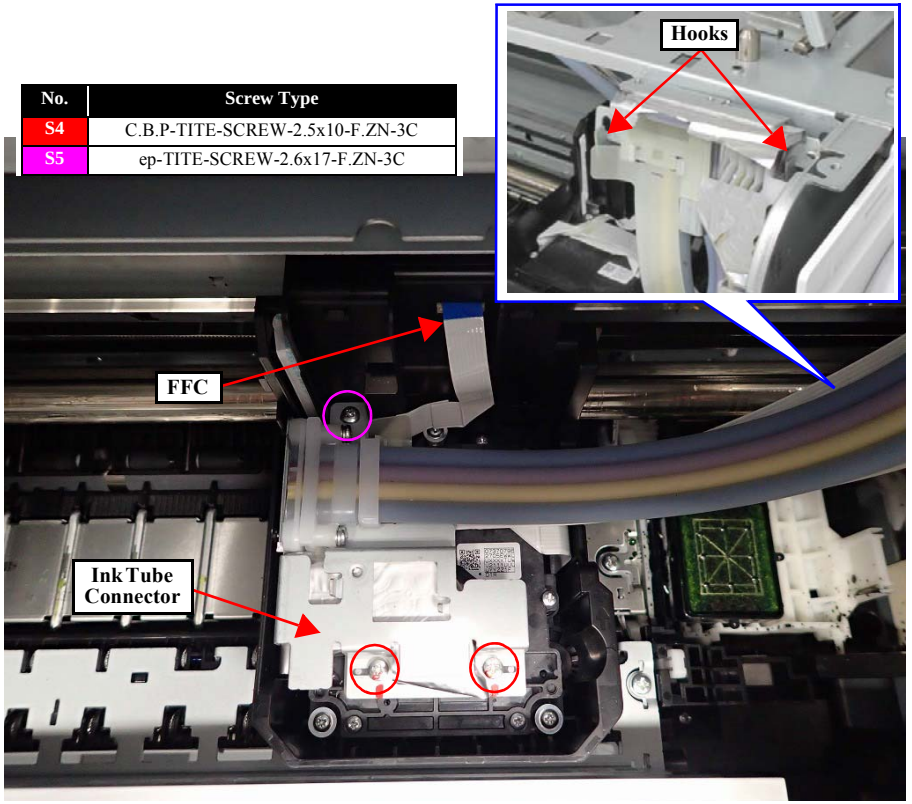
CHECK POINT

Before performing this operation, release the CR lock, then move the CR Unit to the service position

CAUTION

- ☐ If Magnet Holder is not removed, ink spill is occurred when removing the Ink Tube joint from Printhead.
  Therefore, make sure to remove the Magnet holder when removing the Ink tube joint from printhead.
- ☐ Make sure not to put the Magnet Holder to near the Ink Tube Joint after removing it.

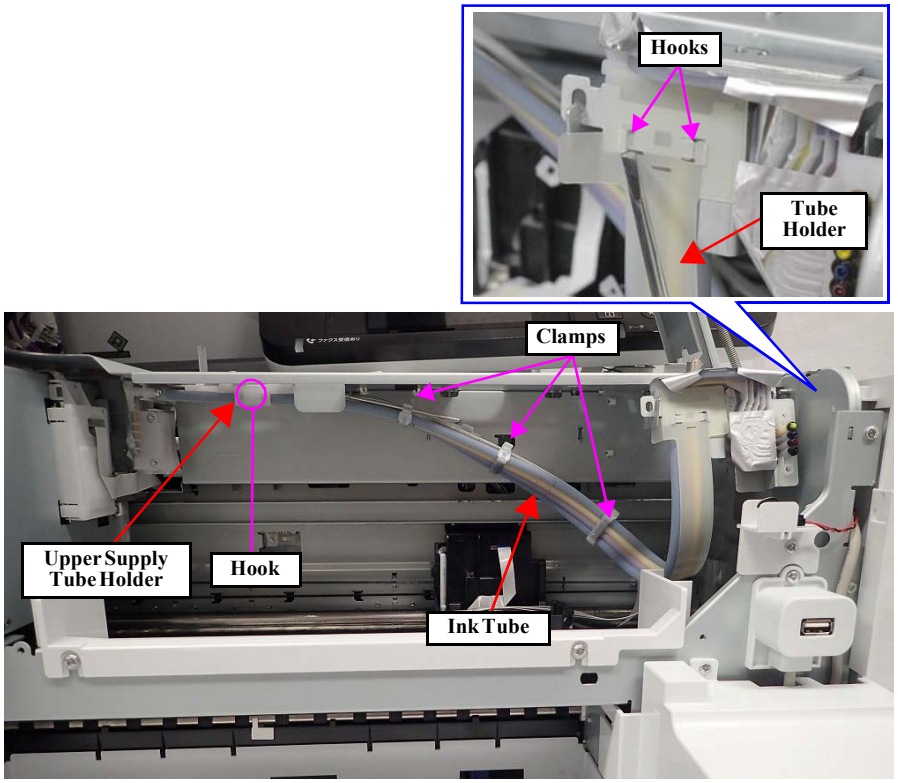
C9 Ink Supply Unit



No.	Screw Type
S4	C.B.P-TITE-SCREW-2.5x10-F.ZN-3C
S5	ep-TITE-SCREW-2.6x17-F.ZN-3C

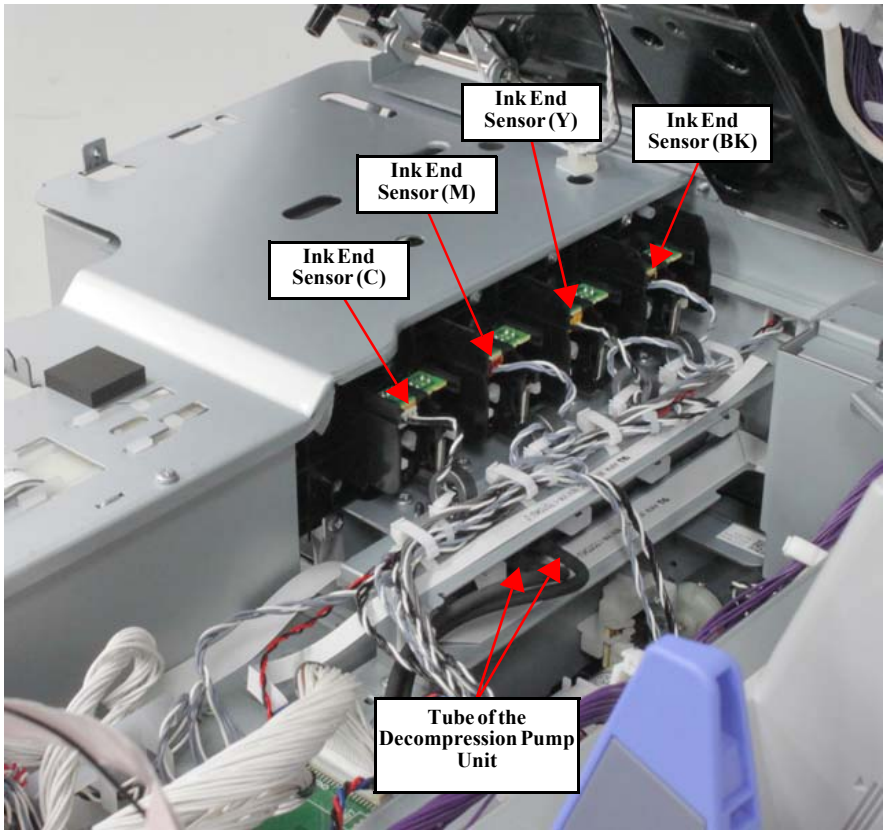
1. Remove the screws (S4: ○) and the screw (S5: ○), then remove the ink tube connector.
2. Hook the ink tube connector on the hook on the frame.
3. Disconnect the FFC from the connector of the CR encoder sensor.

Ink Supply Unit



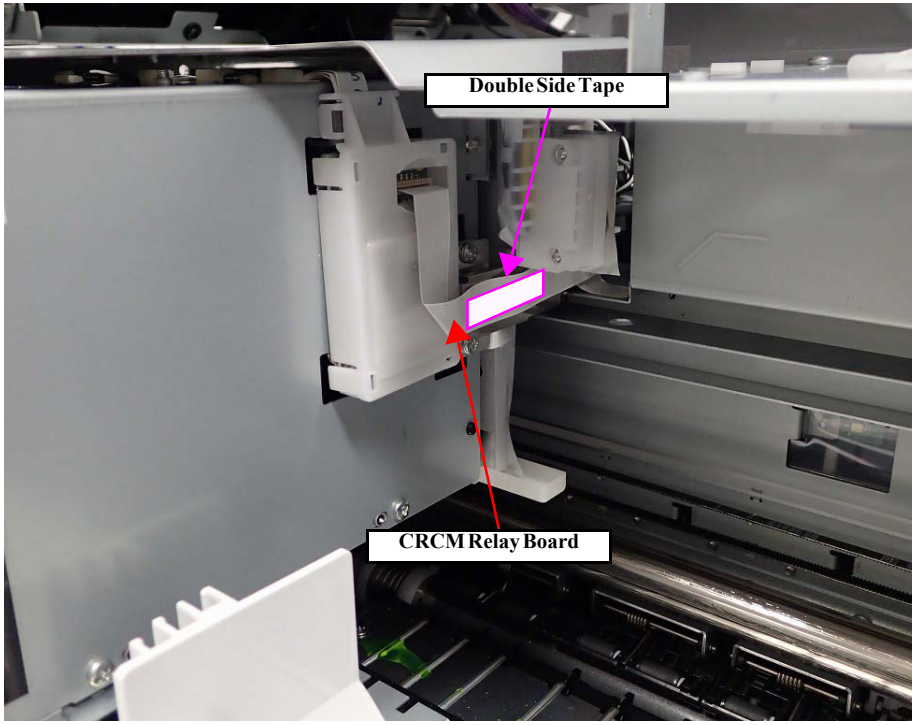
4. Disengage the hook, then release the ink tubes from the upper supply tube holder.
5. Release the ink tubes from the three clamps.
6. Disengage the hook at each one side with flathead screwdriver, and remove the tube holder.

Ink Supply Unit



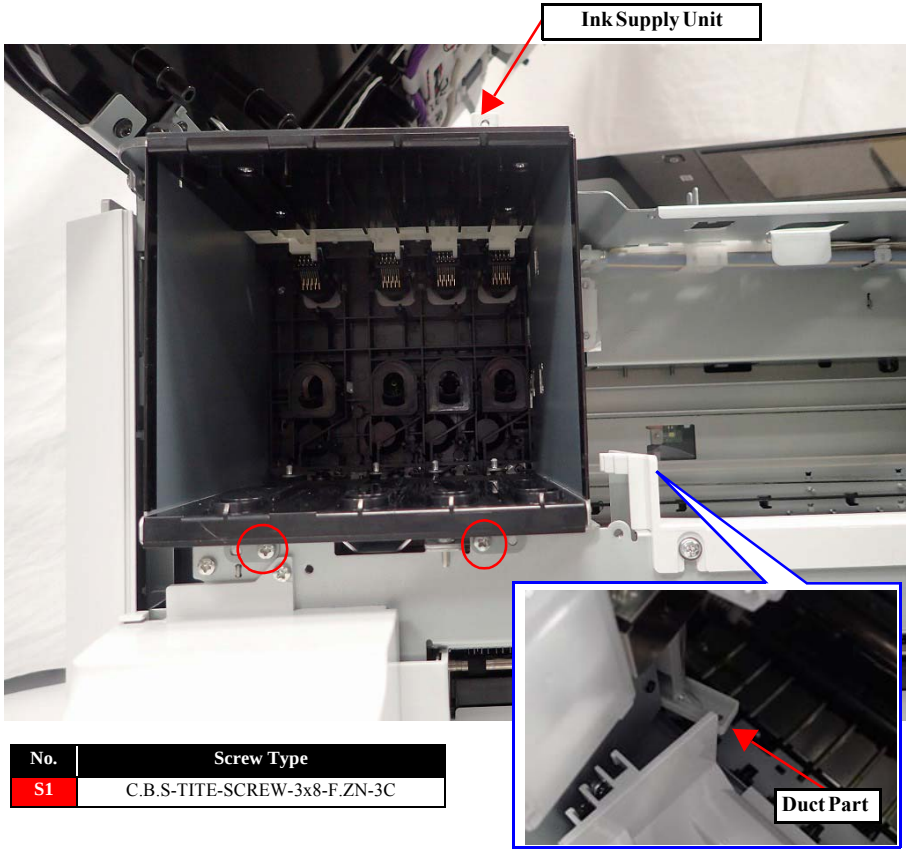
7. Disconnect the cable from the connector of the Ink End Sensor.
8. Pull out the two tubes from the decompression pump unit from the Ink Supply Unit.

Ink Supply Unit



9. Disconnect the CRCM Relay FFC from CRCM Board.
10.Remove the CRCM Relay FFC from Ink Suppky Unit. (with double side tape)

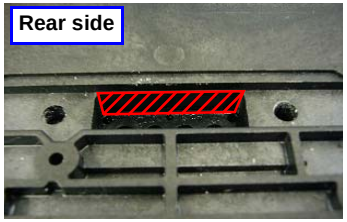
Ink Supply Unit

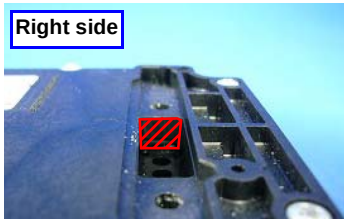


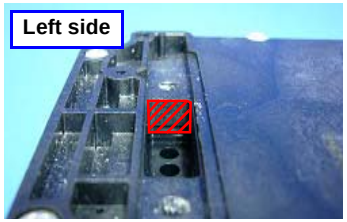
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

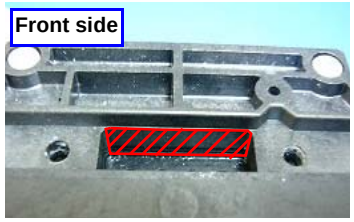
11.Remove the two screws (S1: ○).
12.Remove the Ink Supply Unit while releasing the duct part.

C10 Ink Supply Unit (Preparation before reassembly_1)









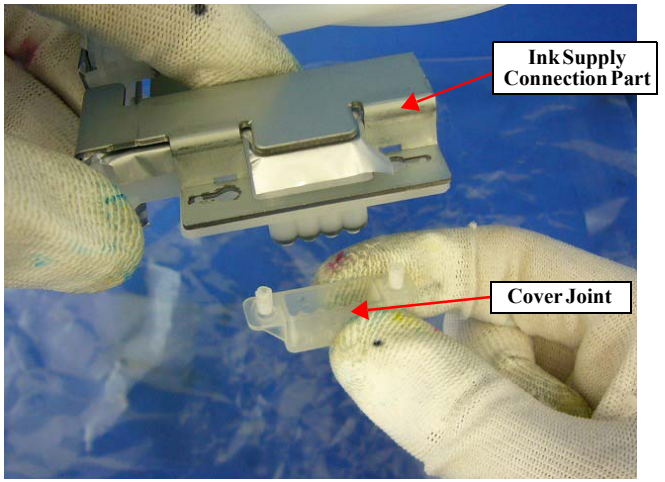
CHECK POINT

Make sure to clean the Ink tube joint part of Printhead by using the Cleaning stick, because perform the Ink Leak Check correctly.

CAUTION

If ink is remained to ink tube joint part of Printhead, Ink Leak Check can not perform correctly.
Therefore cleaning the ink surely.

C11 Ink Supply Unit (Preparation before reassembly_2)



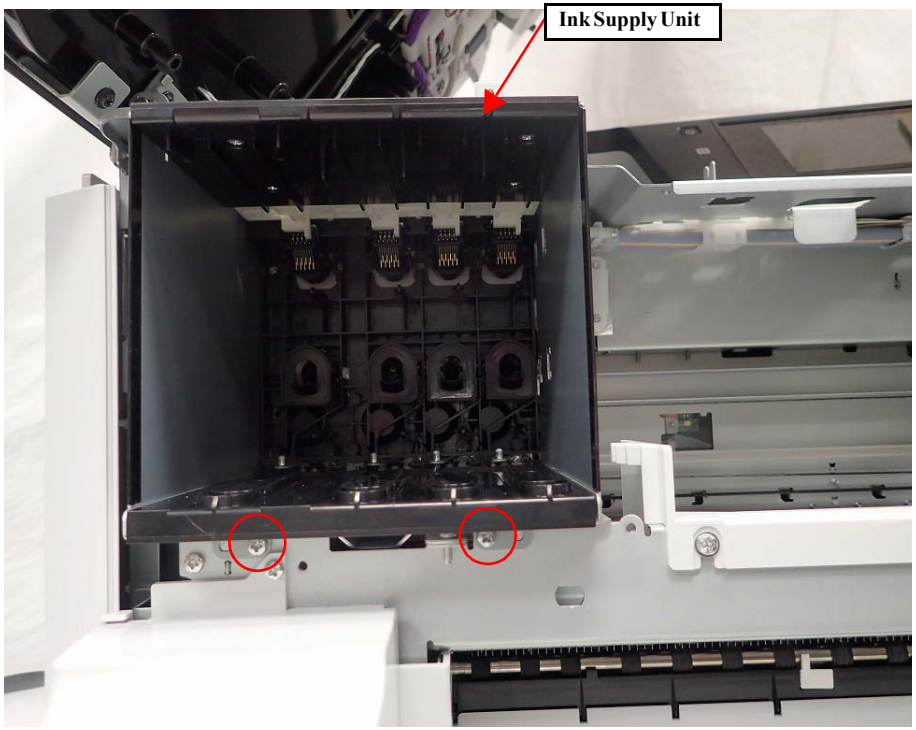
Cover Joint is attached to Ink Supply Unit (ASP).
Remove the cover joint from the ink supply connection part of the Inn Supply Unit (ASP) when installing the Ink Supply Unit.

CAUTION

- ☐ Make sure to put down plastic sheet or cloth, because shipping liquid may drop from Ink tube when removing the Cover Joint.
- ☐ If you remove the Cover Joint to an upward direction, Ink Supply Unit and other parts may dirty by dropped shipping liquid from Ink Tube Connector.
  Therefore, make sure to remove the Cover Joint to a downward direction.

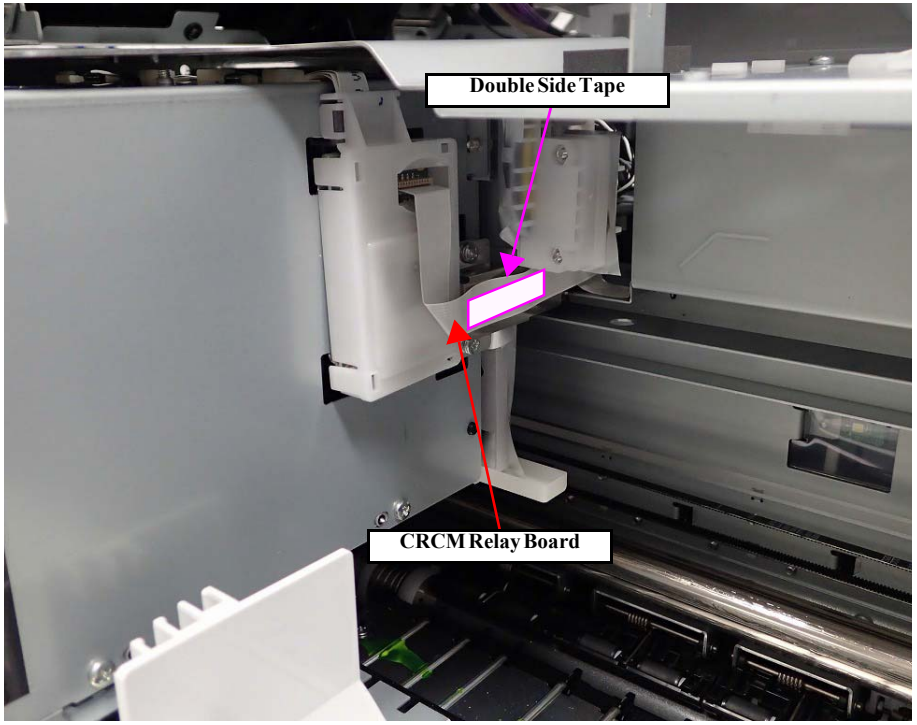
C12

Inl Supply Unit (Reassembling)



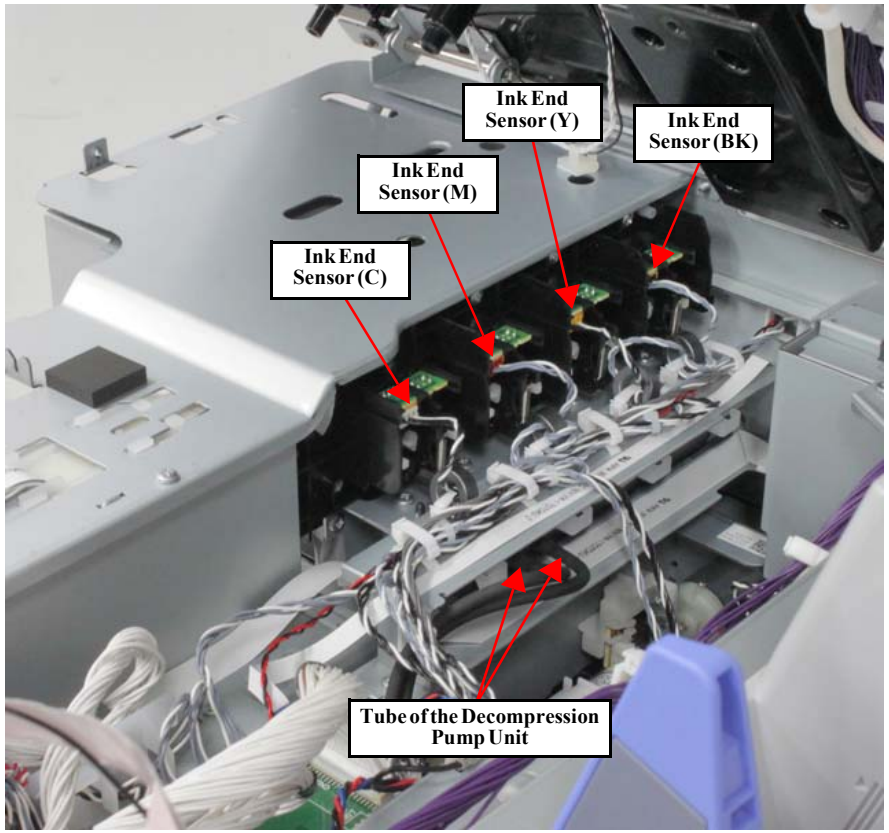
1. Install the Inn Supply Unit, and fix it with two screws.

Ink Supply Unit (Reassembly)



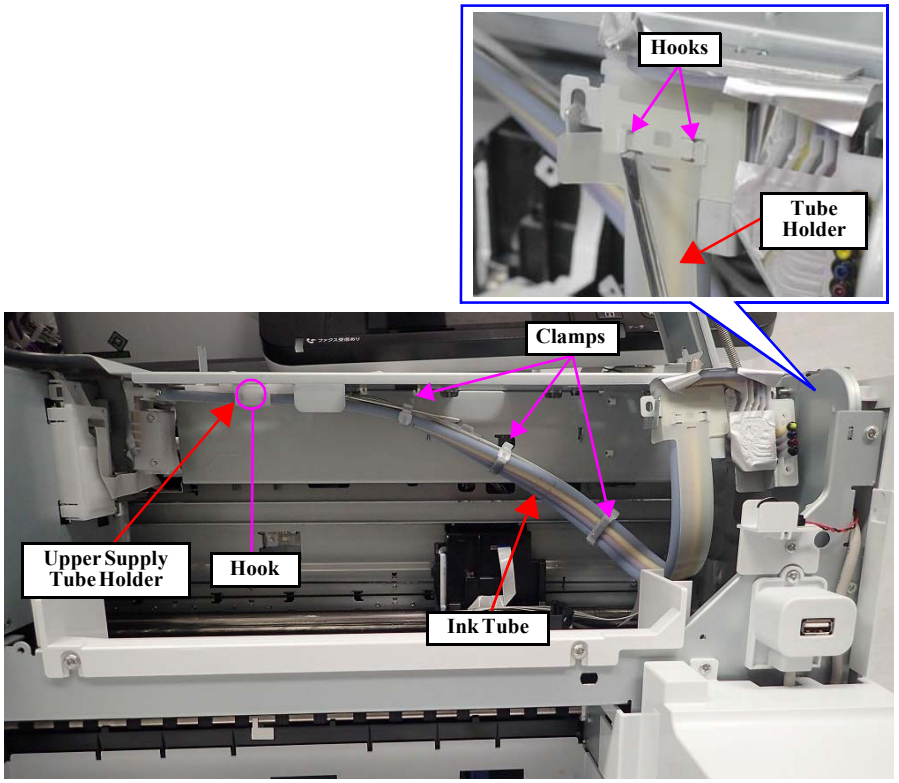
2. Connect the CRCM Relay FFC to CRCM Board.
3. Fix the CRCM Relay FFC to Ink Supply Unit by Doublr Side Tape.

Ink Supply Unit (Reassembly)



4. Connect the cable to the Ink End Sensor.
5. Install the two pump tubes to the Ink Supply Unit.

Ink Supply Unit (Reassembly)



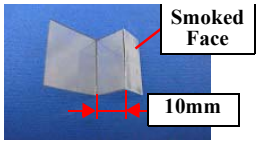
6. Install the tube holder to the ink tube.
7. Fix the ink tube on three clamps.
8. Install the ink tube to the upper supply tube holder, and fix it with hook.

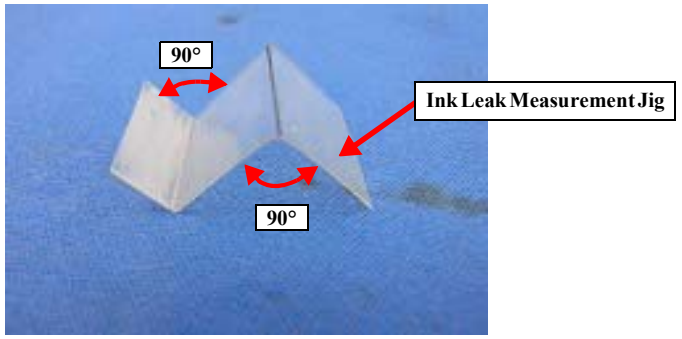
CAUTION Make sure FFC cables to secure/routed properly with the top side of the clamps.

C13

Installing the Leak Check Jig

Types of Ink Leak Measurement Jig

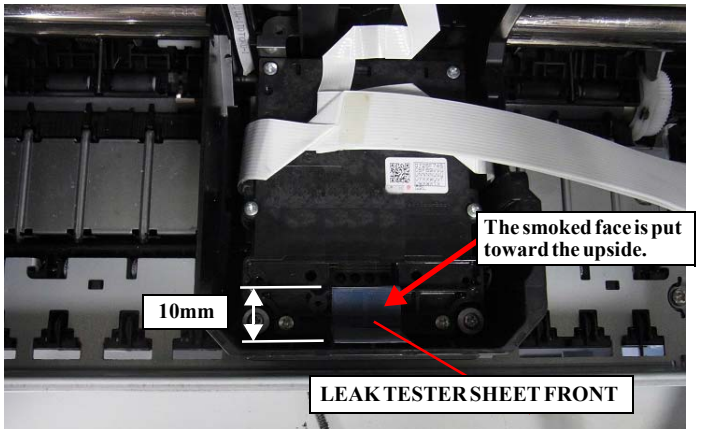
Part Name	Part Code	Photo	Remark
LEAK TESTER SHEET FRONT	1684353		Put it to front side

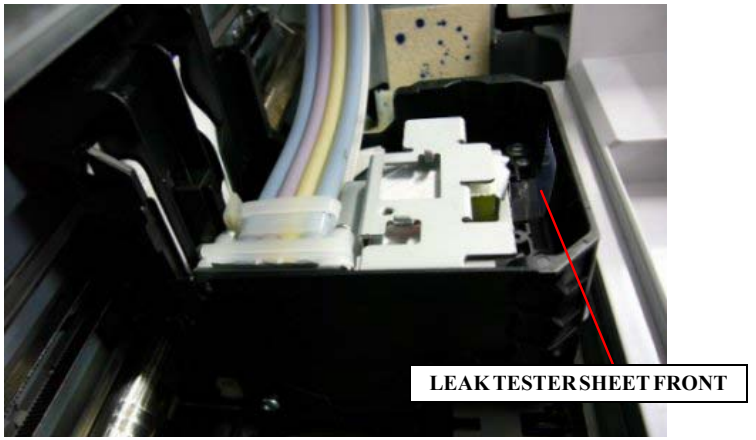


CHECK POINT

In this product, Ink Leak Check is necessary to prevent the ink leakage due to assembly mistake
Therefore, make sure to install the ink leak measurement jig when installing the Ink Tube to Printhead.
Before using the Leak Check Jig, push the ink leak measurement jig along the folds until the fold angle become 90 degrees

Ink leak measurement jig installation





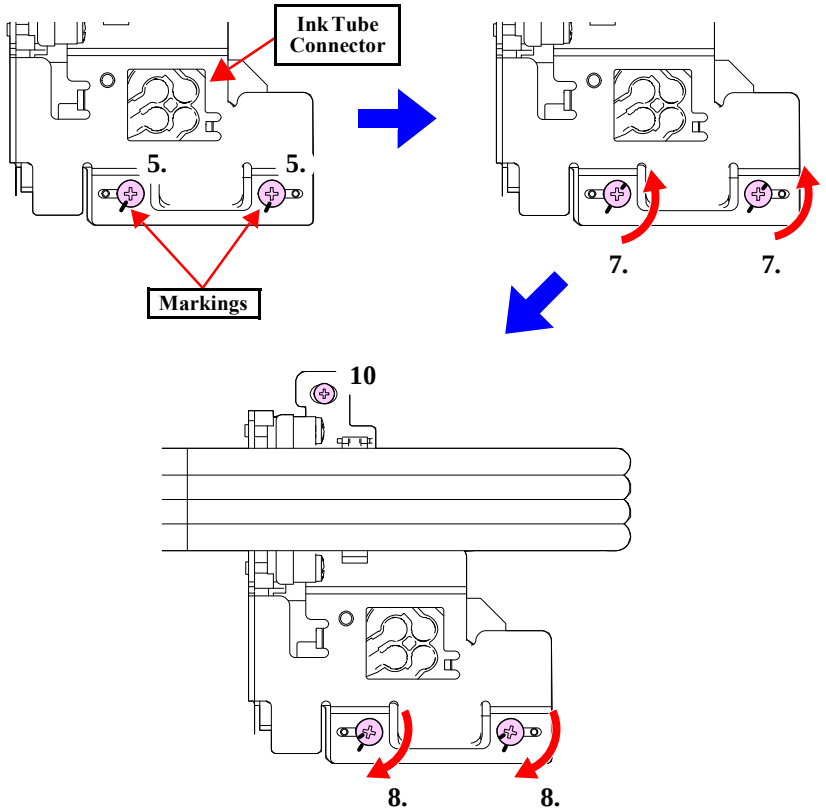
1. Set the ink leak measurement jig to the ink tube connector of the Print Head.

CAUTION

The smoked face of ink leak measurement jig is put toward the upside.

2. Install the ink tube connector to the Print Head.

Ink leak measurement jig installation



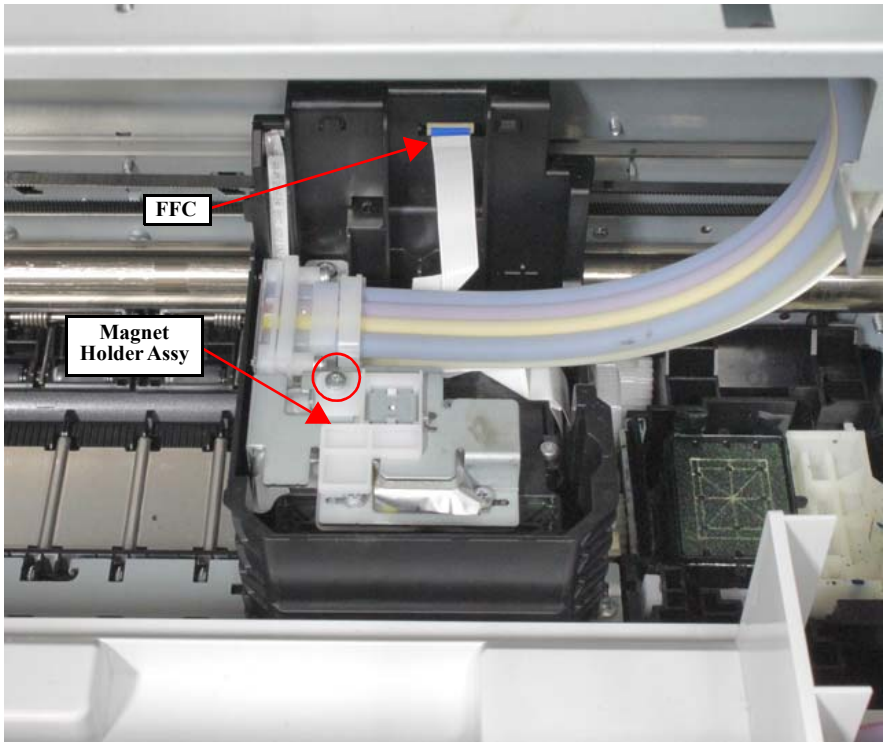
CAUTION

Make sure to use the torque screwdriver to tighten the screws in the next step. Use the following torque.

□ **0.35 ± 0.03 N·m**

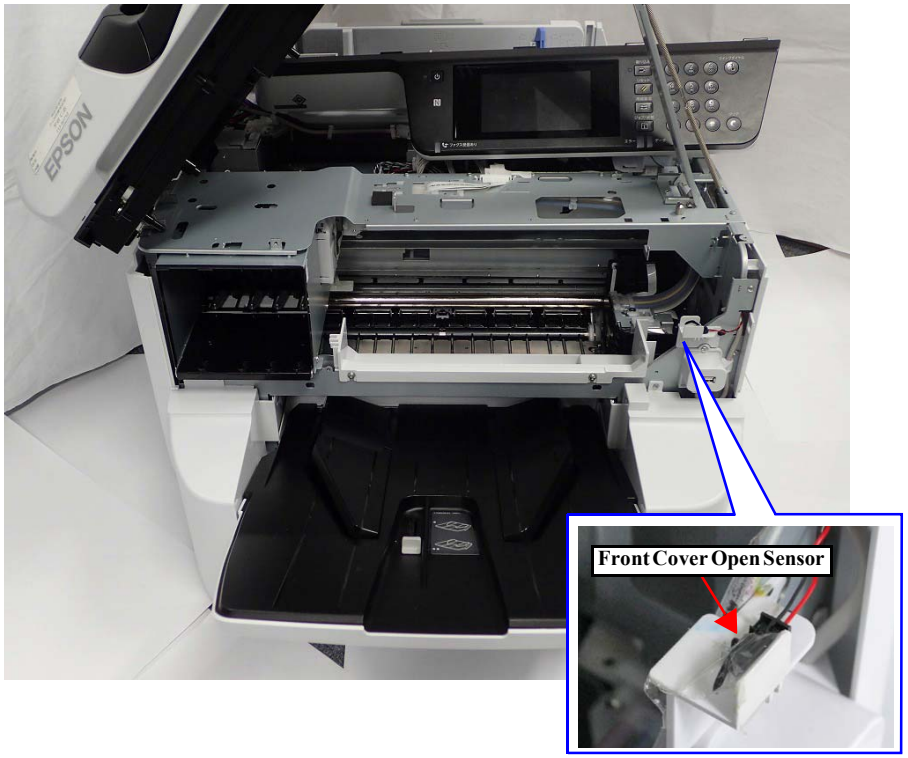
3. Tighten the two screws (S4) at the front side of the ink tube connector by specified torque.
4. Put a marking on the screw.
5. Loosen the screw halfway from the mark.
6. Tighten the screw again by specified torque. (It is tightened from the marked position.)
7. Check the ink tube connector has no backlash.
8. Tighten the screw(S5) at the rearward.

Ink leak measurement jig installation



9. Connect the FFC to the connector of the CR encoder sensor.
10. Install the Magnet Holder Assy with the screw (S3: ○).

C14 Preparation before Adjustment



1. Wrap the front cover open sensor with tape, and disable the sensor function.
2. Install the ink pack and the Maintenance Box.
3. Start the printer in service support mode. (Refer to Service Support Mode *(p. 100)*)

CAUTION
Wrap the front cover sensor with tape surely.
(When the adhesive tape peels off, the CR unit unintentionally moving.)

C15 Adjustment after replacing the Ink Supply Unit

1. Select the **Adjustment: MENU** from the service support mode menu.
2. Select "**After Unit Repair Operation:MENU**" from the adjustment menu.
3. Execute the **"B81 I/S Unit Replace Sequence"**.

		Leak Check Judgment
C16		

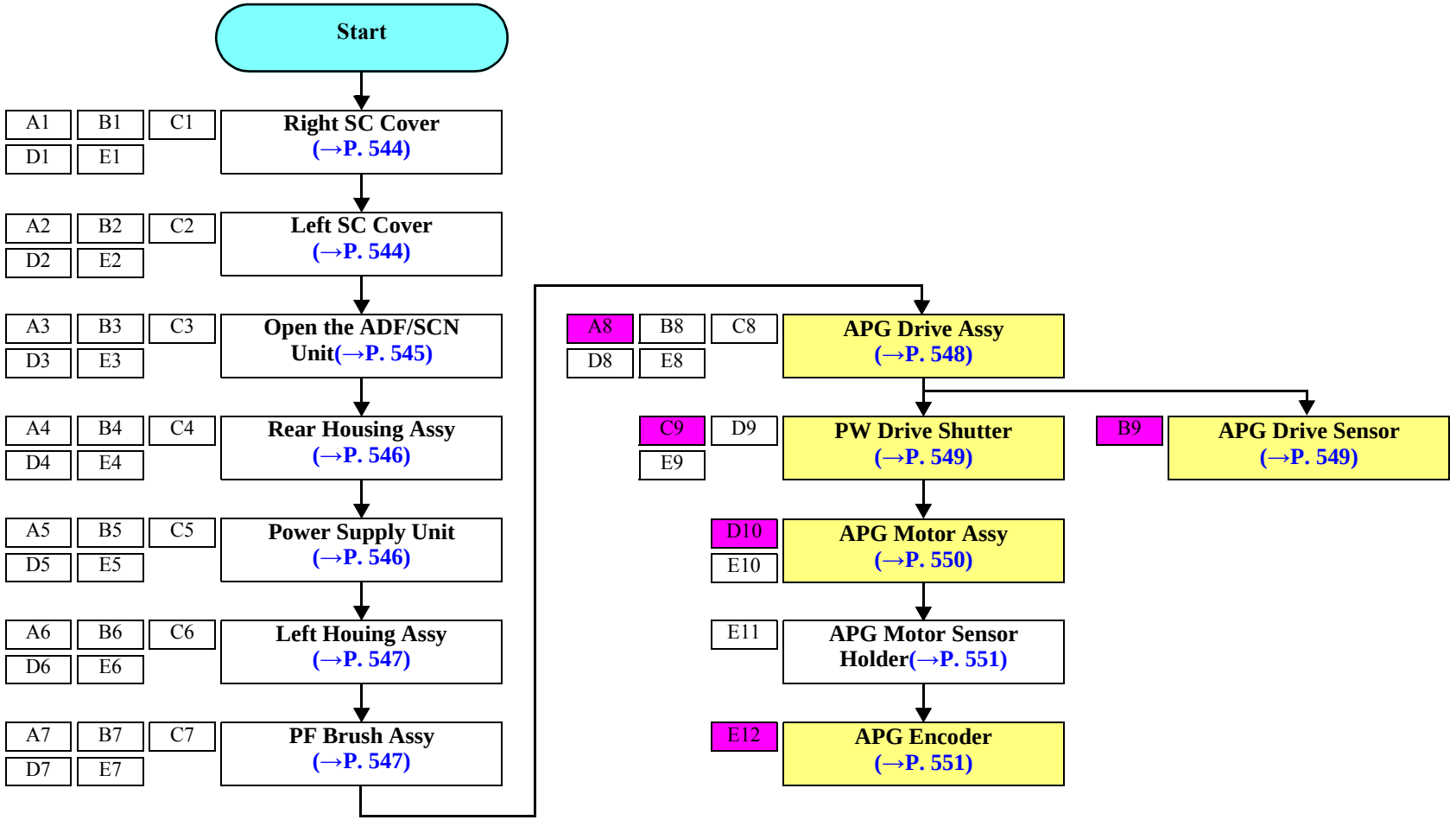
1. Perform the Ink Leak Check based on the determination criteria of the INK LEAK CHECK (p. 285).

7.4.3.15 Carriage Mechanism 1

OUTLINE

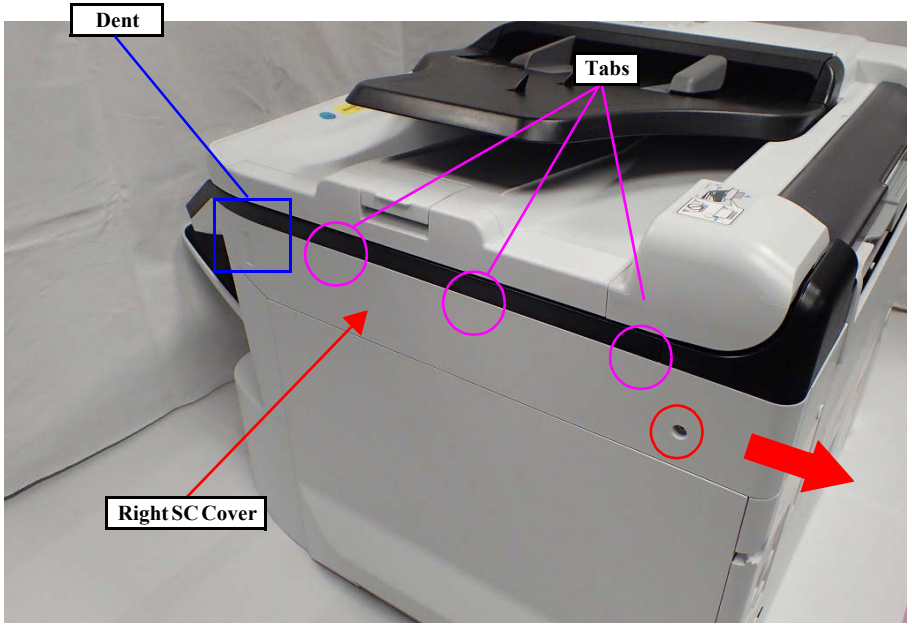
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
APG Drive Assy	A	17 min 30 sec	7 sec	17 min 37 sec
APG Drive Sensor	B	17 min 40 sec	---	17 min 40 sec
PW Drive Shutter	V	18 min 55 sec	12 sec	18 min 55 sec
APG Motor Assy	D	19 min 18 sec	TBD	TBD
APG Encoder	E	19 min 59 sec	7 sec	20 min 6 sec

DISASSEMBLY FLOWCHART



A1	B1	C1
D1	E1	

Right SC Cover

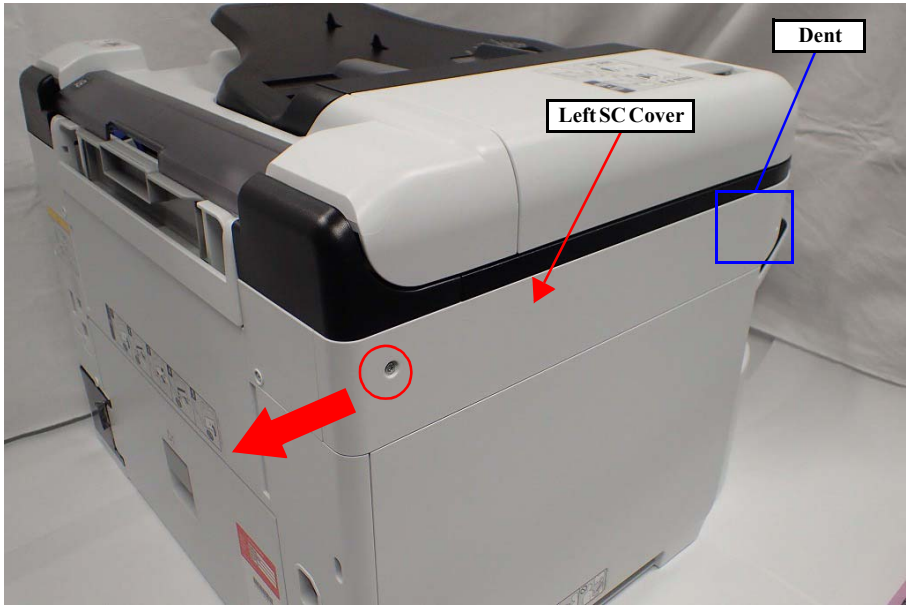


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2	C2
D2	E2	

Left SC Cover

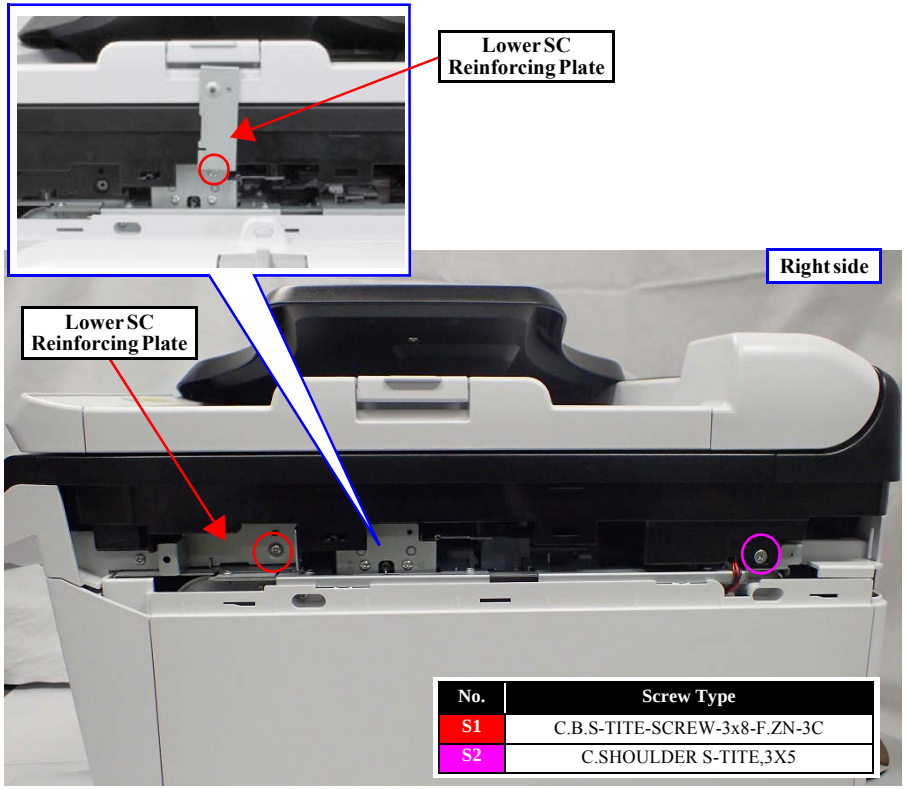


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3	C3
D3	E3	

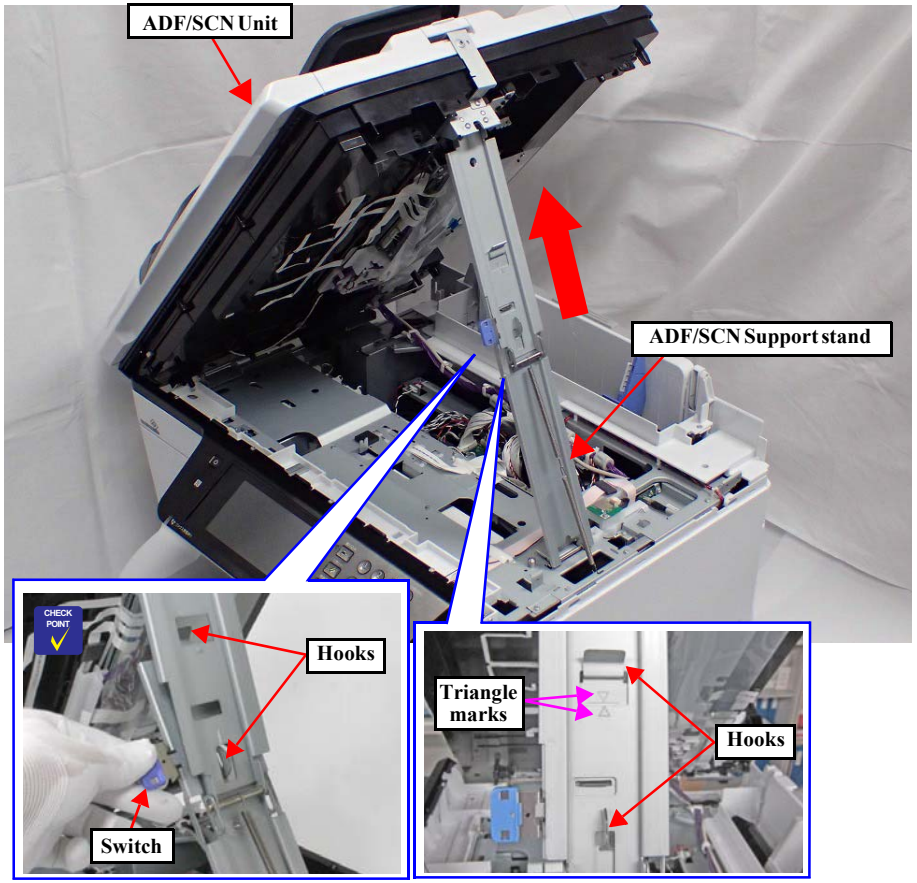
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



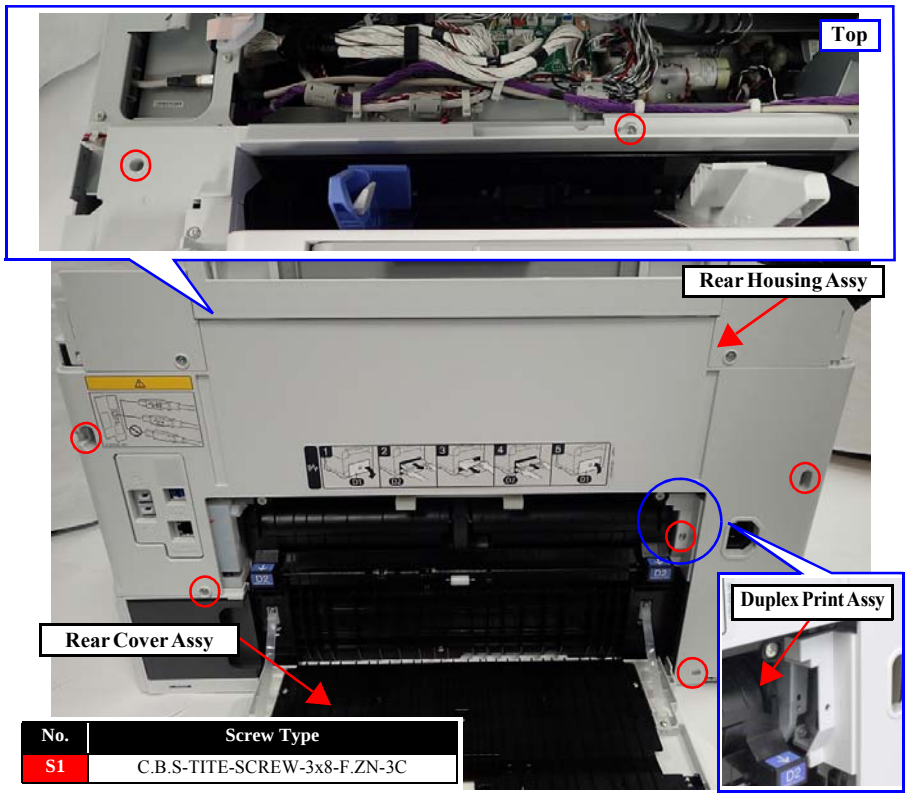
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4	C4
D4	E4	

Rear Housing Assy

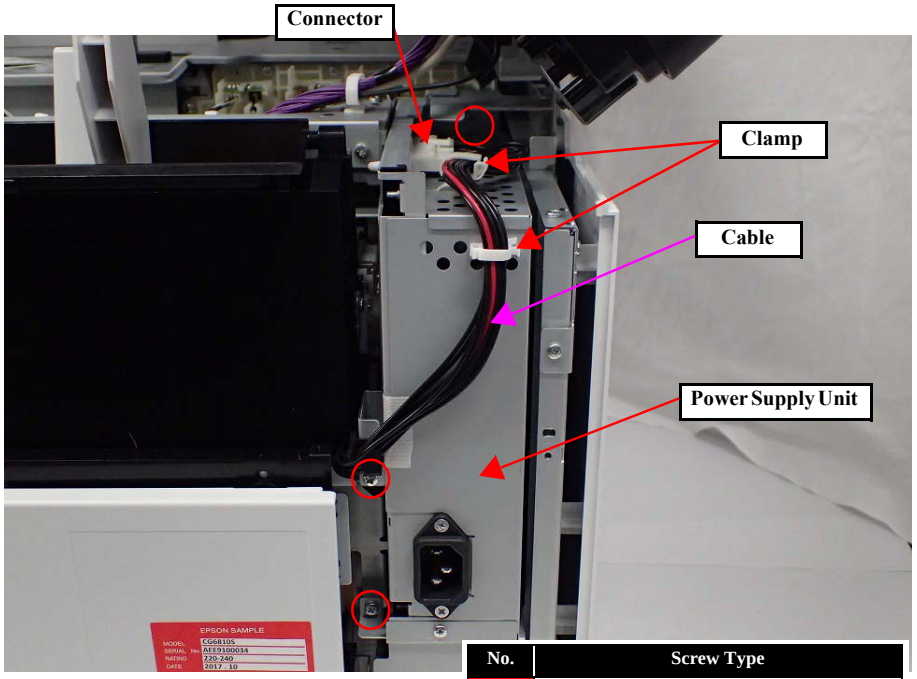


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

A5	B5	C5
D5	E5	

Power Supply Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Release the Cable from two clamps.
2. Disconnect the cable from connector of Power Supply Unit.
3. Remove three screws (S1:○), and remove the Power Supply Unit.

A6	B6	C6
D6	E6	

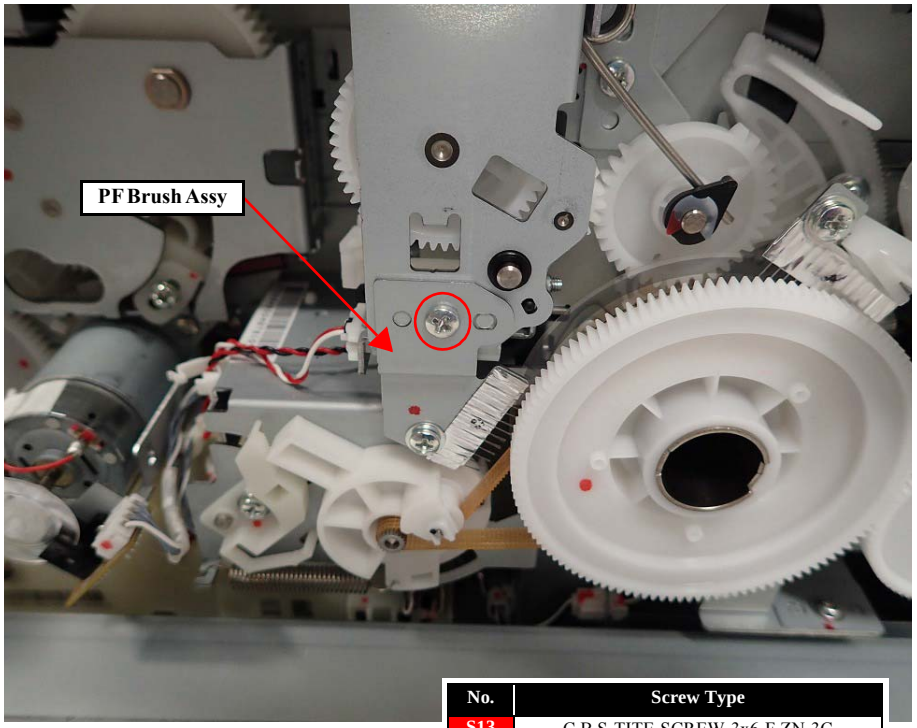
Left Housing Assy

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screw (S1: ○), and remove the Left Housing Assy.

A7	B7	C7
D7	E7	

PF Brush Assy

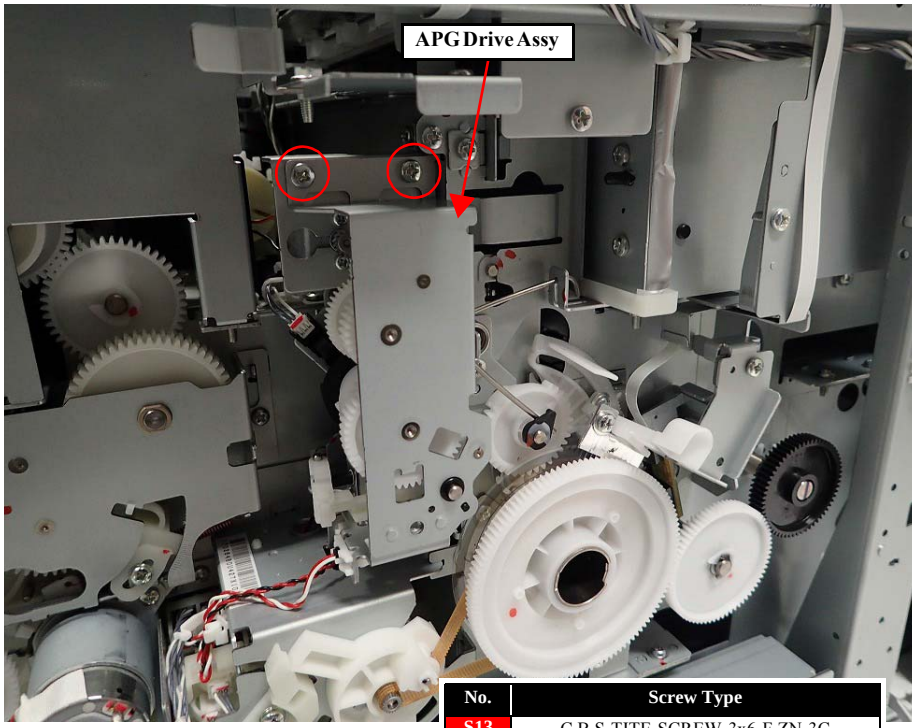


No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the screw (S13: ○), then remove the PF Brush Assy.

A8	B8	C8
D8	E8	

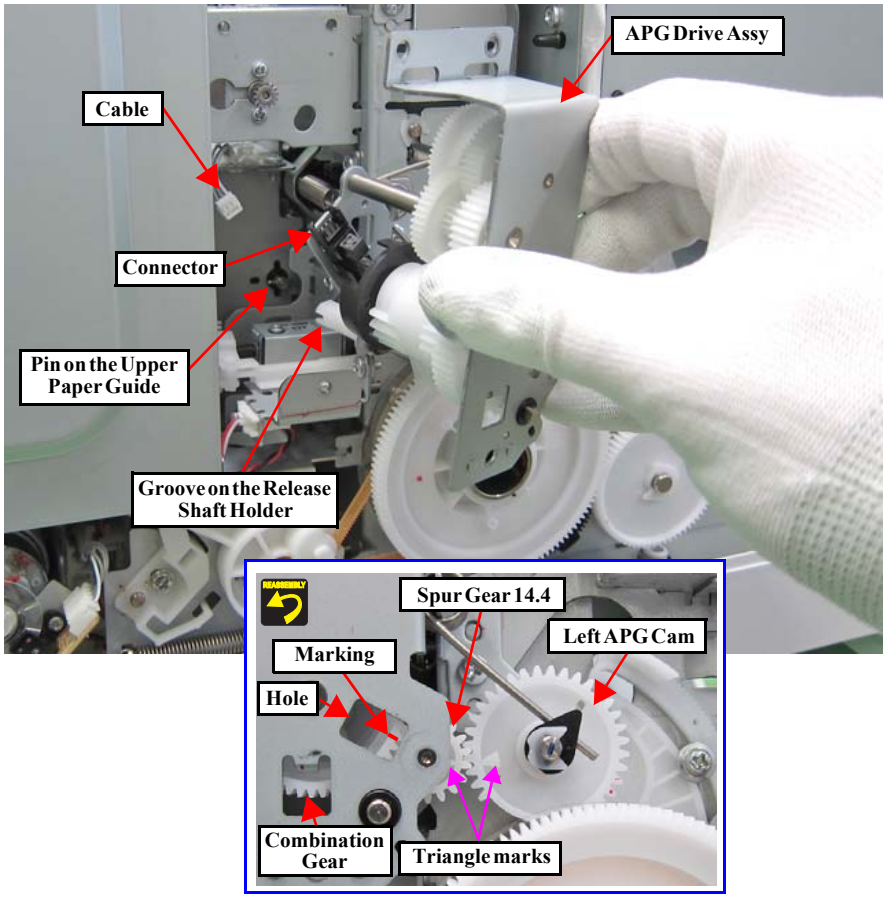
APG Drive Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the two screws (S13: ○), then remove the APG Drive Assy.

APG Drive Assy

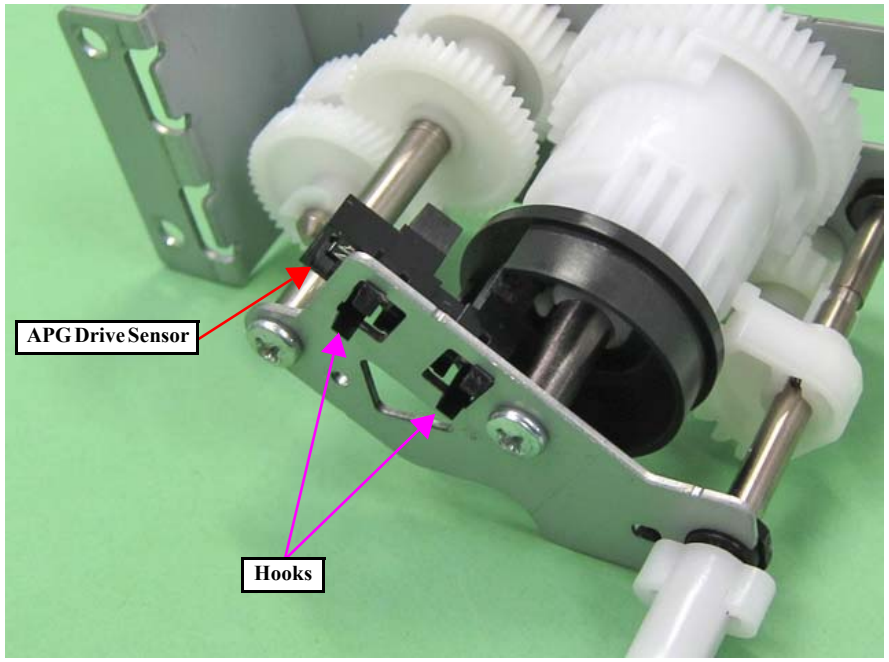


2. Disconnect the cable from the connector of the sensor.

- Align the triangle mark on the left APG cam with the triangle mark on the spur gear 14.4 on the APG Drive Assy. At this point, make sure the mark on the combination gear can be seen through the hole on the APG Drive Assy.
- Insert the pin on the upper paper guide into the groove on the release shaft holder of the APG Drive Assy.

	B9	

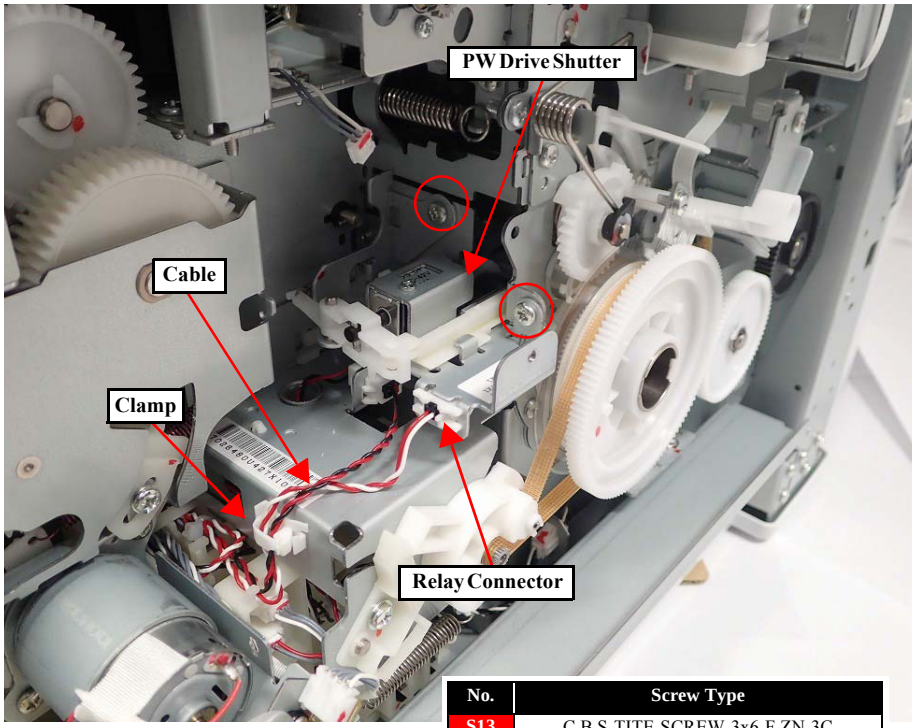
APG Drive Sensor



1. Disengage the four hooks from the APG Drive Sensor.

		C9
D9	E9	

PW Drive Shutter

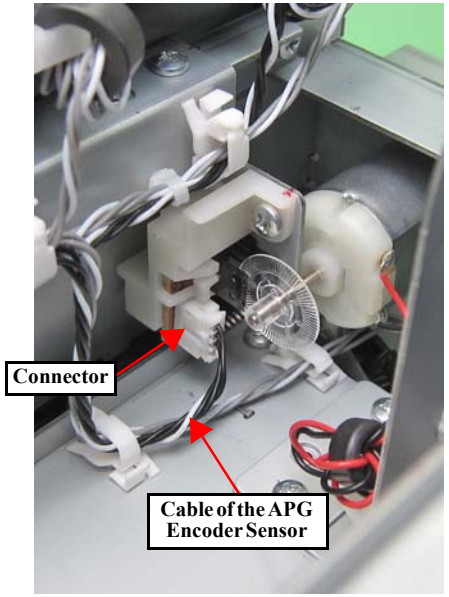


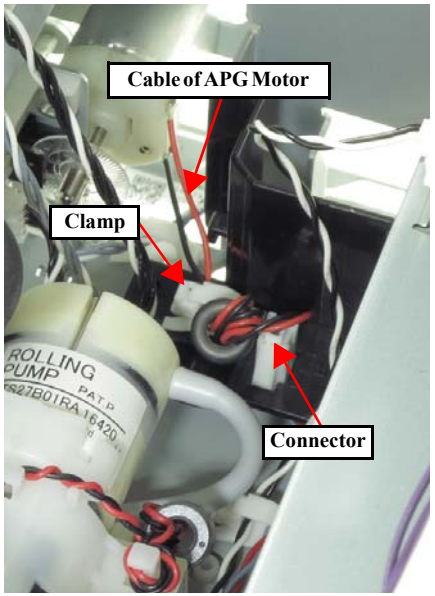
No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Release the cable of the PW Drive Shutter from the clamp.
2. Disconnect the cable from the relay connector.
3. Remove the two screws (S13: ○), then remove the PW Drive Shutter.

D10	E10	

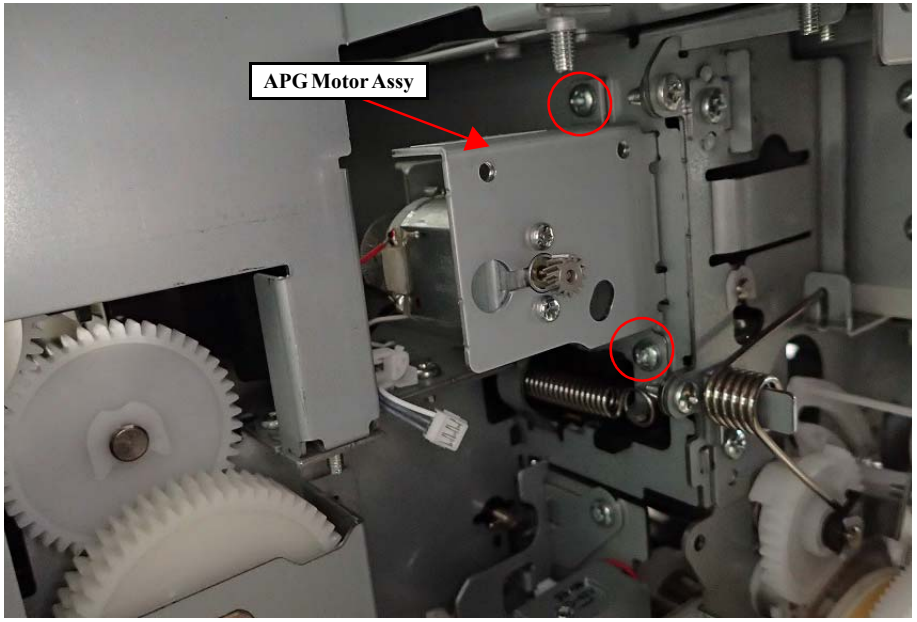
APG Motor Assy





1. Disconnect the cable from the connector of the APG Encoder sensor.
2. Disconnect the cable from the connector of the APG motor.
3. Release the cable of the clamp from the APG motor.

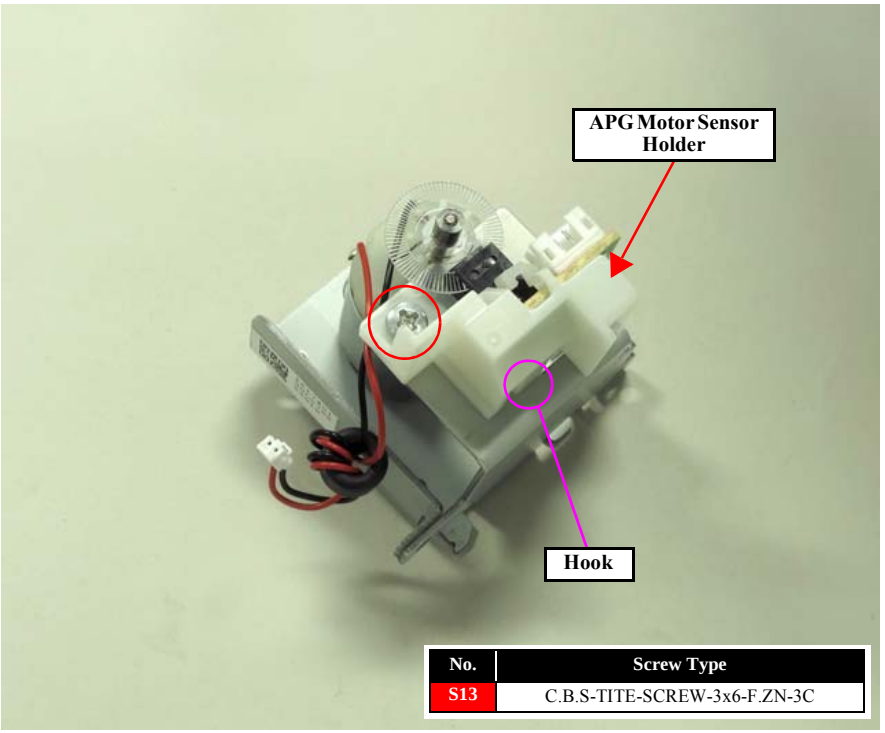
APG Motor Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

4. Remove the two screws (S13: ○), then remove the APG Motor Assy.

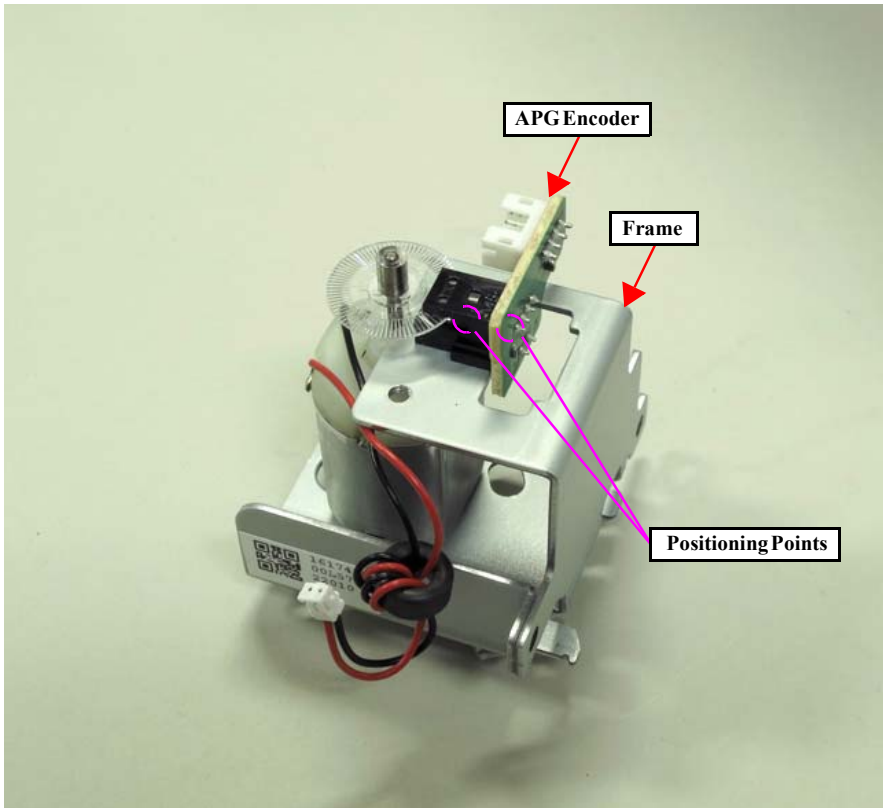
E11 APG Motor Sensor Holder



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the screw (S13: ○).
2. Disengage the hook, then remove the APG Motor Sensor Holder.

E12 APG Encoder



1. Remove the APG Encoder from the frame.

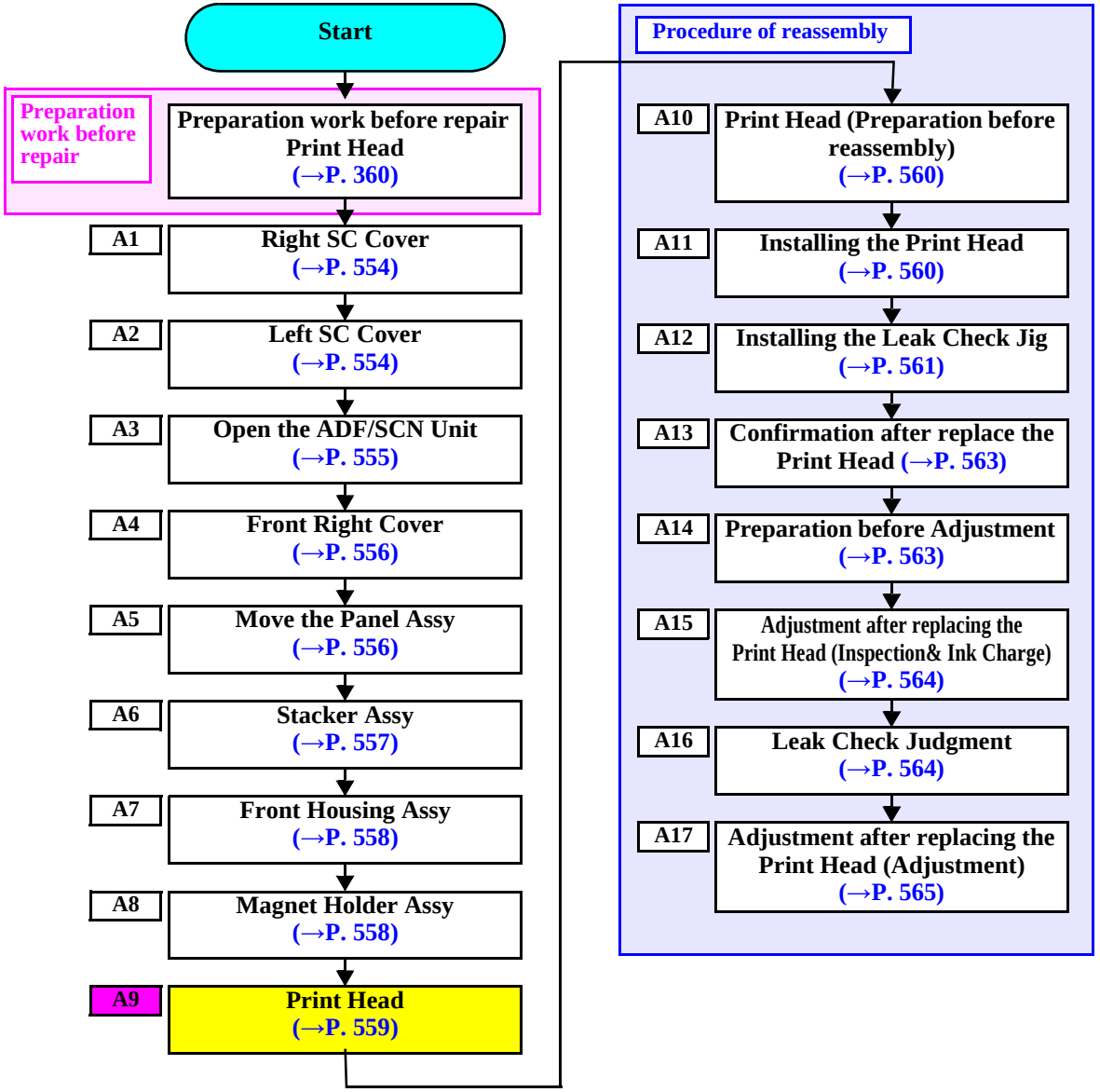
REASSEMBLY There are two positioning points on the APG Encoder.

7.4.3.16 Carriage Mechanism 2

OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Print Head	A	14 min 11 sec	29 min 8 sec	43 min 19 sec

DISASSEMBLY FLOWCHART



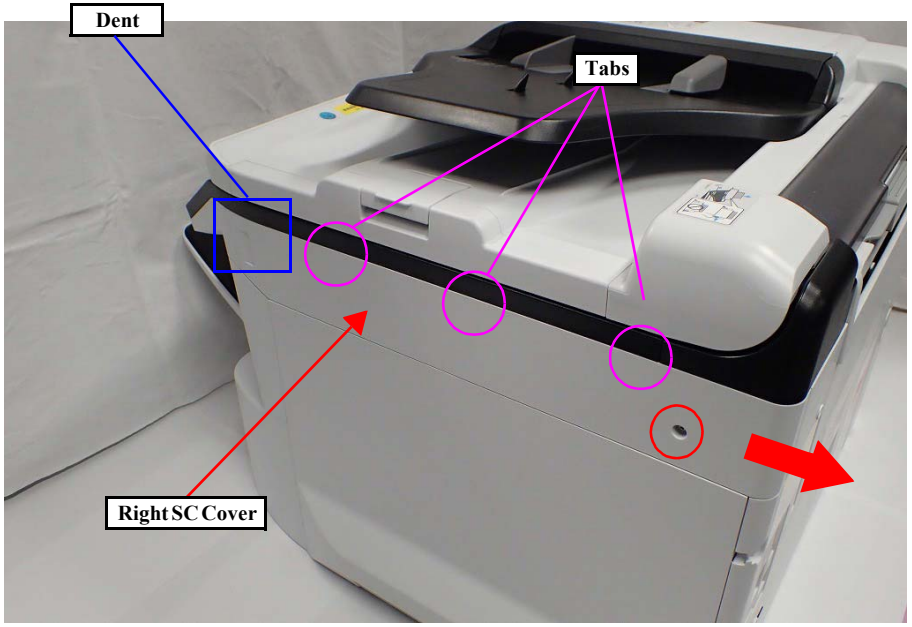
CHECK POINT

Ink Supply Unit needs a special reassembly procedure.
Therefore, make sure to reassemble the Ink supply Unit following the above flowchart.

CAUTION

Make sure to perform "Preparation work before repair Print Head" before disassembly.

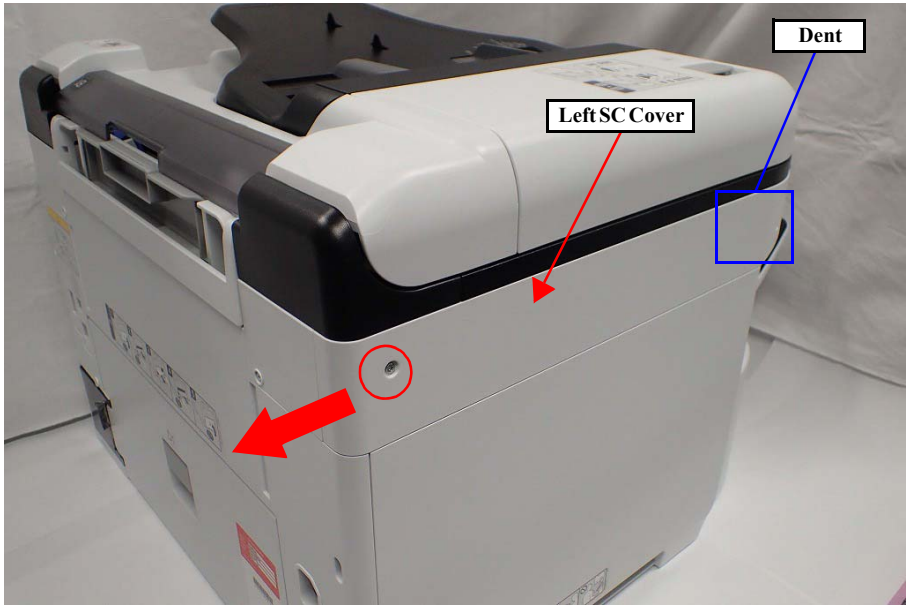
A1		Right SC Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2		Left SC Cover

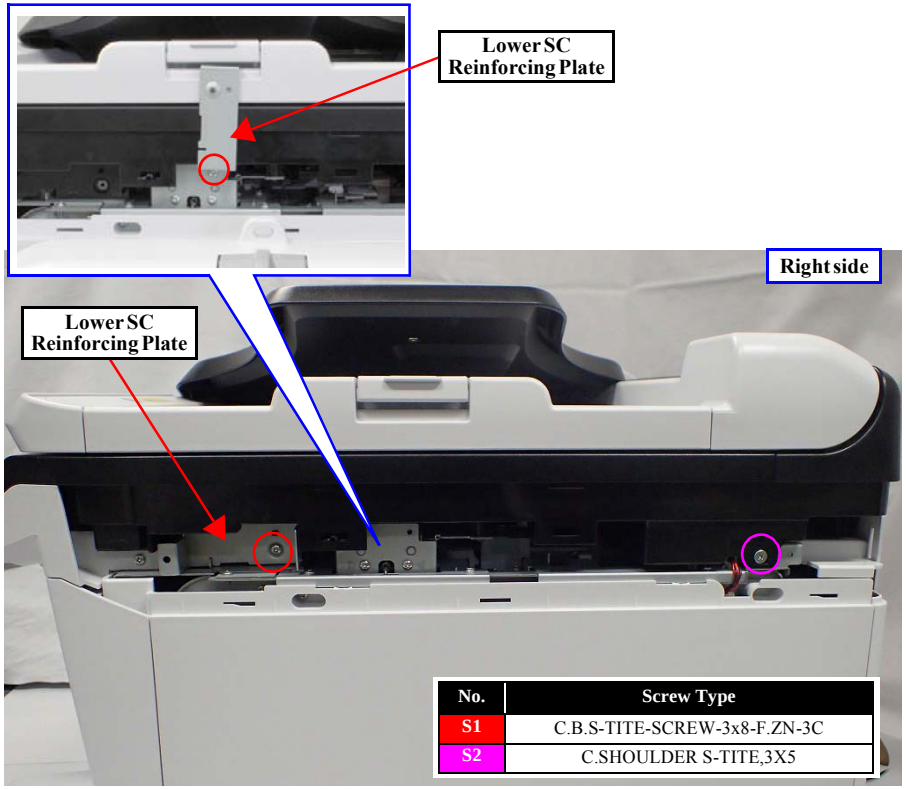


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	

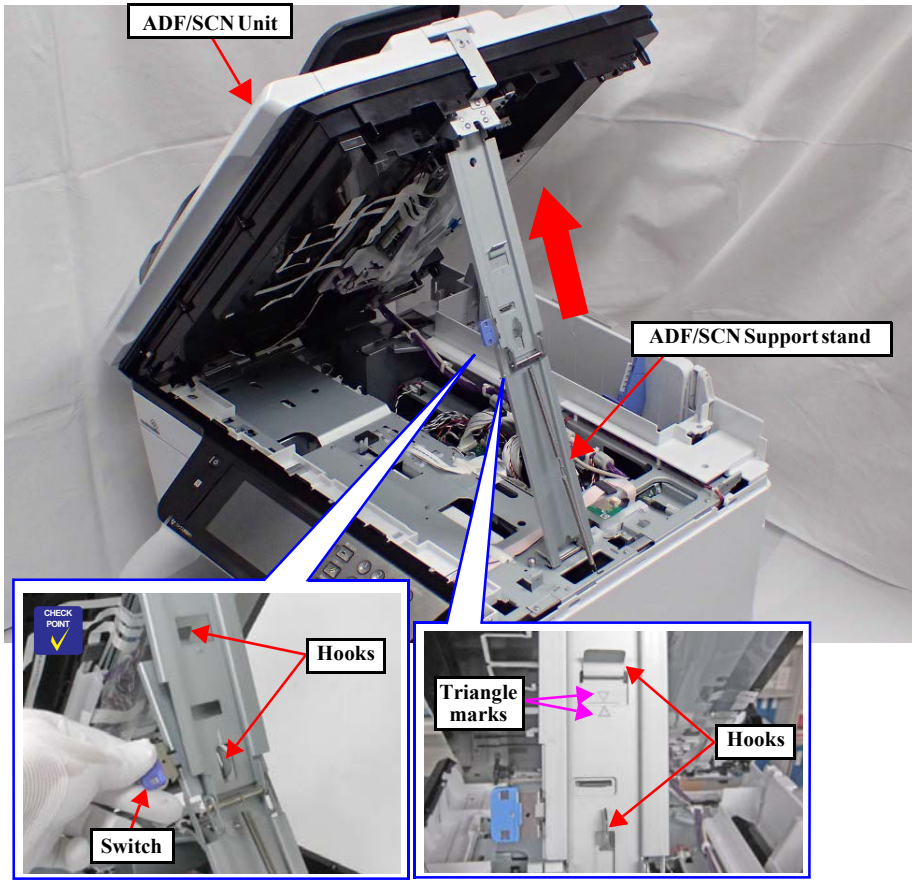
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit

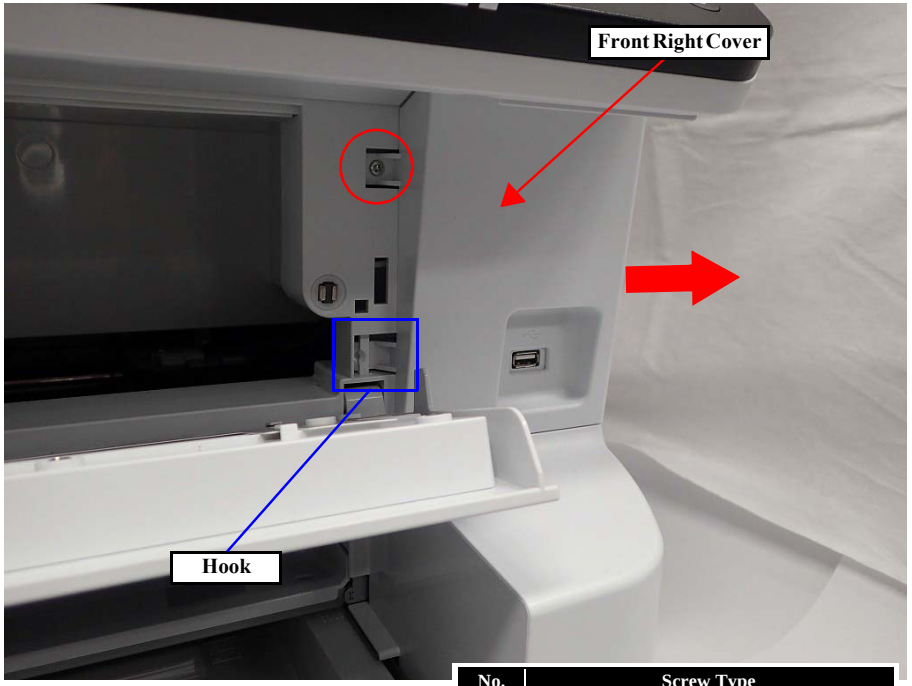


4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

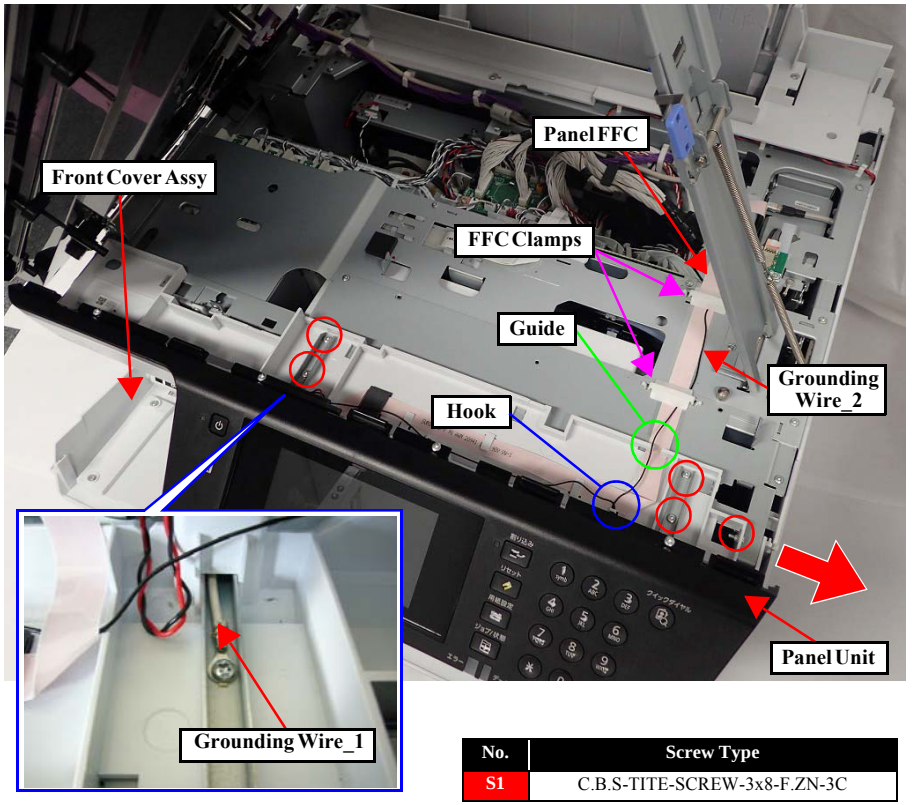
A4		Front Right Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

A5		Move the Panel Assy

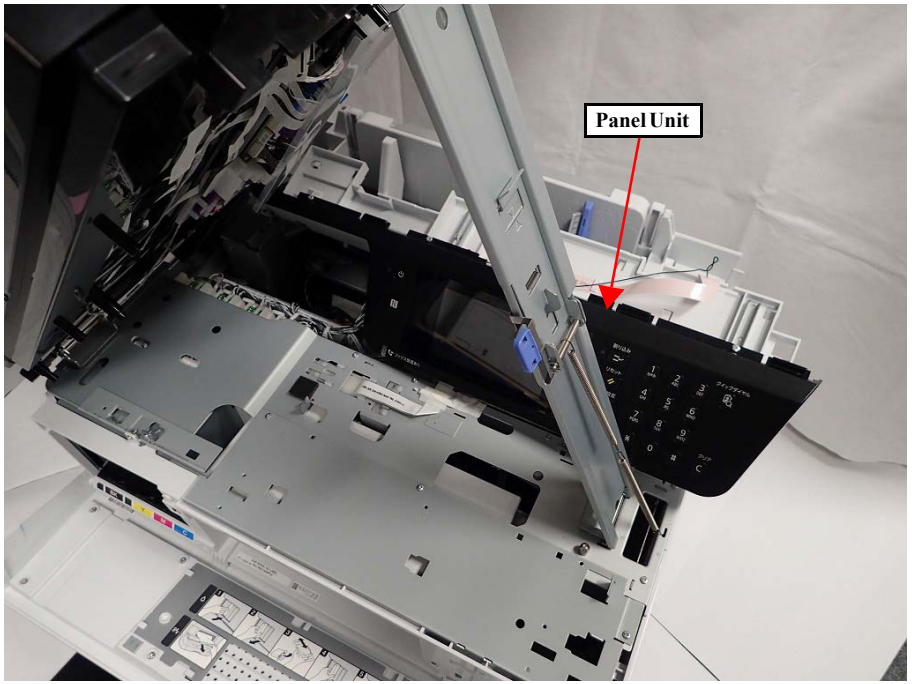


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○)
2. Remove the two FFC clamps.
3. Release the Panel FFC and the grounding wire_2 from the guide.
4. Release thgrounding wire_2 from Hook.
5. Open the Front Cover Assy.
6. Slide the panel unit rightward to remove it.

REASSEMBLY
- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

Move the Panel Unit

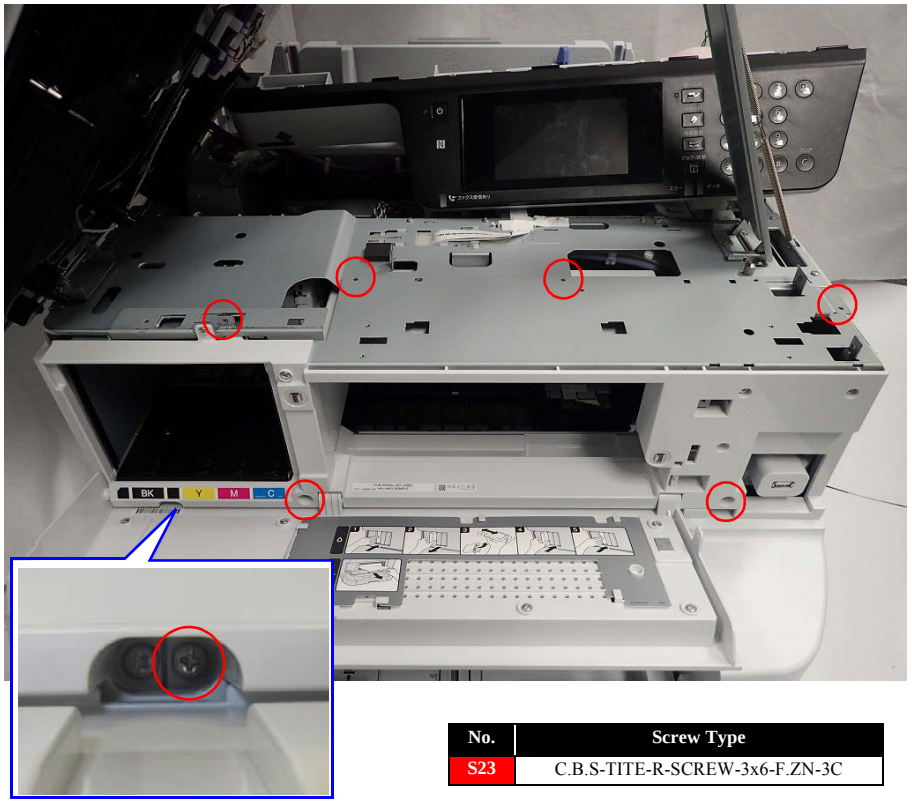


7. Put the panel unit at the rear side of the printer.

A6		Stacker Assy

1. Remove the Stacker Assy.

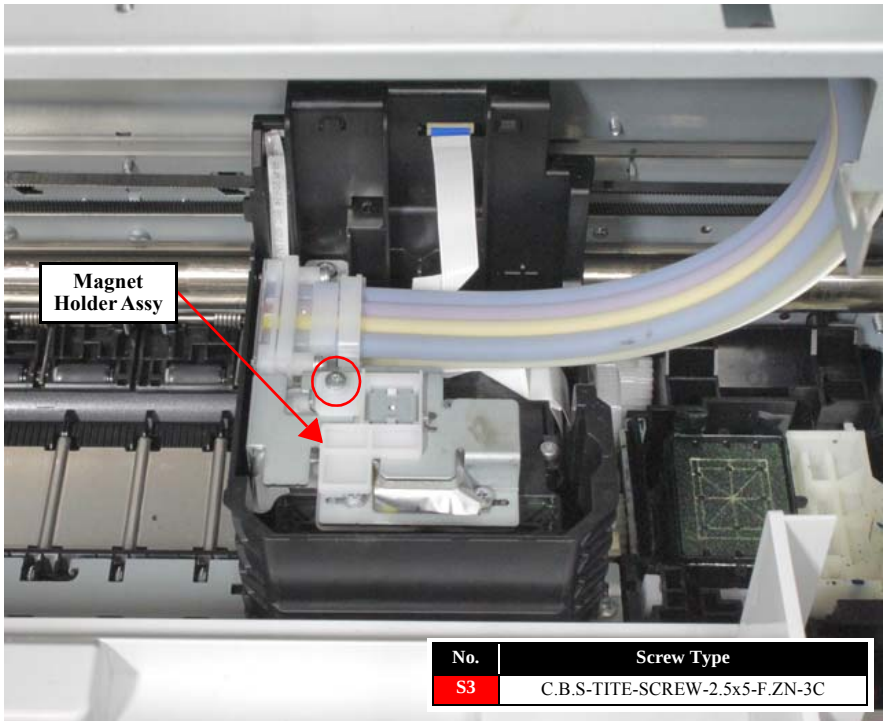
A7 Front Housing Assy



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

A8 Magnet Holder Assy



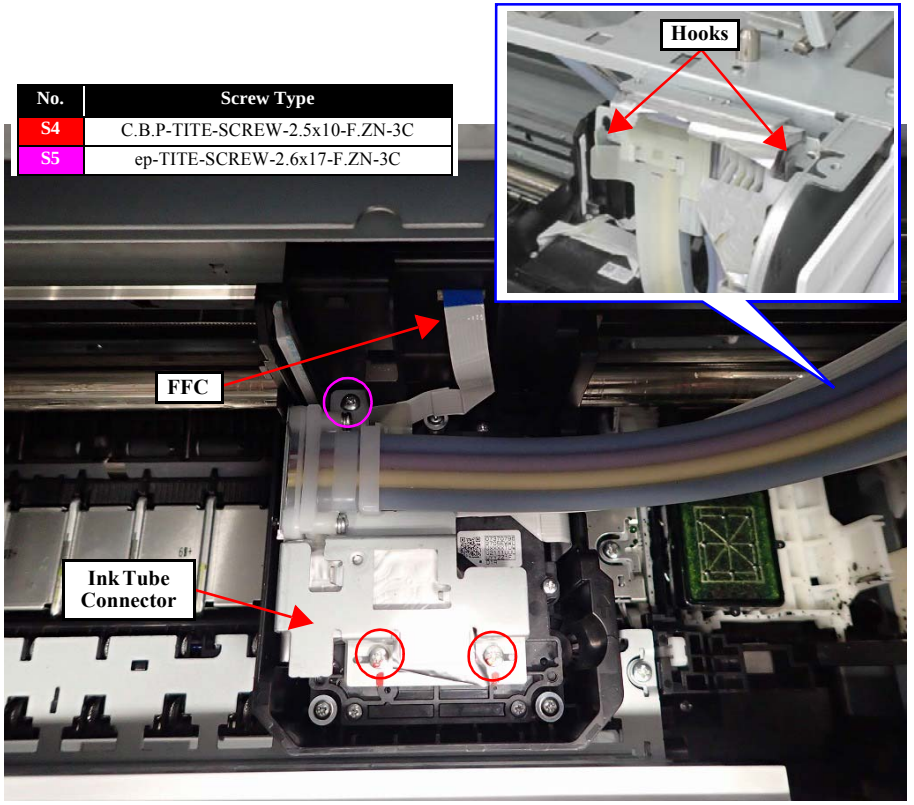
No.	Screw Type
S3	C.B.S-TITE-SCREW-2.5x5-F.ZN-3C

1. Remove the screw (S3: ○), then remove the Magnet Holder Assy.

CHECK POINT: Before performing this operation, release the CR lock, then move the CR Unit to the service position

CAUTION:
- ☐ If Magnet Holder is not removed, ink spill is occurred when removing the Ink Tube joint from Printhead.
  Therefore, make sure to remove the Magnet holder when removing the Ink tube joint from printhead.
- ☐ Make sure not to put the Magnet Holder to near the Ink Tube Joint after removing it.

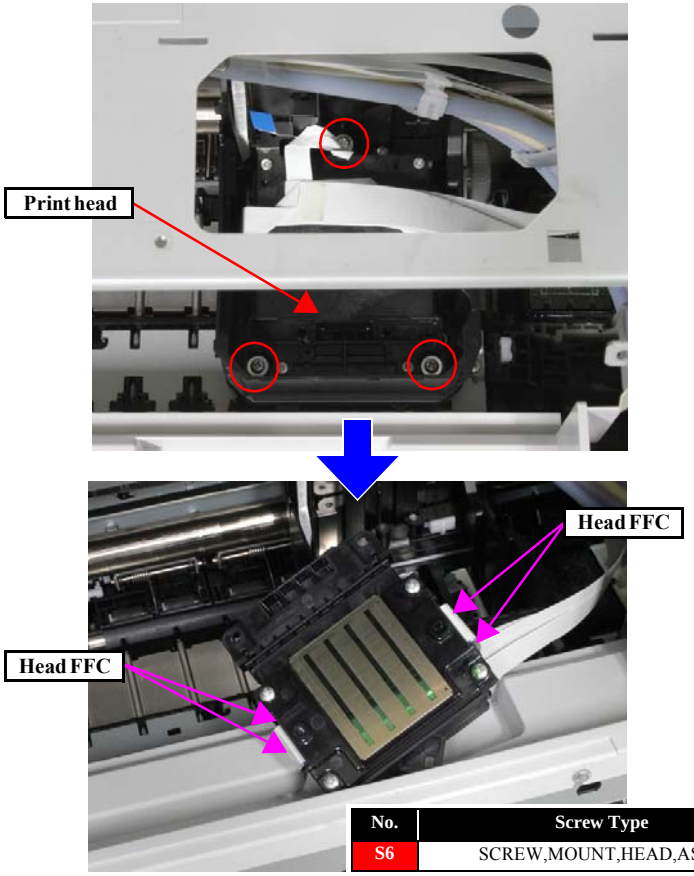
A9		Print Head



No.	Screw Type
S4	C.B.P-TITE-SCREW-2.5x10-F.ZN-3C
S5	ep-TITE-SCREW-2.6x17-F.ZN-3C

1. Remove the two screws (S4: ○) and the screw (S5: ○), then remove the ink tube connector.
2. Hook the ink tube connector on the hook on the frame.
3. Disconnect the FFC from the connector of the CR encoder sensor.

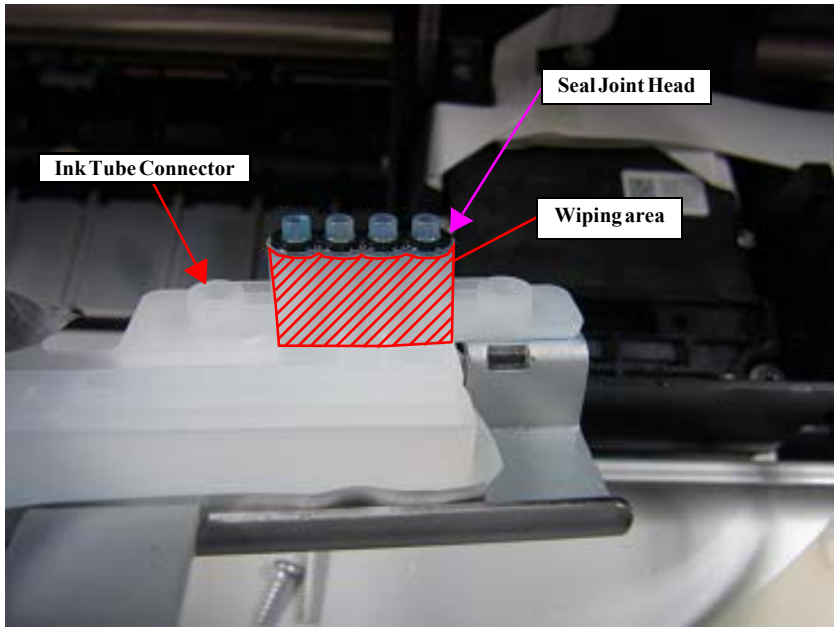
Print head



No.	Screw Type
S6	SCREW,MOUNT,HEAD,ASSY

4. Remove the three screws (S6: ○). then remove the Print Head.
5. Disconnect the four Head FFCs from the connector of the Print Head.

A10 Print Head (Preparation before reassembly)



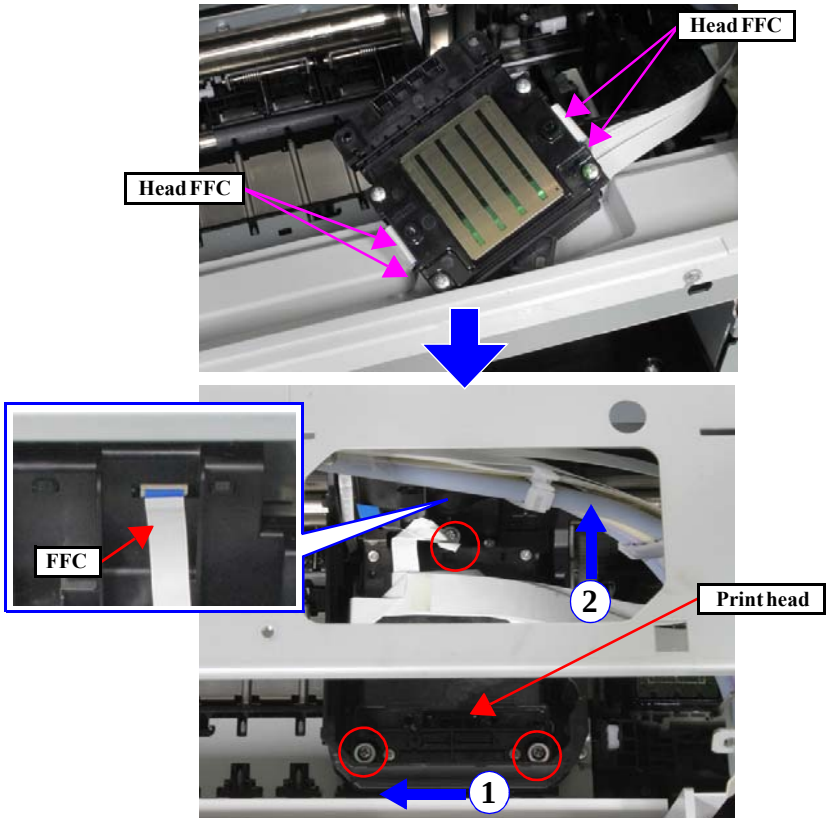
CHECK POINT

Make sure to clean the Ink tube joint part of Ink Supply Unit by using the Cleaning stick, because perform the Ink Leak Check correctly.

CAUTION

- ☐ If ink is remained to ink tube joint part of Ink Supply Unit, Ink Leak Check can not perform correctly. Therefore cleaning the ink surely.
- ☐ Replace the seal joint head with the new one because it cannot be reused.
- ☐ Check the seal joint head is not double-installed.
- ☐ Check the seal joint head is inserted all the way.
- ☐ Check the foreign object does not adhere on the seal joint head.

A11 Installing the Print Head



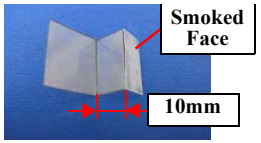
REASSEMBLY

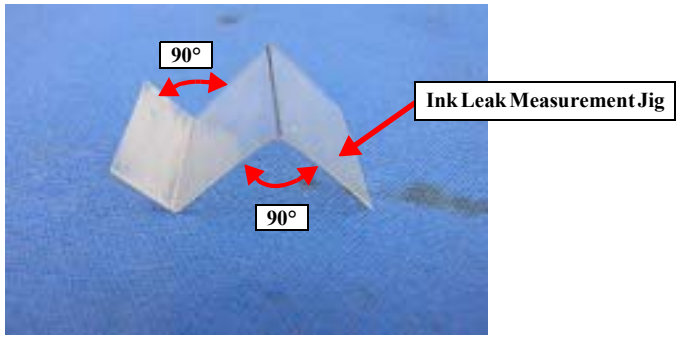
Follow the procedure below to install the Print Head.

1. Connect the four Head FFCs to the connector of the Print Head.
2. Press the Print Head in the direction of the arrow in order, set it to the CR Unit, and fix it with the three screws (S6).
3. Connect the FFC to the connector of the CR encoder sensor.

A12		Installing the Leak Check Jig

Types of Ink Leak Measurement Jig

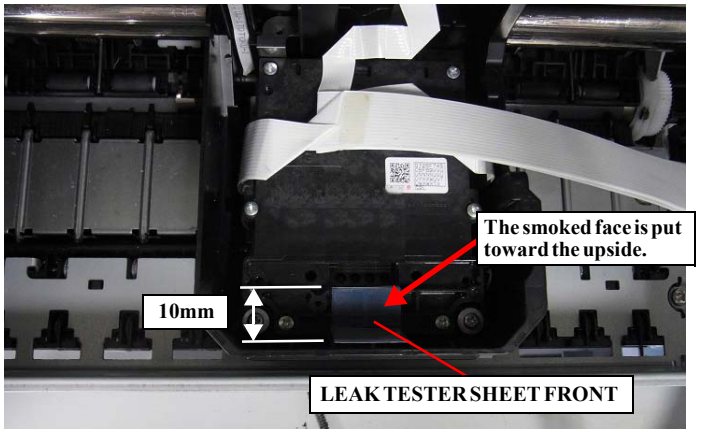
Part Name	Part Code	Photo	Remark
LEAK TESTER SHEET FRONT	1684353		Put it to front side

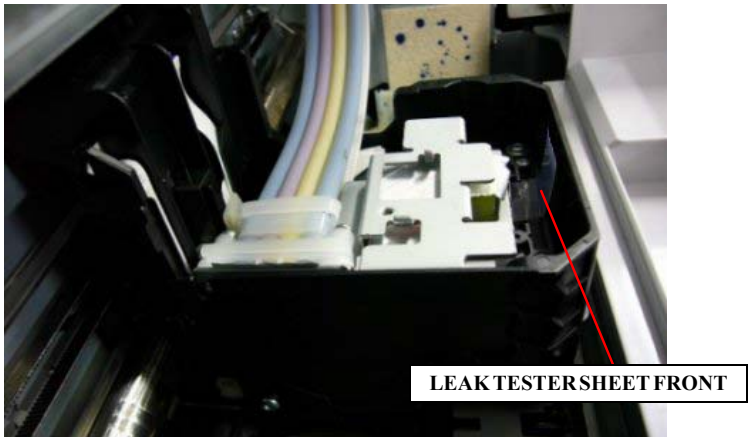


CHECK POINT

In this product, Ink Leak Check is necessary to prevent the ink leakage due to assembly mistake
Therefore, make sure to install the ink leak measurement jig when installing the Ink Tube to Printhead.
Before using the Leak Check Jig, push the ink leak measurement jig along the folds until the fold angle become 90 degrees

Ink leak measurement jig installation





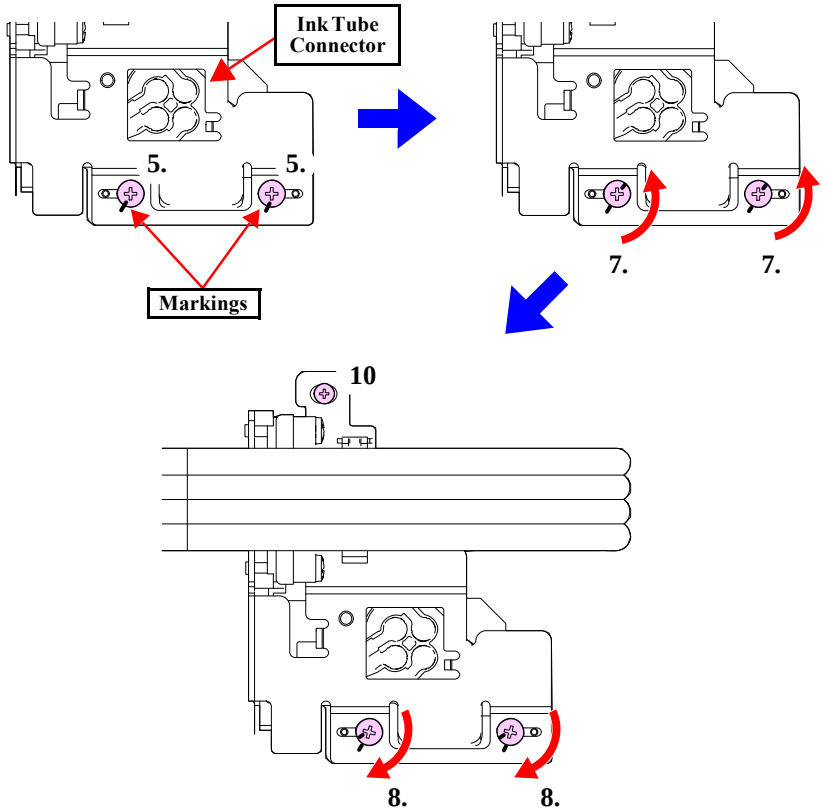
1. Set the ink leak measurement jig to the ink tube connector of the Print Head.

CAUTION

The smoked face of ink leak measurement jig is put toward the upside.

2. Install the ink tube connector to the Print Head.

Ink leak measurement jig installation



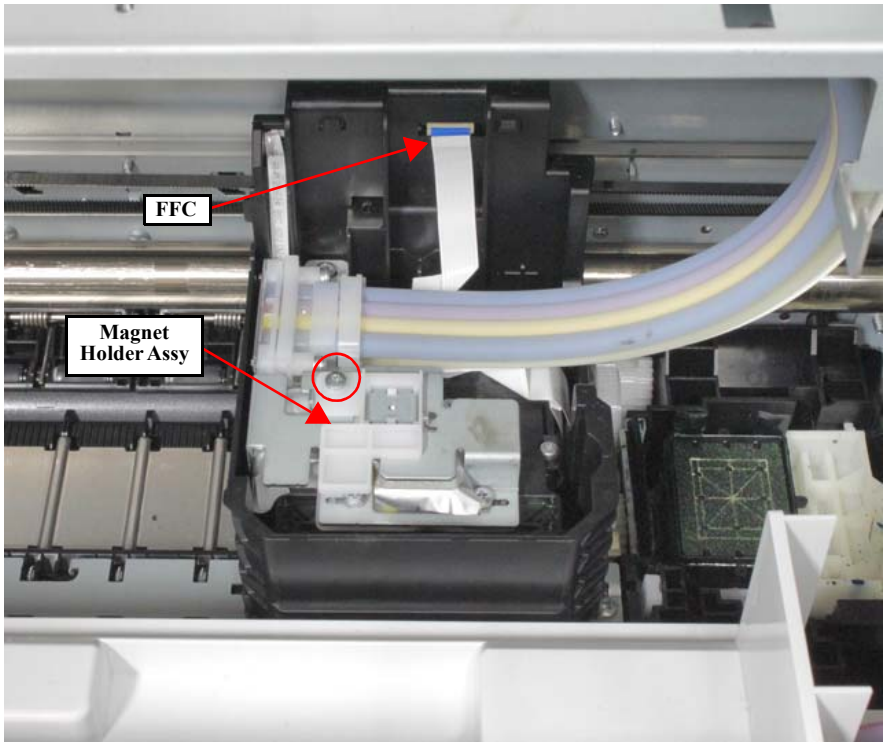
CAUTION

Make sure to use the torque screwdriver to tighten the screws in the next step. Use the following torque.

□ 0.35 ± 0.03 N·m

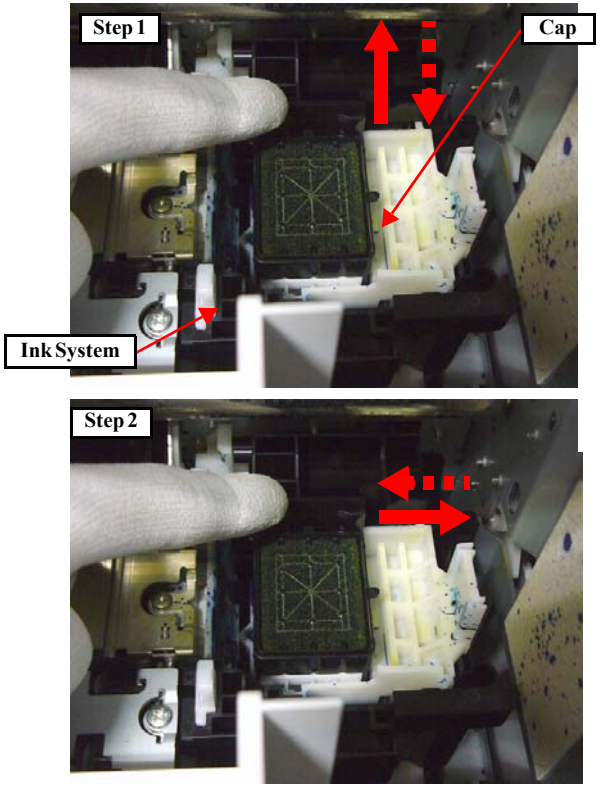
3. Tighten the two screws (S4) at the front side of the ink tube connector by specified torque.
4. Put a marking on the screw.
5. Loosen the screw halfway from the mark.
6. Tighten the screw again by specified torque. (It is tightened from the marked position.)
7. Check the ink tube connector has no backlash.
8. Tighten the screw(S5) at the rearward.

Ink leak measurement jig installation



9. Connect the FFC to the connector of the CR encoder sensor.
10. Install the Magnet Holder Assy with the screw (S3: ○).

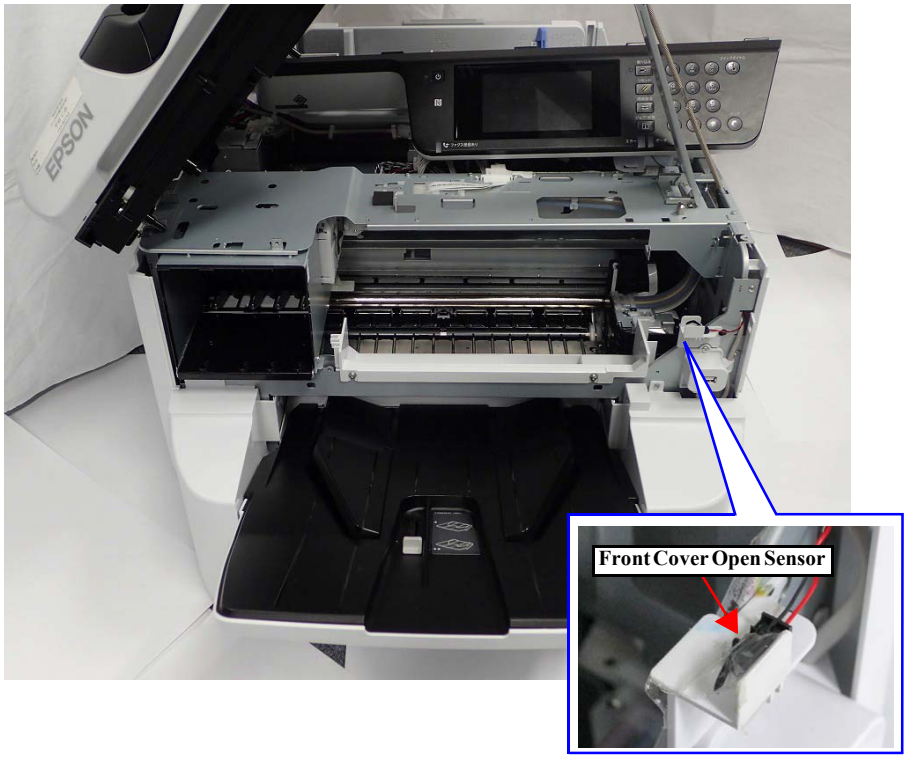
A13 Confirmation after replace the Print Head



In this printer, the cap of the ink system follows the inclination of the Print Head. However, if hardened ink is accumulated on the cap, capping may not be done properly and printing failure may result. After the adjustment is complete, make sure to perform the operation check of the cap following the procedure below.

1. Push the cap of the ink system to the rear and confirm the cap surely returns to the original position.
2. Push the cap of the Cap Unit to the home position and confirm the cap surely returns to the original position.
3. Repeat Step 1 to Step 2 a few times. If the action of the cap is too slow or awkward, or does not return to the original position, replace the ink system with a new one.

A14 Preparation before Adjustment



1. Wrap the front cover open sensor with tape, and disable the sensor function.
2. Install the ink pack and the Maintenance Box.
3. Start the printer in service support mode. (Refer to Service Support Mode *(p. 100)*)

CAUTION Wrap the front cover sensor with tape surely.
(When the adhesive tape peels off, the CR unit unintentionally moving.)

A15		Adjustment after replacing the Print Head (Inspection& Ink Charge)

1. Select the **Adjustment: MENU** from the service support mode menu.
2. Select "**After Unit Repair Operation:MENU**" from the Adjustment menu.
3. Execute the **"B80 Head Replace Sequence"**.

CHECK POINT Execute the nozzle check after the initial ink charge because the ink leak check is performed after this.

A16		Leak Check Judgment

1. Perform the Ink Leak Check based on the determination criteria of the INK LEAK CHECK *(p. 285)*.

CHECK POINT Pull out the ink leak measurement jig with the Head Replace Sequence is running. (Power on mode)

A17		Adjustment after replacing the Print Head (Adjustment)

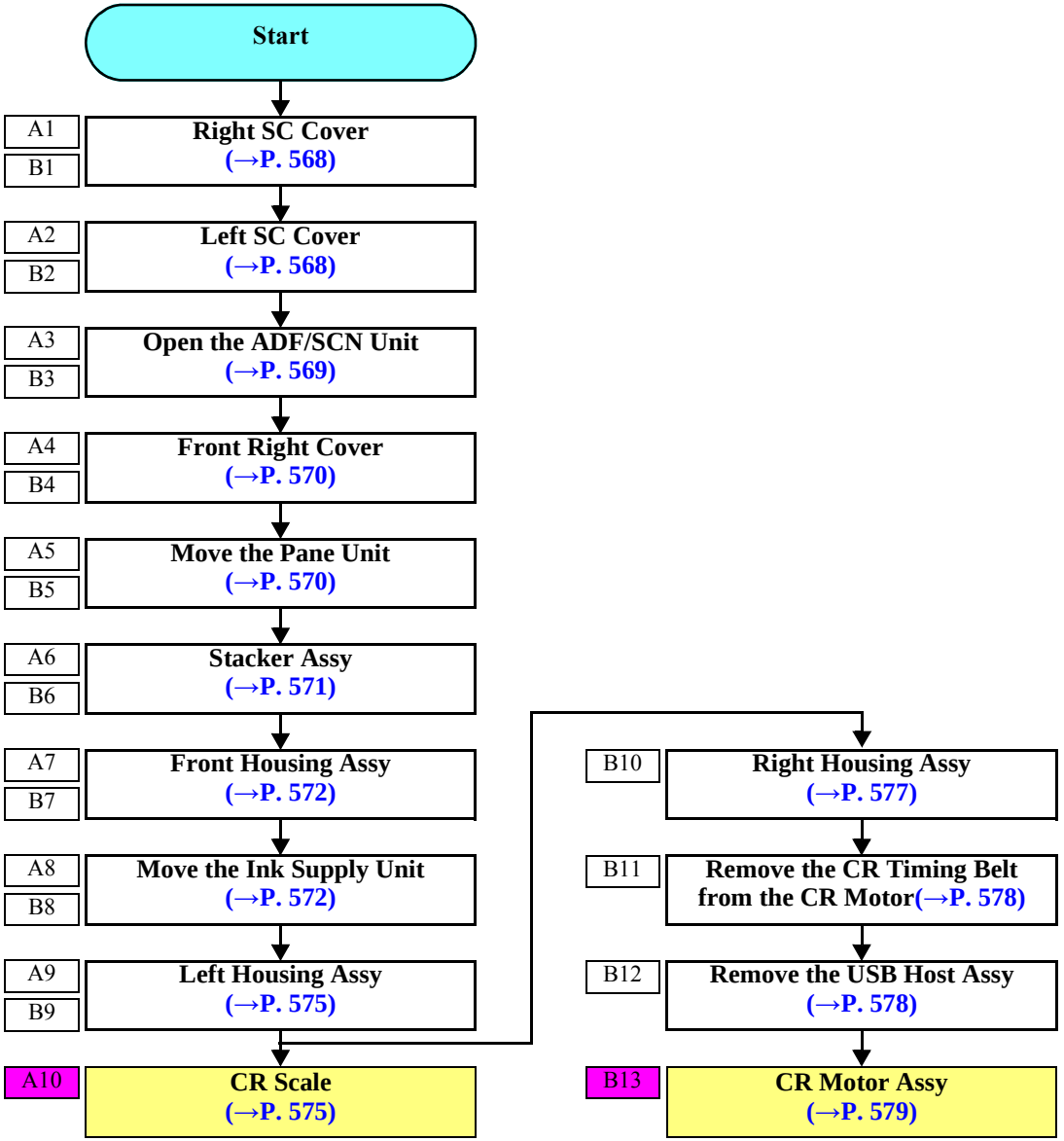
1. Perform the adjustment in order from the head angular mecha adjustment. (Refer to B80 Head Replace Seq (p. 362))

7.4.3.17 Carriage Mechanism 3

OUTLINE

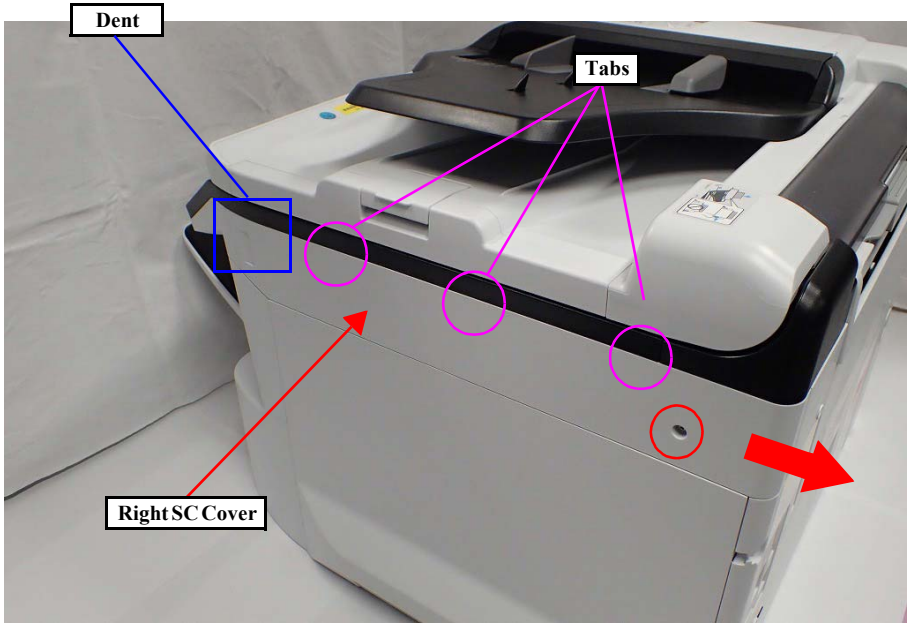
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
CR Scale	A	17 min 23 sec	13 sec	17 min 36 sec
CR Motor Assy	B	14 min 51 sec	49 sec	15 min 40 sec

DISASSEMBLY FLOWCHART



A1	B1

Right SC Cover

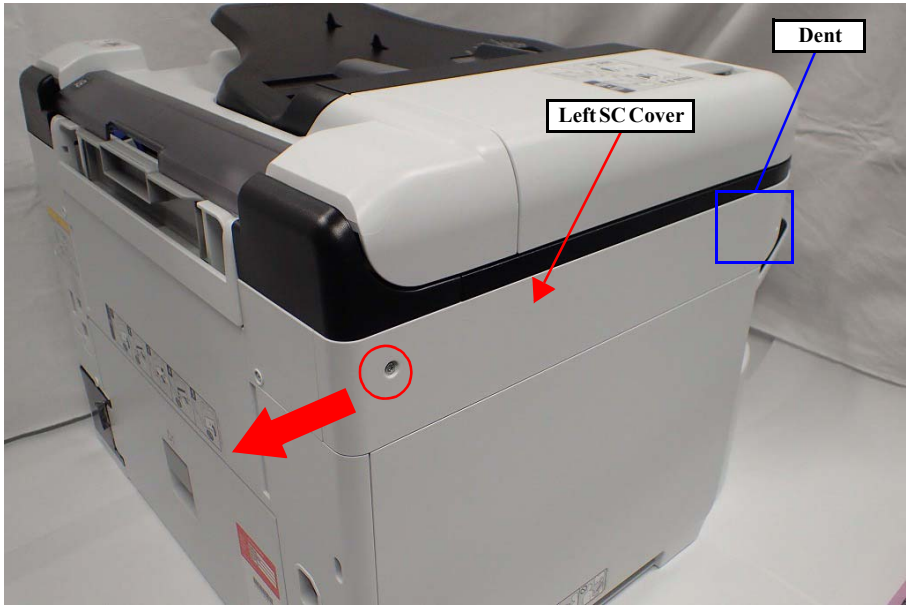


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2

Left SC Cover

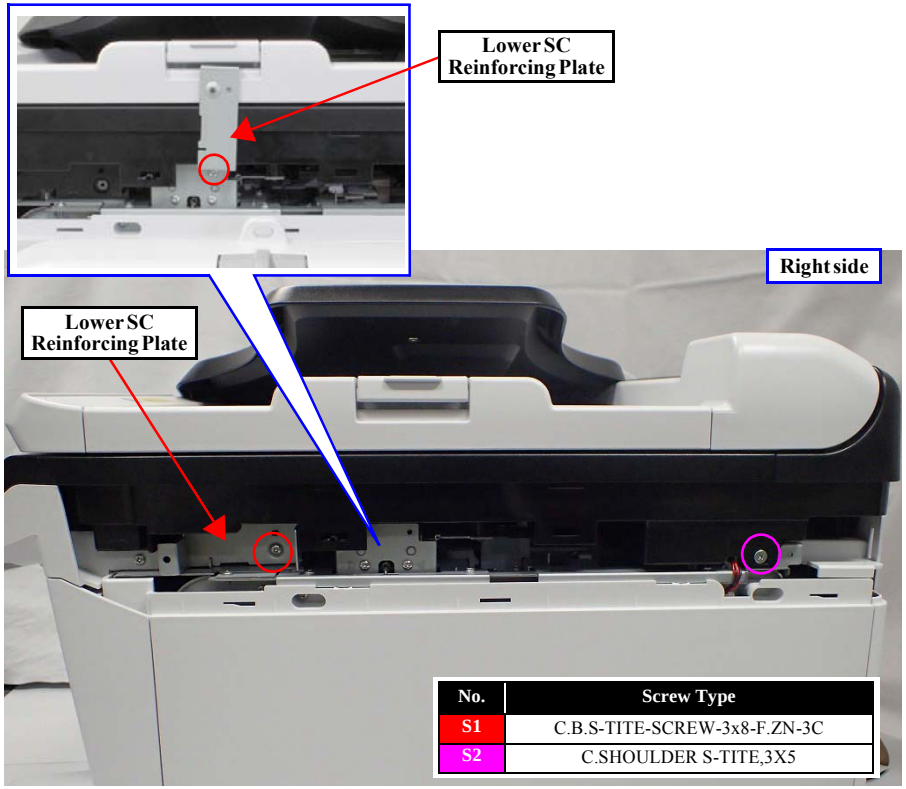


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3

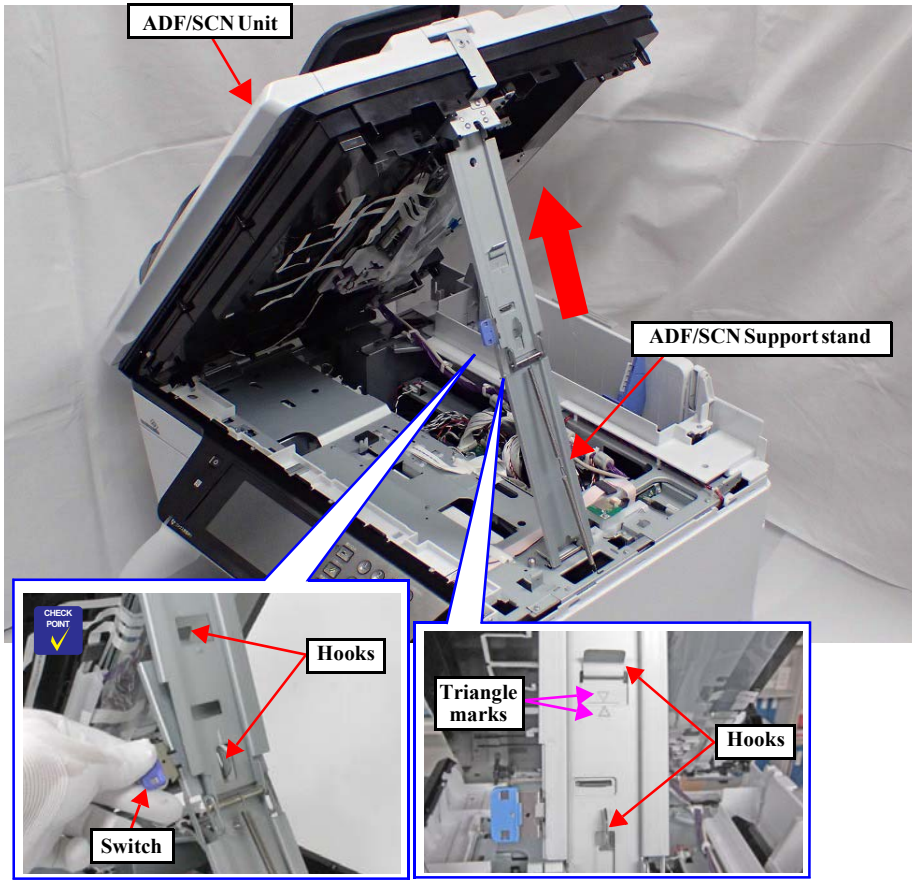
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



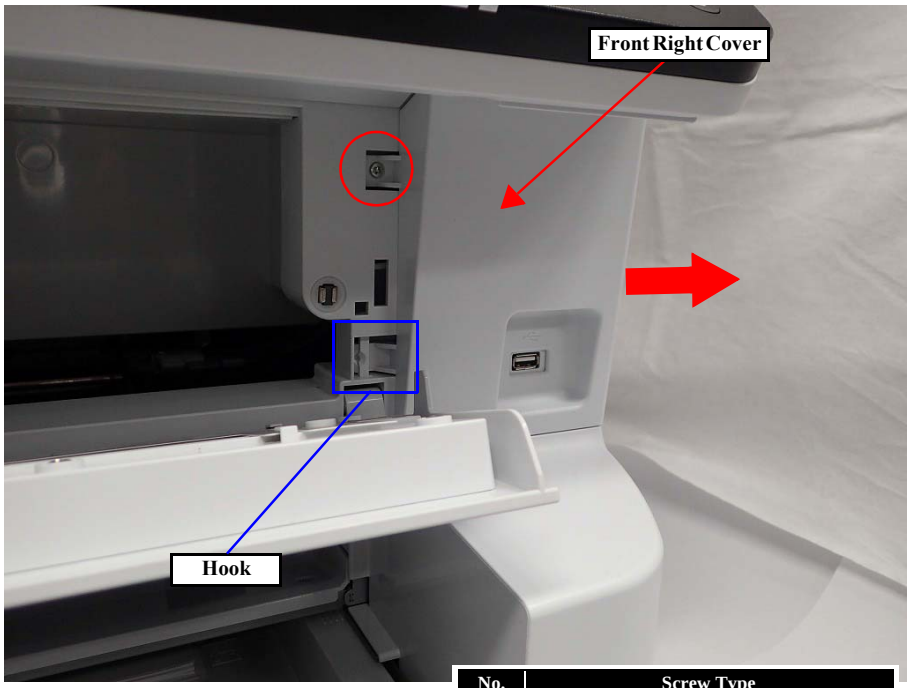
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4

Front Right Cover

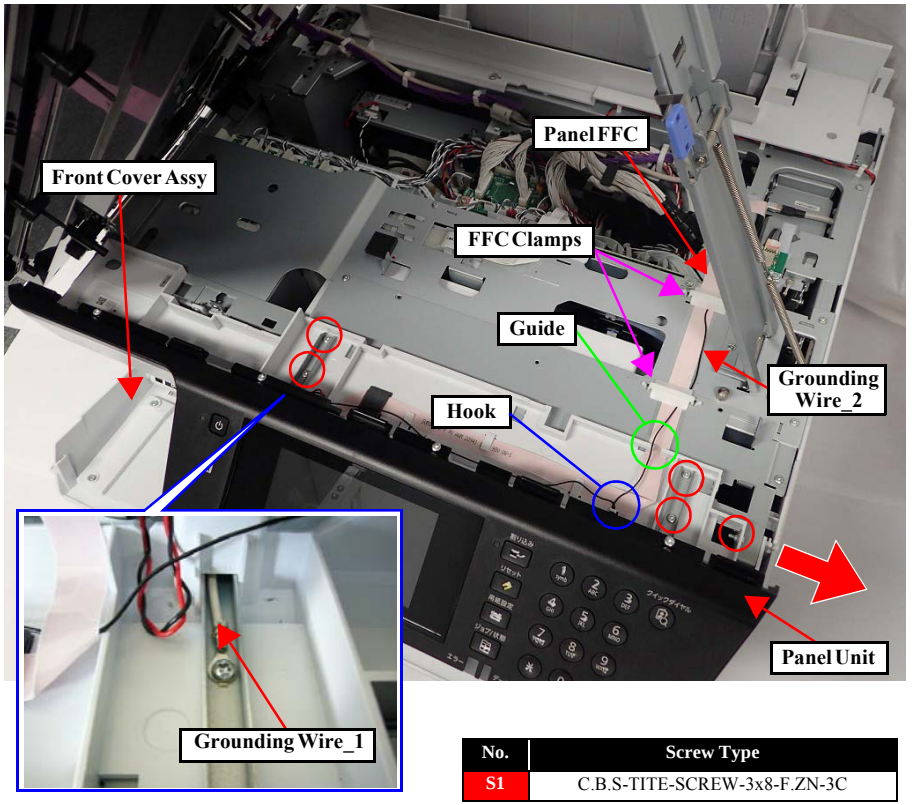


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

A5	B5

Move the Panel Assy



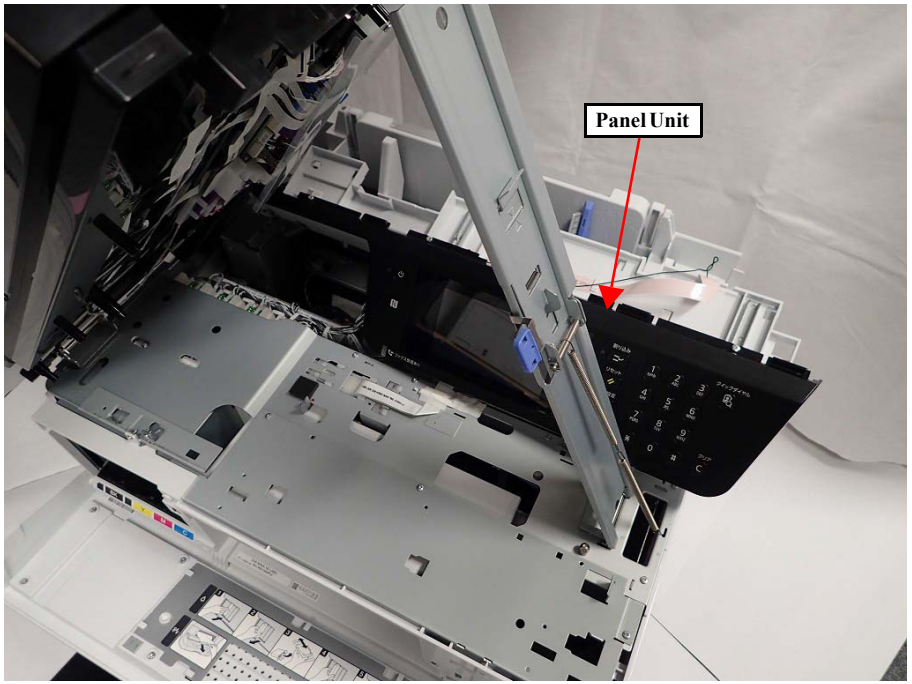
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○)
2. Remove the two FFC clamps.
3. Release the Panel FFC and the grounding wire_2 from the guide.
4. Release thgrounding wire_2 from Hook.
5. Open the Front Cover Assy.
6. Slide the panel unit rightward to remove it.

REASSEMBLY

- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

Move the Panel Unit



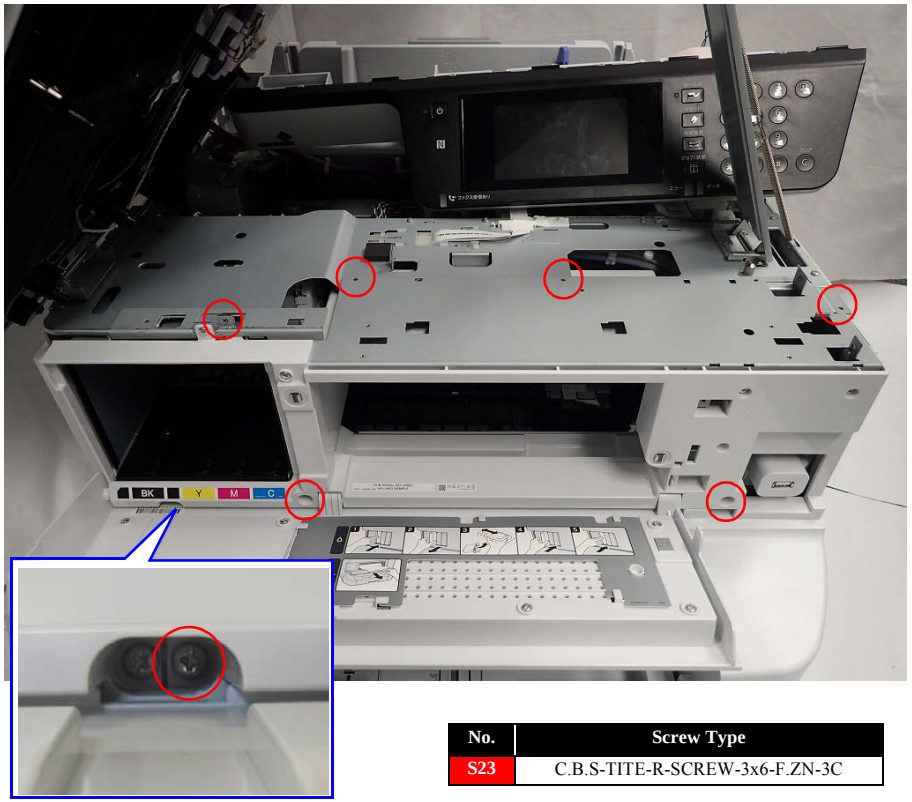
7. Put the panel unit at the rear side of the printer.

A6	B6	Stacker Assy

1. Remove the Stacker Assy.

A7	B7

Front Housing Assy

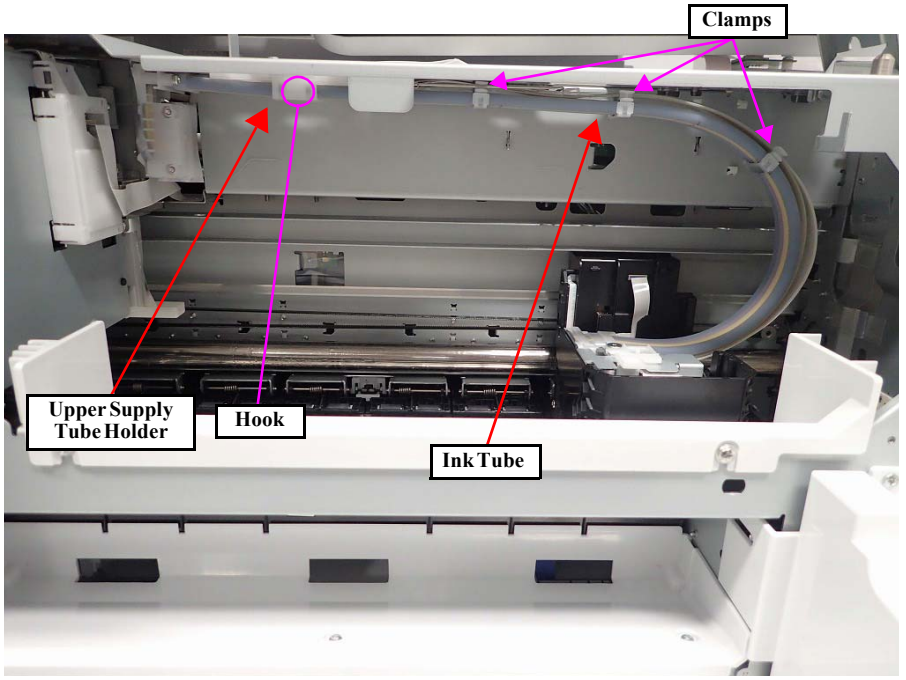


No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

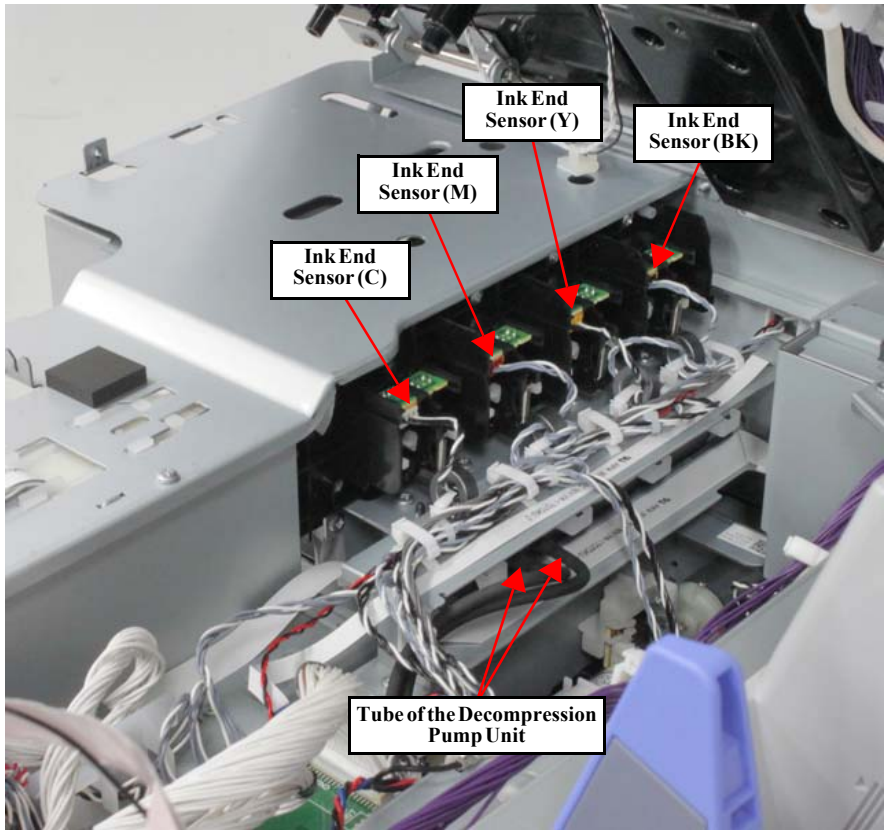
A8	B8

Move the Ink Supply Unit



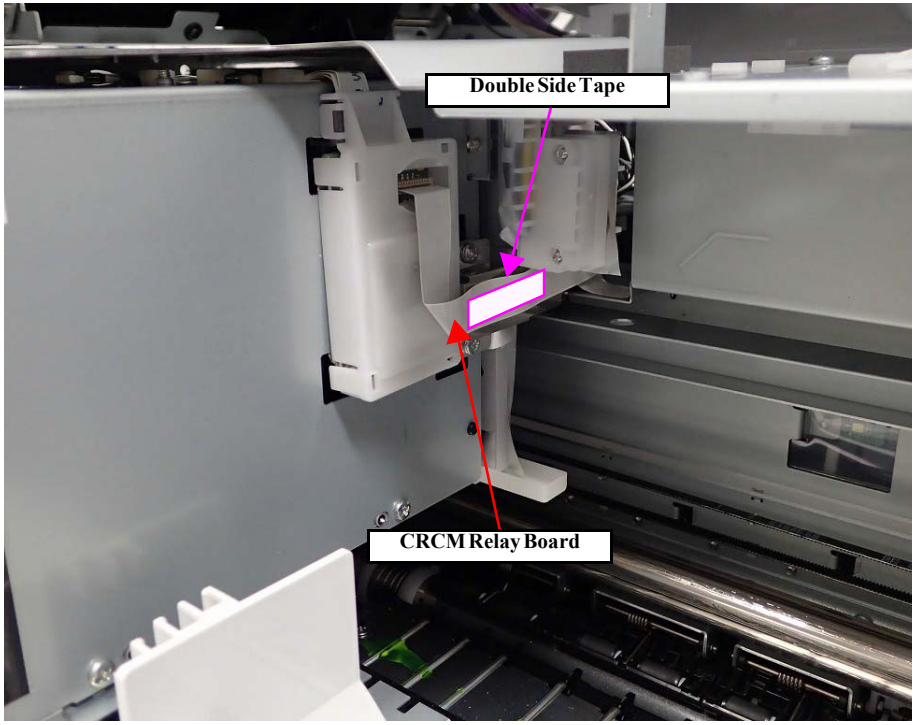
1. Disengage the hook, then release the ink tubes from the upper supply tube holder.
2. Release the ink tubes from the three clamps.

Move the Ink Supply Unit on the Main Frame



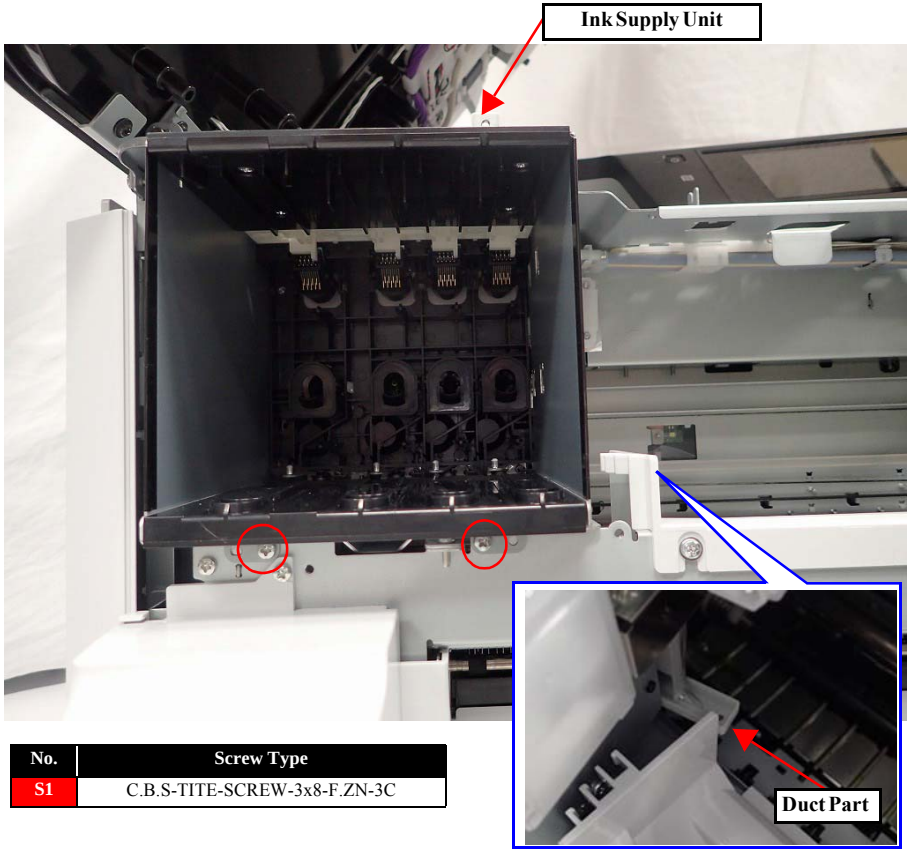
3. Disconnect the cable from the connector of the Ink End Sensor.
4. Pull out the two tubes from the decompression pump unit from the Ink Supply Unit.

Move the Ink Supply Unit on the Main Frame



5. Disconnect the CRCM Relay FFC from CRCM Board.
6. Remove the CRCM Relay FFC from Ink Supply Unit. (with Double side tape)

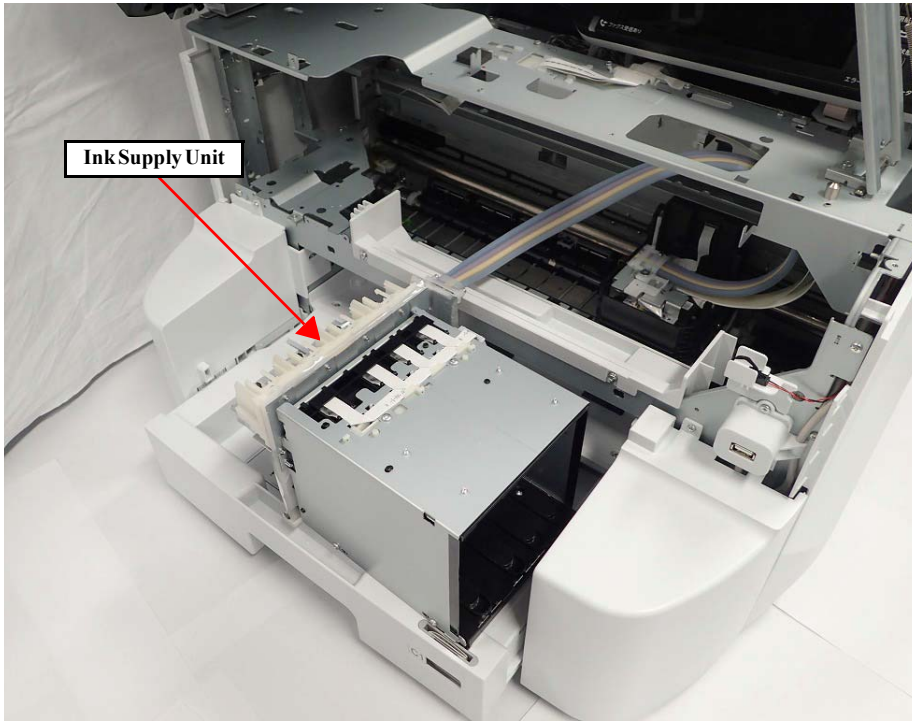
Move the Ink Supply Unit on the Main Frame



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

7. Remove the two screws (S1: ○).
8. Remove the Ink Supply Unit while releasing the duct part.

Move the Ink Supply Unit on the Main Frame



9. Place the Ink Supply Unit temporarily.

A9	B9

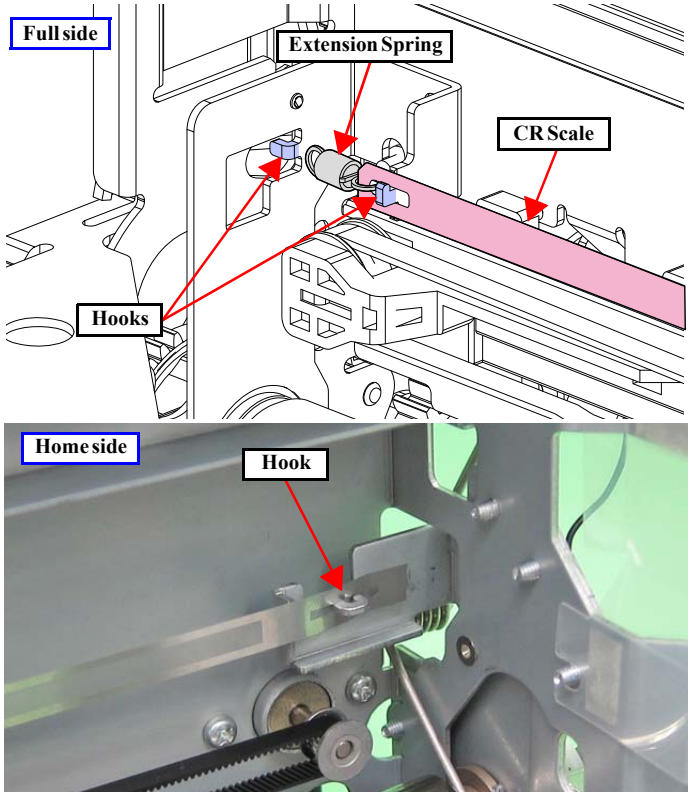
Left Housing Assy

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screw (S1: ○), and remove the Left Housing Assy.

A10	

CR Scale

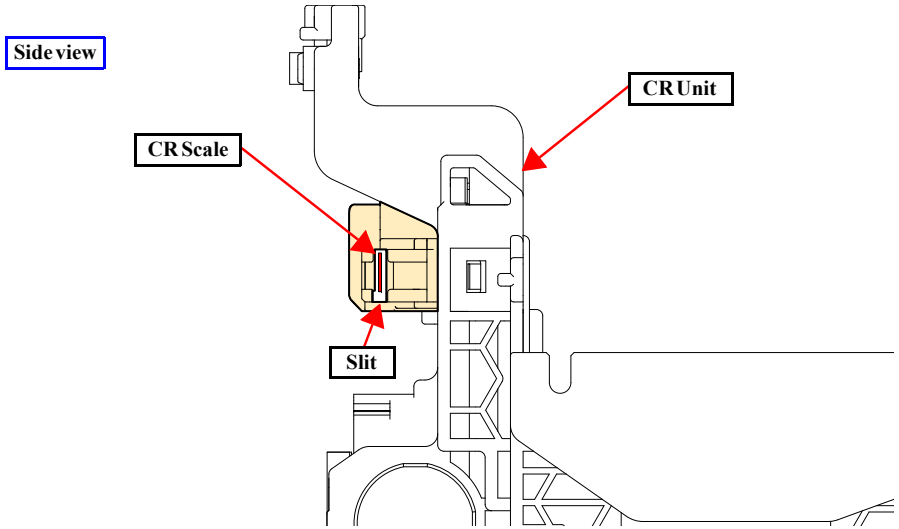


CAUTION

- ☐ The CR Scale is made of SUS and very fragile. Therefore, take extreme care when handling one.
- ☐ If you disassemble the CR Scale, exchange it for the new CR scale.

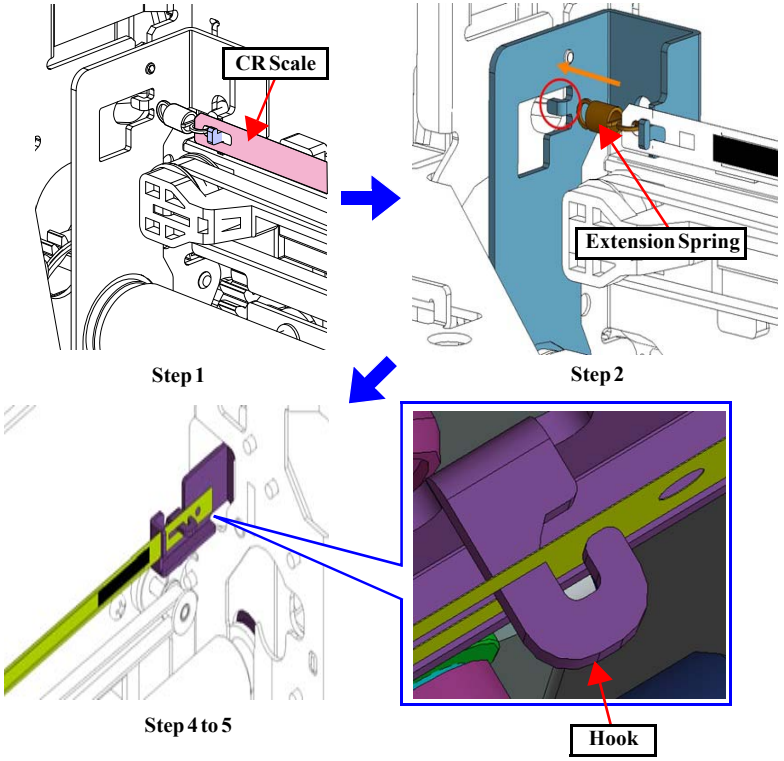
1. At the full side, disengage the Extension Spring from the hook of the frame.
2. Remove the CR Scale from the hook of frame.
3. At the home side, remove the CR Scale from the hook of the frame.

CR Scale



4. Pull out the CR Scale from the slit of the CR Unit.

CR Scale



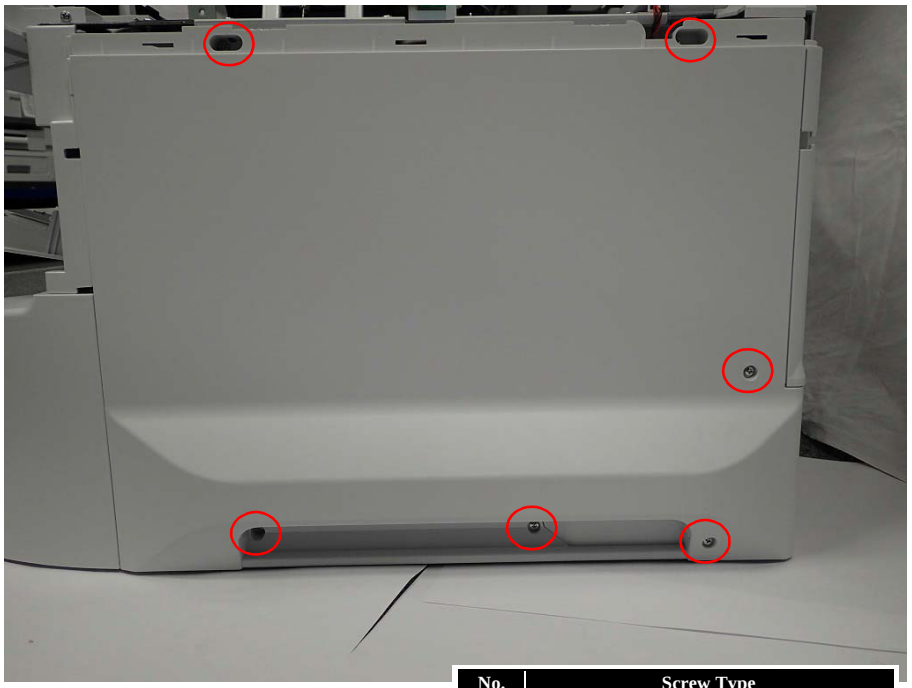
REASSEMBLY

Follow the procedure below to install the CR Scale.

1. At the full side, hook the CR Scale on the frame.
2. Hook the Extension Spring on the frame.
3. Route the CR Scale through the slit on the CR unit.
4. At the home side, hook the CR Scale on the frame.
5. Check the hook is inserted all the way.

	B10

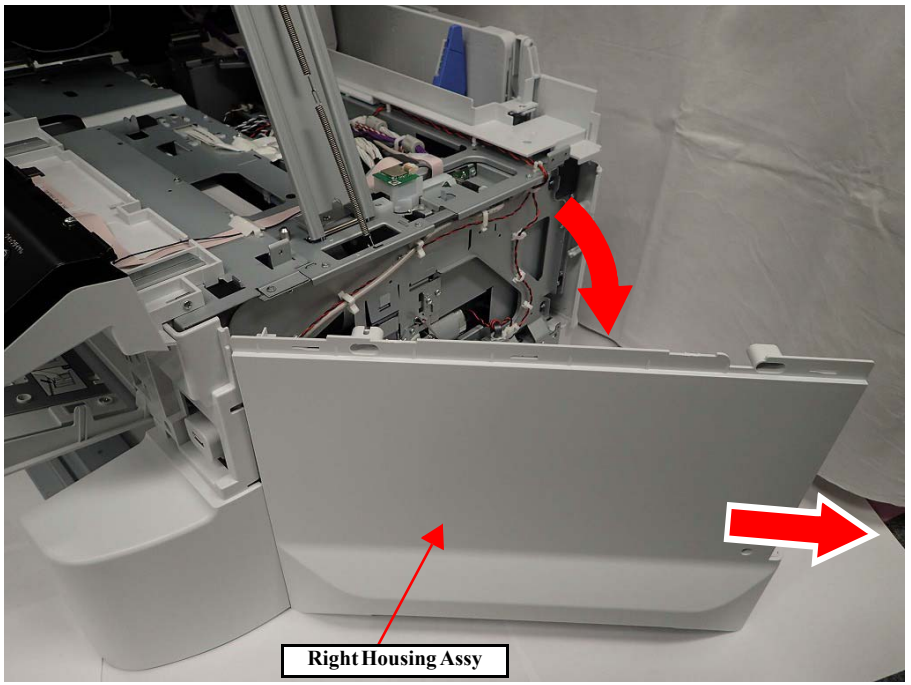
Right Housing Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

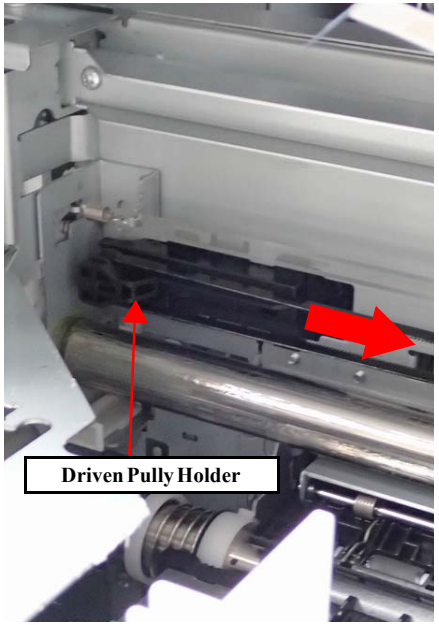
1. Remove six screw (S1: ○).

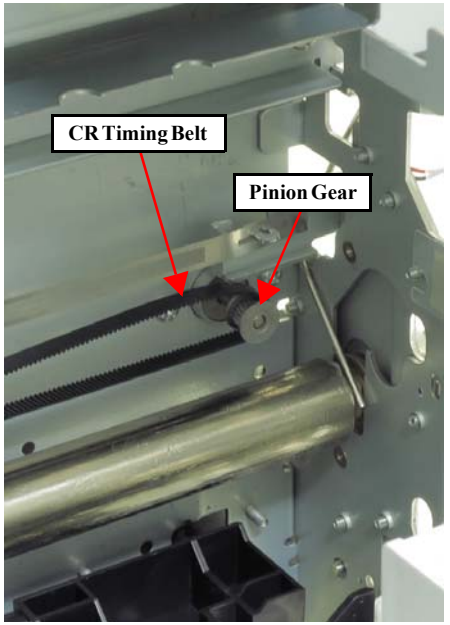
Right Housing Assy



2. Open the Rear side of Right Housing Assy like the above figure.
3. Slide the Right Housing Assy to derection of arrows in state of rear side of RIgth Housing Assy opened condition, and remove it.

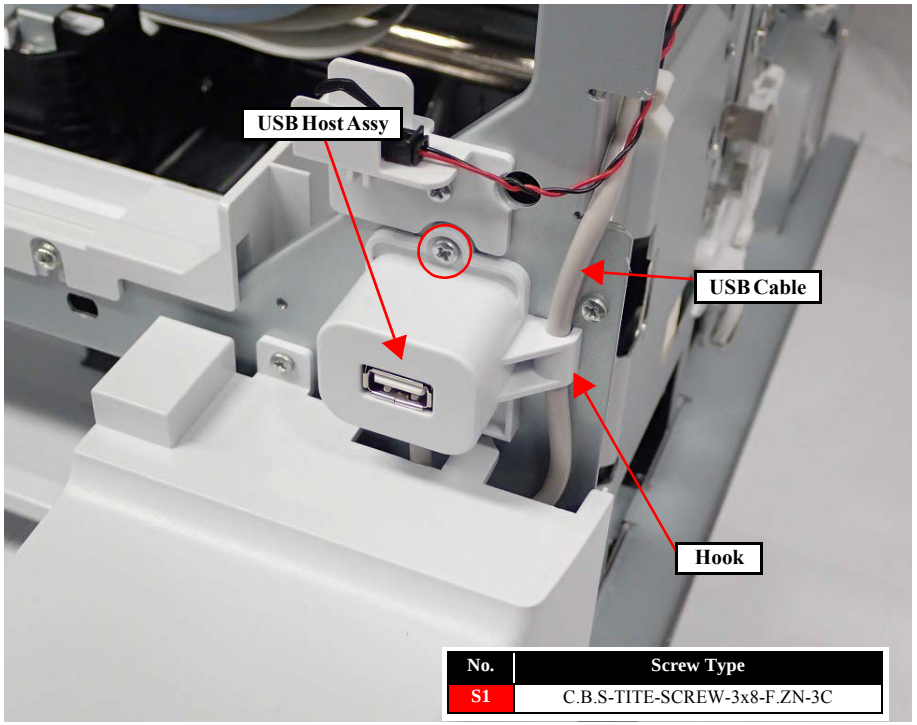
B11 Remove the CR Timing Belt from the CR Motor





1. Push the Driven Pully Holder to direction of arrow, and loosen the tension on the CR Timing Belt.
2. Remove the CR Timing Belt from the pinion gear of the CR motor.

B12 Remove the USB Host Assy



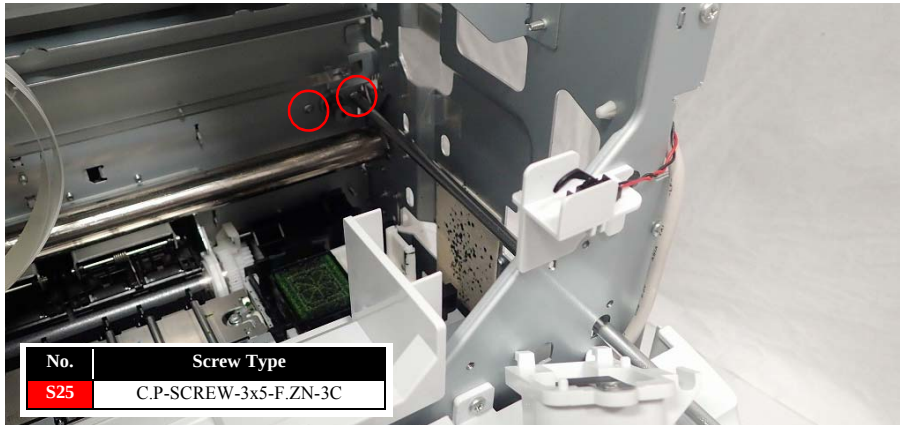
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the screw (S1: ○), then remove the USB Host Assy. (Do not remove the cable.)

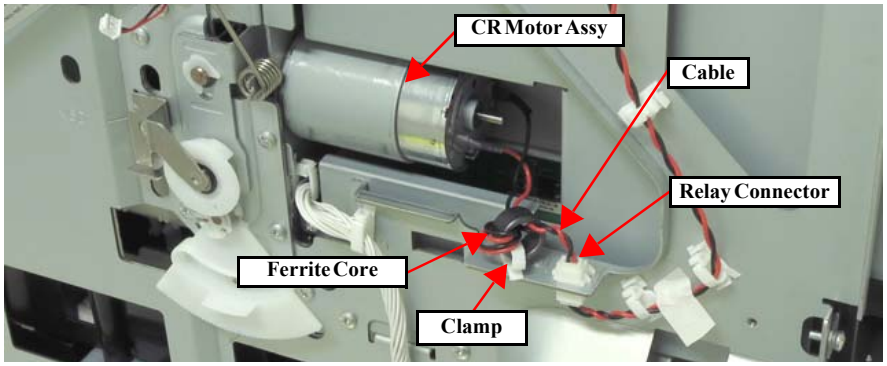
REASSEMBLY Route the USB cable through the hook of the Connector Assy.

B13

CR Motor Assy

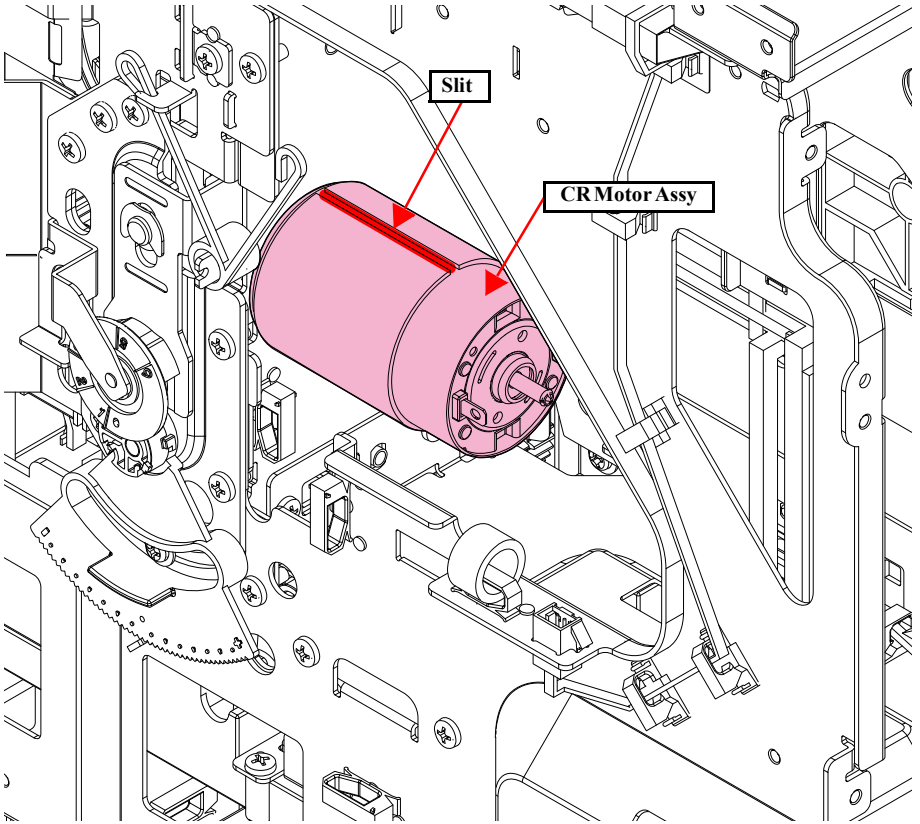


No.	Screw Type
S25	C.P-SCREW-3x5-F.ZN-3C



1. Remove the two screws (S25: ○).
2. Disconnect the cable from the relay connector.
3. Release the ferrite core from the clamp, then remove the CR Motor Assy.

CR Motor Assy



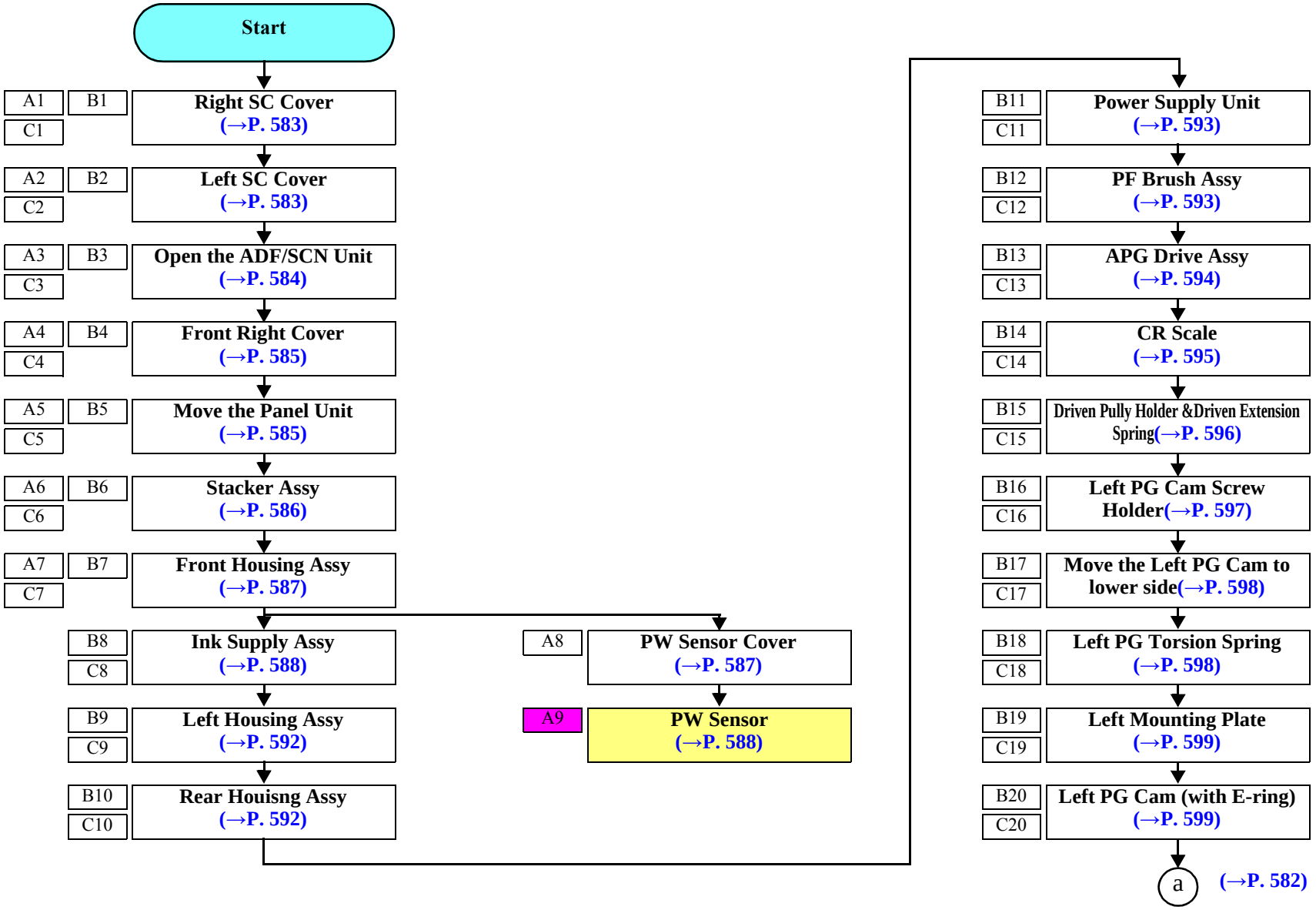
REASSEMBLY Set the CR Motor Assy so that the slit part faces upside.

7.4.3.18 Carriage Mechanism 4

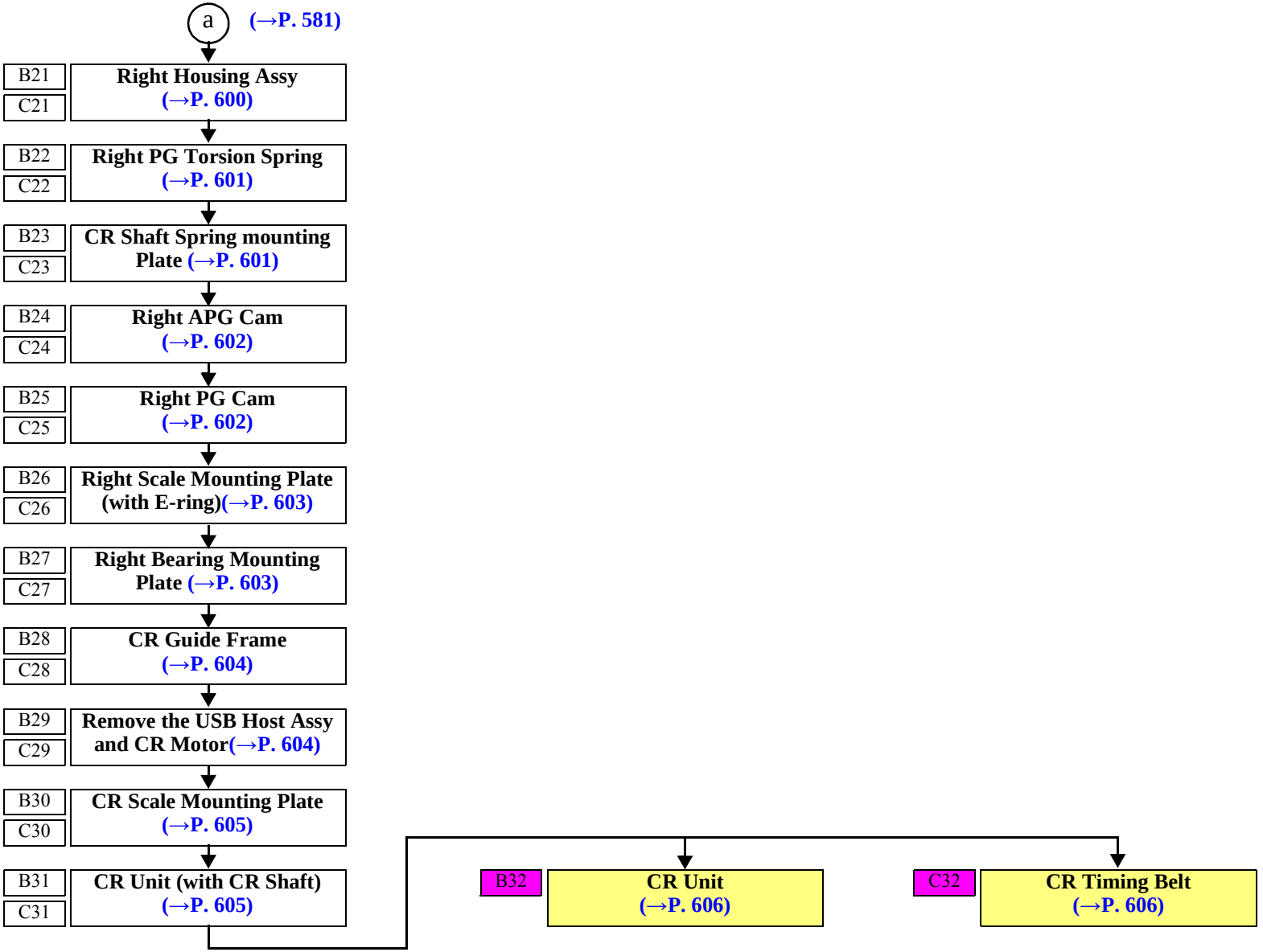
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
PW Sensor	A	9 min 9 sec	7 min 37 sec	16 min 46 sec
CR Unit	B	44 min 38 sec	24 min 38 sec	69 min 16 sec
CR Timing Belt	C	44 min 52 sec	---	44 min 52 sec

DISASSEMBLY FLOWCHART

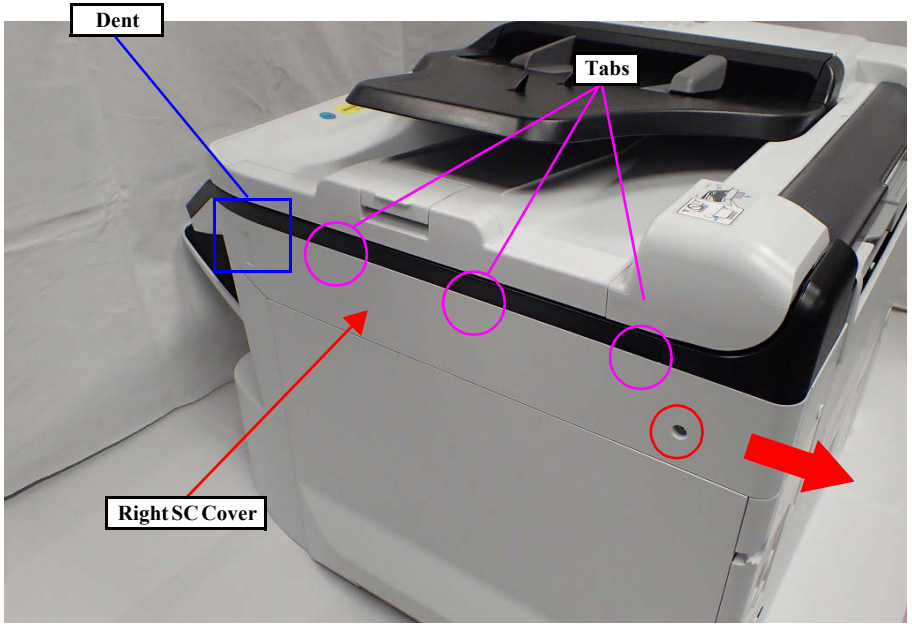


DISASSEMBLY FLOWCHART



A1	B1
C1	

Right SC Cover

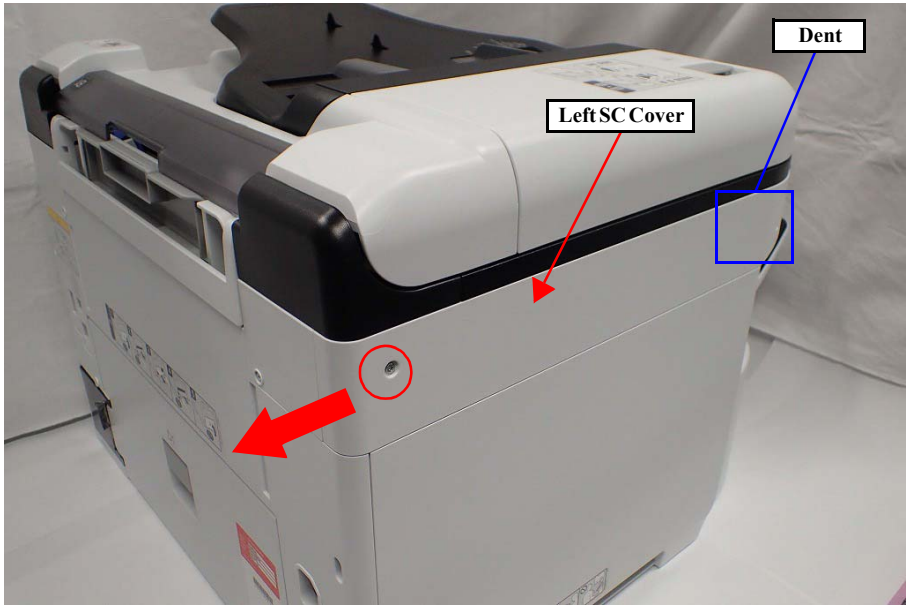


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2
C2	

Left SC Cover

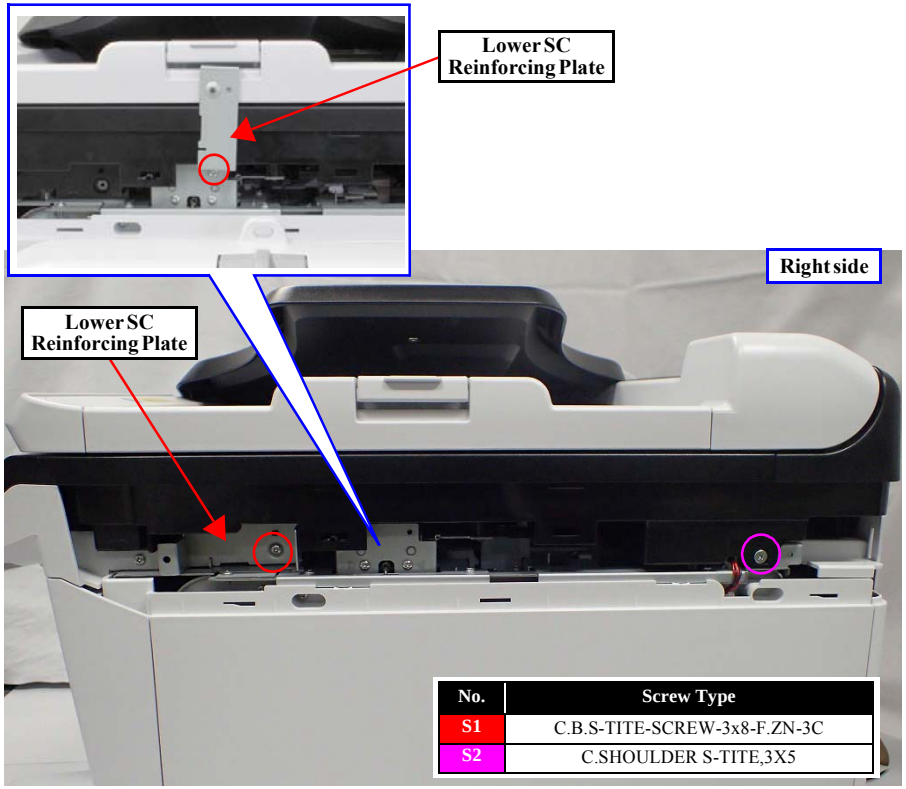


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3
C3	

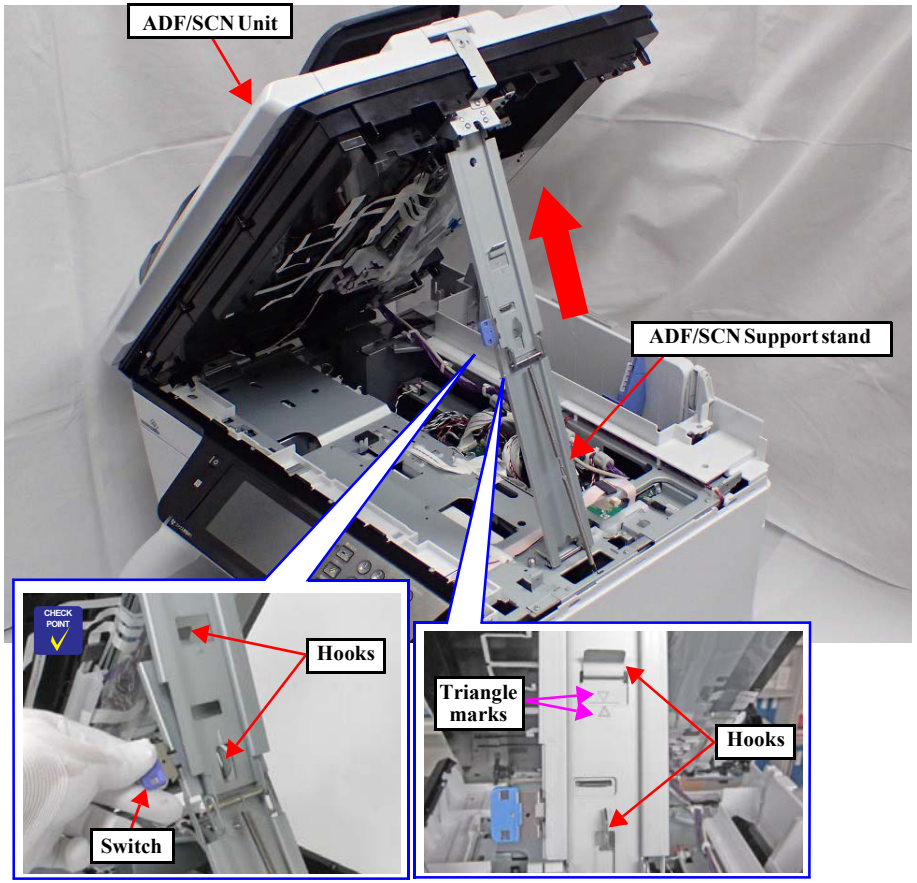
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



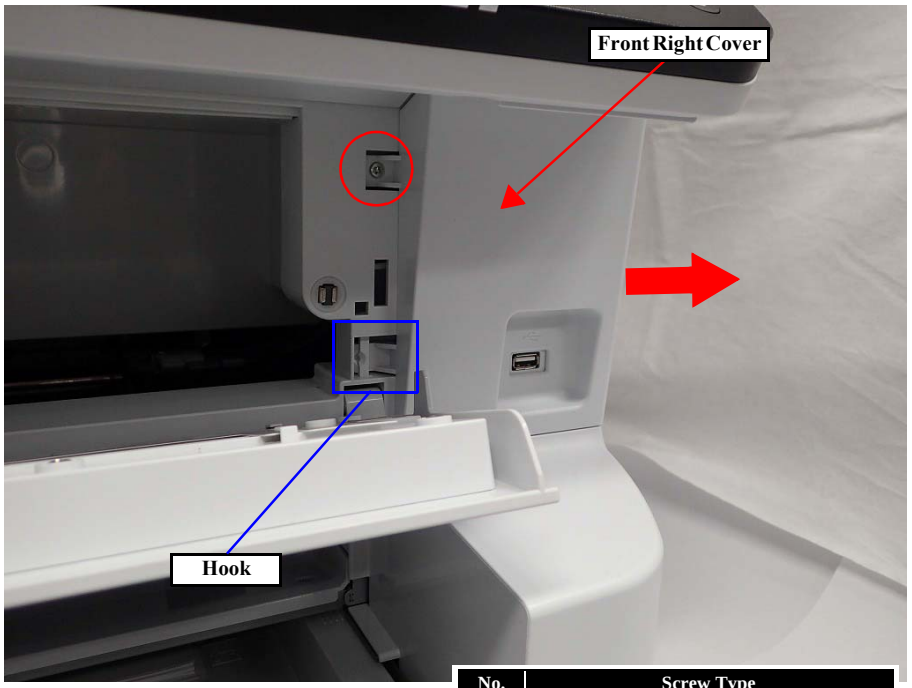
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4
C4	

Front Right Cover

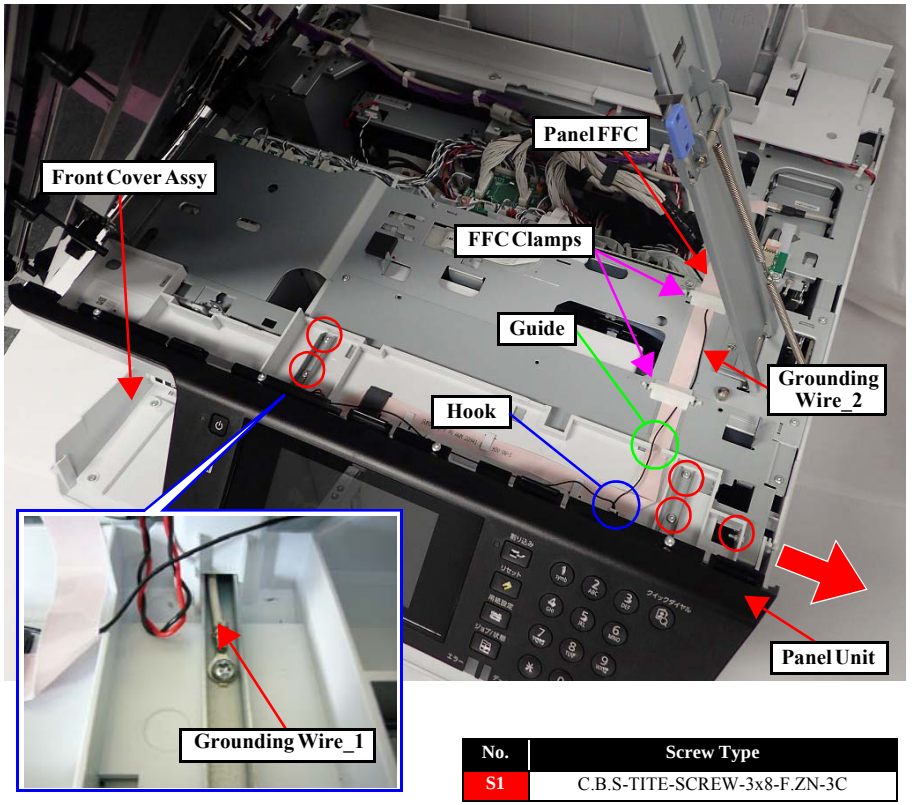


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

A5	B5
C5	

Move the Panel Assy

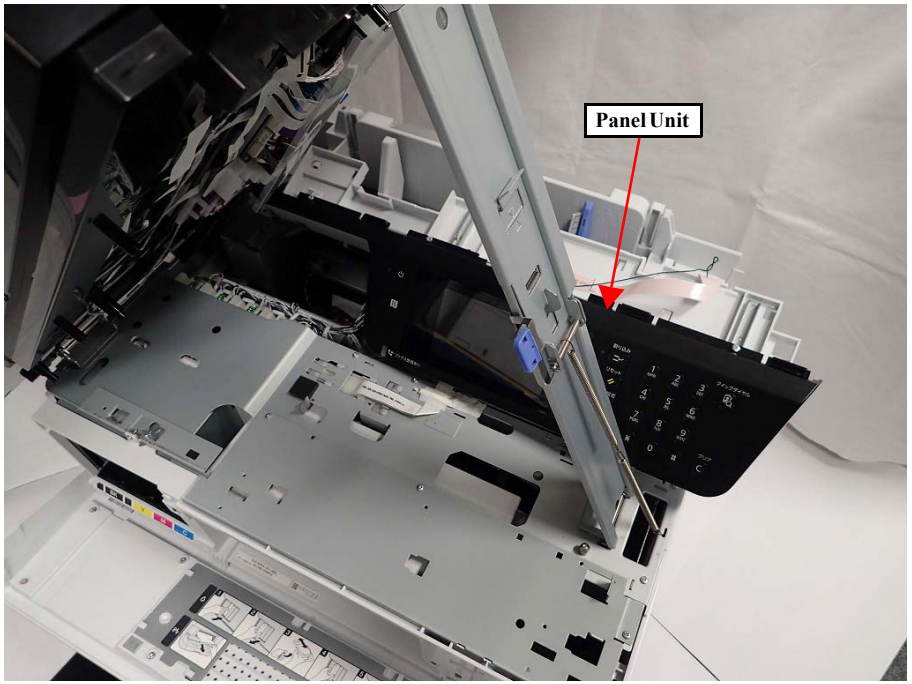


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○)
2. Remove the two FFC clamps.
3. Release the Panel FFC and the grounding wire_2 from the guide.
4. Release thgrounding wire_2 from Hook.
5. Open the Front Cover Assy.
6. Slide the panel unit rightward to remove it.

REASSEMBLY
- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

Move the Panel Unit



7. Put the panel unit at the rear side of the printer.

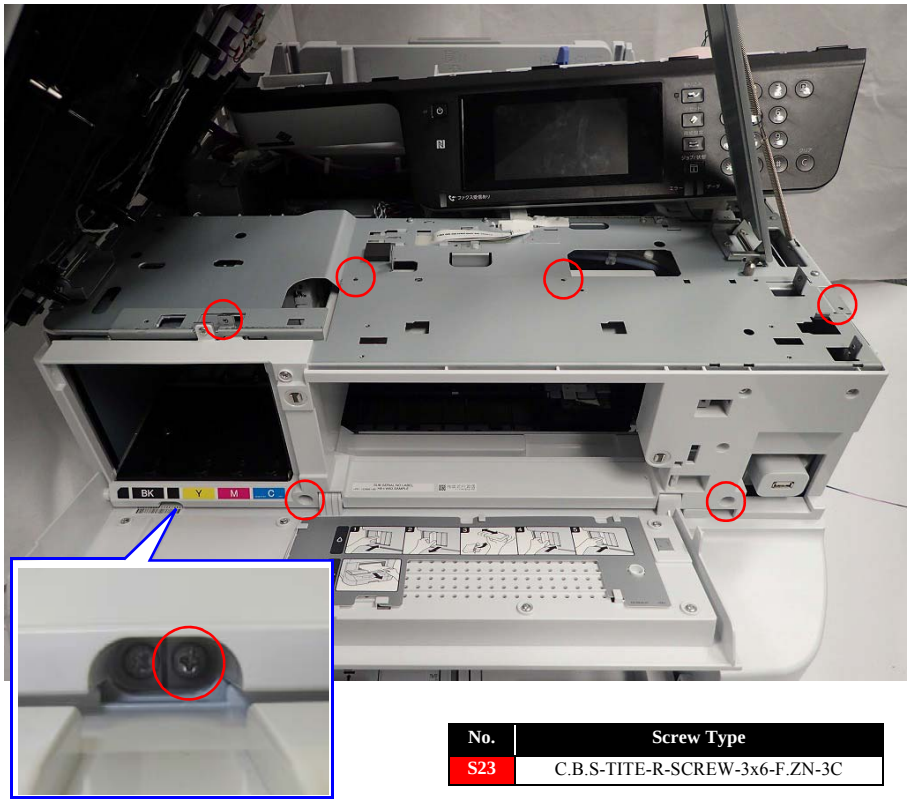
A6	B6
C6	

Stacker Assy

1. Remove the Stacker Assy.

A7	B7
C7	

Front Housing Assy

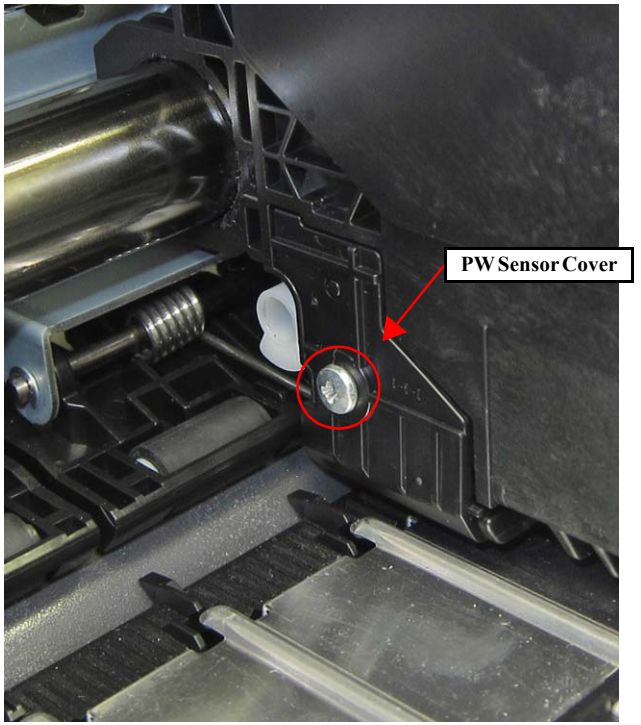


No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

A8	

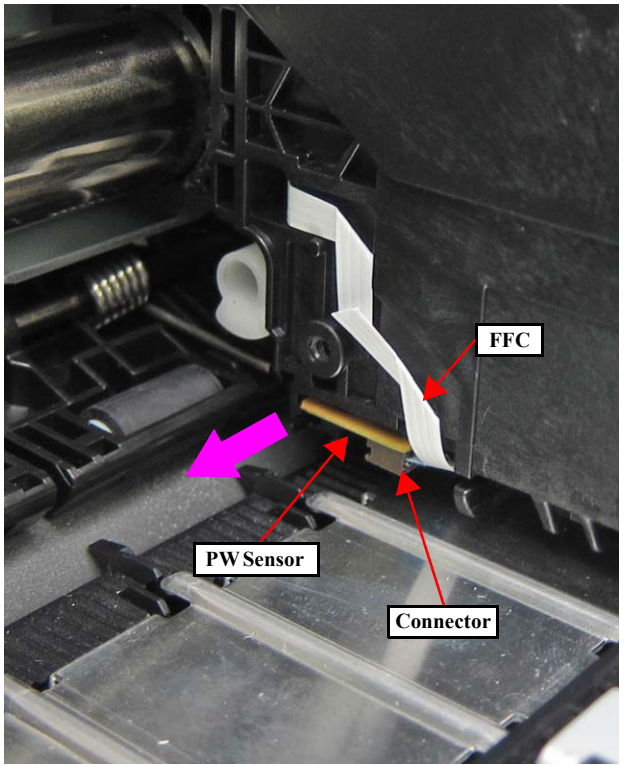
PW Sensor Cover



No.	Screw Type
S31	C.B.P-TITE-SCREW-2.5x5-F.ZN-3C

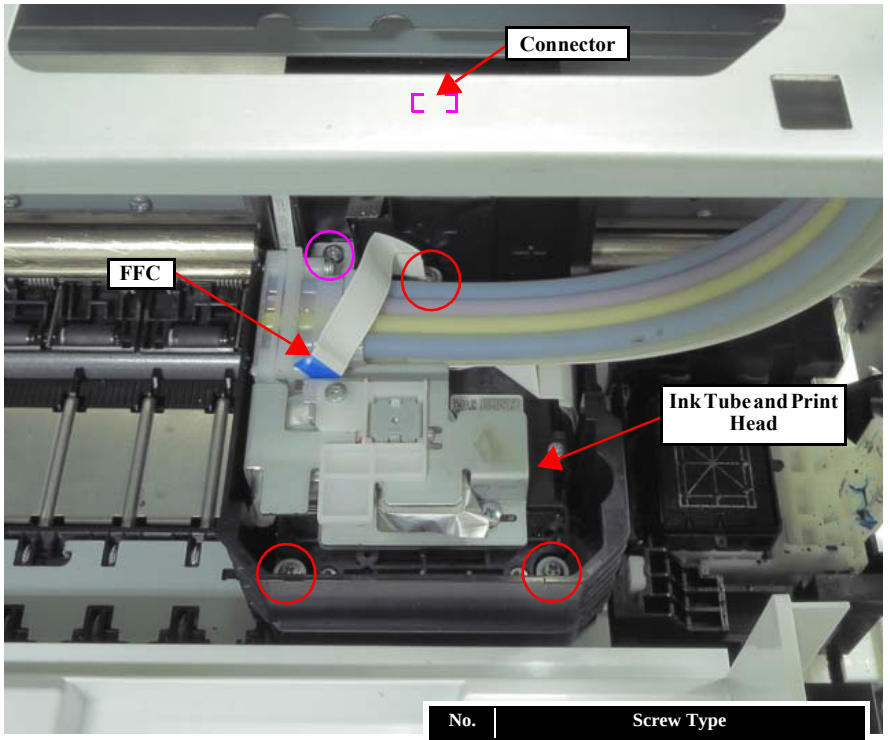
1. Remove the screw (S31: ○), then remove the PW Sensor Cover.

A9		PW Sensor



2. Remove the PW Sensor to direction of arrow.
3. Disconnect the FFC from the connector of the PW Sensor.

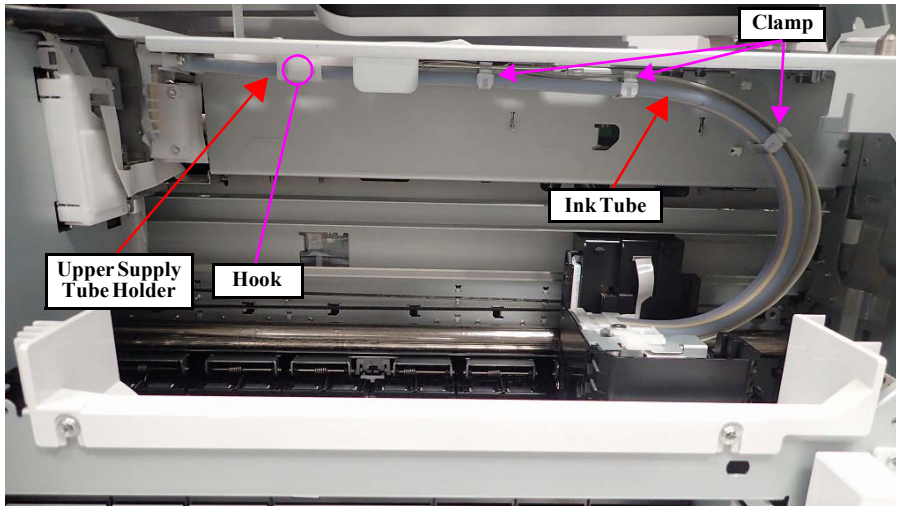
	B8	Ink Supply Assy
C8		



No.	Screw Type
S6	SCREW,MOUNT,HEAD,ASSY
S5	ep-TITE-SCREW-2.6x17-F.ZN-3C

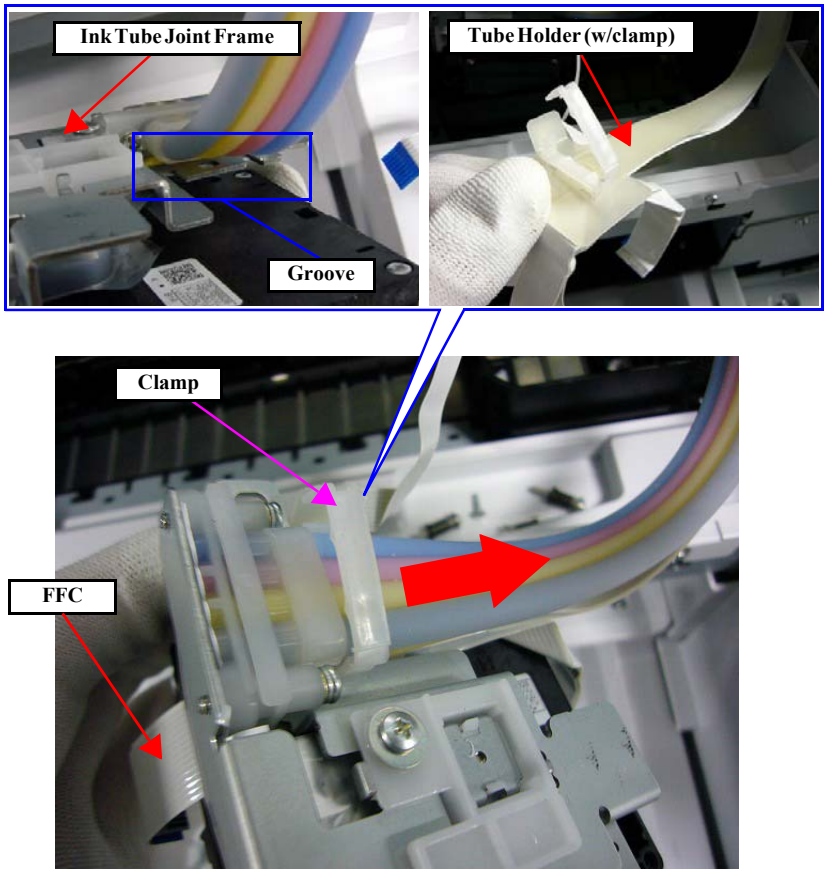
1. Disconnect the FFC from the connector.
2. Remove the three screws (S6: ○) and the screw (S5: ○), then remove the Print Head with ink tubes.

Ink Supply Assy



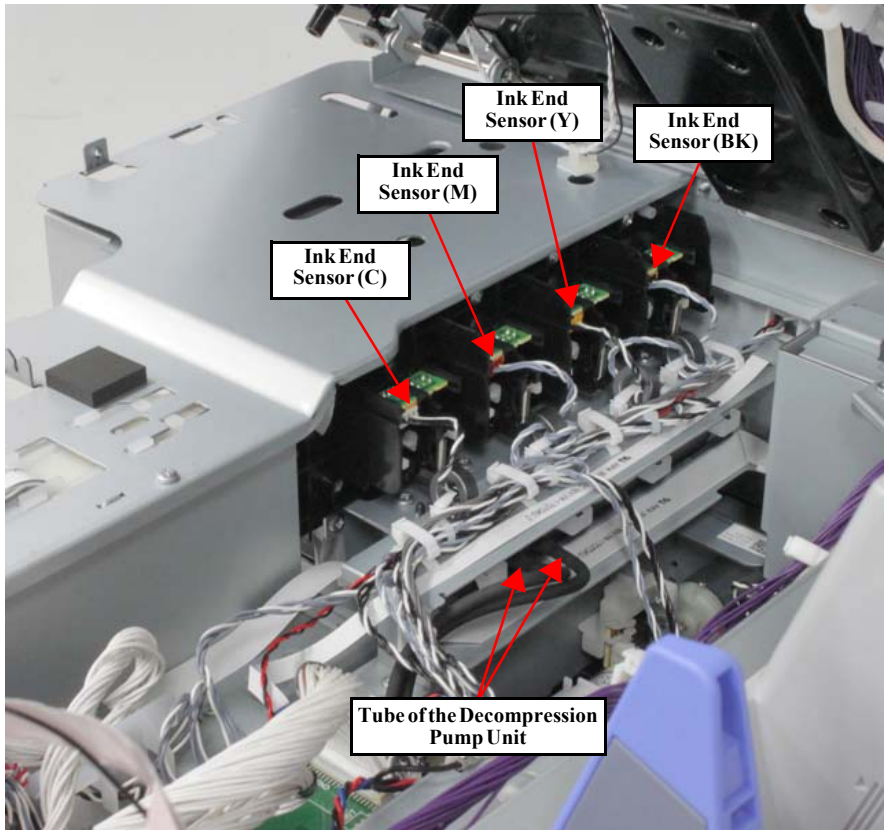
3. Disengage the hook, then release the ink tubes from the upper supply tube holder.
4. Release the ink tubes from the three clamps.

Ink Supply Assy



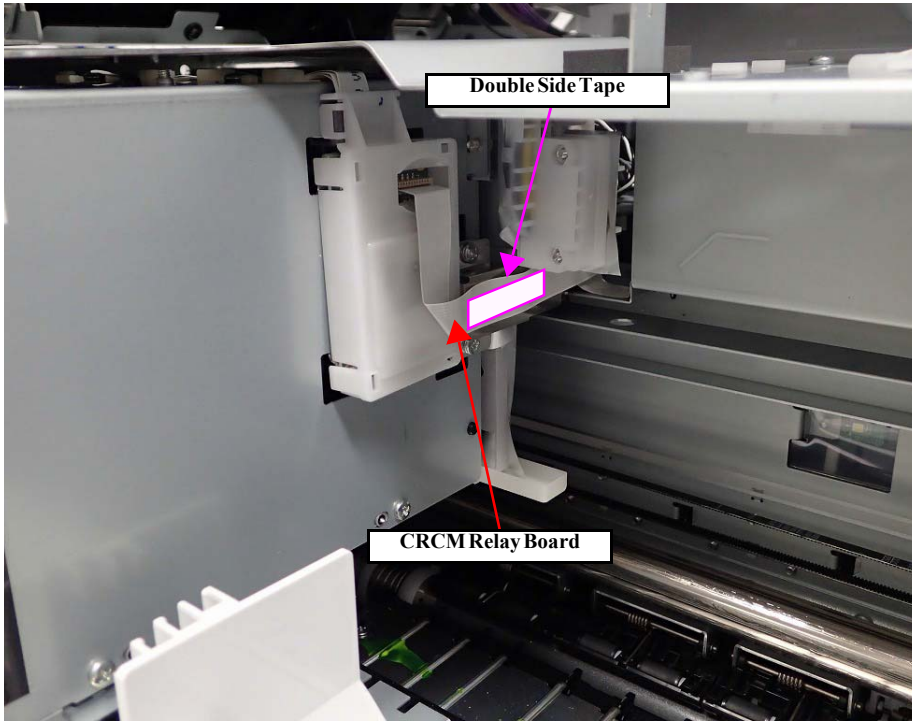
5. Disconnect the four FFC from Print Head.
6. Release the clamp.
7. Slide the Tube Holder (w/clamp) to direction of the arrow, and remove the Tube Holder (w/clamp) while releasing the clamp from groove of ink tube joint frame.

Ink Supply Assy



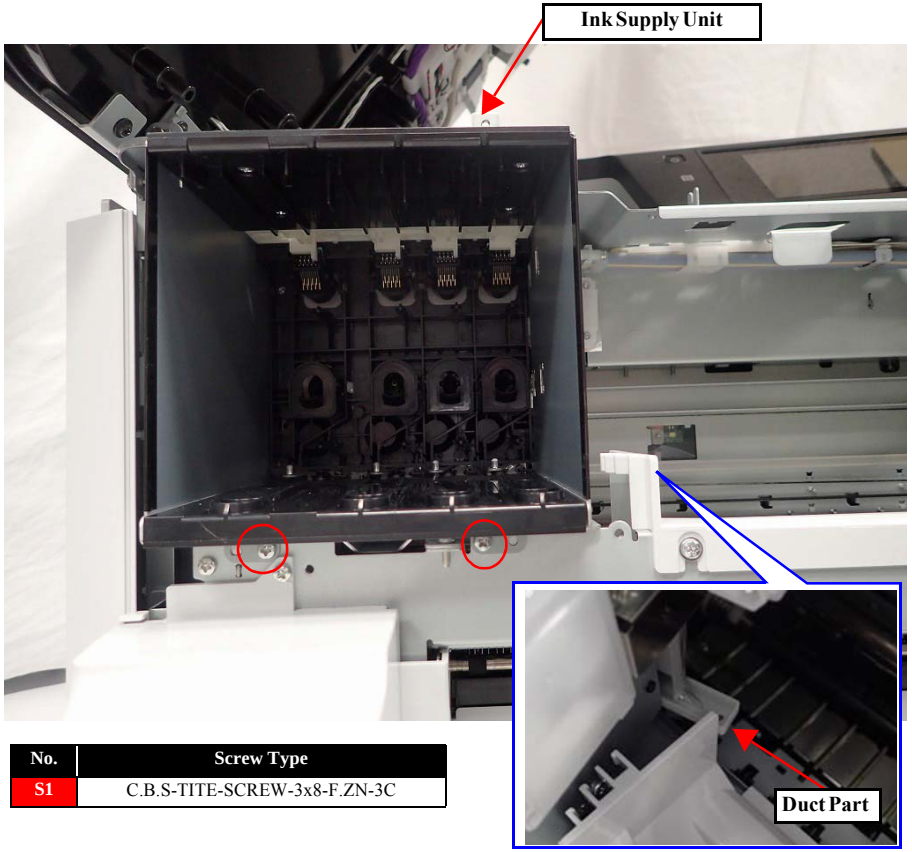
8. Disconnect the cable from the connector of the Ink End Sensor.
9. Pull out the two tubes from the decompression pump unit from the Ink Supply Unit.

Ink Supply Assy



10.Disconnect the CRCM Relay FFC from CRCM Board.
11.Remove the CRCM Relay FFC from Ink Suppky Unit. (with double side tape)

Ink Supply Assy

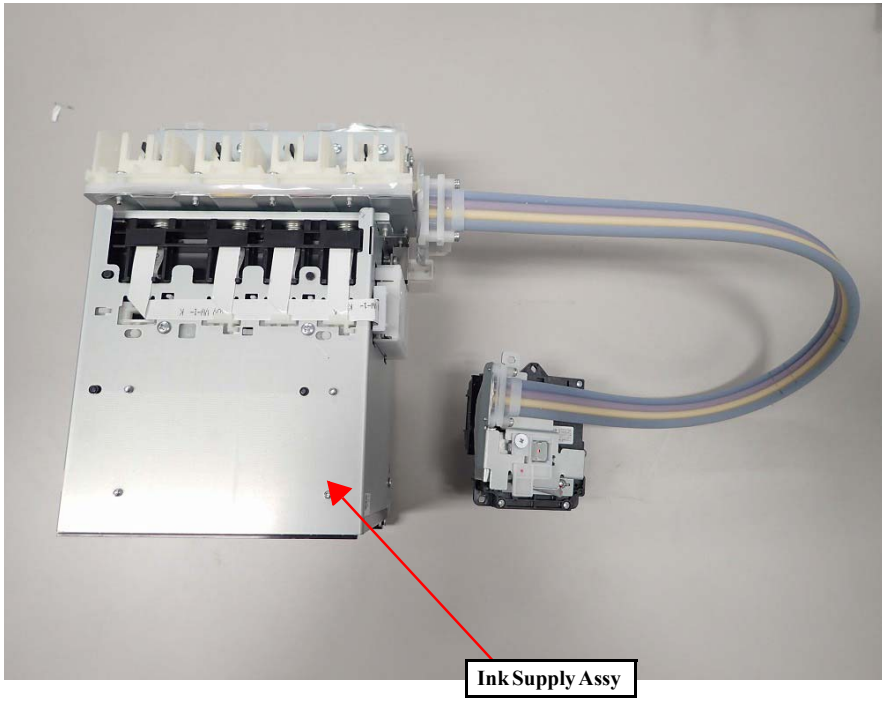


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

12.Remove the two screws (S1: ○).

13.Remove the Ink Supply Unit while releasing the duct part.

Ink Supply Assy



14.Remove the Ink Supply Assy.

CAUTION Ink Supply Unit cannot be completely removed because the Head FFC is connected to the Print Head.

	B9
C9	

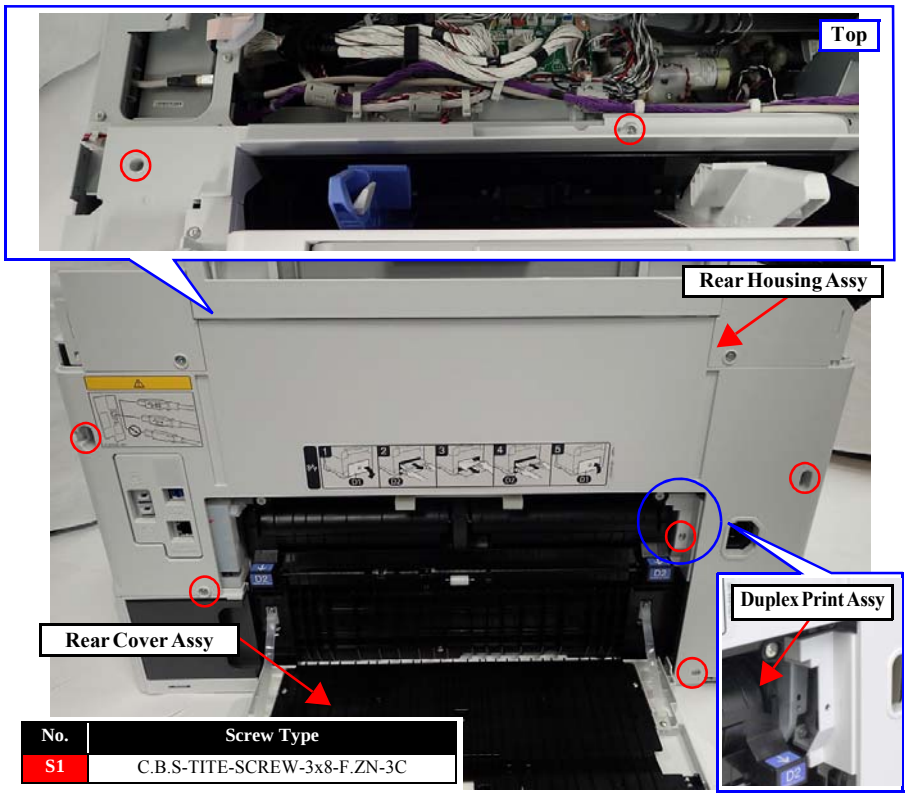
Left Housing Assy

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screw (S1: ○), and remove the Left Housing Assy.

	B10
C10	

Rear Housing Assy

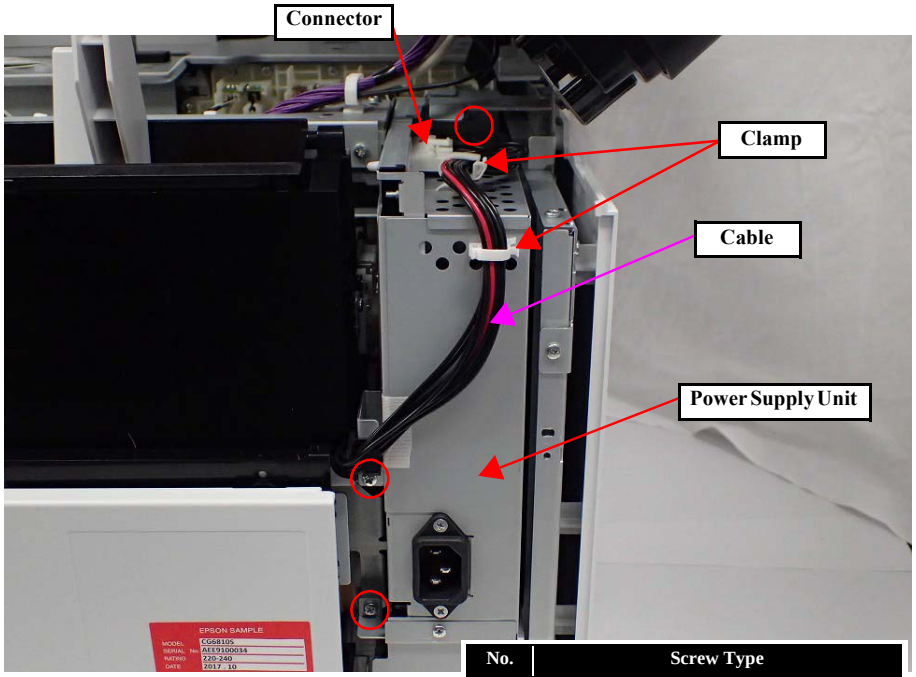


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

	B11
C11	

Power Supply Unit

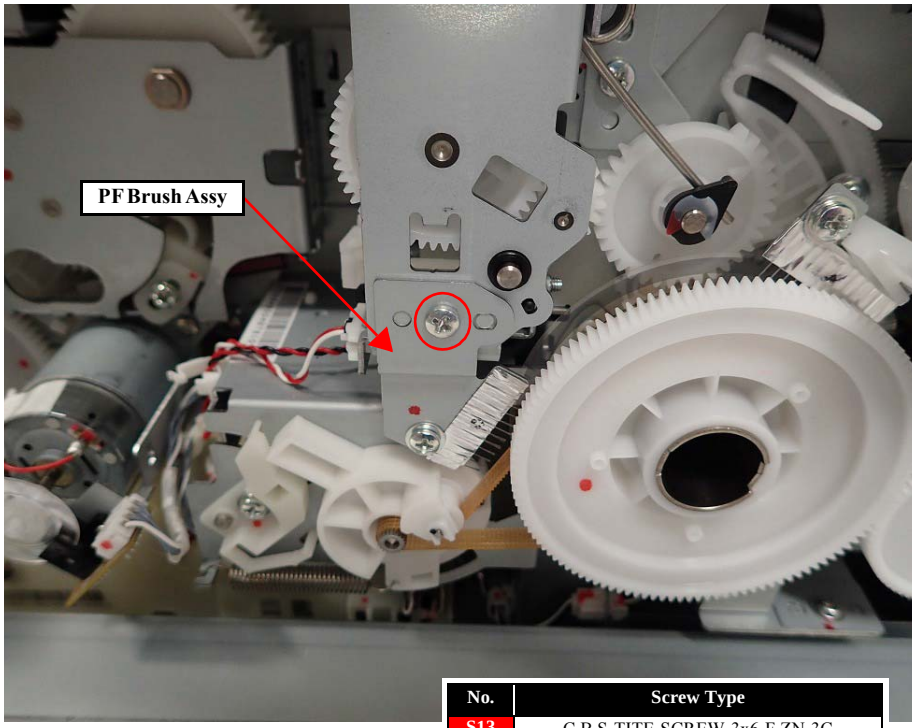


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Release the Cable from two clamps.
2. Disconnect the cable from connector of Power Supply Unit.
3. Remove three screws (S1:○), and remove the Power Supply Unit.

	B12
C12	

PF Brush Assy

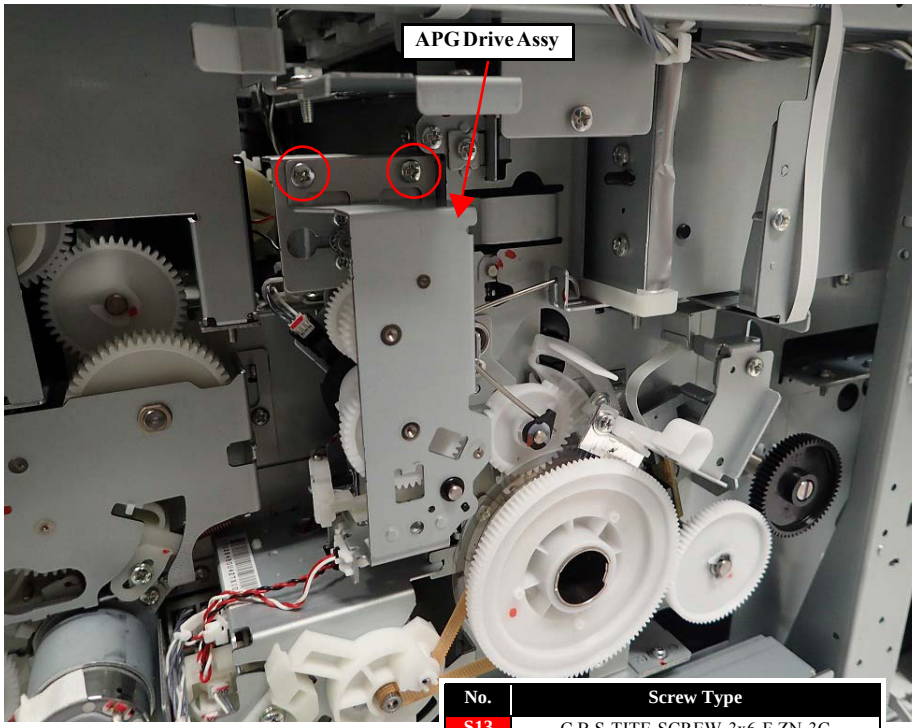


No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the screw (S13: ○), then remove the PF Brush Assy.

	B13
C13	

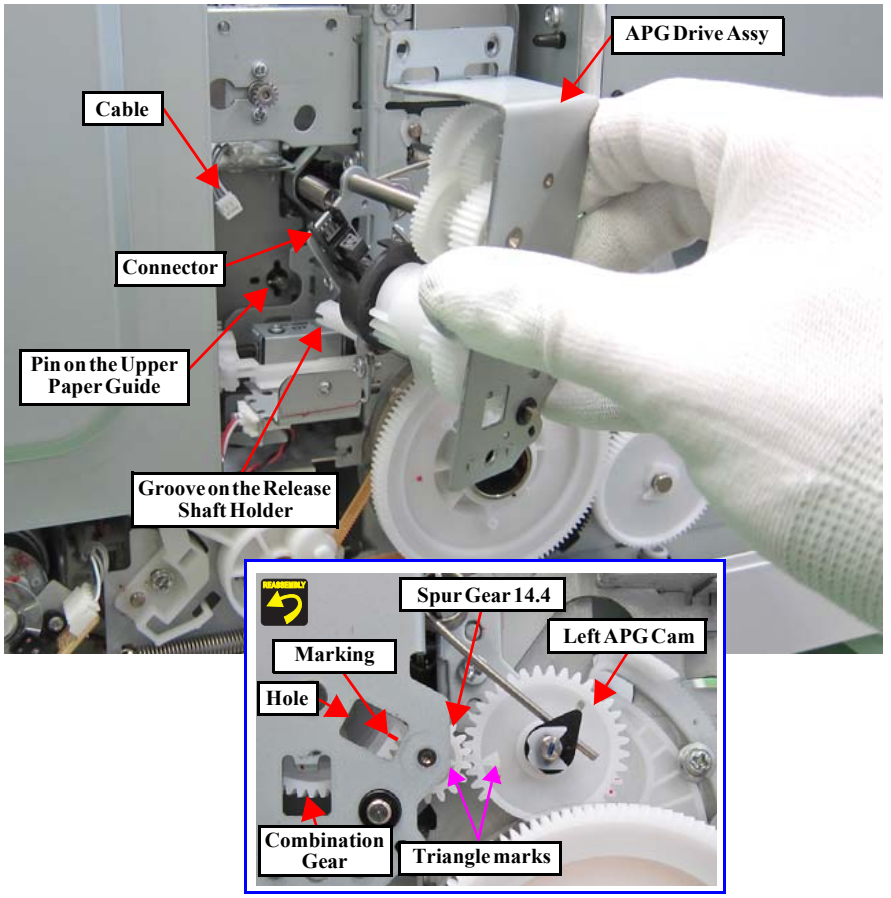
APG Drive Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the two screws (S13: ○), then remove the APG Drive Assy.

APG Drive Assy

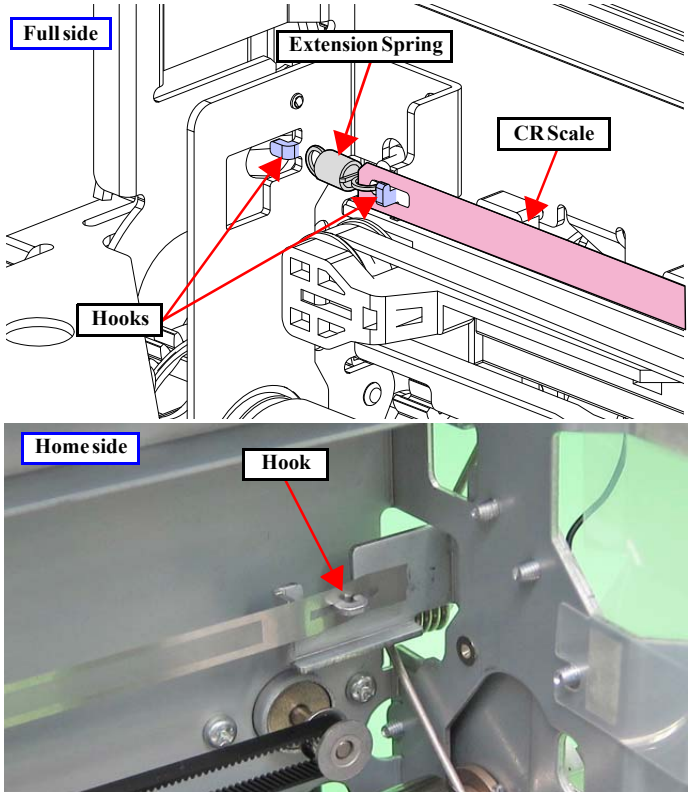


2. Disconnect the cable from the connector of the sensor.

- Align the triangle mark on the left APG cam with the triangle mark on the spur gear 14.4 on the APG Drive Assy. At this point, make sure the mark on the combination gear can be seen through the hole on the APG Drive Assy.
- Insert the pin on the upper paper guide into the groove on the release shaft holder of the APG Drive Assy.

	B14
C14	

CR Scale

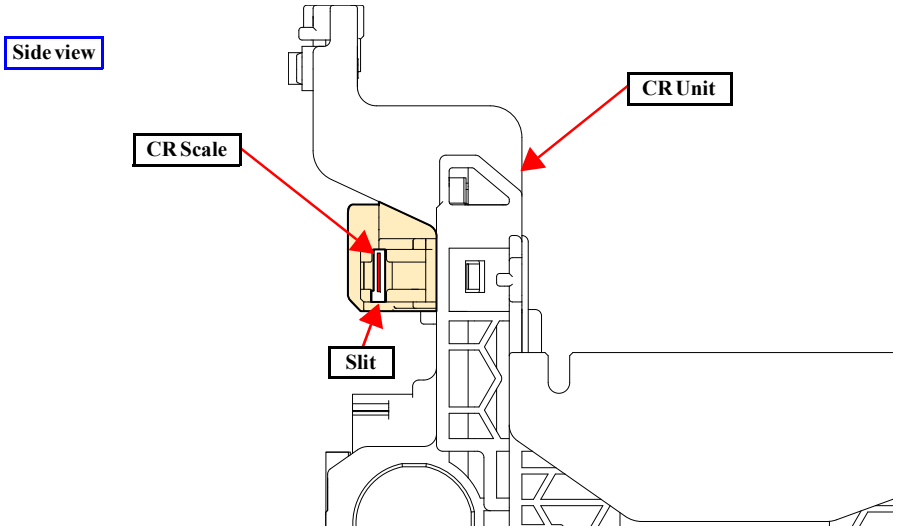


CAUTION

- ☐ The CR Scale is made of SUS and very fragile. Therefore, take extreme care when handling one.
- ☐ If you disassemble the CR Scale, exchange it for the new CR scale.

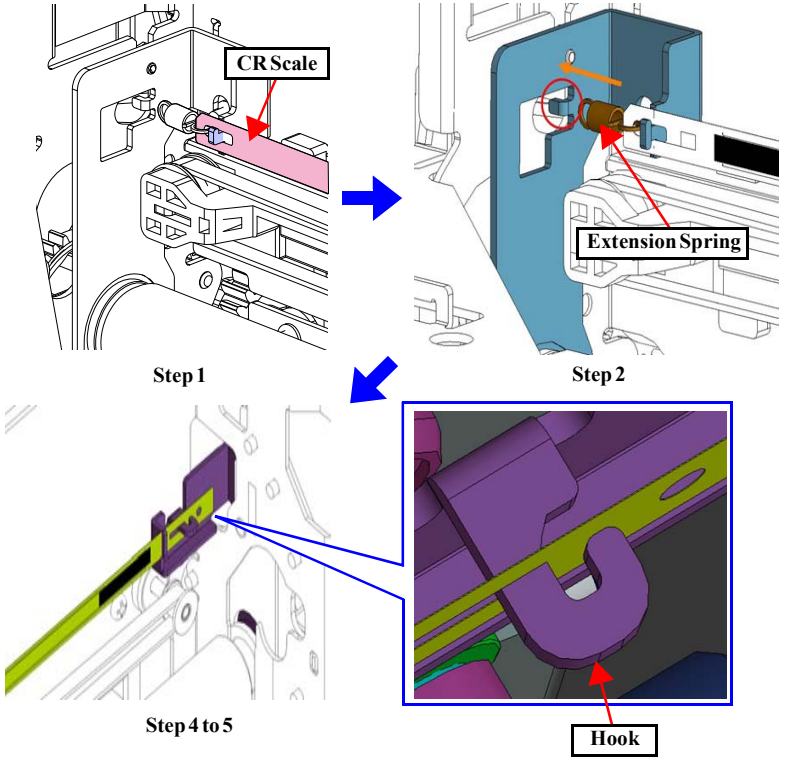
1. At the full side, disengage the Extension Spring from the hook of the frame.
2. Remove the CR Scale from the hook of frame.
3. At the home side, remove the CR Scale from the hook of the frame.

CR Scale



4. Pull out the CR Scale from the slit of the CR Unit.

CR Scale



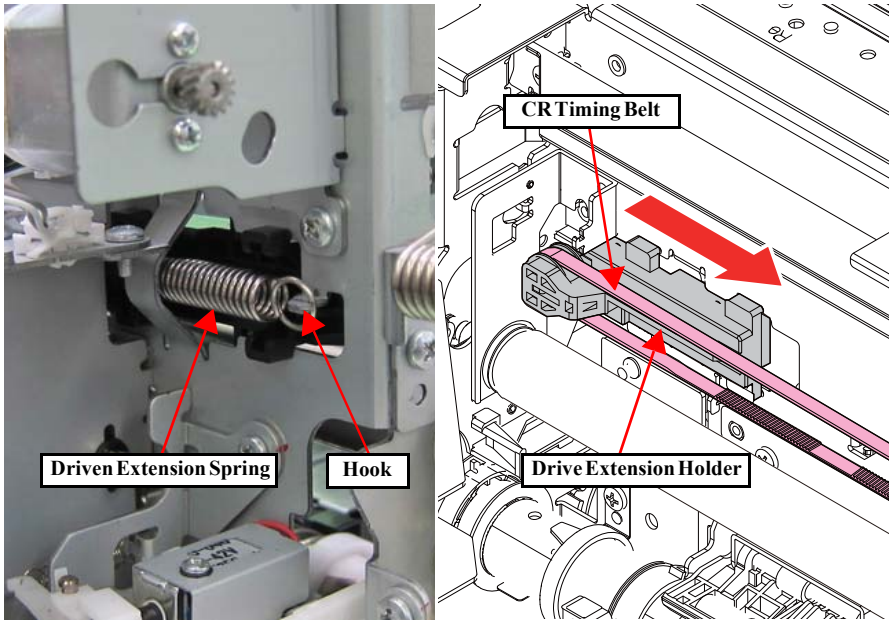
REASSEMBLY

Follow the procedure below to install the CR Scale.

1. At the full side, hook the CR Scale on the frame.
2. Hook the Extension Spring on the frame.
3. Route the CR Scale through the slit on the CR unit.
4. At the home side, hook the CR Scale on the frame.
5. Check the hook is inserted all the way.

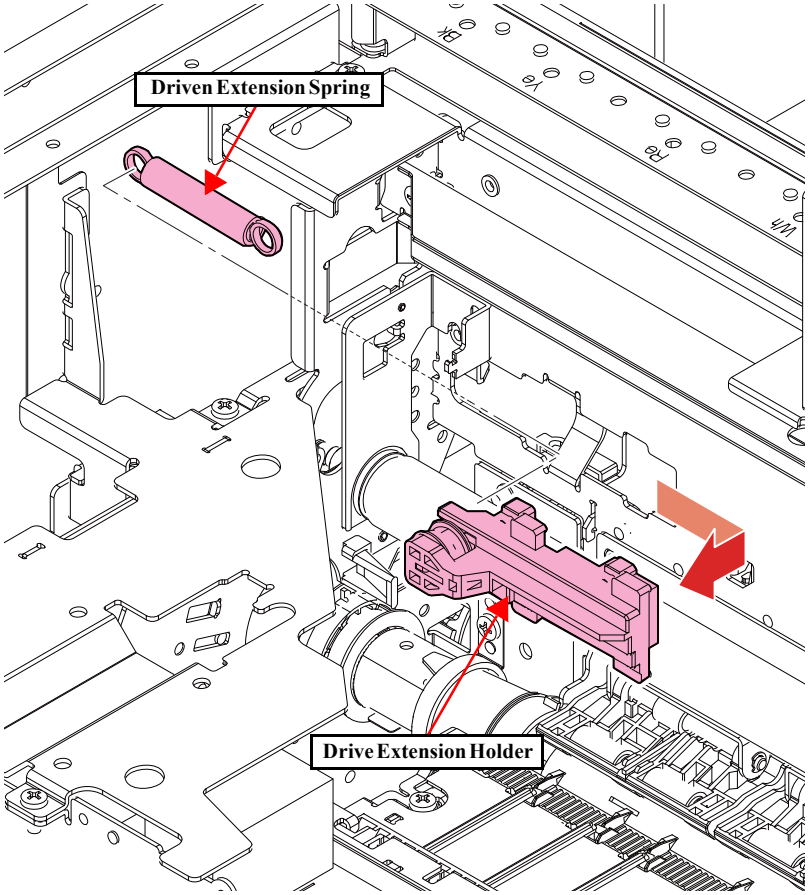
	B15
C15	

Driven Pulley Holder & Driven Extension Spring



1. Remove the driven extension spring from the hook on the frame, and loosen the tension on the CR Timing Belt.
2. Remove the CR Timing Belt by sliding the driven extension holder in the direction of the arrow.

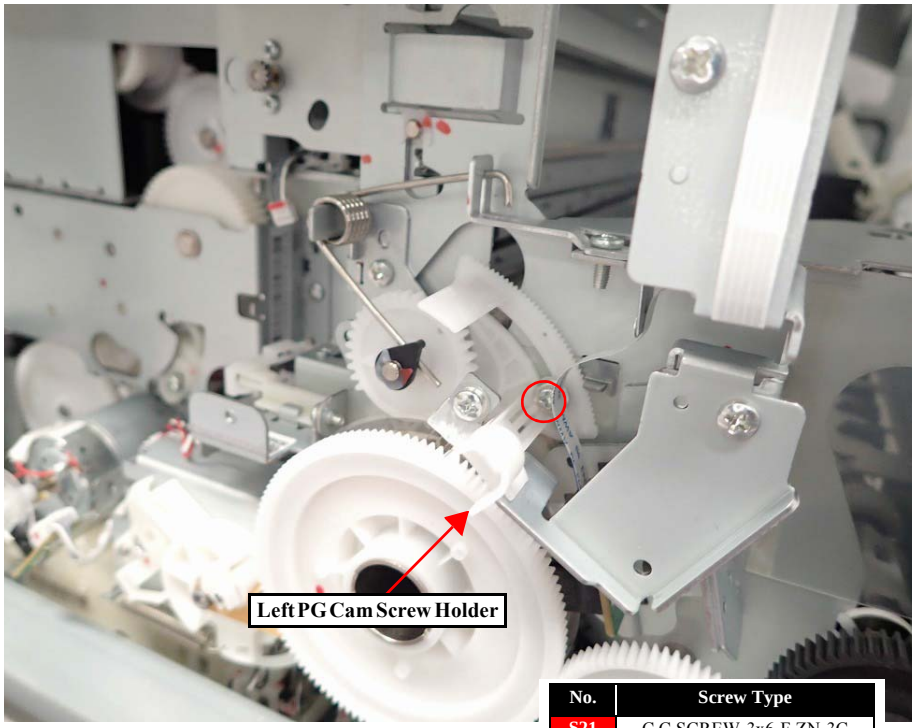
Driven Pulley Holder & Driven Extension Spring



3. Remove the driven extension holder with the driven extension spring.

	B16
C16	

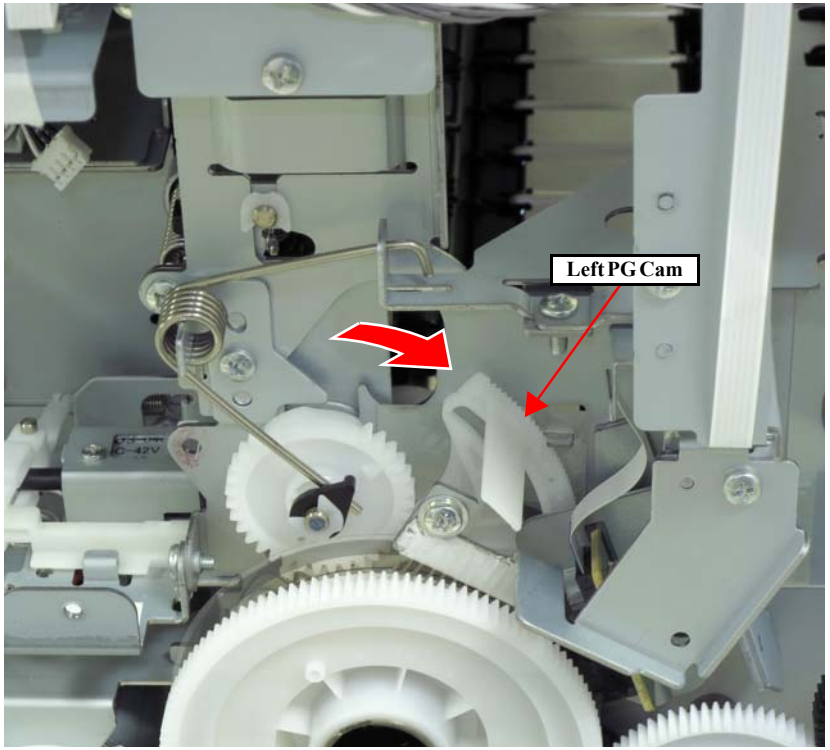
Left PG Cam Screw Holder



No.	Screw Type
S21	C.C.SCREW-3x6-F.ZN-3C

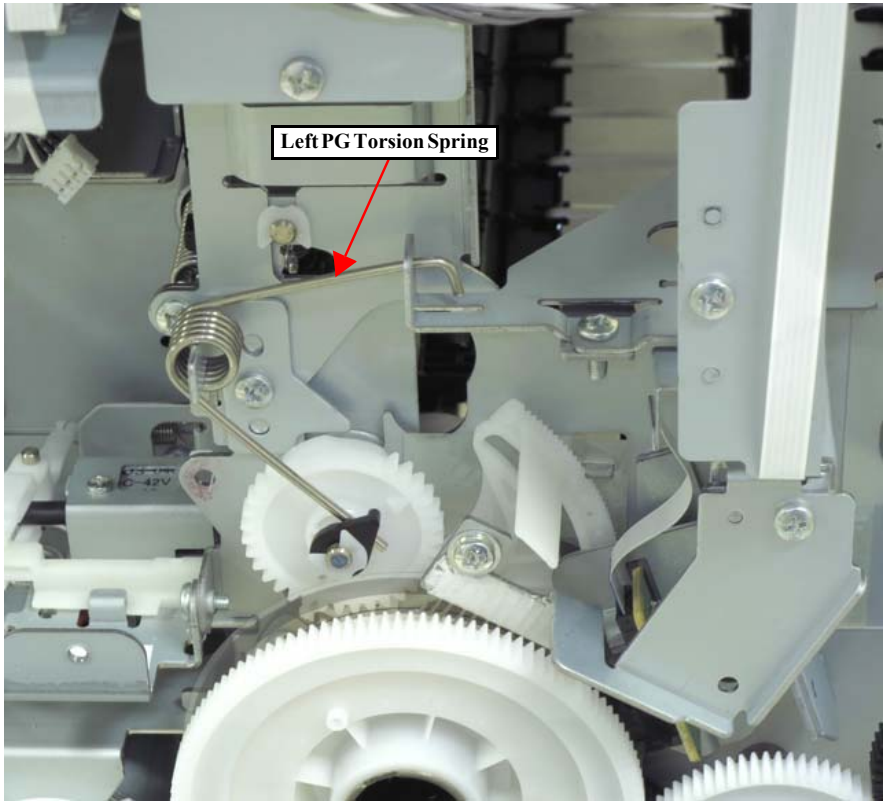
1. Remove the screw (S21: ○), then remove the Left PG Cam Screw Holder with the screw.

	B17	Move the Left PG Cam to lower side
C17		



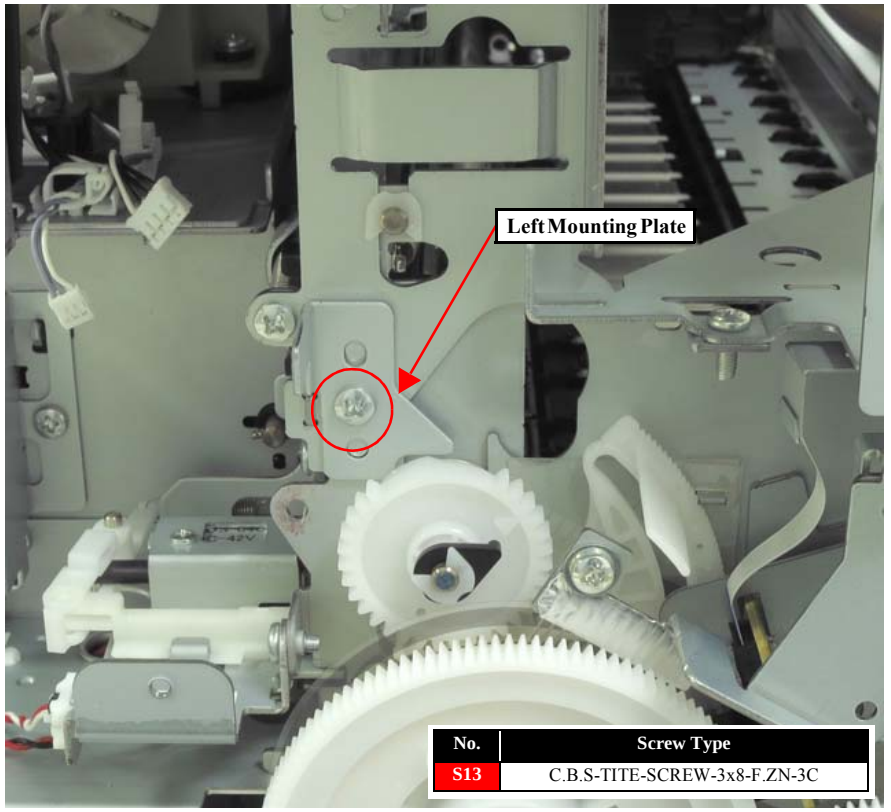
1. Slide the left PG cam downward.

	B18	Left PG Torsion Spring
C18		



1. Remove the Left PG Torsion Spring.

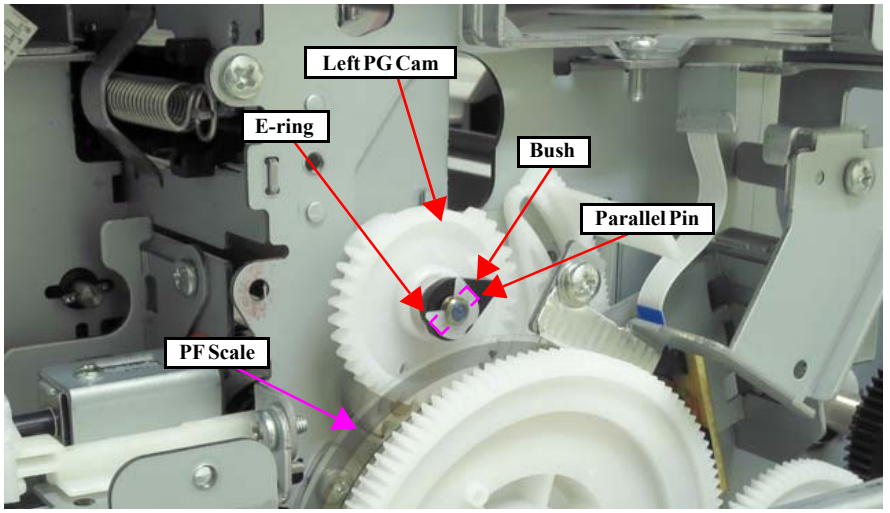
	B19	Left Mounting Plate
C19		



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the screw (S13: ○), then remove the Left Mounting Plate.

	B20	Left PG Cam (with E-ring)
C20		



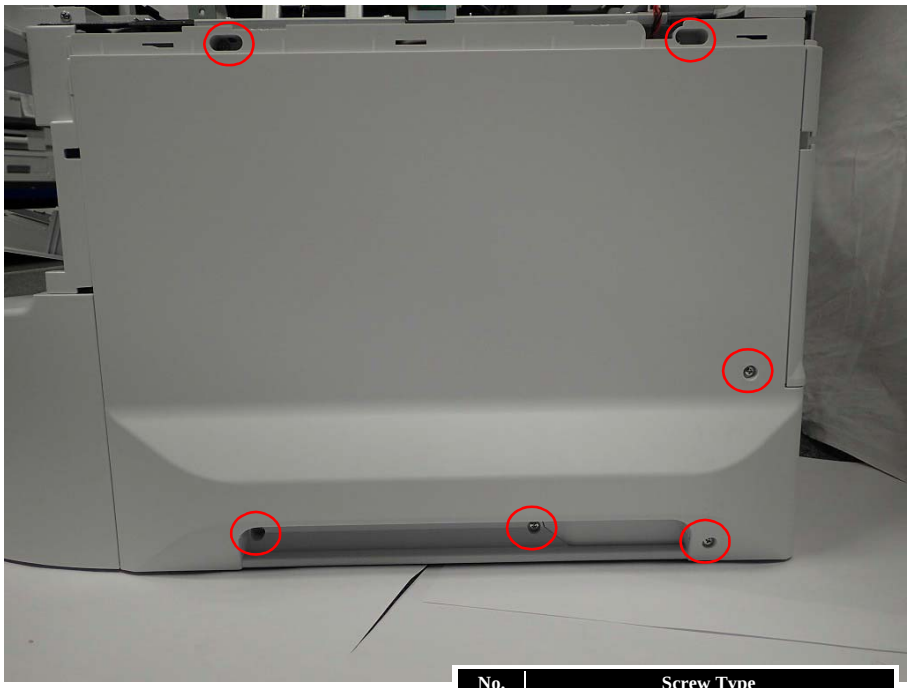
CAUTION

- ☐ When removing the APG gear, be careful not to touch the PF scale.
- ☐ Be careful not to drop the parallel pin.

1. Remove the E-ring and the Bush, then remove the left PG cam and the parallel pin.

	B21
C21	

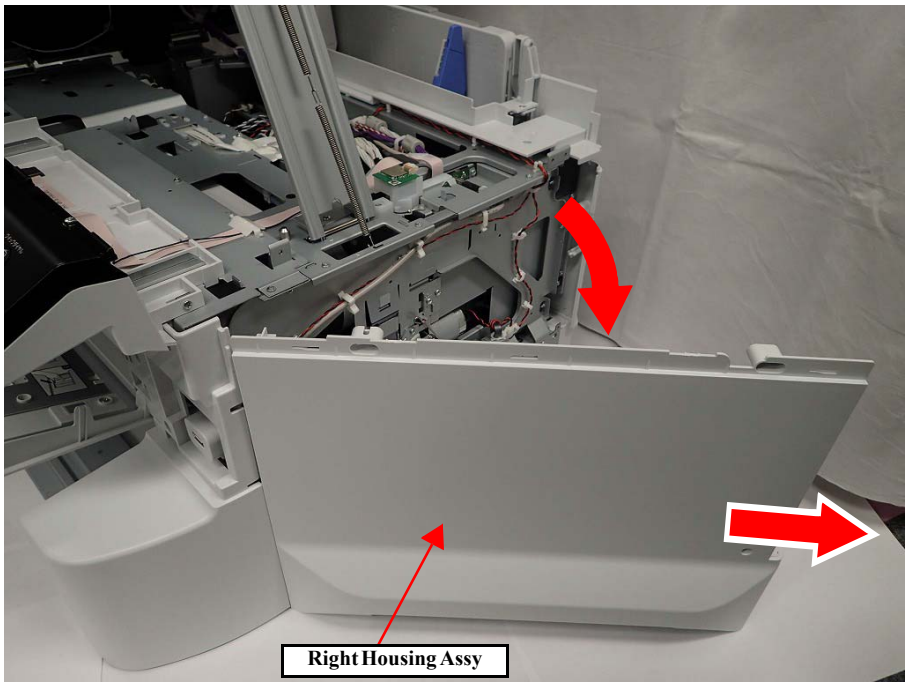
Right Housing Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

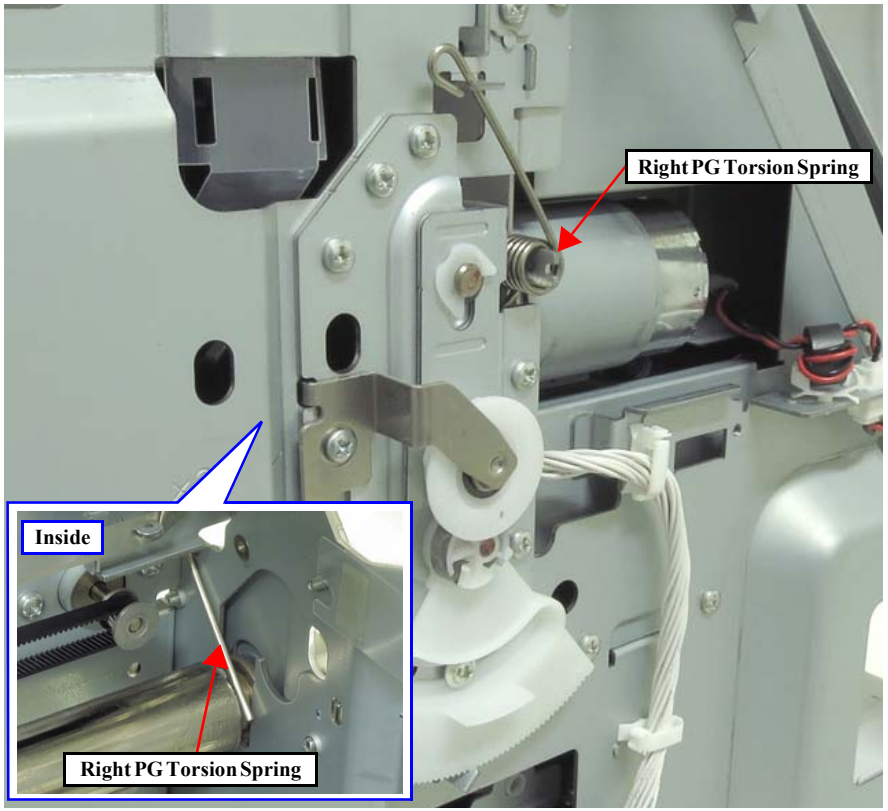
1. Remove six screw (S1: ○).

Right Housing Assy



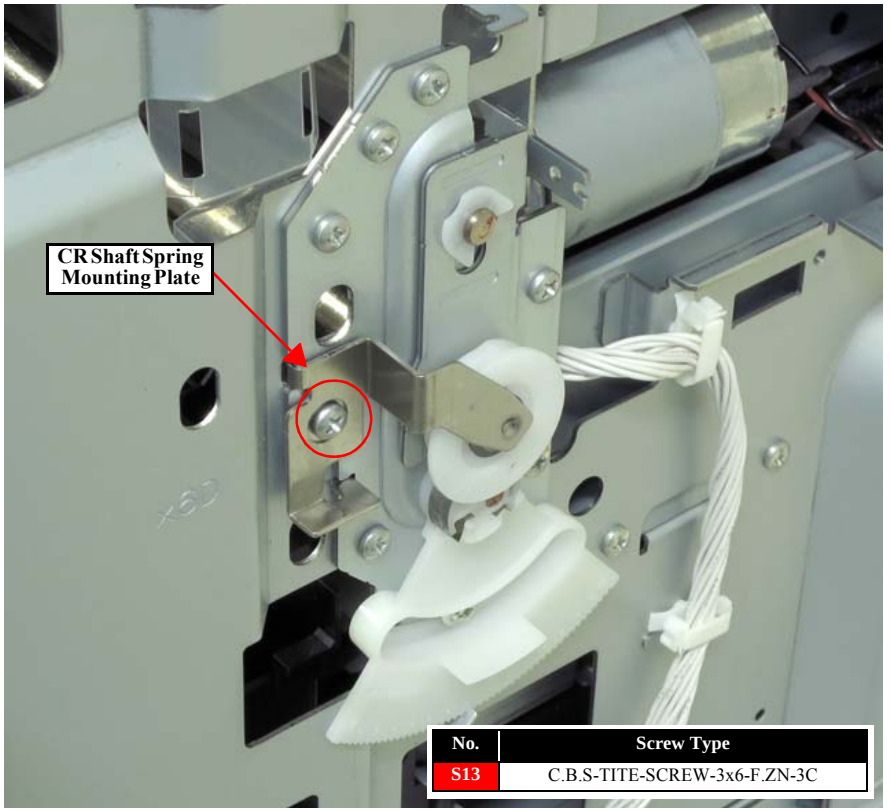
2. Open the Rear side of Right Housing Assy like the above figure.
3. Slide the Right Housing Assy to derection of arrows in state of rear side of RIgth Housing Assy opened condition, and remove it.

	B22	Right PG Torsion Spring
C22		



1. Remove the Right PG Torsion Spring.

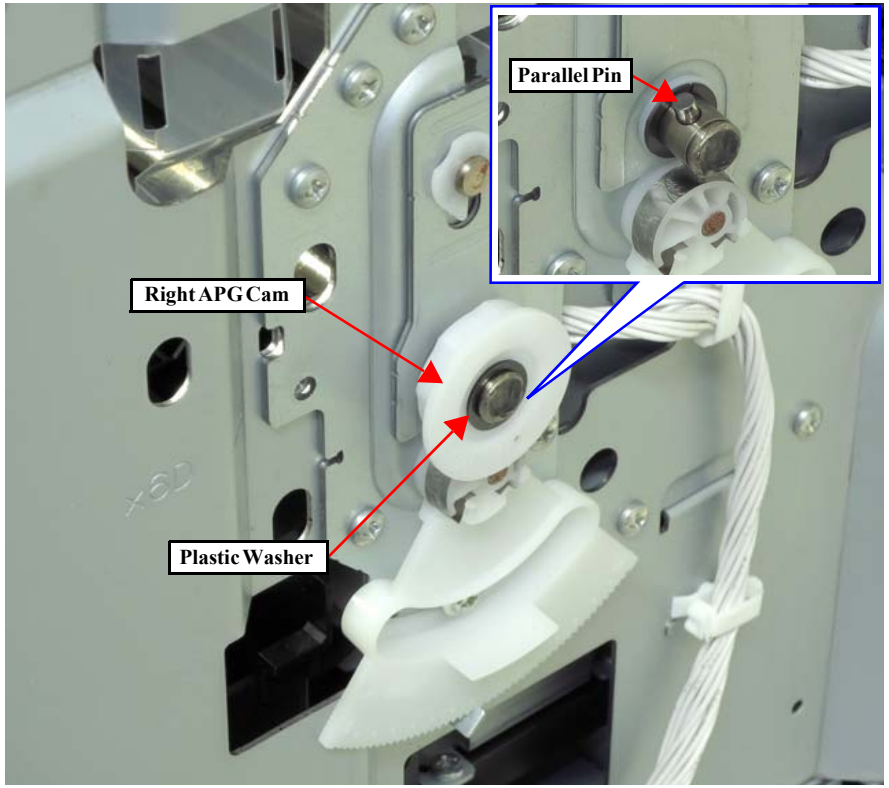
	B23	CR Shaft Spring Mounting Plate
C23		



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

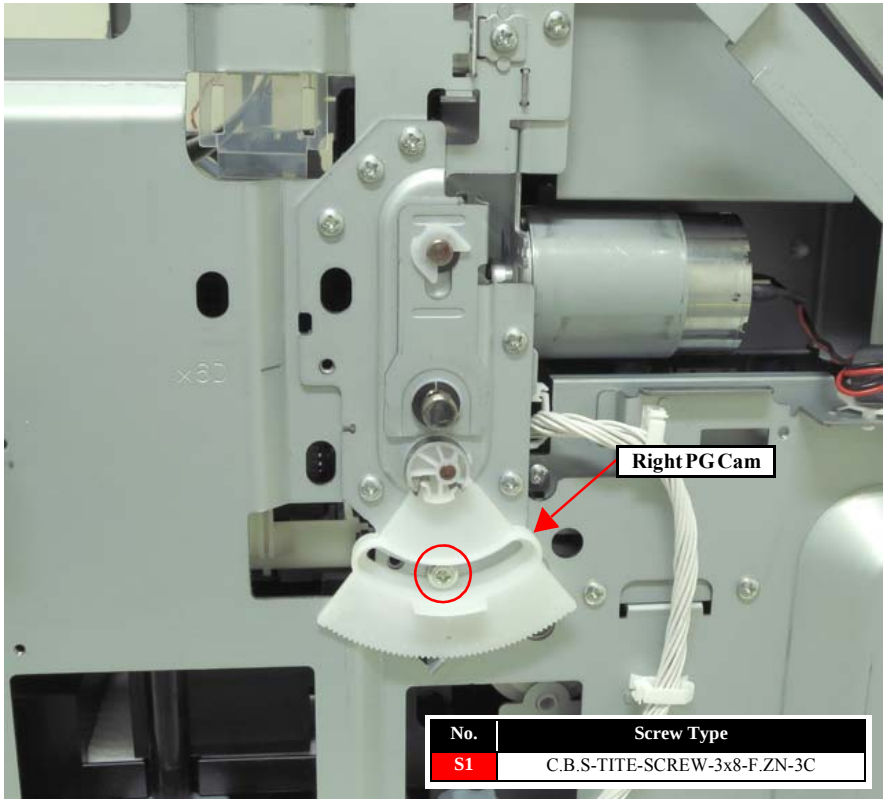
1. Remove the screw (S13: ○), then remove the CR Shaft Spring Mounting Plate.

	B24	Right APG Cam
C24		



1. Remove the plastic washer, then remove the Right APG Cam and the parallel pin.

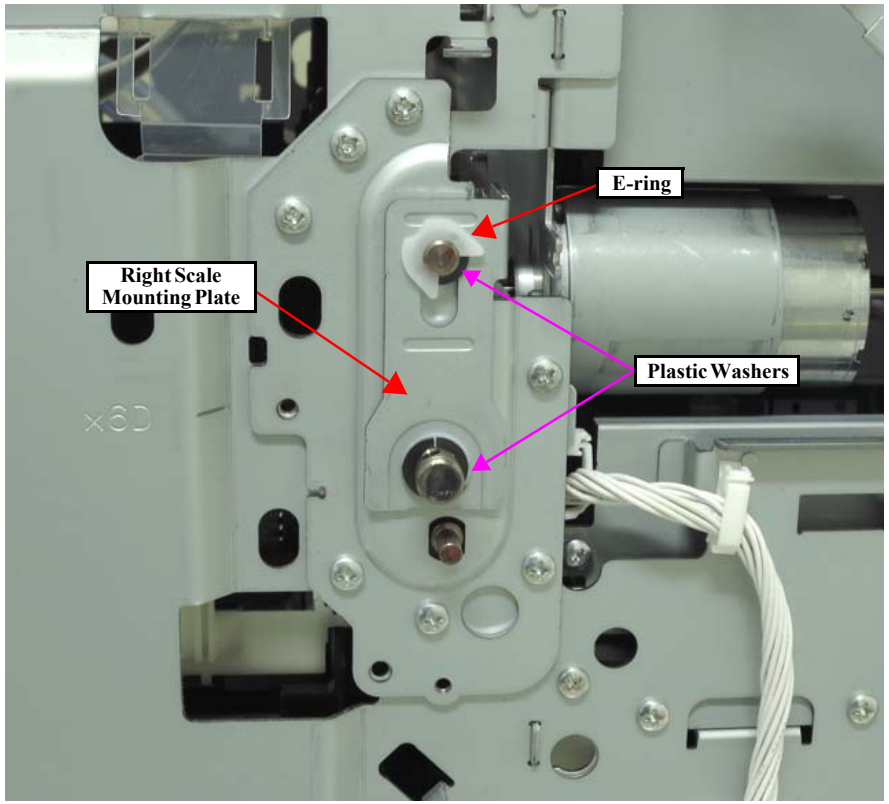
	B25	Right PG Cam
C25		



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

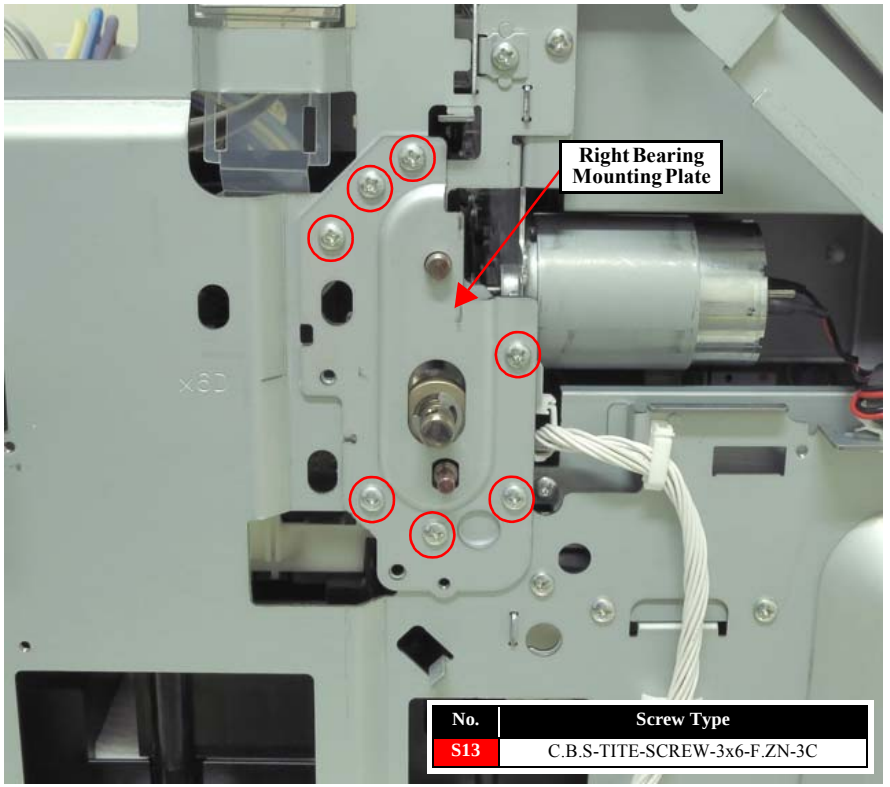
1. Remove the screw (S1: ○), then remove the Right PG Cam.

	B26	Right Scale Mounting Plate (with E-ring)
C26		



1. Remove the E-ring and the two plastic washers, then remove the right scale mounting plate.

	B27	Right Bearing Mounting Plate
C27		

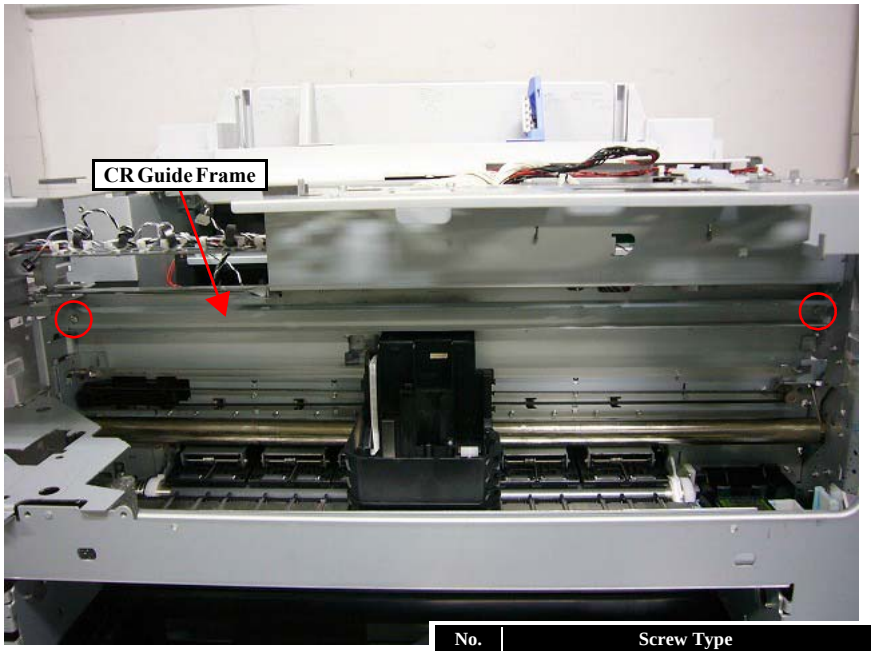


No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S13: ○), then remove the Right Bearing Mounting Plate.

	B28
C28	

CR Guide Frame

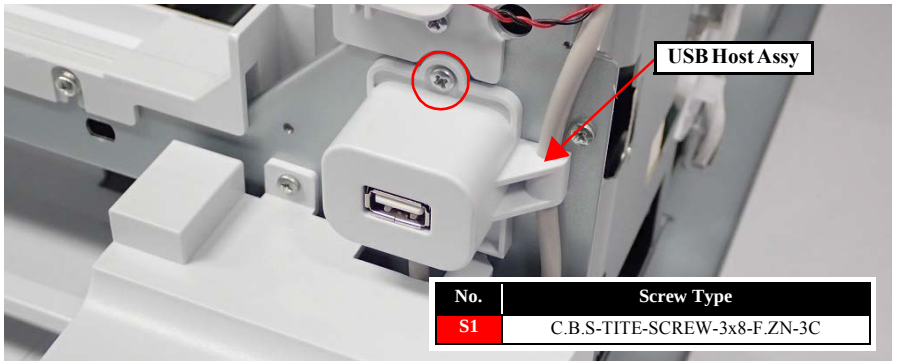


No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

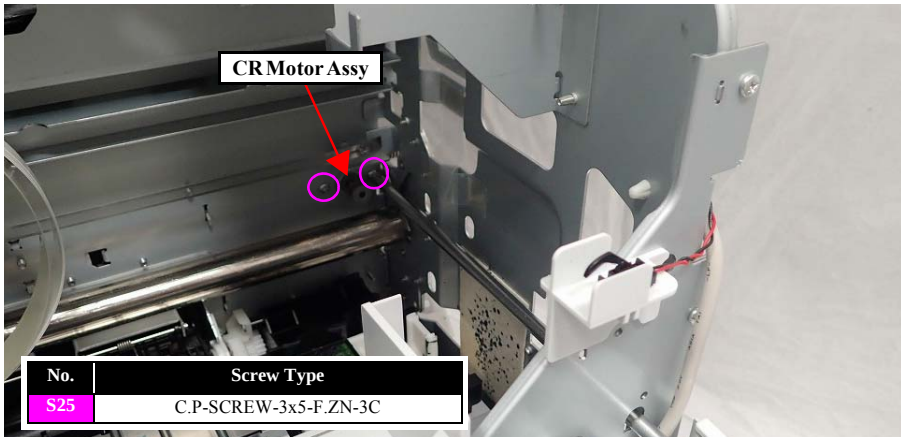
1. Remove the two screws (S23: ○), then remove the CR Guide Frame.

	B29
C29	

Remove the USB Host Assy and CR Motor



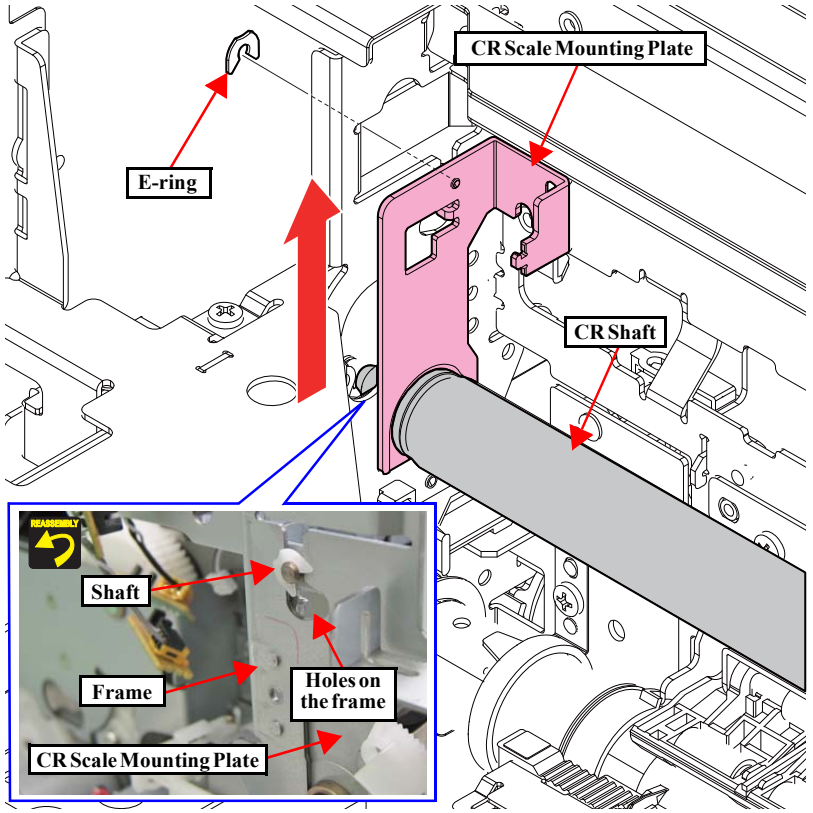
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C



No.	Screw Type
S25	C.P-SCREW-3x5-F.ZN-3C

1. Remove the screw (S1: ○), then remove the USB Host Assy.
2. Remove the two (S25: ○), then remove the CR Motor Assy.

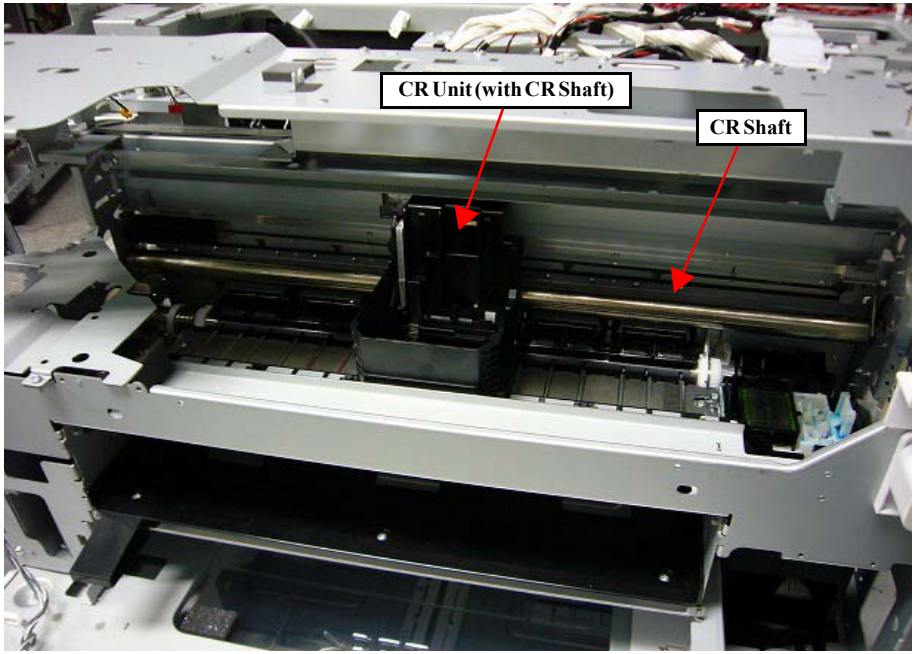
	B30	CR Scale Mounting Plate
C30		



1. Remove the E-ring.
2. Lift the CR Scale Mounting Plate, then remove the CR shaft.

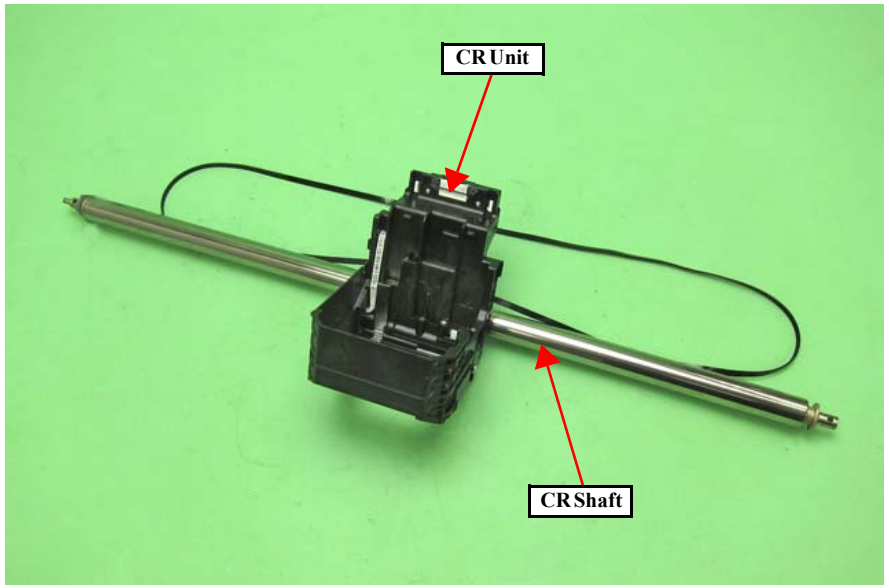
REASSEMBLY When installing the CR Scale Mounting Plate, set the shaft of the CR Scale Mounting Plate into the hole of the frame, and fix it with the E-ring.

	B31	CR Unit (with CR Shaft)
C31		



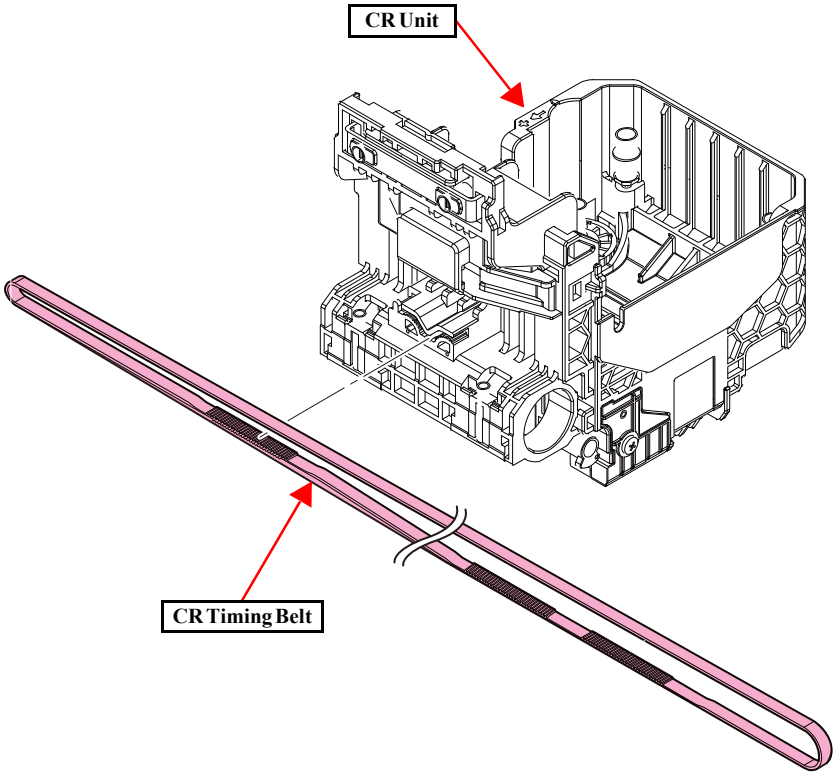
1. Pull out the CR shaft from the printer, them remove the CR Unit (with CR Shaft).

B32 CR Unit



1. Pull out the CR shaft from the CR Unit.

C32 CR Timing Belt



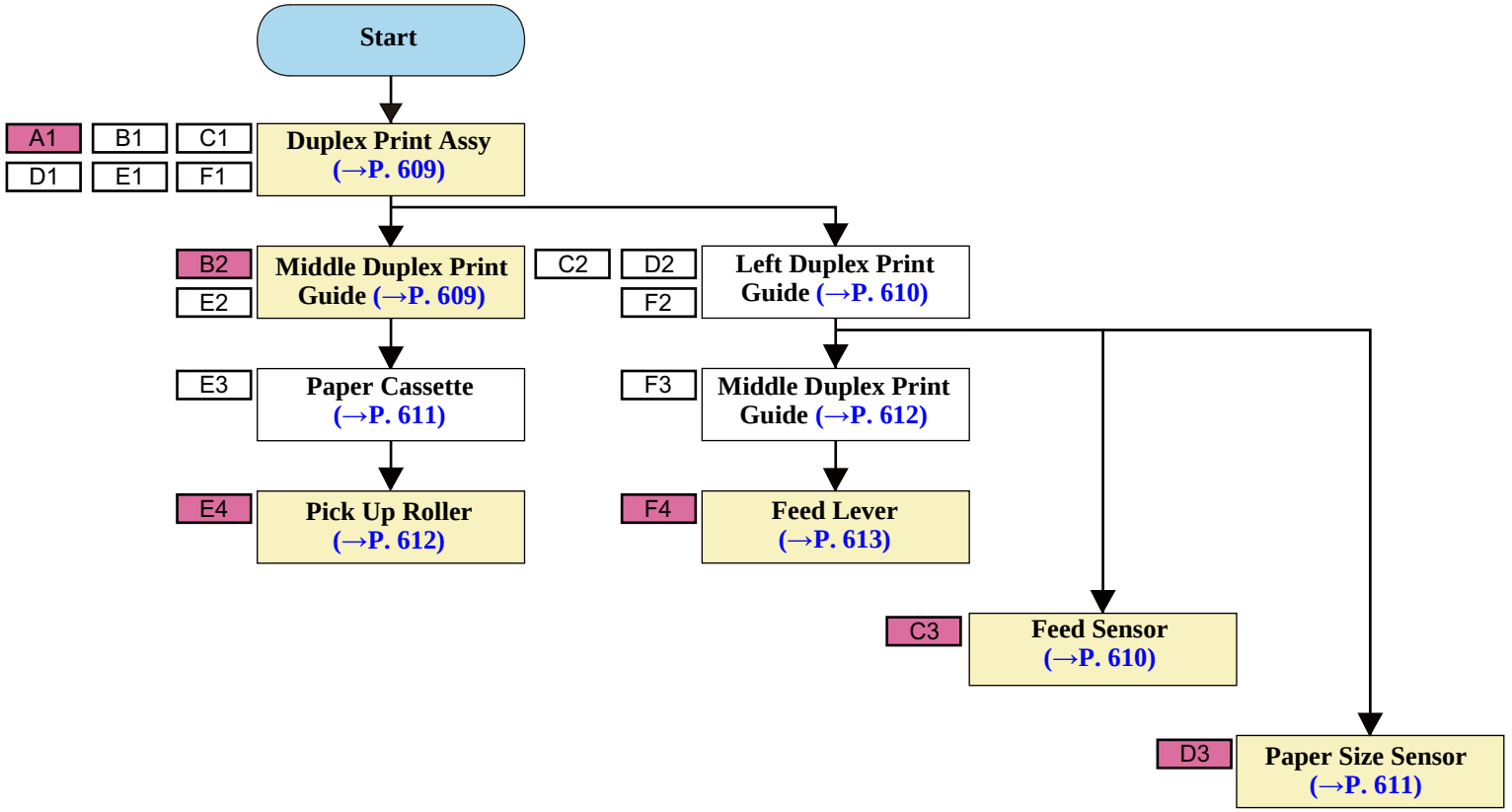
1. Remove the CR Timing Belt from the CR Unit.

7.4.3.19 Paper Feed Mechanism 1

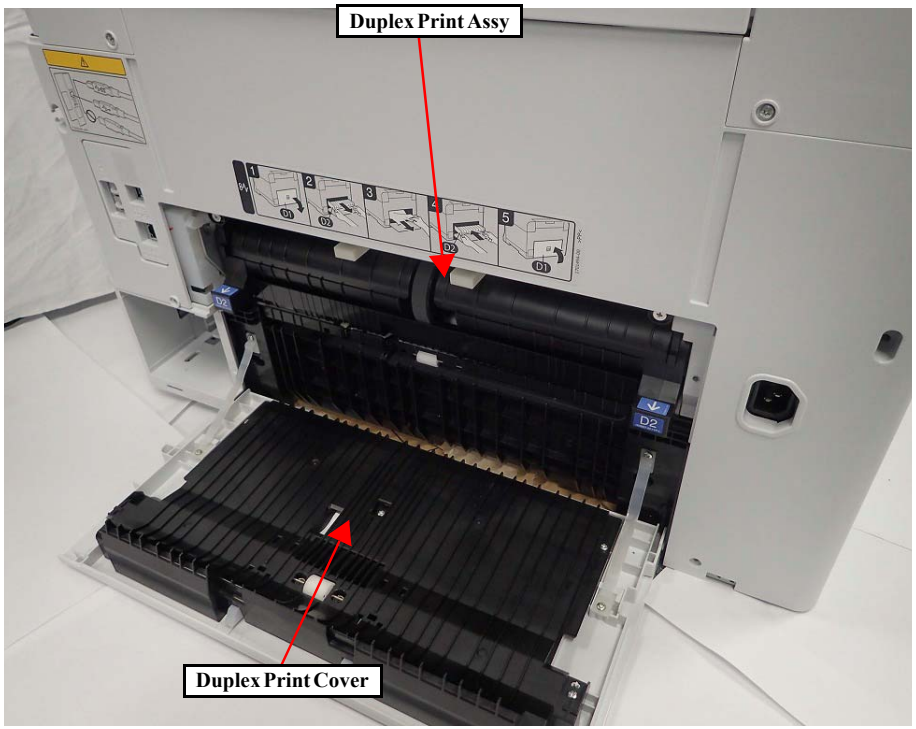
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Duplex Print Assy	A	16 sec	6 min 23 sec	6 min 39 sec
Middle Duplex Print Guide	B	30 sec	---	30 sec
Feed Sensor	C	2 min 4 sec	---	2 min 4 sec
Paper Size Sensor	D	2 min 4 sec	---	2 min 4 sec
Pick Up Roller	E	1 min 15 sec	---	1 min 15 sec
Feed Lever	F	2 min 29 sec	---	2 min 29 sec

DISASSEMBLY FLOWCHART

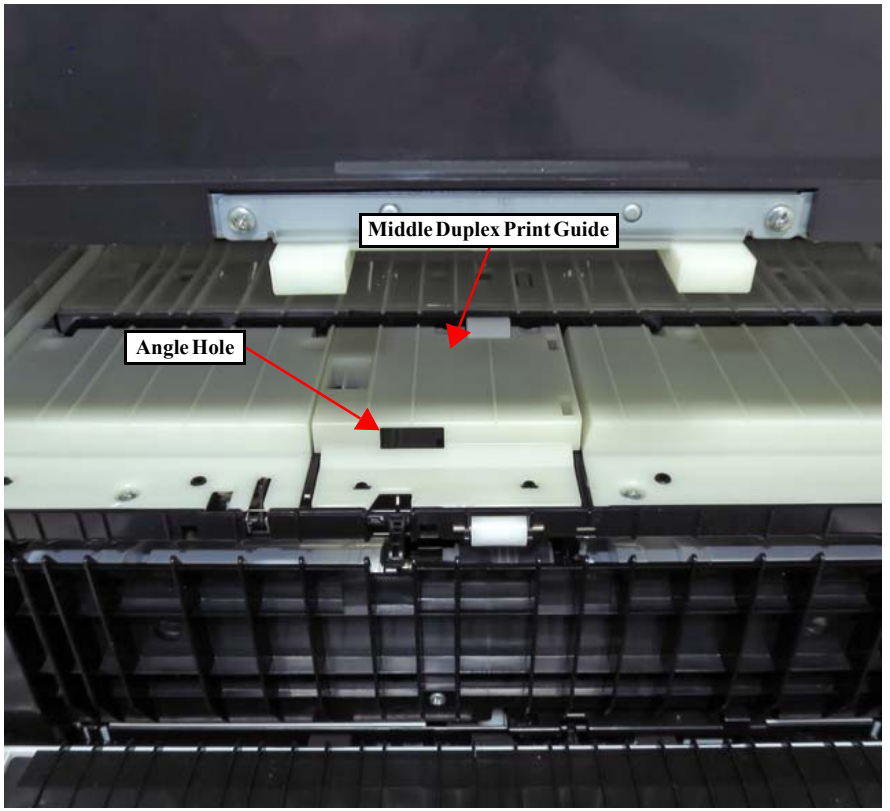


A1	B1	C1	Duplex Print Assy
D1	E1	F1	



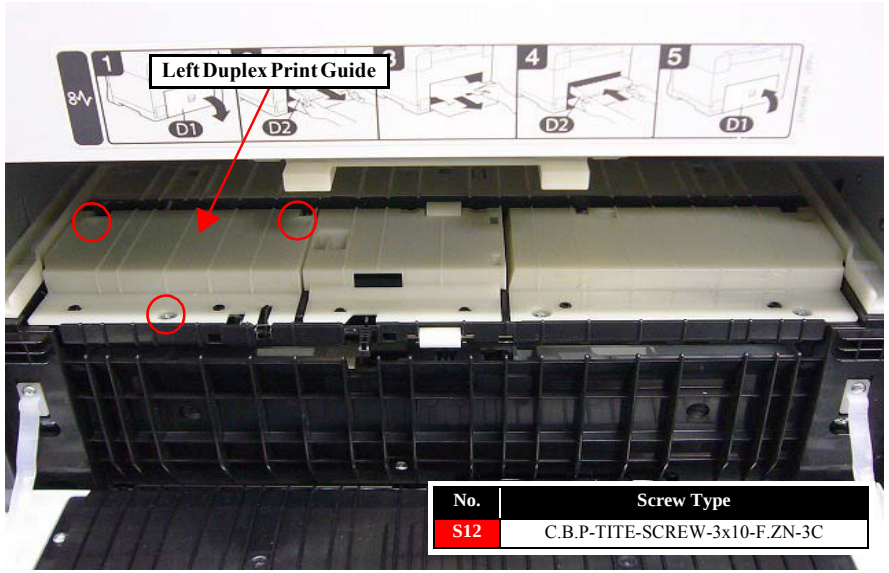
1. Open the Duplex Print Cover.
2. Remove the Duplex Print Assy.

	B2		Middle Duplex Print Guide
	E2		



1. Lift the Middle Duplex Print Guide by hooking a finger on the angle hole, and remove it.

		C2	Left Duplex Print Guide
D2		F2	



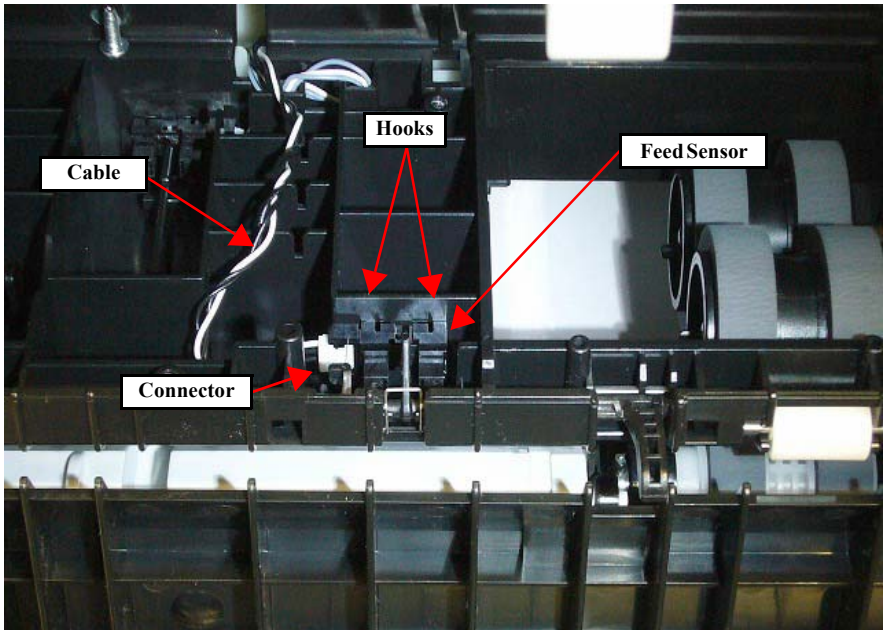
No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

CHECK POINT

When removing the screw in the step below, use a stubby screwdriver whose total length is 40 mm or shorter.

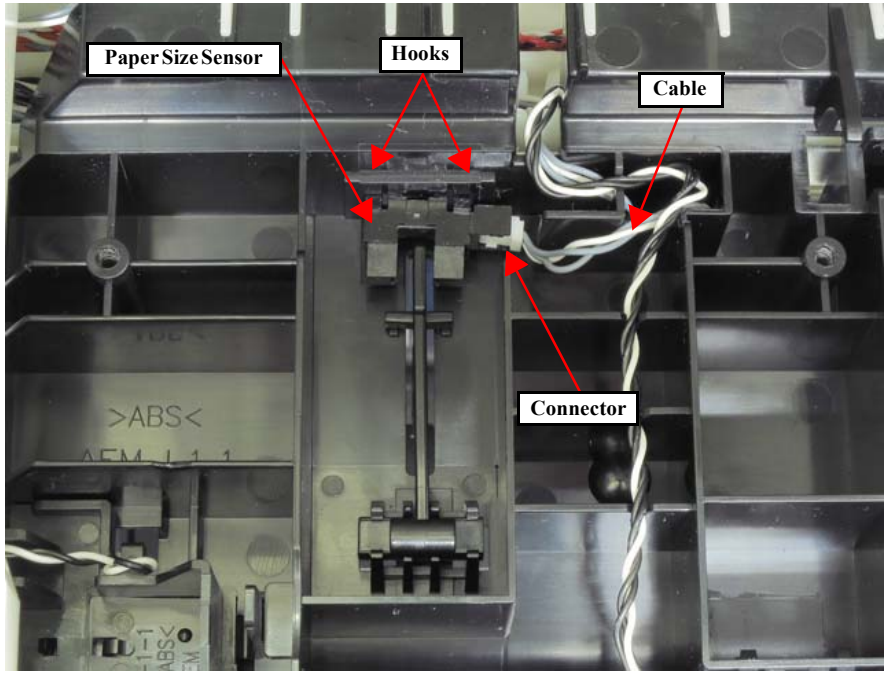
1. Remove the three screws (S12: ○), then remove the Left Duplex Print Guide.

		C3	Feed Sensor



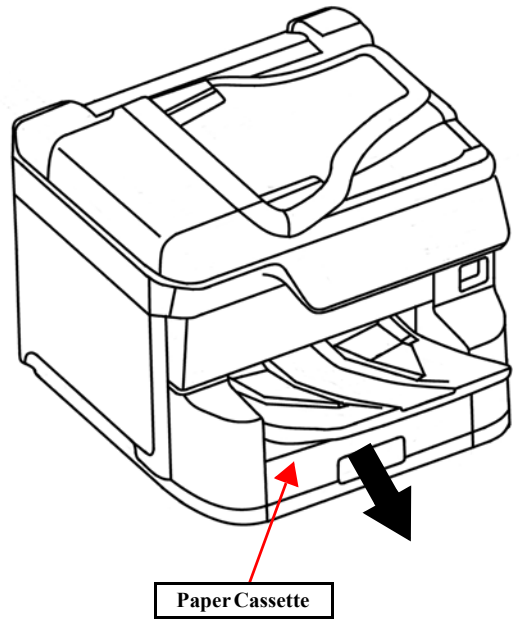
1. Disengage the four hooks and remove the sensor.
2. Disconnect the cables from the sensor connector.

			Paper Size Sensor
D3			



1. Disengage the four hooks and remove the sensor.
2. Disconnect the cables from the sensor connector.

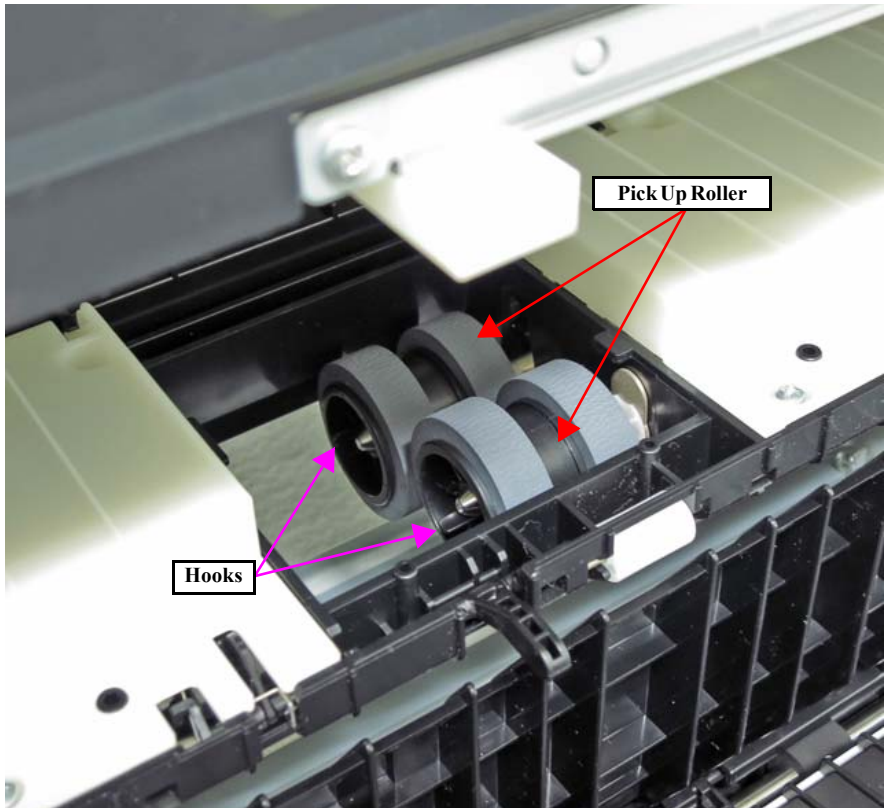
			Paper Cassette
	E3		



1. Remove Paper Cassette.

	E4	

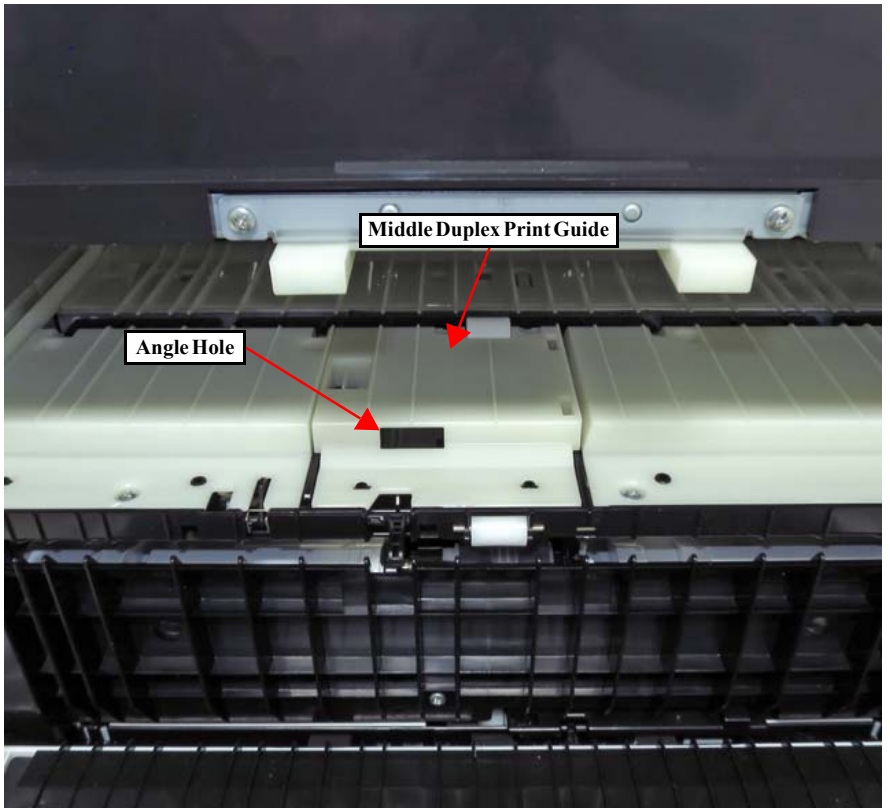
Pick Up Roller



1. Disengage the hooks, then remove the two Pick Up Rollers.

		F3

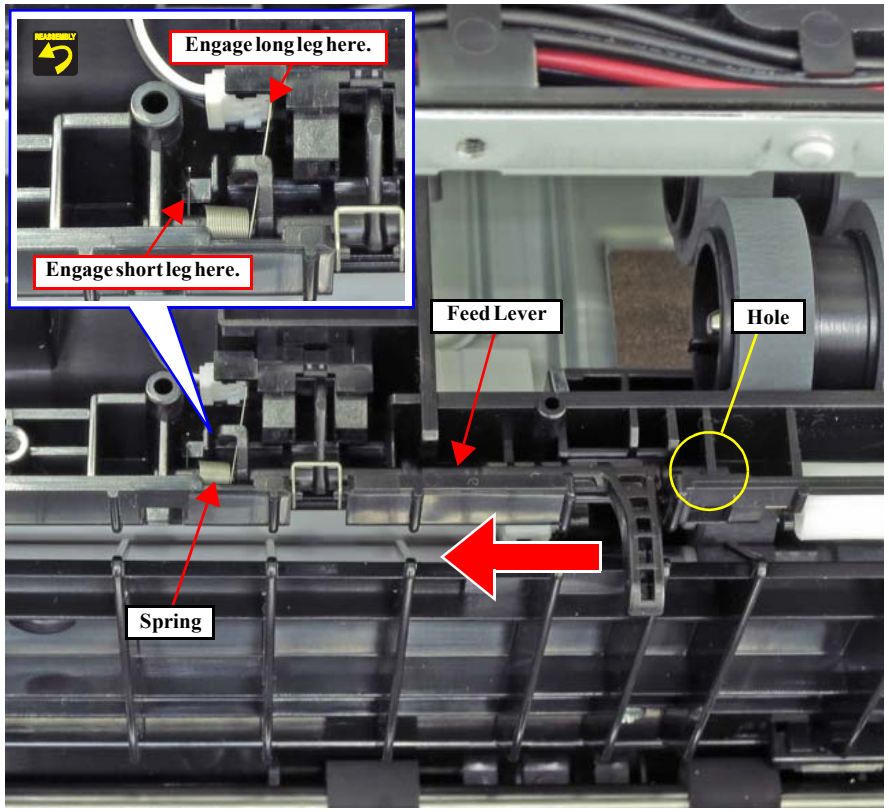
Middle Duplex Print Guide



1. Lift the Middle Duplex Print Guide by hooking a finger on the angle hole, and remove it.

F4

Feed Lever



1. Slide the Feed Lever leftward, then pull it out through the hole of the base.

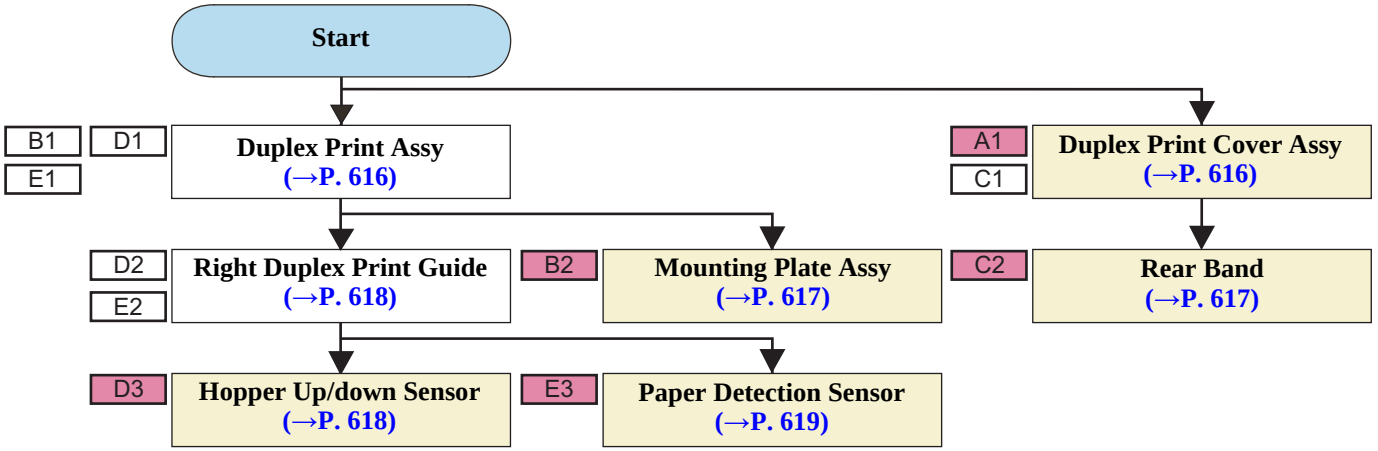
REASSEMBLY Make sure to attach the spring as shown above.

7.4.3.20 Paper Feed Mechanism 2

OUTLINE

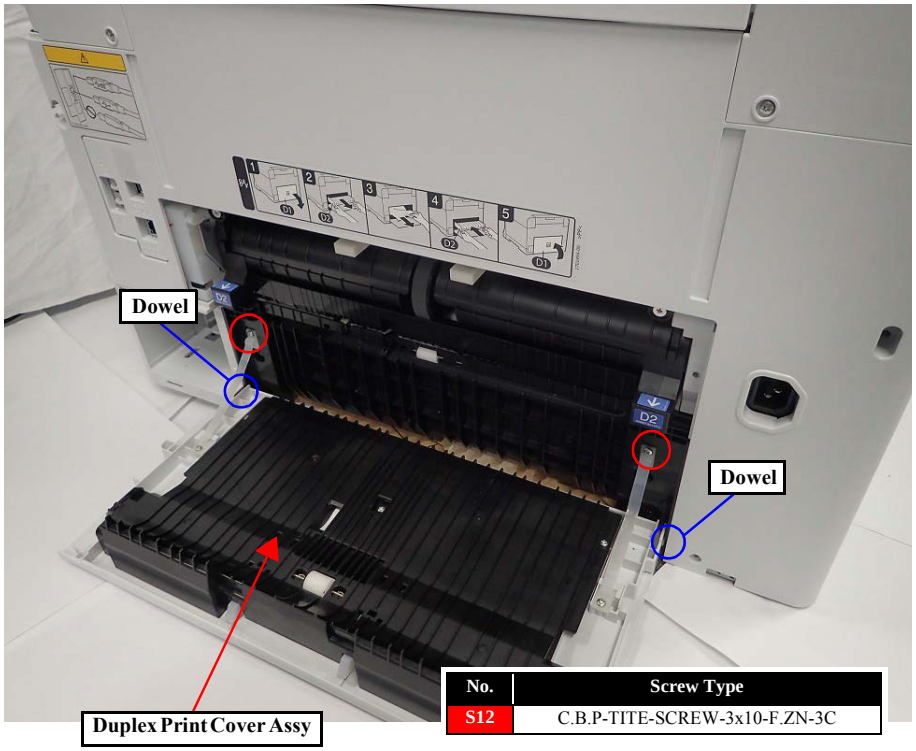
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Duplex Print Cover Assy	A	48 sec	---	48 sec
Mounting Plate Assy	B	1 min 11 sec	---	1 min 11 sec
Rear Band	C	1 min 31 sec	---	1 min 31 sec
Hopper Up/down Sensor	D	2 min 10 sec	---	2 min 10 sec
Paper Detection Sensor	E	2 min 10 sec	---	2 min 10 sec

DISASSEMBLY FLOWCHART



A1		C1

Duplex Print Cover Assy

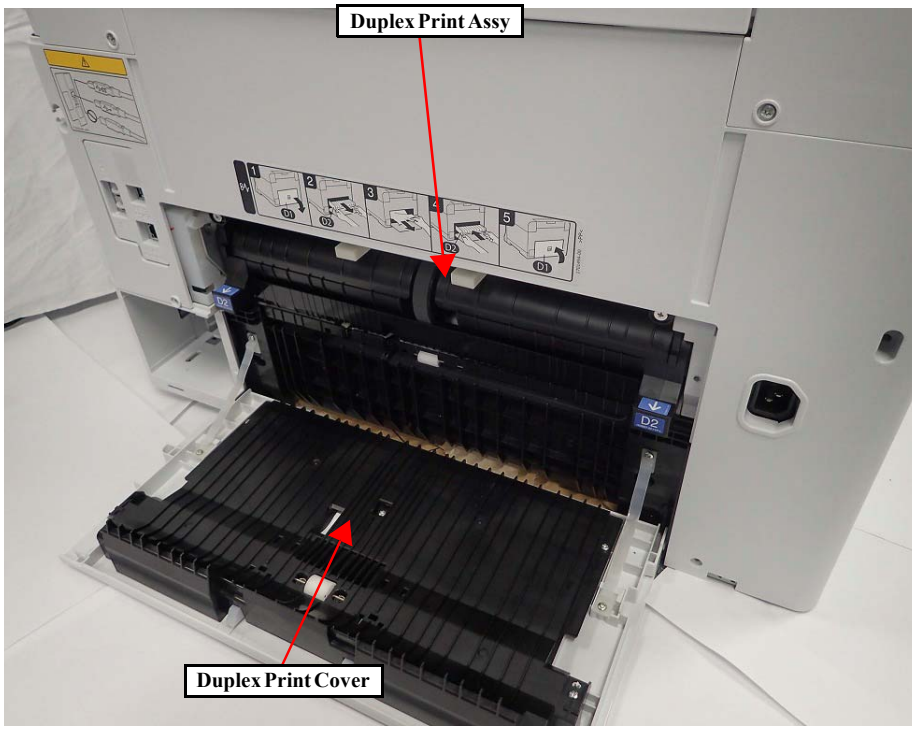


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the two screws (S12: ○).
2. Disengage the two dowels, then remove the Duplex Print Cover Assy.

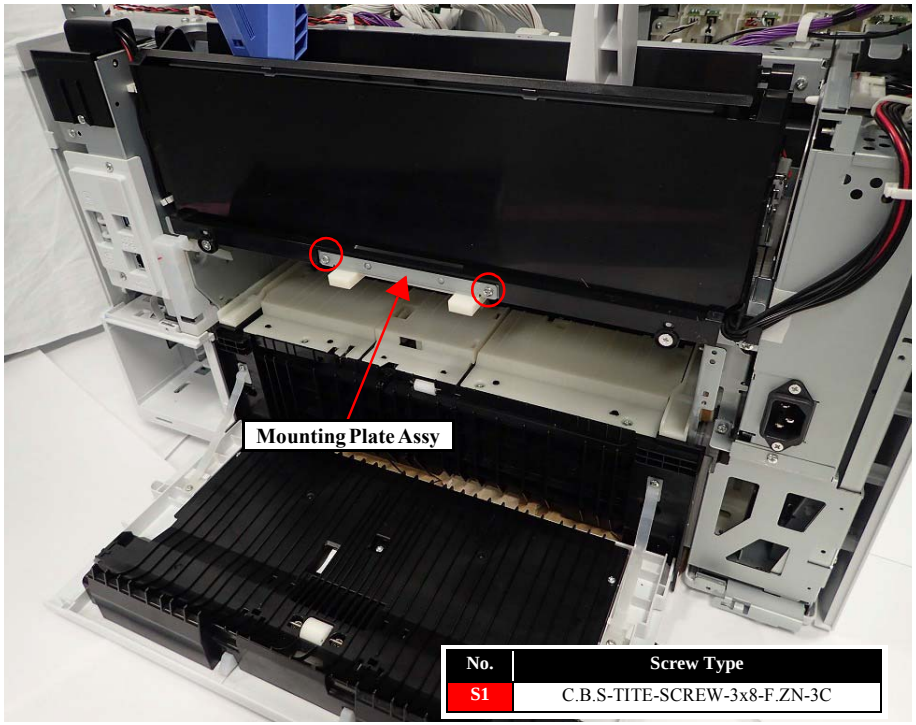
	B1	
D1	E1	

Duplex Print Assy



1. Open the Duplex Print Cover.
2. Remove the Duplex Print Assy.

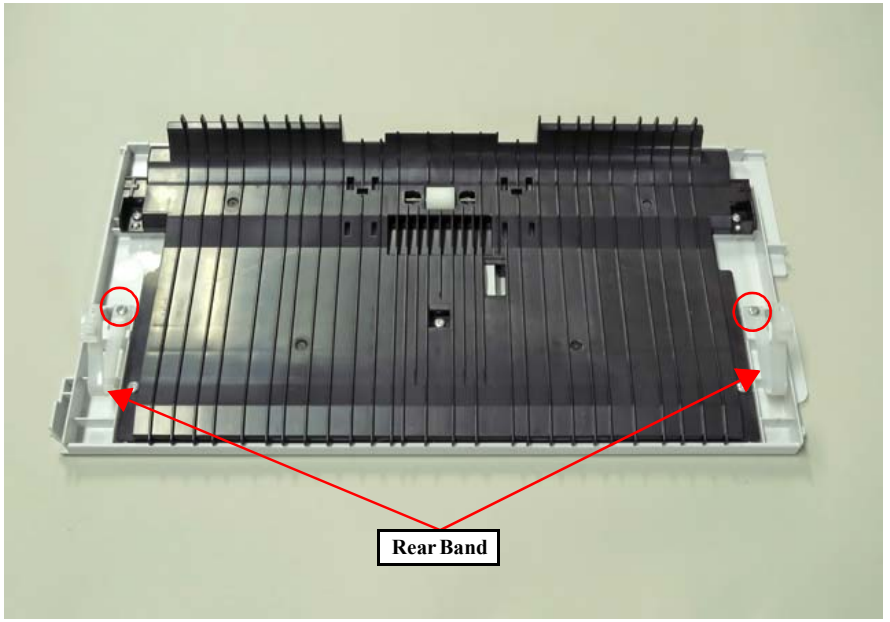
B2 Mounting Plate Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Mounting Plate Assy.

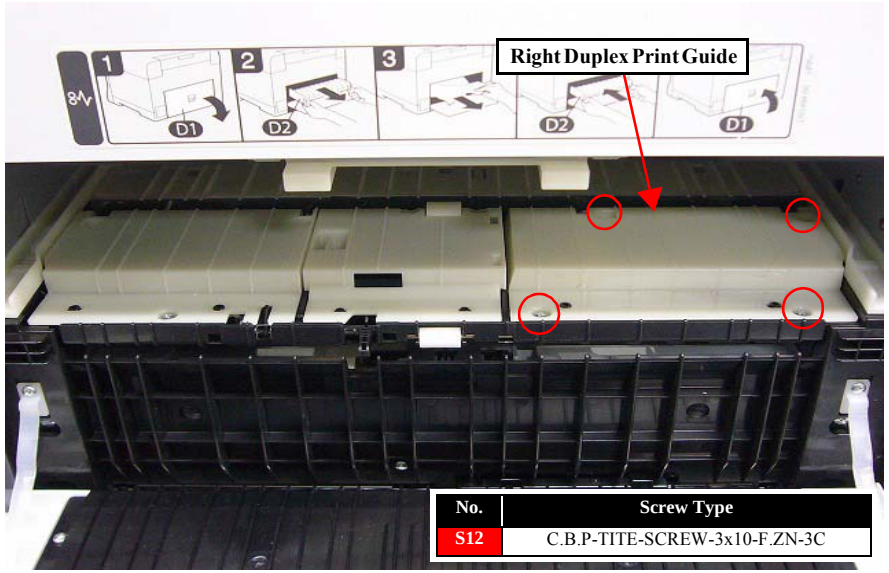
C2 Rear Band



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the two screws (S12: ○), then remove the two Rear Bands.

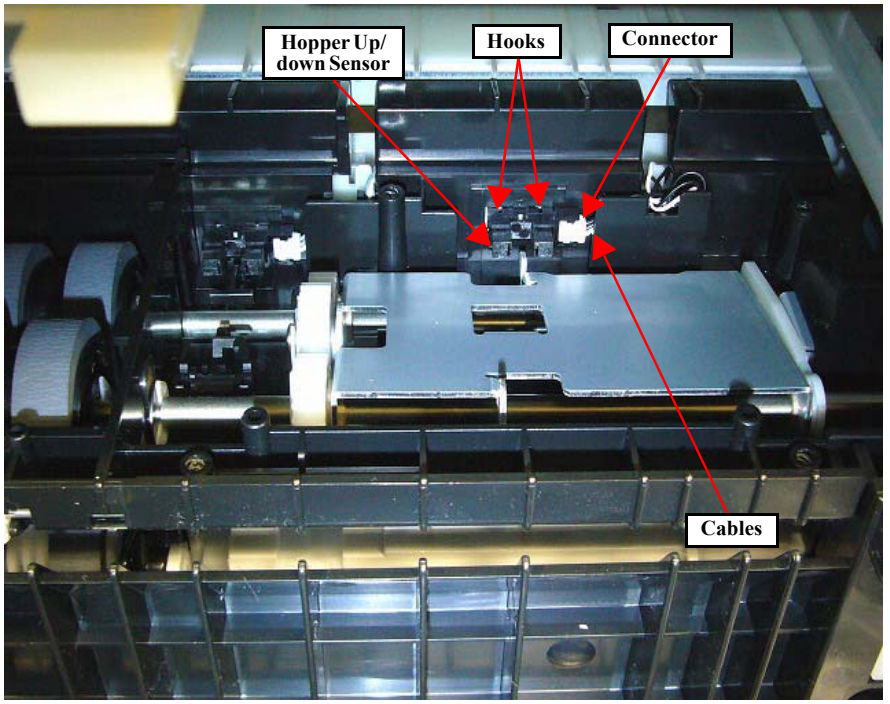
			Right Duplex Print Guide
D2	E2		



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the four screws (S12: ○), then remove the Right Duplex Print Guide.

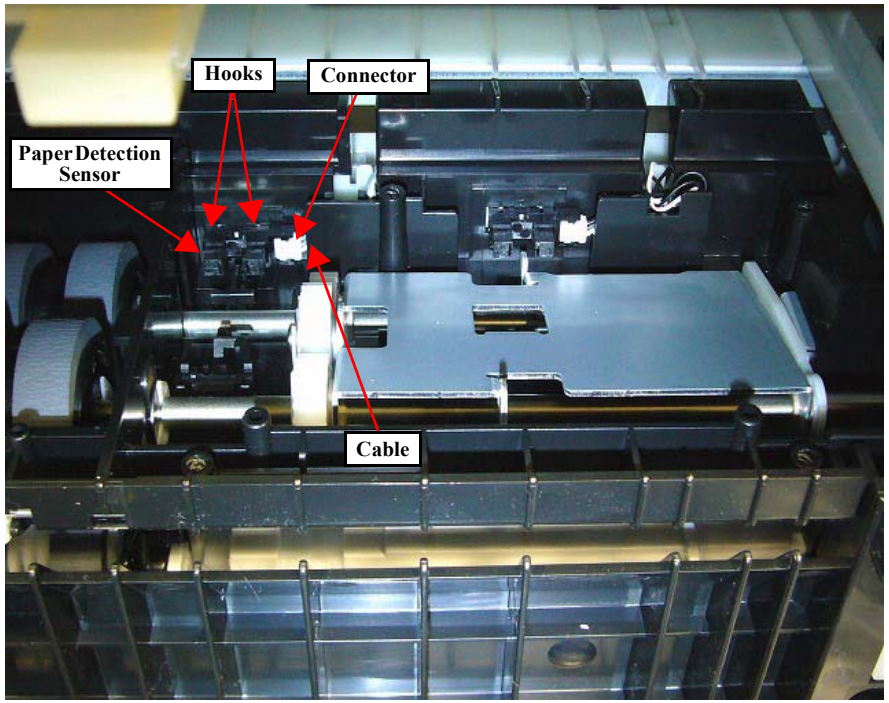
			Hopper Up/down Sensor
D3			



1. Disengage the four hooks and remove the sensor.
2. Disconnect the cables from the sensor connector.

E3

Paper Detection Sensor



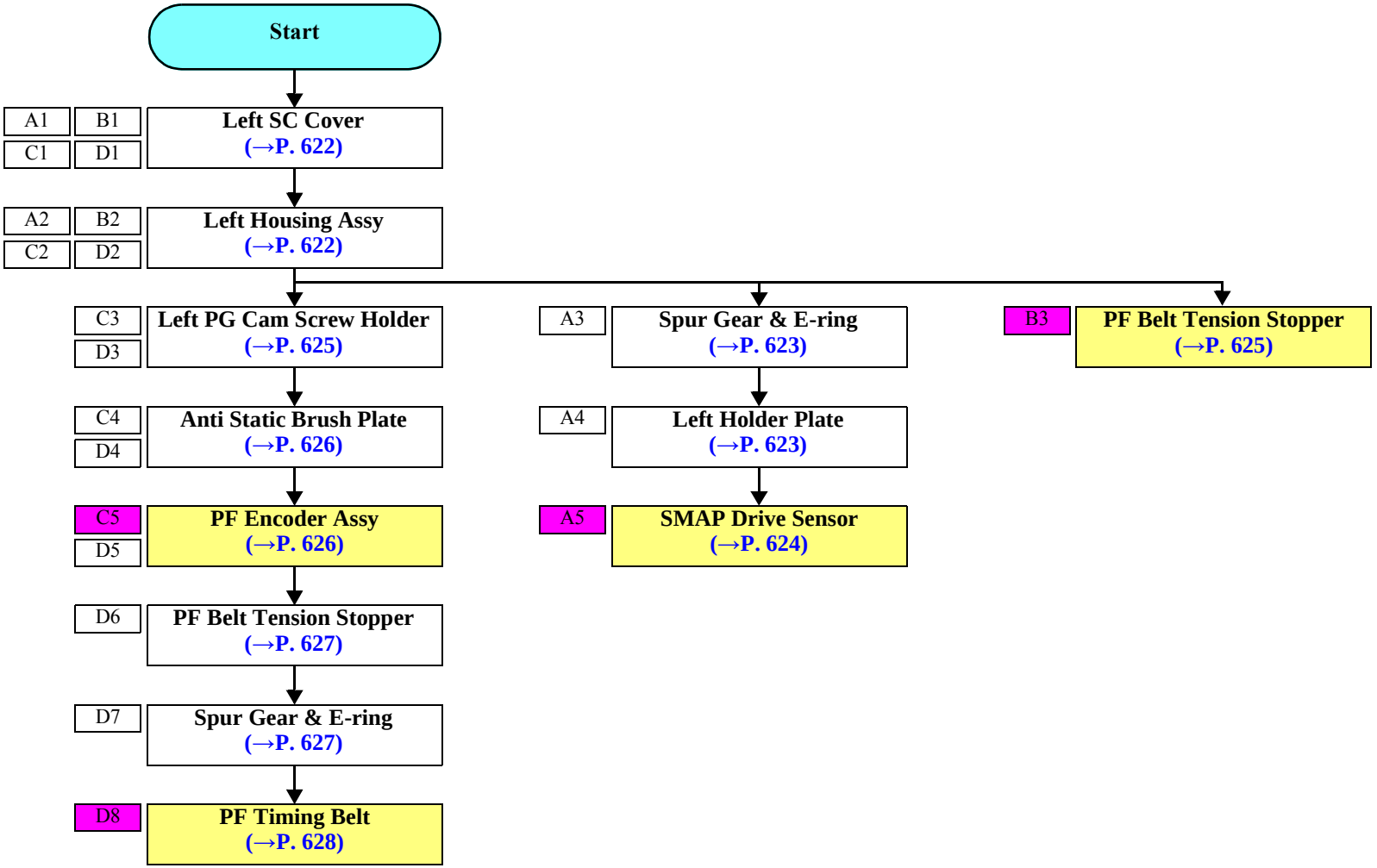
1. Disengage the four hooks and remove the sensor.
2. Disconnect the cables from the sensor connector.

7.4.3.21 Paper Feed Mechanism 3

OUTLINE

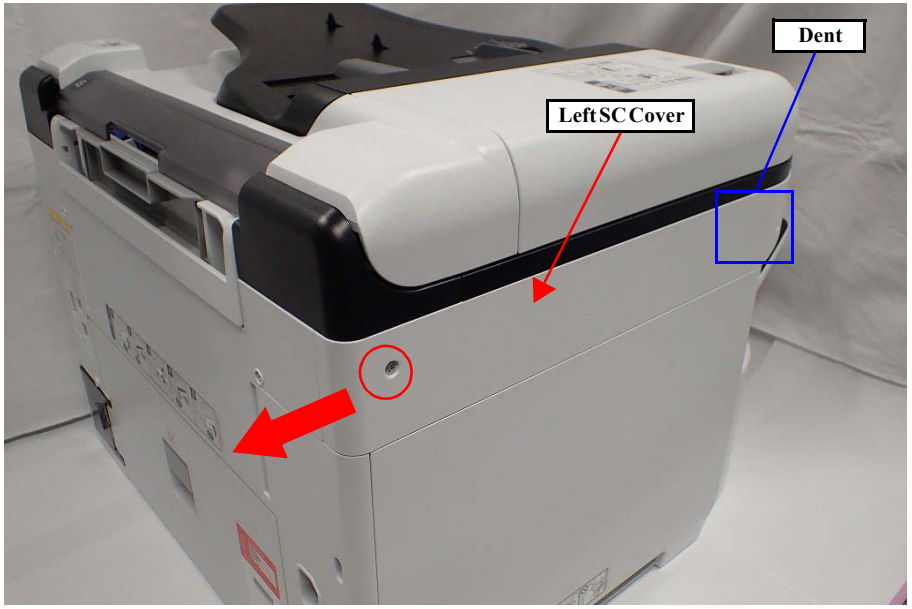
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
SMAP Drive Sensor	A	3 min 14 sec	---	3 min 14 sec
PF Belt Tension Stopper	B	3 min 33 sec	---	3 min 33 sec
PF Encoder Assy	C	4 min 29 sec	---	4 min 29 sec
PF Timing Belt	D	6 min 4 sec	---	6 min 4 sec

DISASSEMBLY FLOWCHART



A1	B1
C1	D1

Left SC Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

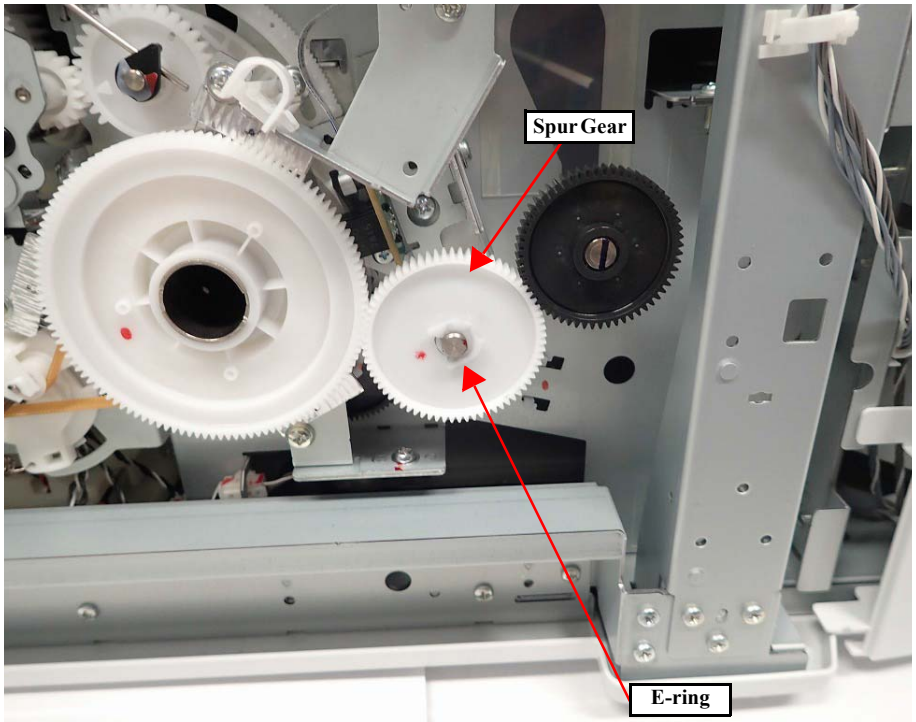
A2	B2
C2	D2

Left Housing Assy

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

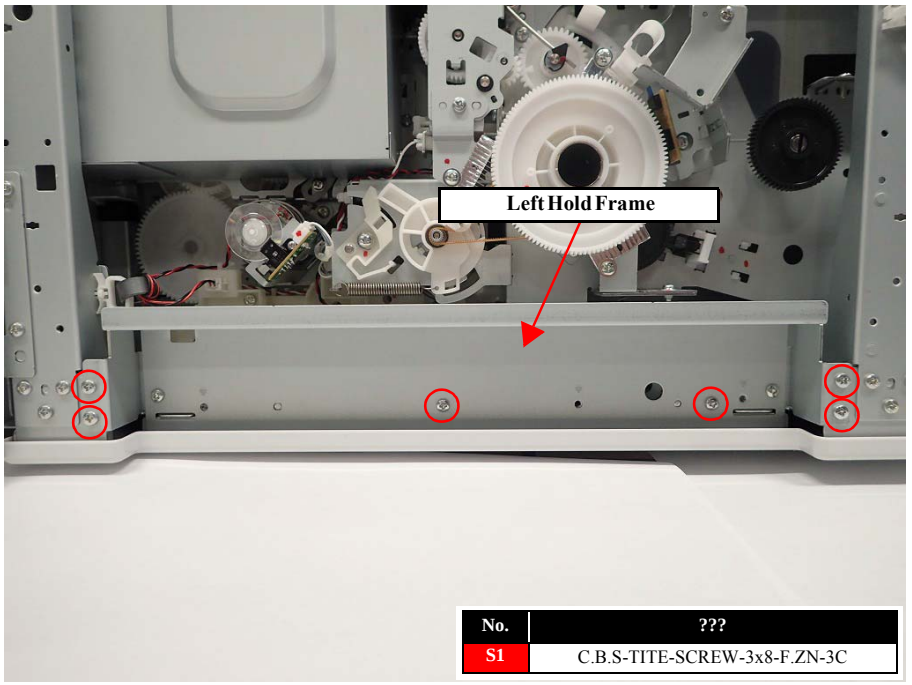
1. Remove six screw (S1: ○), and remove the Left Housing Assy.

A3		Spur Gear & E-ring



1. Remove the E-ring, then remove the Spur Gear.

A4		Left Hold Plate

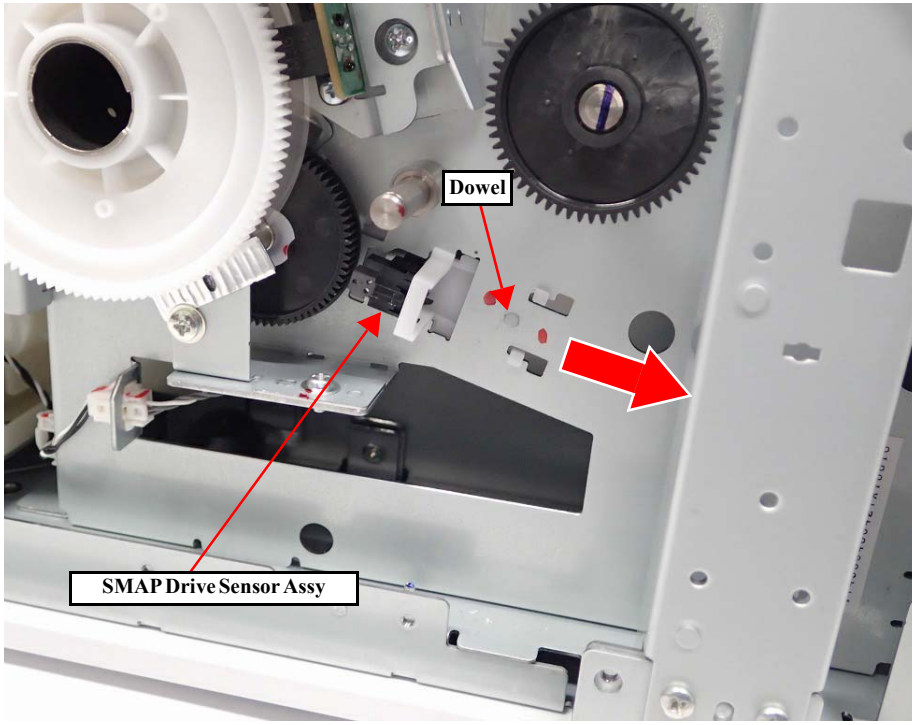


No.	???
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screws (S1:○), and remove the Left Hold Frame.

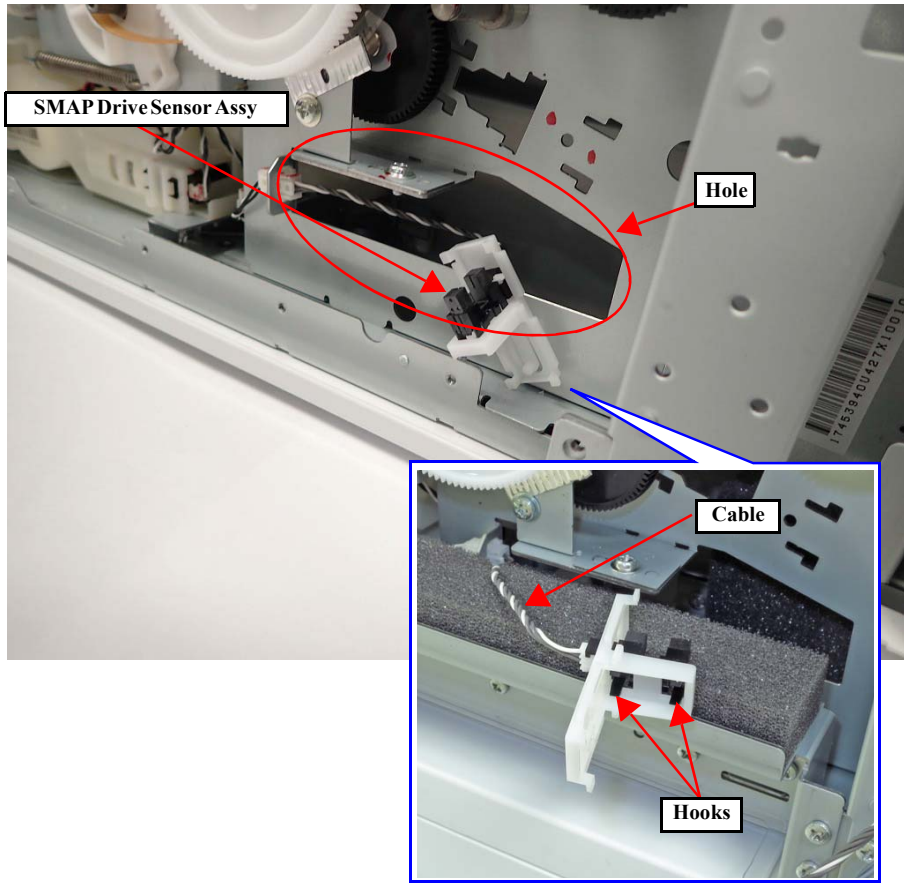
A5

SMAP Drive Sensor



1. While pressing the dowel of the SMAP Drive Sensor Assy, remove the holder in the direction of the arrow.

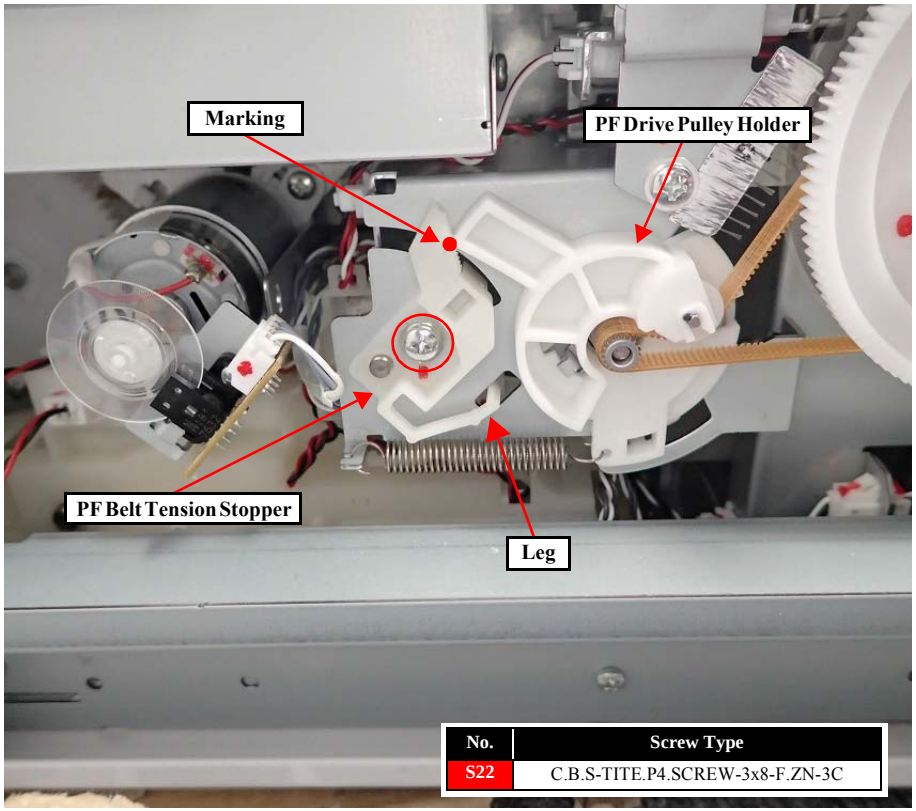
SMAP Drive Sensor



2. Pull out the SMAP Drive Sensor Assy through the cutout of the frame.
3. Disconnect the cable from the connector of the sensor.
4. Disengage the four hooks.

B3	

PF Belt Tension Stopper

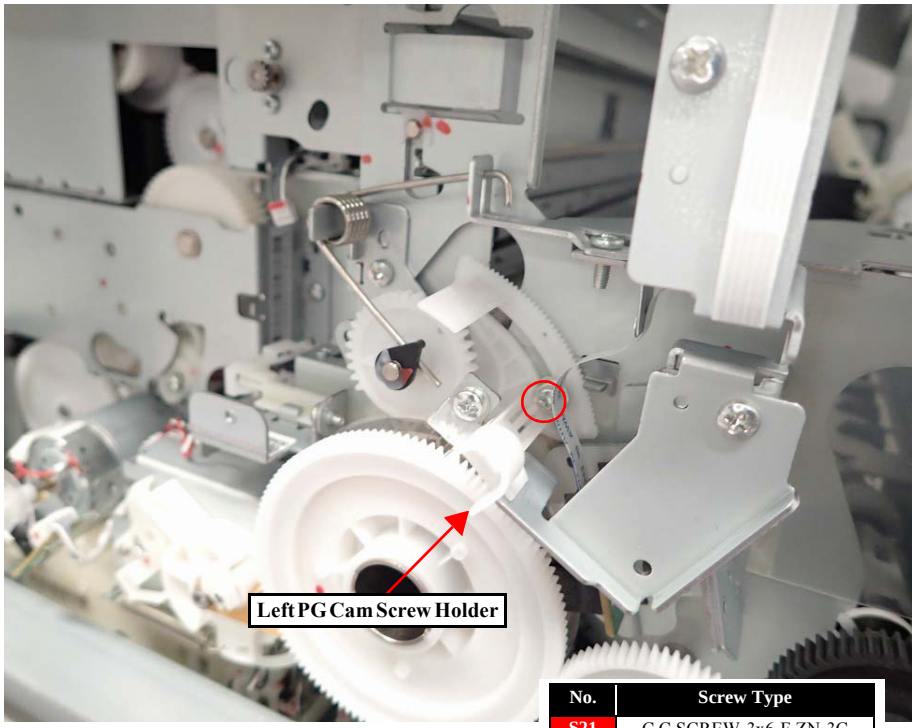


No.	Screw Type
S22	C.B.S-TITE.P4.SCREW-3x8-F.ZN-3C

1. The PF Belt Tension Stopper is in contact with the PF Drive Pulley Holder. Put a mark on the contact point.
2. Loosen the screw (S22: ○) that secures the PF Belt Tension Stopper.
3. Release the leg of the PF Belt Tension Stopper from the frame, then slide the PF Belt Tension Stopper rearward to remove it.

C3	D3

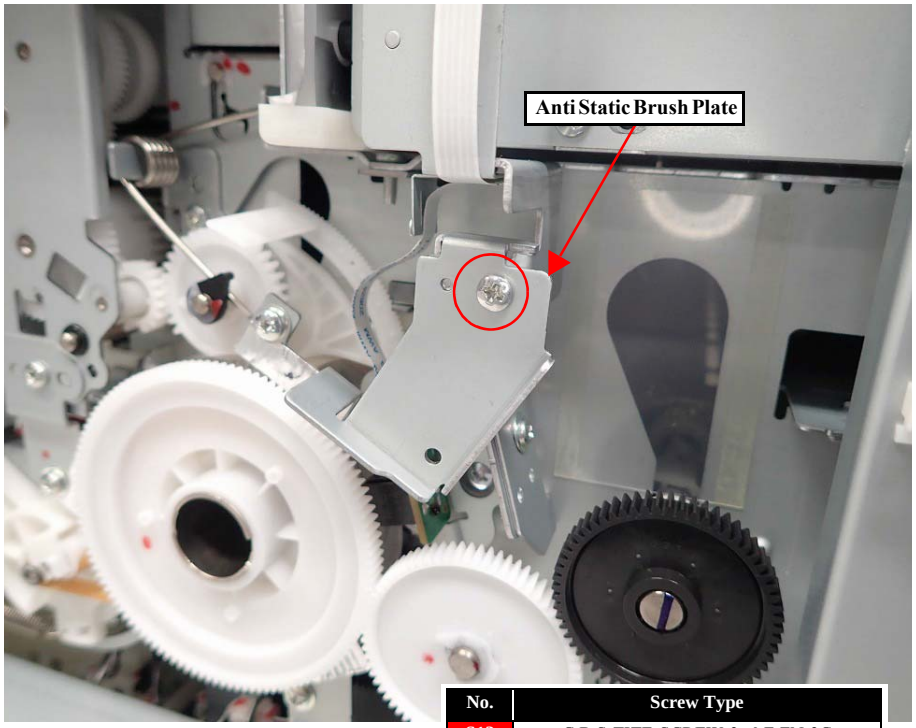
Left PG Cam Screw Holder



No.	Screw Type
S21	C.C.SCREW-3x6-F.ZN-3C

1. Remove the screw (S21: ○), then remove the Left PG Cam Screw Holder with the screw.

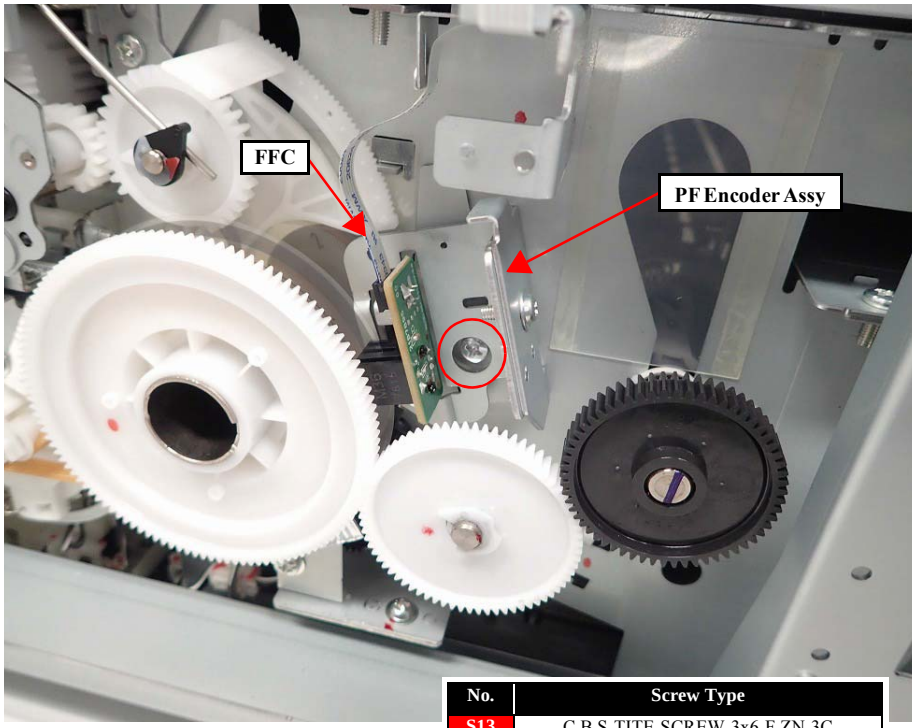
C4	D4	Anti Static Brush Plate



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the screw (S13: ○), then remove the Anti Static Brush Plate.

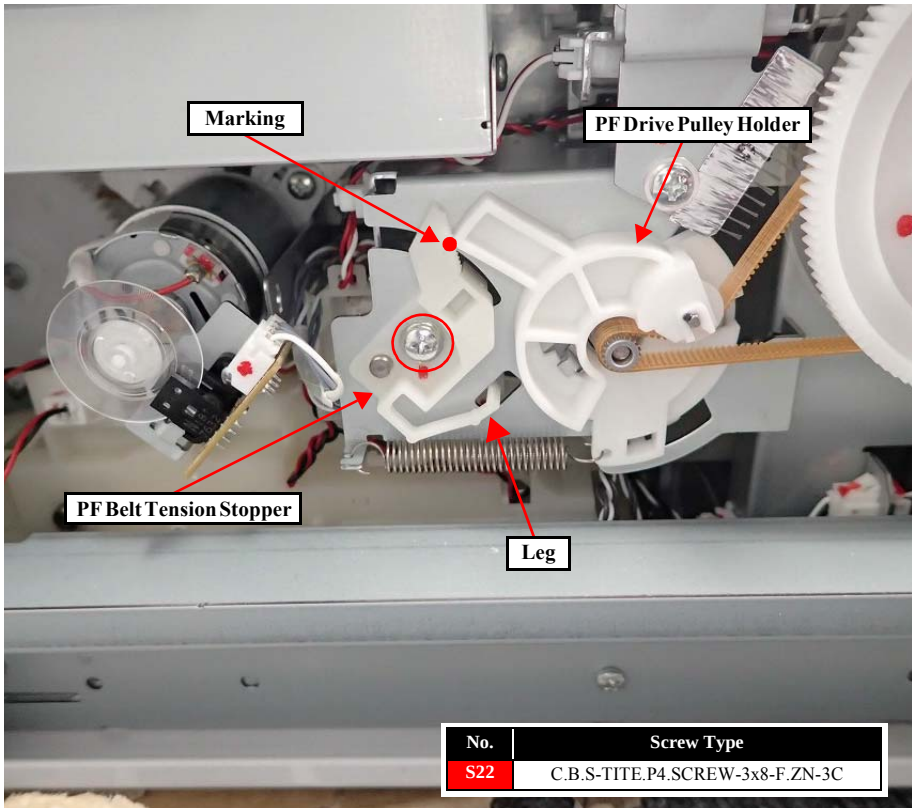
C5	D5	PF Encoder Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Disconnect the FFC from the PF Encoder Assy.
2. Remove the screw (S13: ○), then remove the PF Encoder Assy.

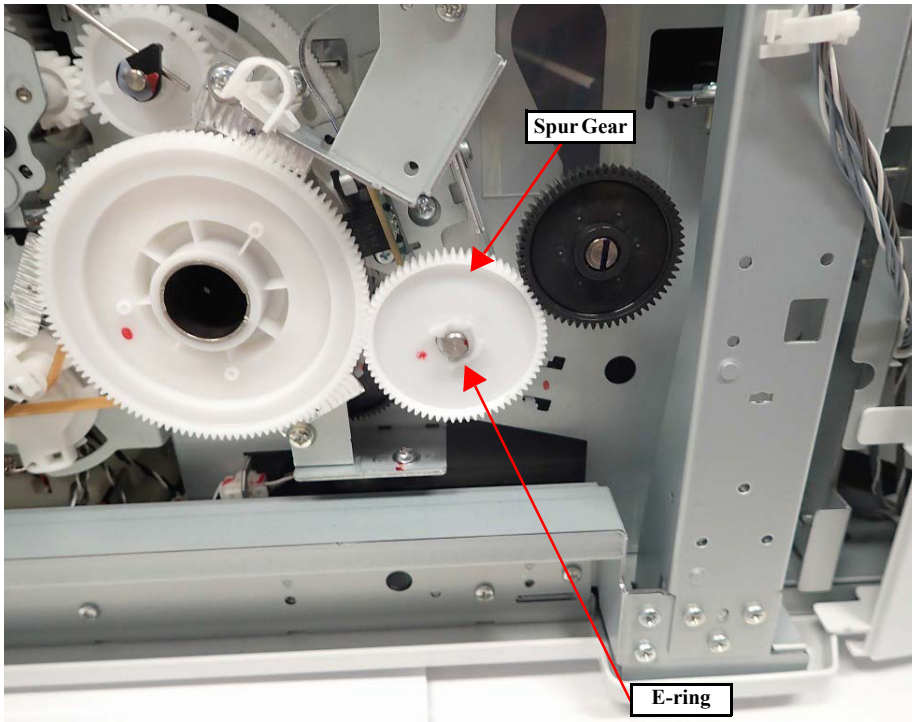
D6 PF Belt Tension Stopper



No.	Screw Type
S22	C.B.S-TITE.P4.SCREW-3x8-F.ZN-3C

1. The PF Belt Tension Stopper is in contact with the PF Drive Pulley Holder. Put a mark on the contact point.
2. Loosen the screw (S22: ○) that secures the PF Belt Tension Stopper.
3. Release the leg of the PF Belt Tension Stopper from the frame, then slide the PF Belt Tension Stopper rearward to remove it.

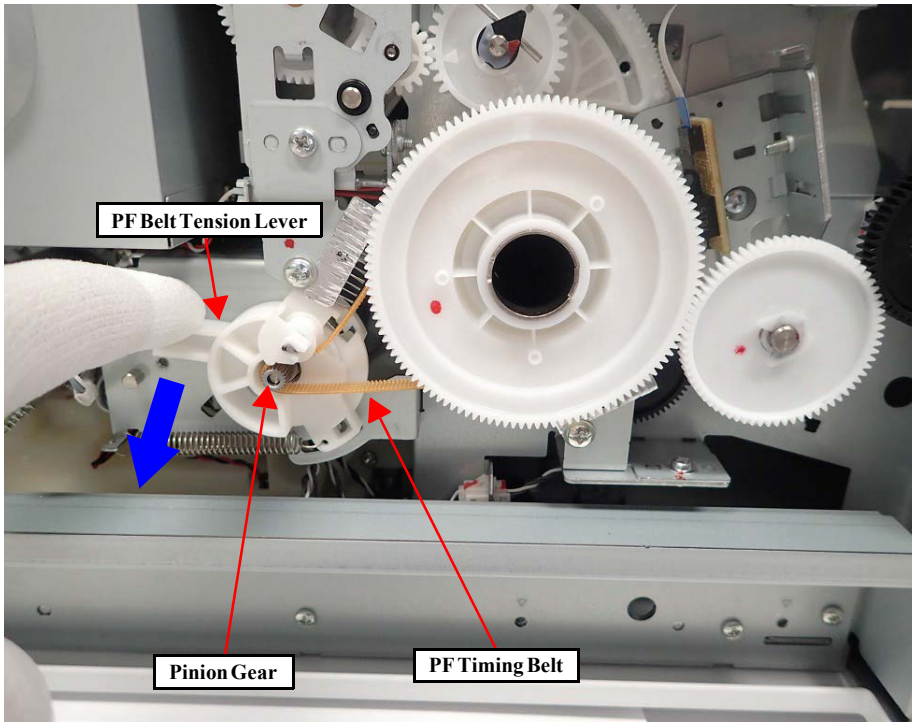
D7 Spur Gear & E-ring



1. Remove the E-ring, then remove the Spur Gear.

D8

PF Timing Belt



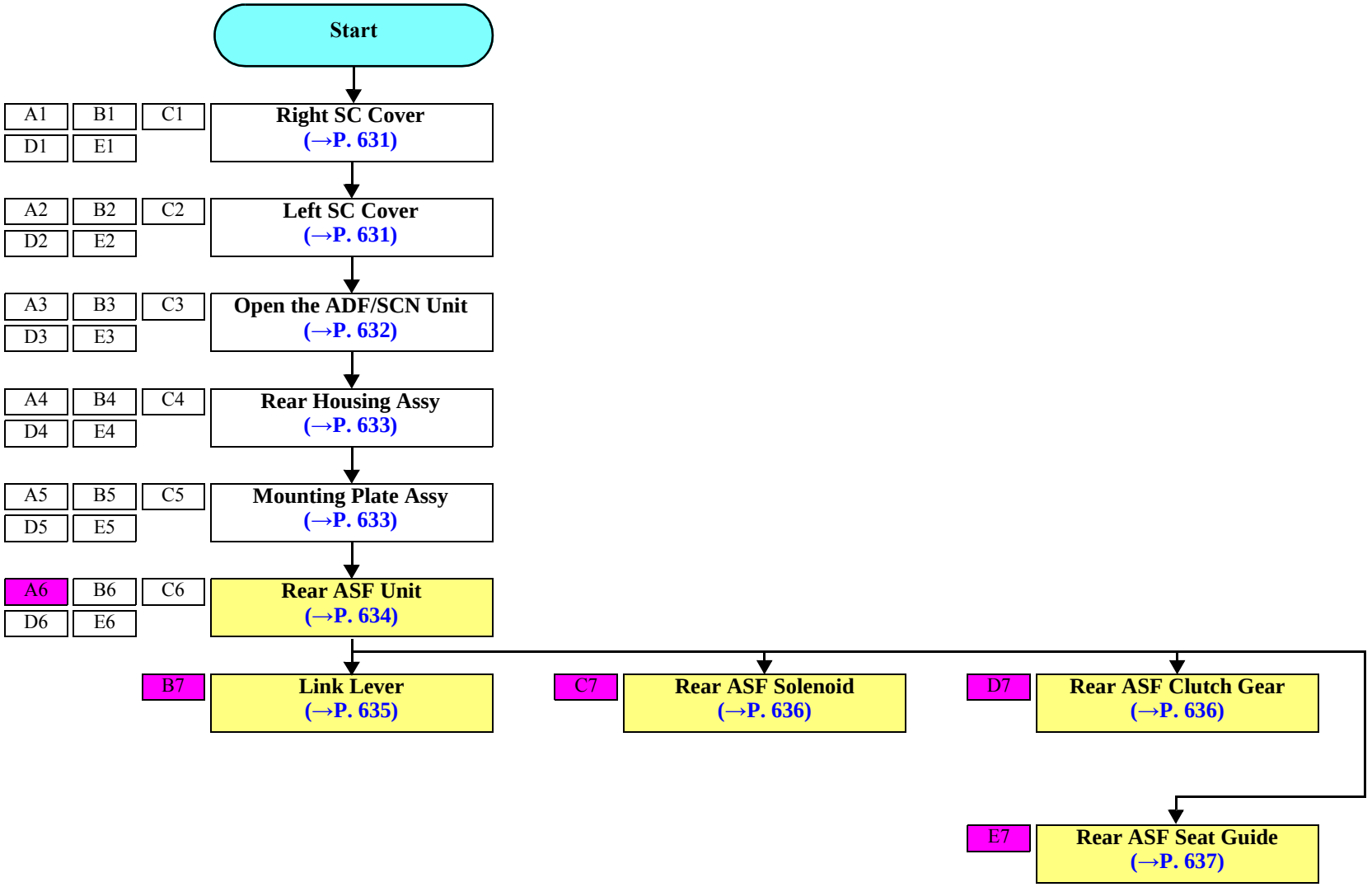
1. Press the PF Belt Tension Lever downward to loosen the PF Timing Belt, then release the belt from the pinion gear of the PF Motor.
2. Remove the PF Timing Belt.

7.4.3.22 Paper Feed Mechanism 4

OUTLINE

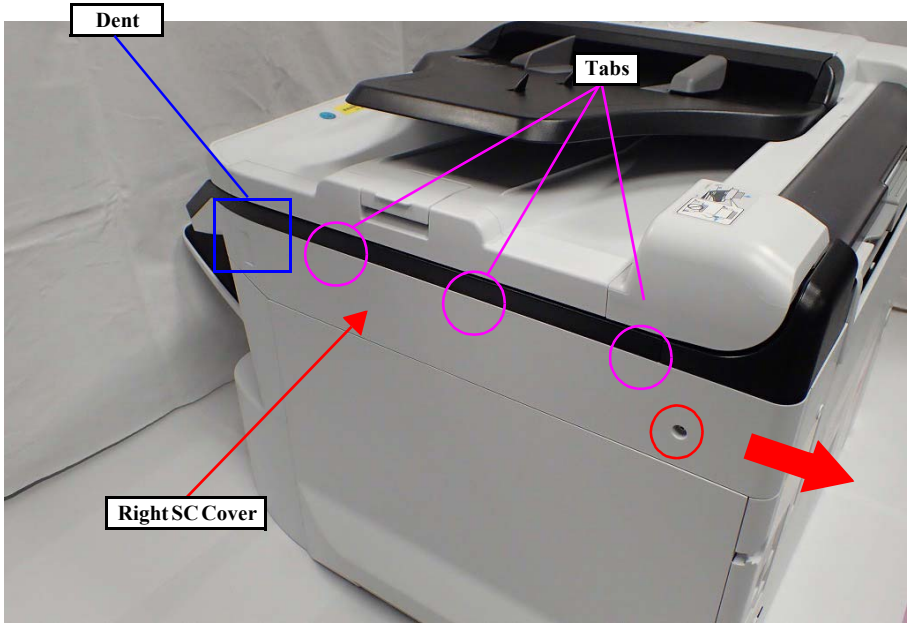
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Rear ASF Unit	A	9 min 4 sec	1 min 27 sec	10 min 31 sec
Link Lever	B	9 min 45sec	---	9 min 45 sec
Rear ASF Solenoid	C	9 min 11 sec	---	9 min 11 sec
Rear ASF Clutch Gear	D	9 min 10 sec	---	9 min 10 sec
Rear ASF Seat Guide	E	9 min 10 sec	---	9 min 10 sec

DISASSEMBLY FLOWCHART



A1	B1	C1
D1	E1	

Right SC Cover

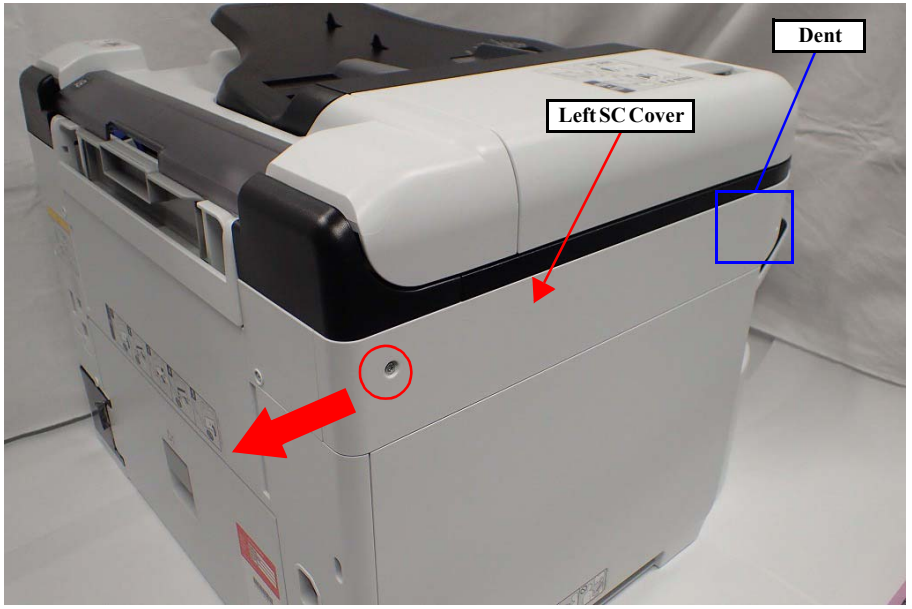


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2	C2
D2	E2	

Left SC Cover

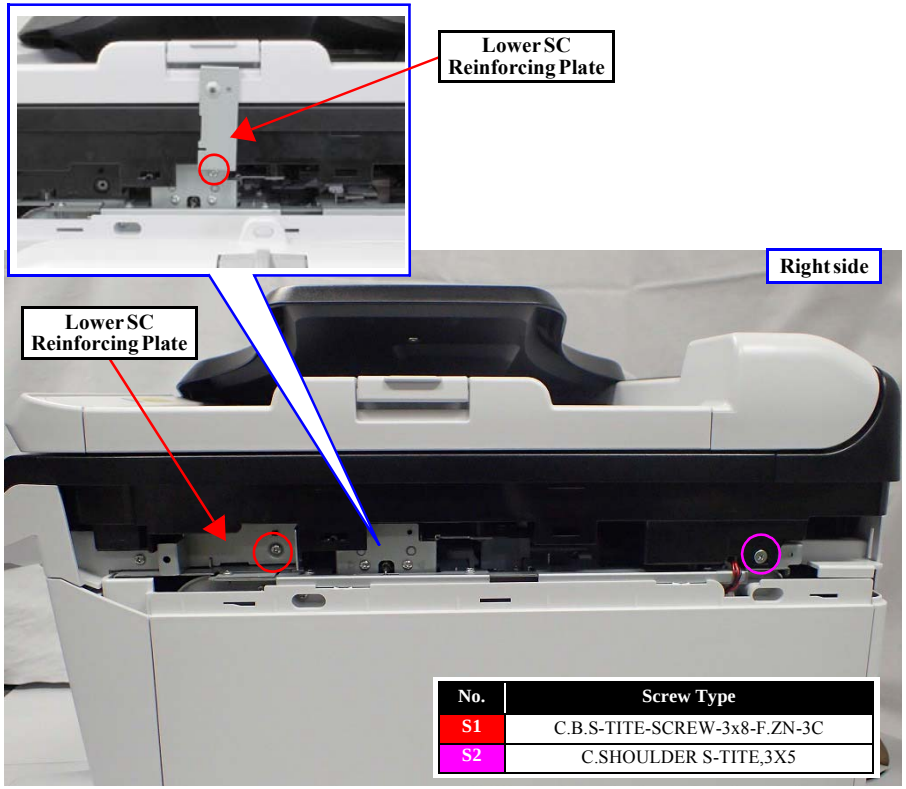


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3	C3
D3	E3	

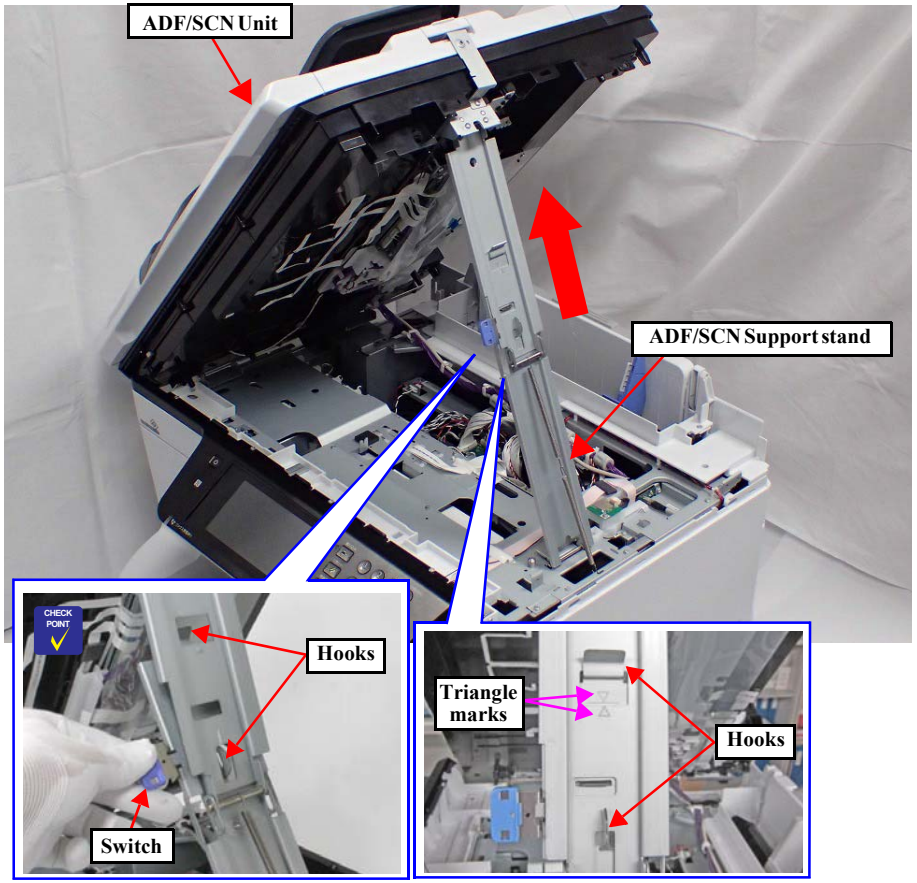
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



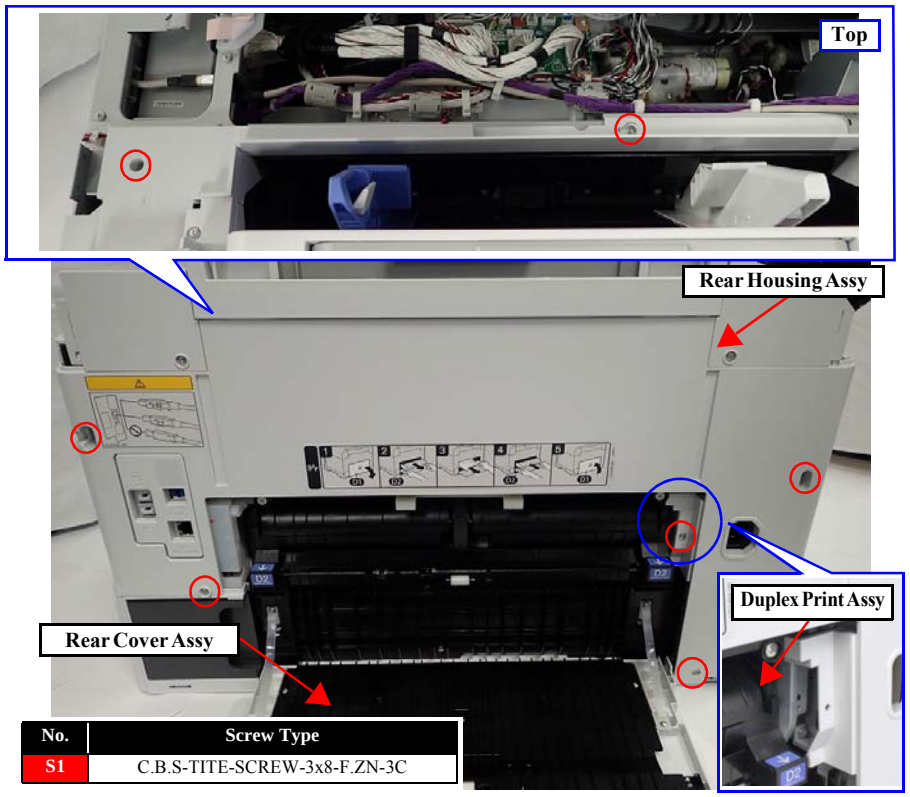
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4	C4
D4	E4	

Rear Housing Assy

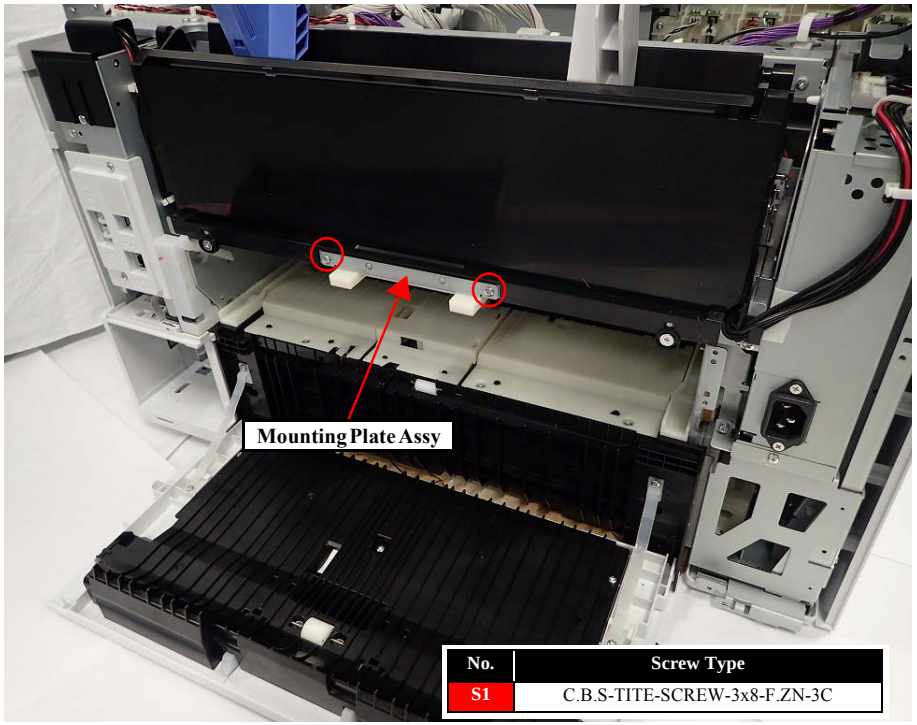


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

A5	B5	C5
D5	E5	

Mounting Plate Assy

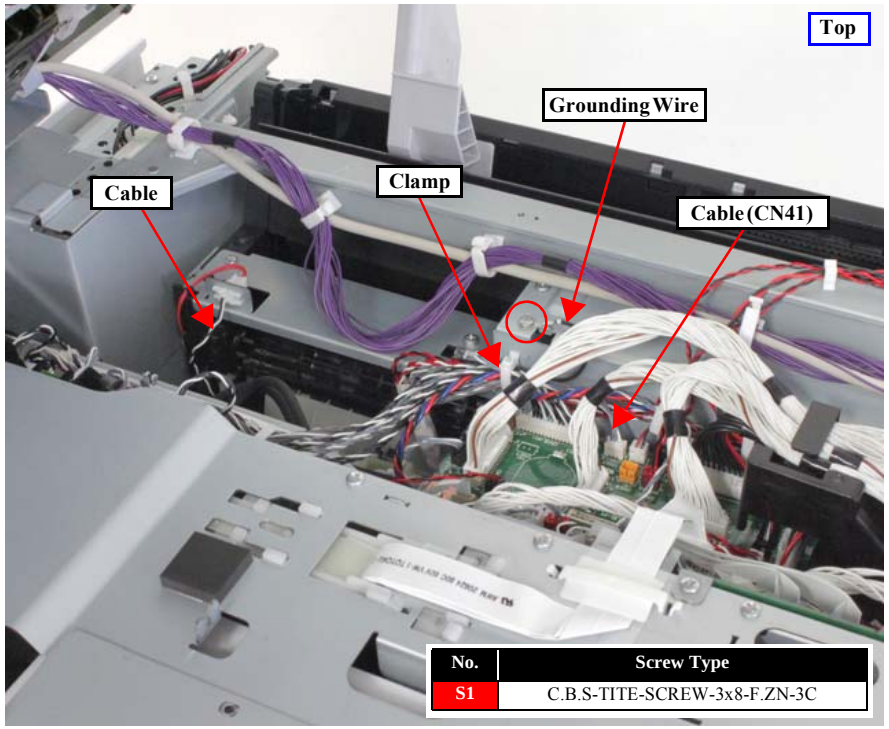


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Mounting Plate Assy.

A6	B6	C6
D6	E6	

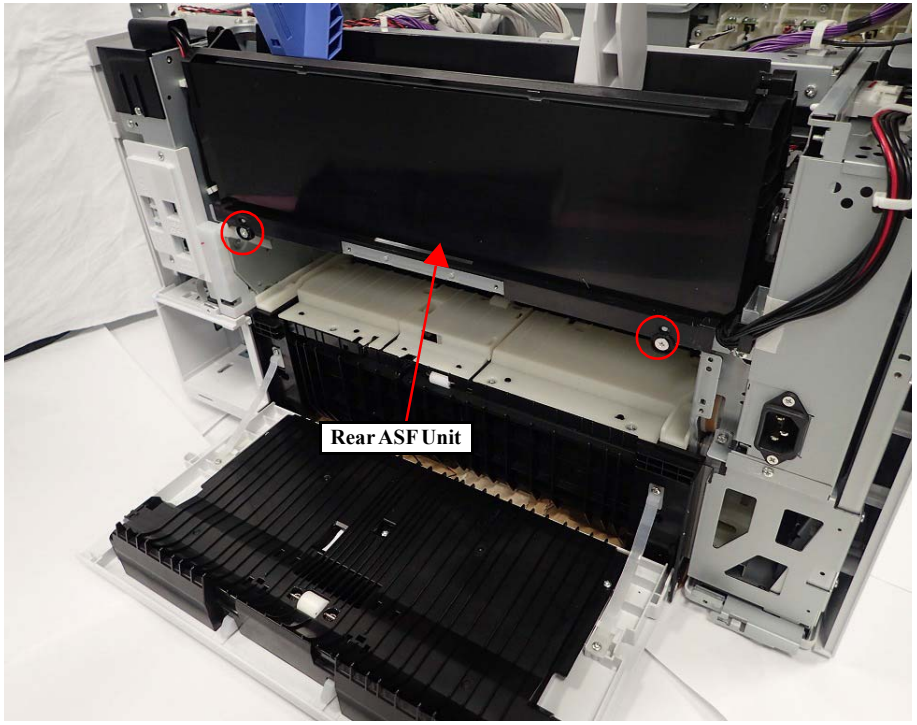
Rear ASF Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the two cables from the connectors.
2. Remove the screw (S1: ○), then release the Grounding Wire.
3. Release the cables and the grounding wire from the clamp.

Rear ASF Unit

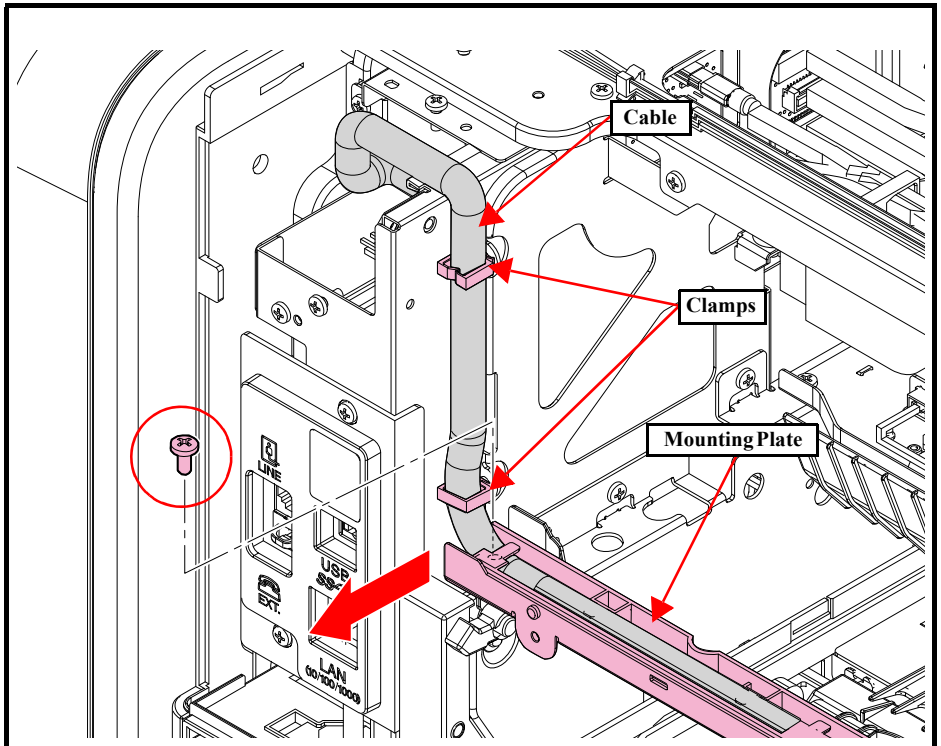


No.	Screw Type
S2	C.SHOULDER S-TITE,3X5

4. Remove the two screws (S2: ○), then remove the Rear ASF Unit.

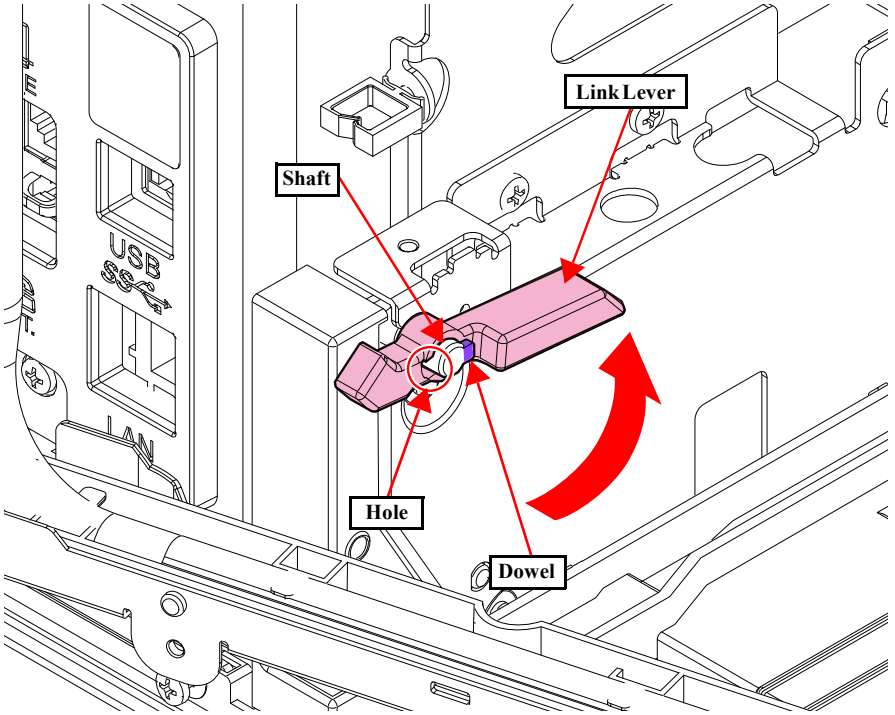
B7

Link Lever



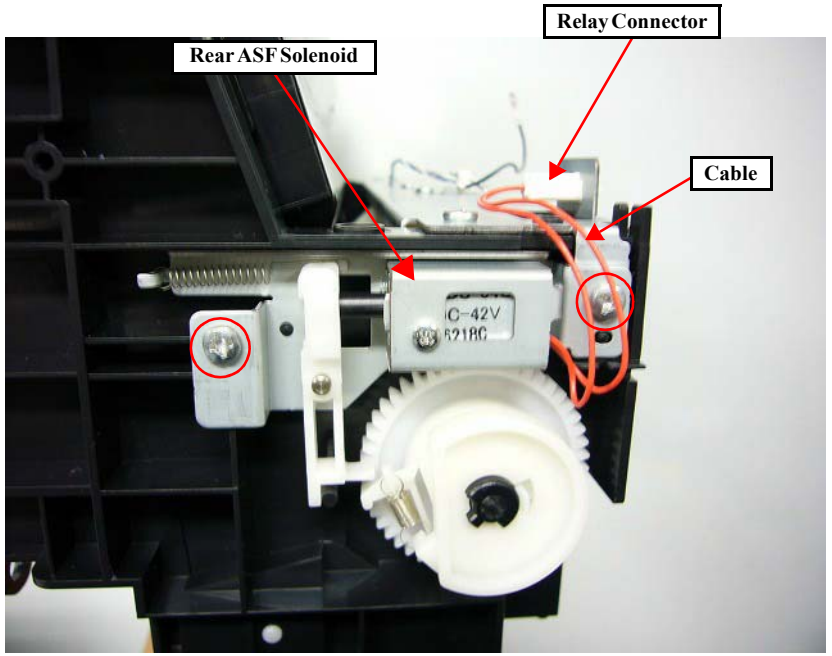
1. Release the cable from the two clamps.
2. Remove the screw (S23: ○), then slide the Mounting Plate in the direction of the arrow.

Link Lever



3. Rotate the Link Lever until its hole aligns with the dowel of the shaft, then remove the Link Lever.

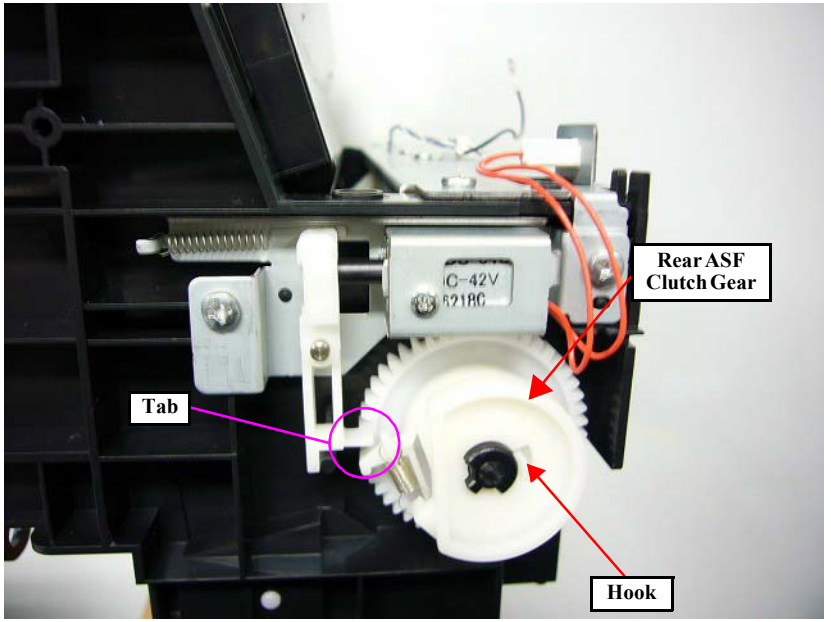
		C7	Rear ASF Solenoid



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Disconnect the cable of the Rear ASF Solenoid from the relay connector.
2. Remove the two screws (S13: ○), then remove the Rear ASF Solenoid.

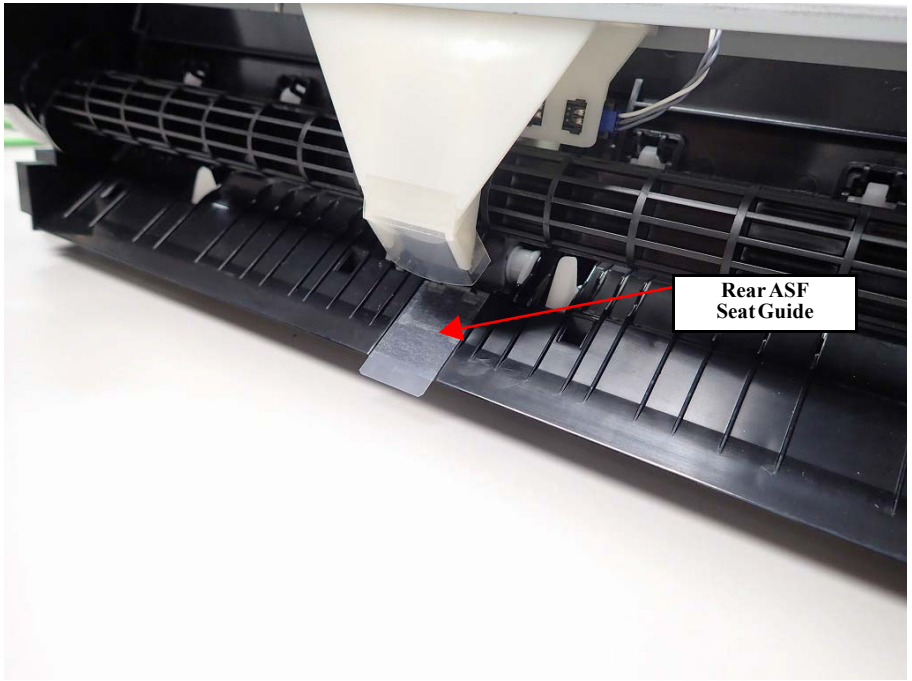
			Rear ASF Clutch Gear
D7			



1. Release the hook, then remove the Rear ASF Clutch Gear disengaging its tooth from the tab of the actuator.

	E7	

Rear ASF Seat Guide



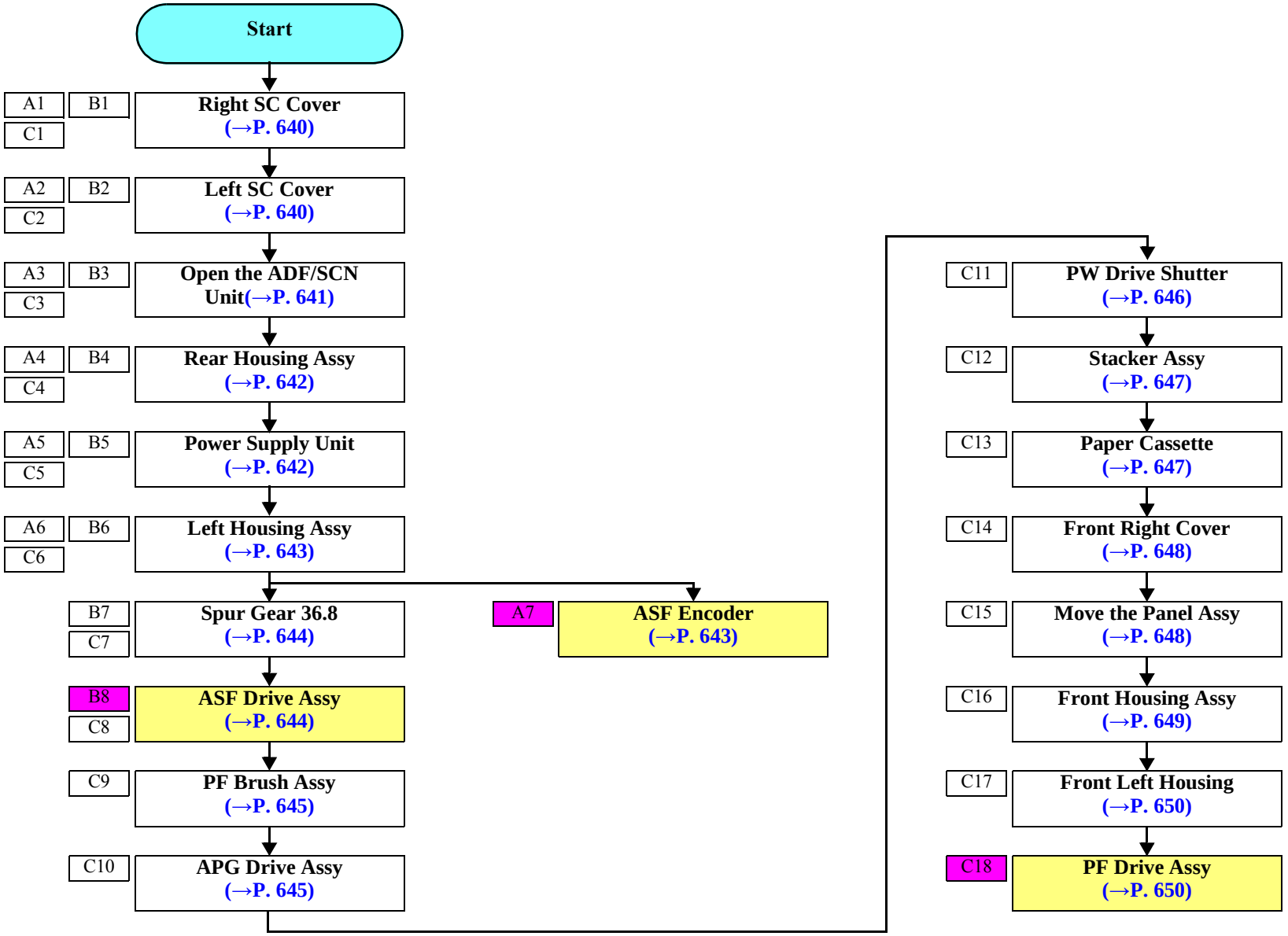
1. Remove the Rear ASF Seat Guide.

7.4.3.23 Paper Feed Mechanism 5

OUTLINE

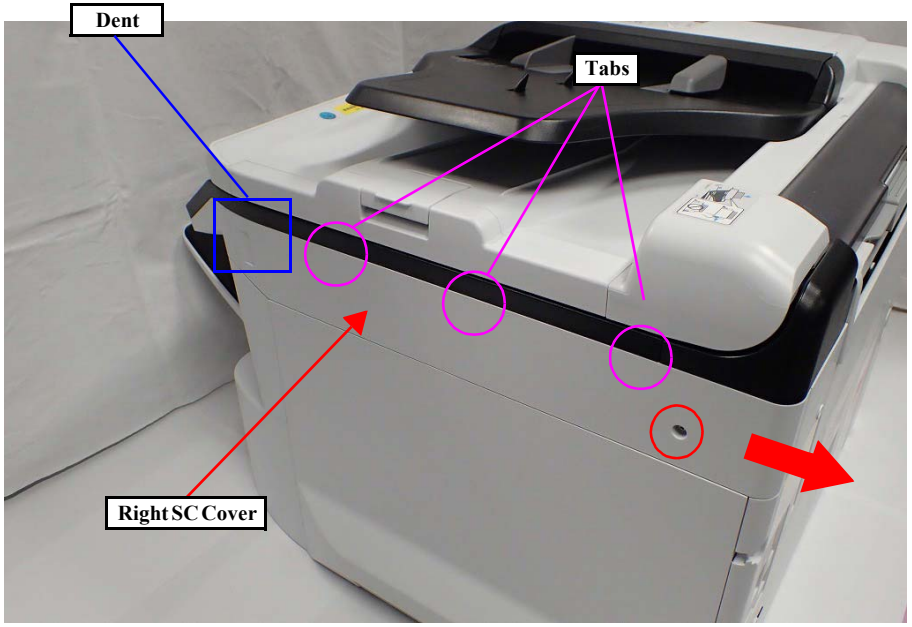
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
ASF Encoder	A	18 min 51 sec	---	18 min 51 sec
ASF Drive Assy	B	18 min 41 sec	34 sec	19 min 15 sec
PF Drive Assy	C	24 min 6 sec	17 sec	24 min 23 sec

DISASSEMBLY FLOWCHART



A1	B1
C1	

Right SC Cover

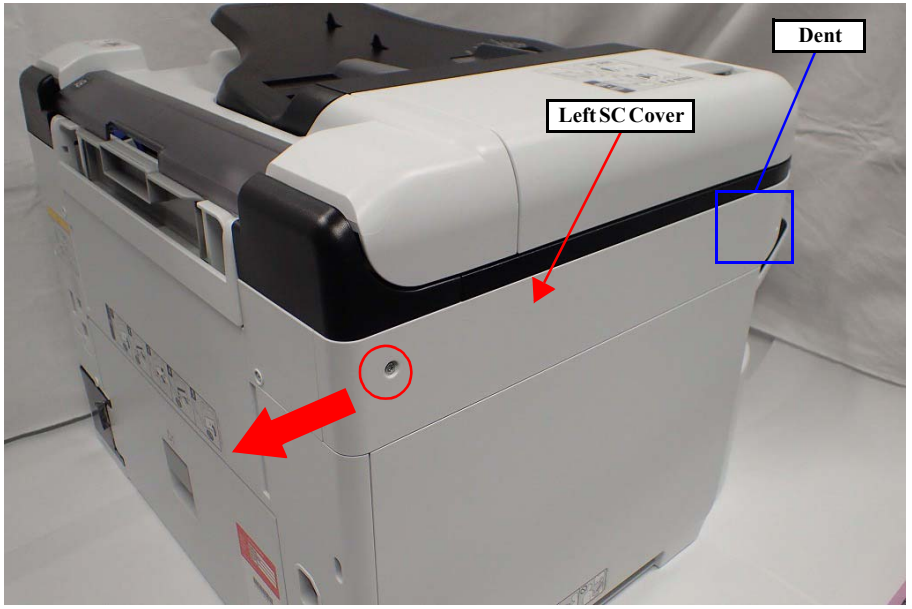


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2
C2	

Left SC Cover

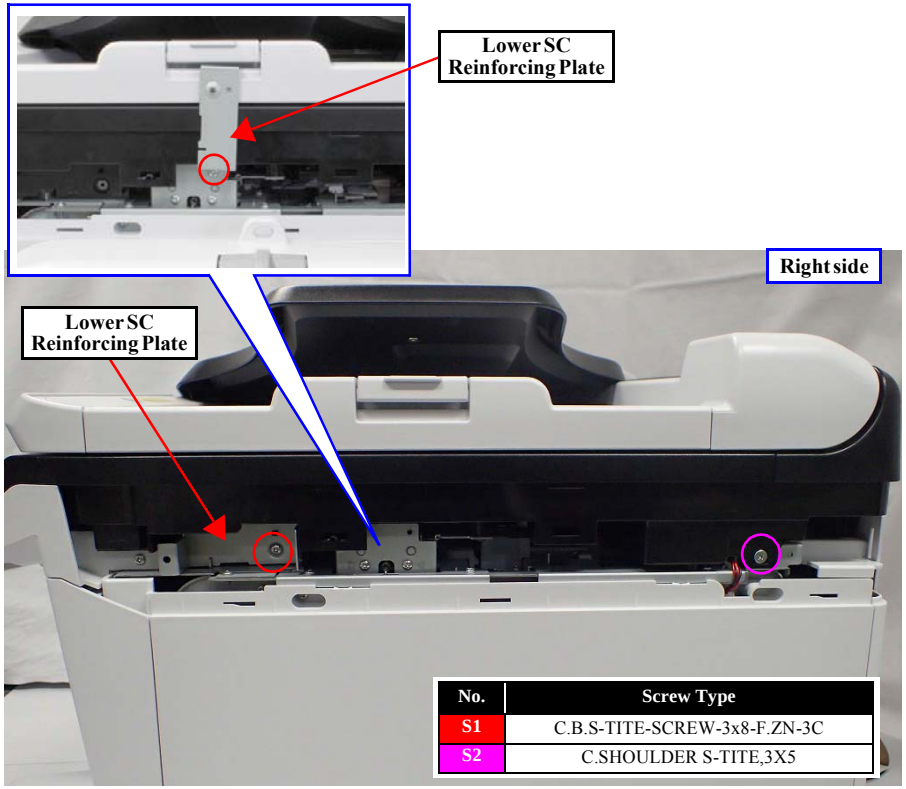


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3
C3	

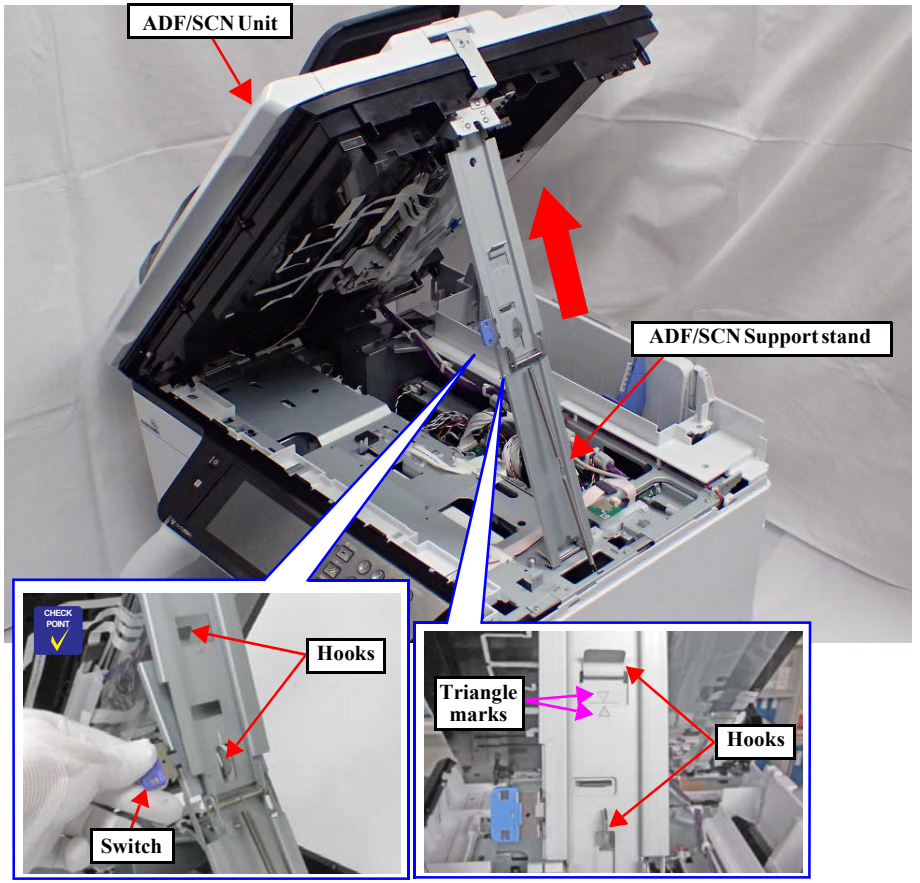
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



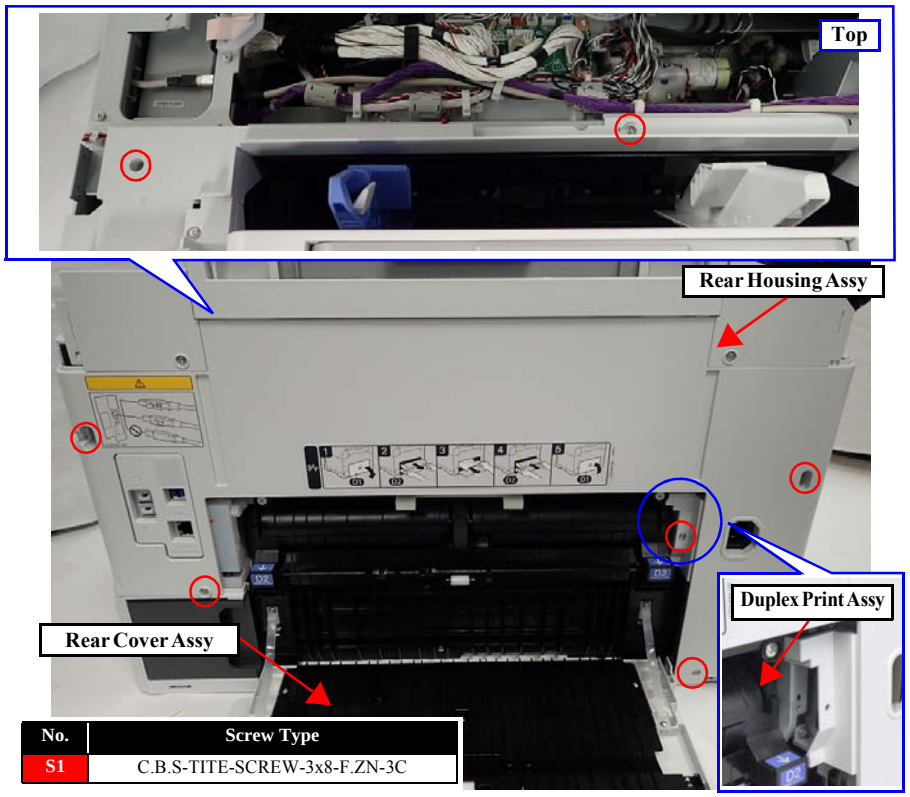
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4
C4	

Rear Housing Assy

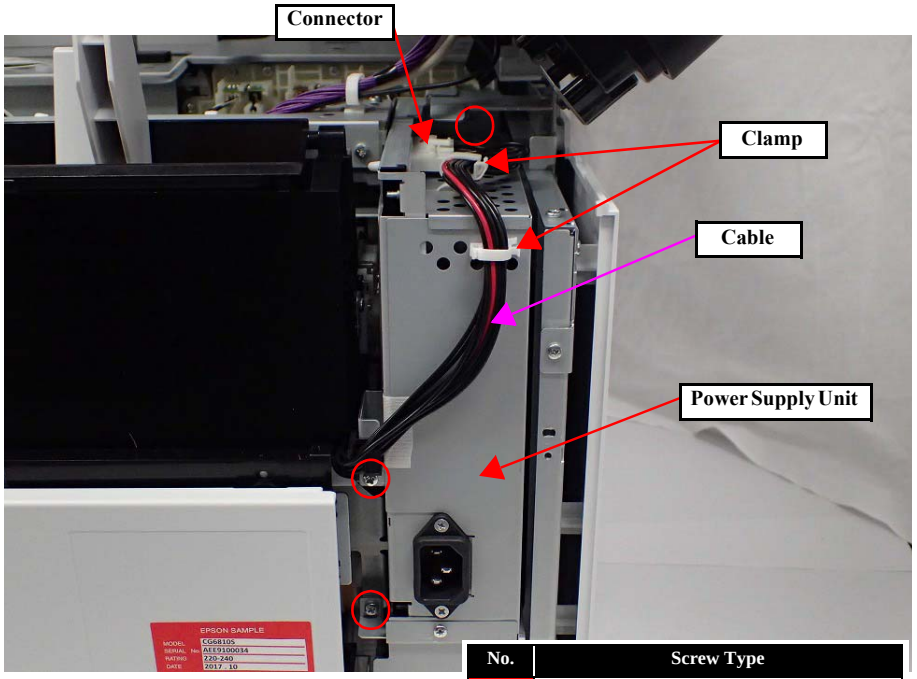


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

A5	B5
C5	

Power Supply Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Release the Cable from two clamps.
2. Disconnect the cable from connector of Power Supply Unit.
3. Remove three screws (S1:○), and remove the Power Supply Unit.

A6	B6
C6	

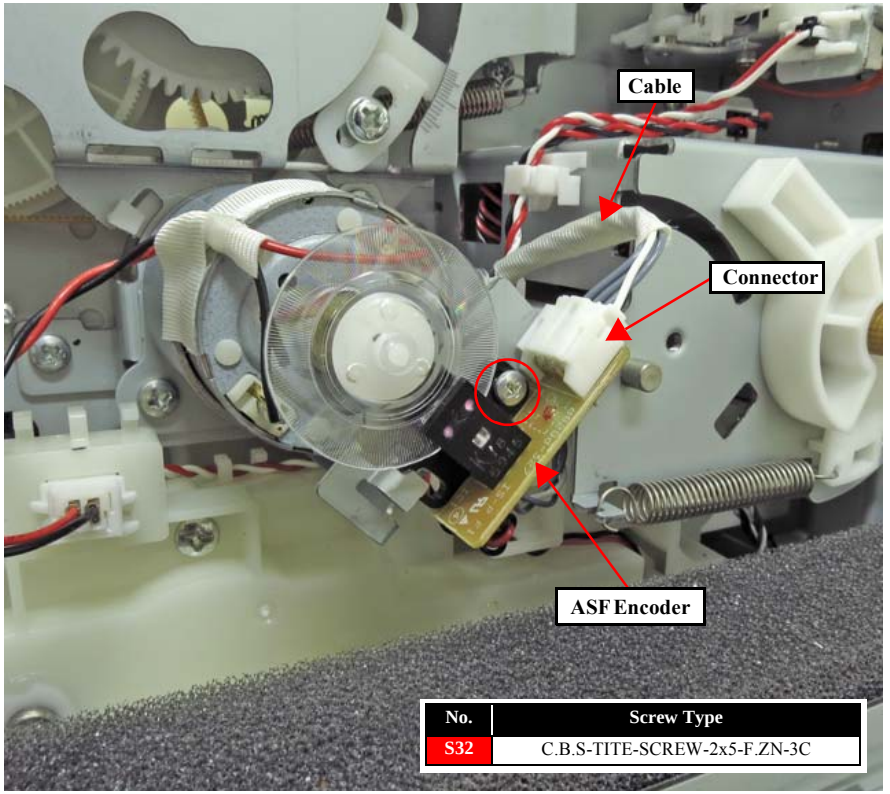
Left Housing Assy

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screw (S1: ○), and remove the Left Housing Assy.

A7	

ASF Encoder

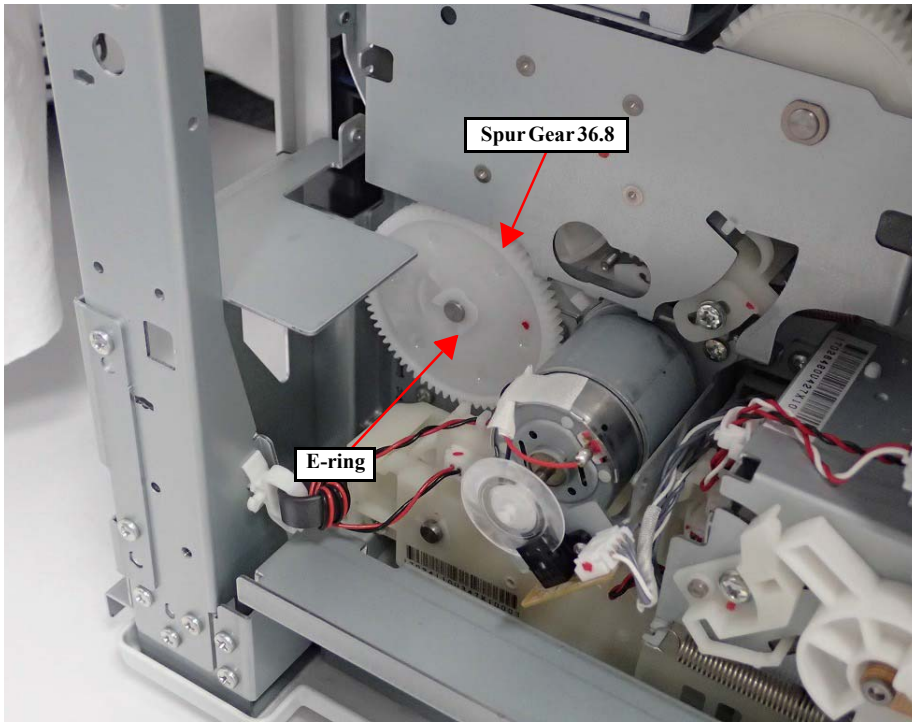


No.	Screw Type
S32	C.B.S-TITE-SCREW-2x5-F.ZN-3C

1. Disconnect the sensor cable from the connector.
2. Remove the screw (S32: ○), then remove the ASF Encoder.

	B7
C7	

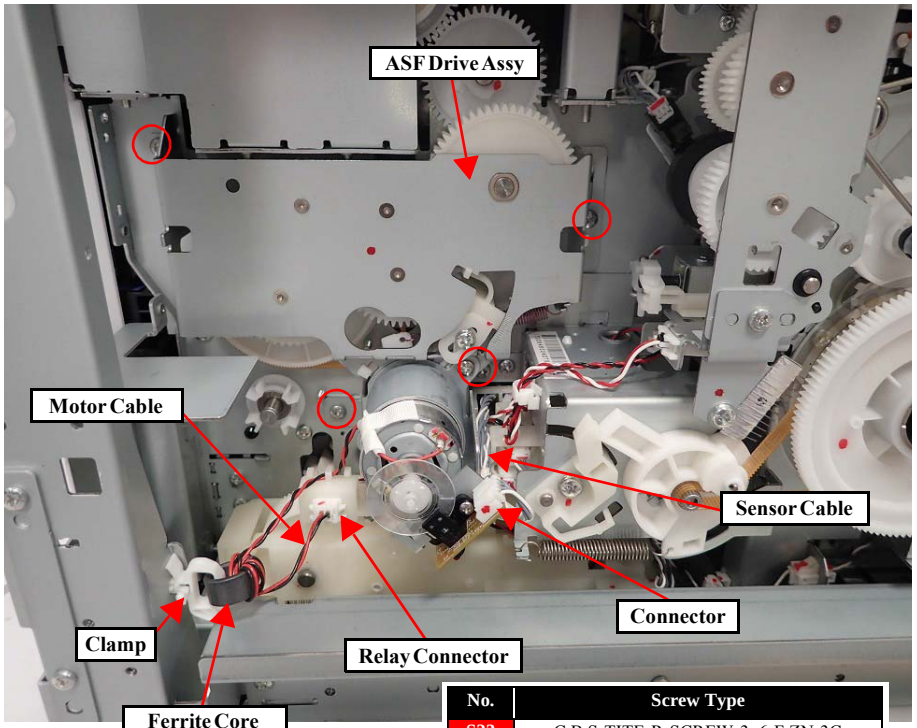
Spur Gear 36.8



1. Remove the E-ring, then remove the Spur Gear 36.8.

	B8
C8	

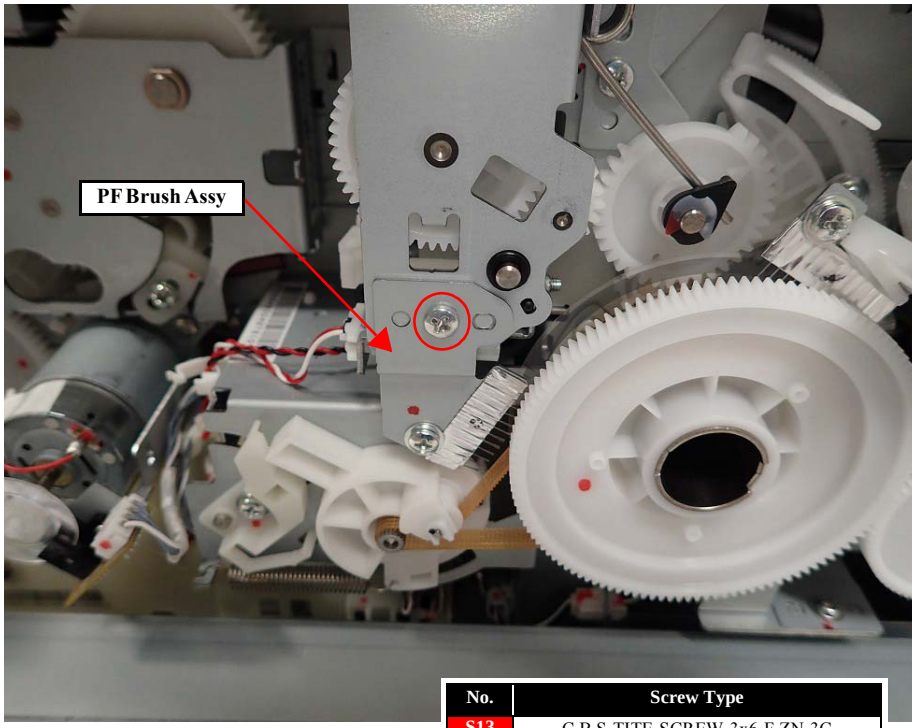
ASF Drive Assy



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Release the ferrite core from the clamp.
2. Disconnect the motor cable from the relay connector.
3. Disconnect the sensor cable from the connector.
4. Remove the four screws (S23: ○), then remove the ASF Drive Assy.

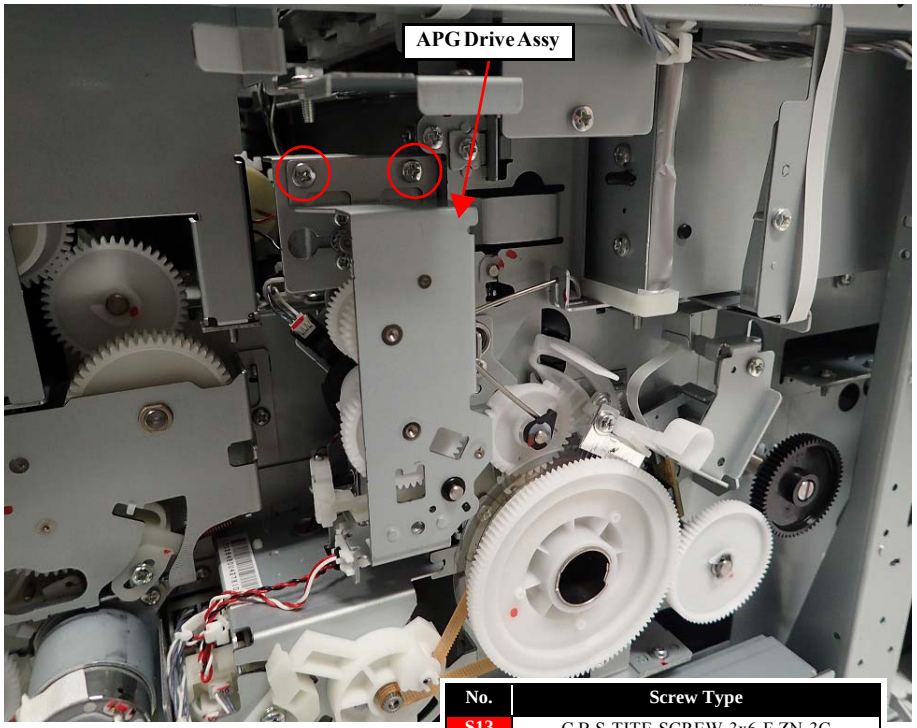
C9 PF Brush Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the screw (S13: ○), then remove the PF Brush Assy.

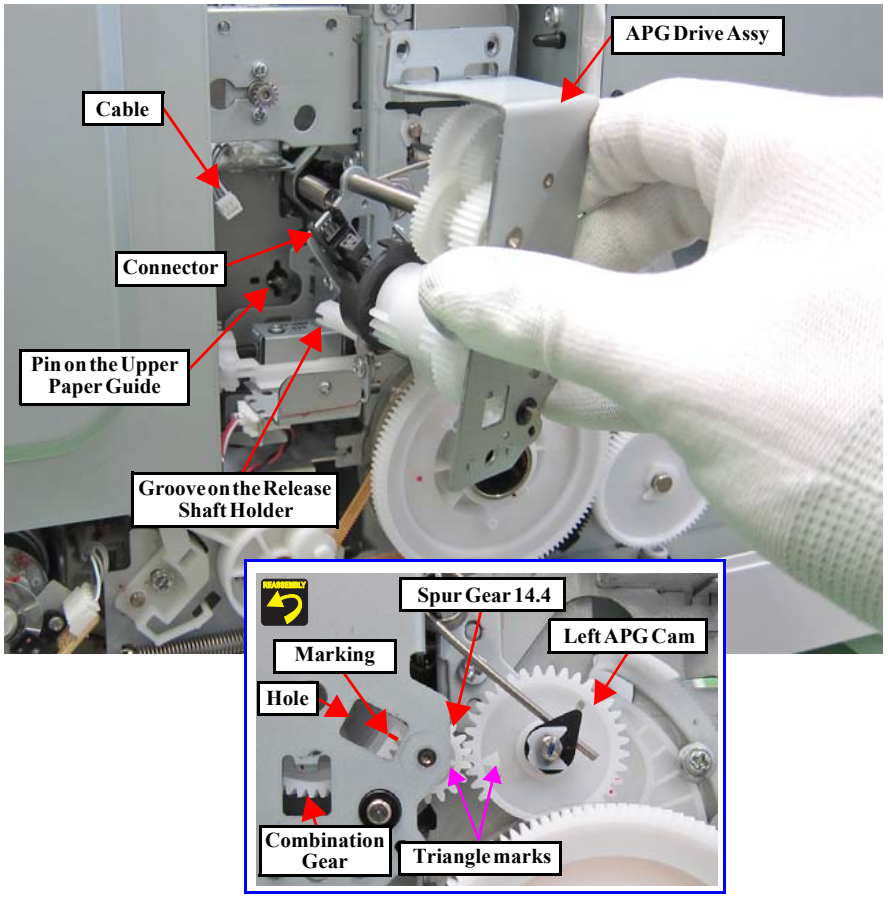
C10 APG Drive Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the two screws (S13: ○), then remove the APG Drive Assy.

APG Drive Assy

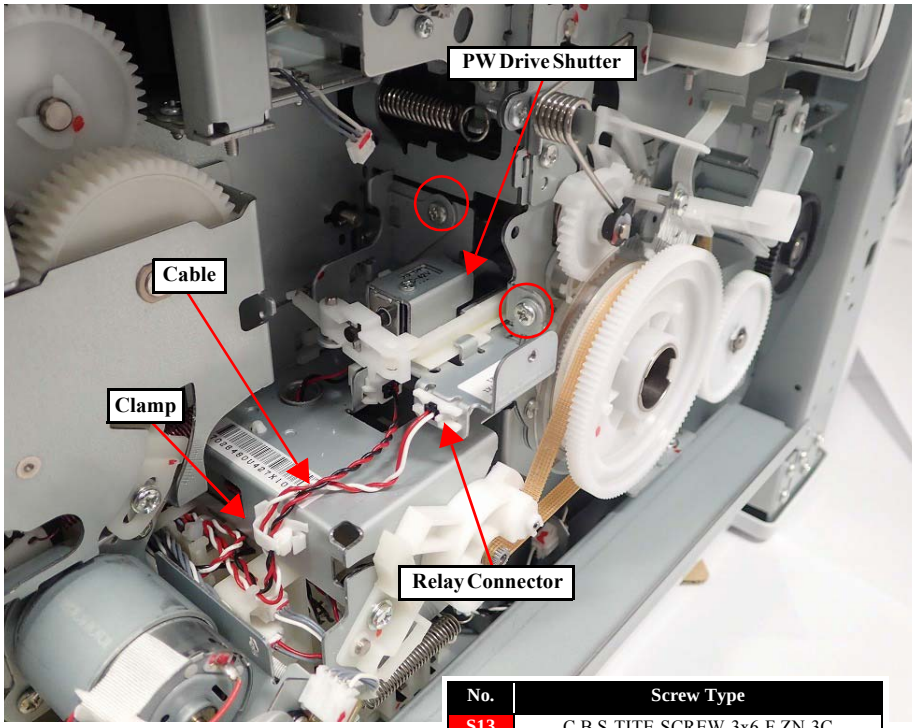


2. Disconnect the cable from the connector of the sensor.

- Align the triangle mark on the left APG cam with the triangle mark on the spur gear 14.4 on the APG Drive Assy. At this point, make sure the mark on the combination gear can be seen through the hole on the APG Drive Assy.
- Insert the pin on the upper paper guide into the groove on the release shaft holder of the APG Drive Assy.

C11	

PW Drive Shutter



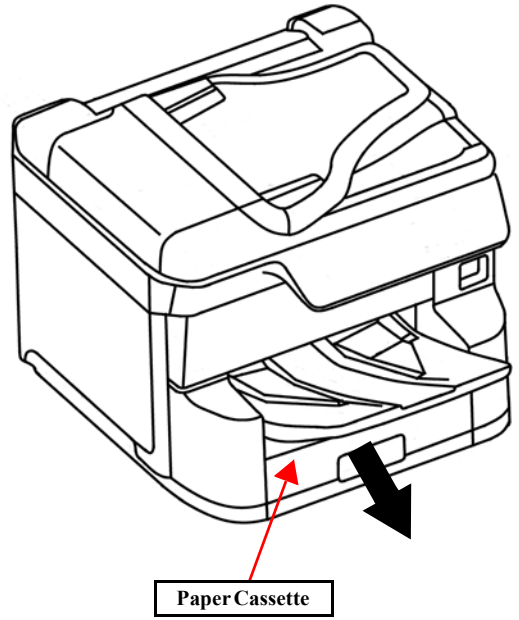
No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Release the cable of the PW Drive Shutter from the clamp.
2. Disconnect the cable from the relay connector.
3. Remove the two screws (S13: ○), then remove the PW Drive Shutter.

C12		Stacker Assy

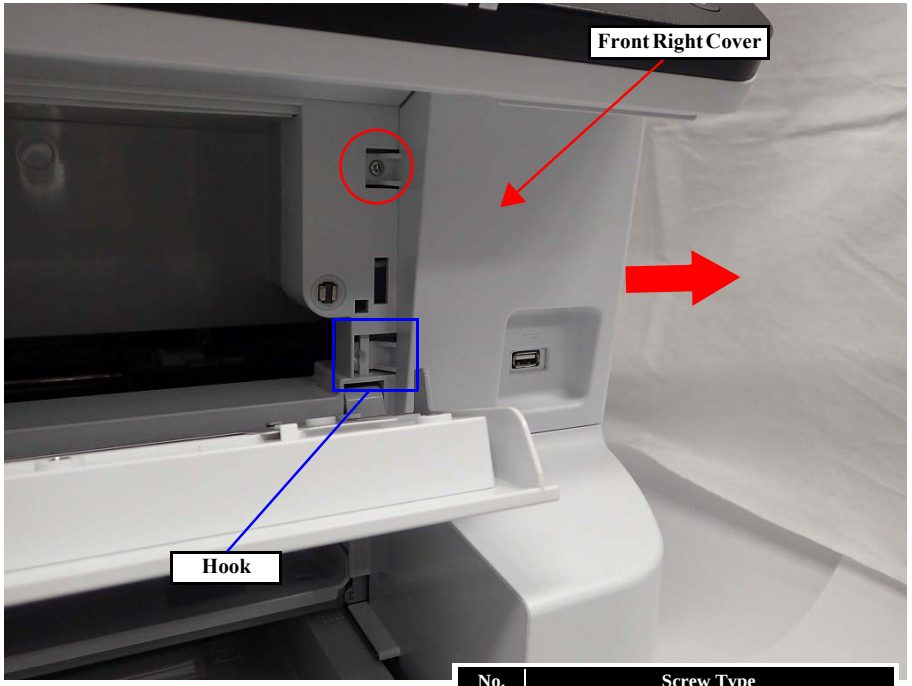
1. Remove the Stacker Assy.

C13		Paper Cassette



1. Remove Paper Cassette.

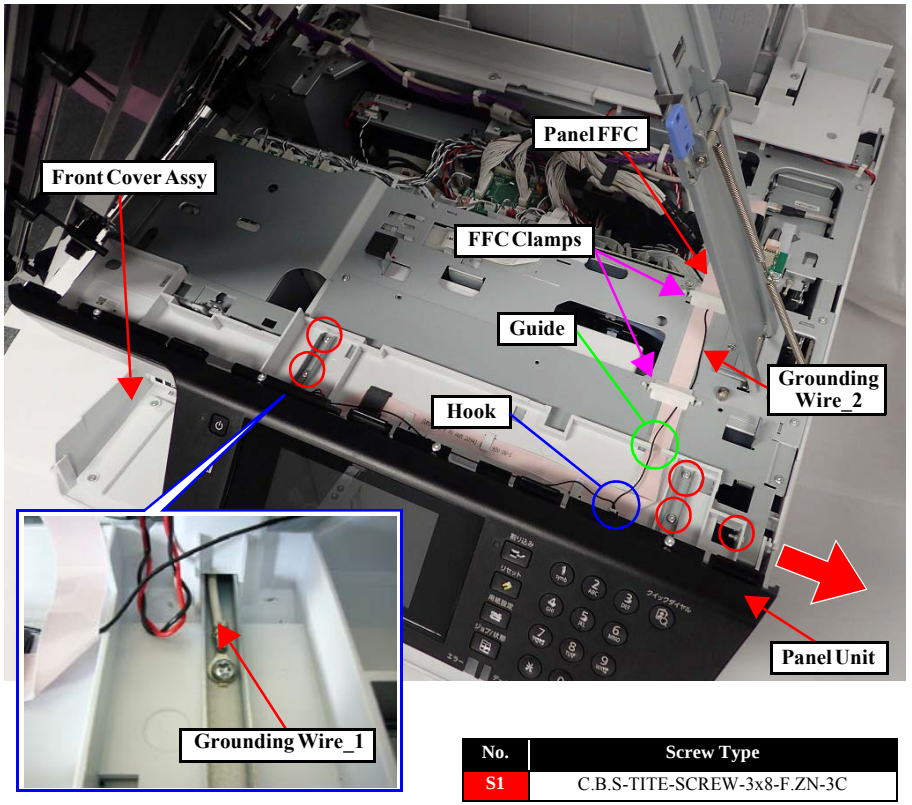
C14 Front Right Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

C15 Move the Panel Assy

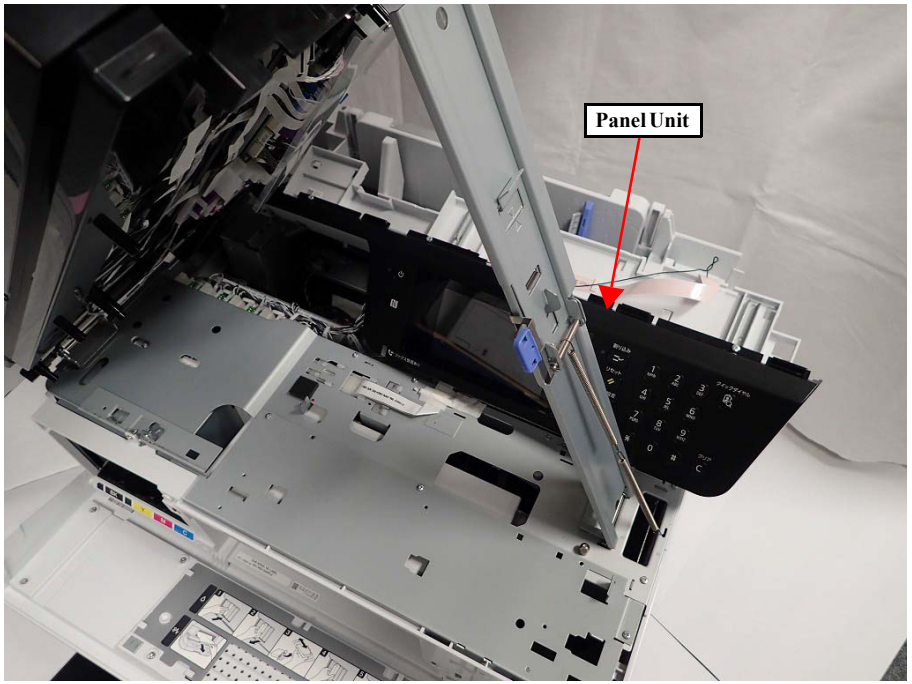


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○)
2. Remove the two FFC clamps.
3. Release the Panel FFC and the grounding wire_2 from the guide.
4. Release thgrounding wire_2 from Hook.
5. Open the Front Cover Assy.
6. Slide the panel unit rightward to remove it.

REASSEMBLY
- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

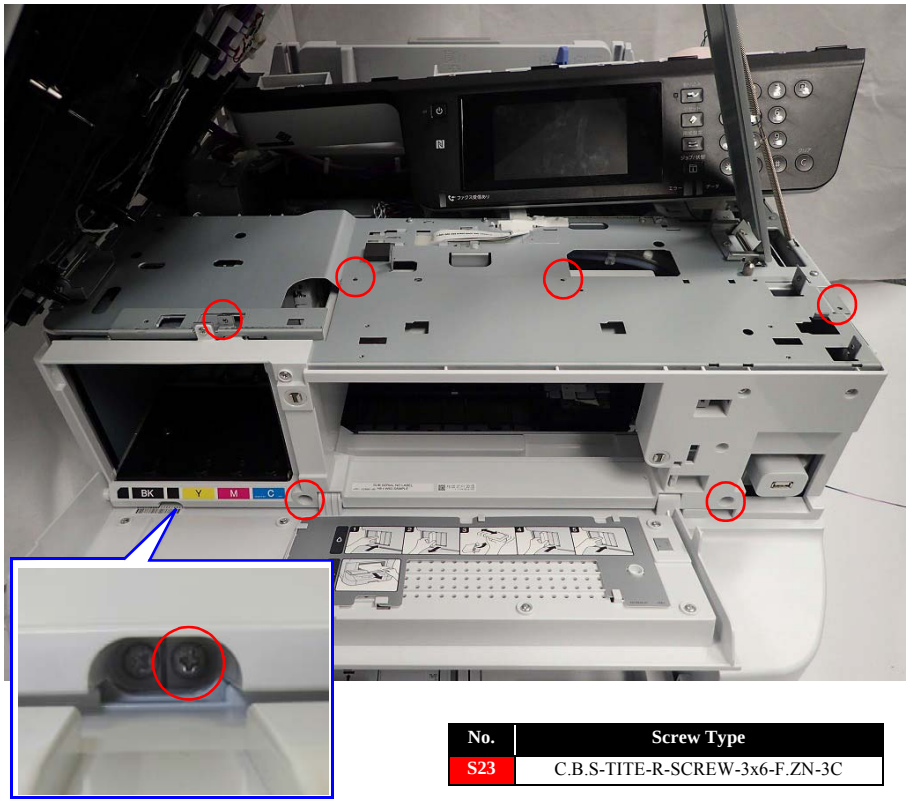
Move the Panel Unit



7. Put the panel unit at the rear side of the printer.

C16	

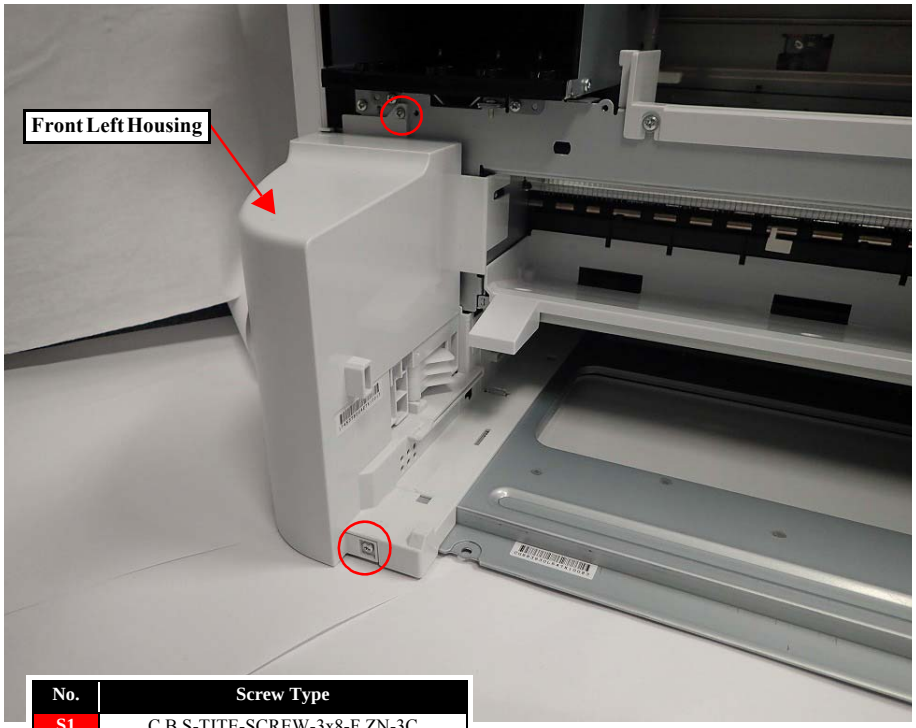
Front Housing Assy



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

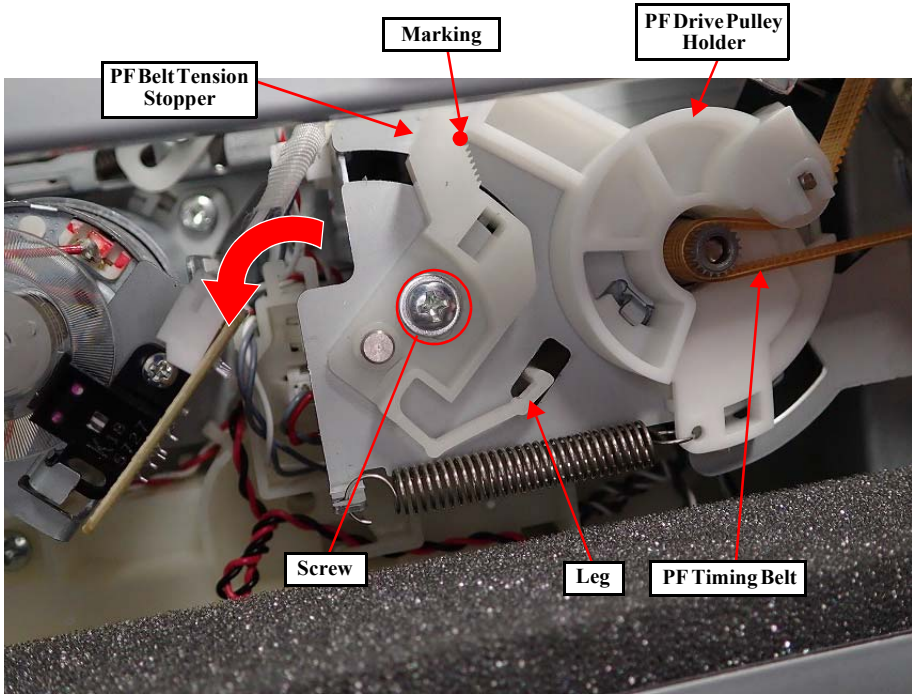
C17 Front Left Housing



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

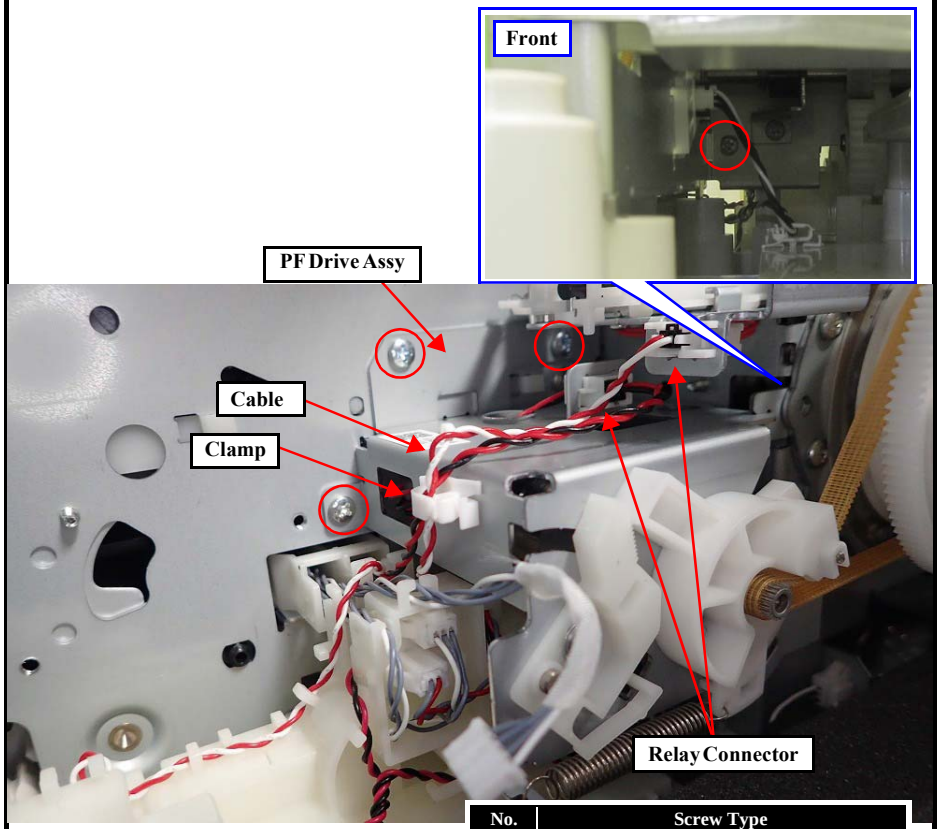
1. Remove the two screws (S1: ○), then remove the Front Left Housing.

C18 PF Drive Assy



1. The PF Belt Tension Stopper is in contact with the PF Drive Pulley Holder. Put a mark on the contact point.
2. Loosen the screw that secures the PF Belt Tension Stopper.
3. Release the leg of the PF Belt Tension Stopper from the frame, then slide it rearward.
4. Remove the PF Timing Belt from the PF Drive Pulley Holder.

PF Drive Assy



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

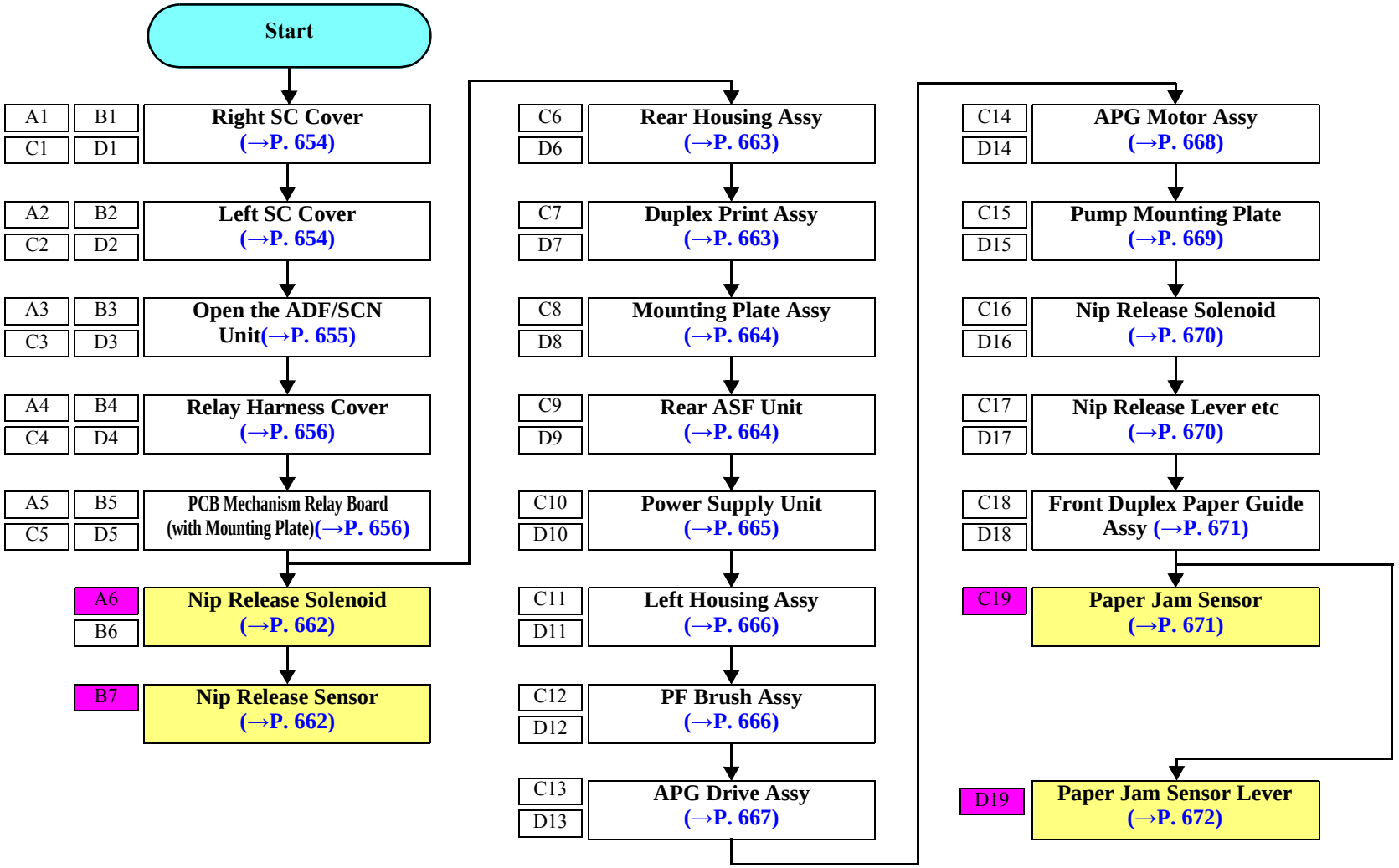
5. Disconnect the cables from the two relay connectors, and release the cables from the clamp.
6. Remove the four screws (S23: ○), then remove the PF Drive Assy.

7.4.3.24 Paper Feed Mechanism 6

OUTLINE

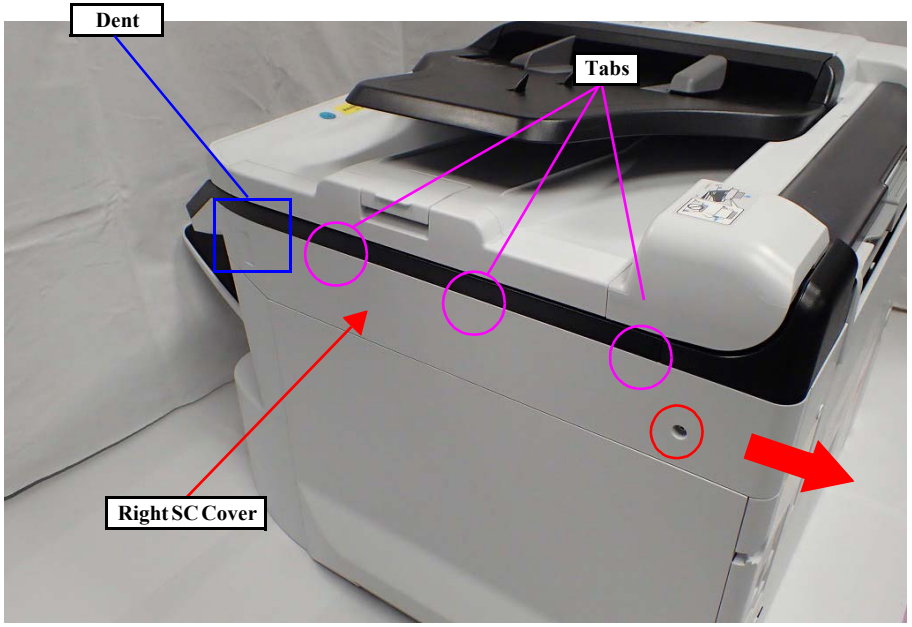
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Nip Release Solenoid	A	16 min 51 sec	5 sec	16 min 56 sec
Nip Release Sensor	B	17 min 33 sec	5 sec	17 min 38 sec
Paper Jam Sensor	C	36 min 59 sec	---	36 min 59 sec
Paper Jam Sensor Lever	D	37 min 37 sec	---	37 min 37 sec

DISASSEMBLY FLOWCHART



A1	B1
C1	D1

Right SC Cover

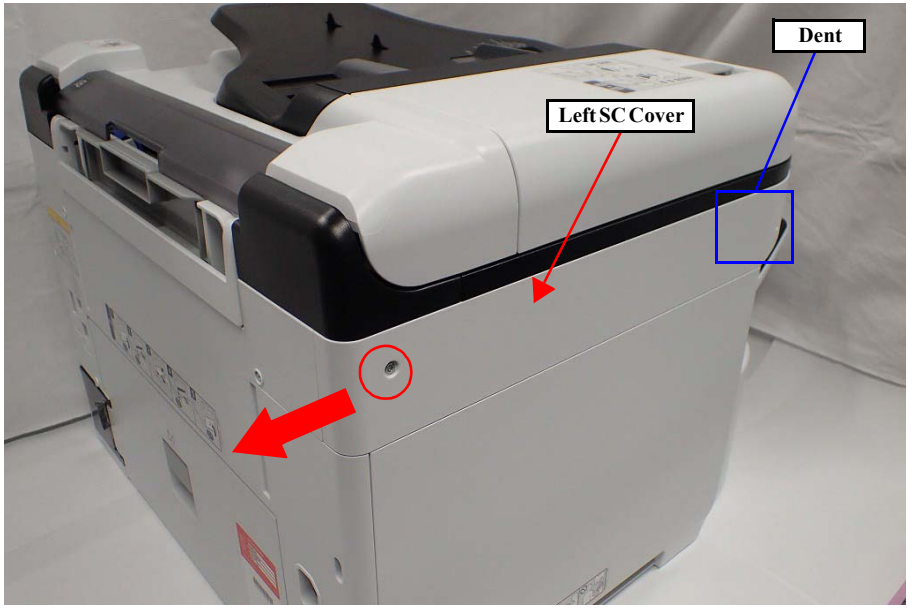


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2
C2	D2

Left SC Cover

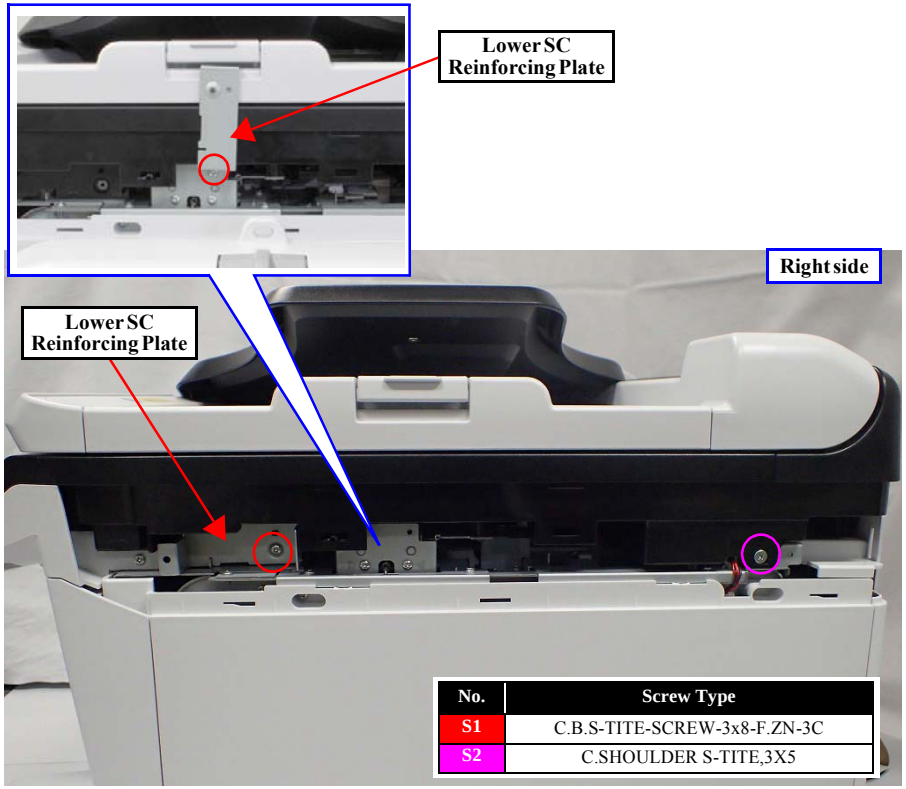


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3
C3	D3

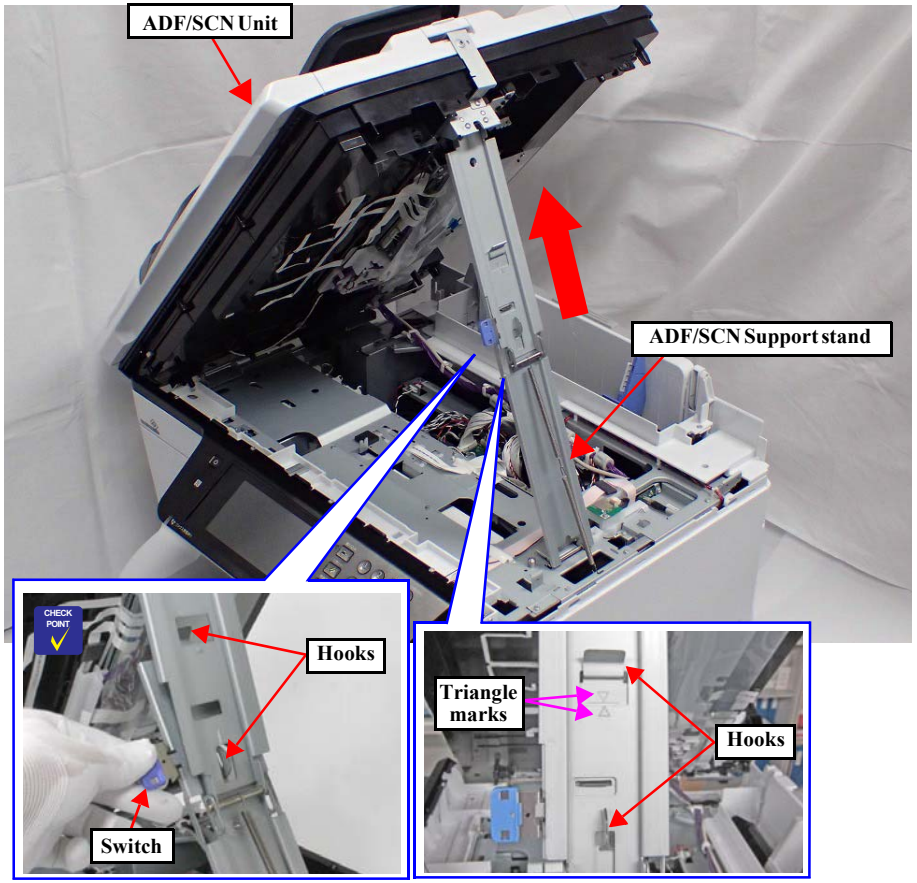
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



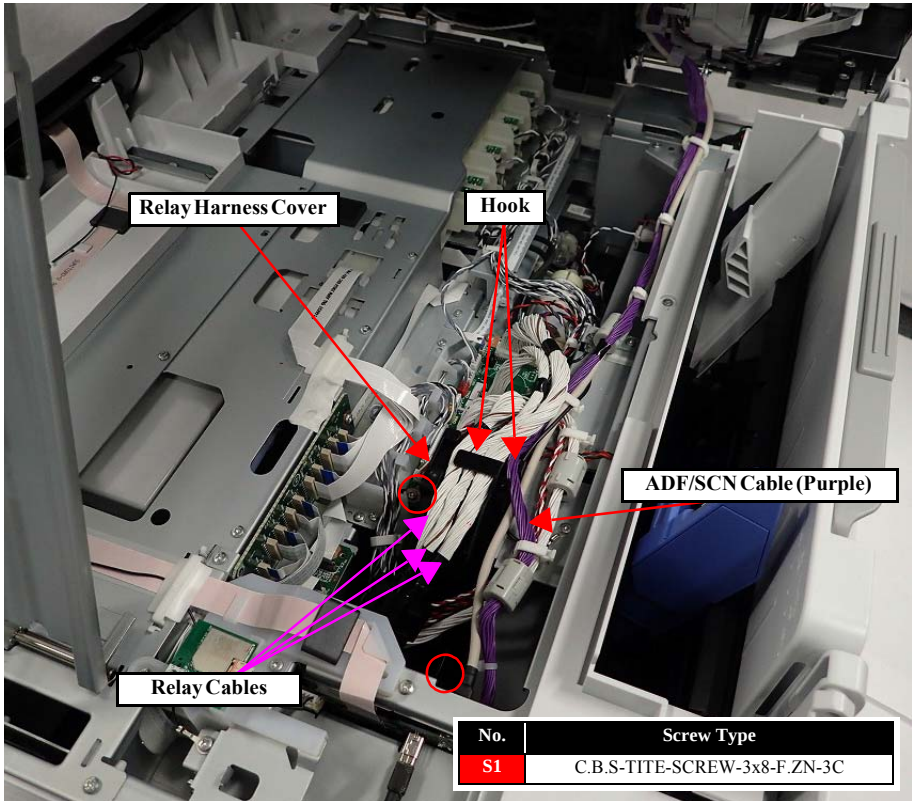
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4	B4
C4	D4

Relay Harness Cover

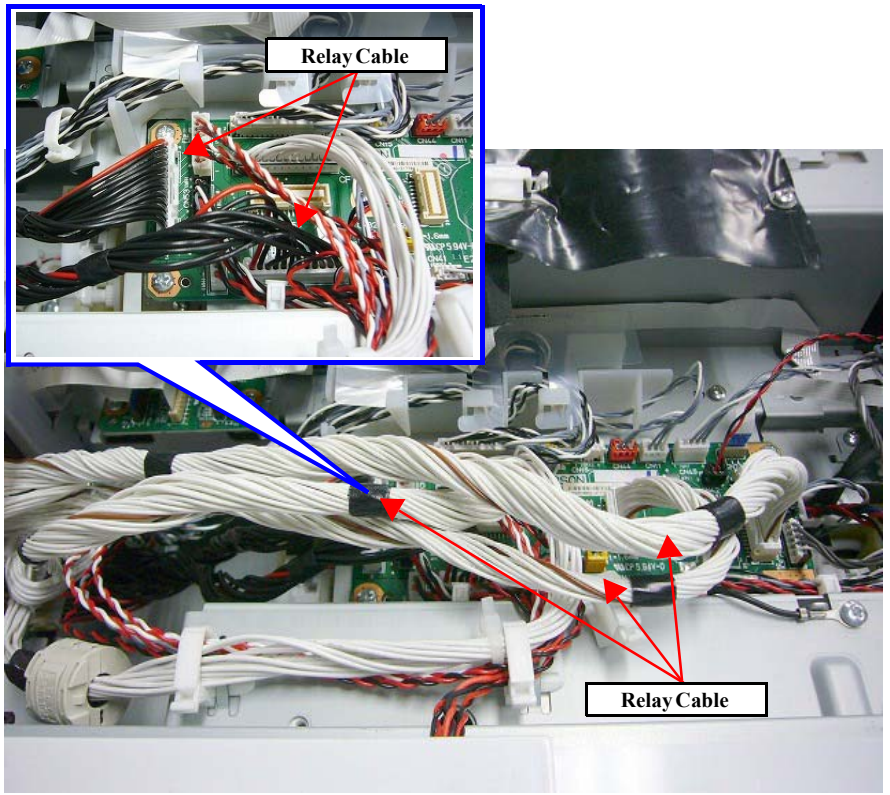


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Release the ADF/SCN Cable (Purple) from the hook of the Relay Harness Cover.
2. Release the relay cables (CN401, CN402, CN403) from hook of Relay Harness Cover.
3. Remove the two screws (S1: ○), then remove the Relay Harness Cover.

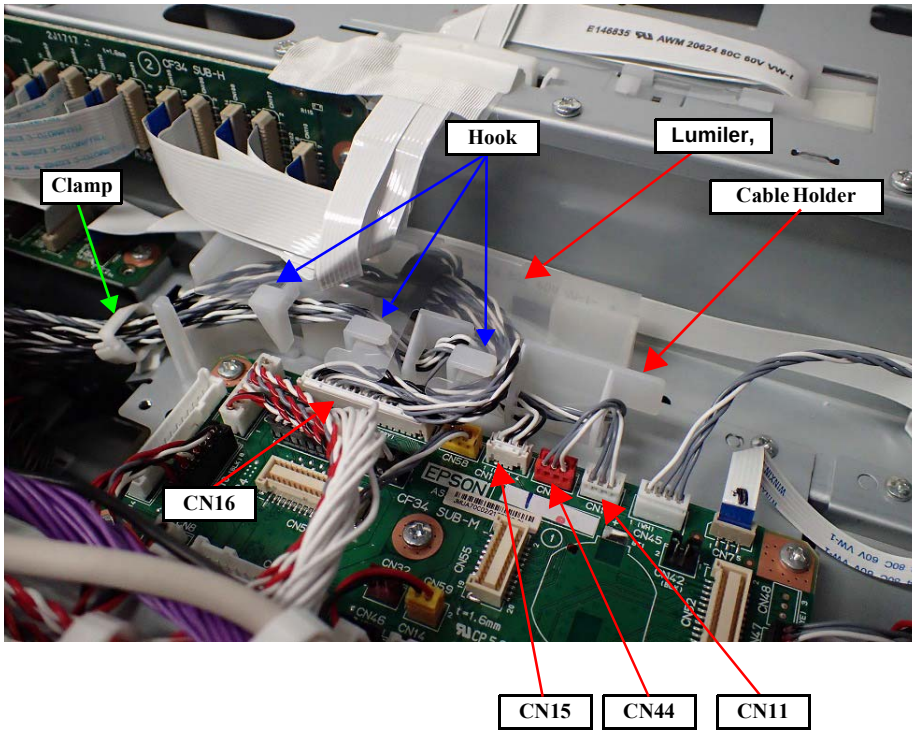
A5	B5
C5	D5

PCB Head Relay Board (with Mounting Plate)



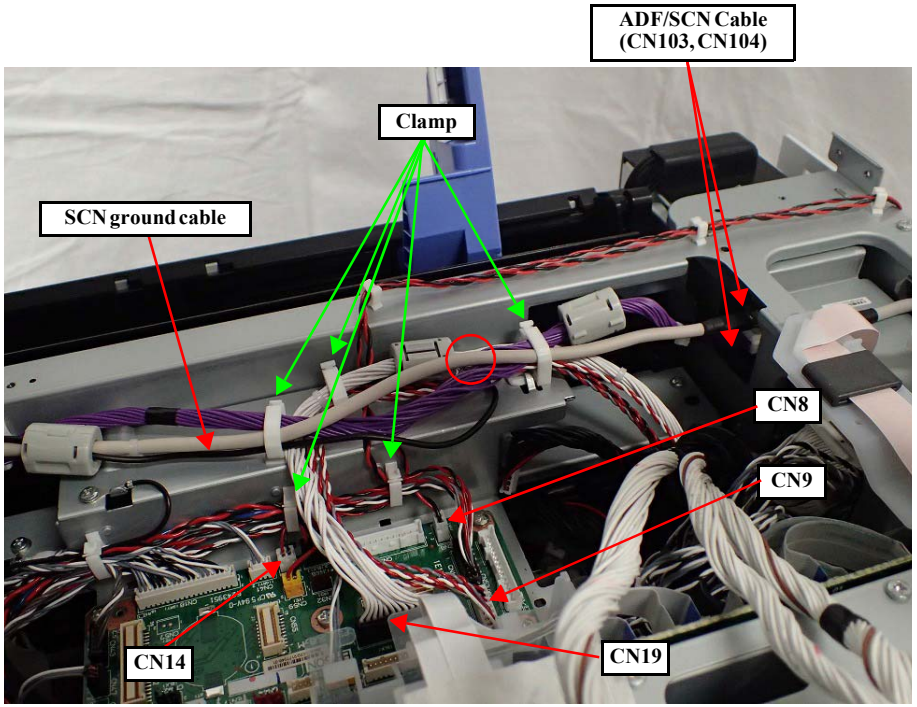
1. Disconnect the five Relay cables from the PCB Mechanism Relay Board.

PCB Mechanism Relay Board (with Mounting Plate)



2. Remove the cable of front side (around the cable holder) by the following procedure.
   - 2-1. Release the three hooks of lumiler, then open the lumiler .
   - 2-2. Release the clamp.
   - 2-3. Disconnect the four cables (CN11, CN15, CN16, CN44) from the PCB Mechanism Relay Board.
   - 2-4. Release the cable from the Cable Holder.

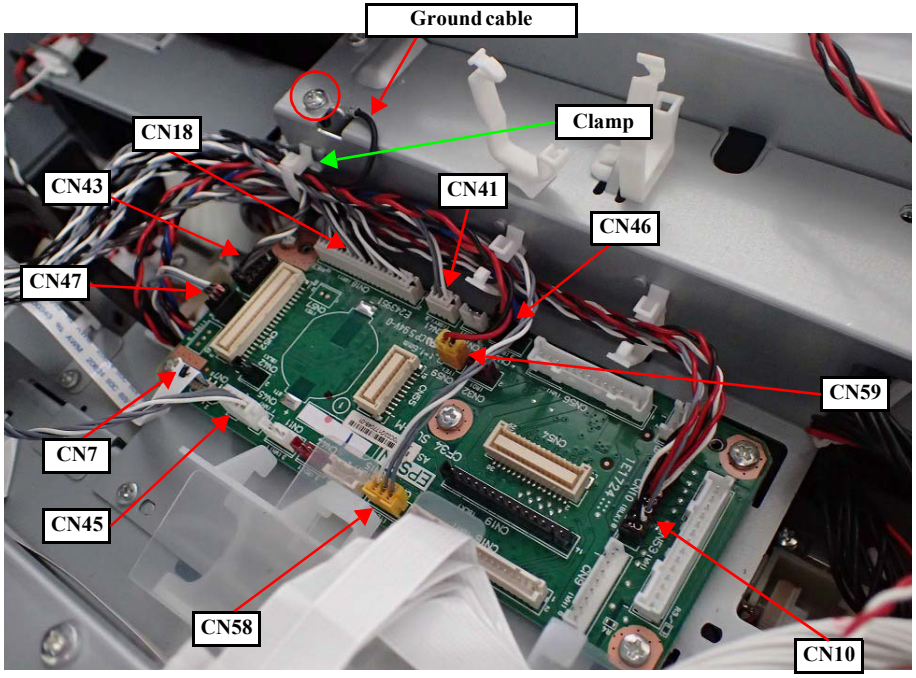
PCB Mechanism Relay Board (with Mounting Plate)



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

3. Disconnect the cables of rear side(1) by the following procedure.
   - 3-1. Disconnect the ADF/SCN cable from the connector (CN103, CN104) of the main board.
   - 3-2. Remove the screw (S1: ○), then remove the SCN ground cable.
   - 3-3. Release the five clamps.
   - 3-4. Disconnect four relay cables from connector (CN8, CN9, CN14, CN19) of the PCB Mechanism Relay Board.

PCB Mechanism Relay Board (with Mounting Plate)

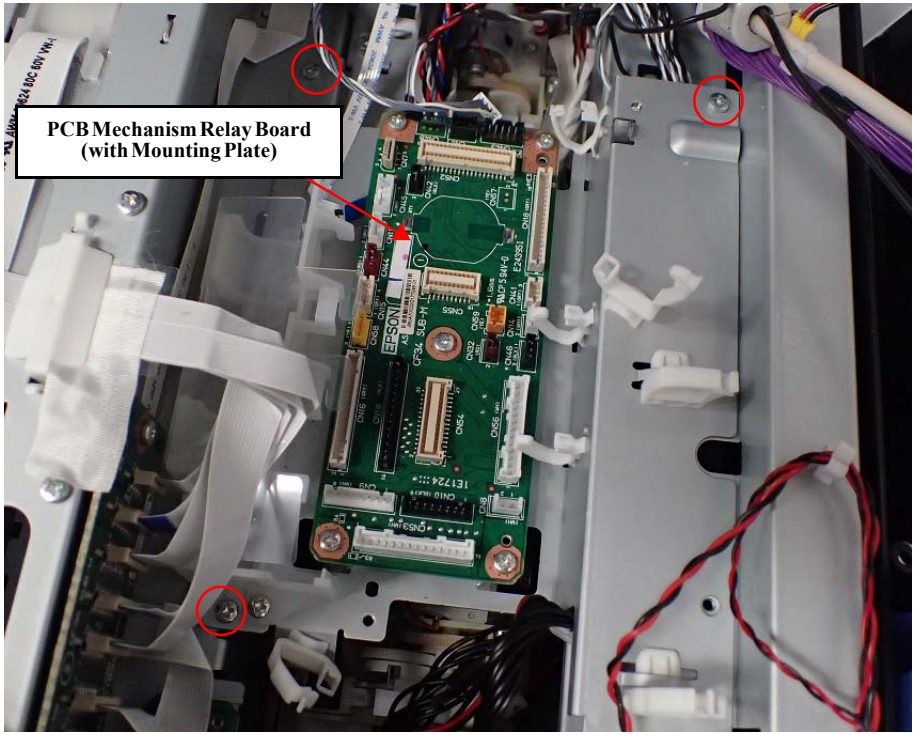


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

4. Disconnect the cables of rear side(1) by the following procedure.
   4-1. Release the cable from the clamp.
   4-2. Disconnect the nine cables and a FFC from the following connector of the PCB mechanism Relay Board.
   - CN7
   - CN41
   - CN46
   - CN58
   - CN10
   - CN43
   - CN47
   - CN59
   - CN18
   - CN45

   4-3. Remove the screw (S1: ○), then remove the Ground cable.

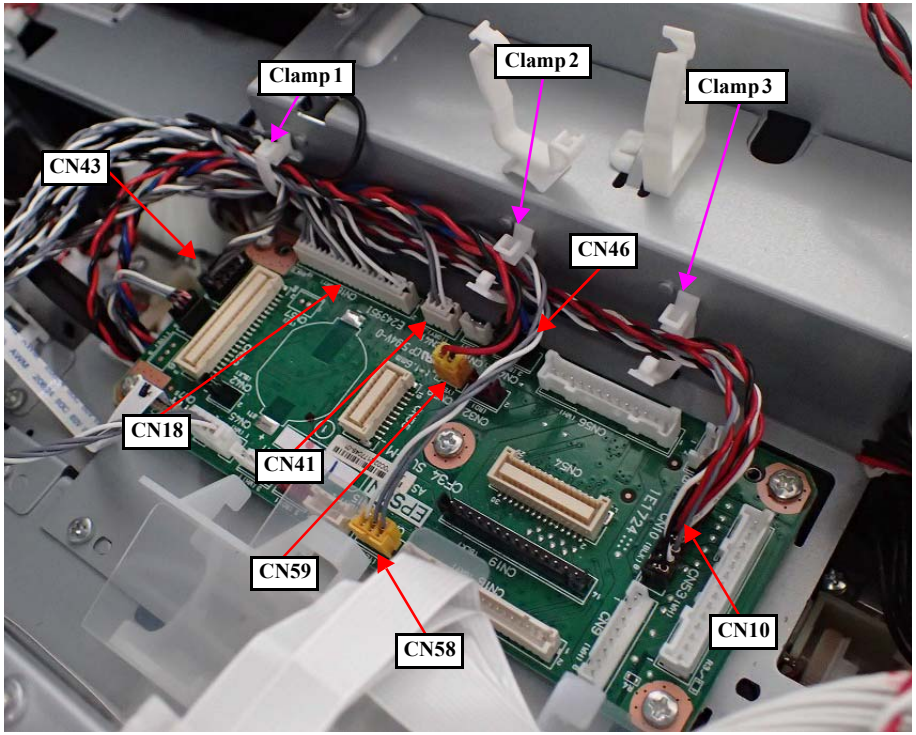
PCB Mechanism Relay Board (with Mounting Plate)



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

5. Remove the three screws (S1: ○), then remove the PCB Mechanism Relay Board (with Mounting Plate).

PCB Mechanism Relay Board (with Mounting Plate)

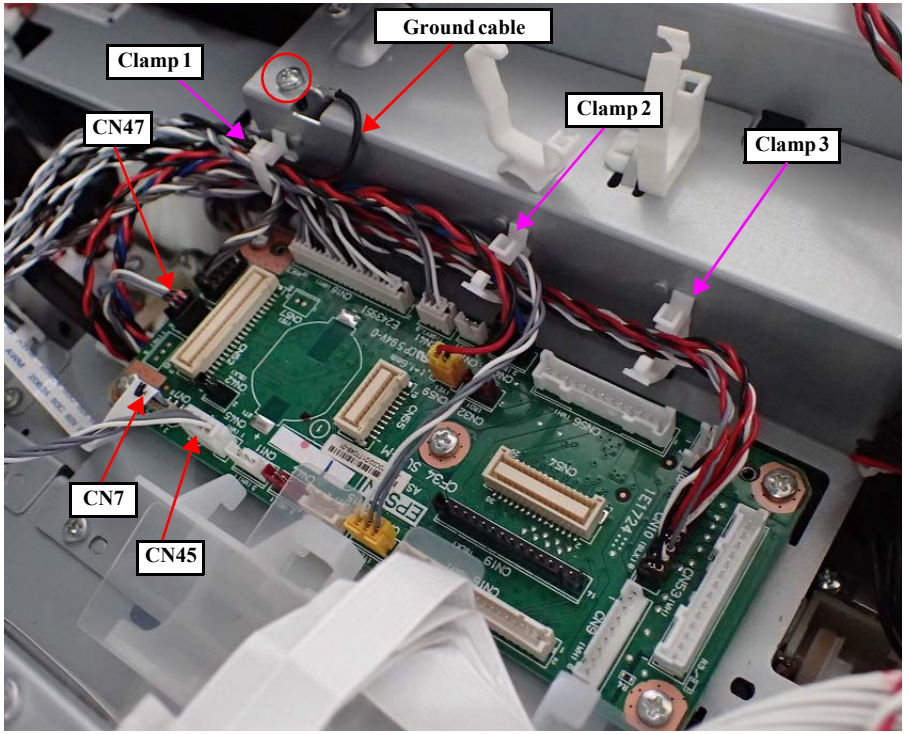


REASSEMBLY

Rotate the cables by the following procedure.

1. Route the cable to the following specified clamp, then connect the cable to PCB Mechanism Relay board.
   - ☐ Cable (CN10: Black):Clamp 3 > Clamp 2 > Clamp 1
   - ☐ Cable (CN58: Yellow):Clamp 2 > Clamp 1
   - ☐ Cable (CN59: Yellow):Clamp 2 > Clamp 1
   - ☐ Cable (CN46: Black):Clamp 2 > Clamp 1
   - ☐ Cable (CN41: White):Clamp 1
   - ☐ Cable (CN18: White):Clamp 1
   - ☐ Cable (CN43: Black):Clamp 1

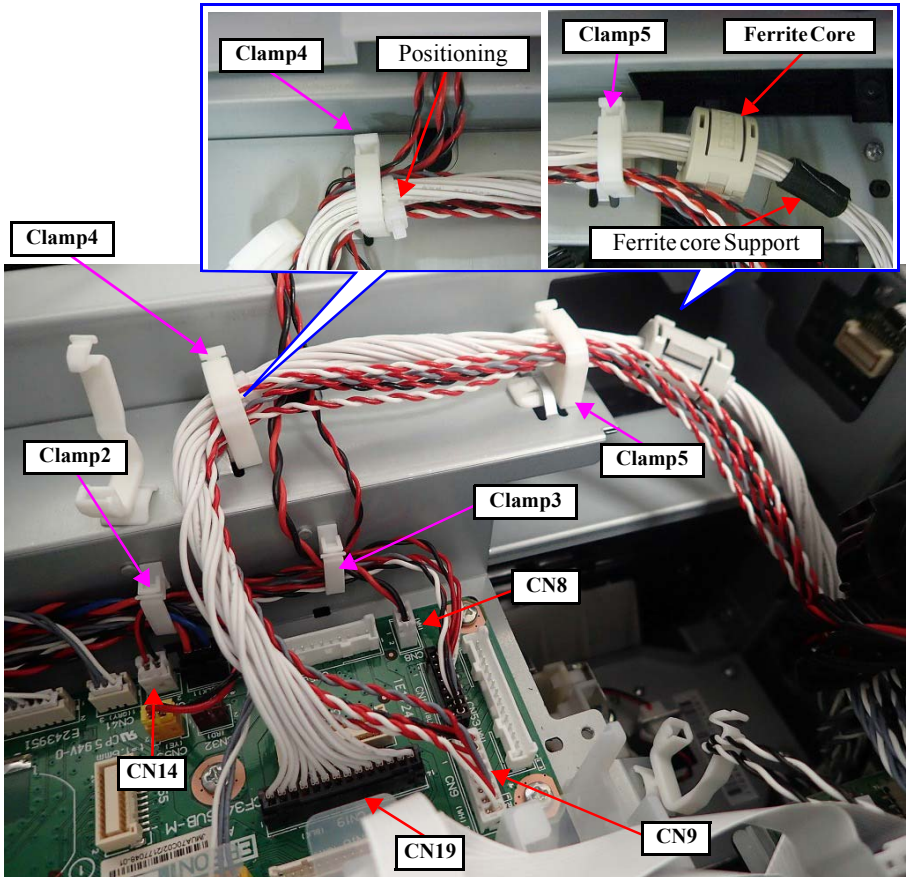
PCB Mechanism Relay Board (with Mounting Plate)



REASSEMBLY

2. Rotate the ground cable to clamp, then fix it by screw (S1).
3. Connect the following cable and FFC to the PCB Mechanism Relay Board.
   - ☐ FFC (CN7: White)
   - ☐ Cable (CN45: White)
   - ☐ Cable (CN47: Black)

PCB Mechanism Relay Board (with Mounting Plate)



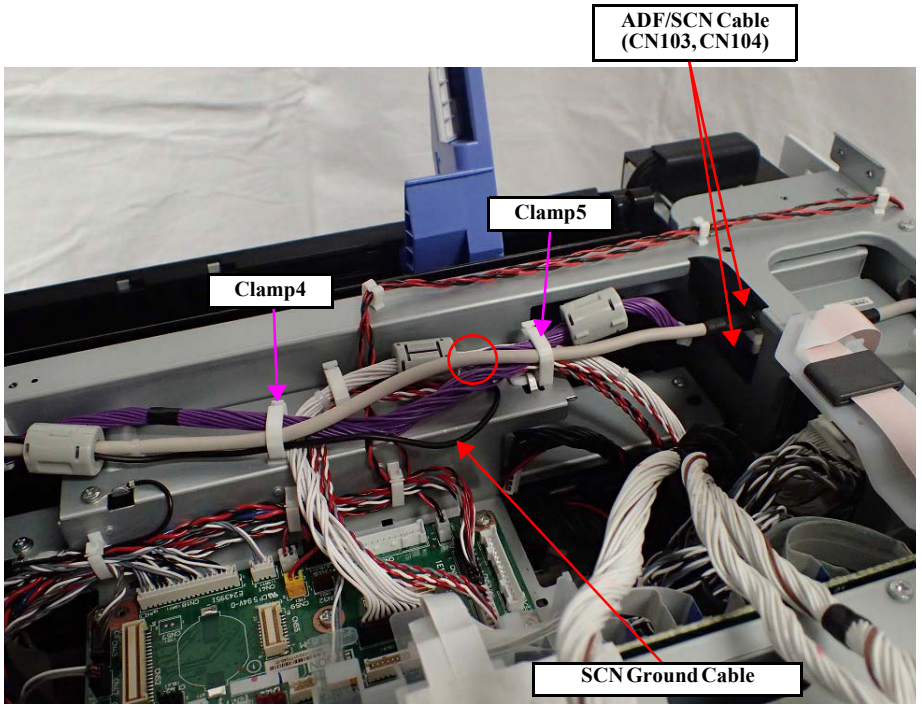
4. Route the cables to the following specified clamp, then connect the cables to the PCB Mechanism Relay Board.
   - ☐ Cable (CN14: White):Clamp 2 > Clamp 3
   - ☐ Cable (CN8: White:Clamp 3
   - ☐ Cable (CN9: White:Clamp 4 > Clamp 5
   - ☐ Cable (CN19: Black:Clamp 4 > Clamp 5

CAUTION

Note the following points when you rotate the cable (CN19).

- Set the positioning of the cable at left side (Home position side) of clamp 4.
- Set the ferrite core of the cable to between clamp5 and ferrite core support.

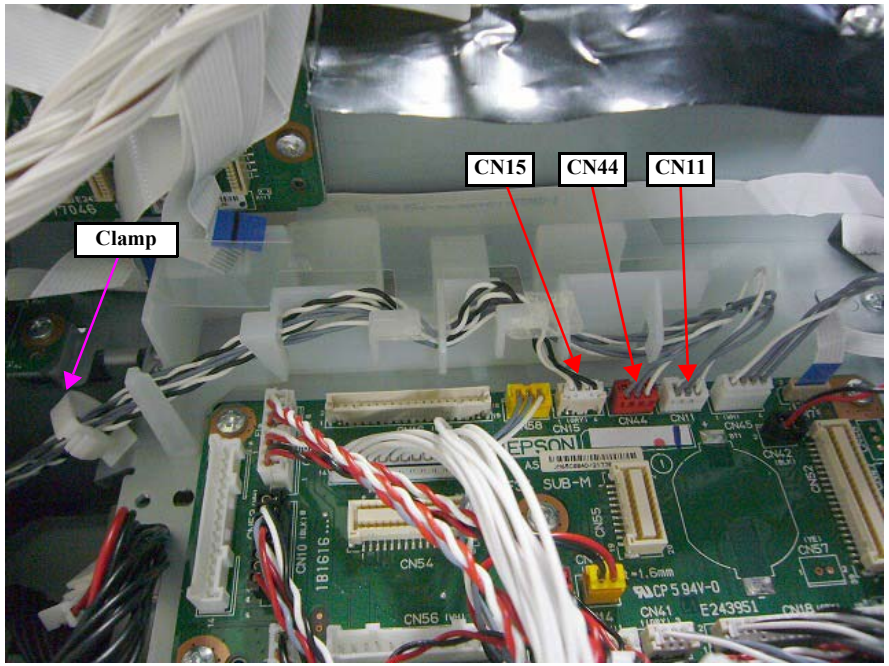
PCB Mechanism Relay Board (with Mounting Plate)



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

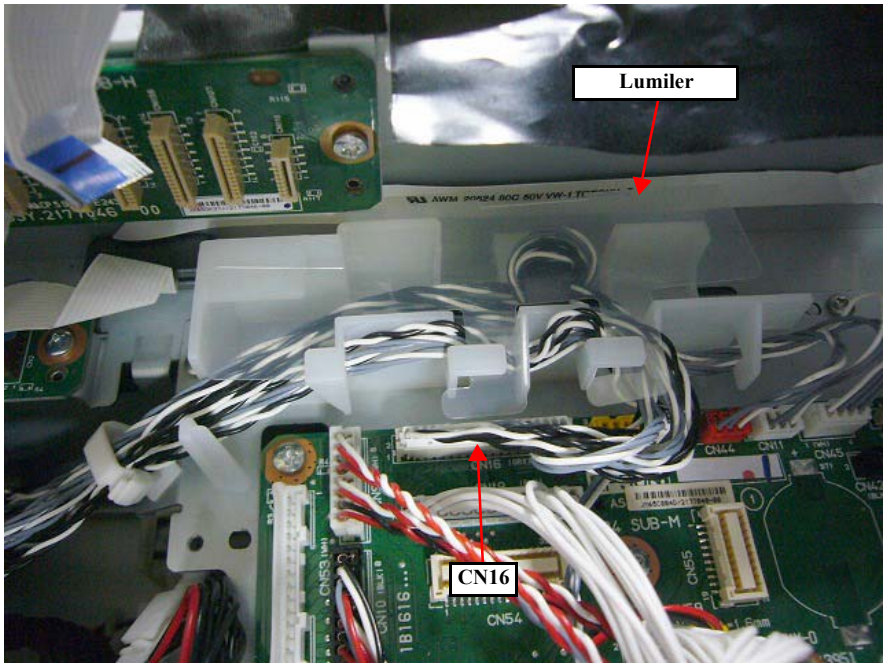
5. Connect the ADF/SCN Cables (CN103, CN104) to Main Board, and fix the these cables by clamp4 and Clamp 5.
6. Fix the SCN Ground Cable by screw (S1).
7. Fix the SCN Ground Cable by Clamp4.

PCB Mechanism Relay Board (with Mounting Plate)



8. Route the cables to Cable Holder following the above figure, then connect the cables to PCB Mechanism Relay Board.
   - ☐ Cable (CN11: White):four hooks > Clamp
   - ☐ Cable (CN44: Red):four hooks > Clamp
   - ☐ Cable (CN15: White:three hooks > Clamp

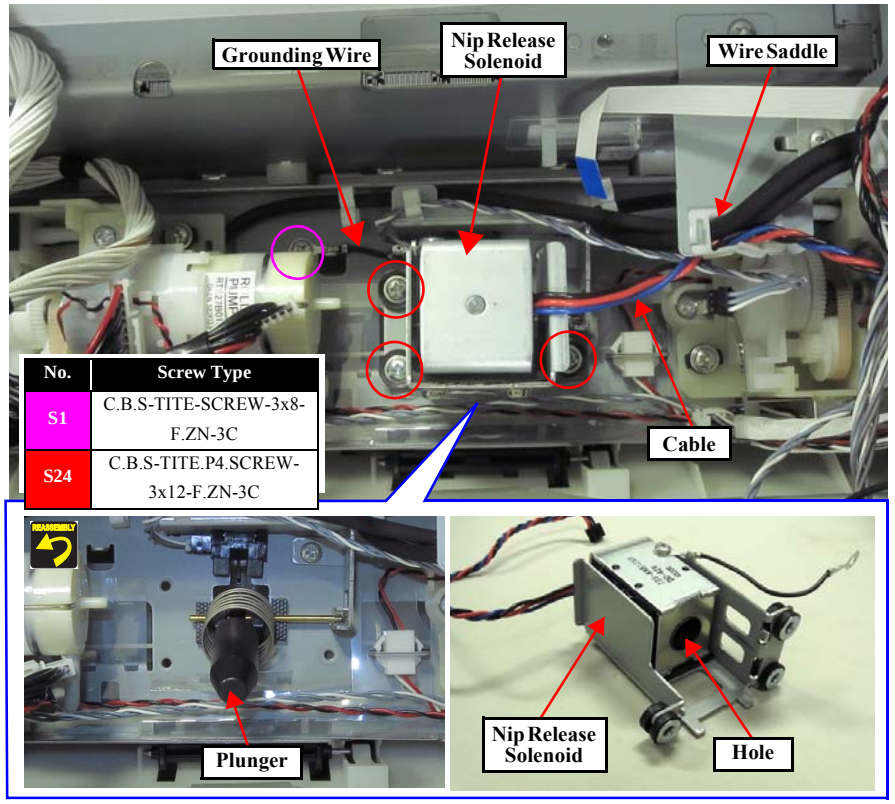
PCB Mechanism Relay Board (with Mounting Plate)



9. Route the cable(CN16) following the above figure, then connect the cable to PCB Mechanism Relay Board.
10. Set the hook of Lumiler to Cable Holder, then fix it.
11. Connect the five relay cables to PCB Mechanism Relay Board.

A6	B6

Nip Release Solenoid



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S24	C.B.S-TITE.P4.SCREW-3x12-F.ZN-3C

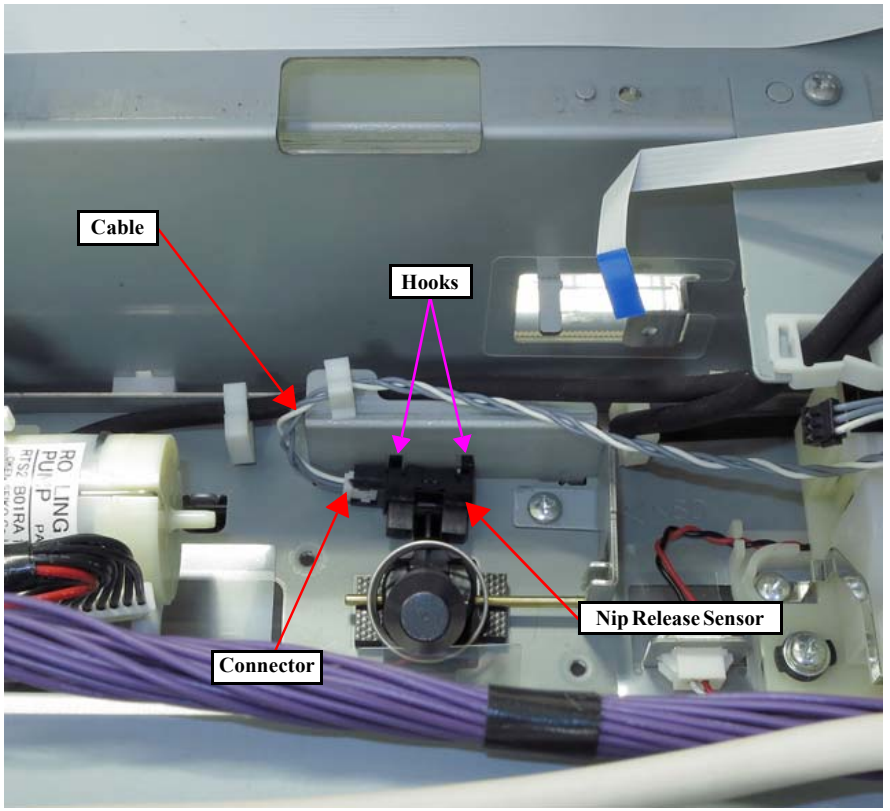
1. Release the cables from the wire saddle.
2. Remove one screw (S1: ○), then release the Grounding Wire.
3. Remove the three screws (S24: ○), then remove the Nip Release Solenoid.

REASSEMBLY Insert the plunger into the hole on the Nip Release Solenoid.

CHECK POINT When replace the Nip Release Solenoid, replacing ht Plunger together.

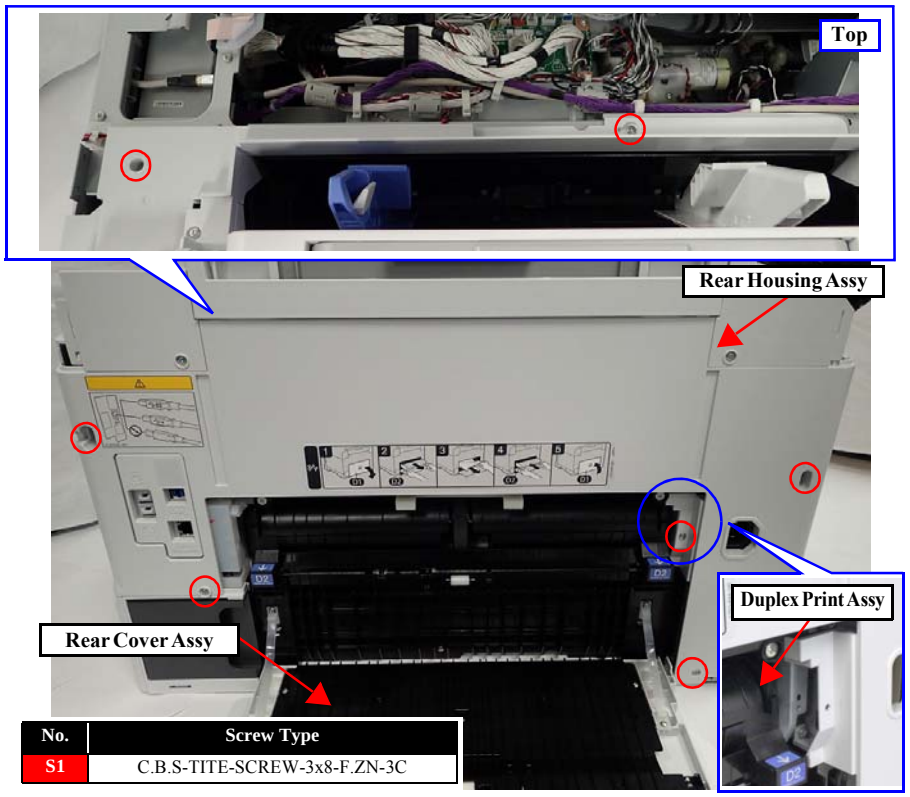
	B7

Nip Release Sensor



1. Disengage the four hooks and remove the Nip Release Sensor.
2. Disconnect the cables from the sensor connector.

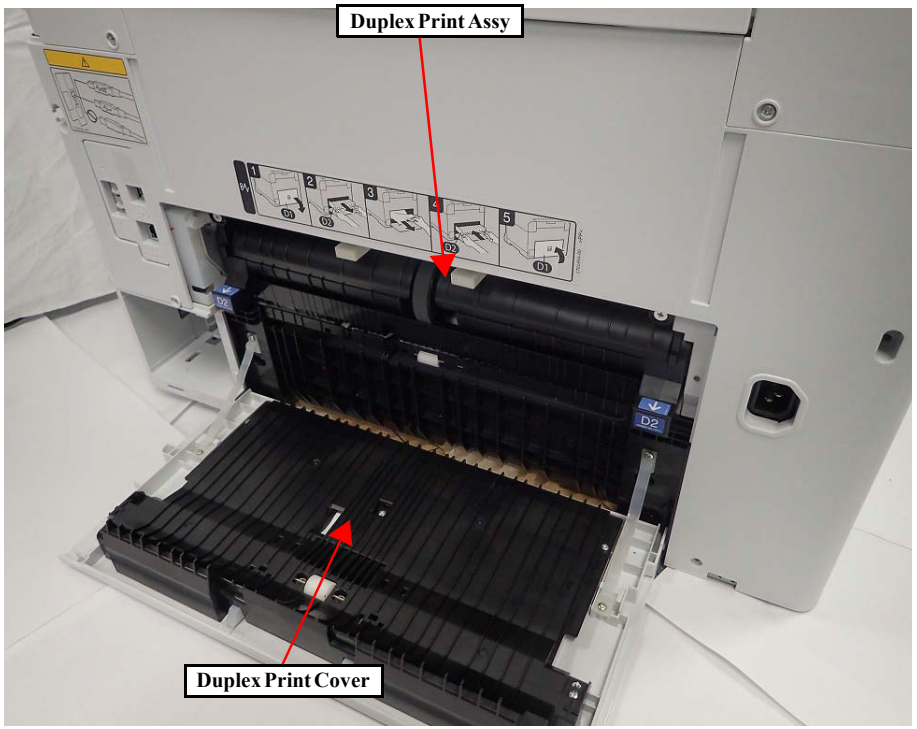
C6	D6	Rear Housing Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

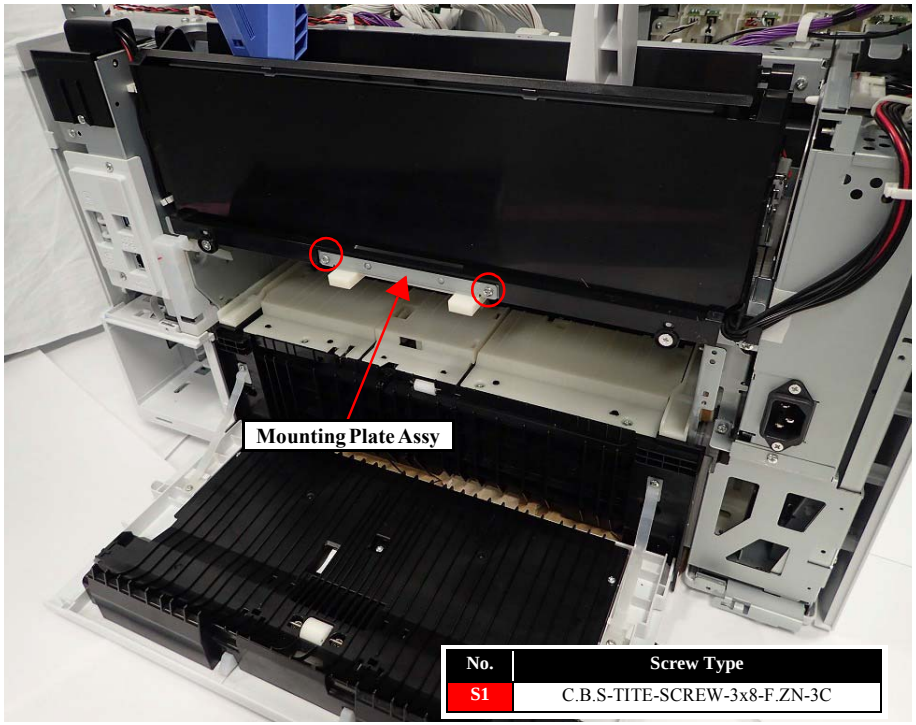
1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

C7	D7	Duplex Print Assy



1. Open the Duplex Print Cover.
2. Remove the Duplex Print Assy.

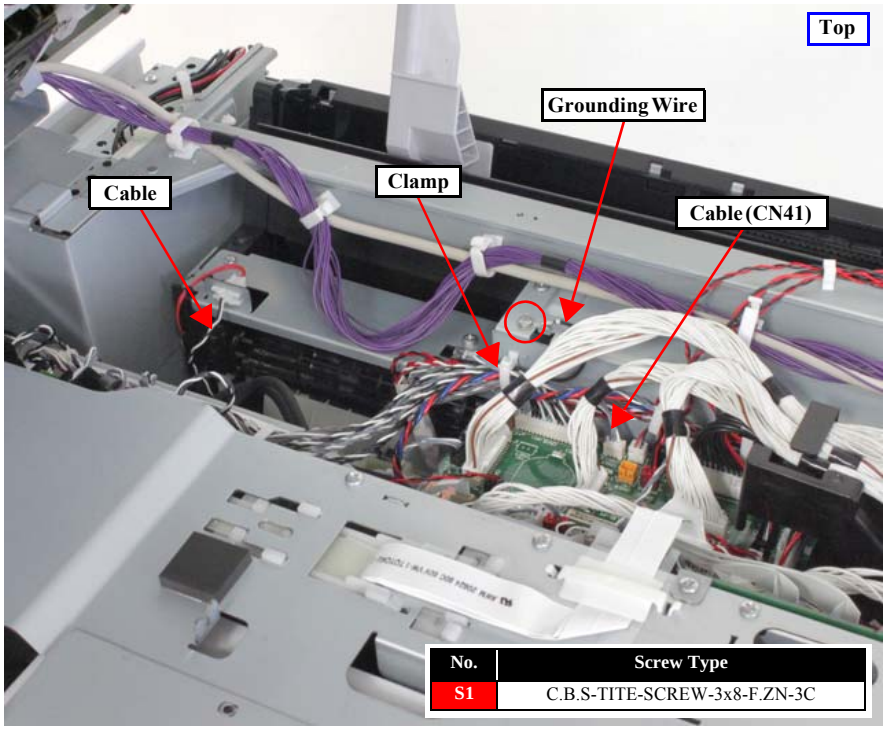
C8	D8	Mounting Plate Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Mounting Plate Assy.

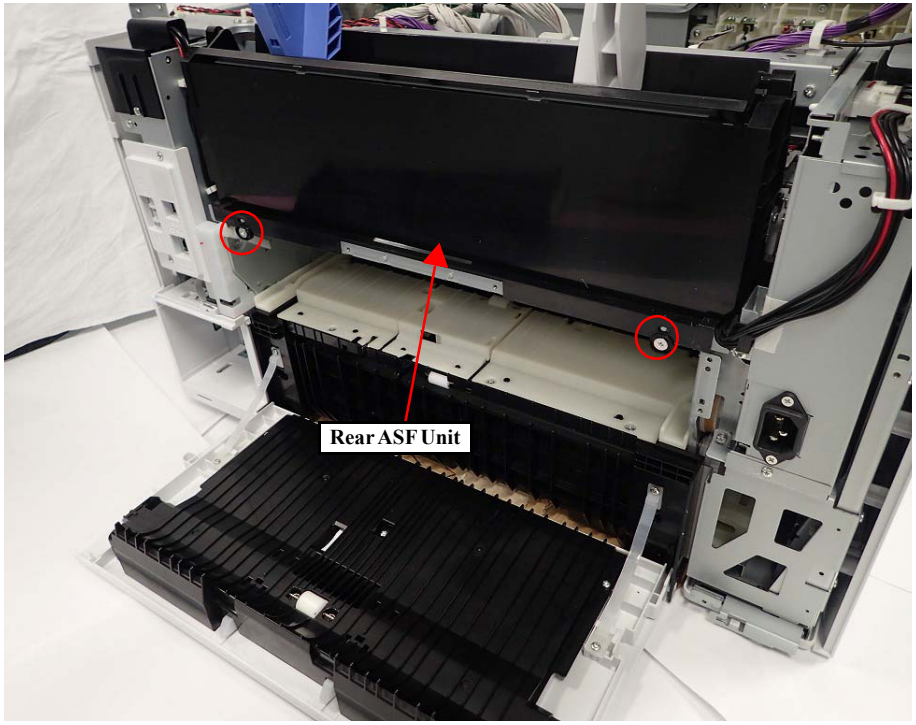
C9	D9	Rear ASF Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the two cables from the connectors.
2. Remove the screw (S1: ○), then release the Grounding Wire.
3. Release the cables and the grounding wire from the clamp.

Rear ASF Unit

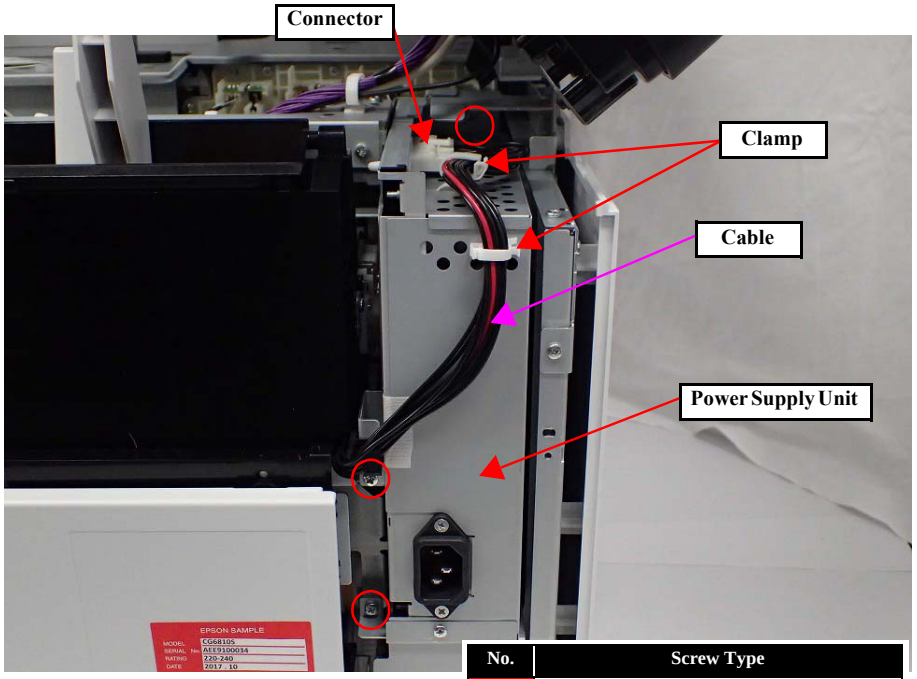


No.	Screw Type
S2	C.SHOULDER S-TITE,3X5

4. Remove the two screws (S2: ○), then remove the Rear ASF Unit.

C10	D10

Power Supply Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

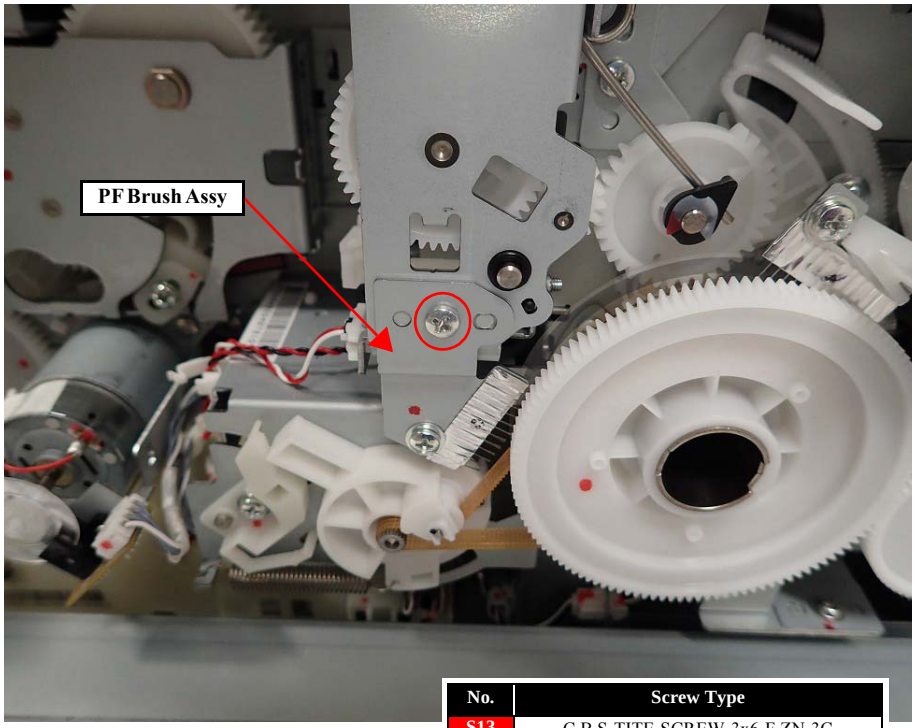
1. Release the Cable from two clamps.
2. Disconnect the cable from connector of Power Supply Unit.
3. Remove three screws (S1:○), and remove the Power Supply Unit.

C11	D11	Left Housing Assy

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screw (S1: ○), and remove the Left Housing Assy.

C12	D12	PF Brush Assy

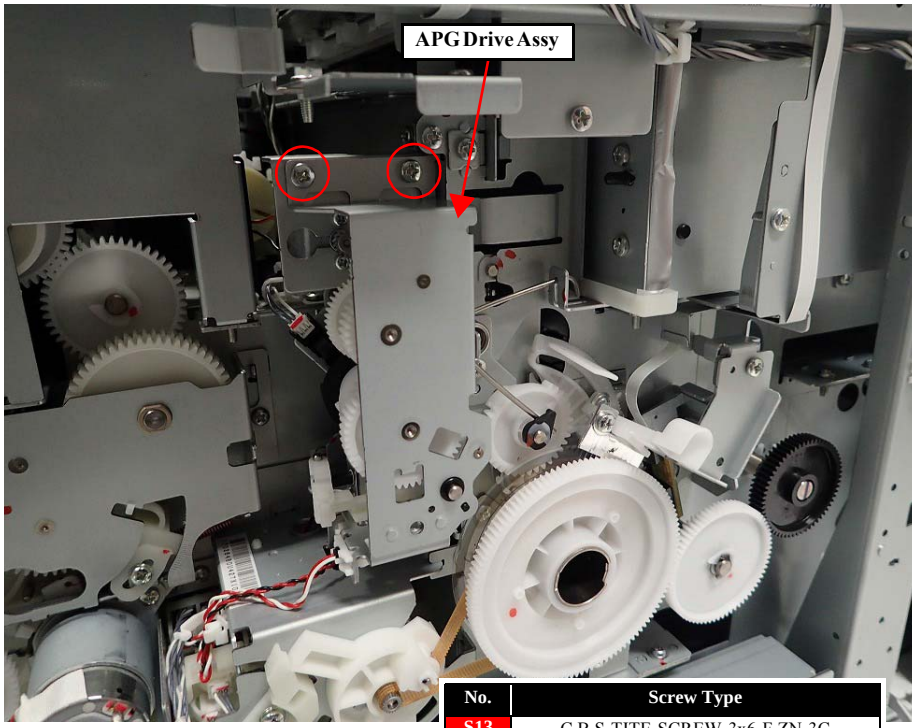


No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the screw (S13: ○), then remove the PF Brush Assy.

C13	D13

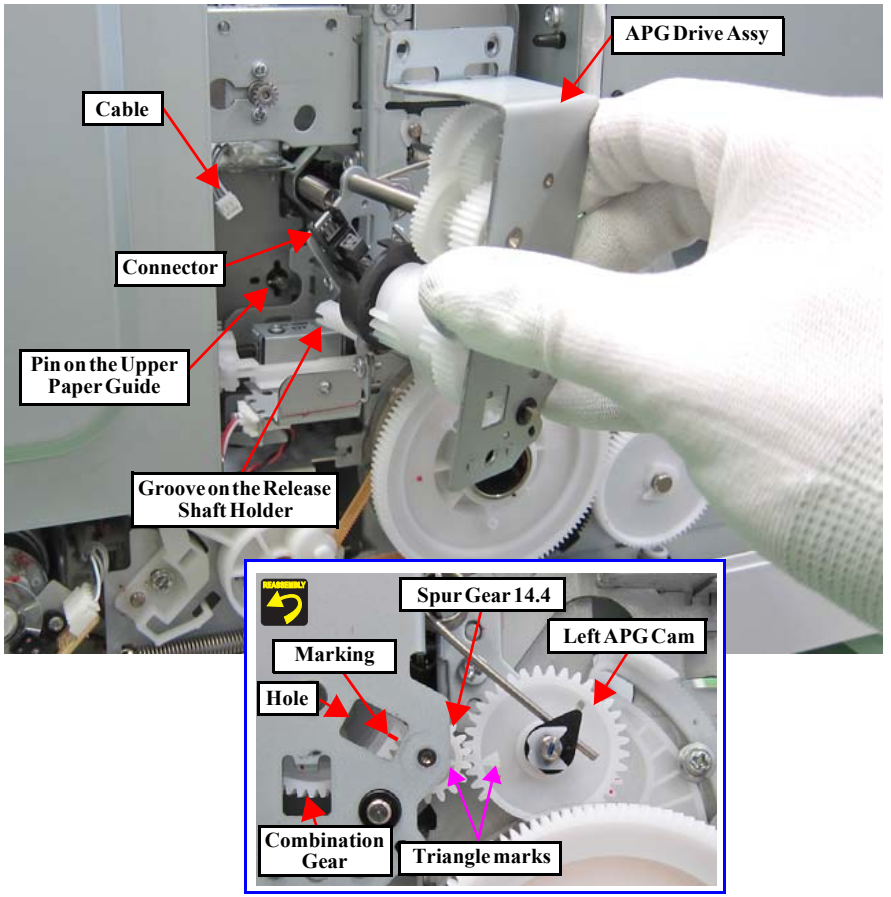
APG Drive Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the two screws (S13: ○), then remove the APG Drive Assy.

APG Drive Assy

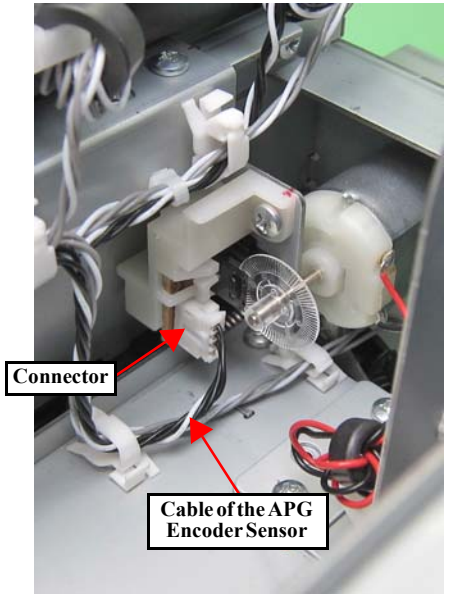


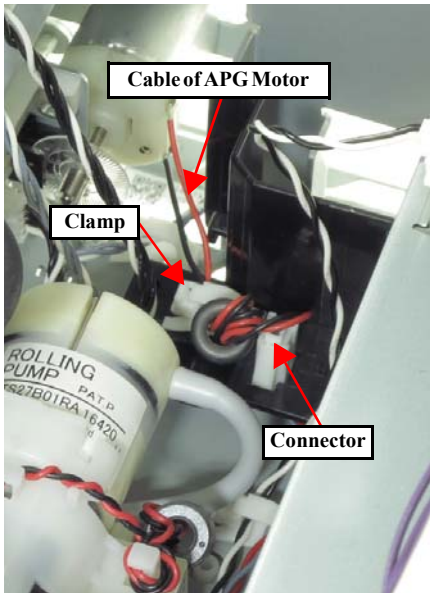
2. Disconnect the cable from the connector of the sensor.

- Align the triangle mark on the left APG cam with the triangle mark on the spur gear 14.4 on the APG Drive Assy. At this point, make sure the mark on the combination gear can be seen through the hole on the APG Drive Assy.
- Insert the pin on the upper paper guide into the groove on the release shaft holder of the APG Drive Assy.

C14	D14

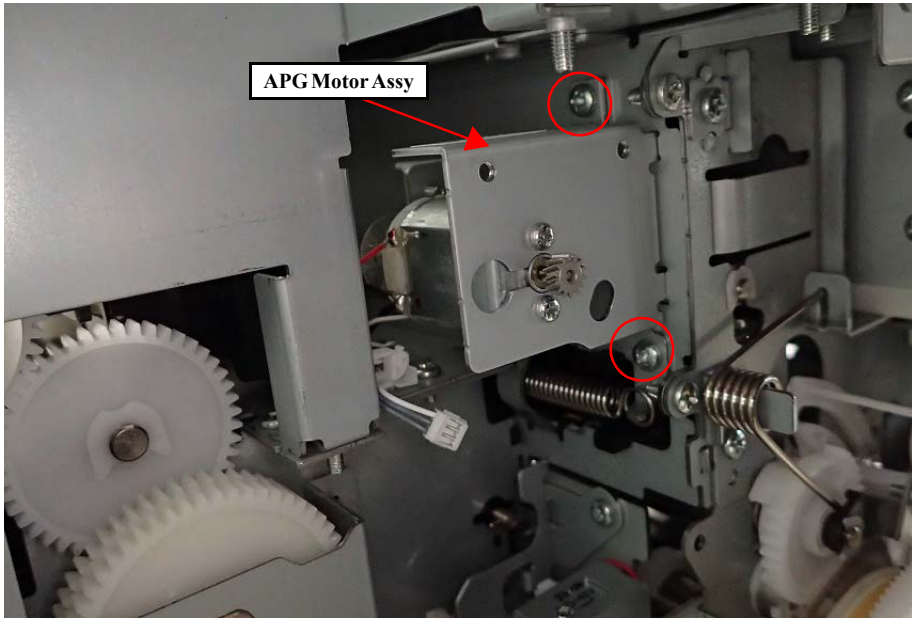
APG Motor Assy





1. Disconnect the cable from the connector of the APG Encoder sensor.
2. Disconnect the cable from the connector of the APG motor.
3. Release the cable of the clamp from the APG motor.

APG Motor Assy

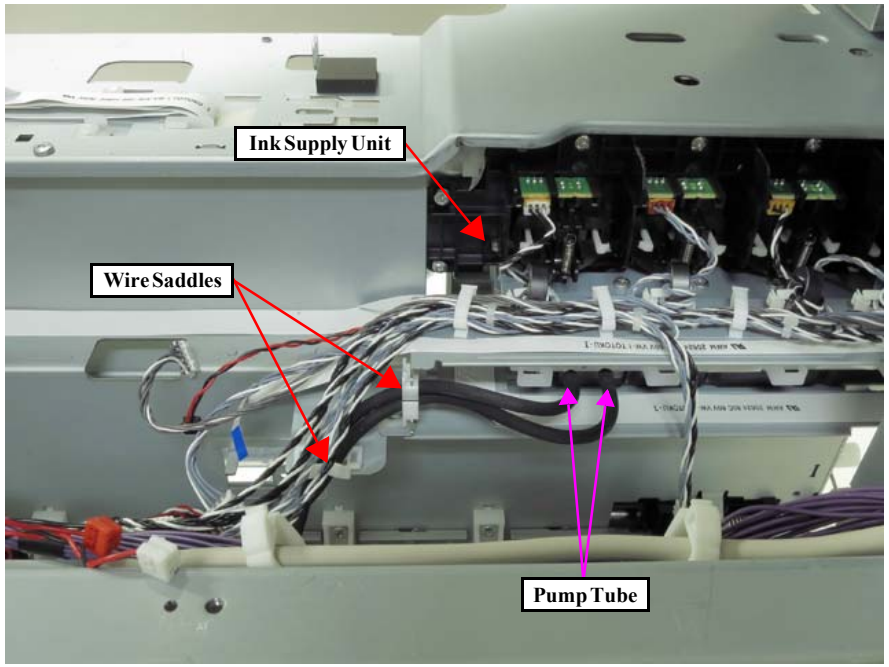


No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

4. Remove the two screws (S13: ○), then remove the APG Motor Assy.

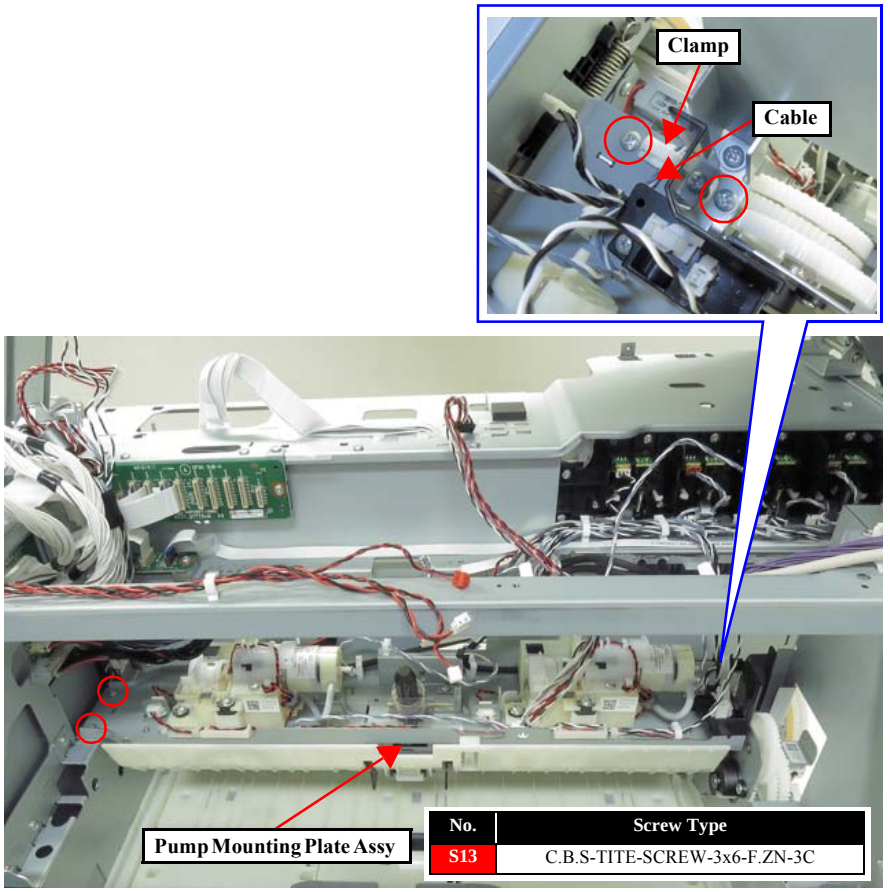
C15	D15

Pump Mounting Plate Assy



1. Pull out the two pump tubes from the Ink Supply Unit.
2. Release the two pump tubes from the wire saddles.

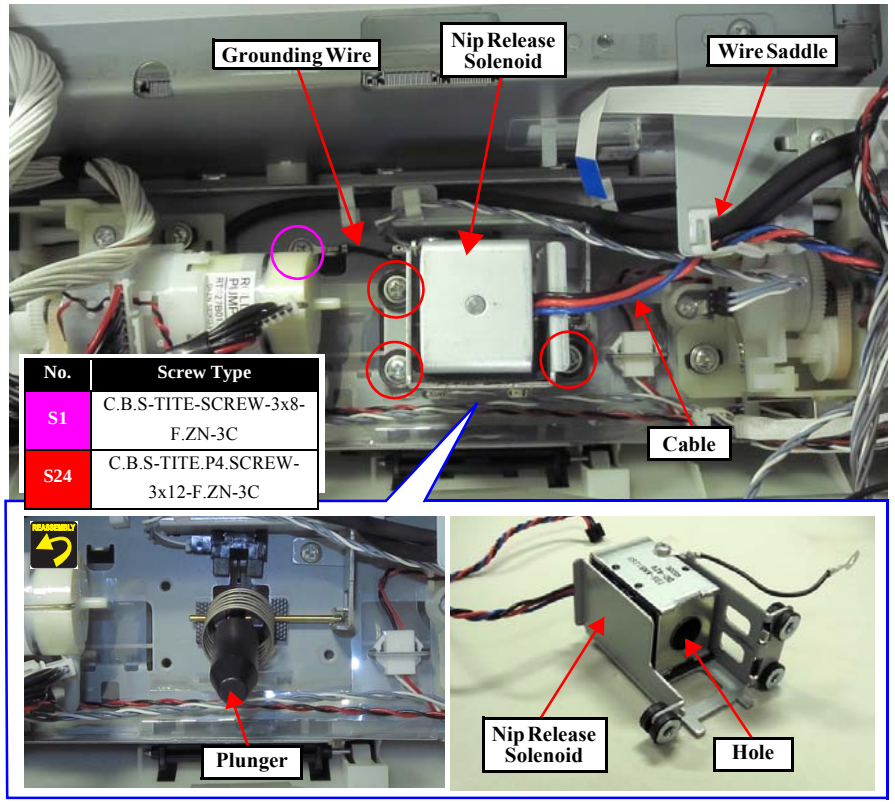
Pump Mounting Plate Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

3. Release the cable from the clamp.
4. Remove the four screws (S13: ○), then remove the Pump Mounting Plate Assy.

C16	D16	Nip Release Solenoid



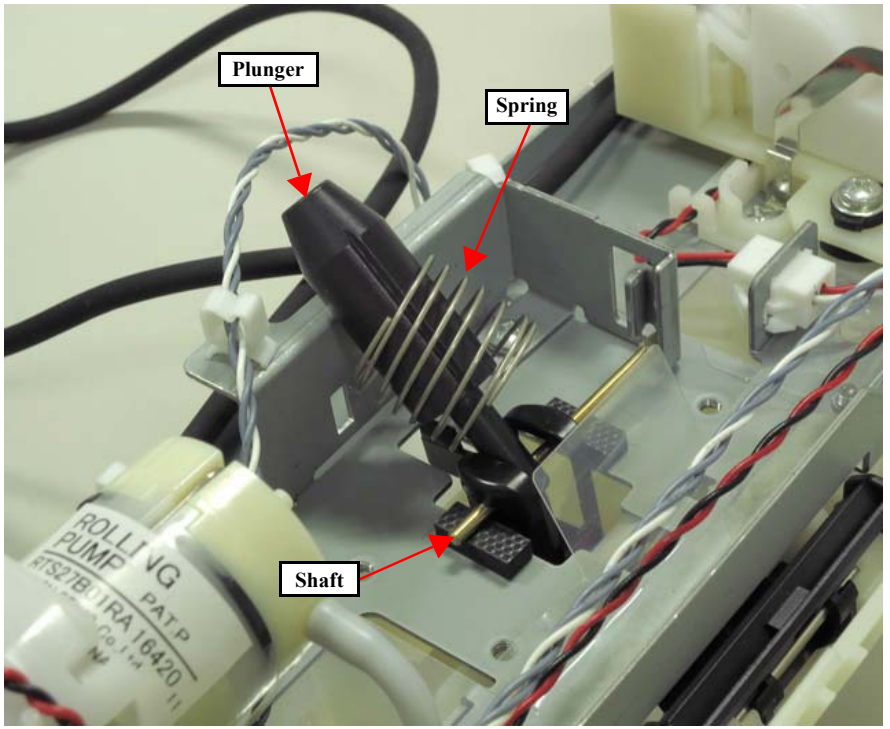
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S24	C.B.S-TITE.P4.SCREW-3x12-F.ZN-3C

1. Release the cables from the wire saddle.
2. Remove one screw (S1: ○), then release the Grounding Wire.
3. Remove the three screws (S24: ○), then remove the Nip Release Solenoid.

REASSEMBLY Insert the plunger into the hole on the Nip Release Solenoid.

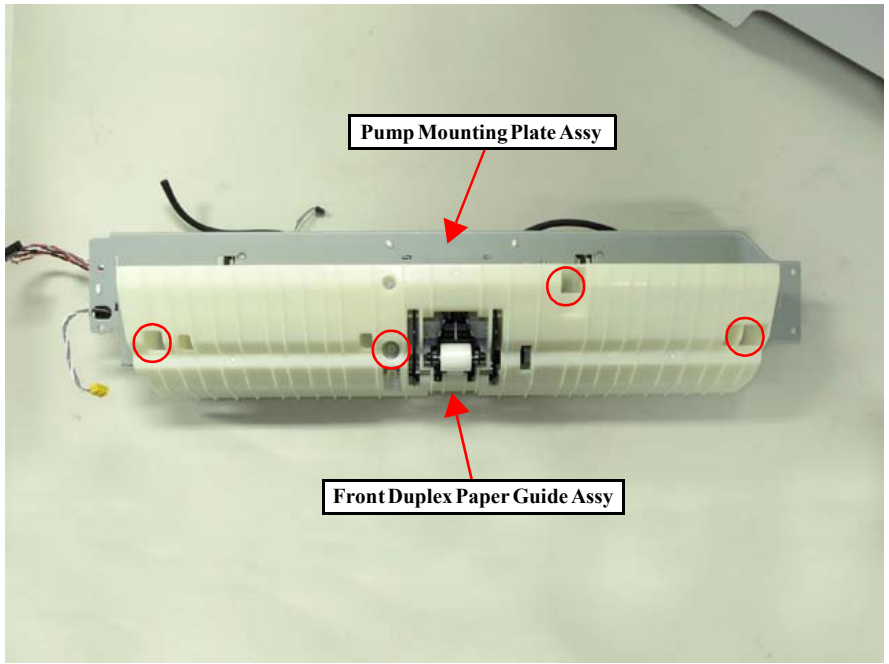
CHECK POINT When replace the Nip Release Solenoid, replacing ht Plunger together.

C17	D17	Nip Release Lever etc.



1. Remove the spring from the plunger.
2. Pull out the shaft from the plunger, then remove the Nip Release Lever.

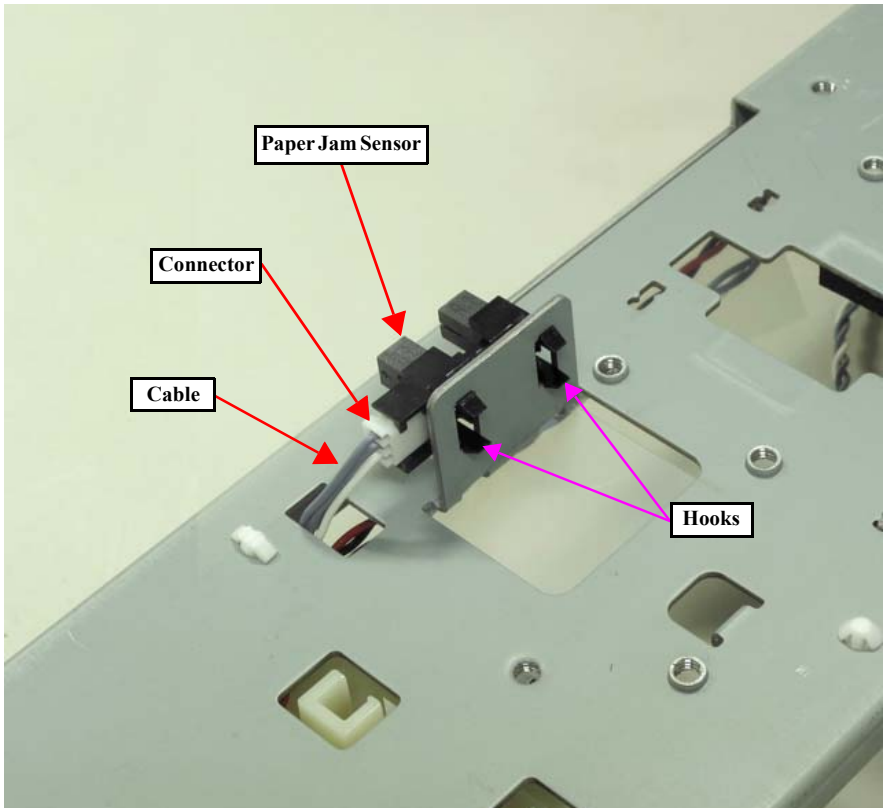
C18	D18	Front Duplex Paper Guide Assy



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the four screws (S23: ○), then remove the Front Duplex Paper Guide Assy from the Pump Mounting Plate Assy.

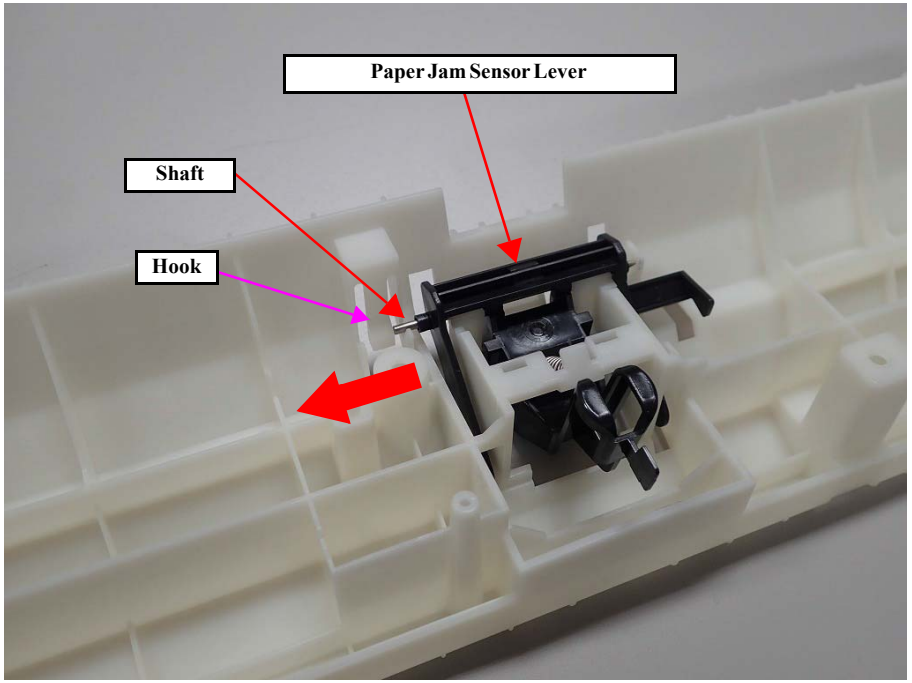
C19		Paper Jam Sensor



1. Disengage the four hooks and remove the Paper Jam Sensor.
2. Disconnect the cables from the sensor connector.

D19

Paper Jam Sensor Lever



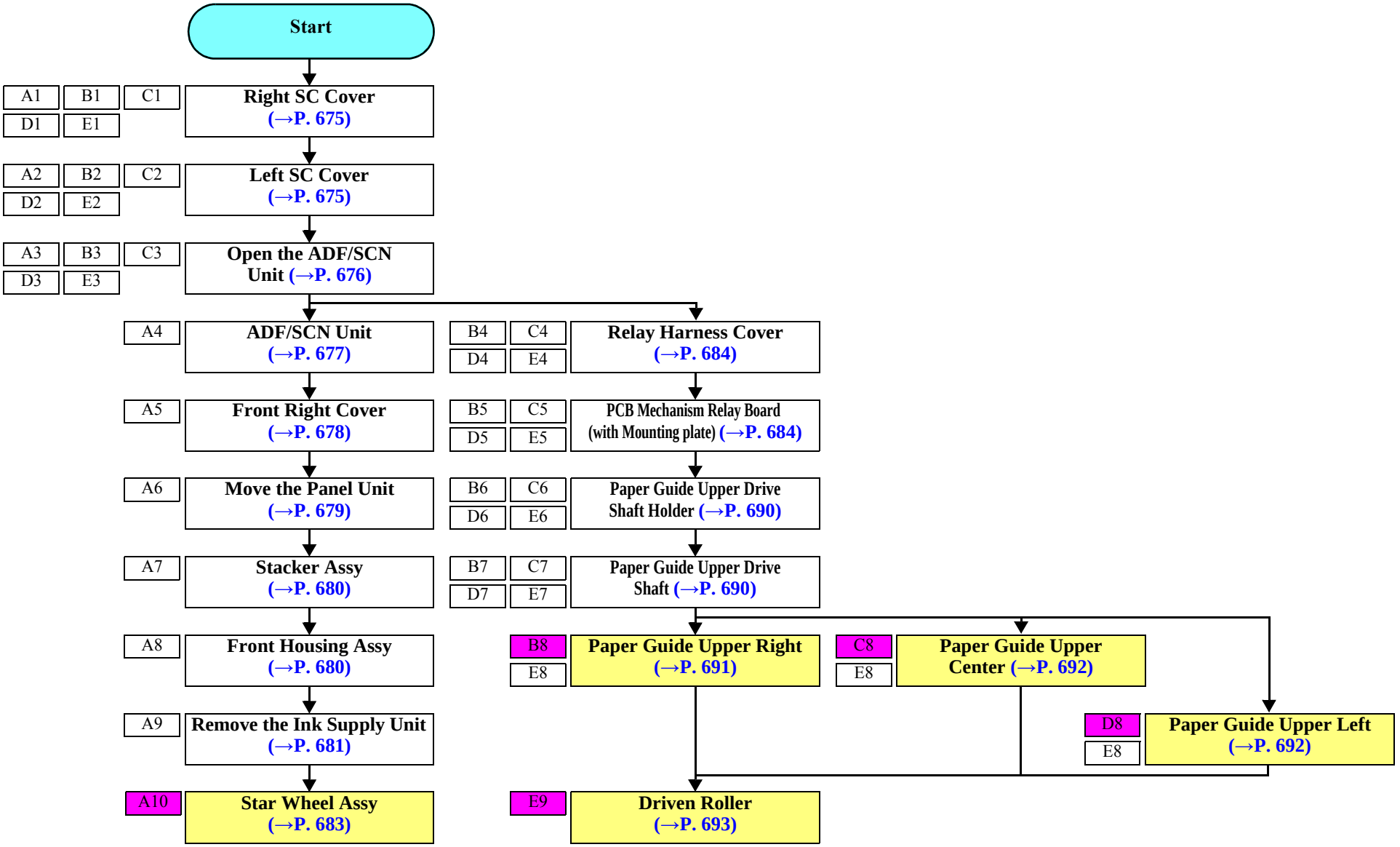
1. Release the hook, and pull out the shaft to direction of the arrow.
2. Remove the Paper Jam Sensor Lever.

7.4.3.25 Paper Feed Mechanism 7

OUTLINE

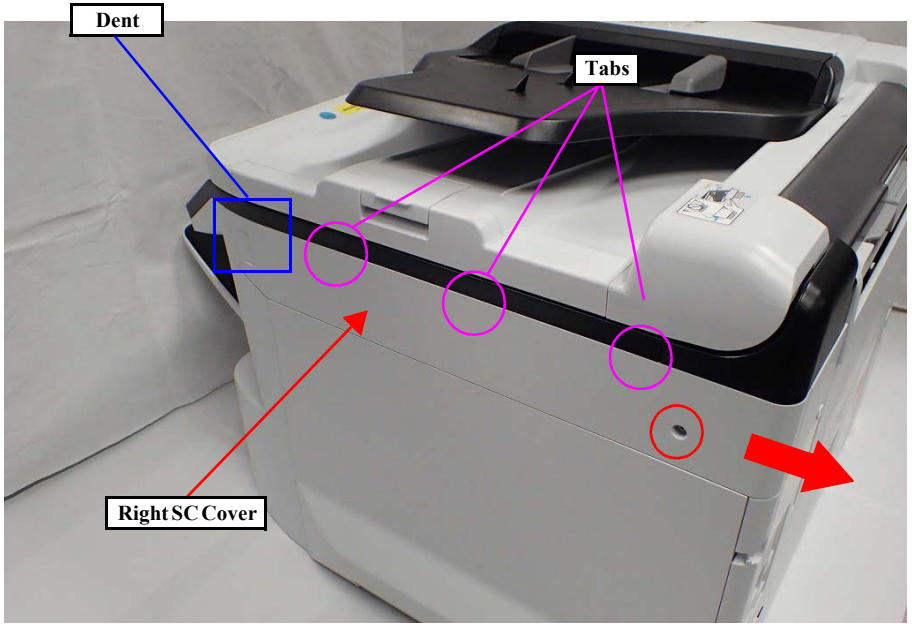
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Star Wheel Assy	A	12 min 5 sec	6 min 23 sec	18 min 28 sec
Paper Guide Upper Left	B	38 min 14 sec	7 min 36 sec	45 min 50 sec
Paper Guide Upper Center	C	38 min 14 sec	7 min 36 sec	45 min 50 sec
Paper Guide Upper Right	D	38 min 14 sec	7 min 36 sec	45 min 50 sec
Driven Roller	D	38 min 51 sec	---	38 min 51 sec

DISASSEMBLY FLOWCHART



A1	B1	C1
D1	E1	

Right SC Cover

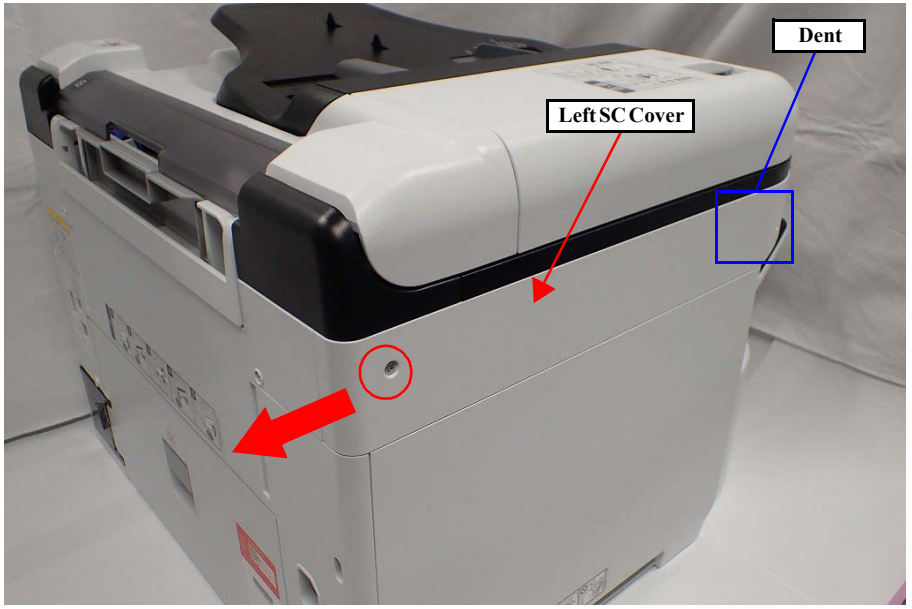


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

A2	B2	C2
D2	E2	

Left SC Cover

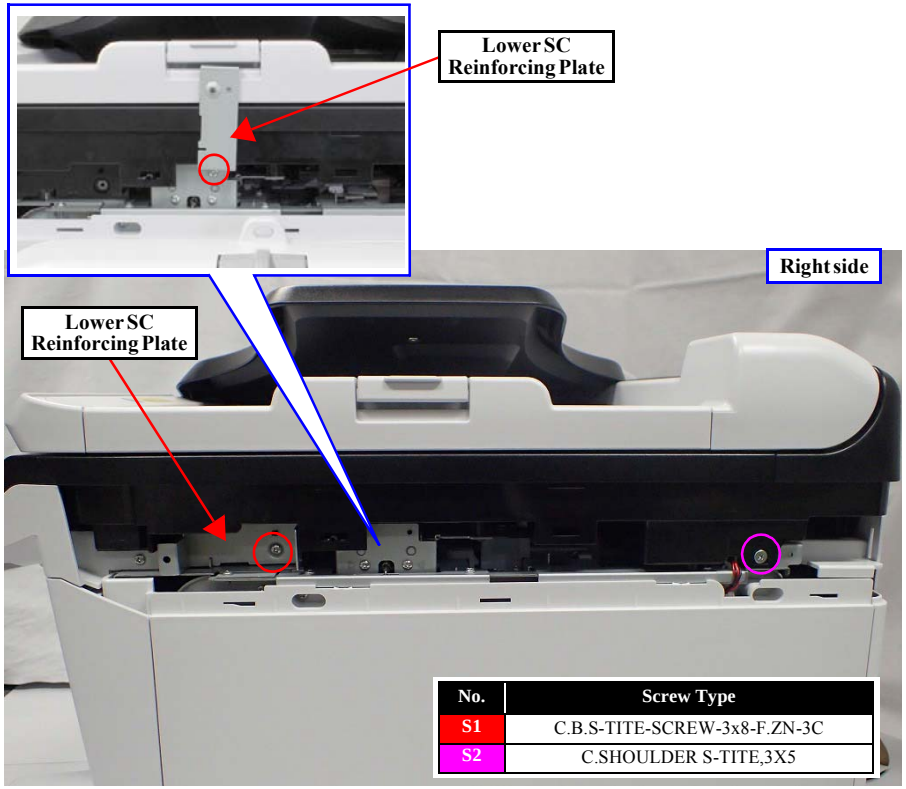


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

A3	B3	C3
D3	E3	

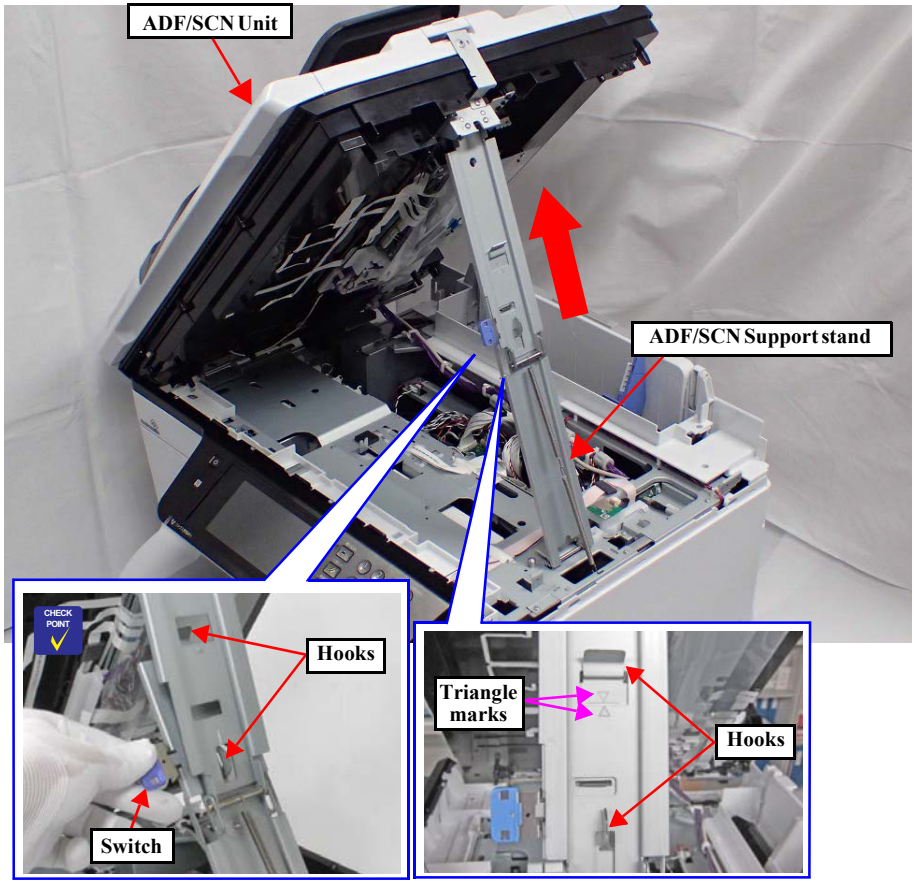
Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit



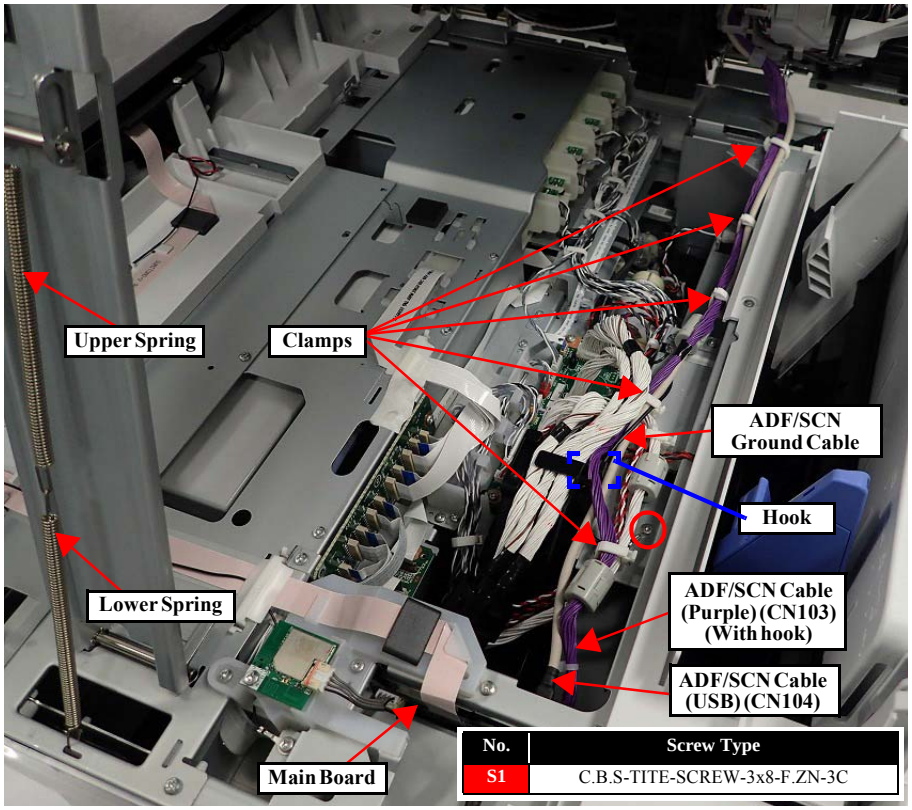
4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

A4		

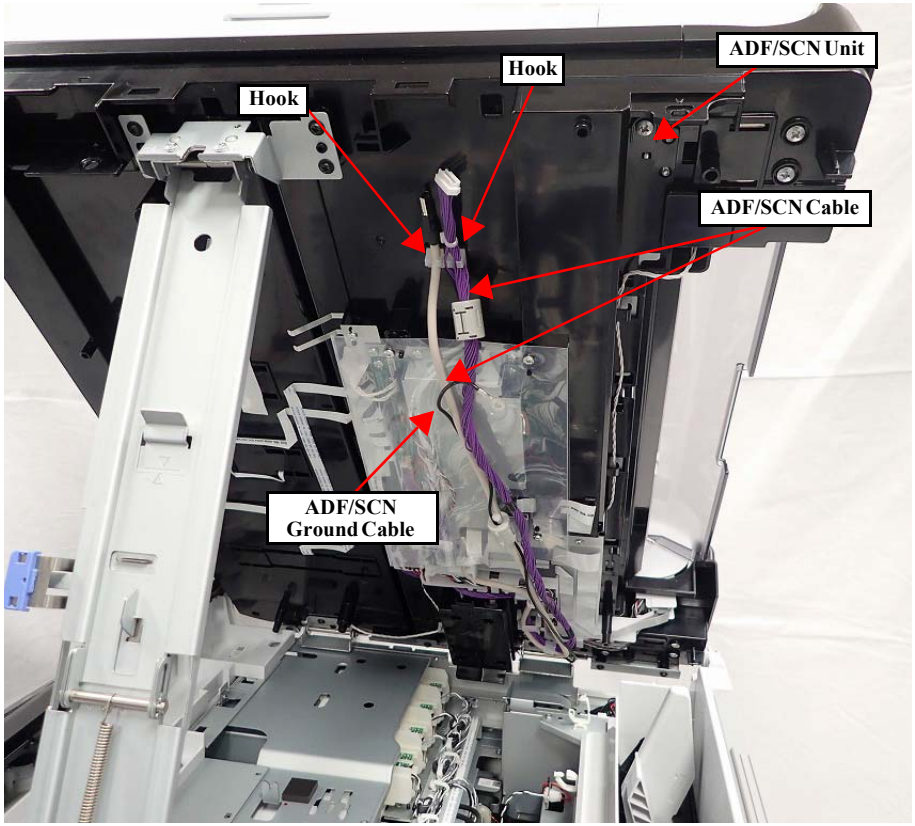
ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Separate the upper spring and lower spring.
2. Disconnect the following cables from the connector of the Main Board.
   - ADF/SCN Cable (USB) (CN104)
   - ADF/SCN Cable (Purple) (CN103) (With hook)
3. Remove one screw (S1: ○), and release the ADF/SCN ground cable.
4. Release the ADF/SCN cables and ADF/SCN ground cable from the five clamps.
5. Release the ADF/SCN cable (Purple) from hook of the Relay cable cover.

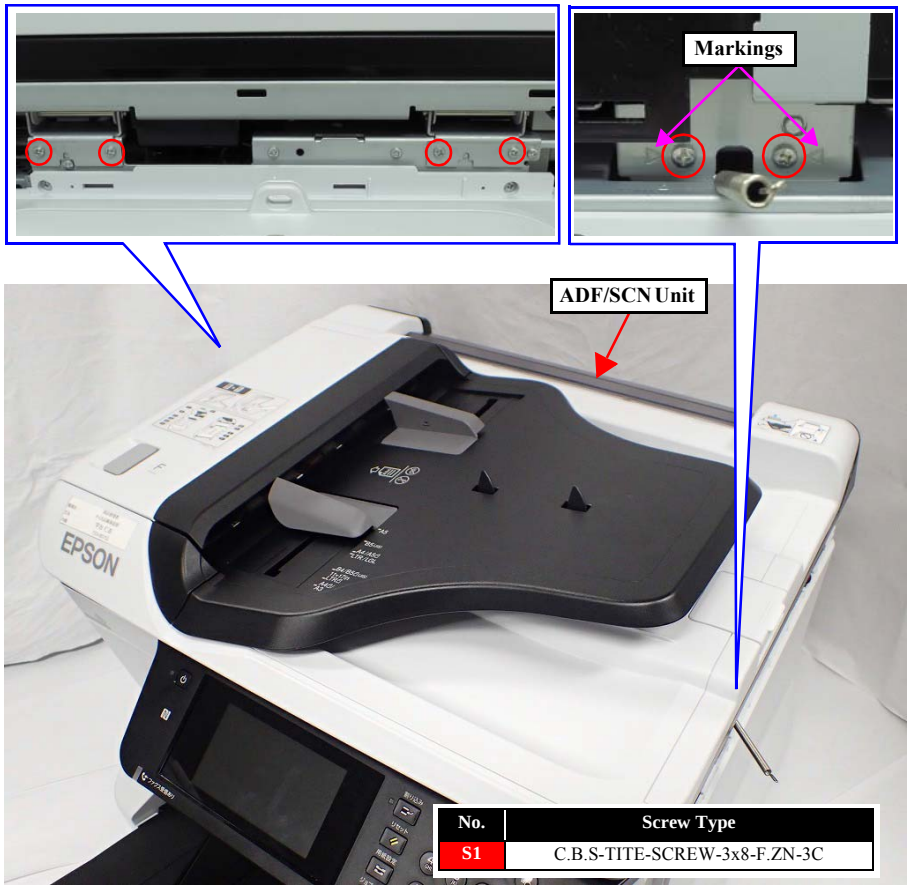
ADF/SCN Unit



6. Wrap the ADF/SCN ground cable around the ADF/SCN cable (Purple).
7. Fix the ADF/SCN Cables (ADF/SCN ground cable is wrapped condition) to two hooks.
8. Close the ADF/SCN Unit.

REASSEMBLY If the upper spring and the lower spring were separated, even if the ADF / SCN unit is fully extended, the support stand will not automatically open.

ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

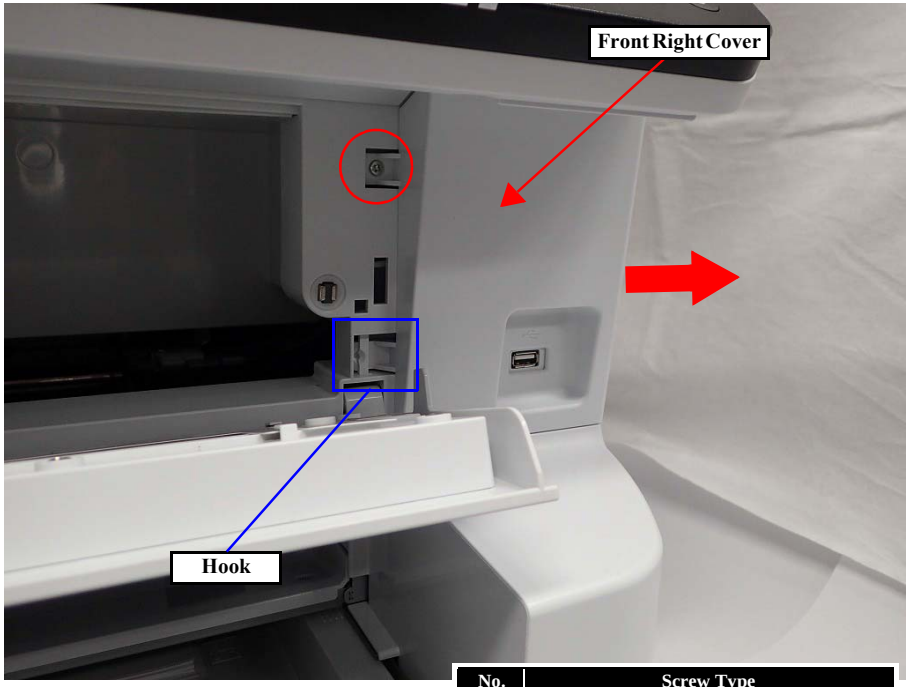
9. Remove the six screws (S1: ○).

CHECK POINT The screw to be removed is indicated by a triangle mark.

10. Pull the ADF/SCN Unit upward to remove it.

A5		

Front Right Cover

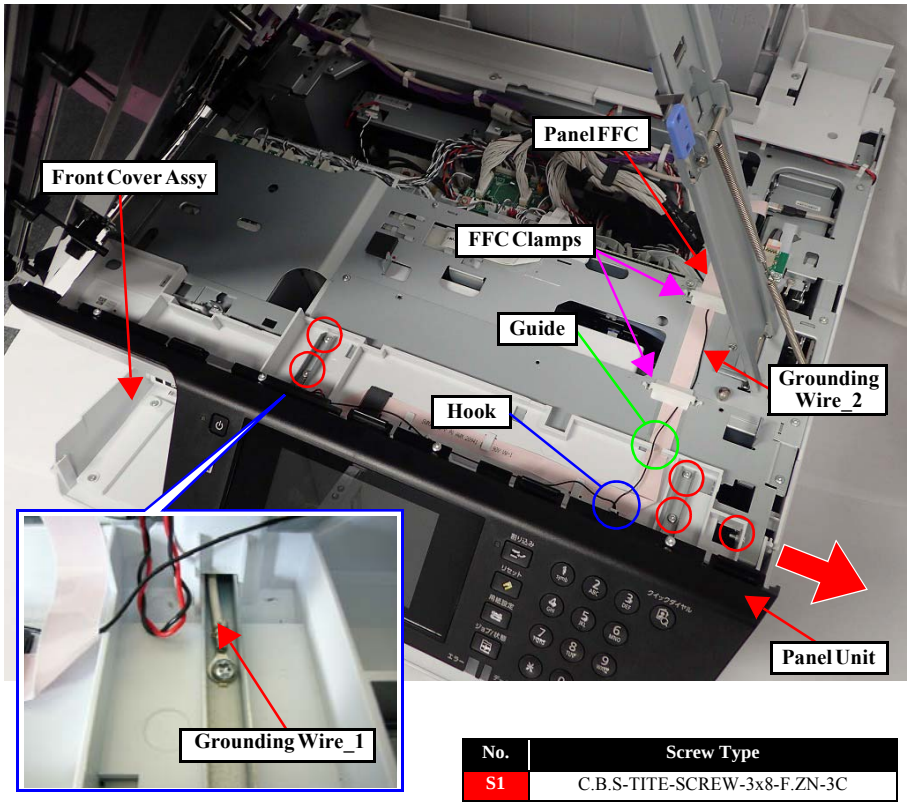


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

A6		

Move the Panel Assy

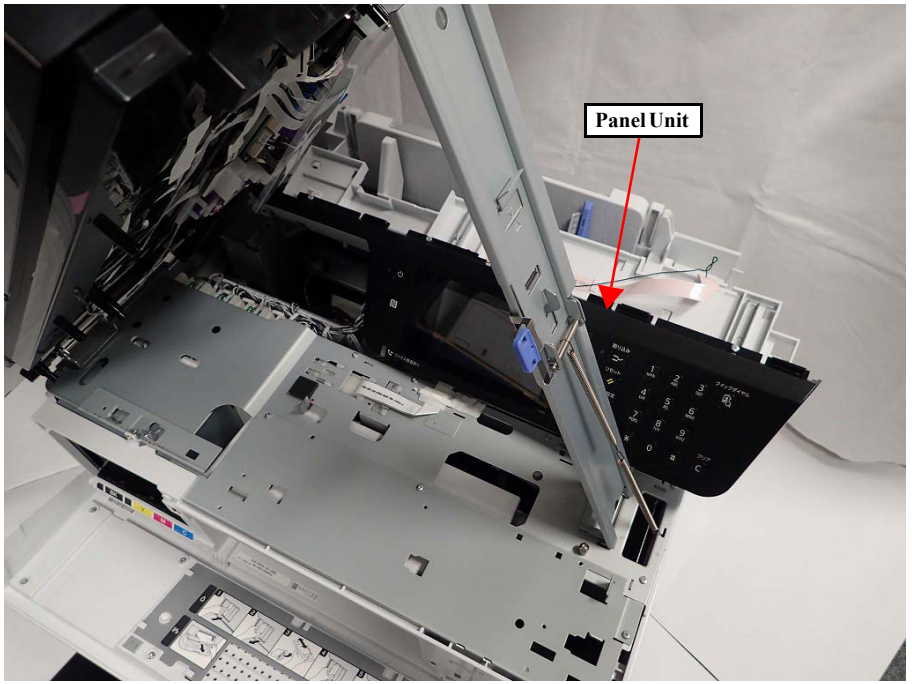


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○)
2. Remove the two FFC clamps.
3. Release the Panel FFC and the grounding wire_2 from the guide.
4. Release thgrounding wire_2 from Hook.
5. Open the Front Cover Assy.
6. Slide the panel unit rightward to remove it.

REASSEMBLY
- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

Move the Panel Unit

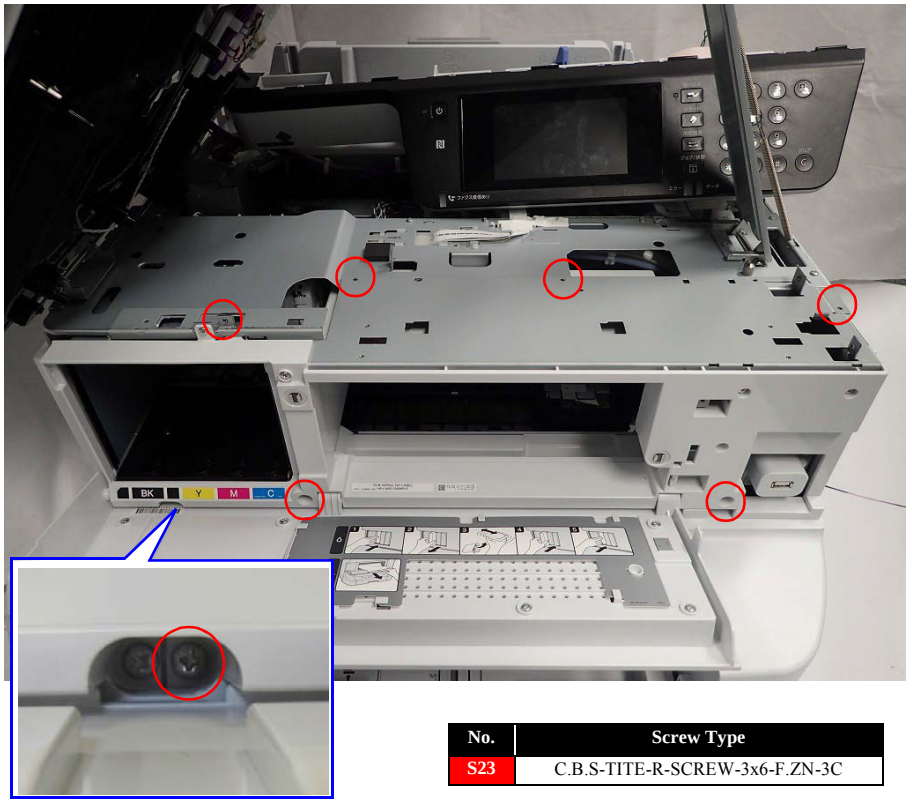


7. Put the panel unit at the rear side of the printer.

A7			Stacker Assy

1. Remove the Stacker Assy.

A8			Front Housing Assy

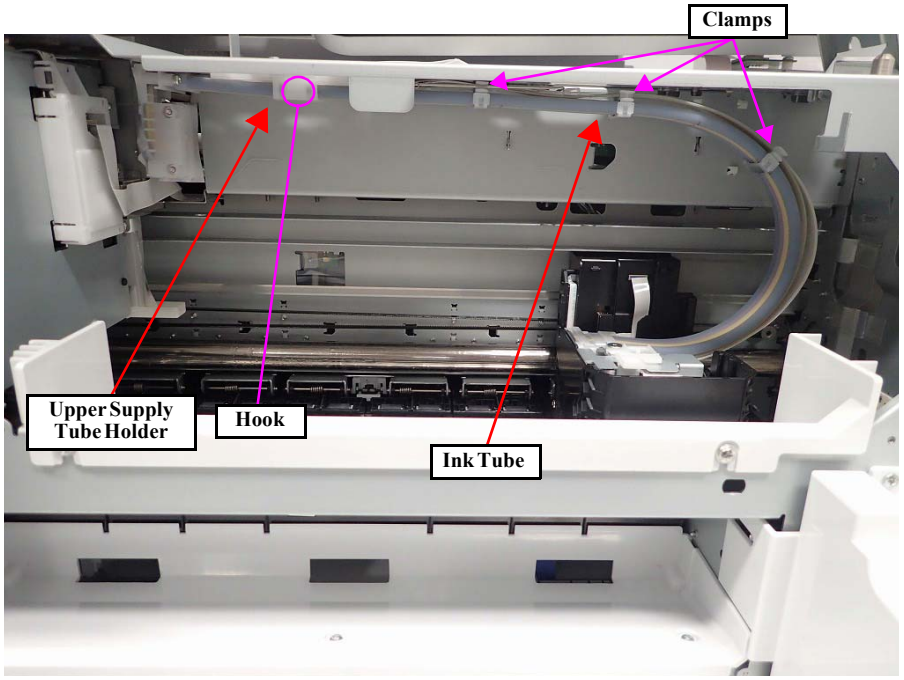


No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

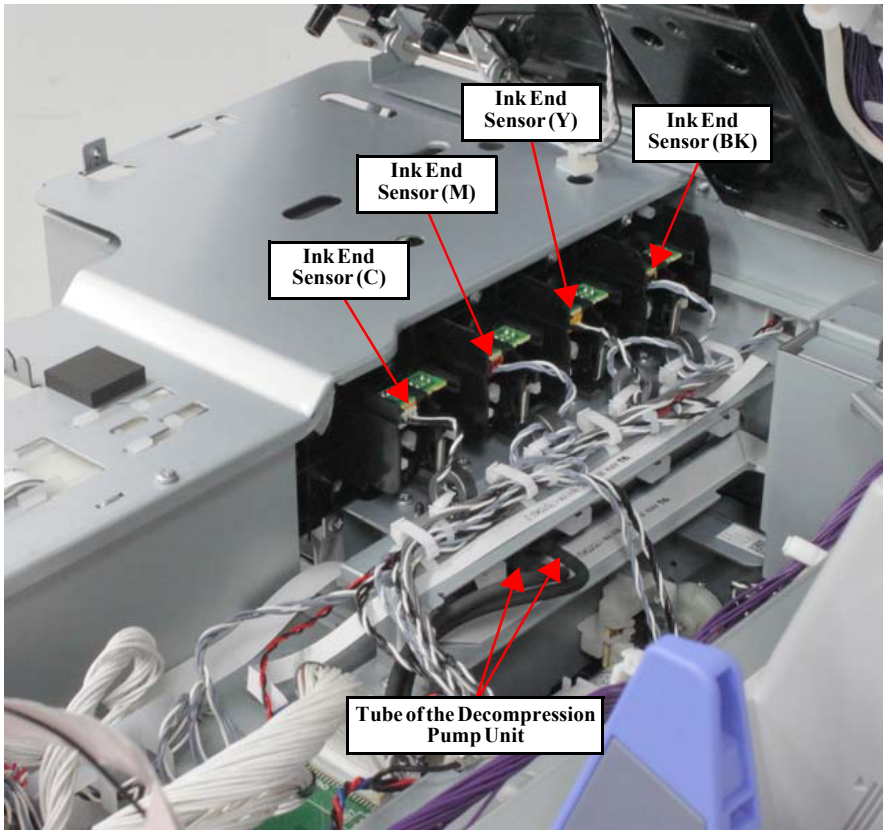
A9		

Remove the Ink Supply Unit



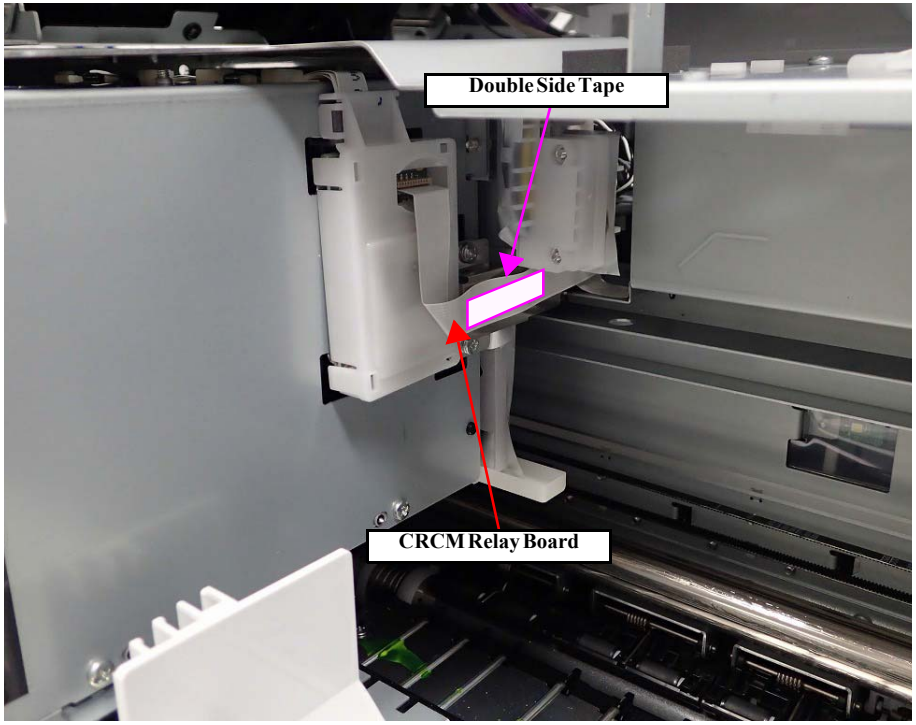
1. Disengage the hook, then release the ink tubes from the upper supply tube holder.
2. Release the ink tubes from the three clamps.

Move the Ink Supply Unit on the Main Frame



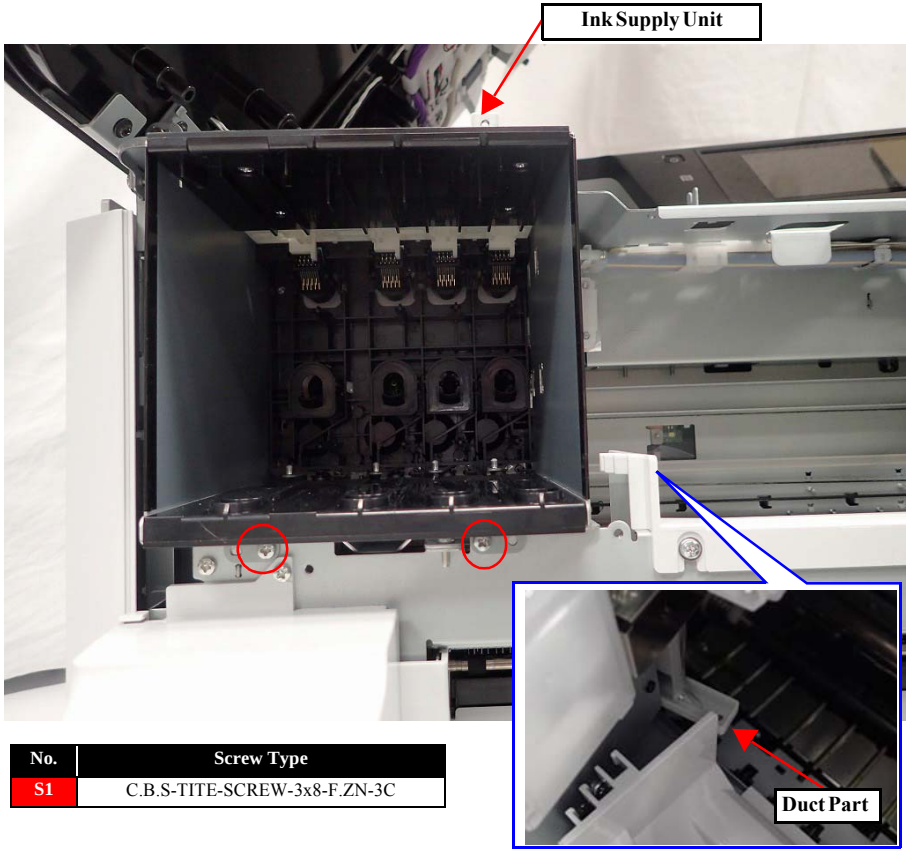
3. Disconnect the cable from the connector of the Ink End Sensor.
4. Pull out the two tubes from the decompression pump unit from the Ink Supply Unit.

Move the Ink Supply Unit on the Main Frame



5. Disconnect the CRCM Relay FFC from CRCM Board.
6. Remove the CRCM Relay FFC from Ink Supply Unit. (with Double side tape)

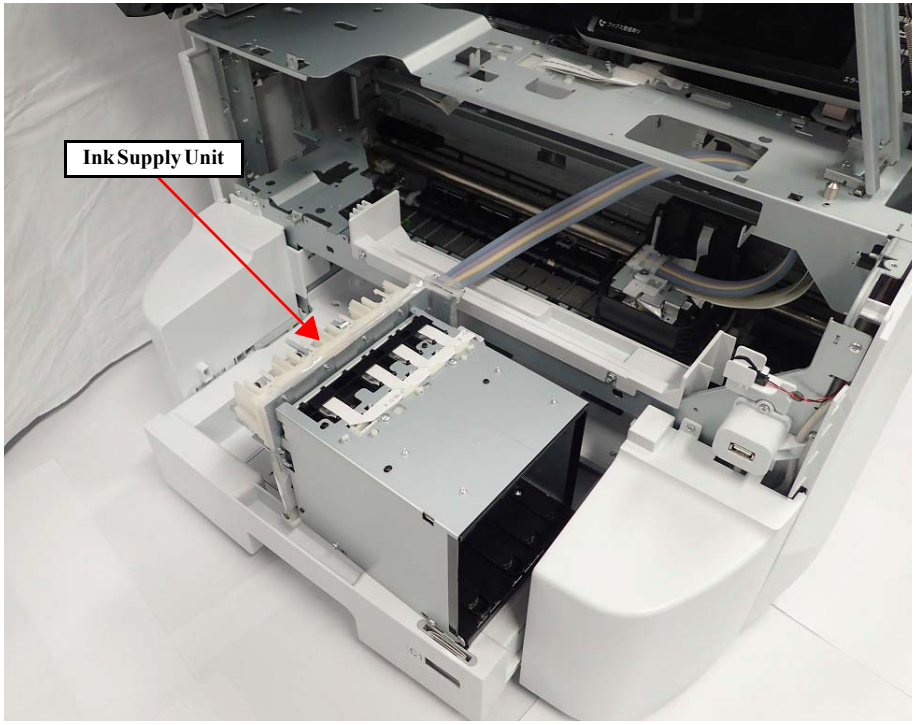
Move the Ink Supply Unit on the Main Frame



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

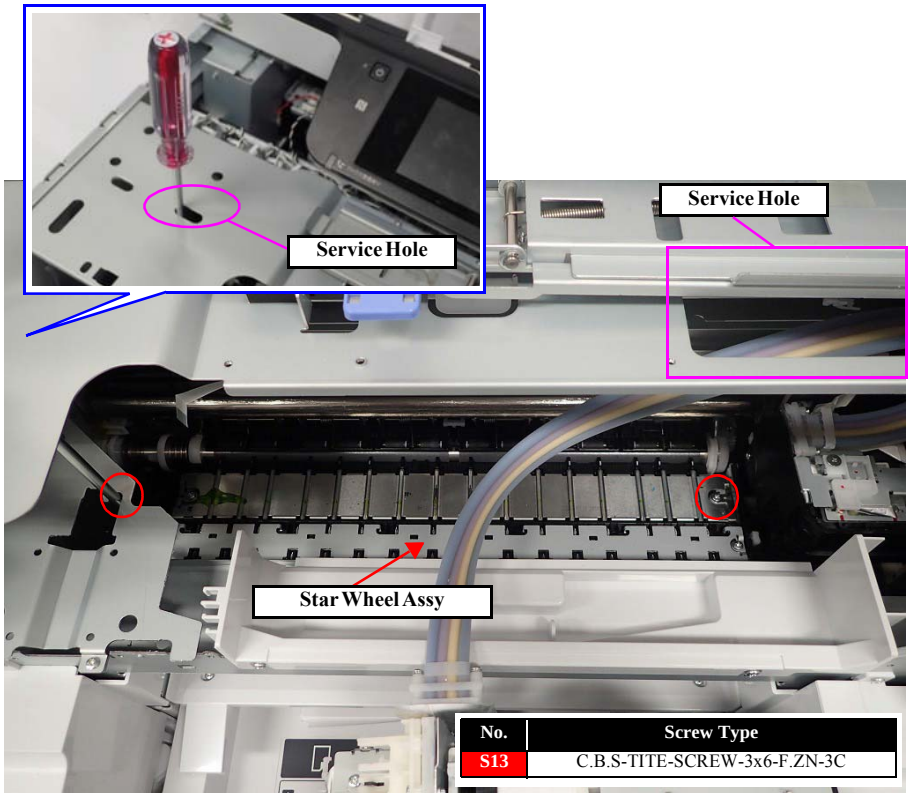
7. Remove the two screws (S1: ○).
8. Remove the Ink Supply Unit while releasing the duct part.

Move the Ink Supply Unit on the Main Frame



9. Place the Ink Supply Unit temporarily.

A10			Star Wheel Assy

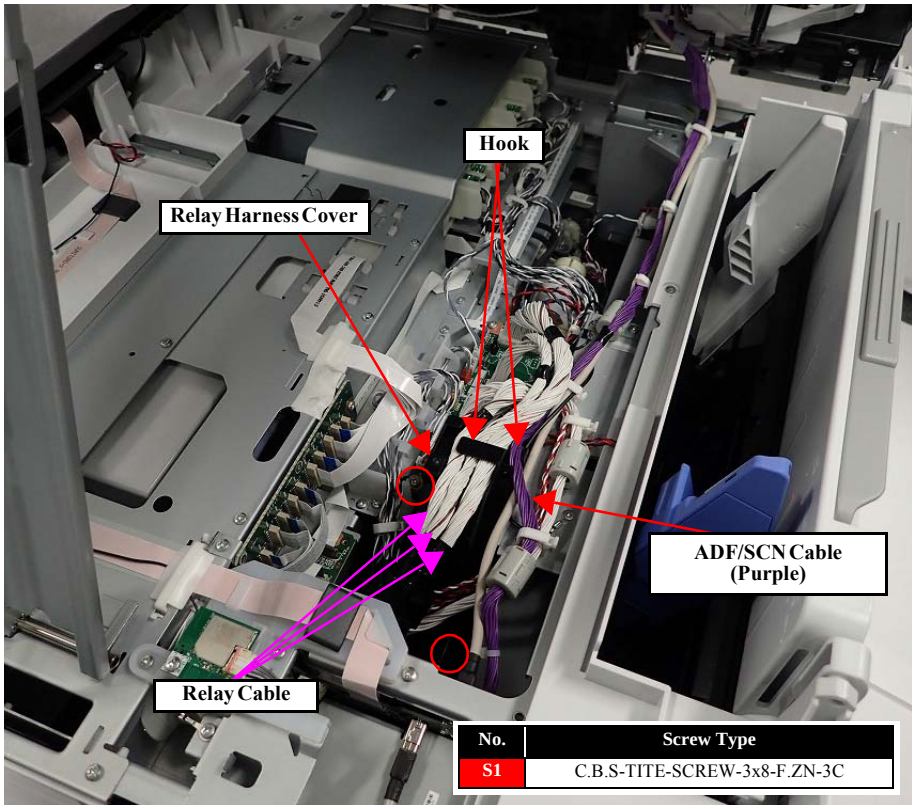


No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the two screws (S13:○), from serivece hole of teh Main Frame.
2. Remove the Star Wheel Assy.

	B4	C4
D4	E4	

Relay Harness Cover

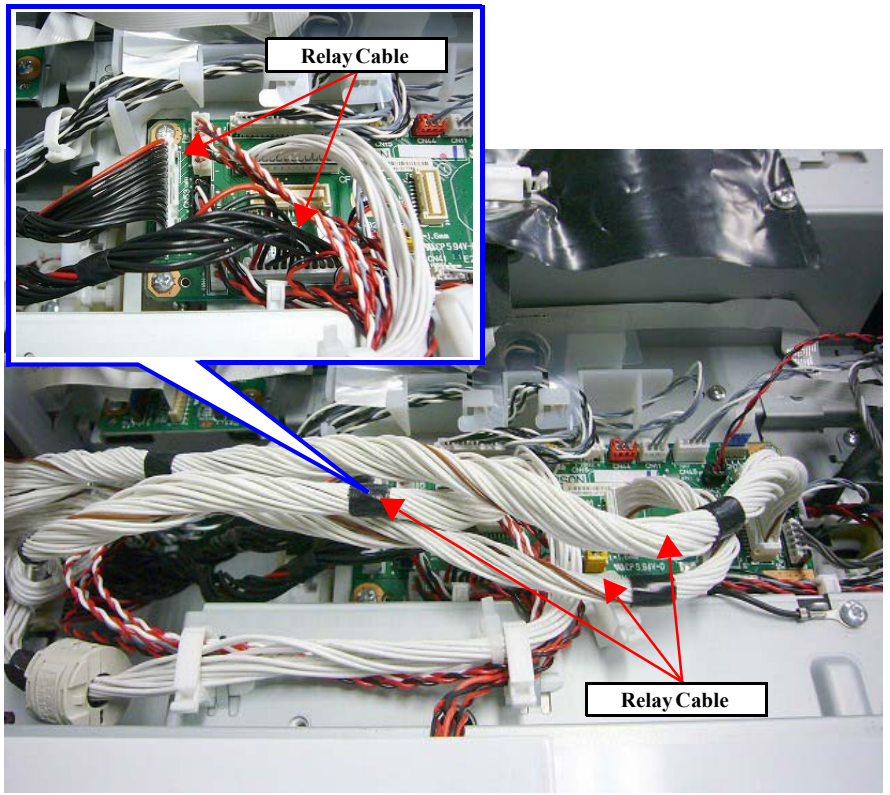


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Release the ADF/SCN Cable (Purple) from hook of Relay Harness Cover.
2. Release the Relay Cables(CN401, CN402, CN403) from hook of Relay Harness Cover.
3. Remove two screws (S1:○), and remove the Relay Harness Cover.

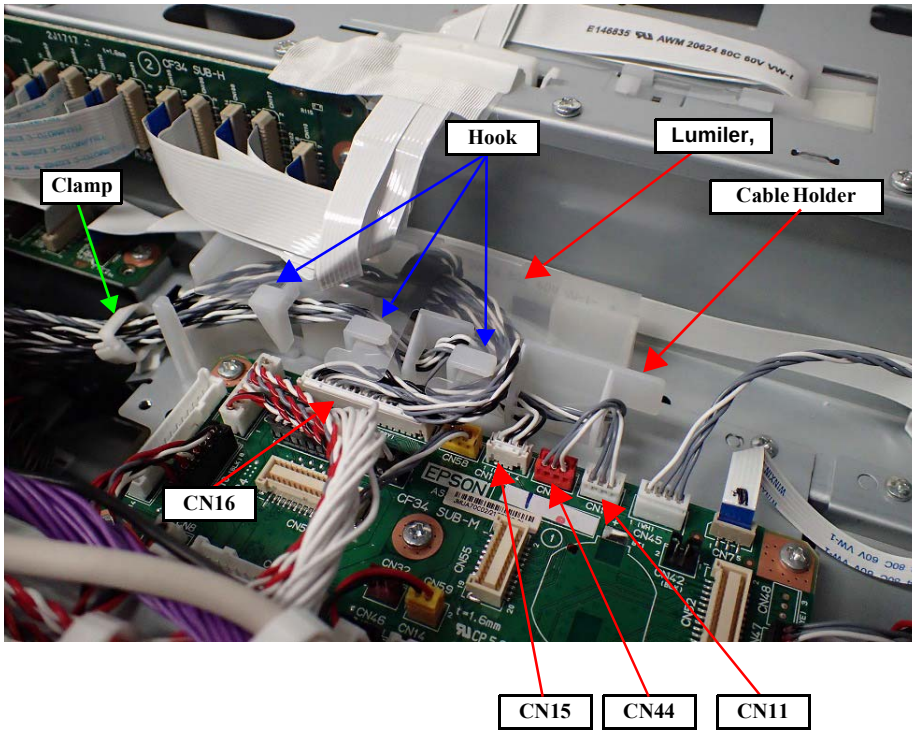
	B5	C5
D5	E5	

PCB Mechanism Relay Broad (with Mounting Plate)



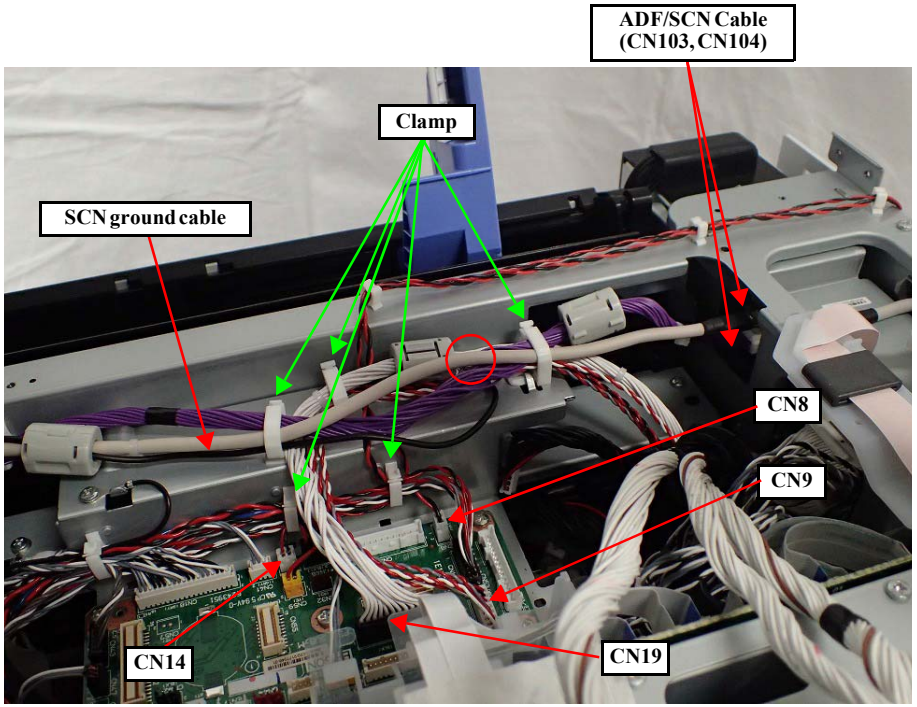
1. Disconnect the five Relay cables from the PCB Mechanism Relay Board.

PCB Mechanism Relay Board (with Mounting Plate)



2. Remove the cable of front side (around the cable holder) by the following procedure.
   - 2-1. Release the three hooks of lumiler, then open the lumiler .
   - 2-2. Release the clamp.
   - 2-3. Disconnect the four cables (CN11, CN15, CN16, CN44) from the PCB Mechanism Relay Board.
   - 2-4. Release the cable from the Cable Holder.

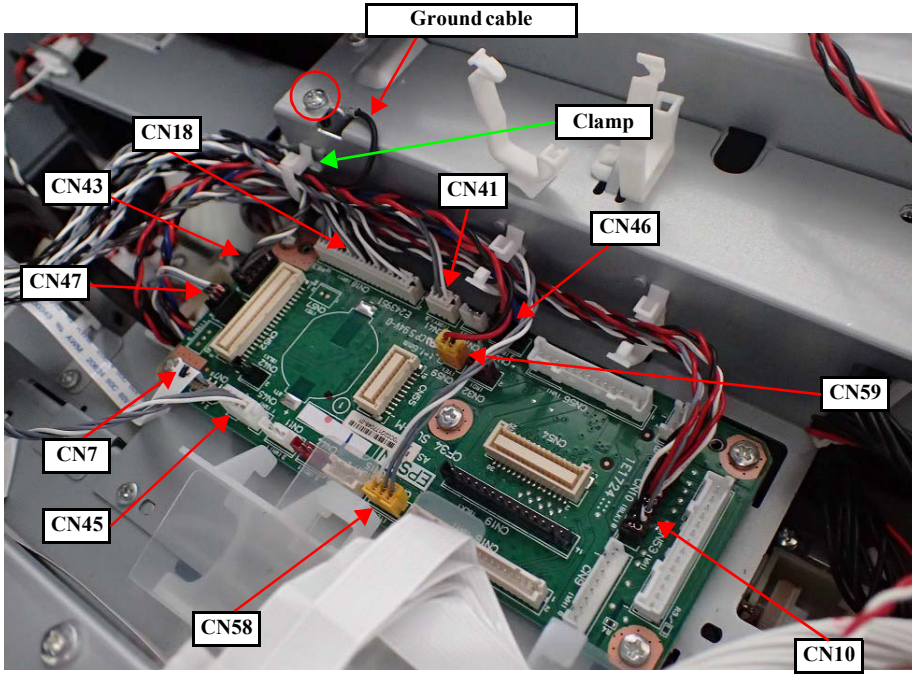
PCB Mechanism Relay Board (with Mounting Plate)



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

3. Disconnect the cables of rear side(1) by the following procedure.
   - 3-1. Disconnect the ADF/SCN cable from the connector (CN103, CN104) of the main board.
   - 3-2. Remove the screw (S1: ○), then remove the SCN ground cable.
   - 3-3. Release the five clamps.
   - 3-4. Disconnect four relay cables from connector (CN8, CN9, CN14, CN19) of the PCB Mechanism Relay Board.

PCB Mechanism Relay Board (with Mounting Plate)

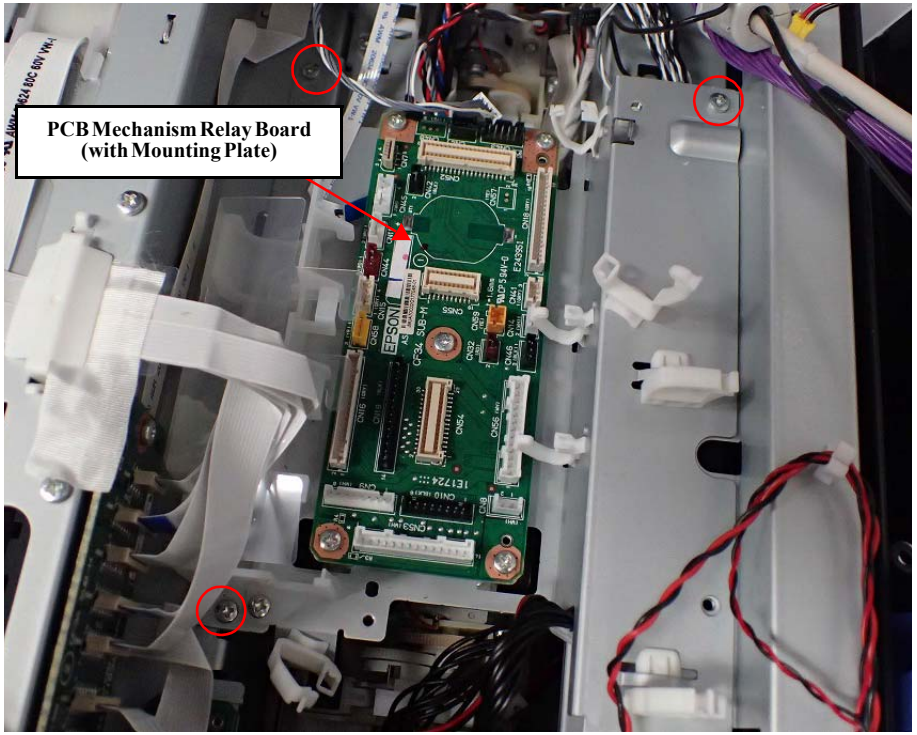


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

4. Disconnect the cables of rear side(1) by the following procedure.
   4-1. Release the cable from the clamp.
   4-2. Disconnect the nine cables and a FFC from the following connector of the PCB mechanism Relay Board.
   - CN7
   - CN41
   - CN46
   - CN58
   - CN10
   - CN43
   - CN47
   - CN59
   - CN18
   - CN45

   4-3. Remove the screw (S1: ○), then remove the Ground cable.

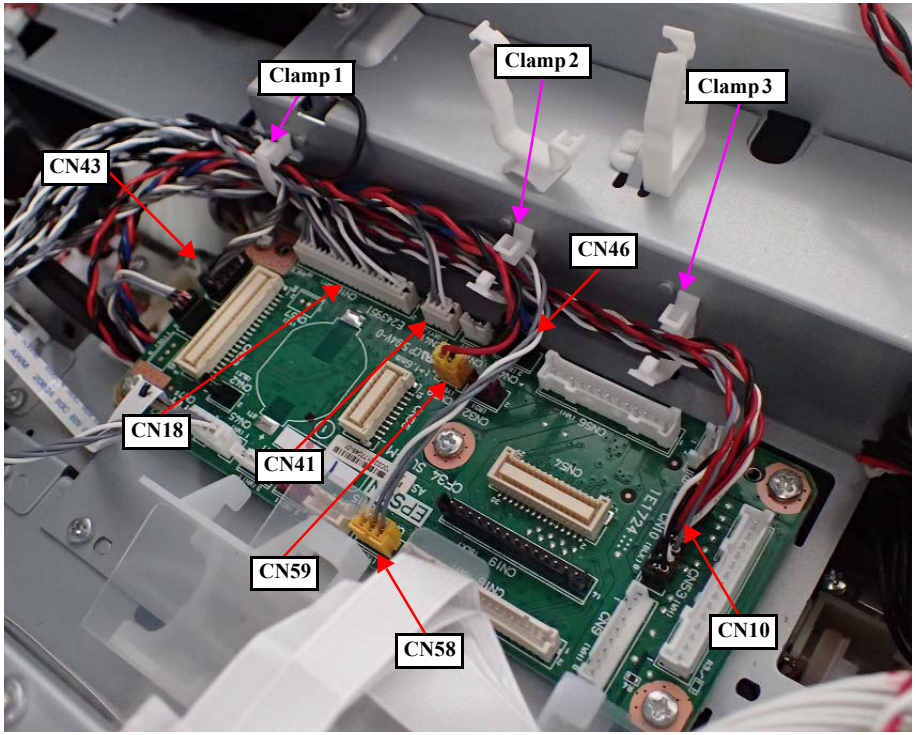
PCB Mechanism Relay Board (with Mounting Plate)



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

5. Remove the three screws (S1: ○), then remove the PCB Mechanism Relay Board (with Mounting Plate).

PCB Mechanism Relay Board (with Mounting Plate)

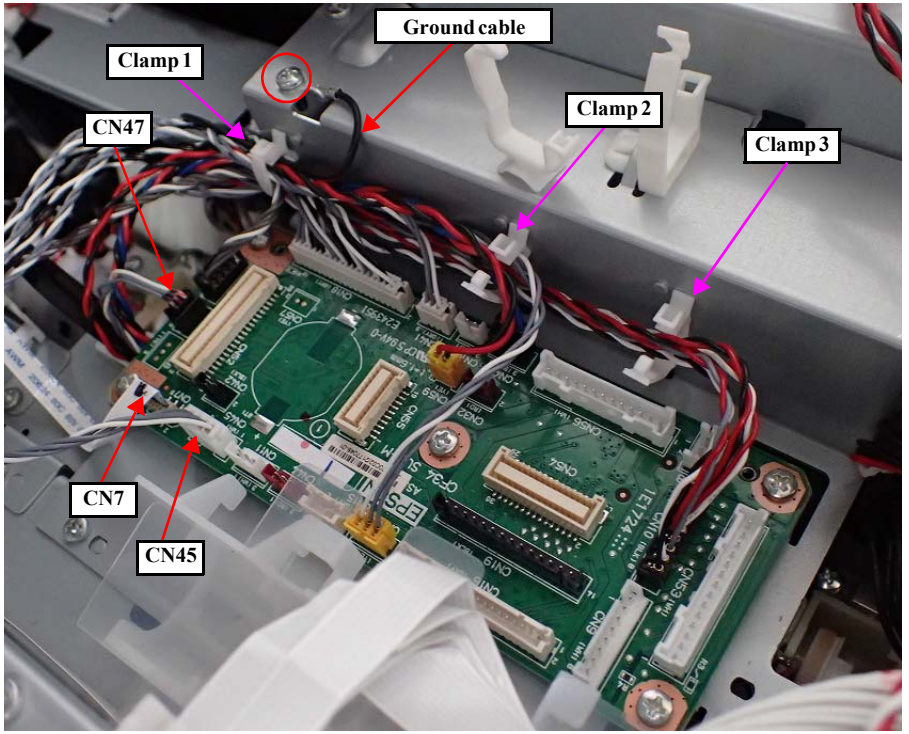


REASSEMBLY

Rotate the cables by the following procedure.

1. Route the cable to the following specified clamp, then connect the cable to PCB Mechanism Relay board.
   - ☐ Cable (CN10: Black):Clamp 3 > Clamp 2 > Clamp 1
   - ☐ Cable (CN58: Yellow):Clamp 2 > Clamp 1
   - ☐ Cable (CN59: Yellow):Clamp 2 > Clamp 1
   - ☐ Cable (CN46: Black):Clamp 2 > Clamp 1
   - ☐ Cable (CN41: White):Clamp 1
   - ☐ Cable (CN18: White):Clamp 1
   - ☐ Cable (CN43: Black):Clamp 1

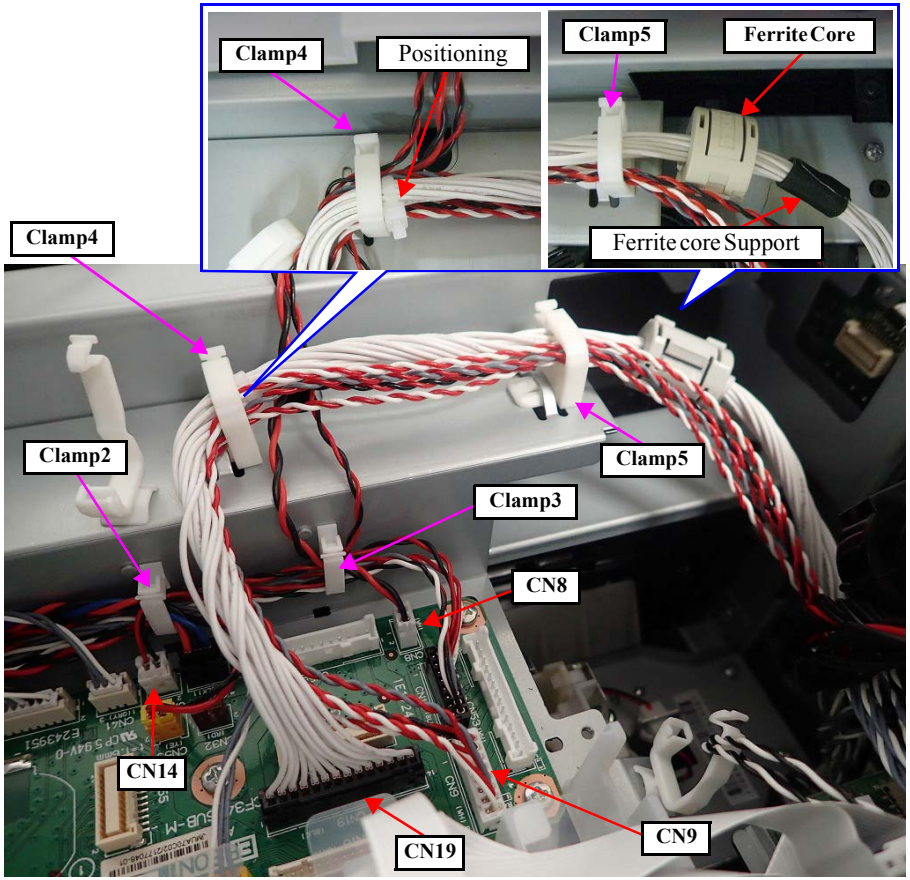
PCB Mechanism Relay Board (with Mounting Plate)



REASSEMBLY

2. Rotate the ground cable to clamp, then fix it by screw (S1).
3. Connect the following cable and FFC to the PCB Mechanism Relay Board.
   - ☐ FFC (CN7: White)
   - ☐ Cable (CN45: White)
   - ☐ Cable (CN47: Black)

PCB Mechanism Relay Board (with Mounting Plate)

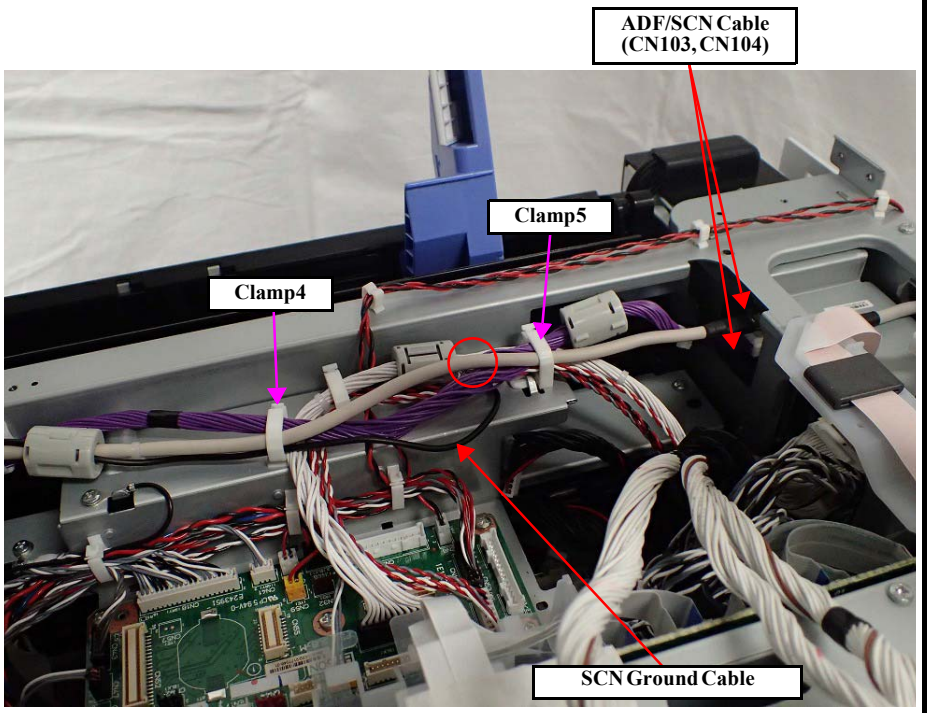


4. Route the cables to the following specified clamp, then connect the cables to the PCB Mechanism Relay Board.
   - ☐ Cable (CN14: White):Clamp 2 > Clamp 3
   - ☐ Cable (CN8: White:Clamp 3
   - ☐ Cable (CN9: White:Clamp 4 > Clamp 5
   - ☐ Cable (CN19: Black:Clamp 4 > Clamp 5

CAUTION

Note the following points when you rotate the cable (CN19).
- Set the positioning of the cable at left side (Home position side) of clamp 4.
- Set the ferrite core of the cable to between clamp5 and ferrite core support.

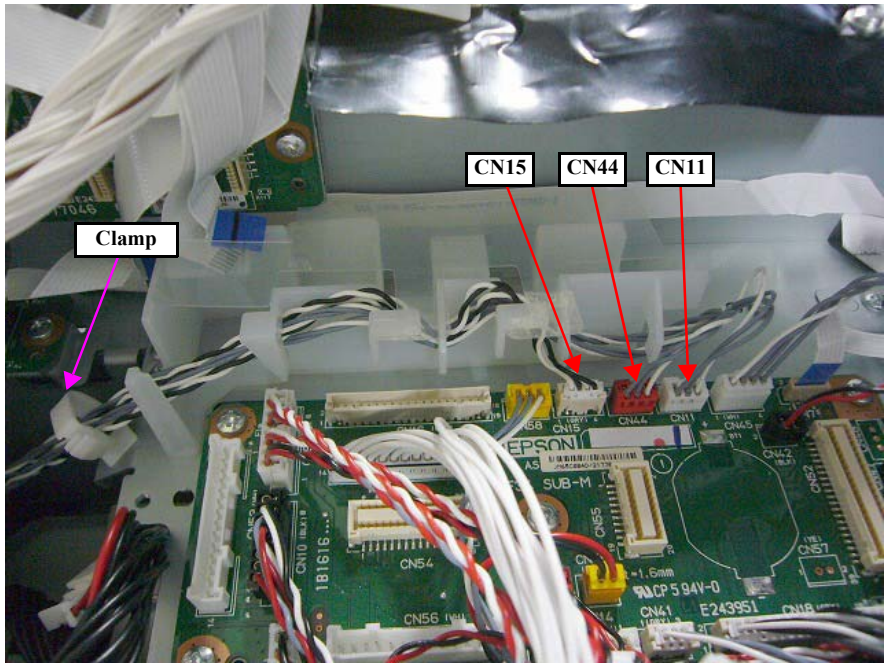
PCB Mechanism Relay Board (with Mounting Plate)



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

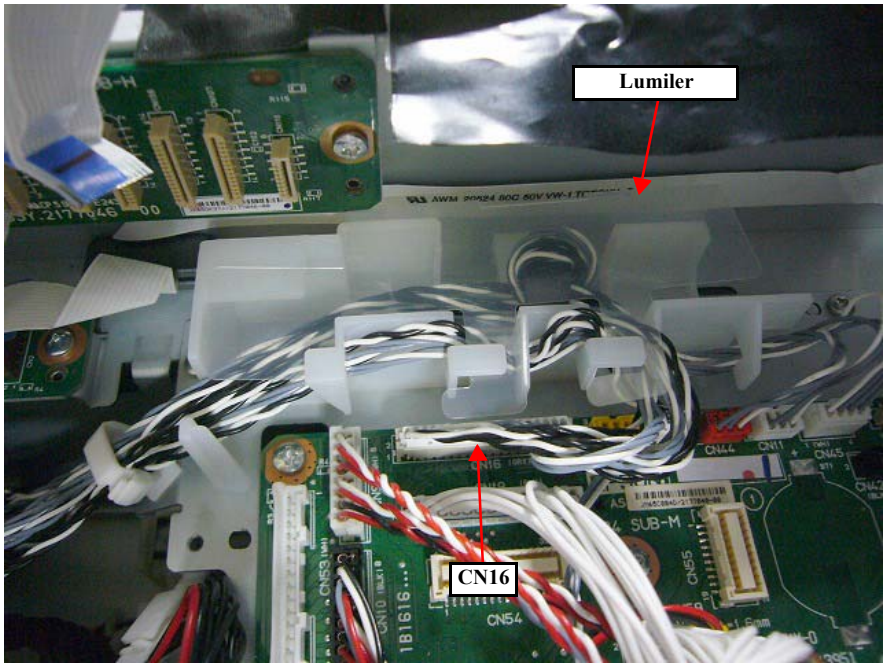
5. Connect the ADF/SCN Cables (CN103, CN104) to Main Board, and fix the these cables by clamp4 and Clamp 5.
6. Fix the SCN Ground Cable by screw (S1).
7. Fix the SCN Ground Cable by Clamp4.

PCB Mechanism Relay Board (with Mounting Plate)



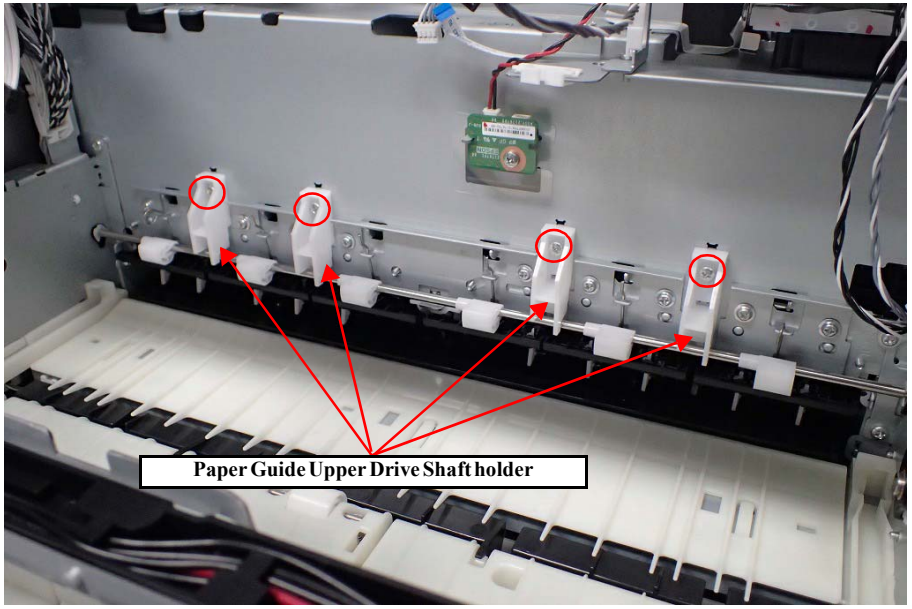
8. Route the cables to Cable Holder following the above figure, then connect the cables to PCB Mechanism Relay Board.
   - ☐ Cable (CN11: White):four hooks > Clamp
   - ☐ Cable (CN44: Red):four hooks > Clamp
   - ☐ Cable (CN15: White:three hooks > Clamp

PCB Mechanism Relay Board (with Mounting Plate)



9. Route the cable(CN16) following the above figure, then connect the cable to PCB Mechanism Relay Board.
10. Set the hook of Lumiler to Cable Holder, then fix it.
11. Connect the five relay cables to PCB Mechanism Relay Board.

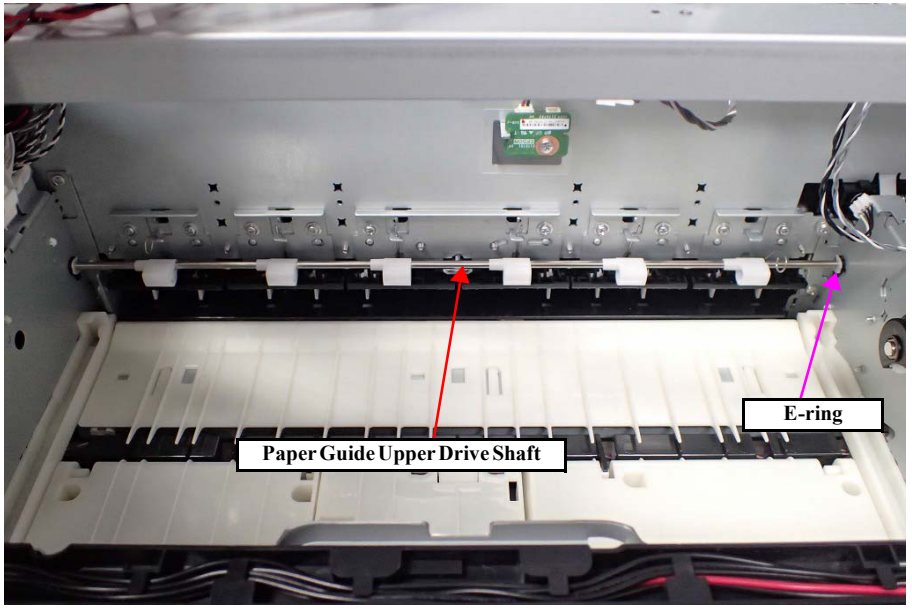
	B6	C6	Paper Guide Upper Drive Shaft Holder
D6	E6		



No.	Screw Type
S1	C.B.S-TITE-R-SCREW-3x8-F.ZN-3C

1. Remove four screws (S1:○), and Remove the aper Guide Upper Drive Shaft Holder (x4).

	B7	C7	Paper Guide Upper Drive Shaft
D7	E7		

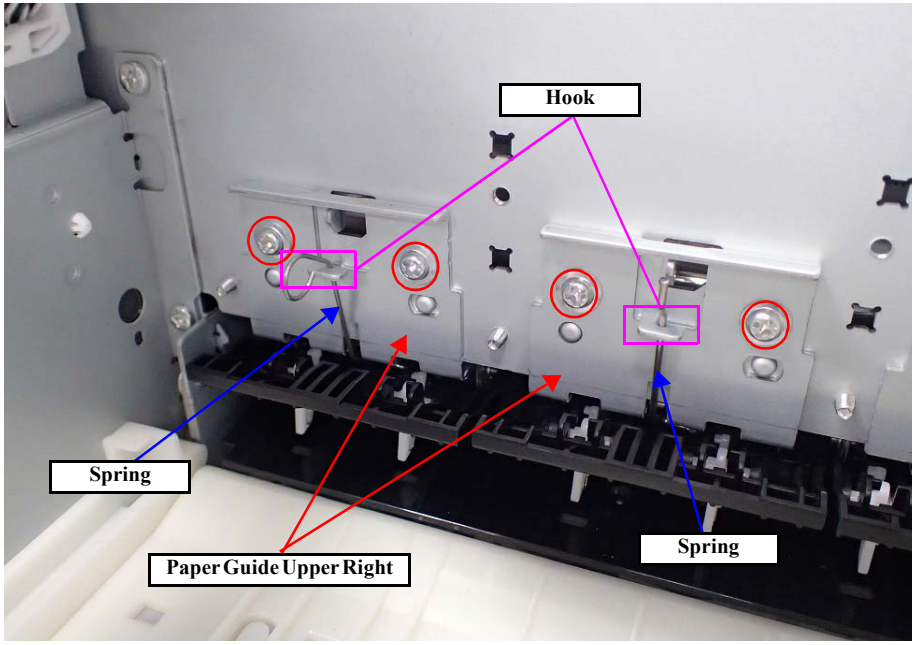


1. Remove the E-ring (Full side).
2. Remove the shaft by shifting it to the full side so that the home side escapes.

CAUTION Be careful not to lose E-ring.

	B8	
	E8	

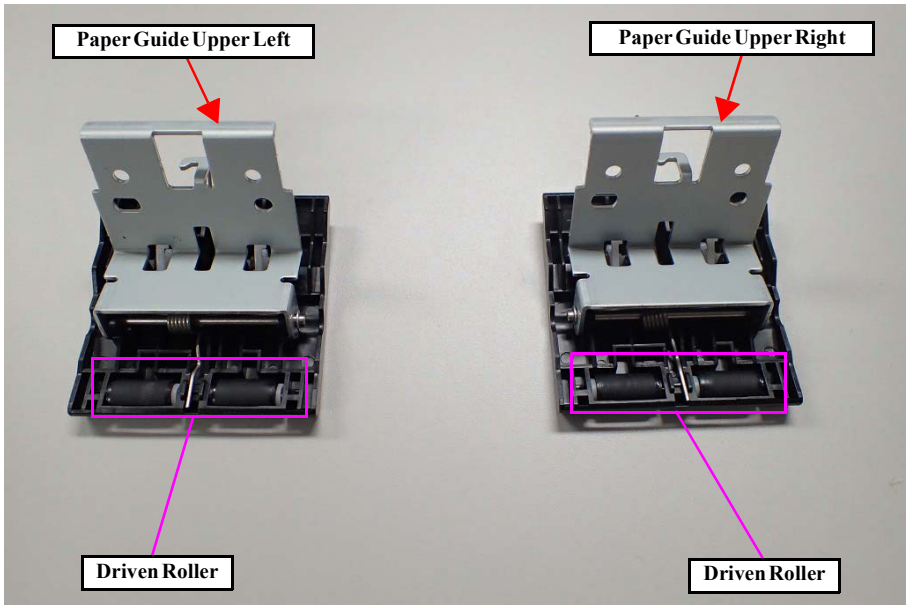
Paper Guide Upper Right



No.	Screw Type
S28	C.C.SCREW-3x5-F.ZN-3C

1. Remove the Spring from hook.
2. Remove two screw(each part) (S28:○), and Pull out the Paper Guide Upper Right to back side.

Paper Guide Upper Right

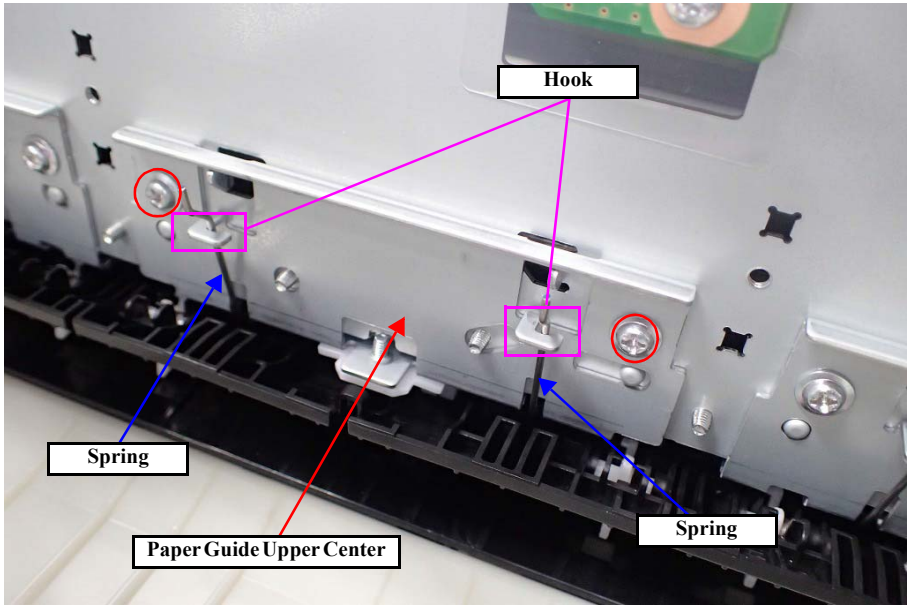


CAUTION

Peper Guide Upper Left and Paper Guide Upper Right are similar in shape.
However, Be careful driven roller installation direction is different.
(The white part of Driven Roller faces the center)

		C8
	E8	

Paper Guide Upper Center

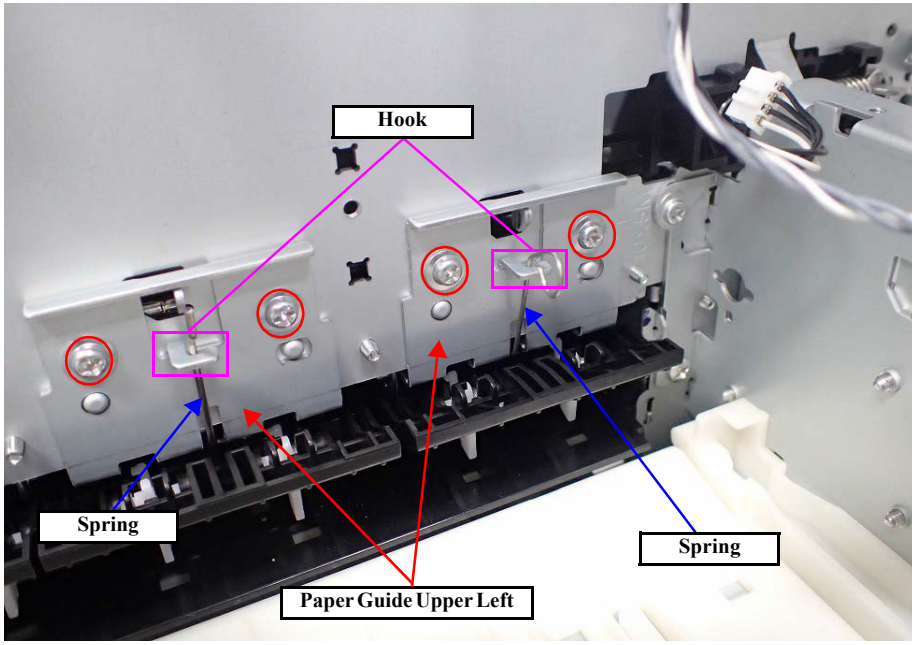


No.	Screw type
S28	C.C.SCREW-3x5-F.ZN-3C

1. Remove the Spring from the hook.
2. Remove two screws (S28:○), and Pull out the Paper Guide Upper Center to back side.

D8	E8	

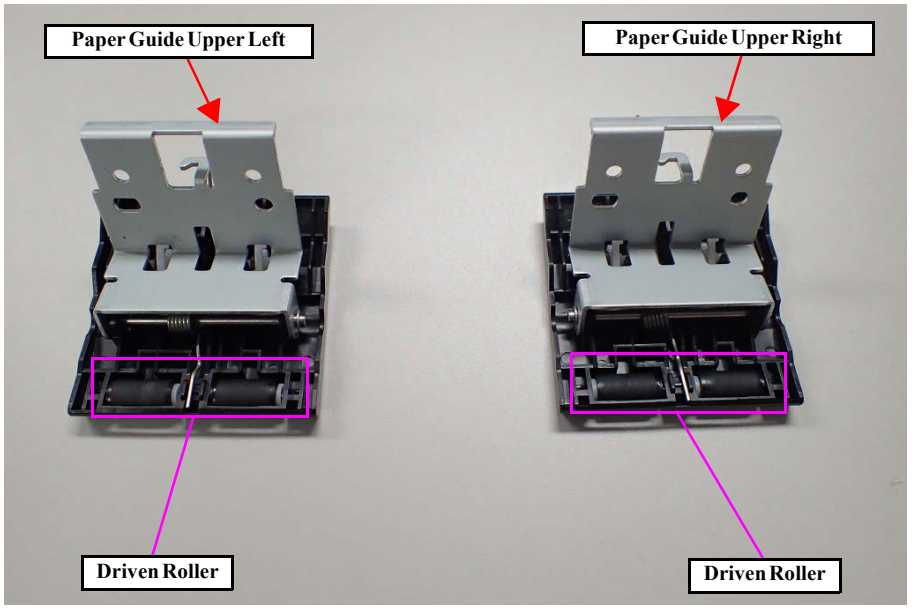
Paper Guide Upper Left



No.	Screw Type
S28	C.C.SCREW-3x5-F.ZN-3C

1. Remove the Spring from the hook.
2. Remove two screws (each part) (S28:○), and pull out the Paper Guide Upper Left to back side.

Paper Guide Upper Left

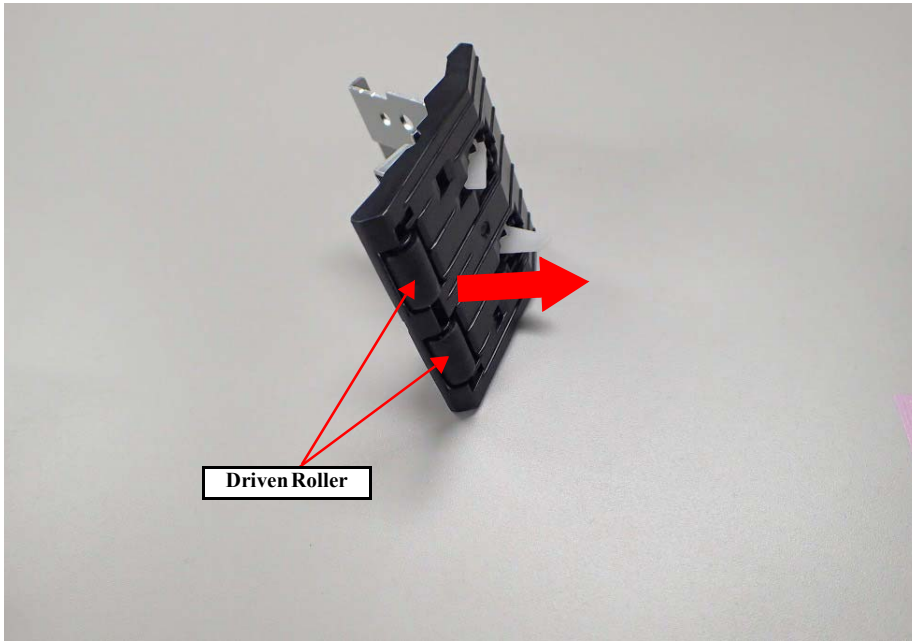


CAUTION

Peper Guide Upper Left and Paper Guide Upper Right are similar in shape.
However, Be careful driven roller installation direction is different.
(The white part of Driven Roller faces the center)

	E9	

Driven Roller

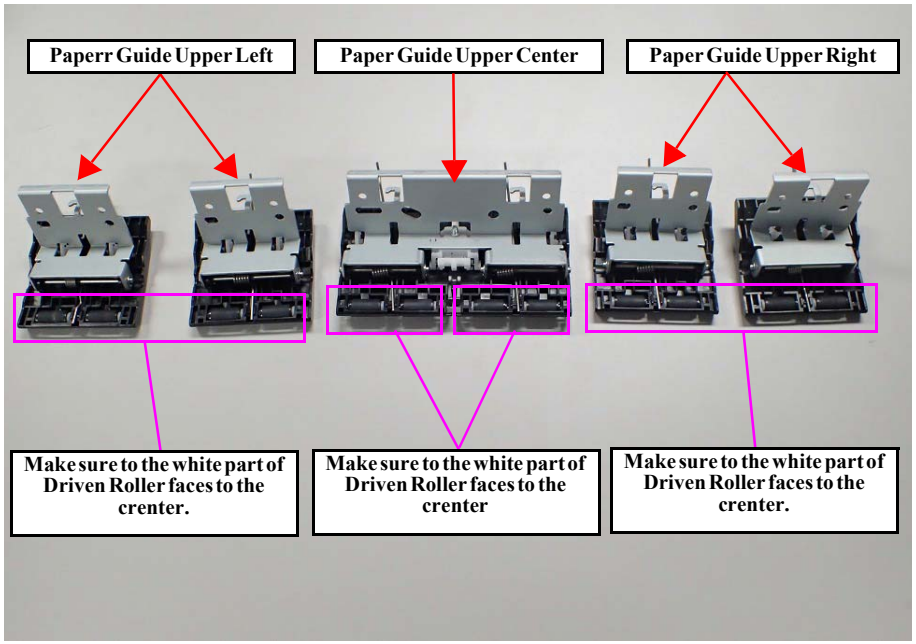


1. Push the Driven Roller to direction of the arrow, and remove it (with shaft).
2. Remove the Driven Roller from shaft.

CHECK POINT

The procedure for removing Paper Guide Upper Left and Paper Guide Upper Center is the same.

Driven Roller



REASSEMBLY

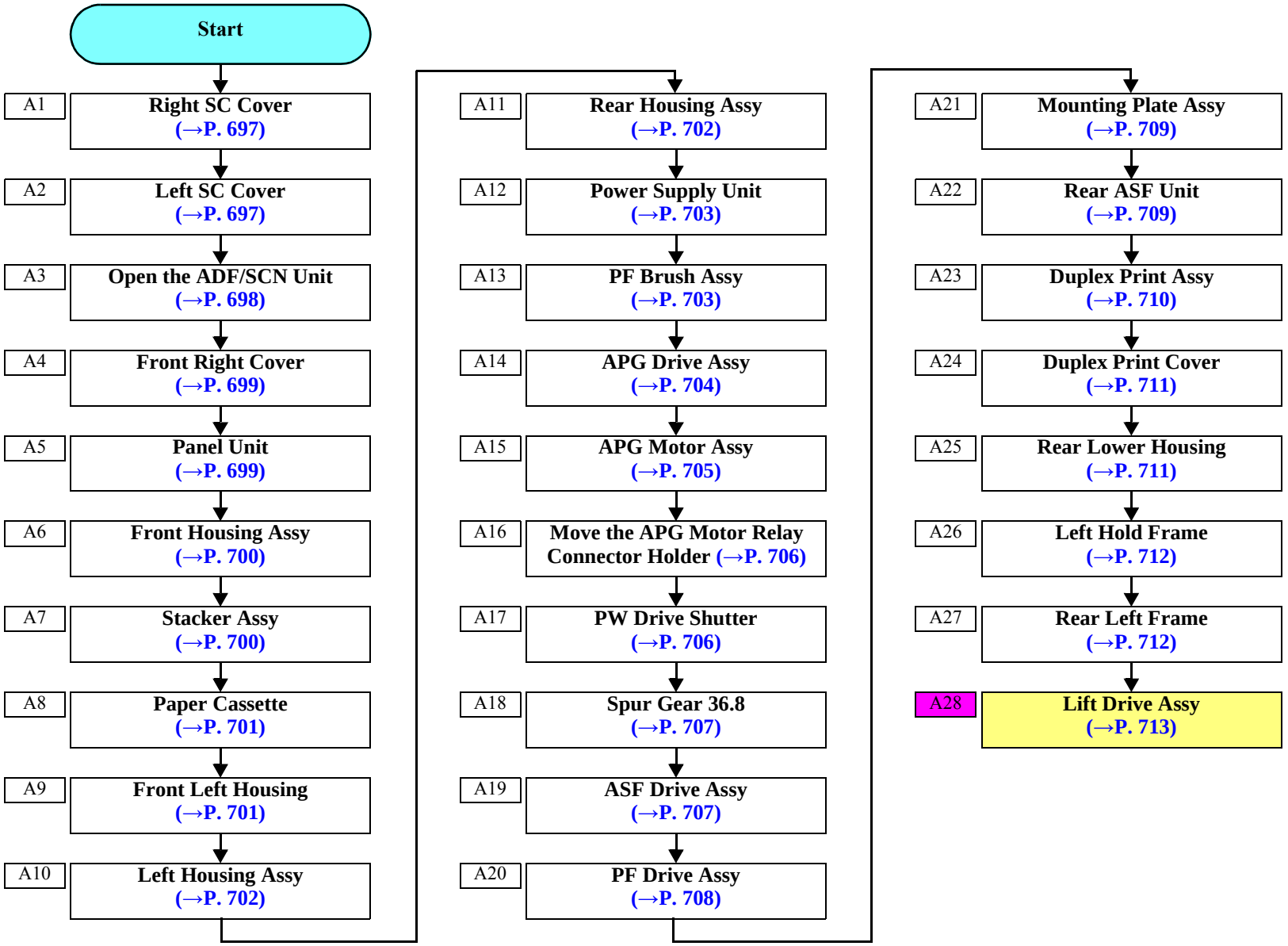
Driven Roller has the installlation direction.
Therefore, makesure to install the Driven roller correct direction refer to figure.

7.4.3.26 Paper Feed Mechanism 8

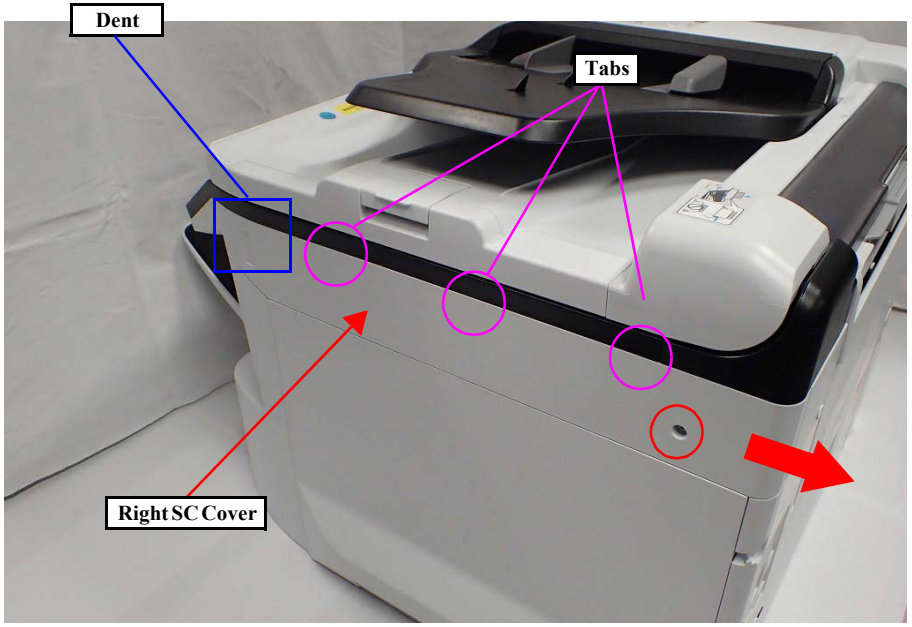
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Lift Drive Assy	A	39 min 26 sec	34 sec	40 min 00 sec

DISASSEMBLY FLOWCHART



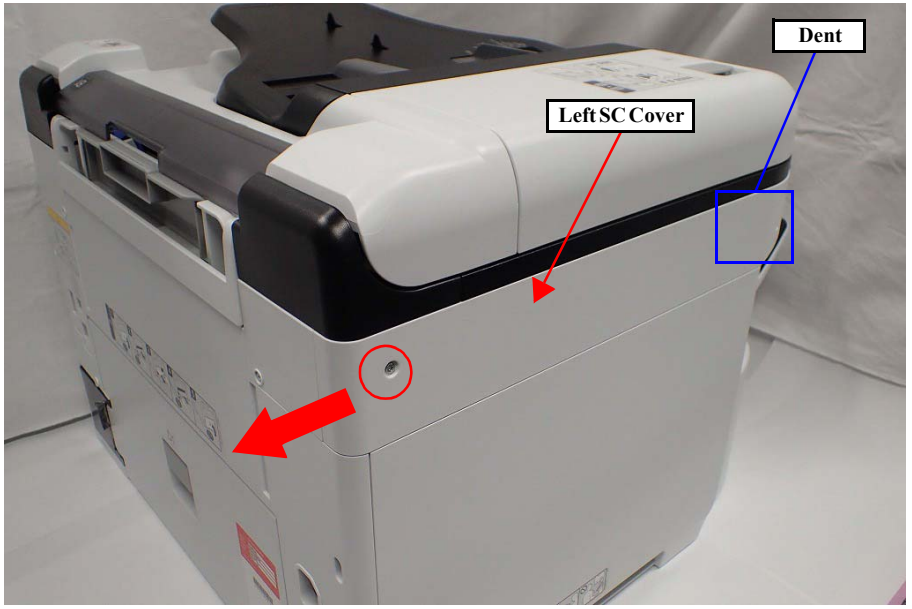
A1		Right SC Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○).
2. Slide the Right SC Cover while pushing the dent of Right SC Cover, and release the three tabs.
3. Remove the Right SC Cover.

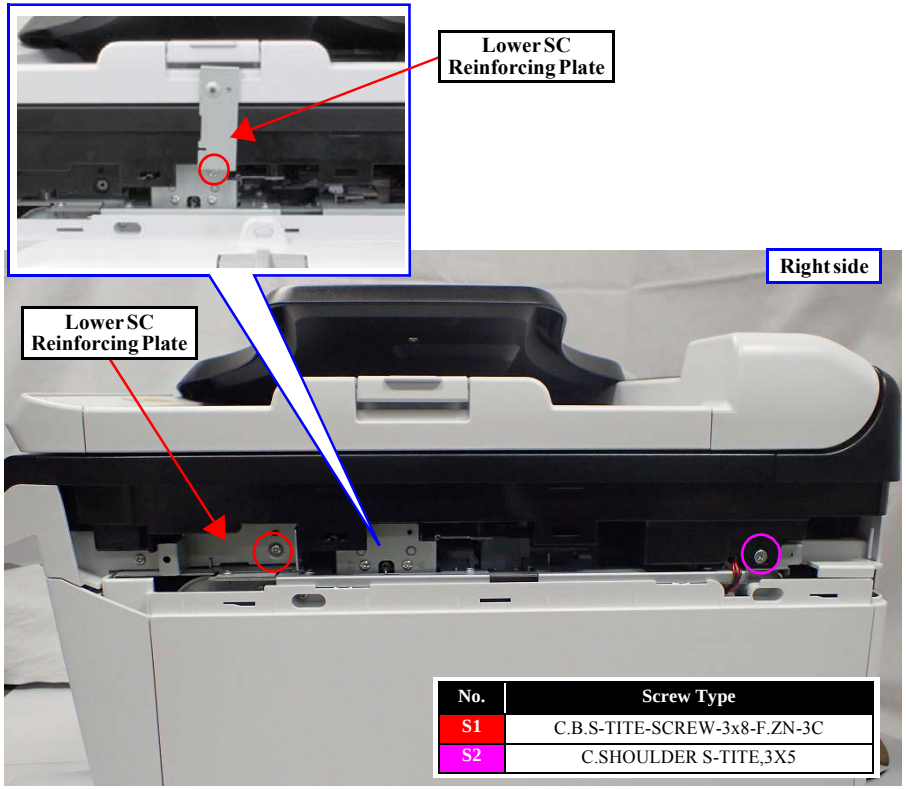
A2		Left SC Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove one screw (S1: ○)
2. Slide the Left SC Cover while pushing the dent of Left SC Cover, and remove it.

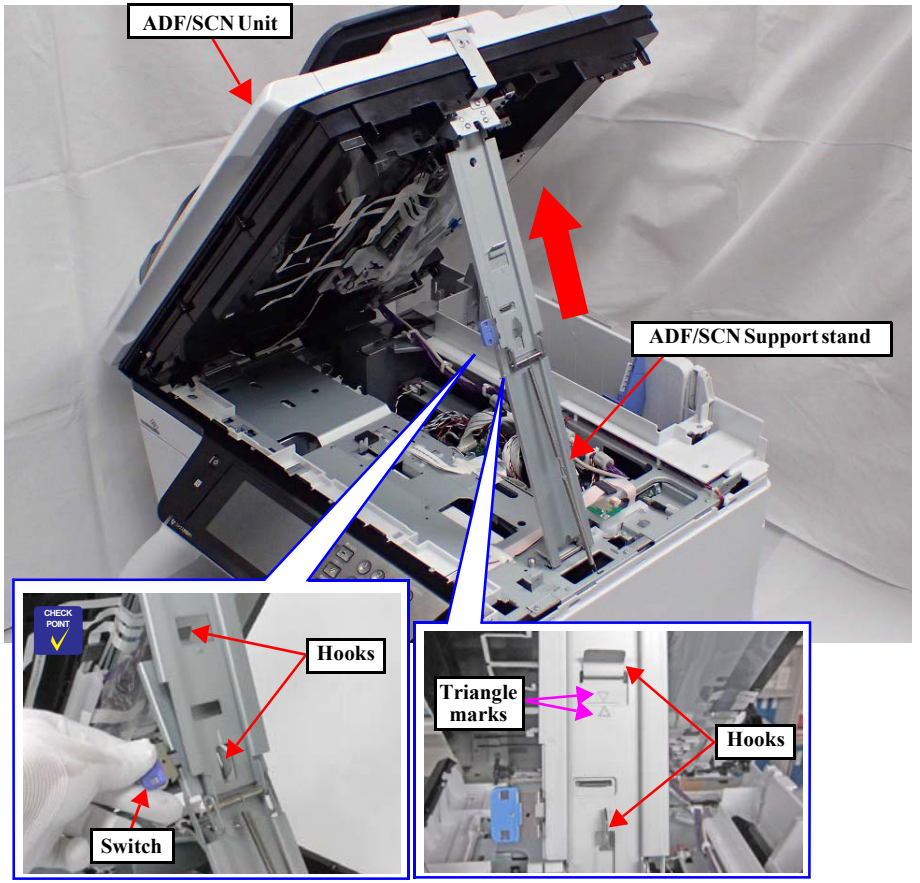
A3		Open the ADF/SCN Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove one screw (S1: ○), then remove the Lower SC Reinforcing Plate.
2. Reattach the Lower SC Reinforcing Plate in its portrait orientation, then secure it with the screw (S1: ○).
3. Remove one screw (S2: ○).

Open the ADF/SCN Unit

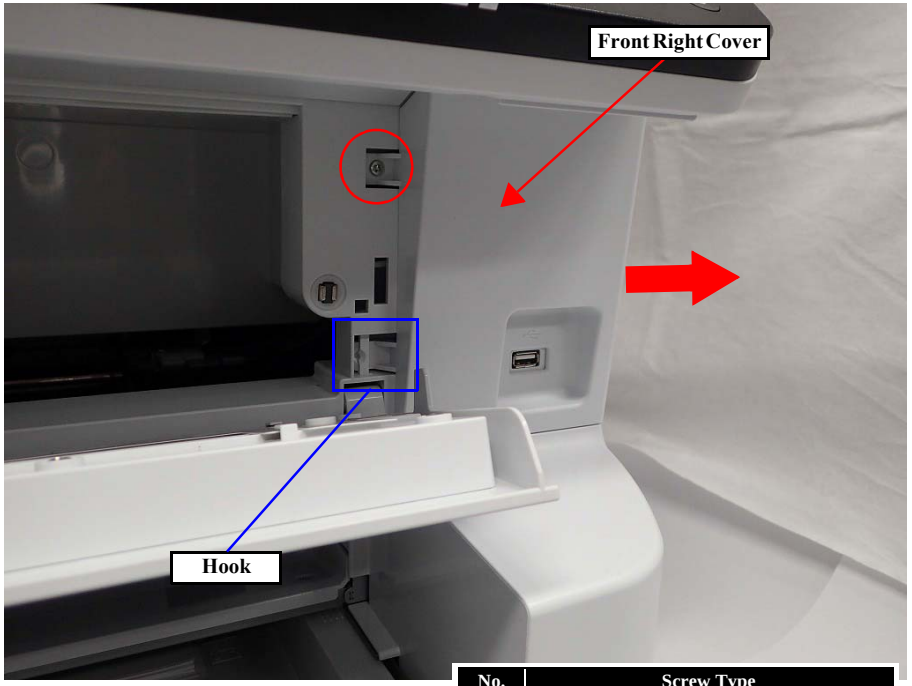


4. Open the ADF/SCN Unit and extend the support stand as far as it goes, then support the ADF/SCN Unit with the ADF/SCN support stand.

CAUTION: Make sure that the extended ADF/SCN support stand is fixed with the two hooks, and the two triangle marks face to each other.

CHECK POINT: When closing the ADF/SCN Unit, press the switch on the ADF/SCN support stand and hold up the ADF/SCN Unit to disengage the two hooks, then fold the ADF/SCN support stand.

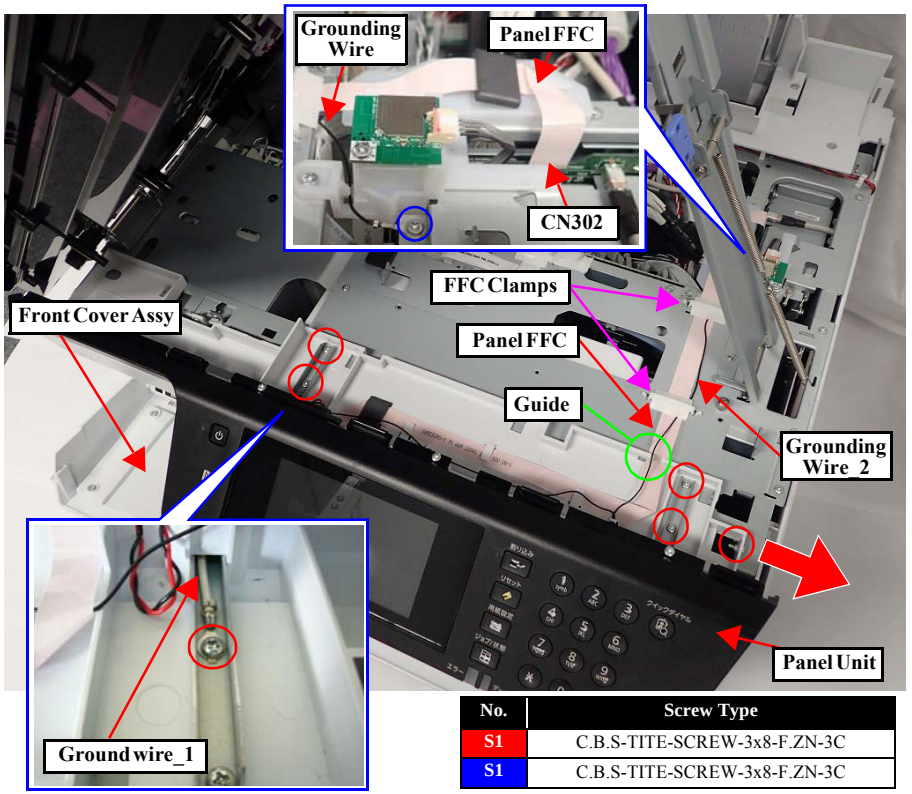
A4 Front Right Cover



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

A5 Panel Unit

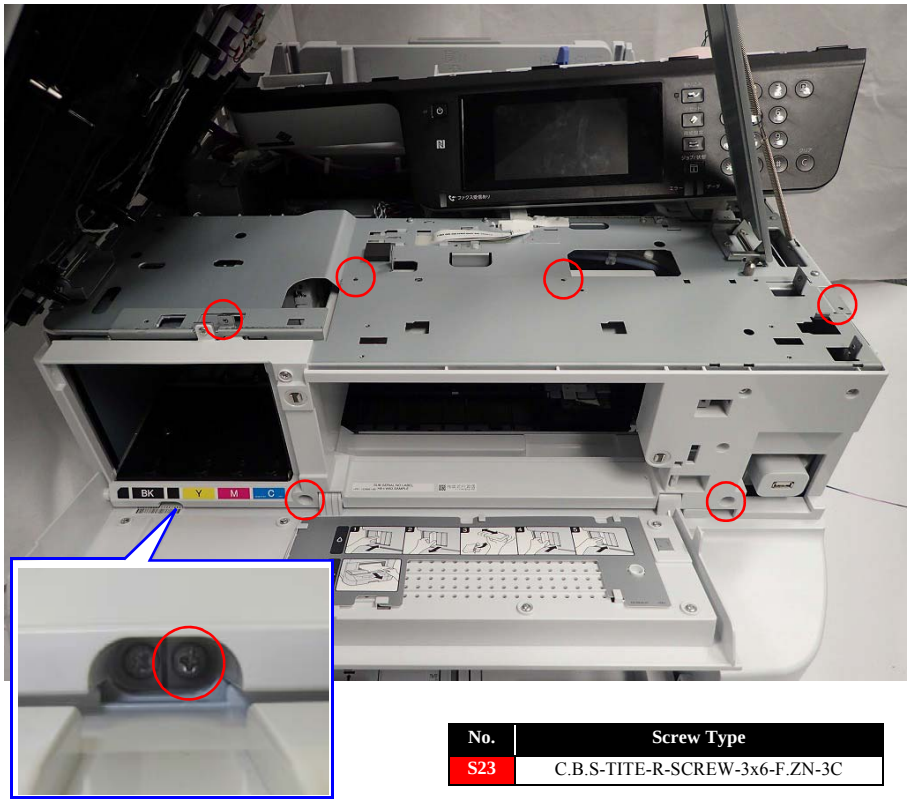


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the five screws (S1: ○).
2. Disconnect the FFC from the connector (CN302) of the Main Board.
3. Remove one screw (S1: ○), then release the grounding wire.
4. Remove the two FFC Clamps.
5. Open the front cover.
6. Slide the panel unit rightward to remove it.

REASSEMBLY
- ☐ There is a place to fasten the grounding wire together when fixing the panel.
- ☐ Route the Grounding wire_2 over the Panel FFC, and fix it by FFC Clamps.

A6		Front Housing Assy



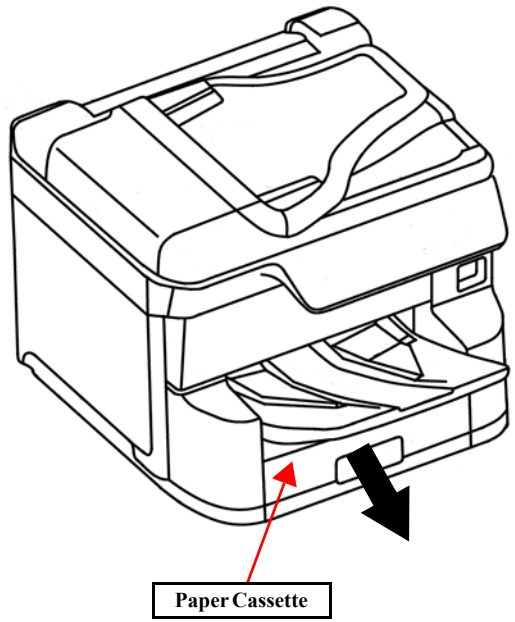
No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

A7		Stacker Assy

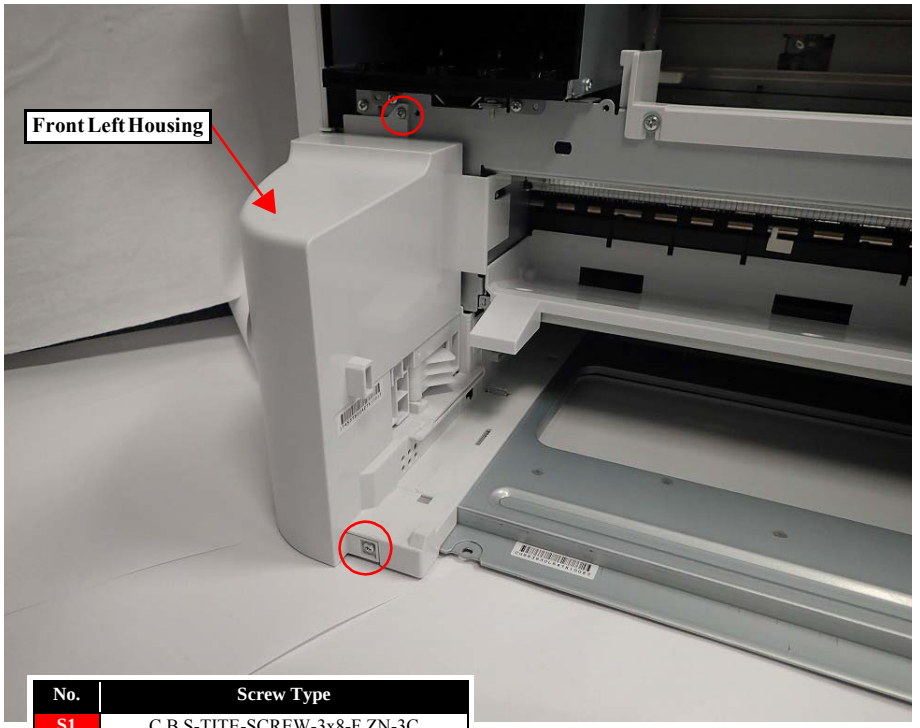
1. Remove the Stacker Assy.

A8		Paper Cassette



1. Remove Paper Cassette.

A9		Front Left Housing



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

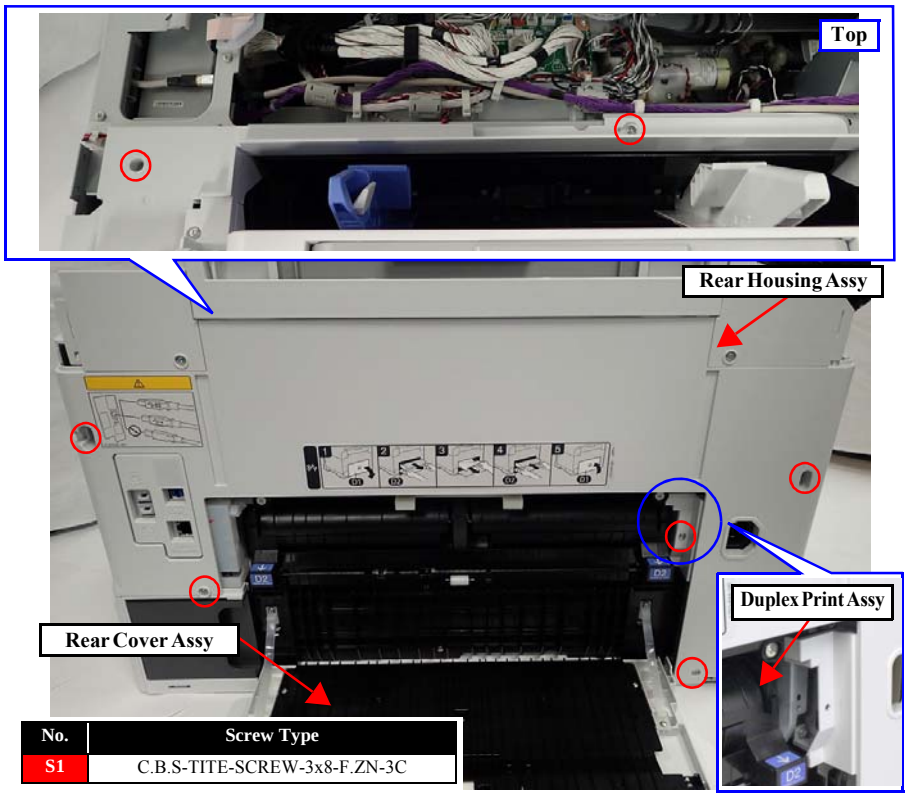
1. Remove the two screws (S1: ○), then remove the Front Left Housing.

A10 Left Housing Assy

No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screw (S1: ○), and remove the Left Housing Assy.

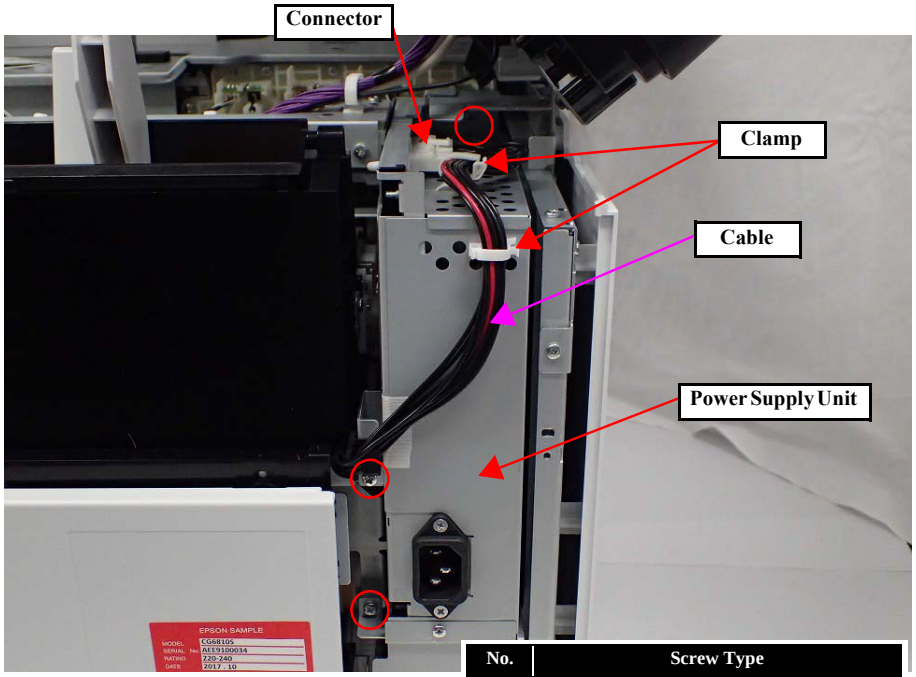
A11 Rear Housing Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the seven screws (S1: ○), and remove the Rear Housing Assy while avoiding interference with the Duplex Print Assy.

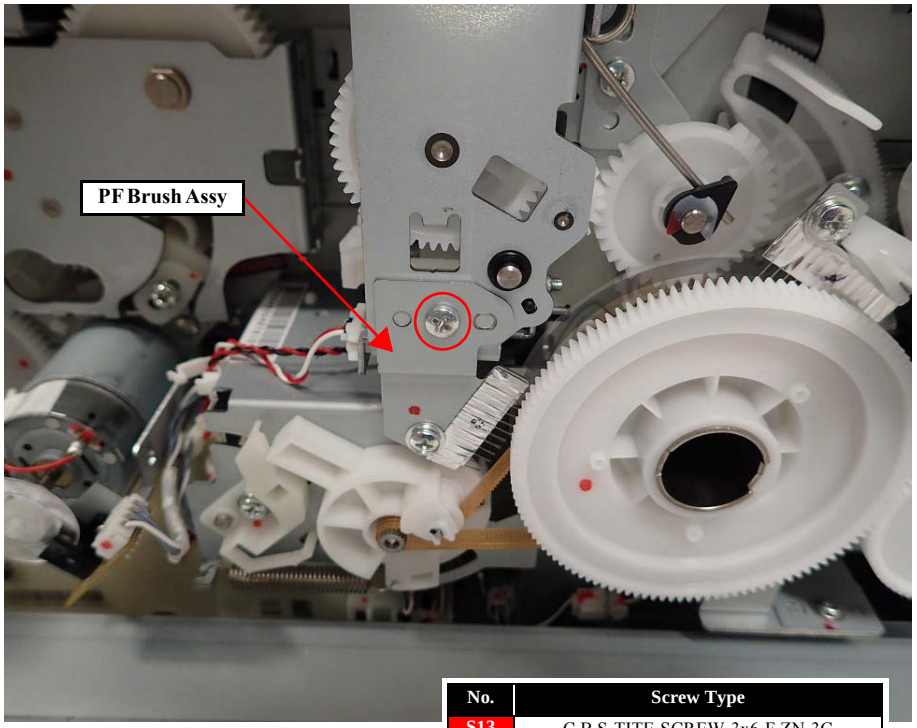
A12 Power Supply Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Release the Cable from two clamps.
2. Disconnect the cable from connector of Power Supply Unit.
3. Remove three screws (S1:○), and remove the Power Supply Unit.

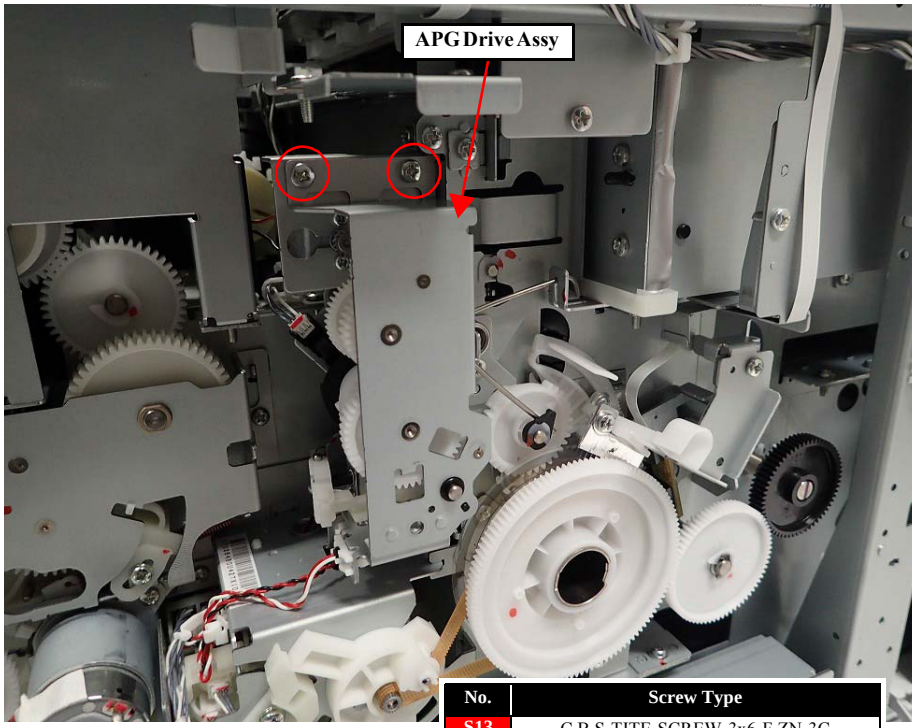
A13 PF Brush Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the screw (S13: ○), then remove the PF Brush Assy.

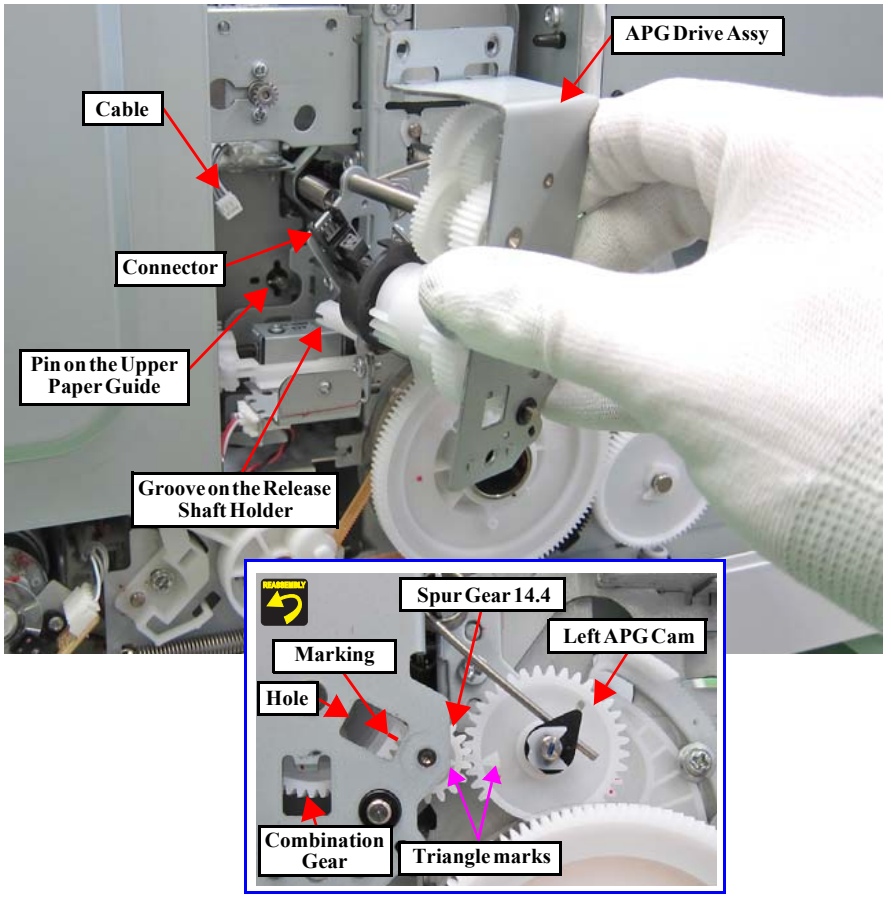
A14		APG Drive Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the two screws (S13: ○), then remove the APG Drive Assy.

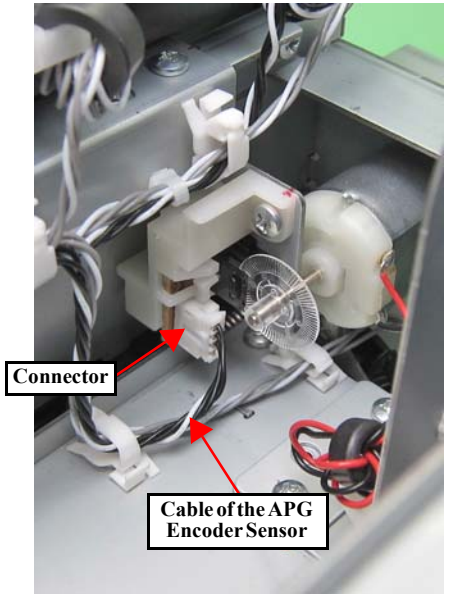
APG Drive Assy

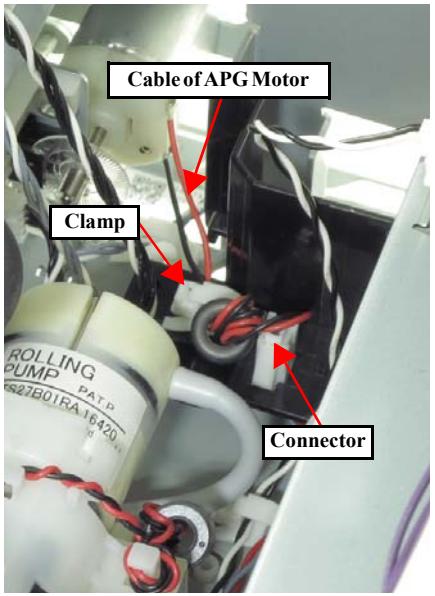


2. Disconnect the cable from the connector of the sensor.

- Align the triangle mark on the left APG cam with the triangle mark on the spur gear 14.4 on the APG Drive Assy. At this point, make sure the mark on the combination gear can be seen through the hole on the APG Drive Assy.
- Insert the pin on the upper paper guide into the groove on the release shaft holder of the APG Drive Assy.

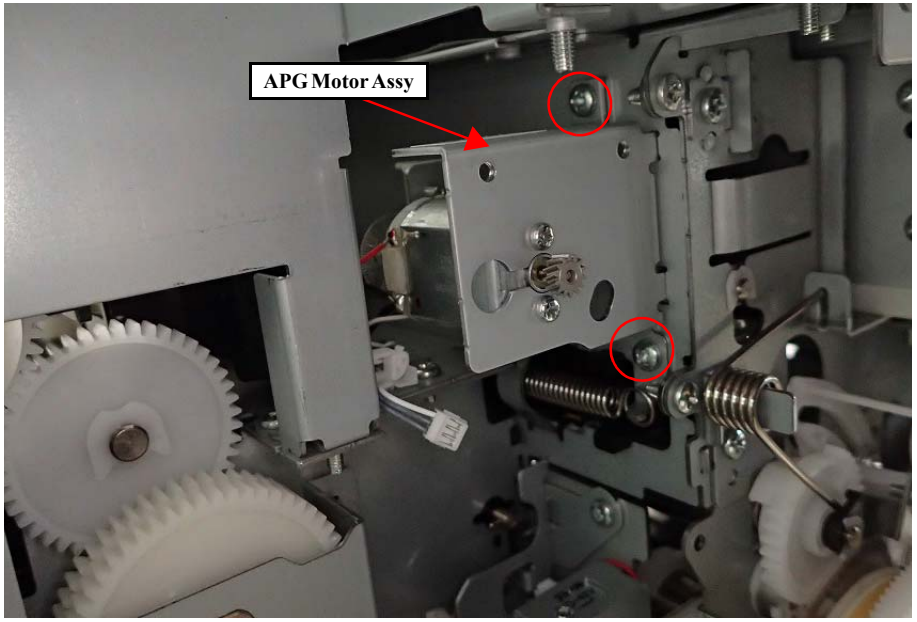
A15		APG Motor Assy





1. Disconnect the cable from the connector of the APG Encoder sensor.
2. Disconnect the cable from the connector of the APG motor.
3. Release the cable of the clamp from the APG motor.

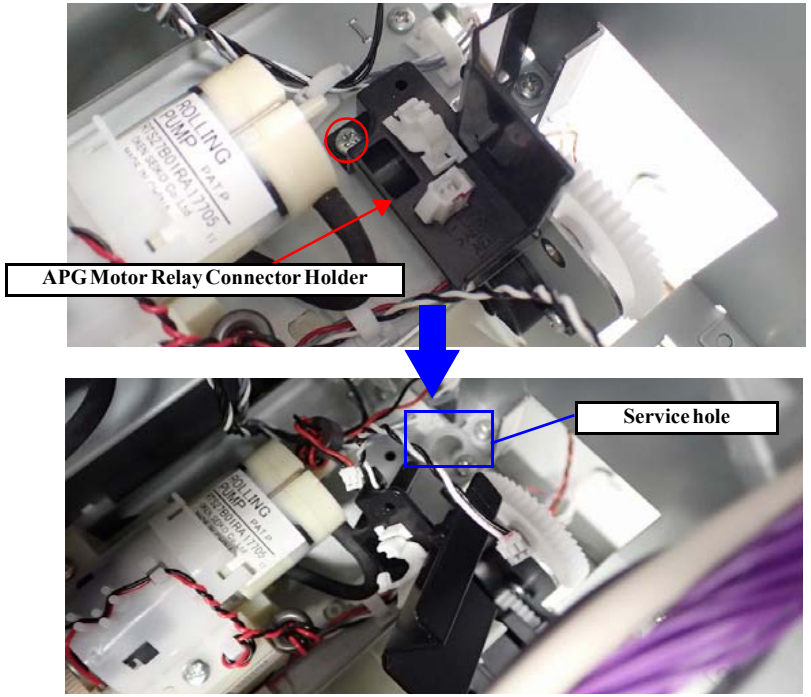
APG Motor Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

4. Remove the two screws (S13: ○), then remove the APG Motor Assy.

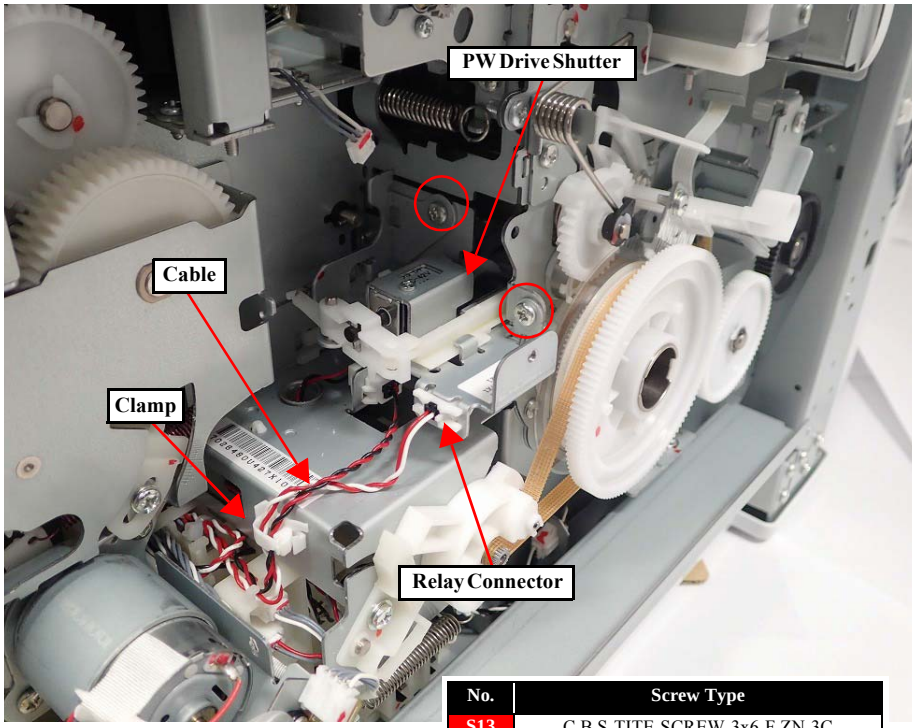
A16 Move the APG Motor Relay Connector Holder



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the screw (S1:○).
2. Move the APG Motor Relay Connector Holder to make the Service Hole visible.

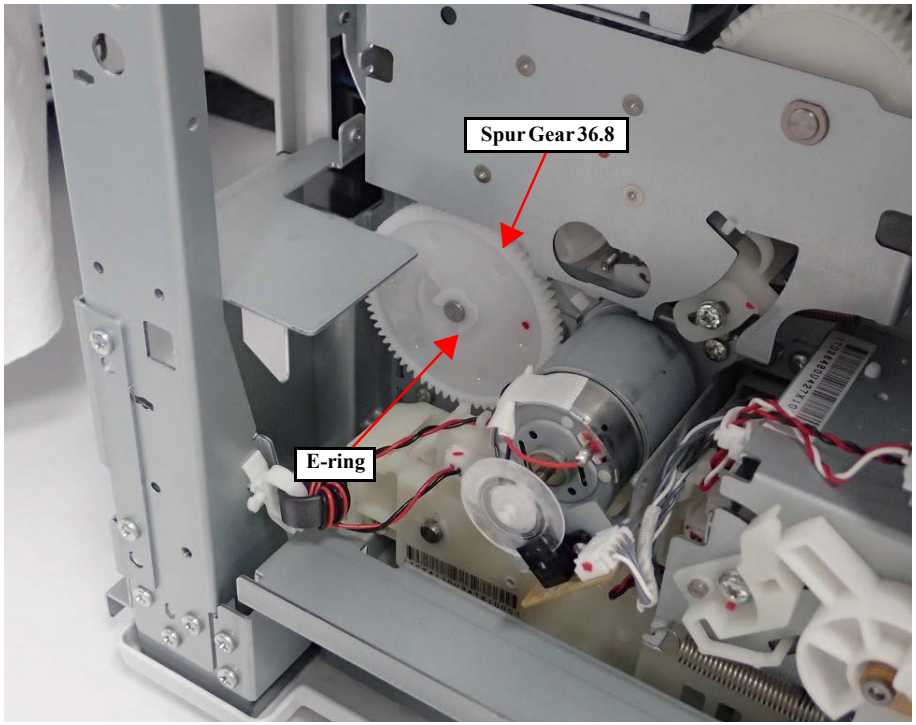
A17 PW Drive Shutter



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

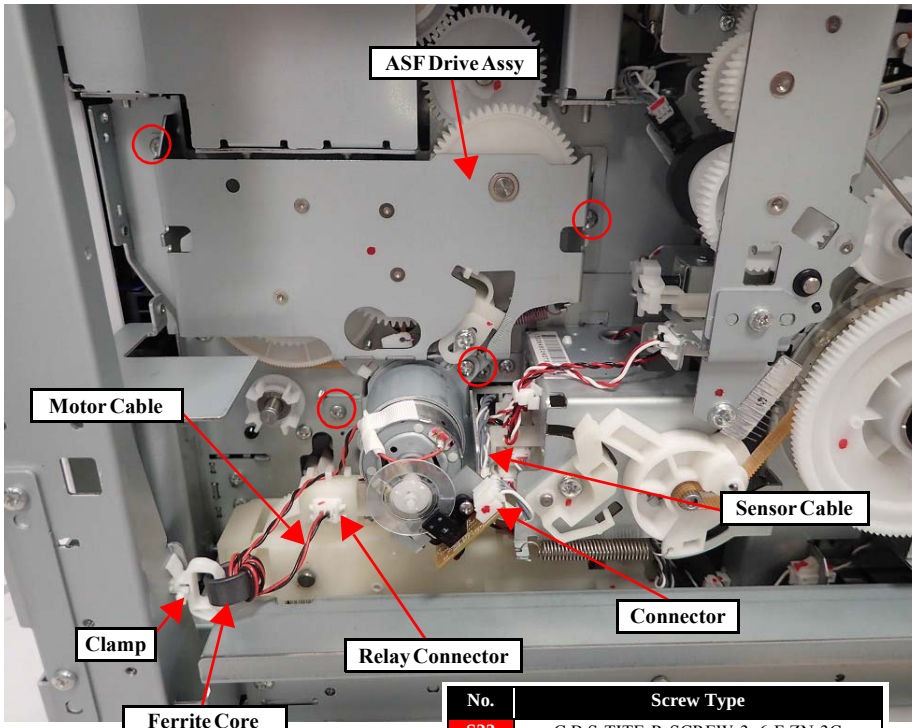
1. Release the cable of the PW Drive Shutter from the clamp.
2. Disconnect the cable from the relay connector.
3. Remove the two screws (S13: ○), then remove the PW Drive Shutter.

A18 Spur Gear 36.8



1. Remove the E-ring, then remove the Spur Gear 36.8.

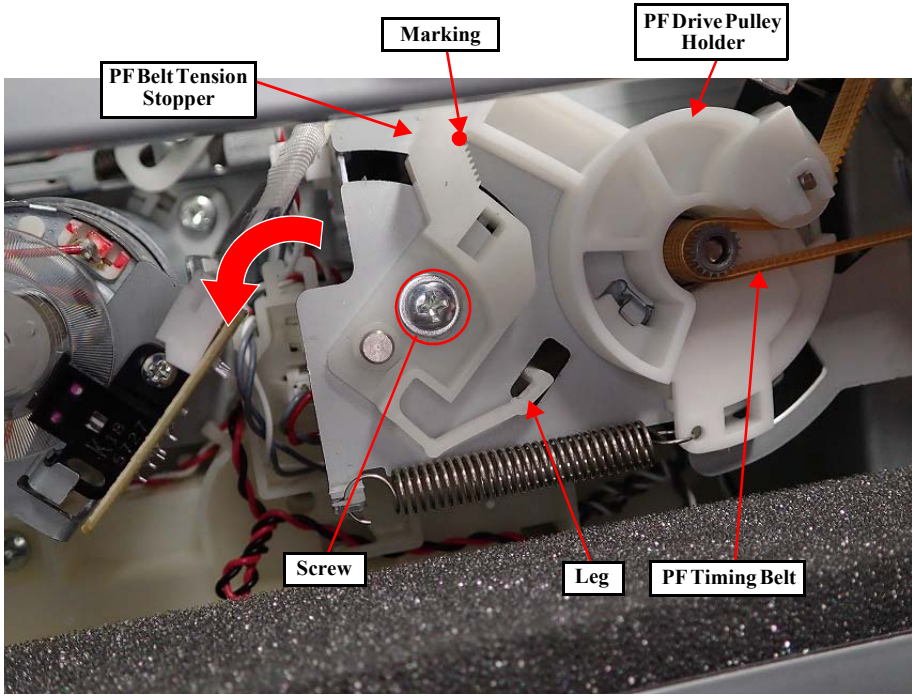
A19 ASF Drive Assy



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

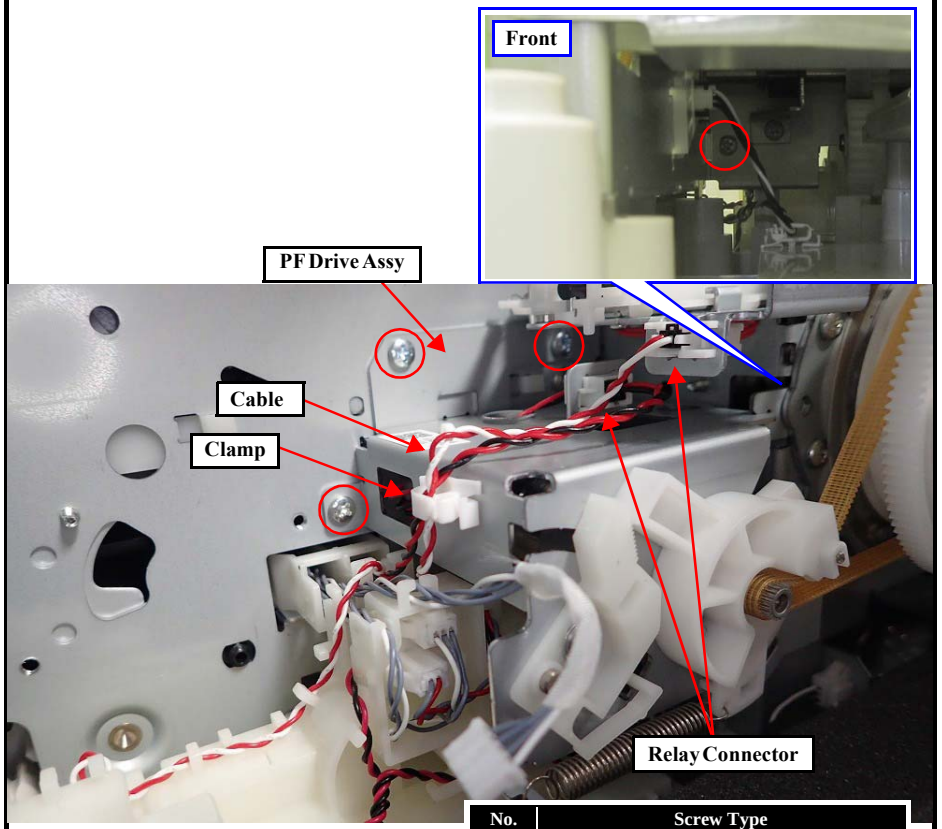
1. Release the ferrite core from the clamp.
2. Disconnect the motor cable from the relay connector.
3. Disconnect the sensor cable from the connector.
4. Remove the four screws (S23: ○), then remove the ASF Drive Assy.

A20		PF Drive Assy



1. The PF Belt Tension Stopper is in contact with the PF Drive Pulley Holder. Put a mark on the contact point.
2. Loosen the screw that secures the PF Belt Tension Stopper.
3. Release the leg of the PF Belt Tension Stopper from the frame, then slide it rearward.
4. Remove the PF Timing Belt from the PF Drive Pulley Holder.

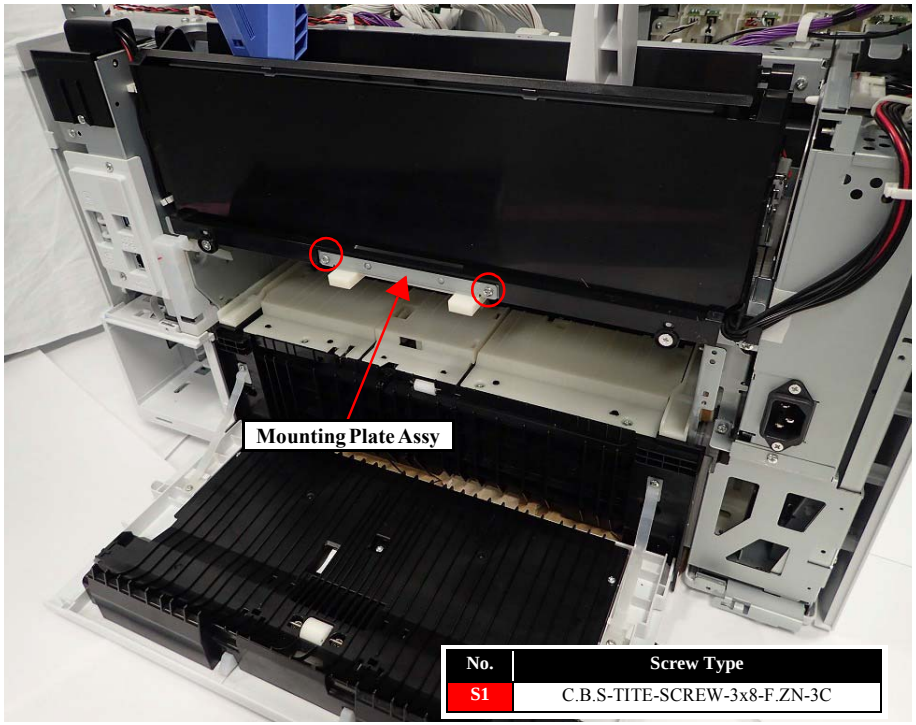
PF Drive Assy



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

5. Disconnect the cables from the two relay connectors, and release the cables from the clamp.
6. Remove the four screws (S23: ○), then remove the PF Drive Assy.

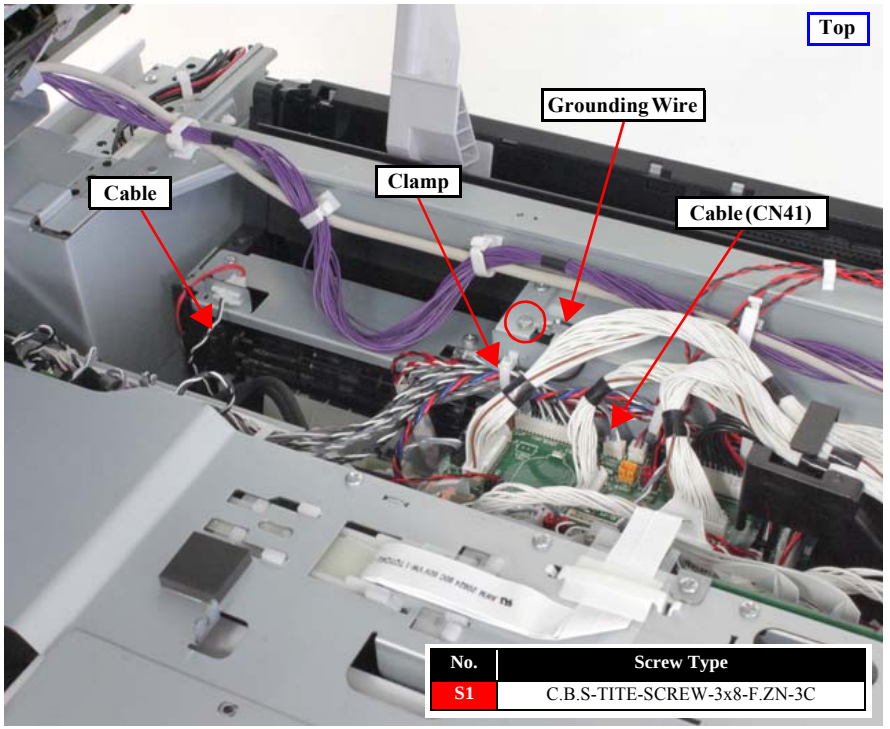
A21 Mounting Plate Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S1: ○), then remove the Mounting Plate Assy.

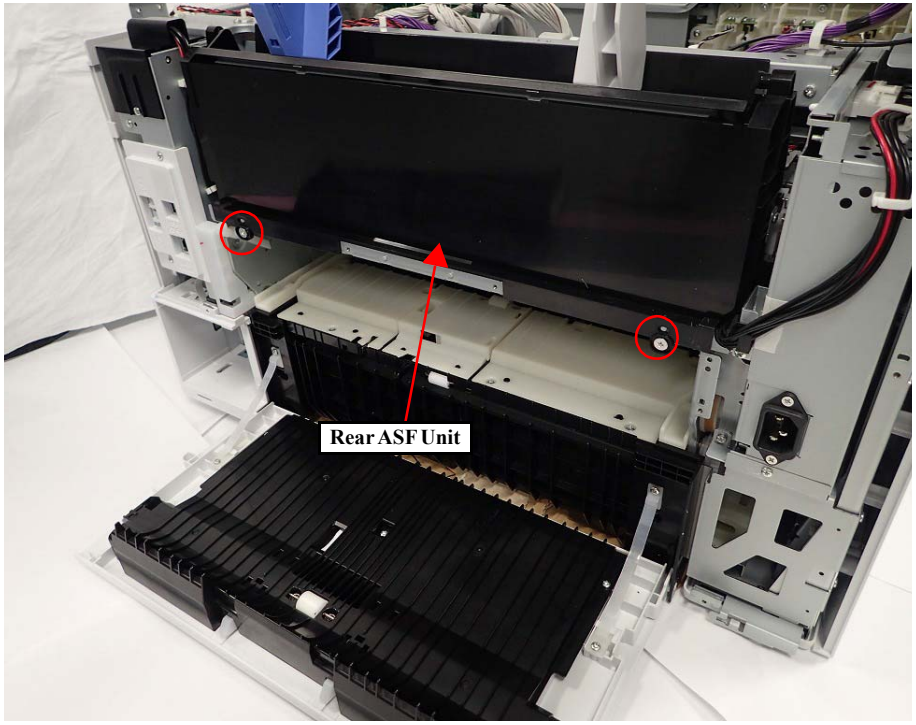
A22 Rear ASF Unit



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Disconnect the two cables from the connectors.
2. Remove the screw (S1: ○), then release the Grounding Wire.
3. Release the cables and the grounding wire from the clamp.

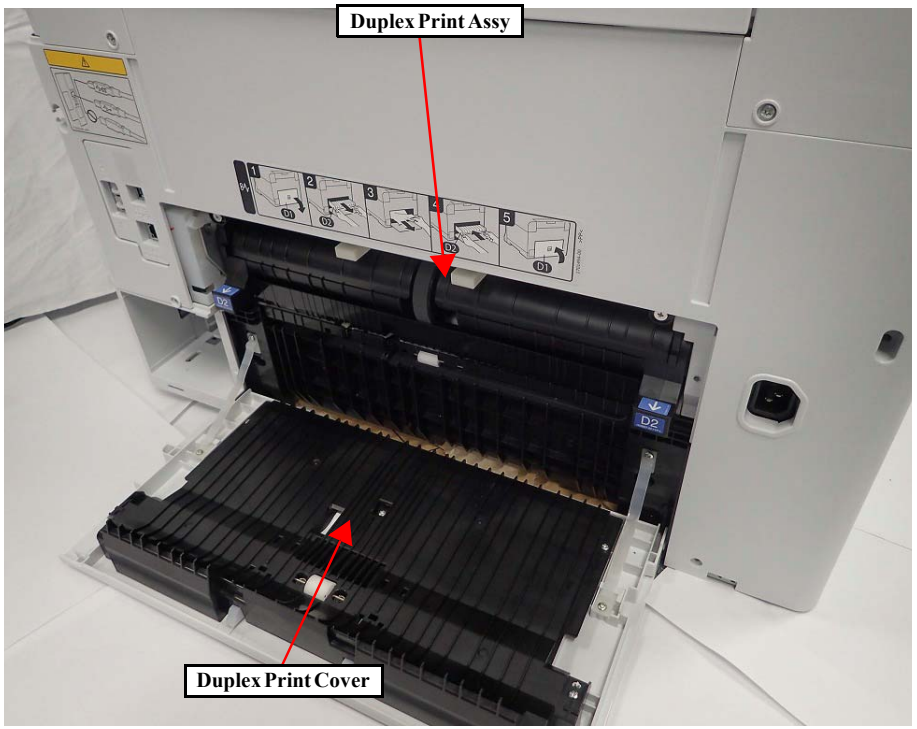
Rear ASF Unit



No.	Screw Type
S2	C.SHOULDER S-TITE,3X5

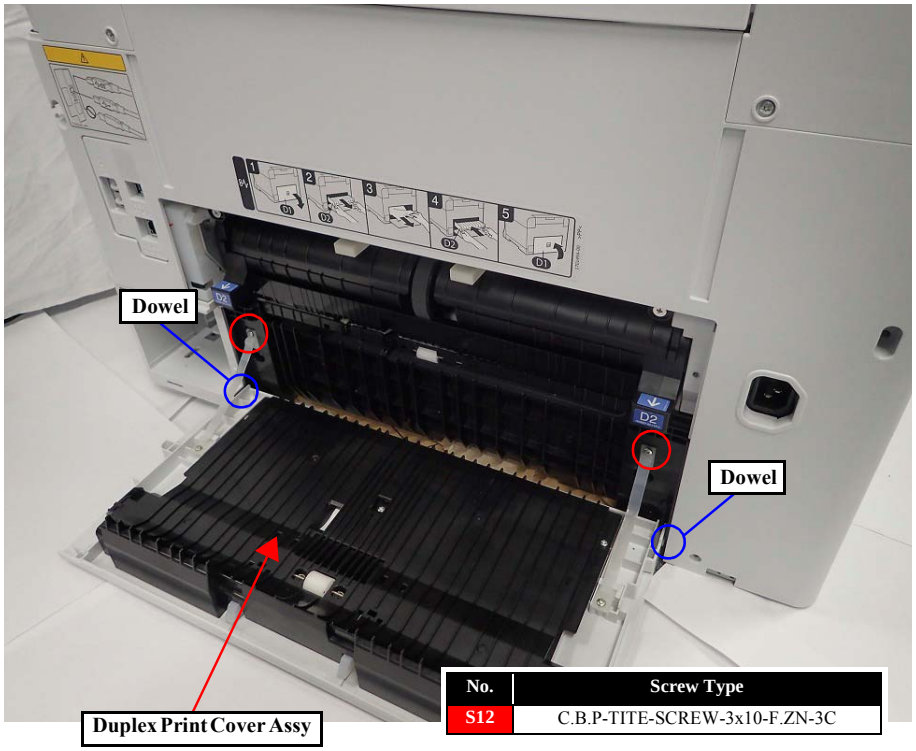
4. Remove the two screws (S2: ○), then remove the Rear ASF Unit.

A23		Duplex Print Assy



1. Open the Duplex Print Cover.
2. Remove the Duplex Print Assy.

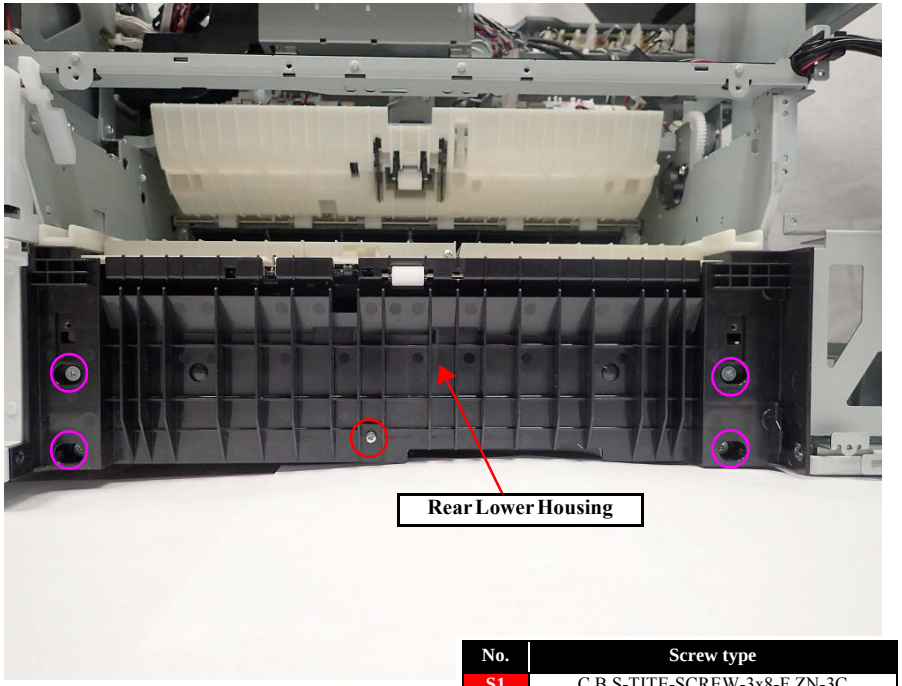
A24 Duplex Print Cover



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the two screws (S12: ○).
2. Disengage the two dowels, then remove the Duplex Print Cover Assy.

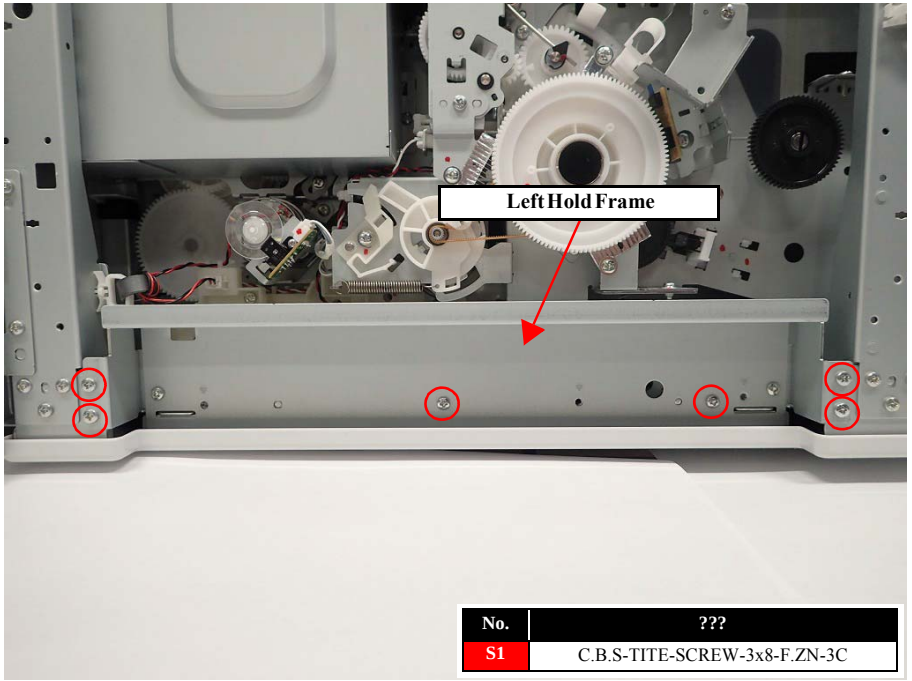
A25 Rear Lower Housing



No.	Screw type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C
S2	C.SHOULDER S-TITE,3X5

1. Remove the five screw (S1:○ x1)(S2:○ x4).
2. Remove the Rear Lower Housing.

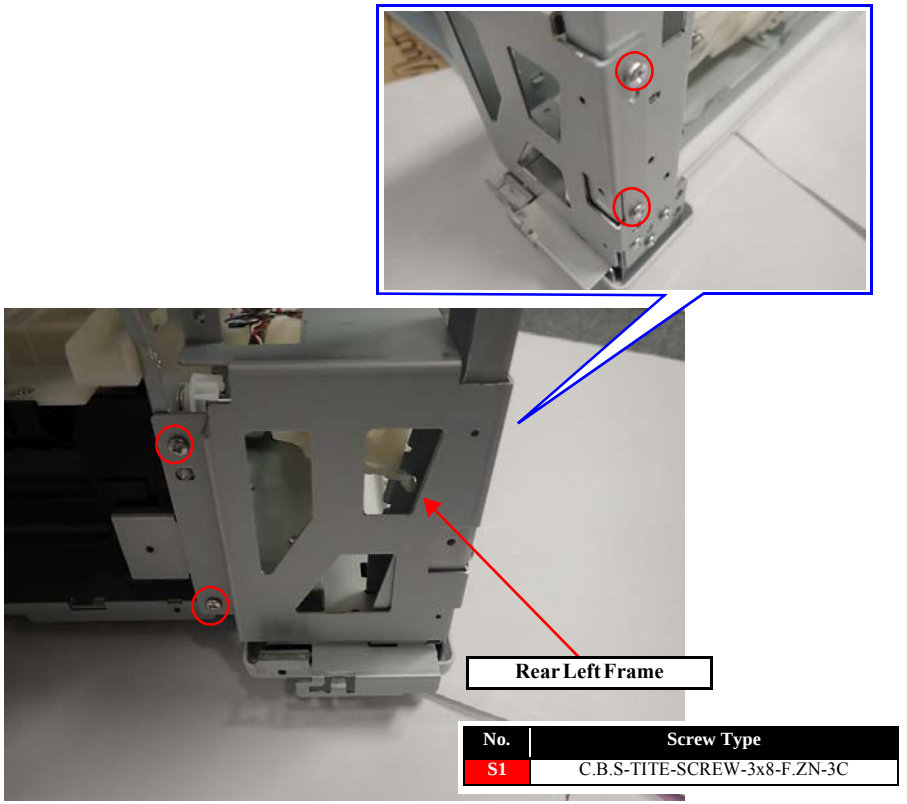
A26		Left Hold Frame



No.	???
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove six screws (S1:○), and remove the Left Hold Frame.

A27		Rear Left Frame

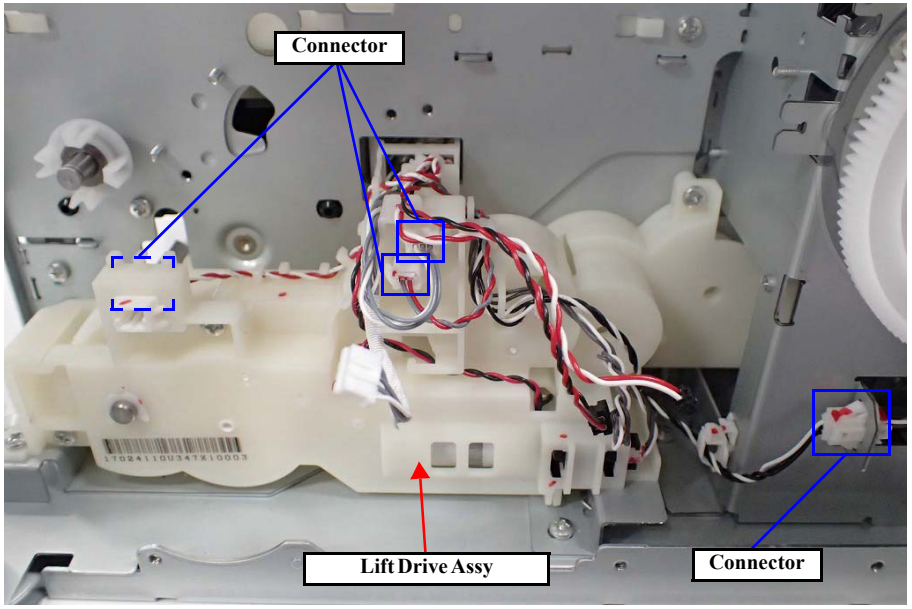


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove four screws (S1:○), and remove the Rear Left Frame.

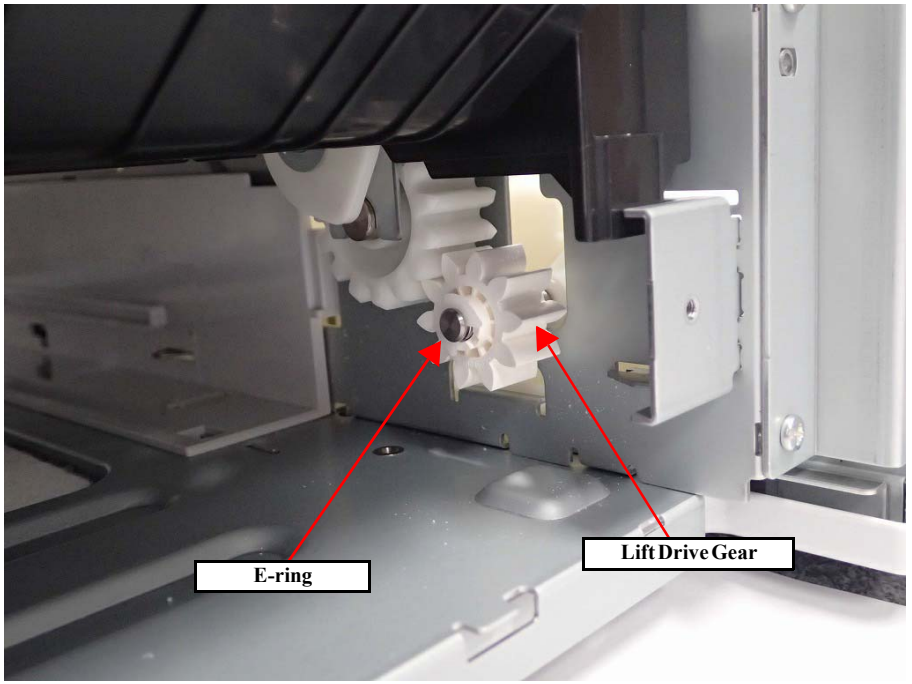
A28

Lift Drive Assy



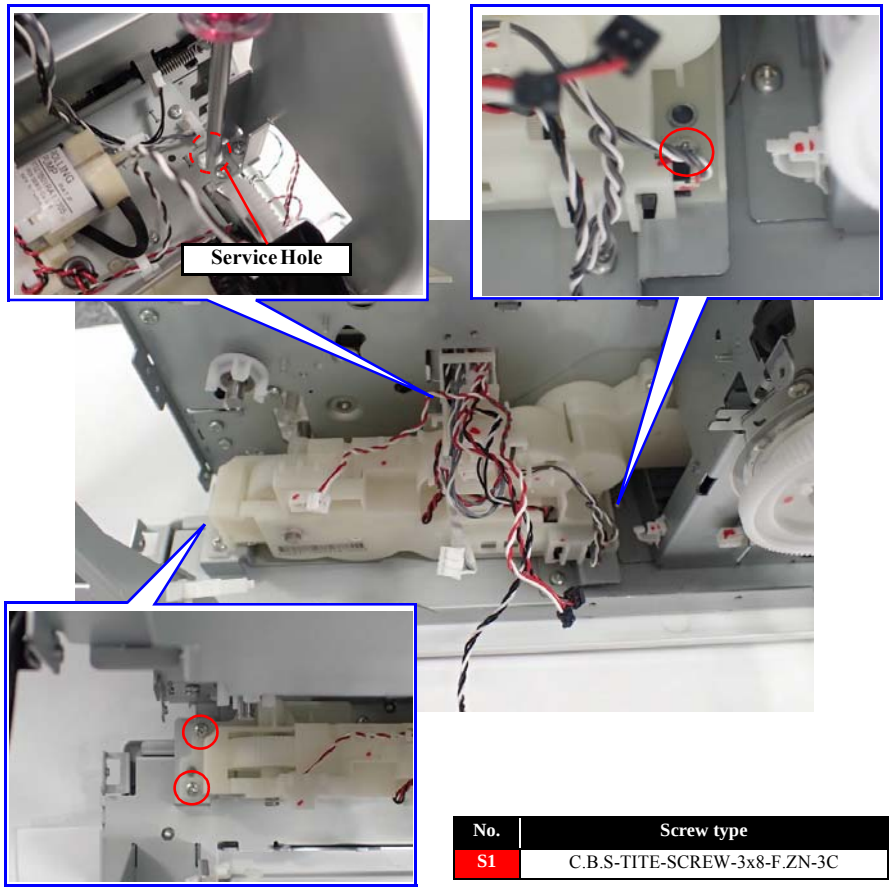
1. Disconnect the cable from four connecotrs.
2. Release the cable from all hooks on Lift Drive Assy.

Lift Drive Assy



3. (Access from rear side) Remove the E-ring, and remove the Lift Drive Gear.

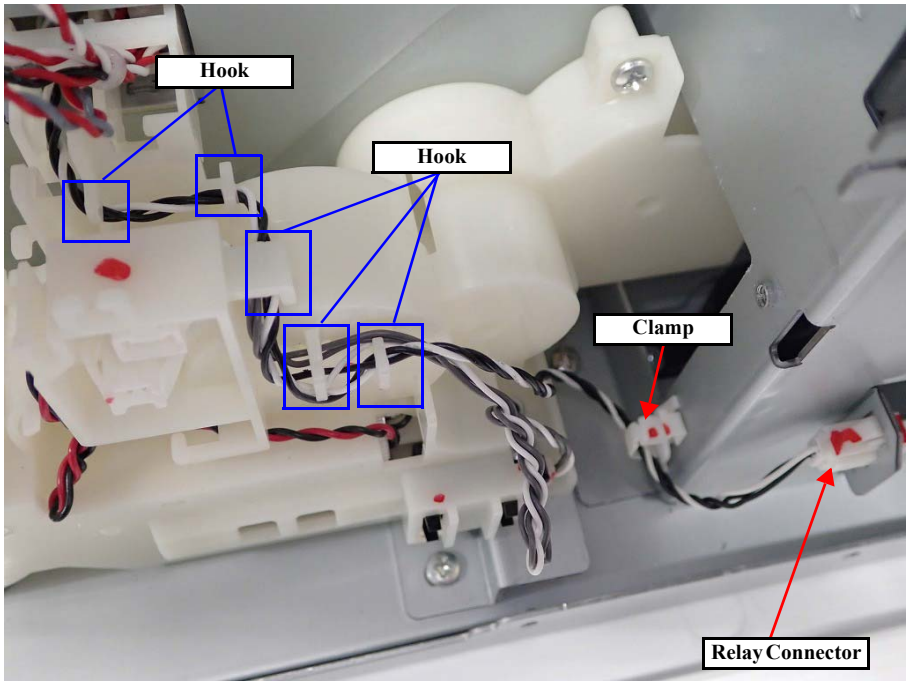
Lift Drive Assy



No.	Screw type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

4. Remove four screws (S1:○), and remove the Lift Drive Assy.

Lift Drive Assy

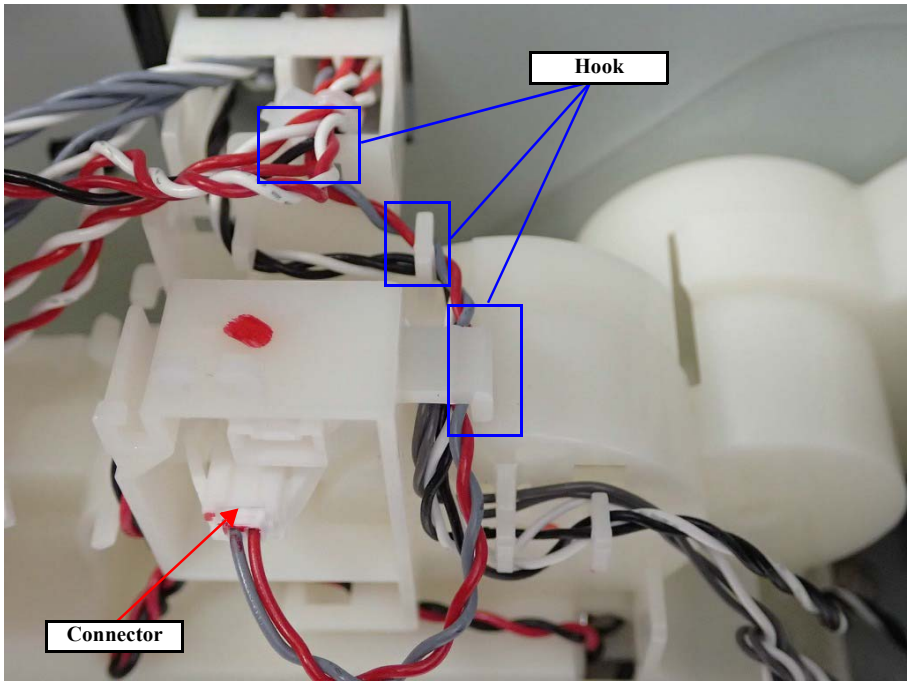


REASSEMBLY

Route the cable by the following procedure.

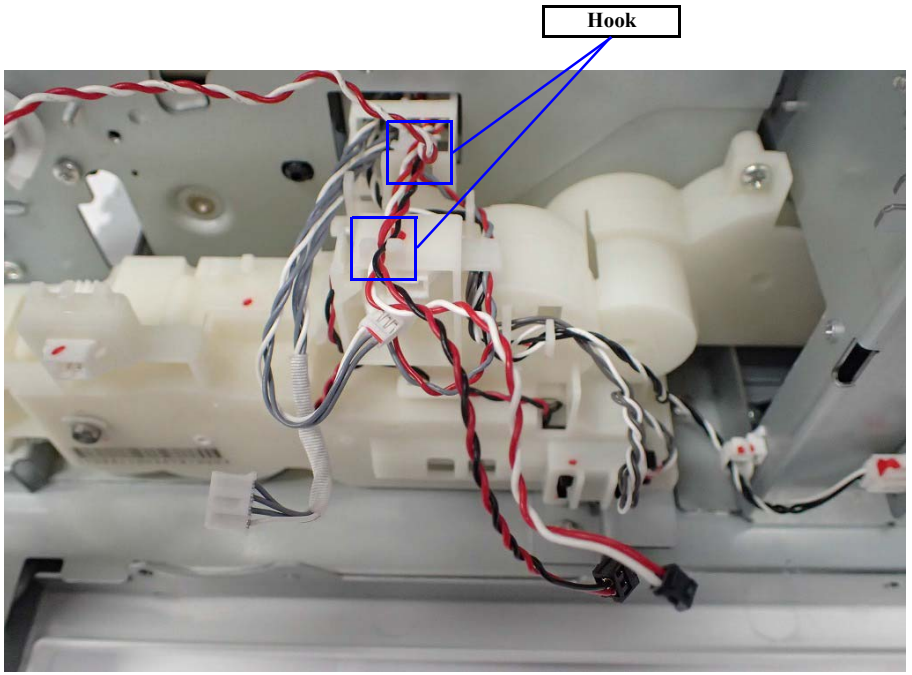
1. Route the Cable (Black/White) through the five hooks.
2. Connect the Cable (Black/White) to Relay Connector.
3. Fix the Cable (Black/White) with clamp.

Lift Drive Assy



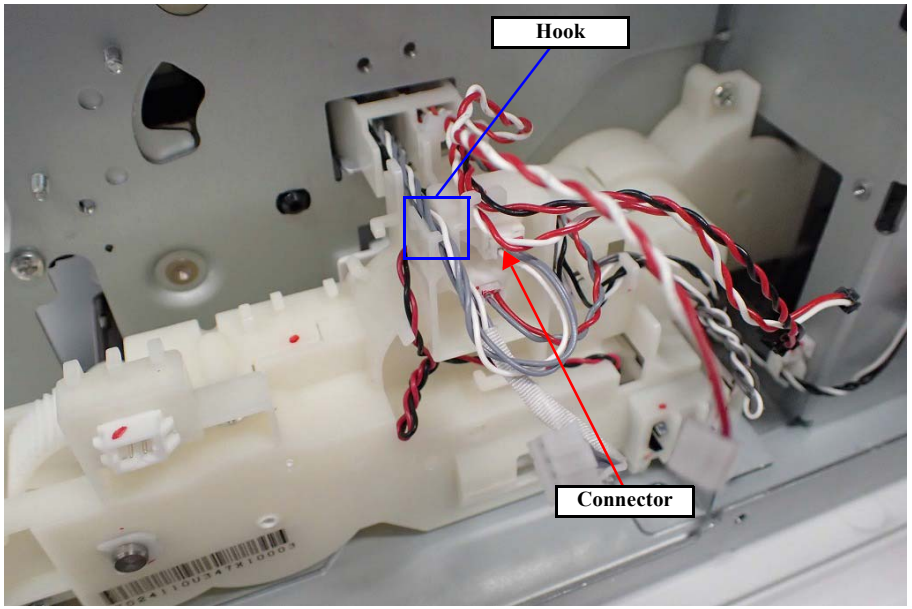
4. Route the Cable (Gray/Red)throgh teh Three hooks, and connect the cable to Connector.

Lift Drive Assy



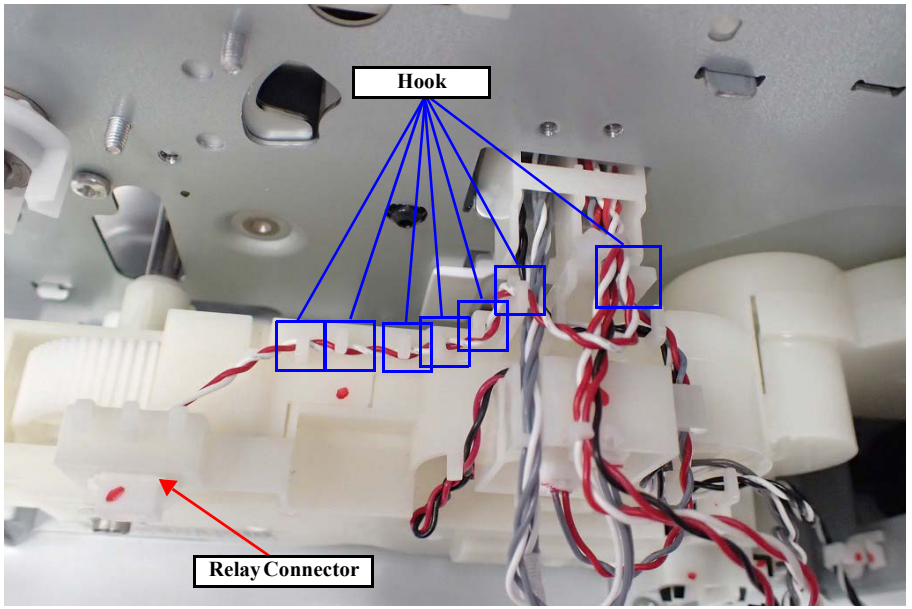
5. Route the Cable (Red/Black) and Cable (Red/White) through teh two hooks.

Lift Drive Assy



6. Route the two Cables (Gray/White) through the two hooks.
7. Connect the one cable to connector.

Lift Drive Assy



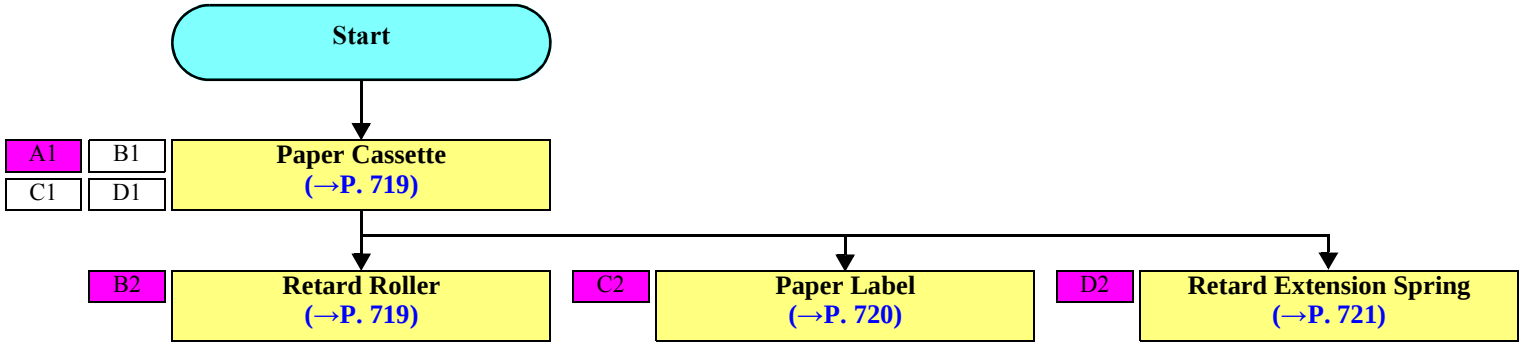
8. Route the Cable (Red/White)throgh the seven hooks, and connect it to the Relay Connector.

7.4.3.27 Paper Cassette

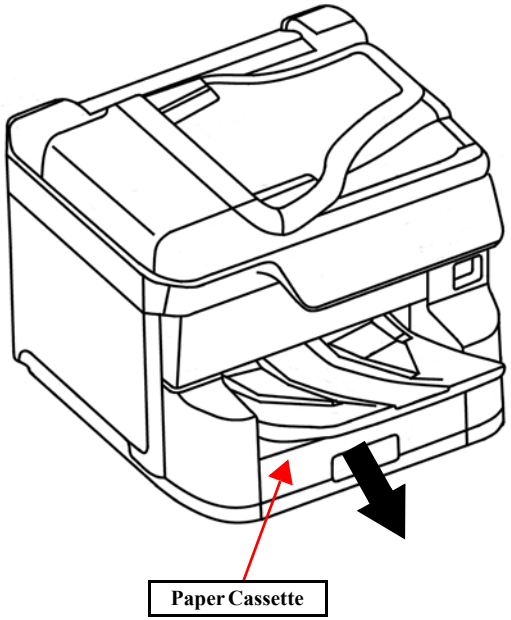
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Paper Cassette	A	10 sec	---	10 sec
Retard Roller	B	21 sec	---	21 sec
Paper Label	C	26 sec	---	26 sec
Retard Extension Spring	D	53 sec	---	53 sec

DISASSEMBLY FLOWCHART

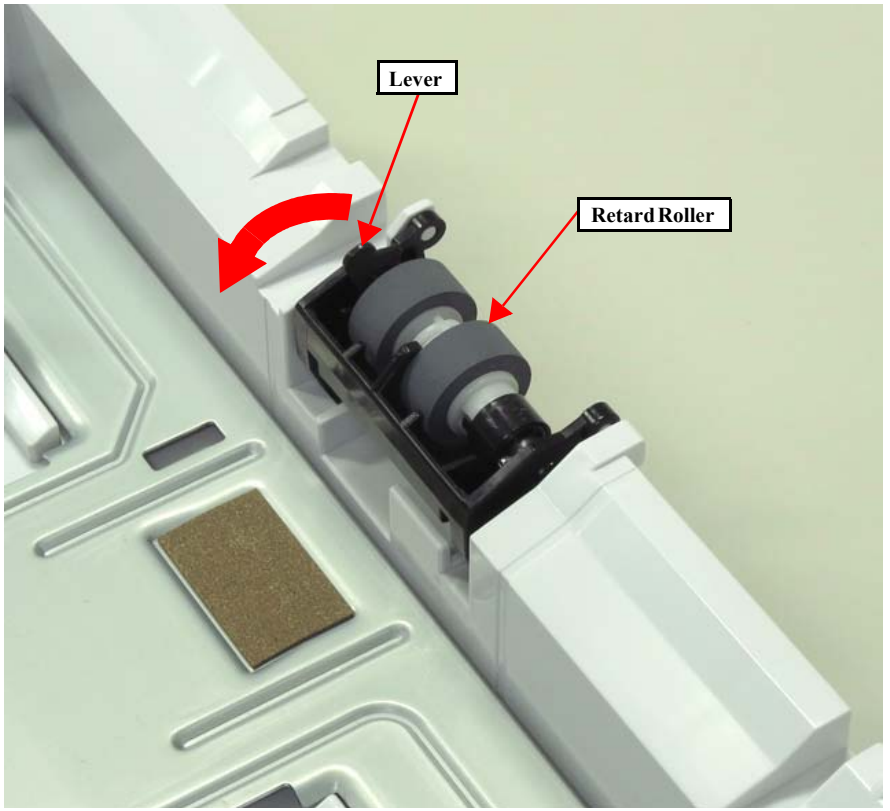


A1	B1	Paper Cassette
C1	D1	



1. Remove Paper Cassette.

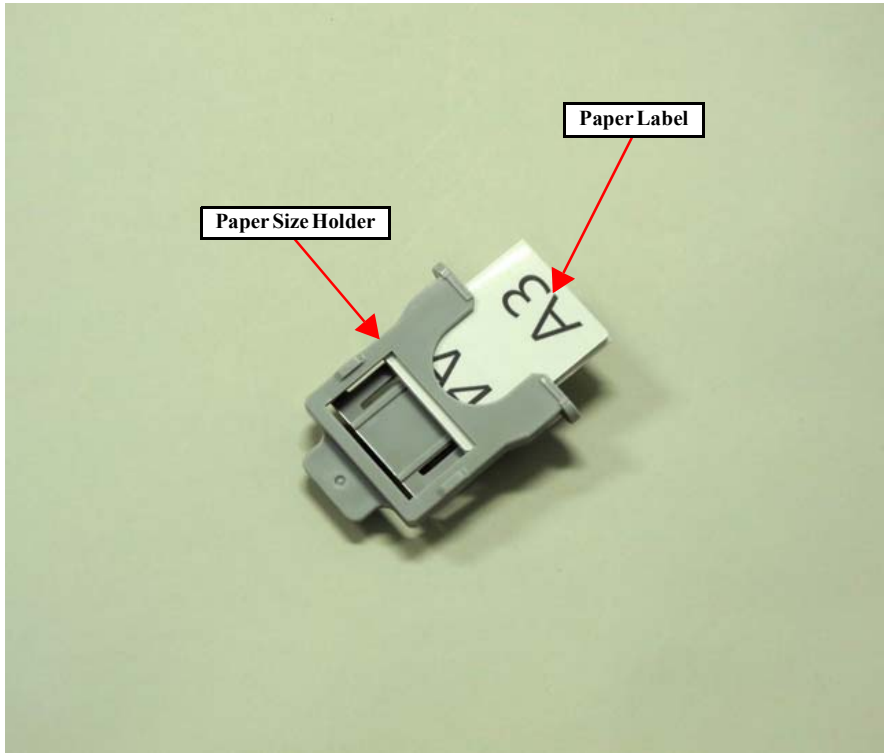
	B2	Retard Roller



1. Move the lever to direction of the arrow, then remove the Retard Roller.

C3

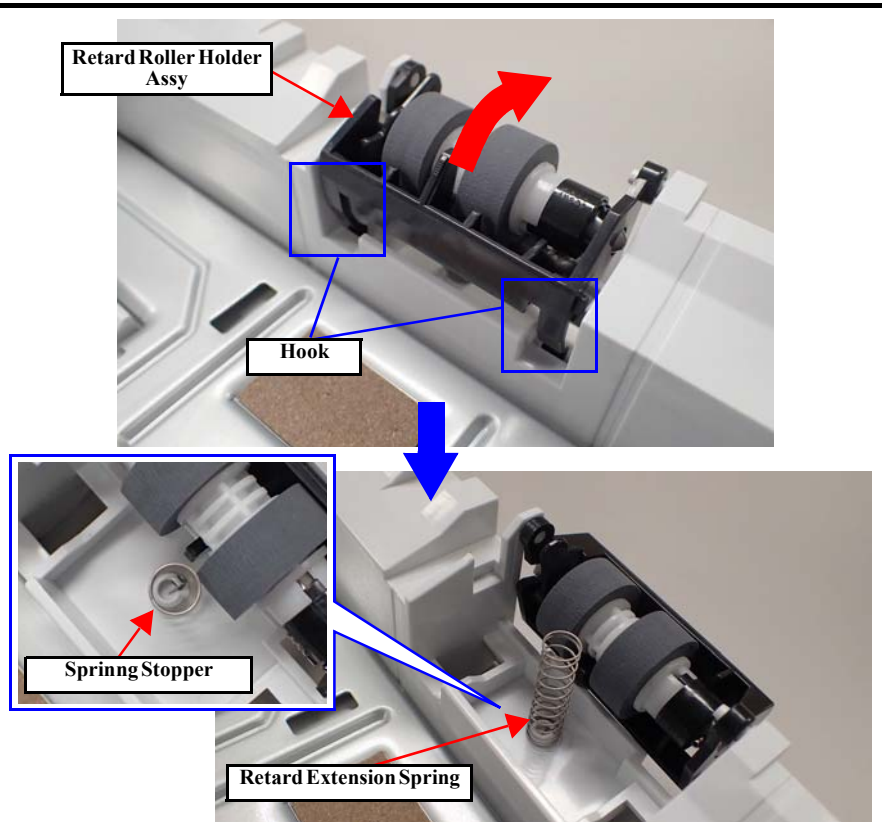
Paper Label



1. Pull the Paper Label out of the Paper Size Holder.

D2

Retard Extension Spring



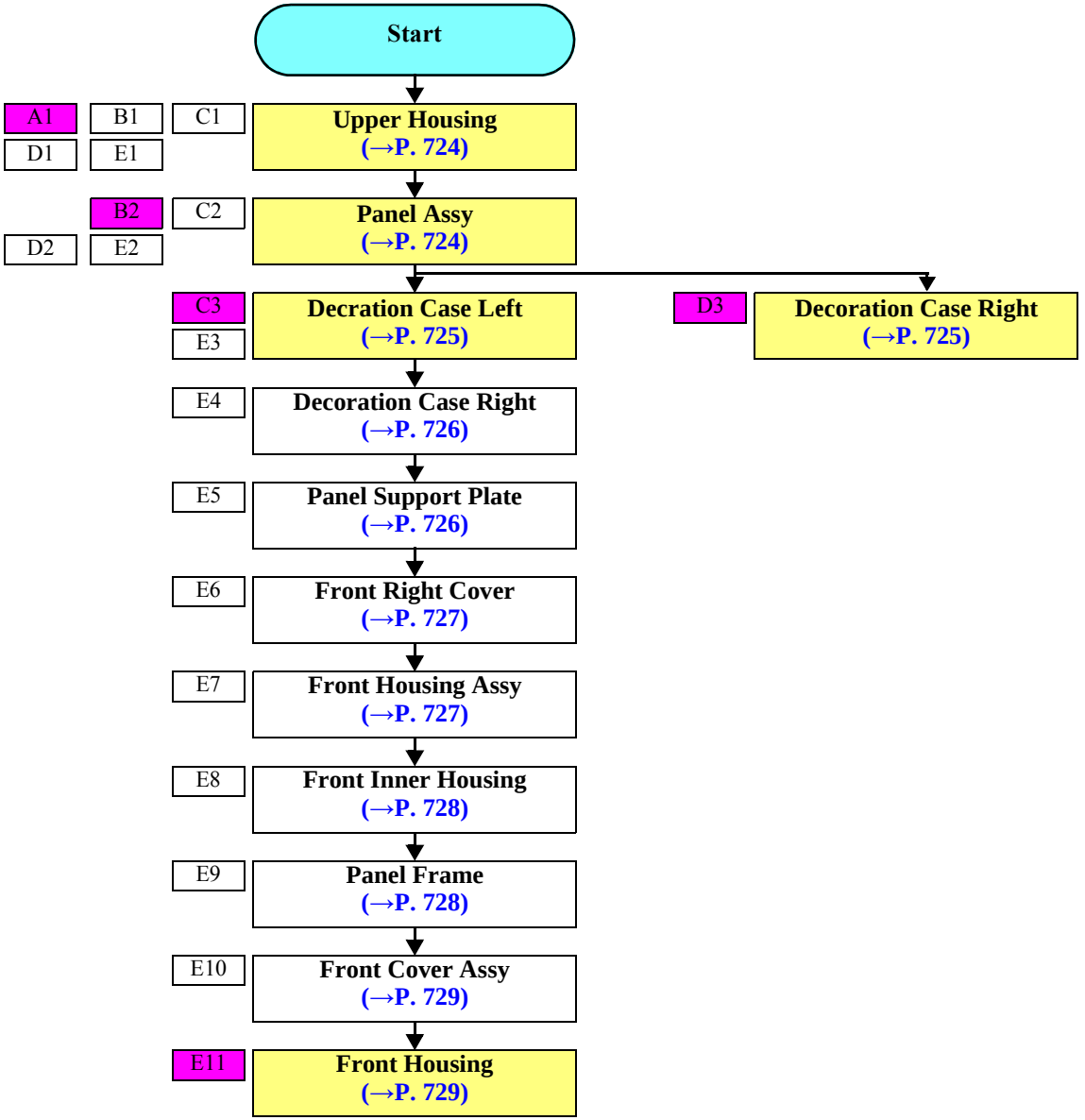
1. Release the two hooks of Retard Roller Holder Assy, and rotate it to direction of the arrow.
2. Remove the Retard Extension Spring.

7.4.3.28 Housing 1 (WF-S8190/S8190a)

OUTLINE

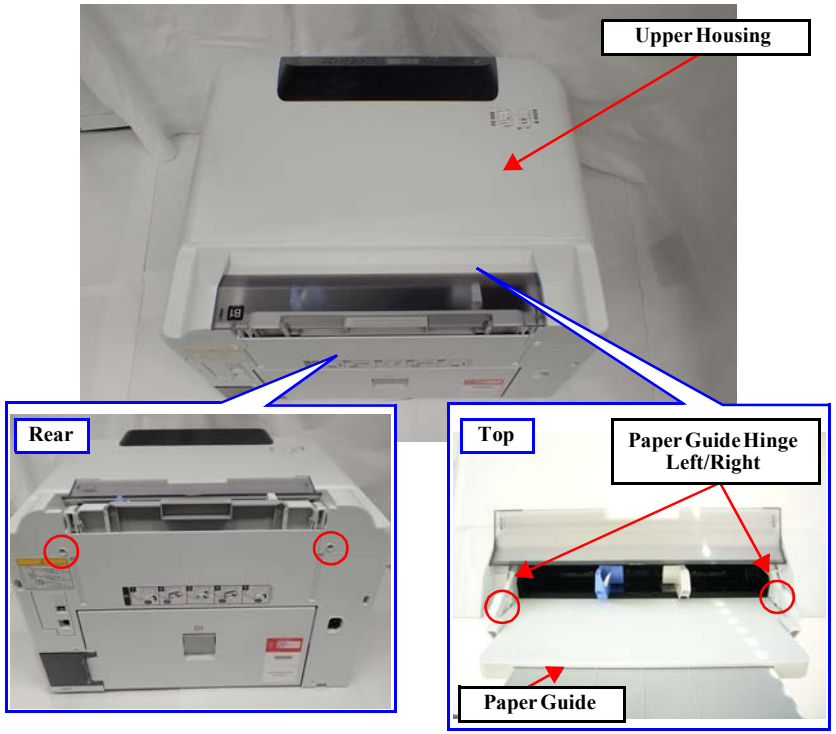
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Upper Housing	A	2min 56 sec	---	2min 56 sec
Panel Assy	B	5 min 12 sec	---	5 min 12 sec
Decoration Case Left	C	5 min 14 sec	---	5 min 14 sec
Decoration Case Right	D	5 min 17 sec	---	5 min 17 sec
Front Housing	E	14 min 33 sec	---	14 min 33 sec

DISASSEMBLY FLOWCHART



A1	B1	C1
D1	E1	

Upper Housing

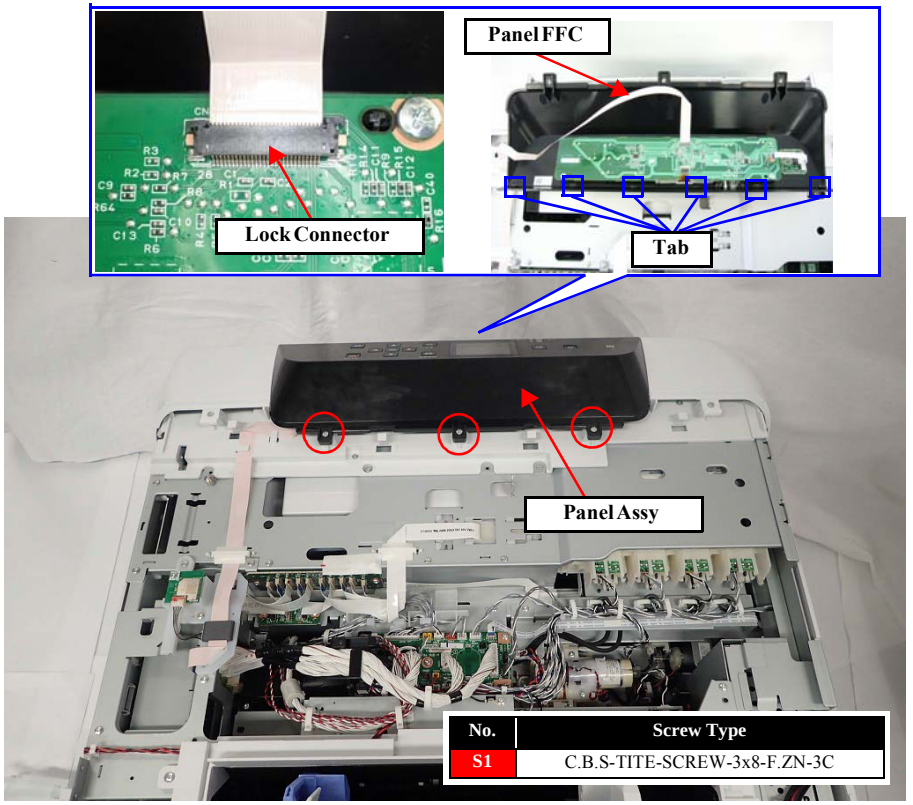


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws of Upper Housing rear side (S1:○).
2. Pull out the Paper guide, and remove the two screws of Upper Housing top face (S1:○).
3. Release the Paper Guide Hinge Left/Right from guide of the Upper Housing.
4. Slide the Upper Housing to rear side during the hold up the Upper Housing.

	B2	C2
D2	E2	

Panel Assy



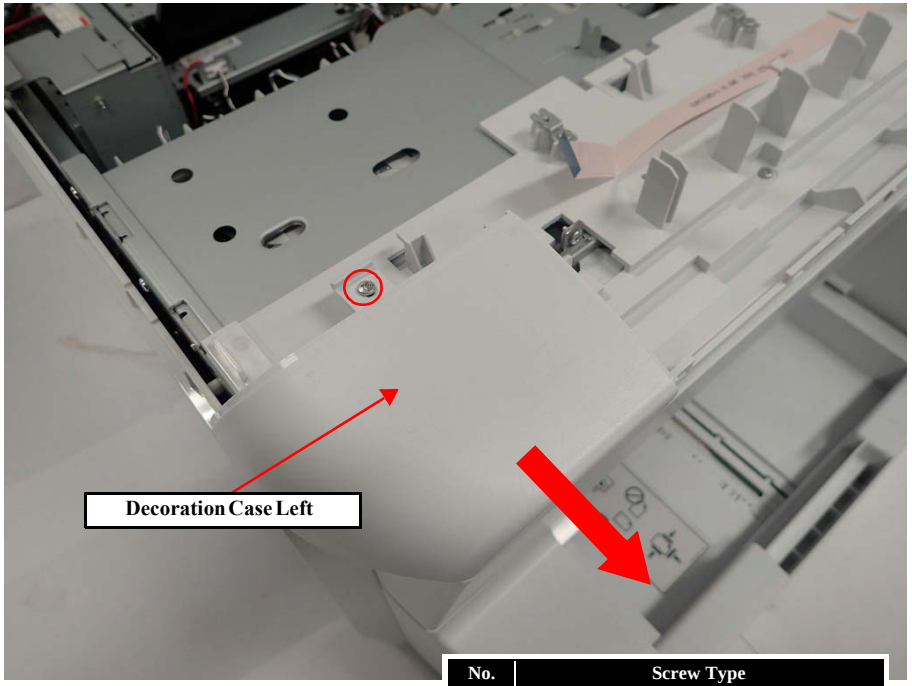
No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove three screws (S1:○).
2. Release the six tabs, and remove the Panel Assy.
3. Disconnect the Panel FFC from Panel Assy.

CAUTION Make sure to insert and remove the Panel FFC with conector unlock condition.

		C3
	E3	

Decoration Case Left

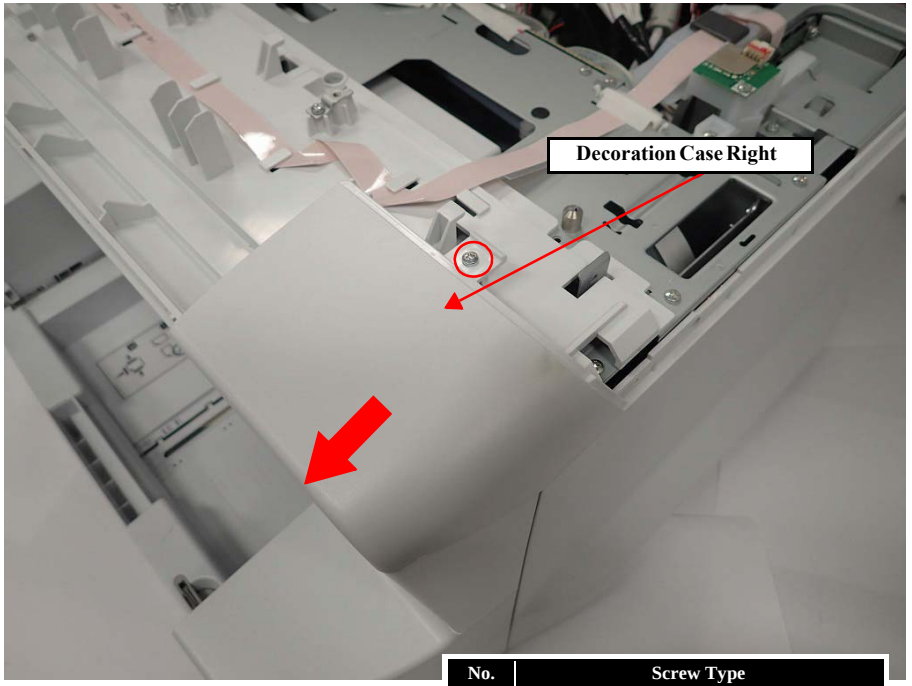


No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the Screw (S1:○).
2. Slide the Decoration Case Left to direction of the arrow.

D3		

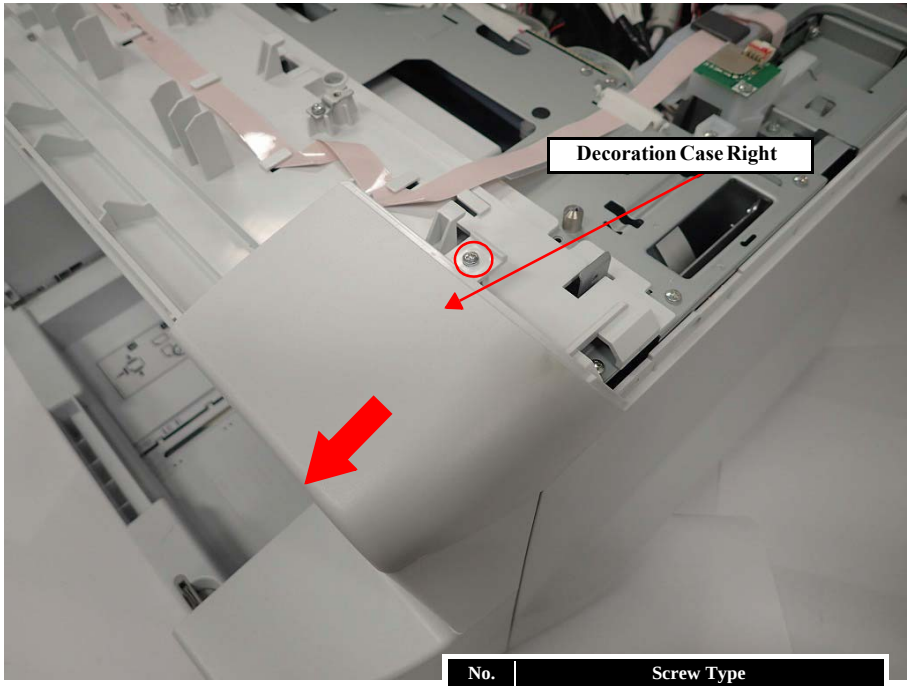
Decoration Case Right



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the screw (S1:○).
2. Slide the Decoration Case Right to the direction of the arrow.

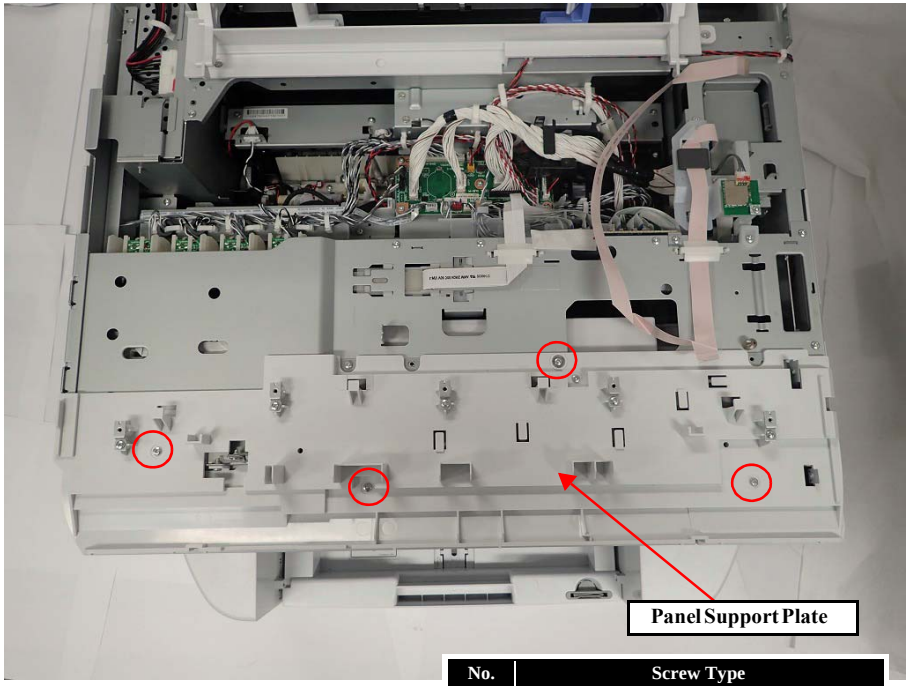
			Decoration Case Right
	E4		



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove the screw (S1:○).
2. Slide the Decoration Case Right to the direction of the arrow.

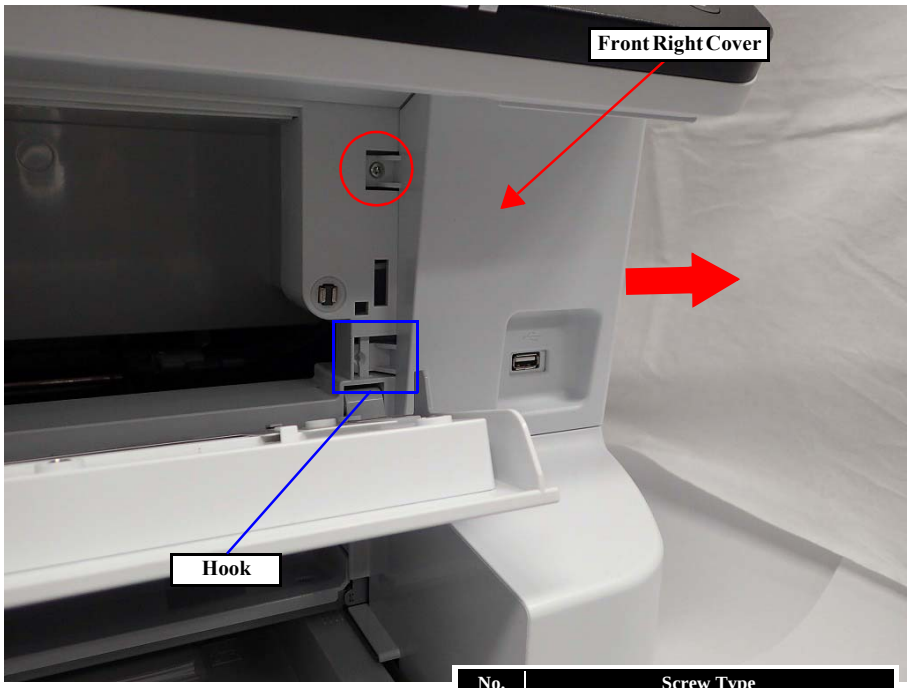
			Panel Support Plate
	E5		



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Remove four screws (S1:○), and remove the Panel Support Plate.

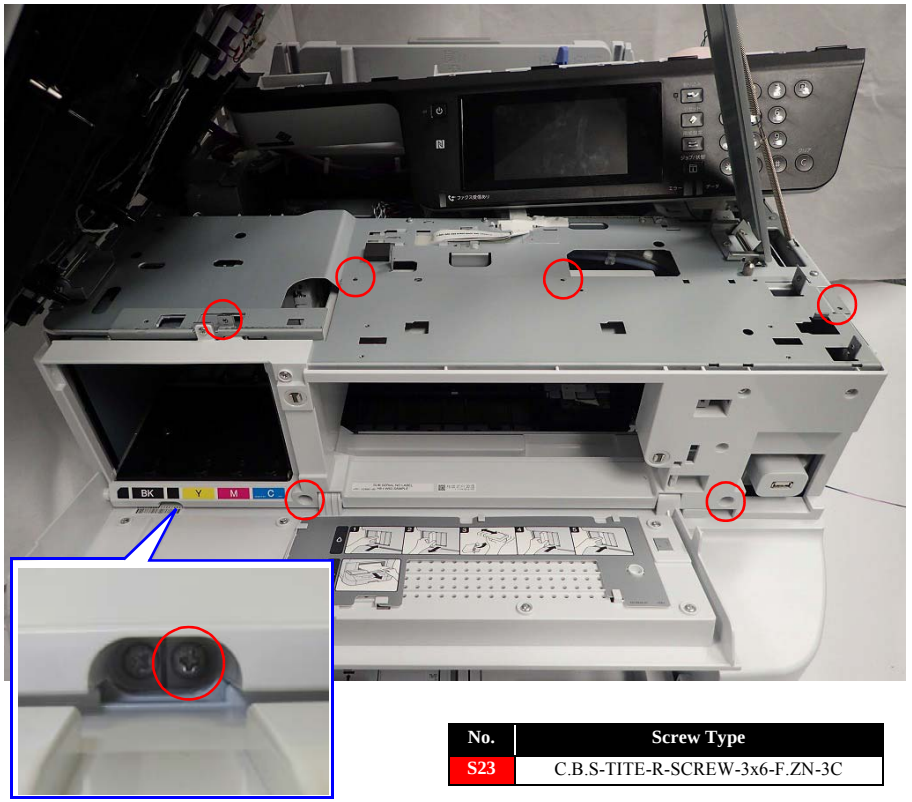
			Front Right Cover
	E6		



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open Front Cover Assy.
2. Remove one screw (S1: ○).
3. Release the Hook, then silde the Front Right Cover to direction of arrows and remove it.

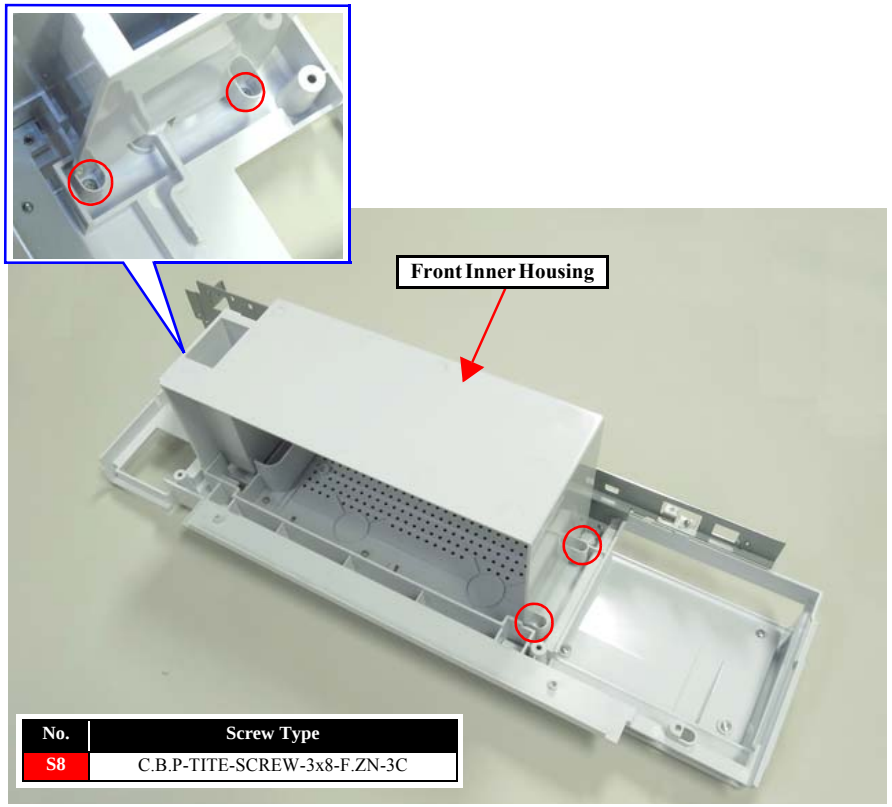
			Front Housing Assy
	E7		



No.	Screw Type
S23	C.B.S-TITE-R-SCREW-3x6-F.ZN-3C

1. Remove the seven screws (S23: ○), then remove the Front Housing Frame Assy.

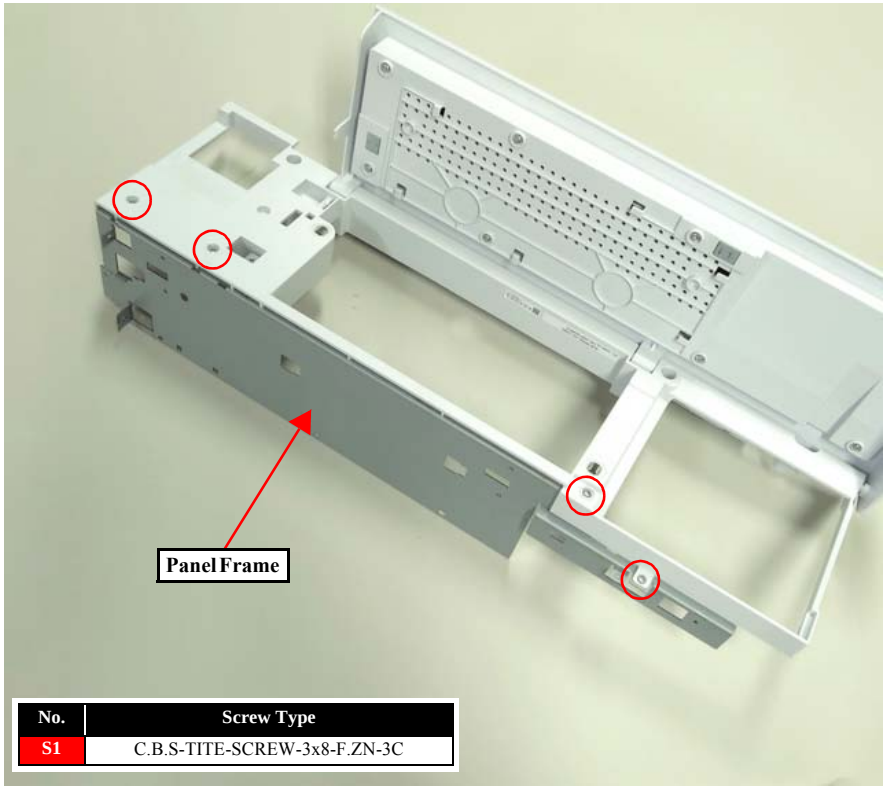
			Front Inner Housing
	E8		



No.	Screw Type
S8	C.B.P-TITE-SCREW-3x8-F.ZN-3C

1. Remove the four screws (S8: ○), then remove the Front Inner Housing.

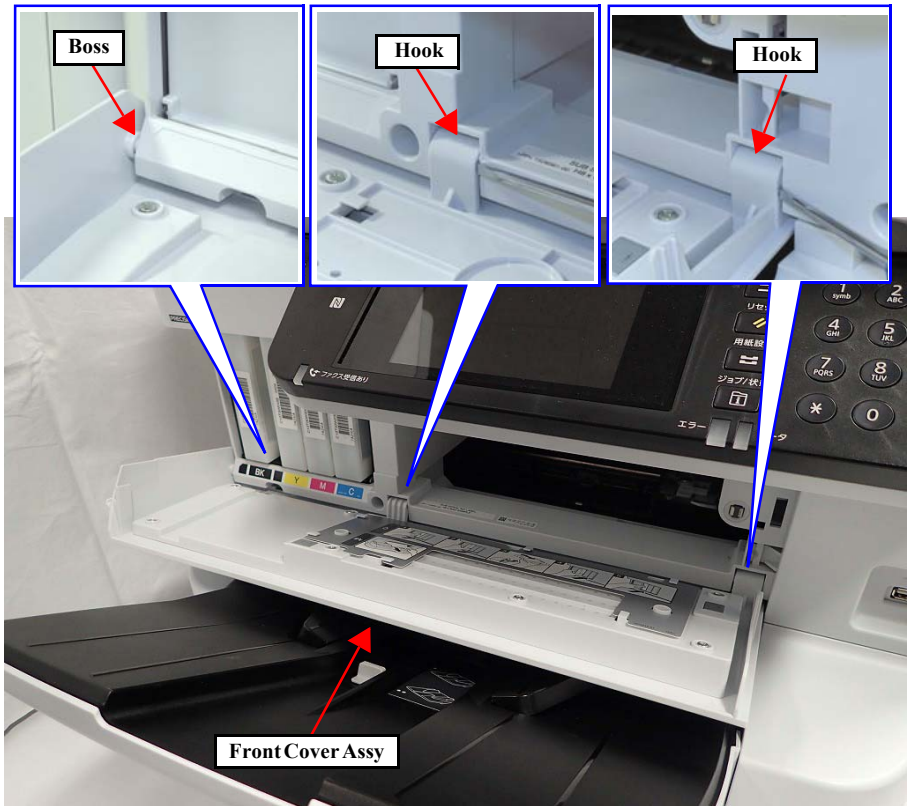
			Panel Frame
	E9		



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

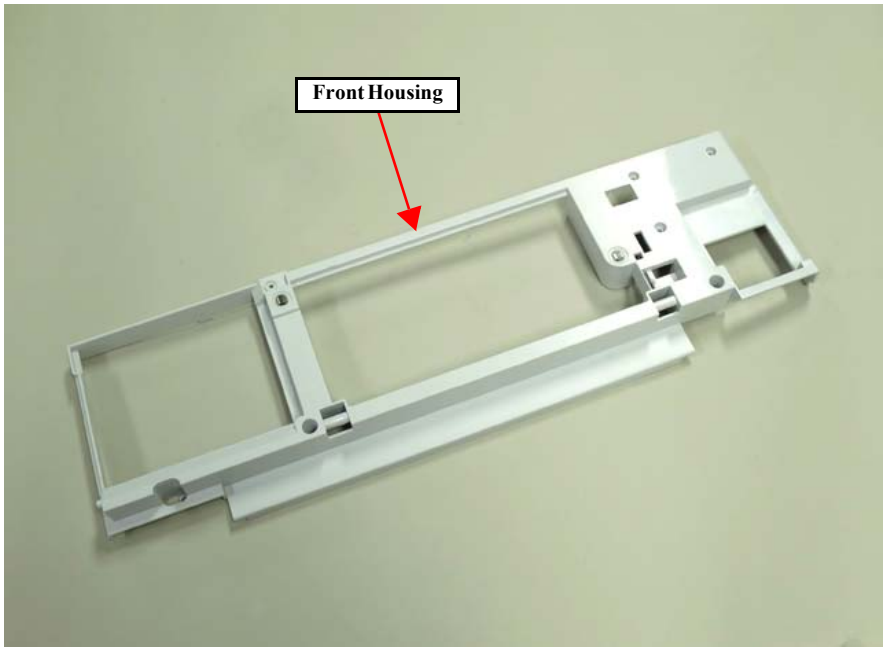
1. Remove the four screws (S1: ○), then remove the Panel Frame.

			Front Cover Assy
	E10		



1. Open the Front Cover Assy.
2. Disengage the boss of the Front Cover Assy.
3. Disengage the left hook using a flathead screwdriver.
4. Disengage the right hook, then remove the Front Cover Assy.

			Front Housing
	E11		

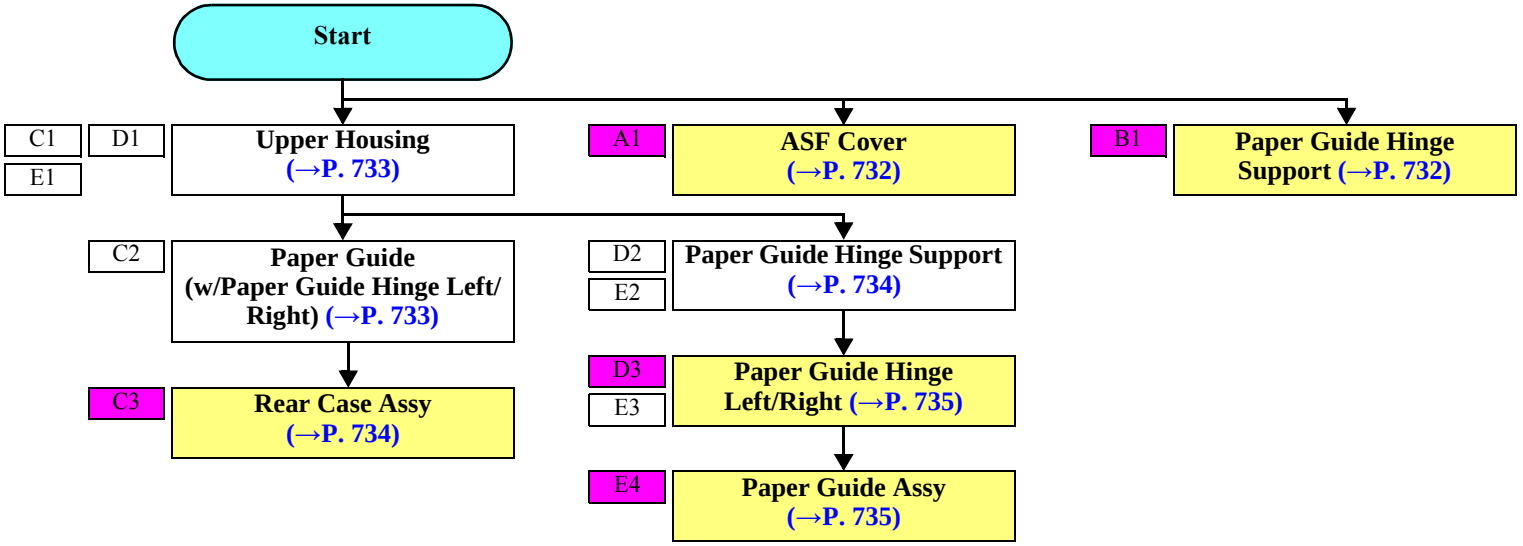


7.4.3.29 Housing 2 (PX-S8190/S8190a)

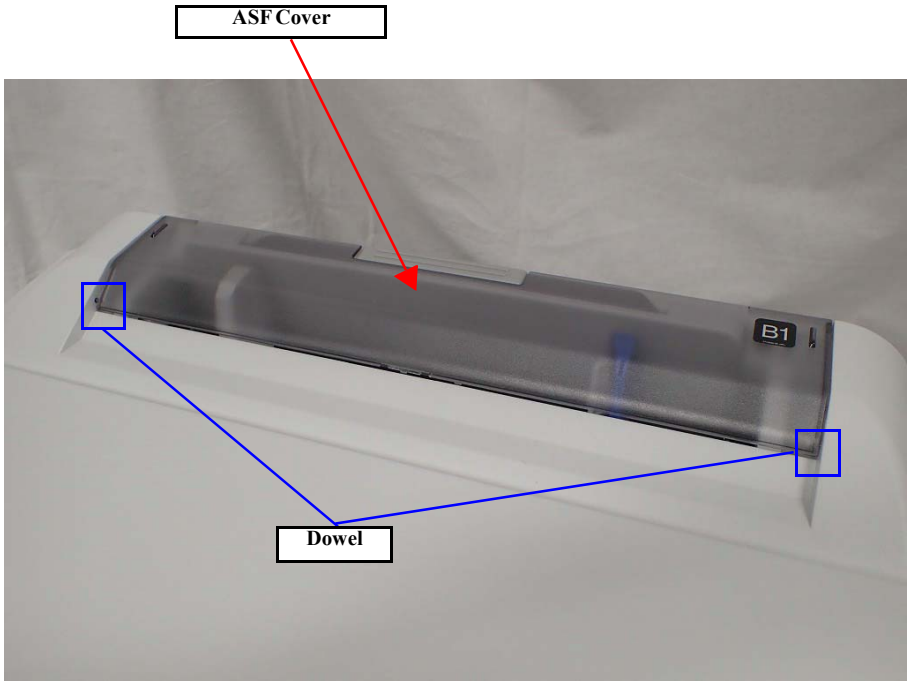
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
ASF Cover	A	25 sec	---	25 sec
Paper Guide Hinge Support	B	3 min 40 sec	---	3 min 40 sec
Rear Case Assy	C	3 min 6 sec	---	3 min 6 sec
Paper Guide Hinge Left/ Right	D	3 min 40 sec	---	3 min 40 sec
Paper Guide Assy	E	4 min 14 sec	---	4 min 14 sec

DISASSEMBLY FLOWCHART

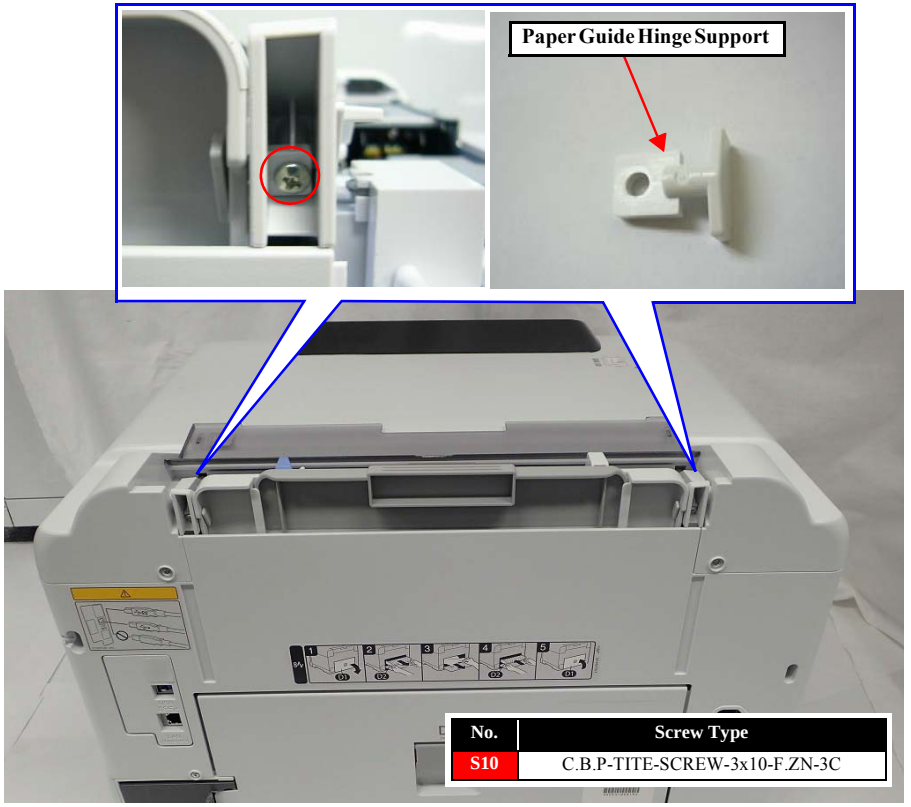


A1			ASF Cover



1. Disengage the two dowels, then remove the ASF Cover.

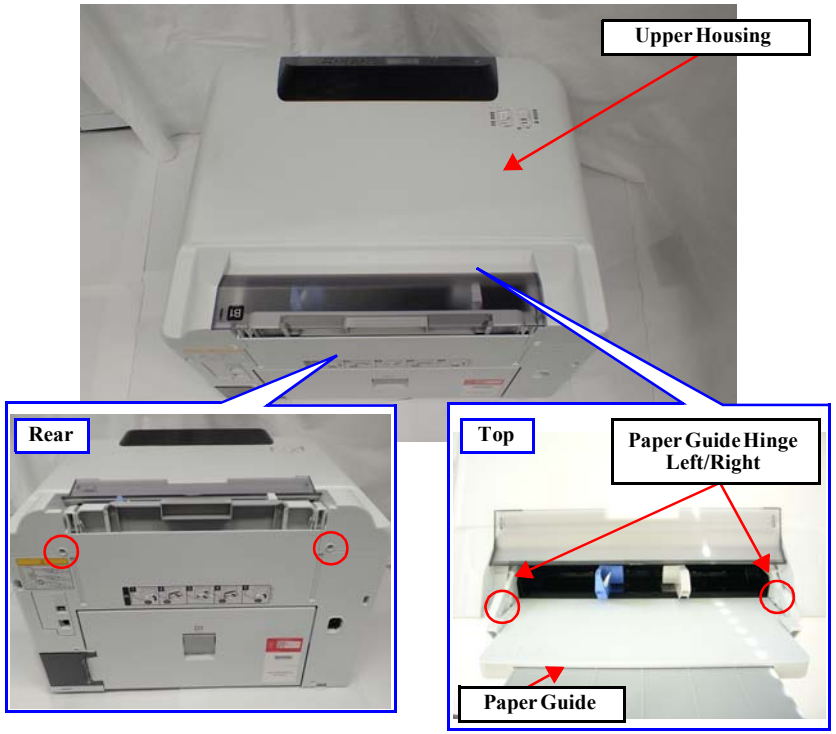
	B1		Paper Guide Hinge Support



No.	Screw Type
S10	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the screw (S10:○), and rmeove the Paper Guide Hinge Support.

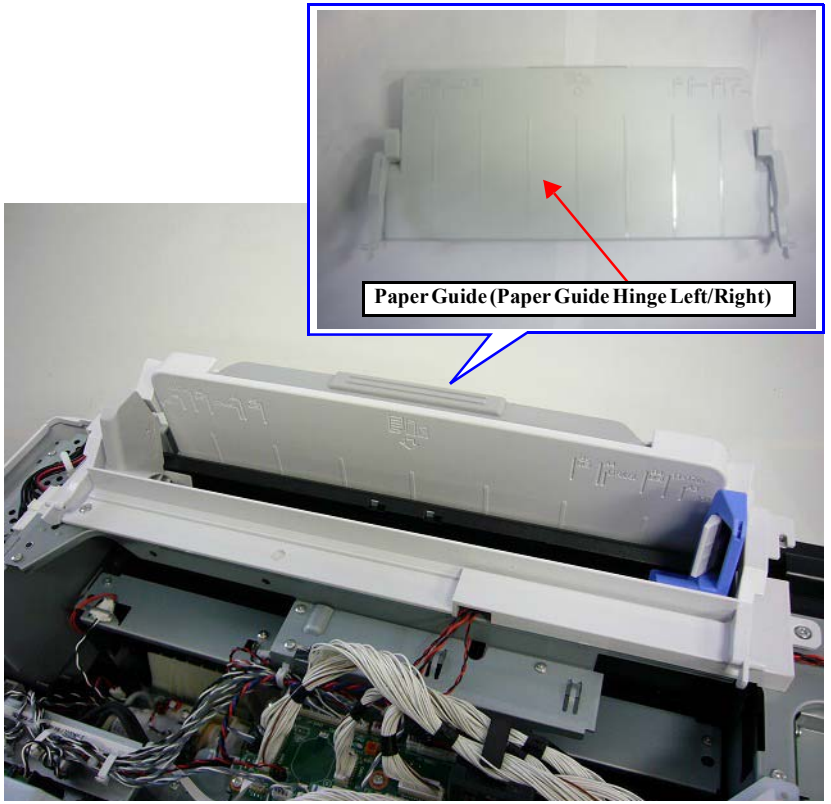
		C1	Upper Housing
D1	E1		



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

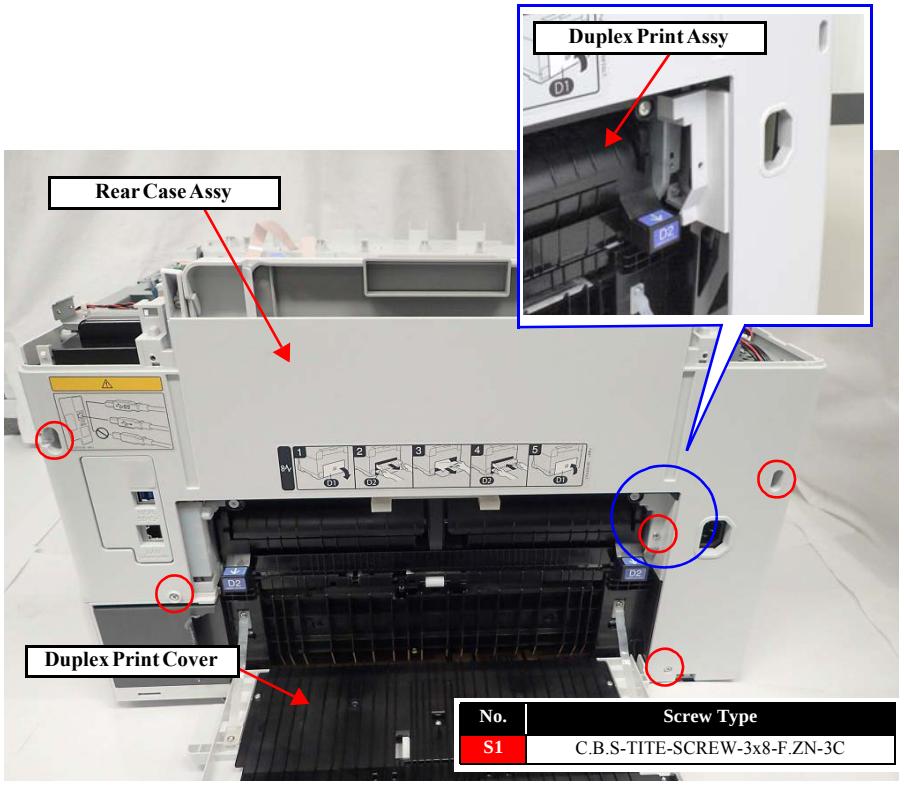
1. Remove the two screws of Upper Housing rear side (S1:○).
2. Pull out the Paper guide, and remove the two screws of Upper Housing top face (S1:○).
3. Release the Paper Guide Hinge Left/Right from guide of the Upper Housing.
4. Slide the Upper Housing to rear side during the hold up the Upper Housing.

		C2	Paper Guide (with Paper Guide Hinge Left/Right)



1. Remove the Paper Guide (with Paper Guide Hinge Left/Right)

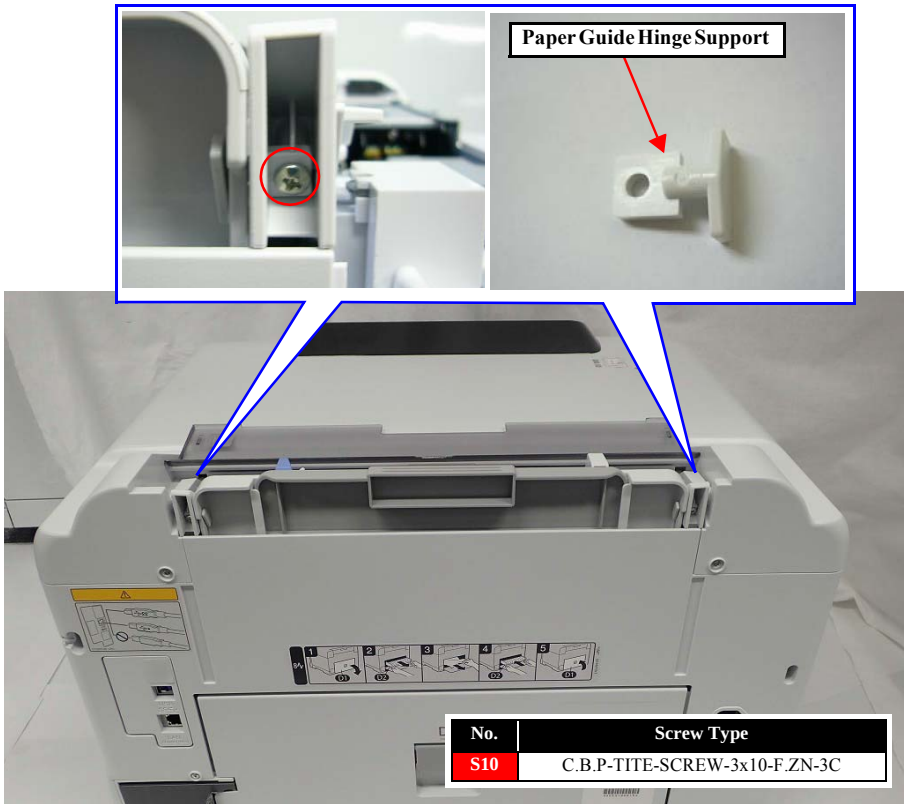
		C3	Rear Case Assy



No.	Screw Type
S1	C.B.S-TITE-SCREW-3x8-F.ZN-3C

1. Open the Duplex Print Cover.
2. Remove the five screws (S1:○), and remove the Rear Case Assy while avoiding interference with the Duplex Print Assy.

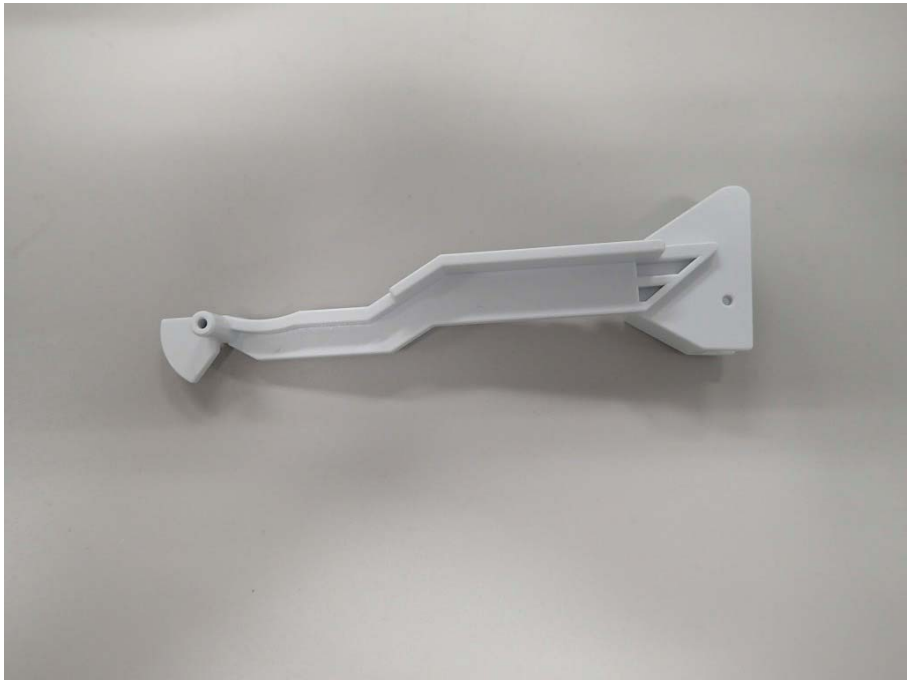
			Paper Guide Hinge Support
D2	E2		



No.	Screw Type
S10	C.B.P-TITE-SCREW-3x10-F.ZN-3C

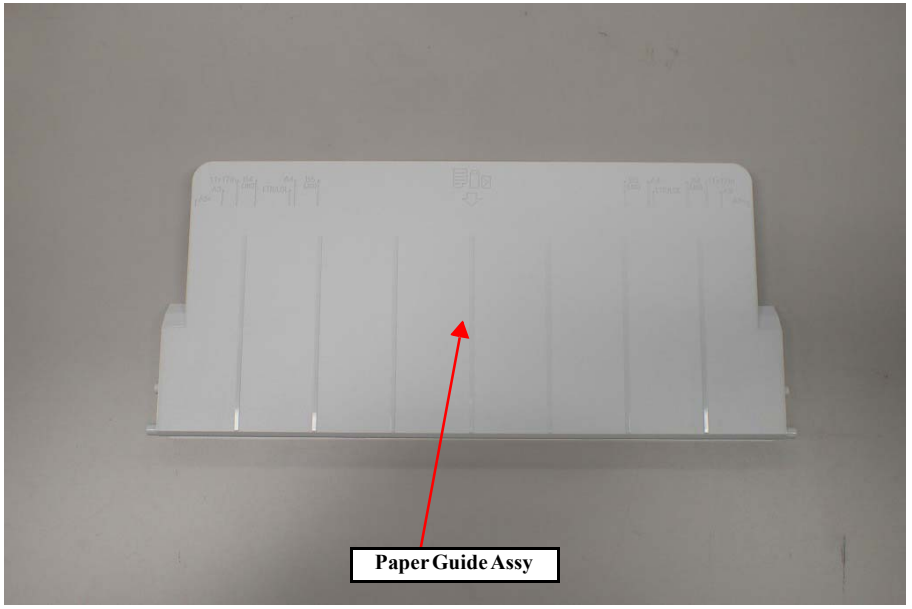
1. Remove the screw (S10:○), and rmeove the Paper Guide Hinge Support.

			Paper Guide Hinge Left/Right
D3	E3		



1. Remove the Paper Guide Hinge Left/Right.

			Paper Guide Assy
	E4		



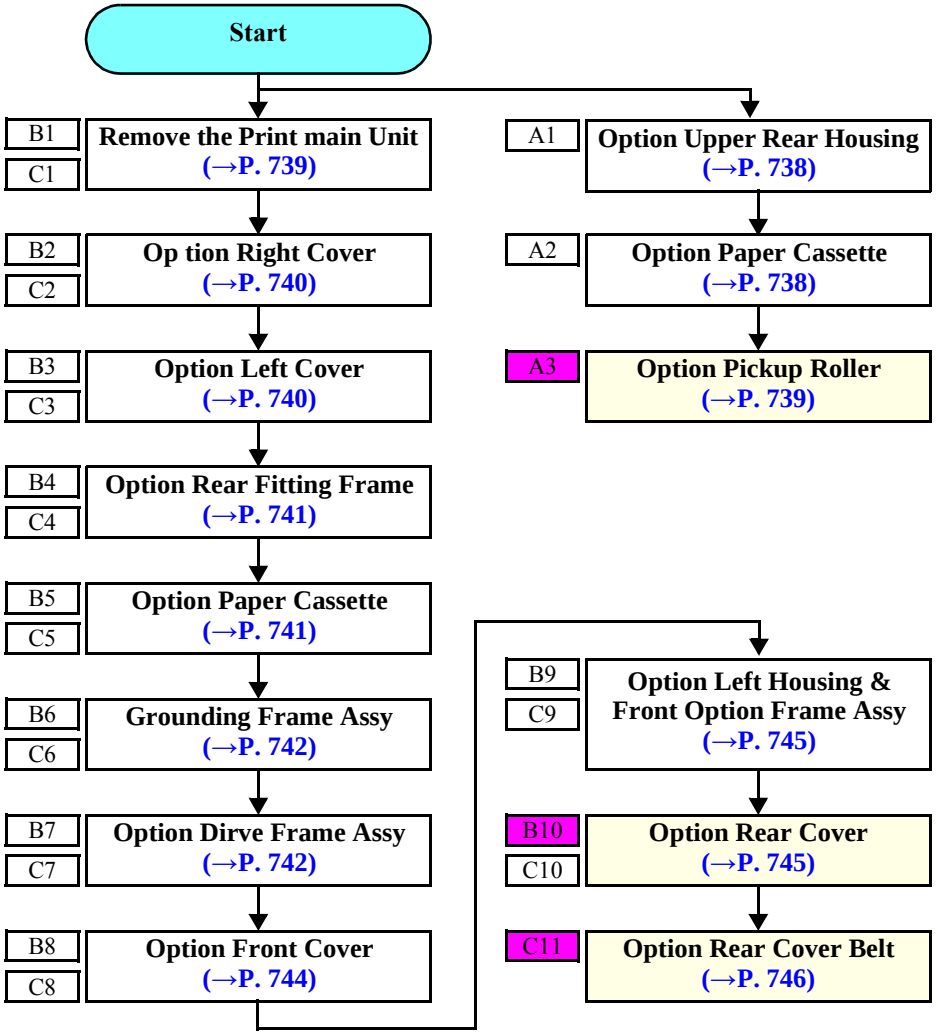
1. Remove the Paper Guide Assy.

7.4.3.30 Option Cassette Unit 1

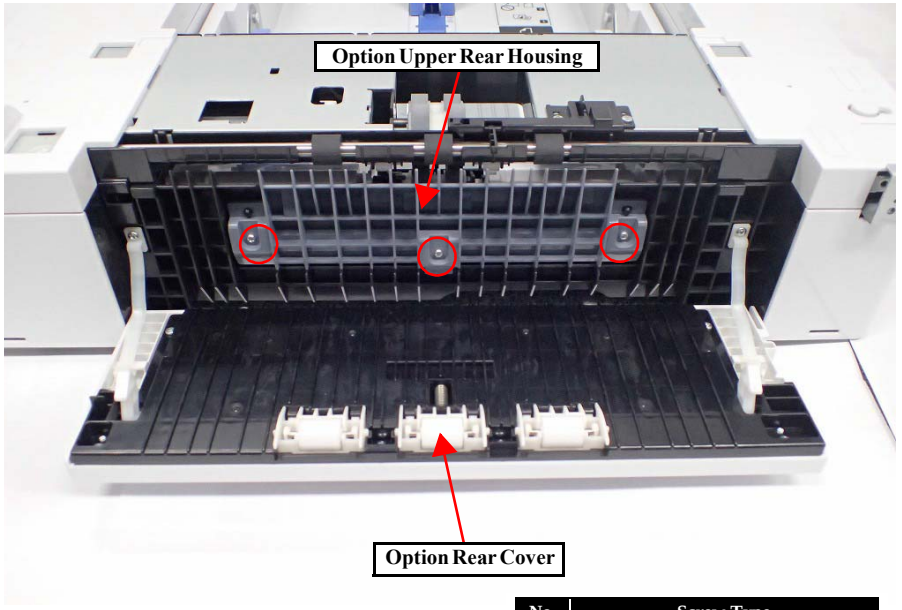
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Option Pick Up Roller	A	1 min 49 sec	---	1 min 49 sec
Option Rear Cover	B	17 min 34 sec	---	17 min 34 sec
Option Rear Belt Cover	C	17 min 34 sec	---	17 min 34 sec

DISASSEMBLY FLOWCHART



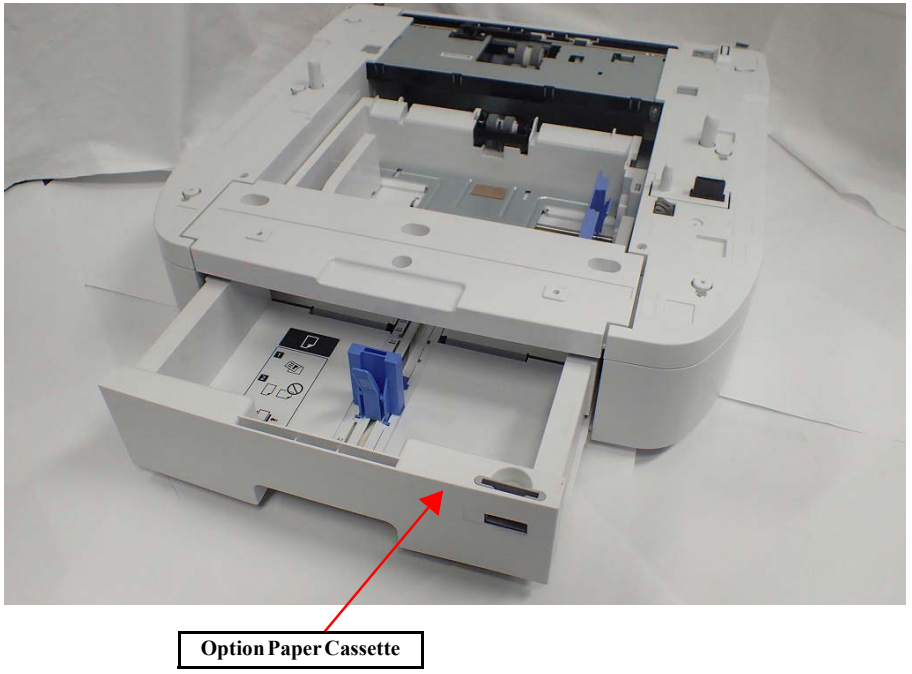
A1		Option Upper Rear Housing



No.	Screw Type
S27	C.P.SCREW-3x8-F.ZN-3C

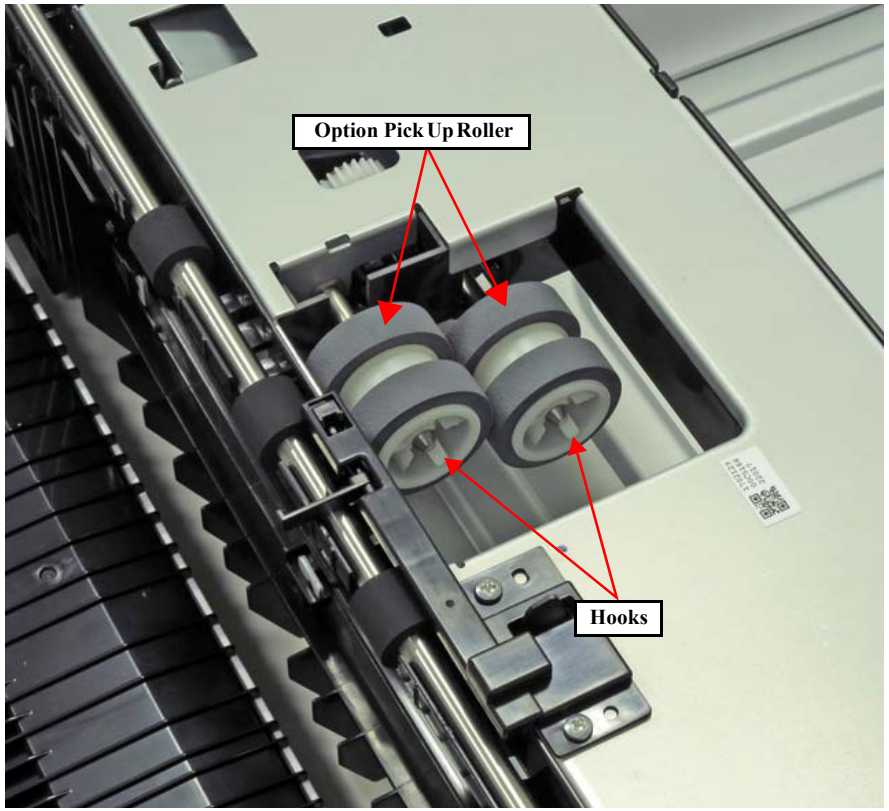
1. Open the Option Rear Cover.
2. Remove the three screws (S27: ○), then remove the Upper Rear Housing.

A2		Option Paper Cassette



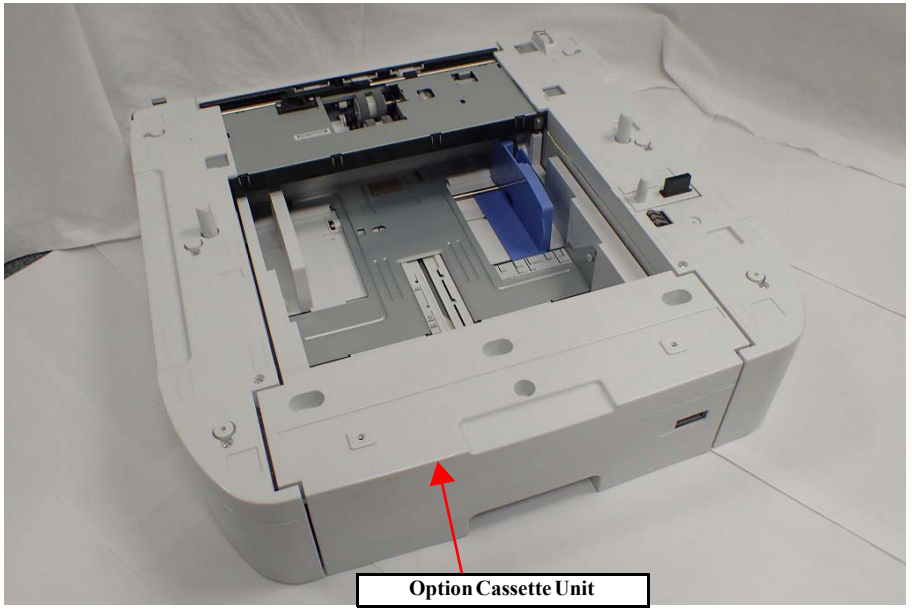
1. Remove the Option Paper Cassette.

A3		Option Pickup Roller



1. Disengage the hook, then remove the Option Pick Up Roller.

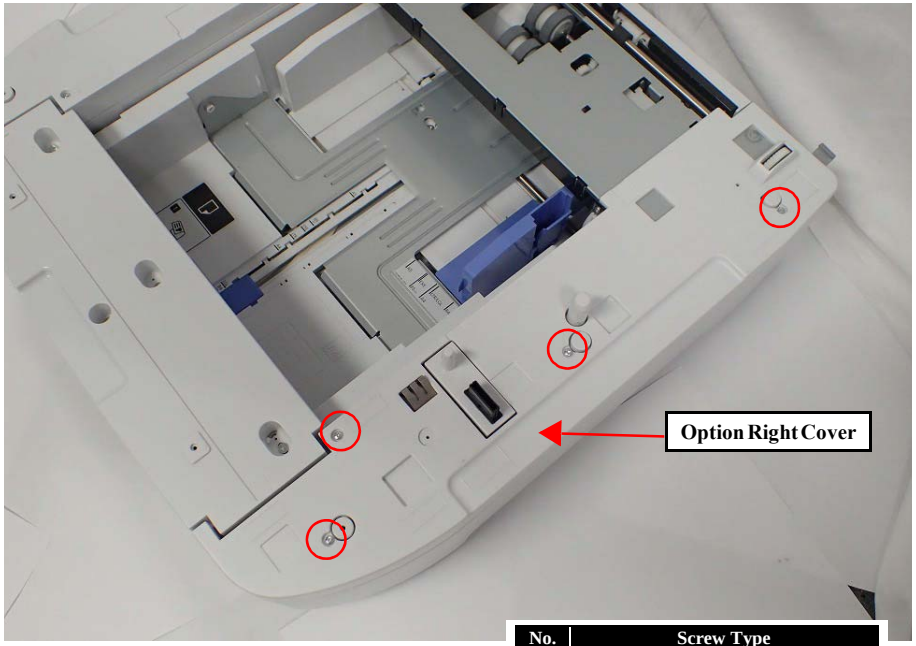
	B1	Remove the Printer Main Unit
C1		



1. Remove the Printer main Unit from Option Cassette Unit.

	B2
C2	

Option Right Cover

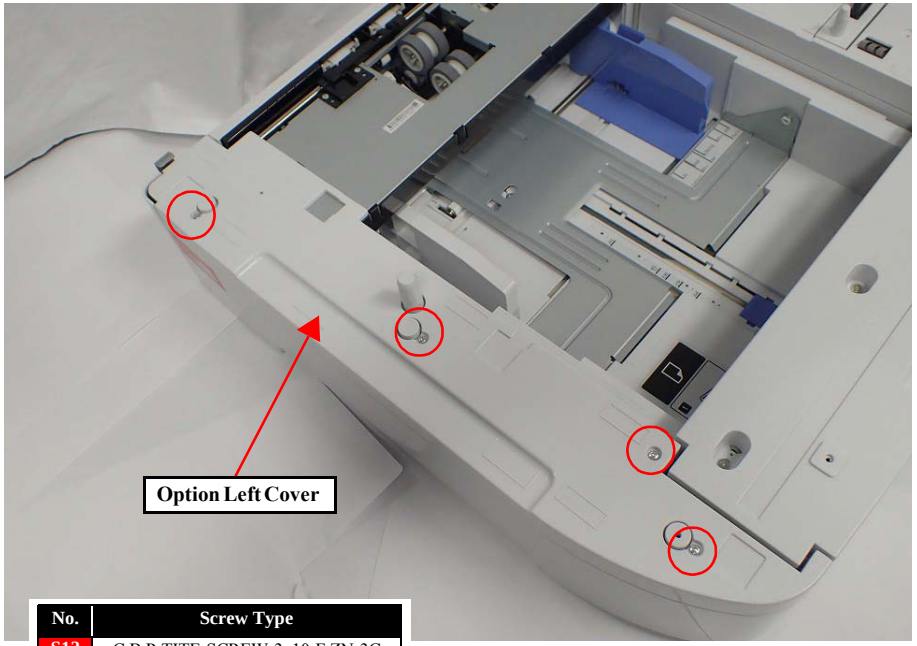


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the four screws (S12: ○), then remove the Option Right Cover.

	B3
C3	

Option Left Cover

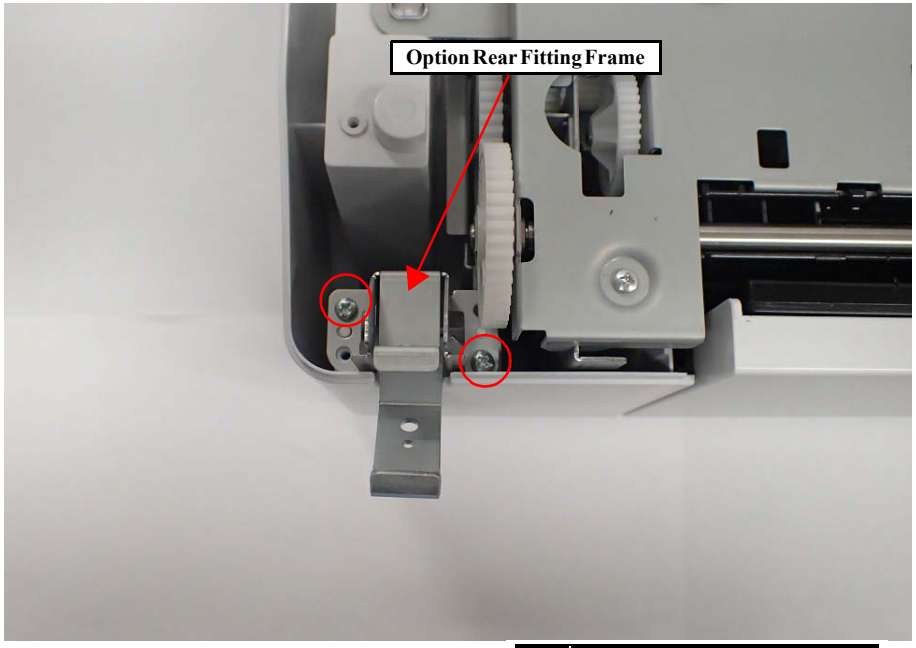


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the four screws (S12: ○), then remove the Option Left Cover.

	B4
C4	

Option Rear Fitting Frame

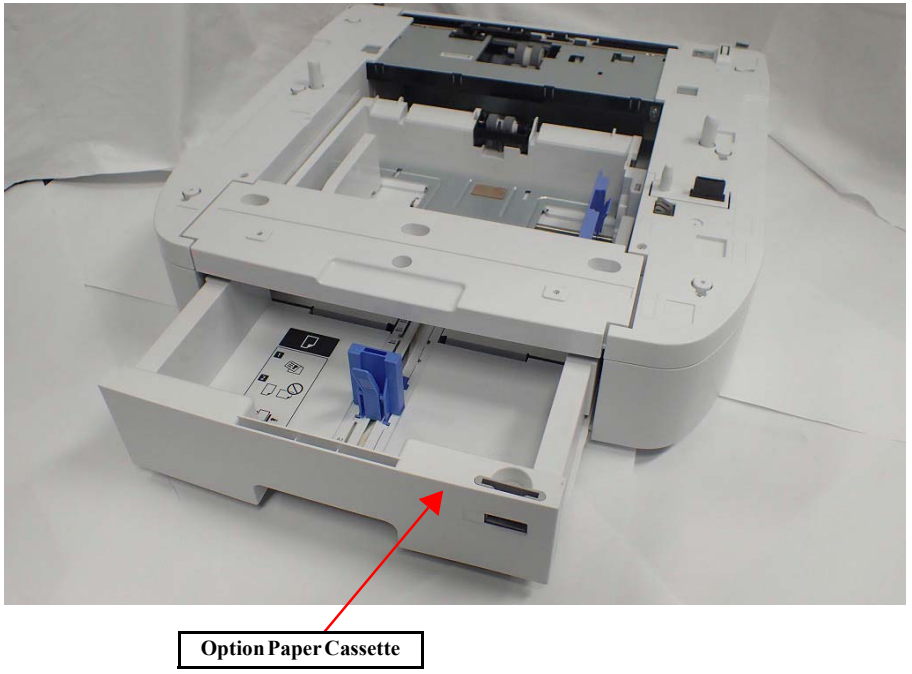


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the two screws (S12: ○), then remove the Option Rear Fitting Frame.

	B5
C5	

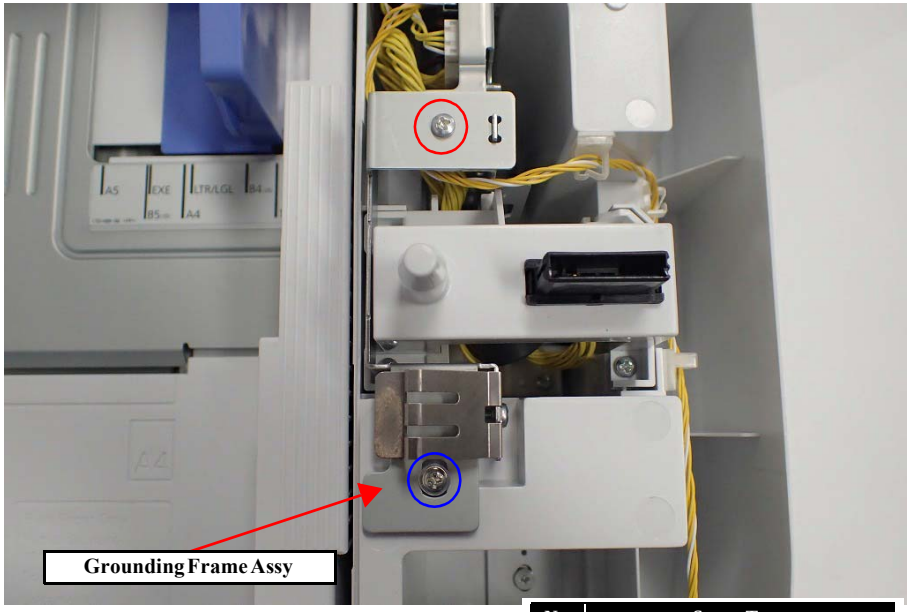
Option Paper Cassette



1. Remove the Option Paper Cassette.

	B6
C6	

Grounding Frame Assy

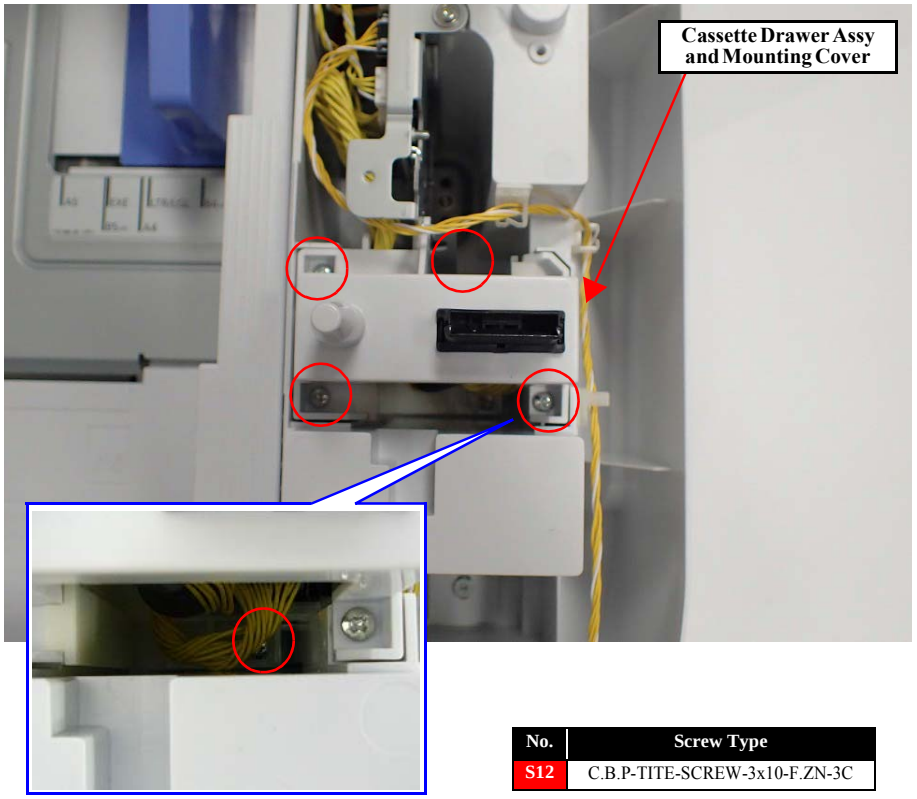


No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C
S29	C.C.P-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S13:○ x1, S29:○ x1), and remove the Grounding Frame Assy.

	B7
C7	

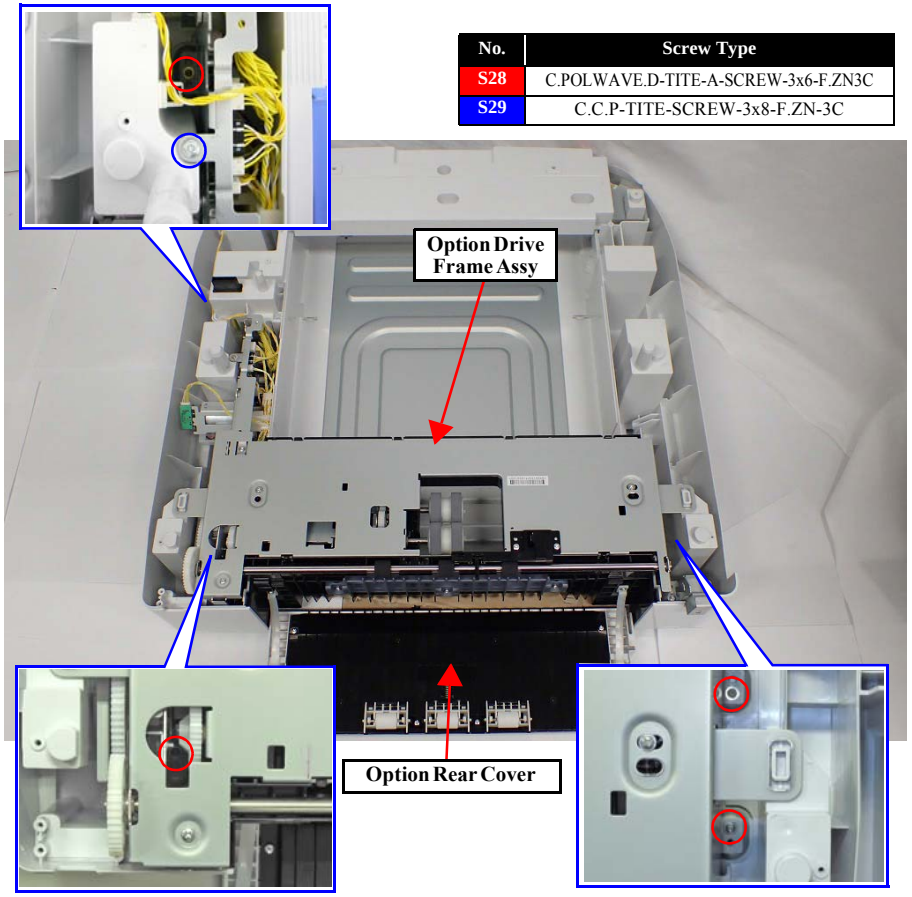
Option Drive Frame Assy



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Open the Option Rear Cover.
2. Remove the five screws (S12: ○) fixing the Cassette Drawers.

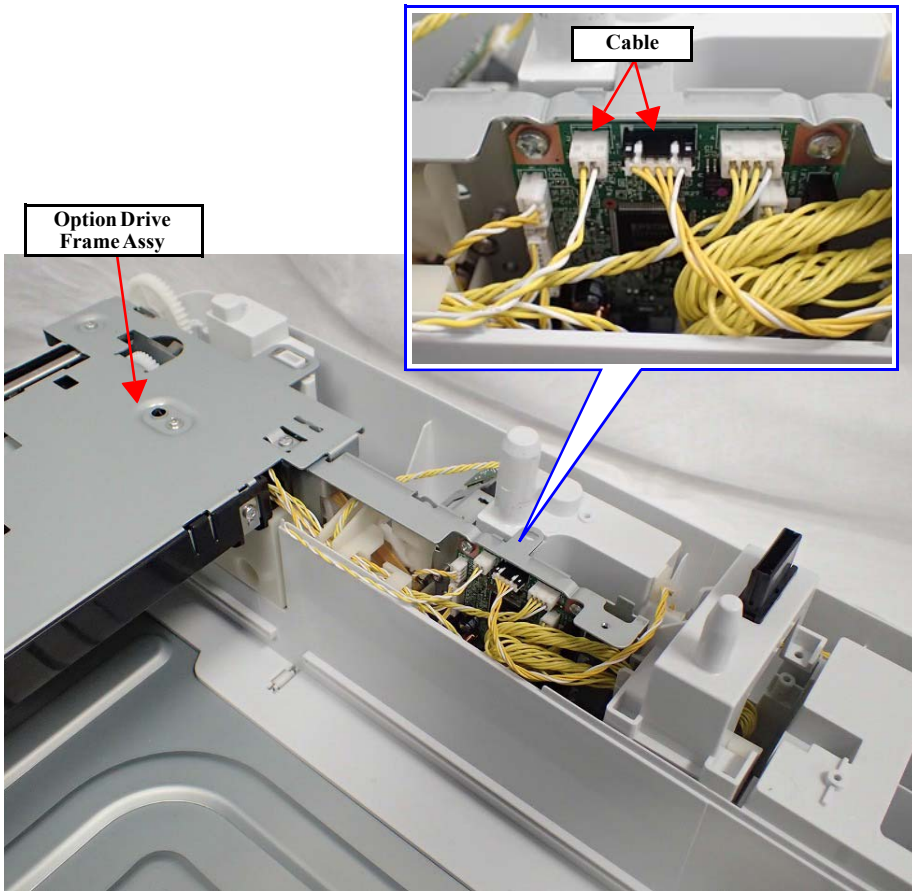
Option Drive Frame Assy



No.	Screw Type
S28	C.POLWAVE.D-TITE-A-SCREW-3x6-F.ZN3C
S29	C.C.P-TITE-SCREW-3x8-F.ZN-3C

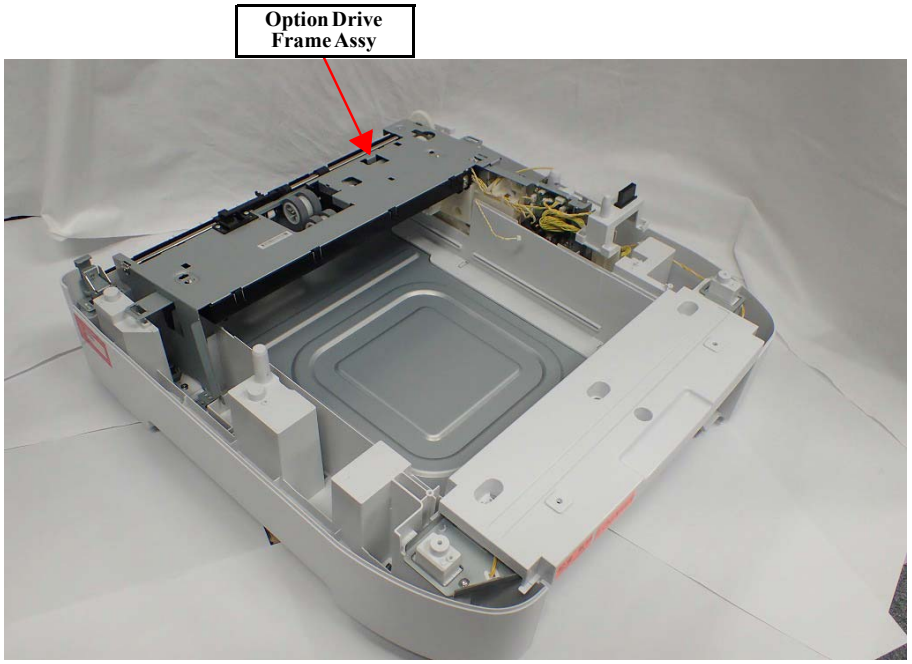
3. Remove the four screws (S28: ○) and one screw (S29: ○) fixing the Option Drive Frame Assy.

Option Drive Frame Assy



4. Disconnect the two cables from Option Cassette Board.

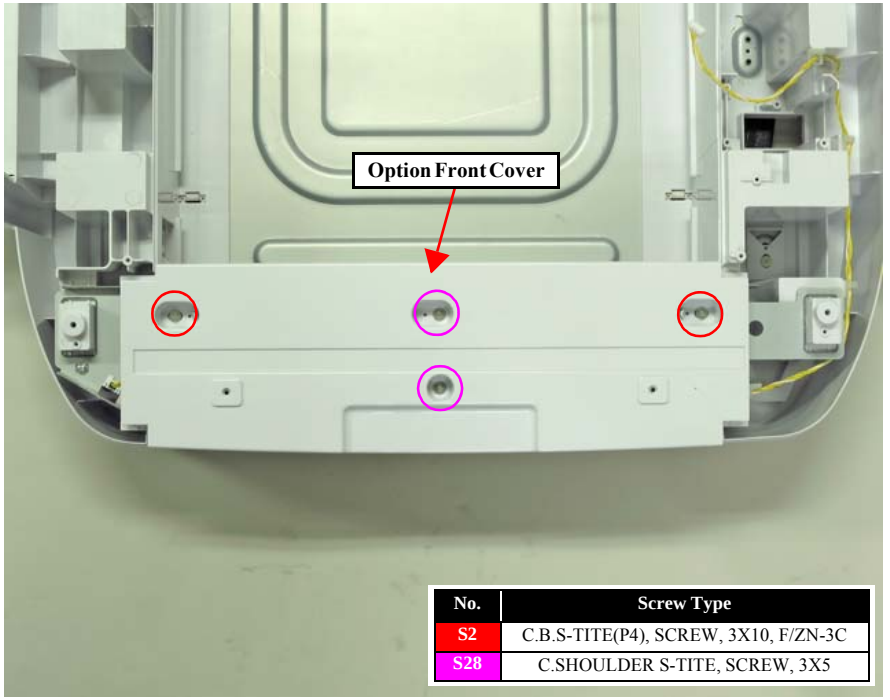
Option Drive Frame Assy



5. Remove the Option Drive Frame Assy.

	B8
C8	

Option Front Cover

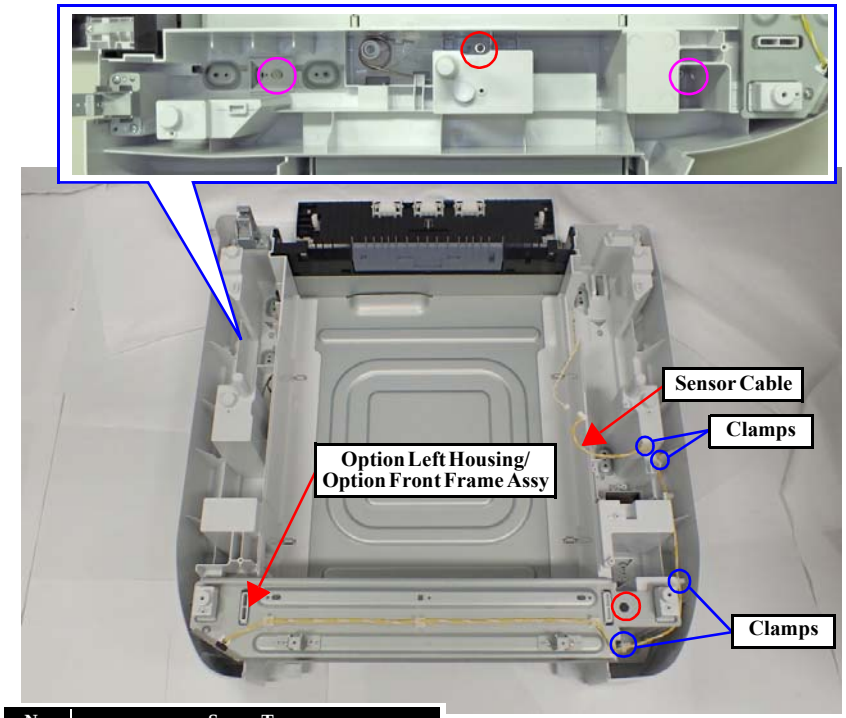


No.	Screw Type
S2	C.B.S-TITE(P4), SCREW, 3X10, F/ZN-3C
S28	C.SHOULDER S-TITE, SCREW, 3X5

1. Remove the two screws (S2: ○), and the two screws (S28: ○) then remove the Option Front Cover.

	B9
C9	

2nd Left Housing & Option Front Frame Assy

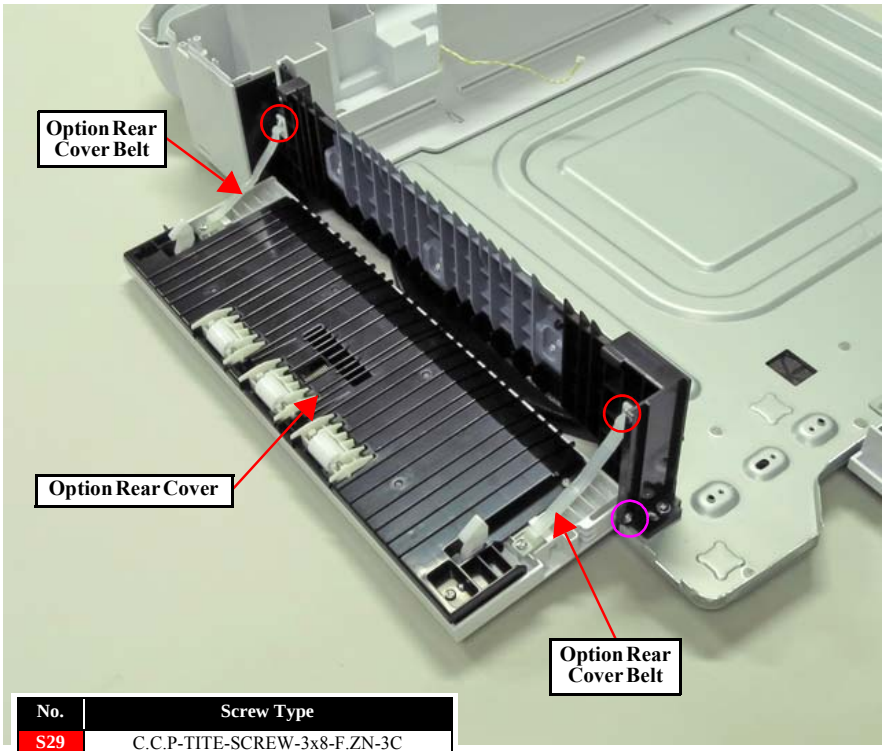


No.	Screw Type
S2	C.SHOULDER S-TITE,3X5
S28	C.POLWAVE.D-TITE-A-SCREW-3x6-F.ZN3C

1. Release the sensor cable from the four clamps.
2. Remove the two screws (S2: ○) and the two screws (C28: ○) fixing the Option Left Housing and the Option Front Frame Assy.
3. Pull the Option Left Housing and the Option Front Frame Assy upward to remove it.

	B10
C10	

Option Rear Cover

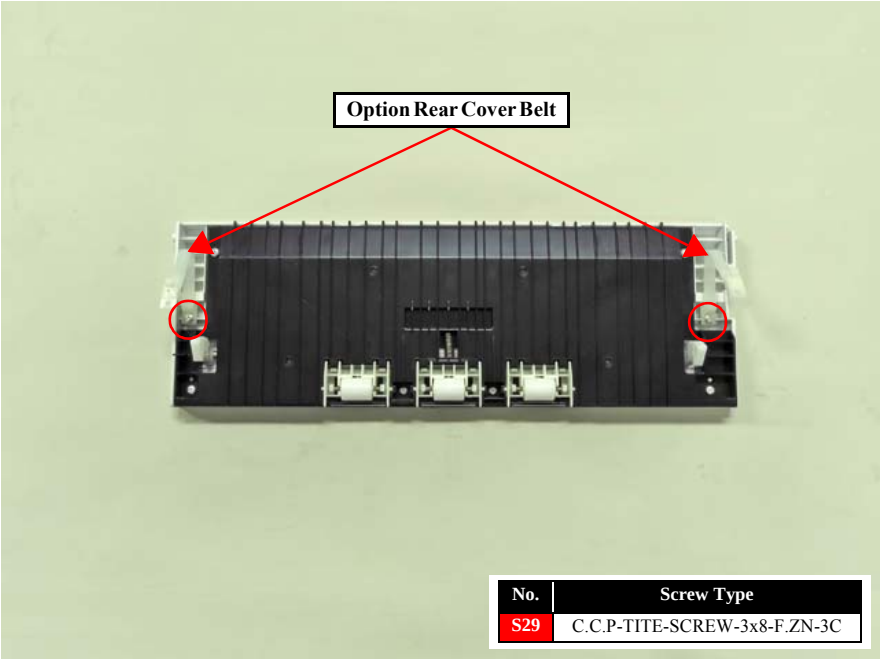


No.	Screw Type
S29	C.C.P-TITE-SCREW-3x8-F.ZN-3C
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the two screws (S29: ○), then remove the Option Rear Cover Belt.
2. Remove the screw (S12: ○), then remove the Option Rear Cover.

C11

Option Rear Cover Belt



No.	Screw Type
S29	C.C.P-TITE-SCREW-3x8-F.ZN-3C

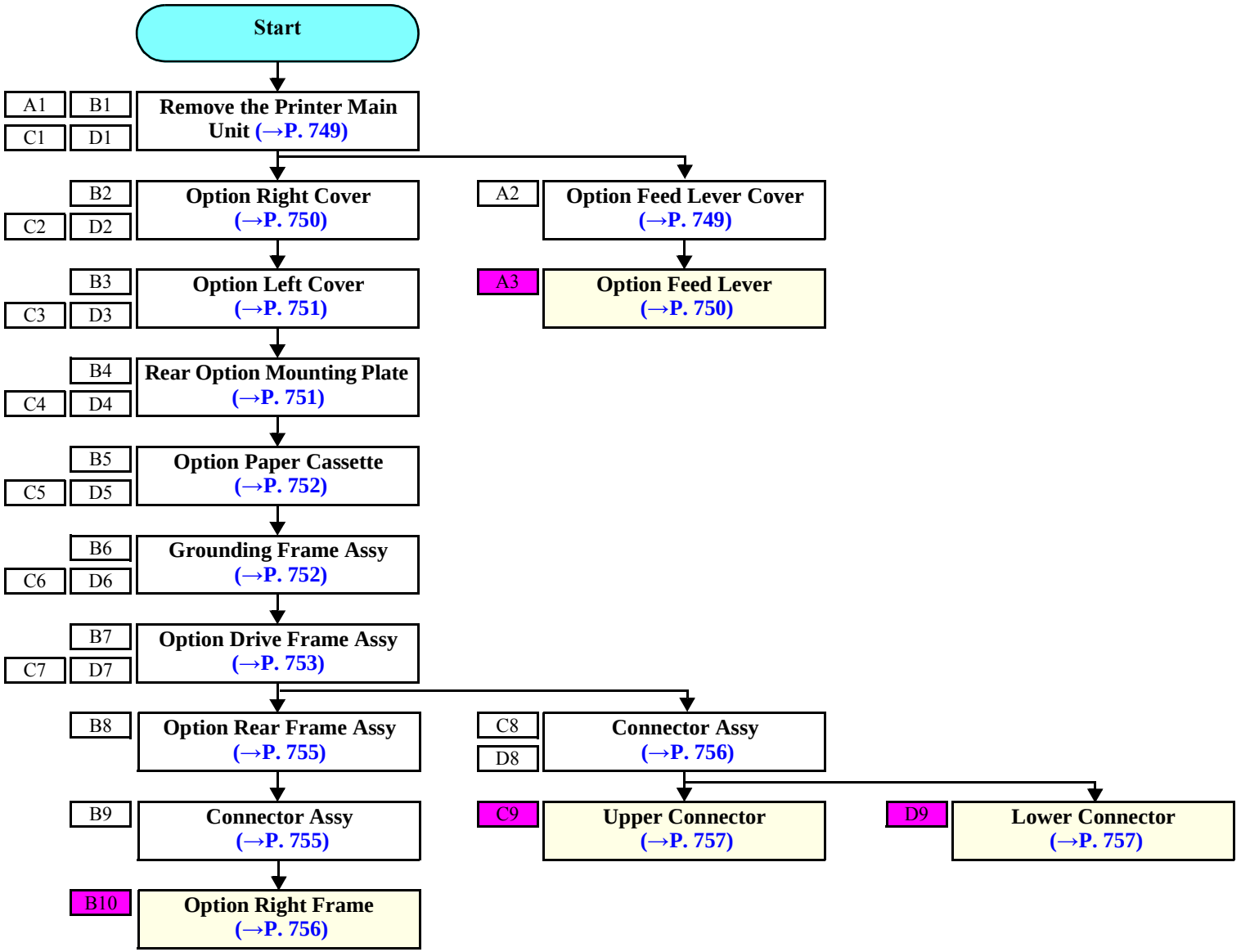
1. Remove the two screws (S29: ○), then remove the two Option Rear Cover Belts.

7.4.3.31 Option Cassette Unit 2

OUTLINE

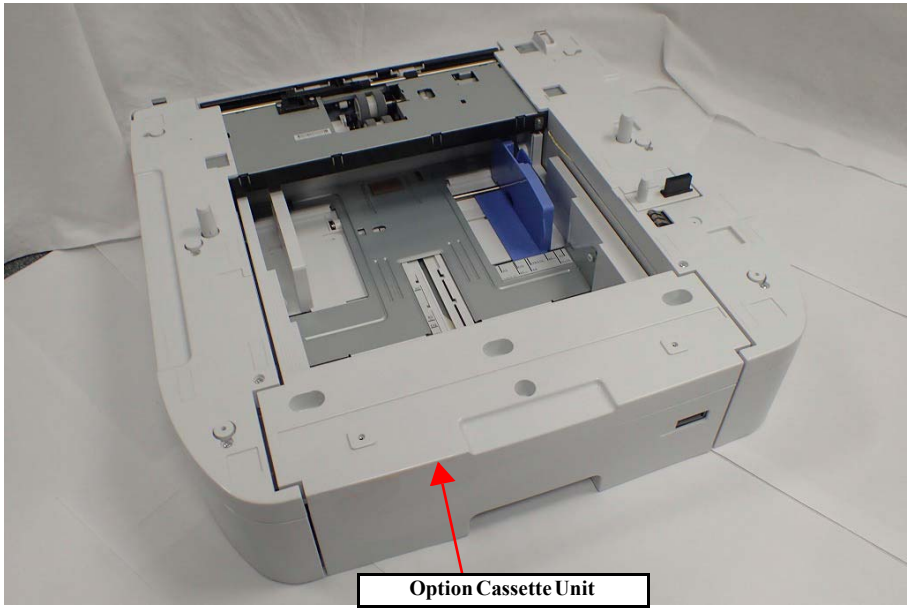
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Option Feed Lever	A	3 min 40 sec	---	3 min 40 sec
Upper Connector	B	11 min 49 sec	---	11 min 49 sec
Lower Connector	C	11 min 49 sec	---	11 min 49 sec
Option Right Frame	D	14 min 7 sec	34 sec	14 min 41 sec

DISASSEMBLY FLOWCHART



A1	B1
C1	D1

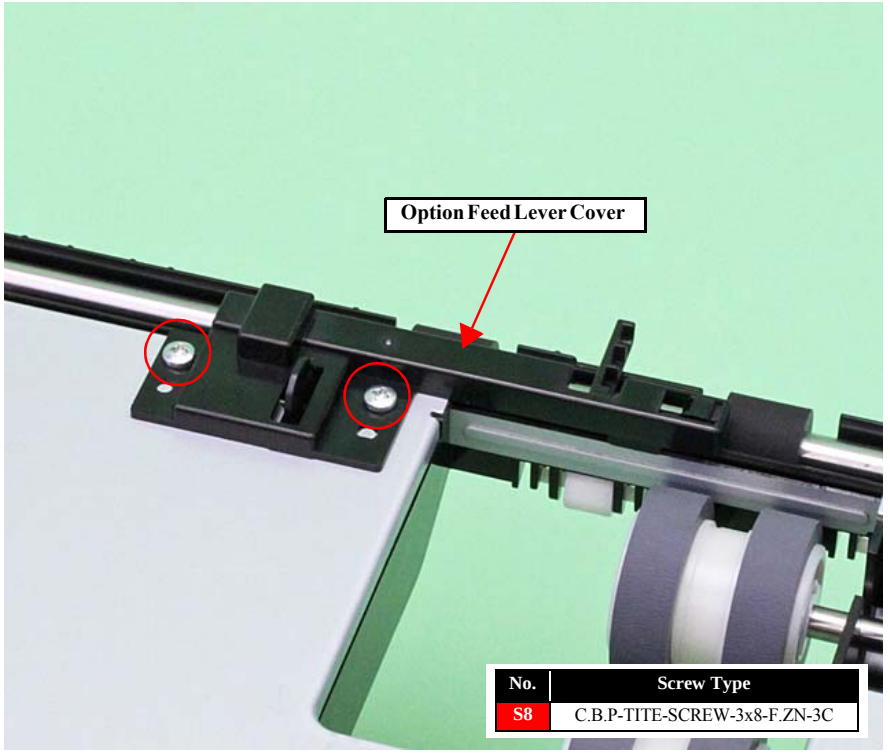
Remove the Print Main Unit



1. Remove the Printer main Unit from Option Cassette Unit.

A2	

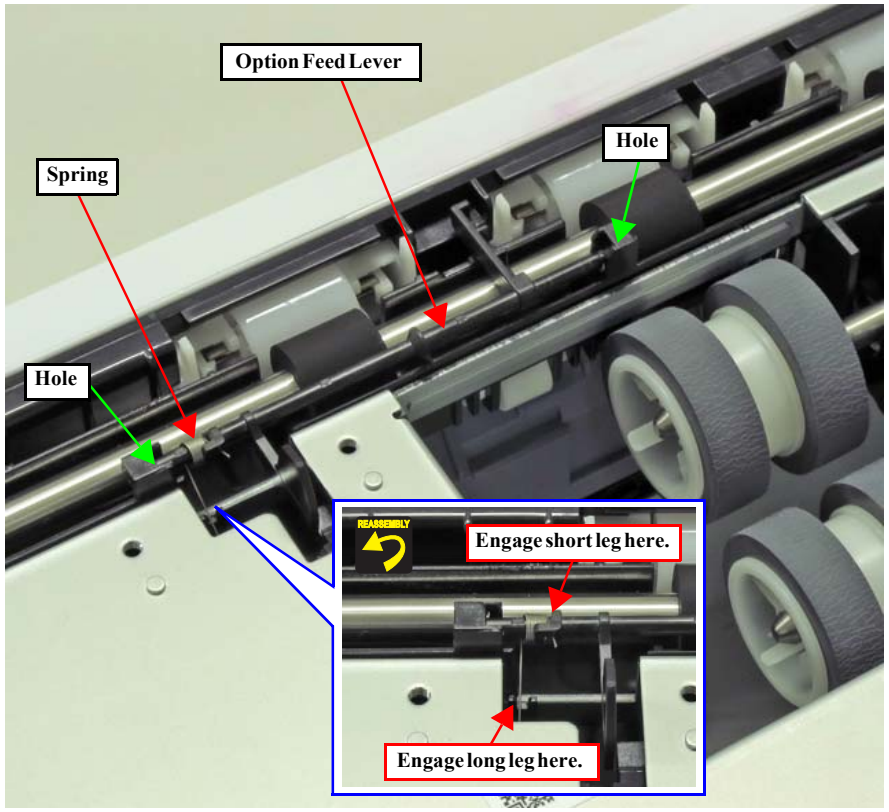
Option Feed Lever Cover



No.	Screw Type
S8	C.B.P-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S8: ○), then remove the Option Feed Lever Cover.

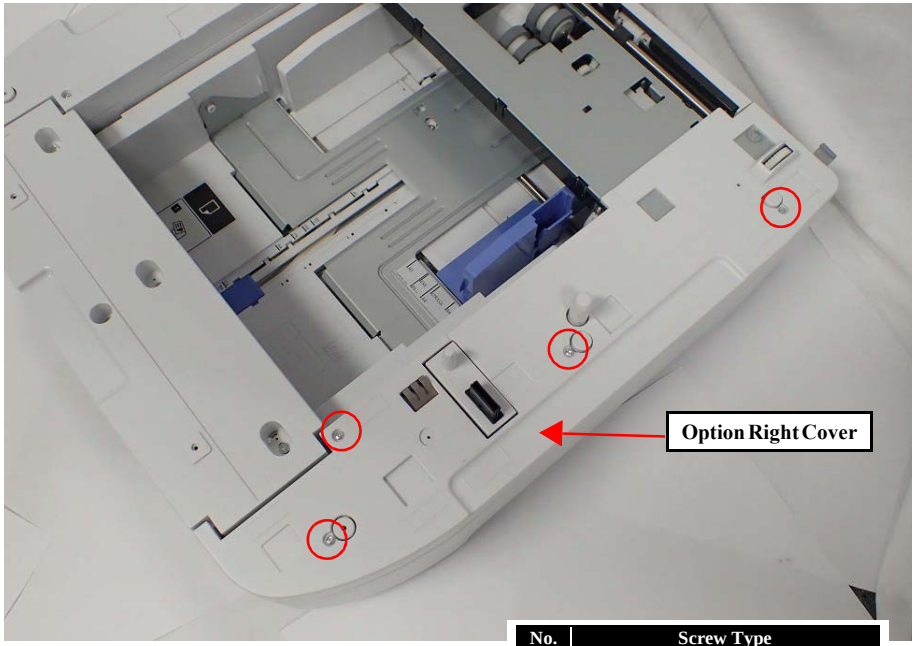
A3		Option Feed Lever



1. Release the Option Feed Lever from the holes of the cover.
2. Remove the Option Feed Lever with the spring.

REASSEMBLY Make sure to attach the spring as shown above.

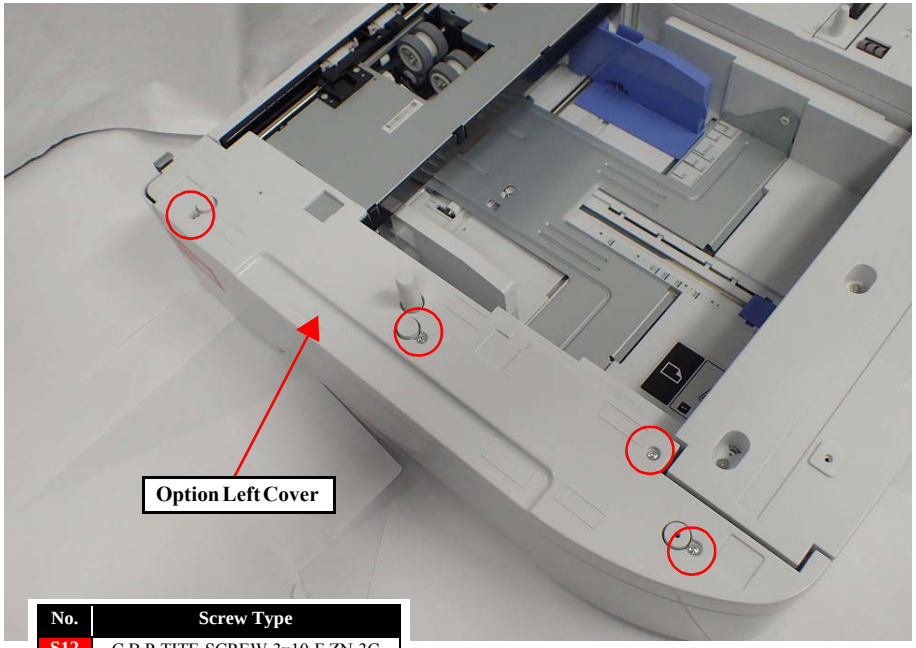
	B2	Option Right Cover
C2	D2	



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the four screws (S12: ○), then remove the Option Right Cover.

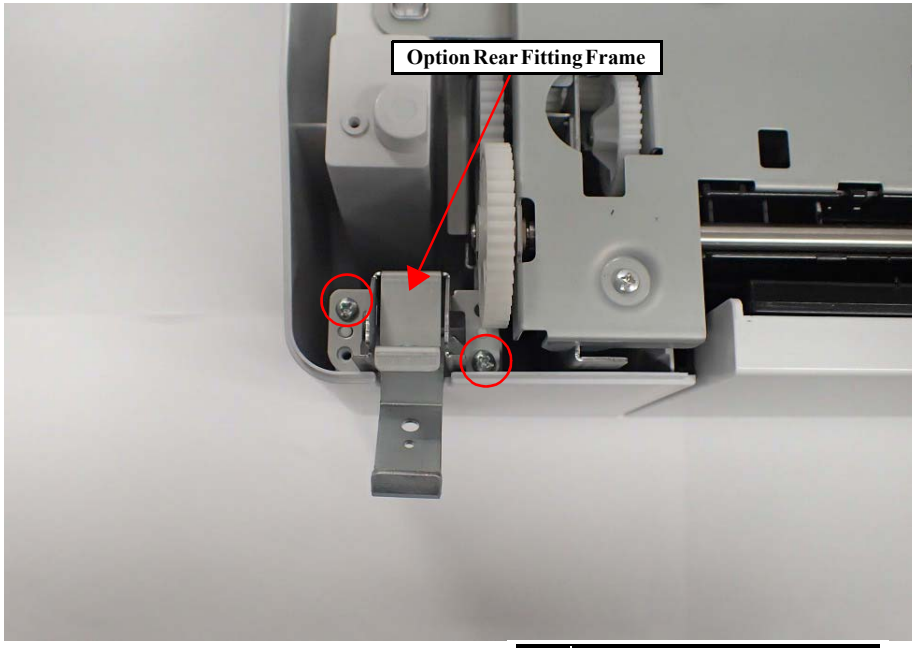
	B3	Option Left Cover
C3	D3	



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the four screws (S12: ○), then remove the Option Left Cover.

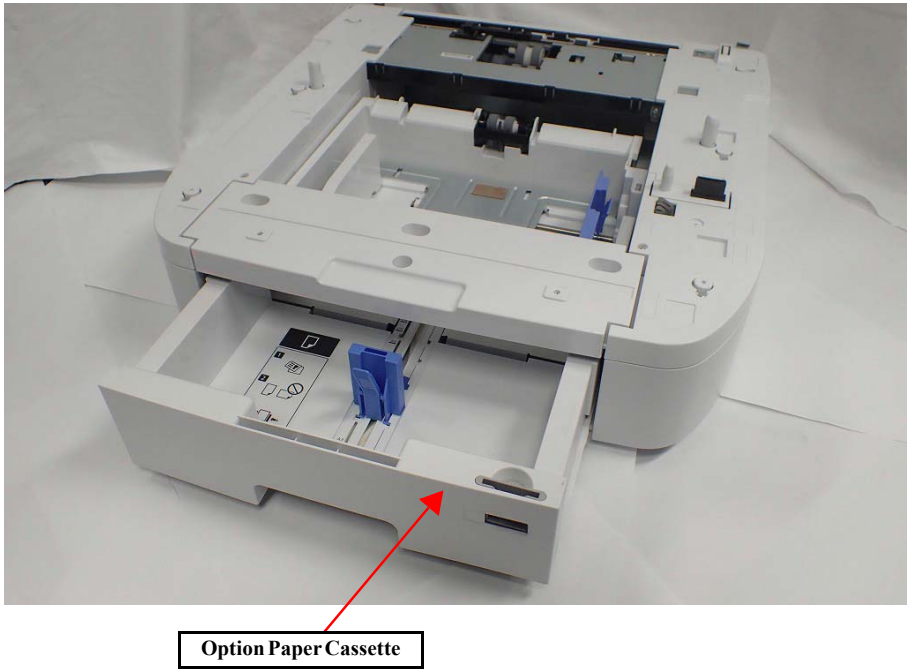
	B4	Rear Option Mounting Plate
C4	D4	



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

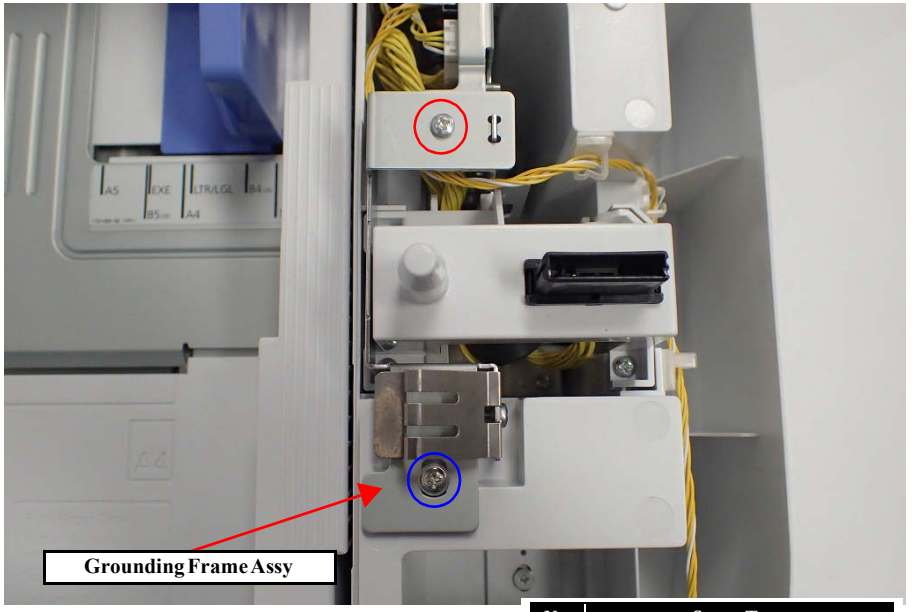
1. Remove the two screws (S12: ○), then remove the Option Rear Fitting Frame.

	B5	Option Paper Cassette
C5	D5	



1. Remove the Option Paper Cassette.

	B6	Grounding Frame Assy
C6	D6	

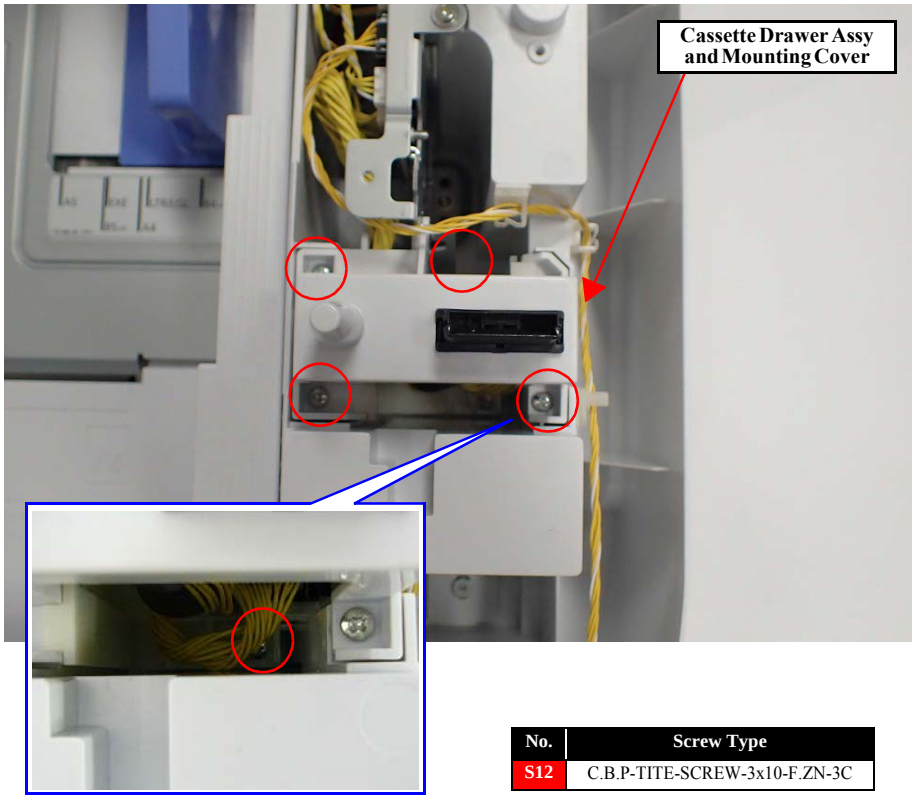


No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C
S29	C.C.P-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S13:○ x1, S29:○ x1), and remove the Grounding Frame Assy.

	B7
C7	D7

Option Drive Frame Assy

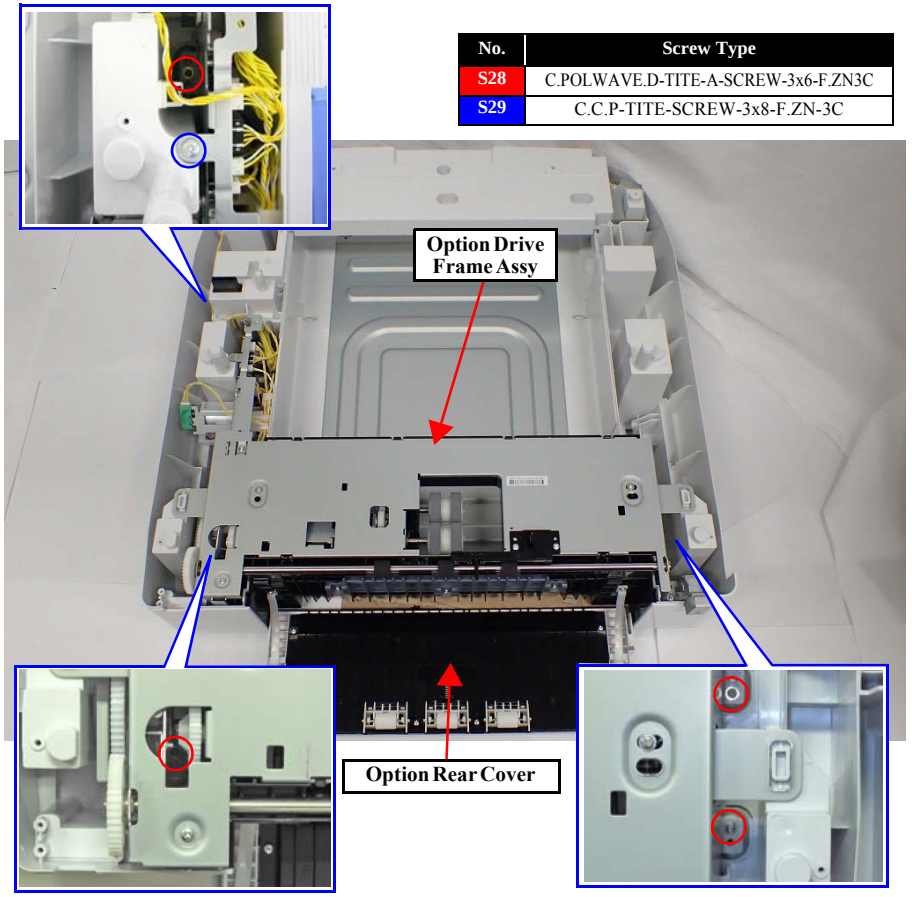


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Open the Option Rear Cover.
2. Remove the five screws (S12: ○) fixing the Cassette Drawers.

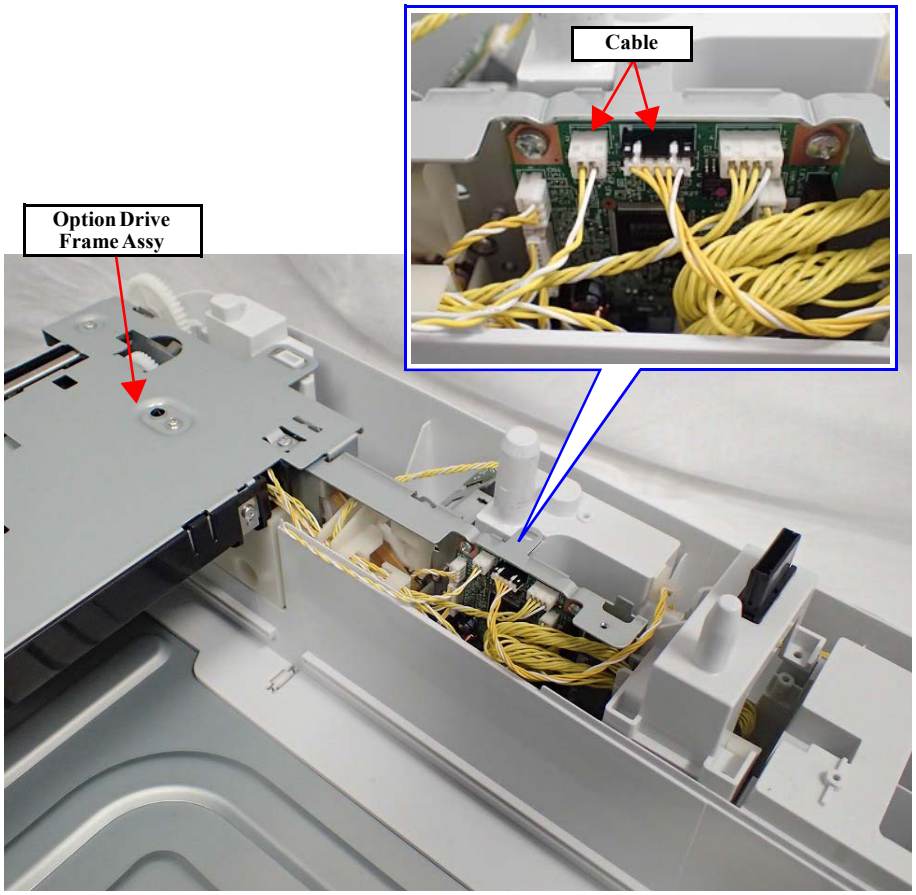
Option Drive Frame Assy

No.	Screw Type
S28	C.POLWAVE.D-TITE-A-SCREW-3x6-F.ZN3C
S29	C.C.P-TITE-SCREW-3x8-F.ZN-3C



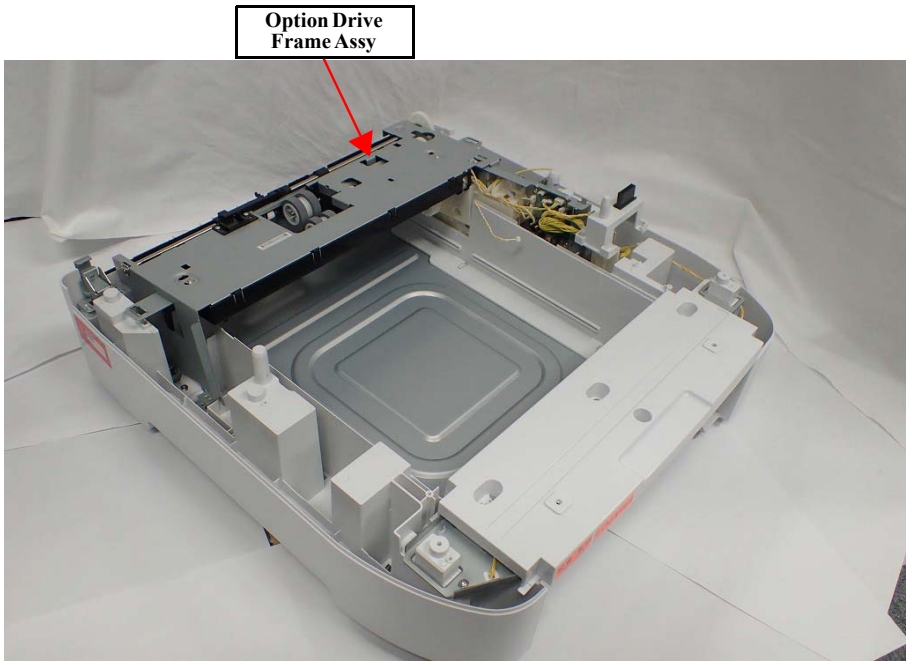
3. Remove the four screws (S28: ○) and one screw (S29: ○) fixing the Option Drive Frame Assy.

Option Drive Frame Assy



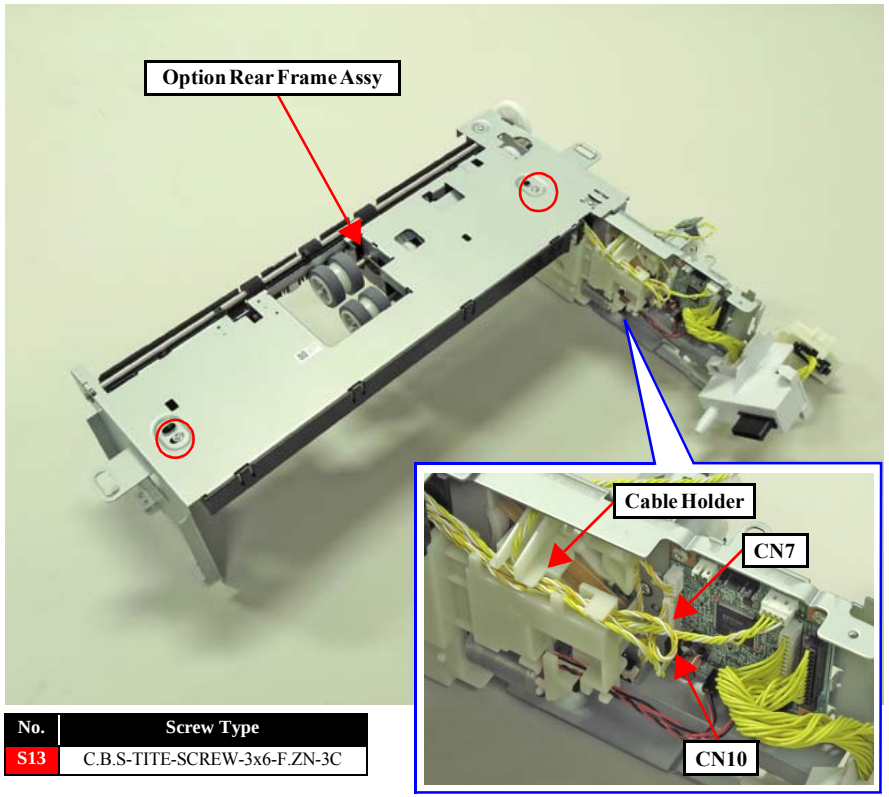
4. Disconnect the two cables from Option Cassette Board.

Option Drive Frame Assy



5. Remove the Option Drive Frame Assy.

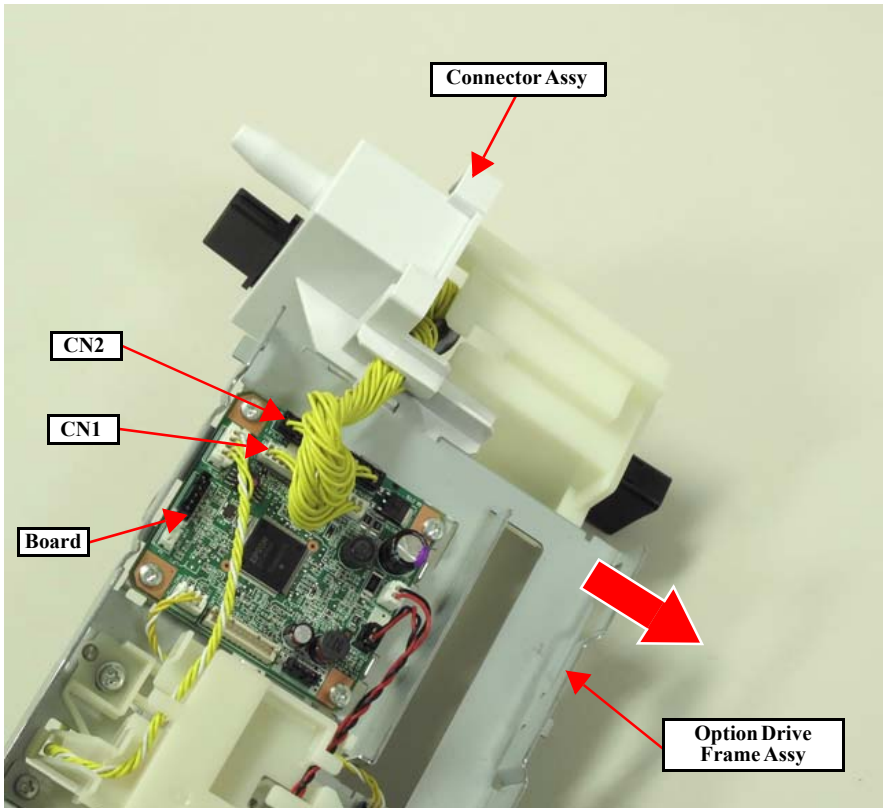
B8 Option Rear Frame Assy



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

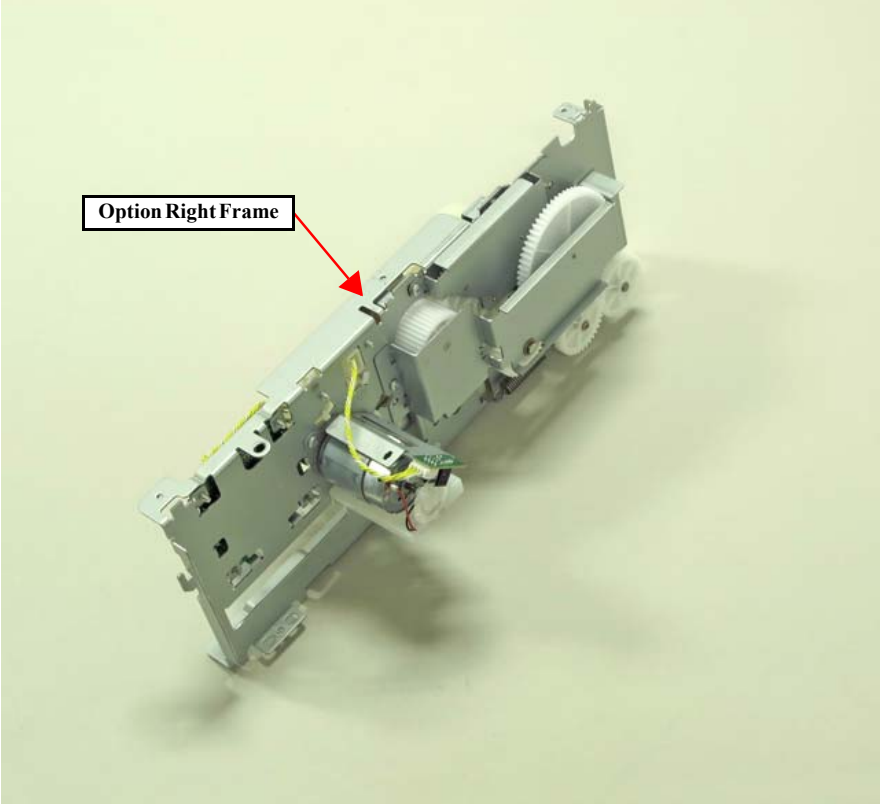
1. Remove the cable from the connector (CN7, CN10) of the board.
2. Release the cables from the Cable Holder.
3. Remove the two screws (S13: ○), then remove the Option Rear Frame Assy.

B9 Connector Assy

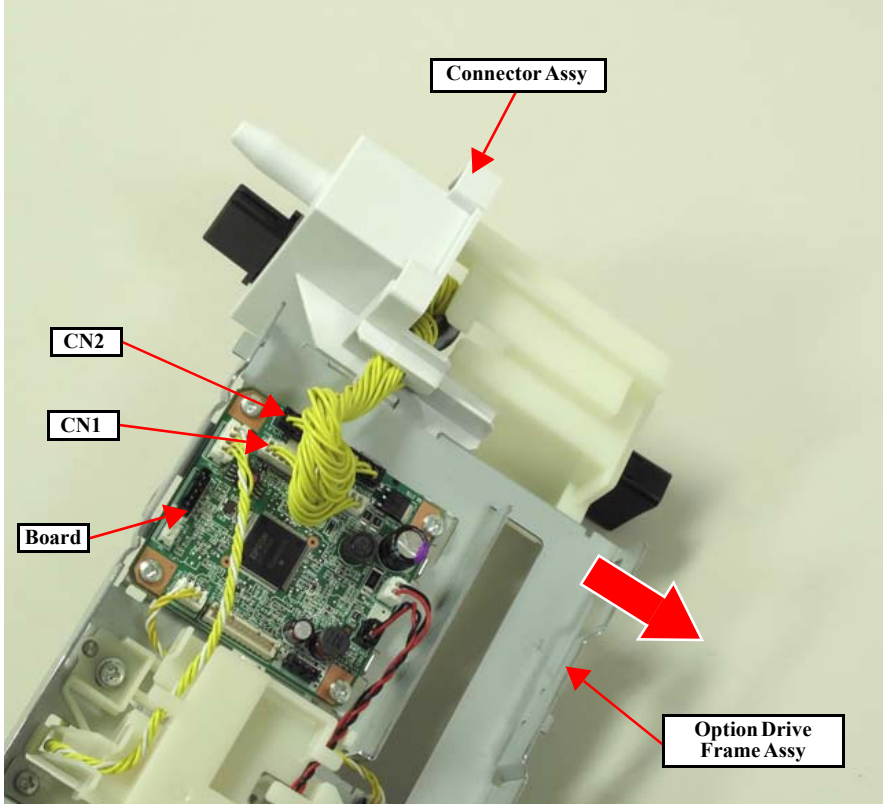


1. Remove the cable from the connector (CN1, CN2) of the board.
2. Slide the Option Drive Frame Assy in the direction of the arrow, and remove the Connector Assy.

	B10	Option Right Frame

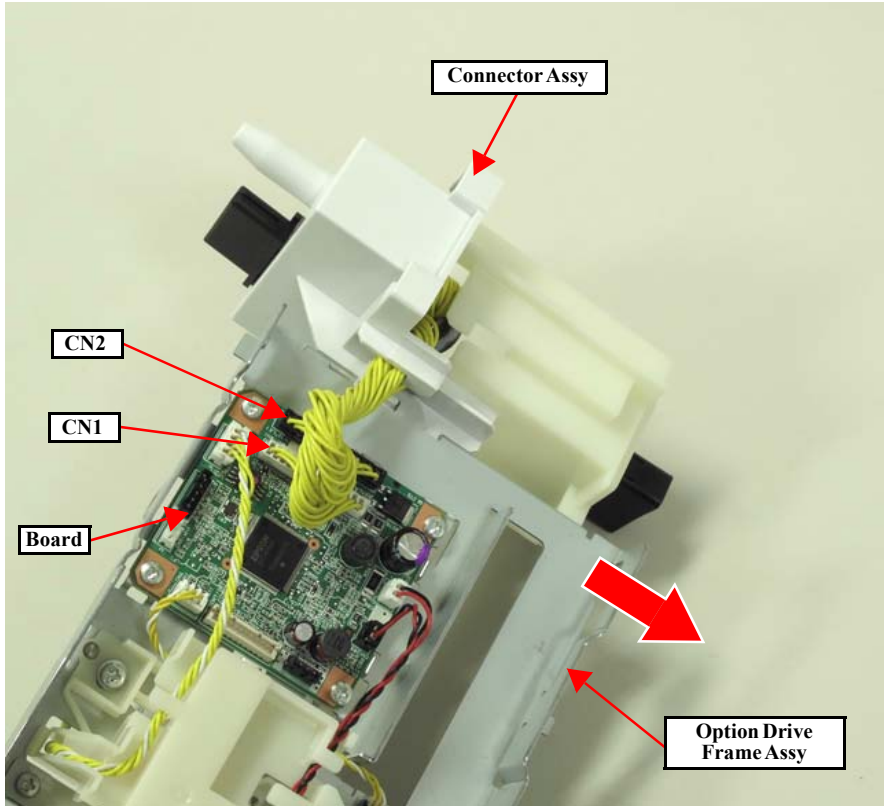


		Connector Assy
C8	D8	



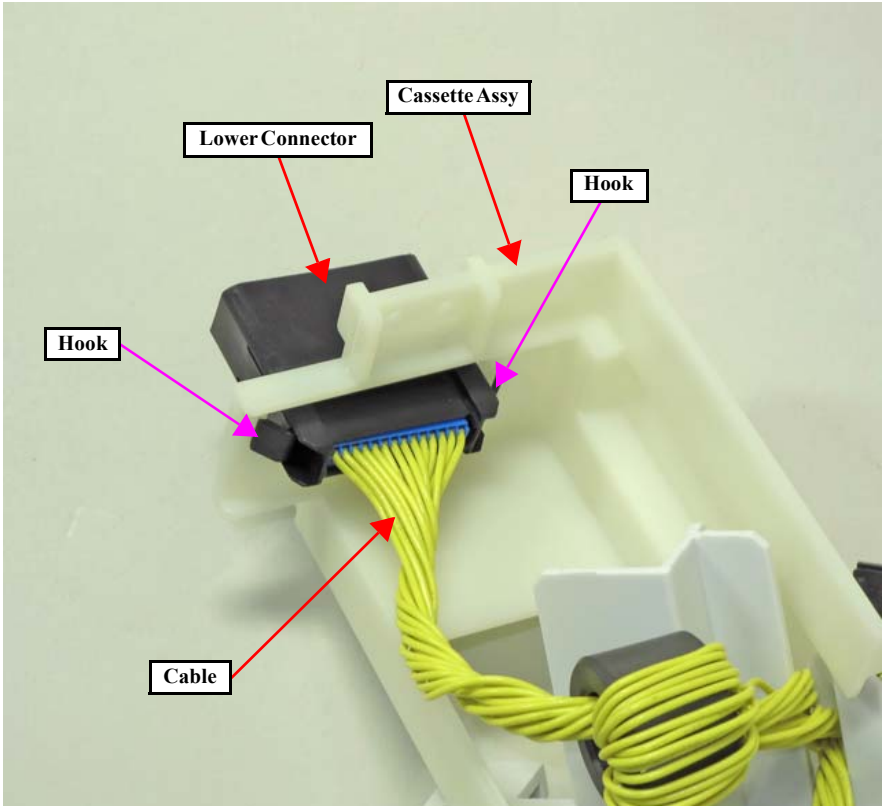
1. Remove the cable from the connector (CN1, CN2) of the board.
2. Slide the Option Drive Frame Assy in the direction of the arrow, and remove the Connector Assy.

C9 Upper Connector



1. Remove the cable from the connector (CN1, CN2) of the board.
2. Slide the Option Drive Frame Assy in the direction of the arrow, and remove the Connector Assy.

D9 Lower Connector



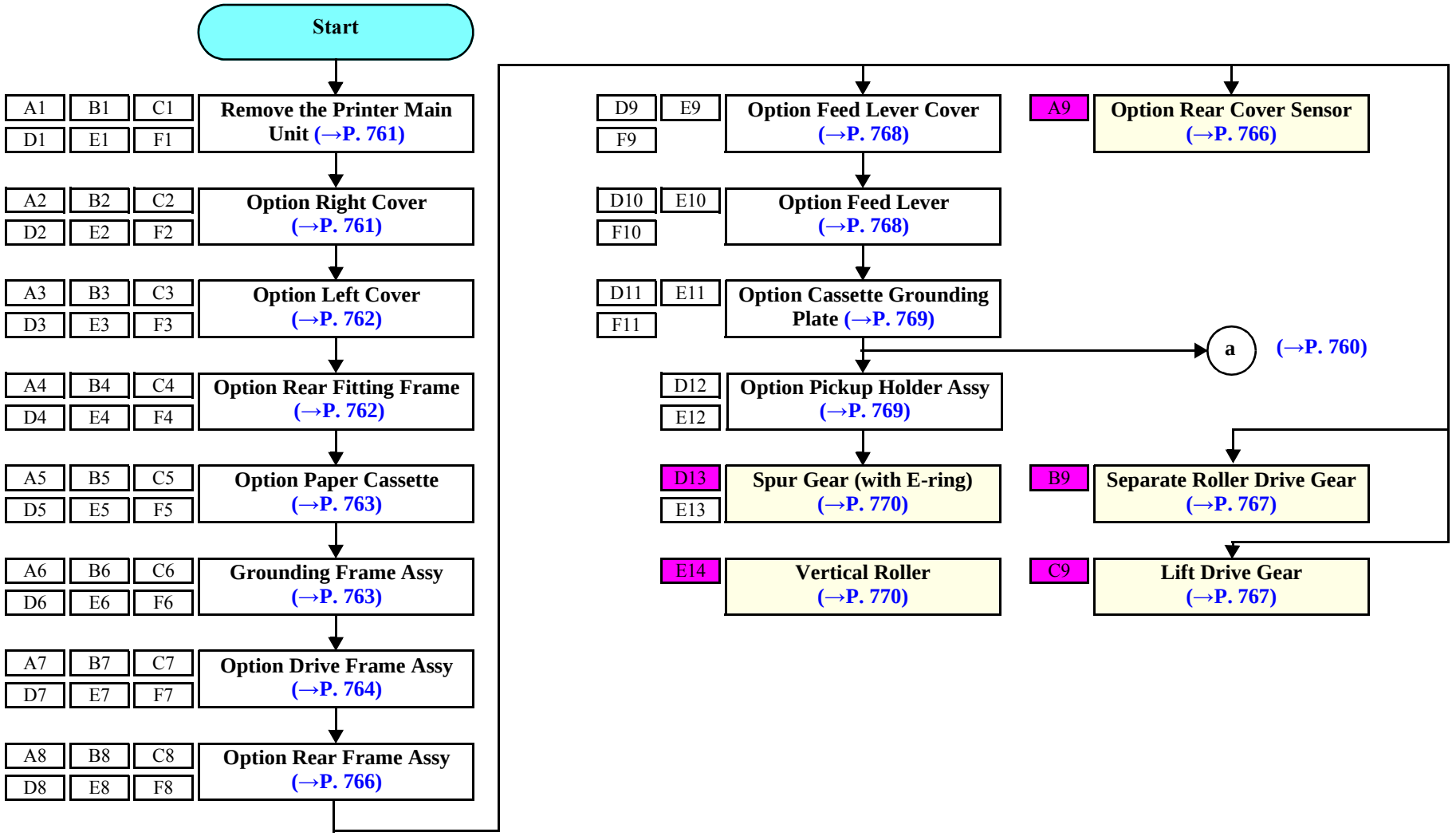
1. Disengage the two hooks, then remove the Lower Connector from the Cassette Assy.
2. Disconnect the cables from the Lower Connector.

7.4.3.32 2nd Cassette Unit 3

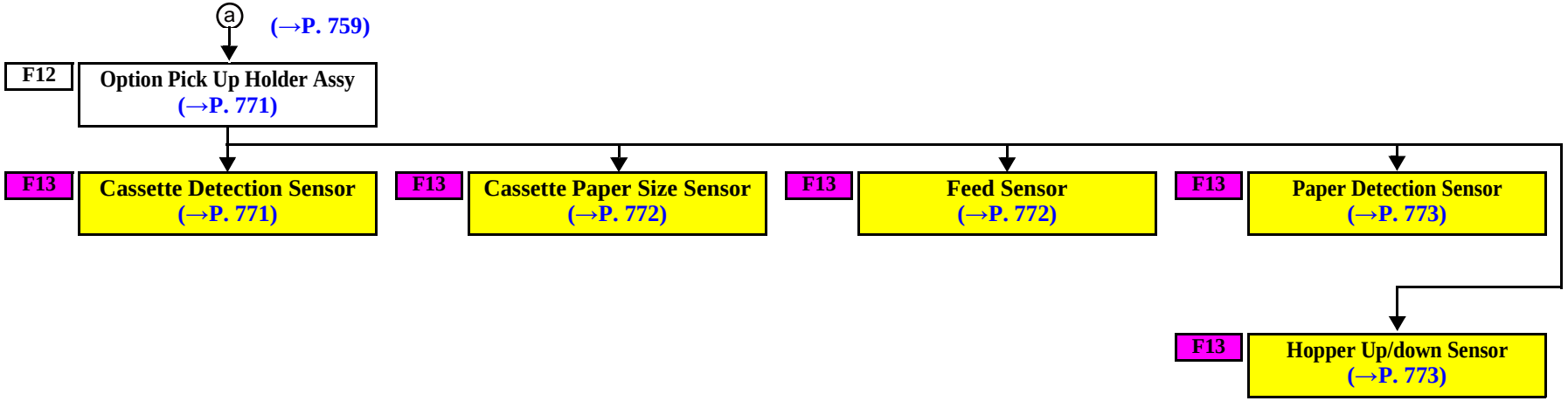
OUTLINE

Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Option Rear Cover Sensor	A	13 min 55 sec	---	13 min 55 sec
Separate Roller Drive Gear	B	13 min 45 sec	---	13 min 45 sec
Lift Drive Gear	C	14 min 6 sec	---	14 min 6 sec
Spur Gear (with E-ring)	D	17 min 37 sec	---	17 min 37 sec
Vertical Roller	E	18 min 22 sec	---	18 min 22 sec
Cassette Detection Sensor Feed Sensor/ Cassette Paper Size Sensor/ Paper Detection Sensor/ Hopper Up/down Sensor	F	17 min 33 sec	---	17 min 33 sec

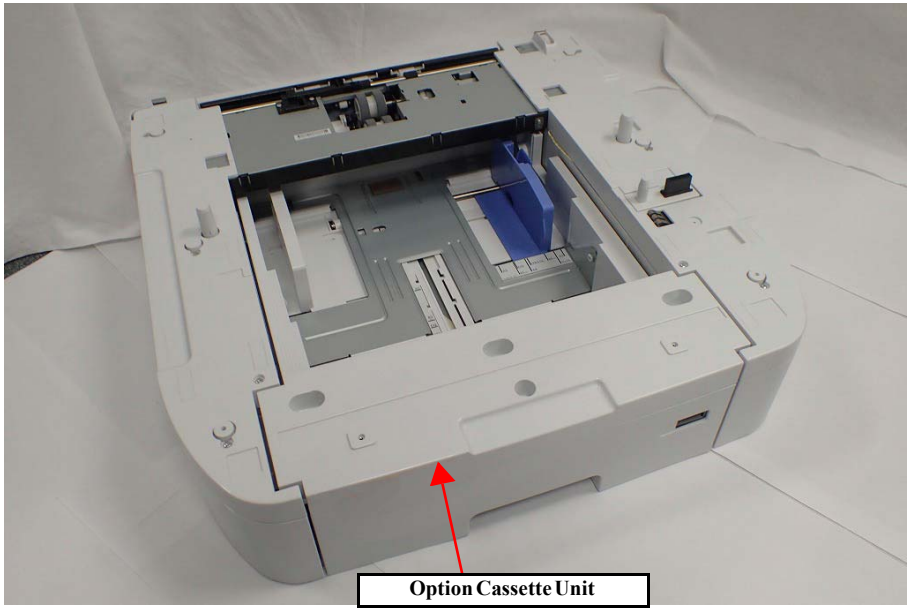
DISASSEMBLY FLOWCHART



DISASSEMBLY FLOWCHART

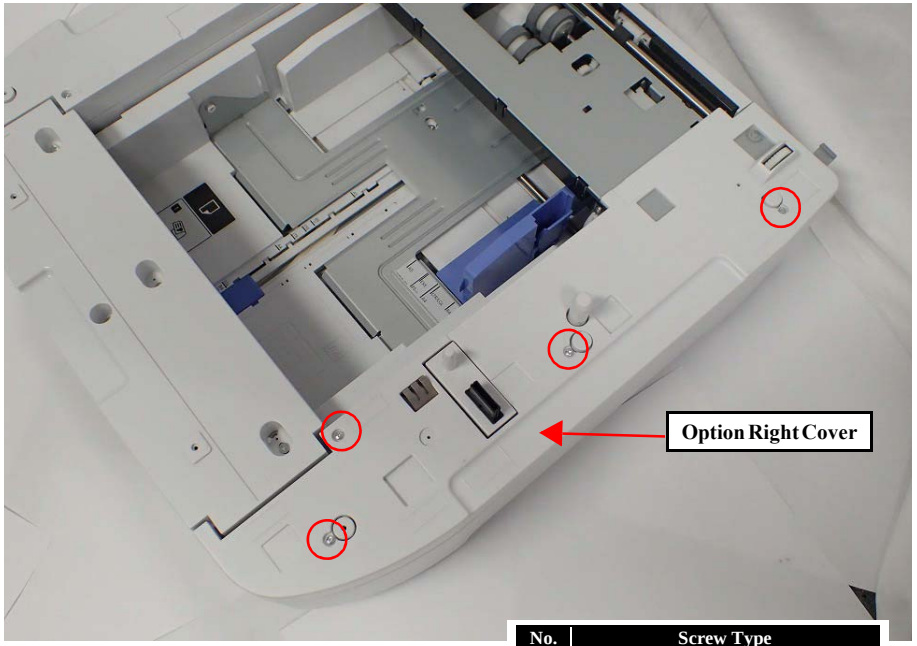


A1	B1	C1	Remove the Printer Main Unit
D1	E1	F1	



1. Remove the Printer main Unit from Option Cassette Unit.

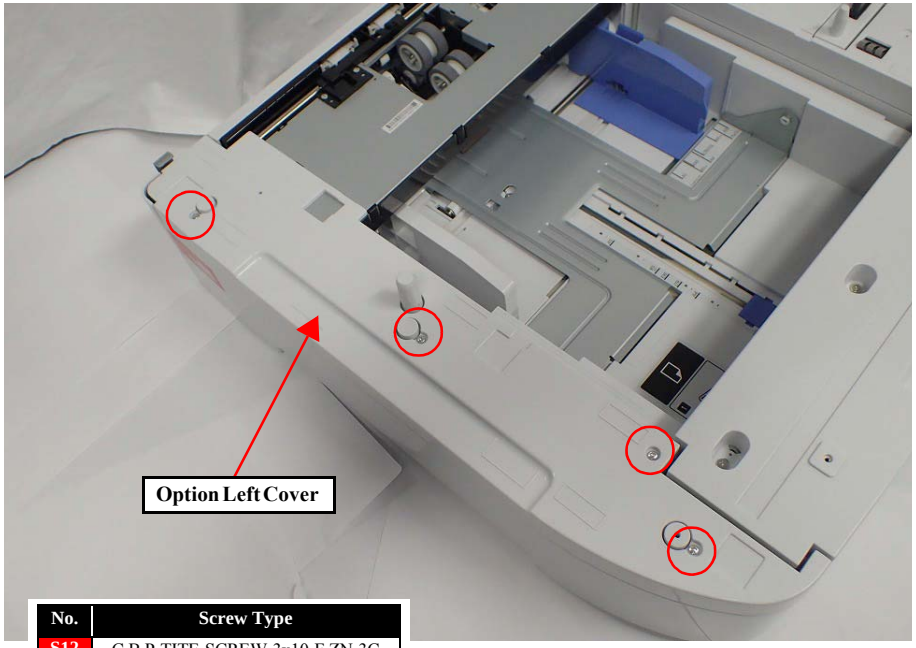
A2	B2	C2	Option Right Cover
D2	E2	F2	



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the four screws (S12: ○), then remove the Option Right Cover.

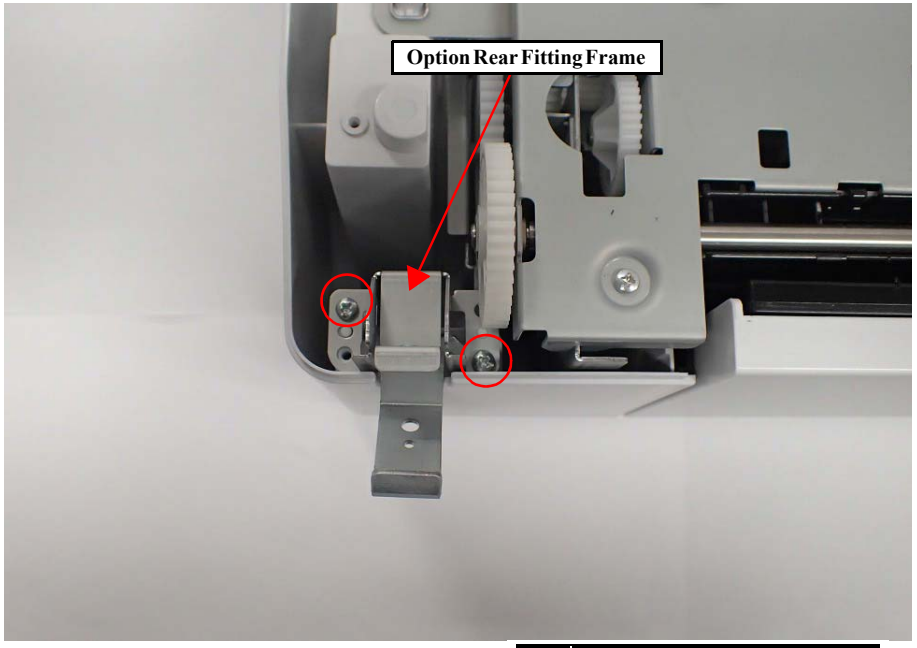
A3	B3	C3	Option Left Cover
D3	E3	F3	



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the four screws (S12: ○), then remove the Option Left Cover.

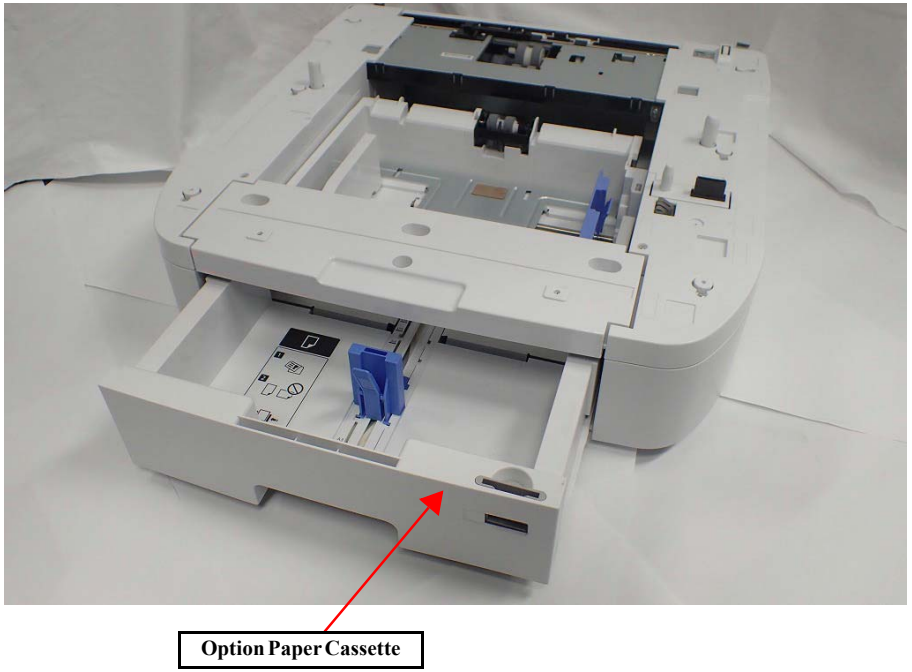
A4	B4	C4	Option Rear Fitting Frame
D4	E4	F4	



No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

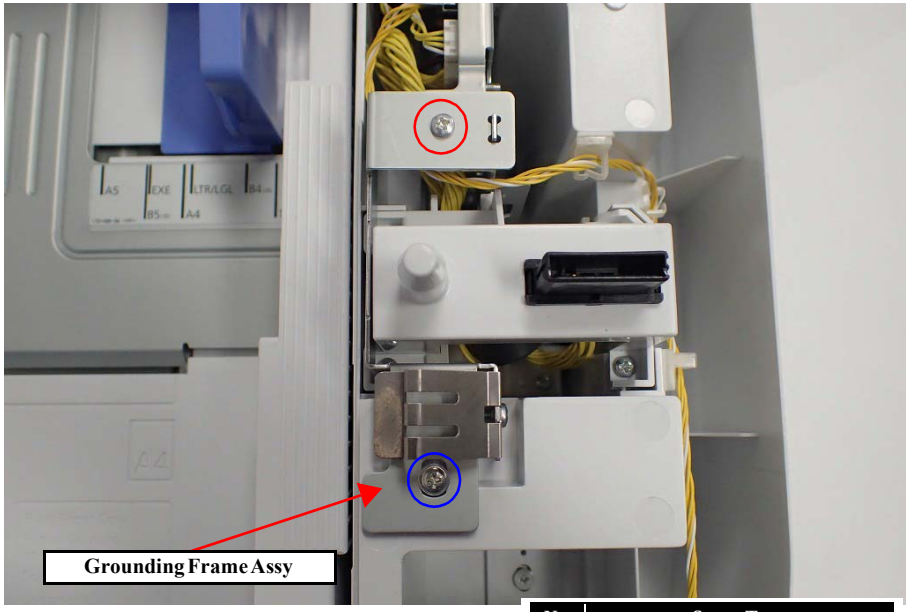
1. Remove the two screws (S12: ○), then remove the Option Rear Fitting Frame.

A5	B5	C5	Option Paper Cassette
D5	E5	F5	



1. Remove the Option Paper Cassette.

A6	B6	C6	Grounding Frame Assy
D6	E6	F6	

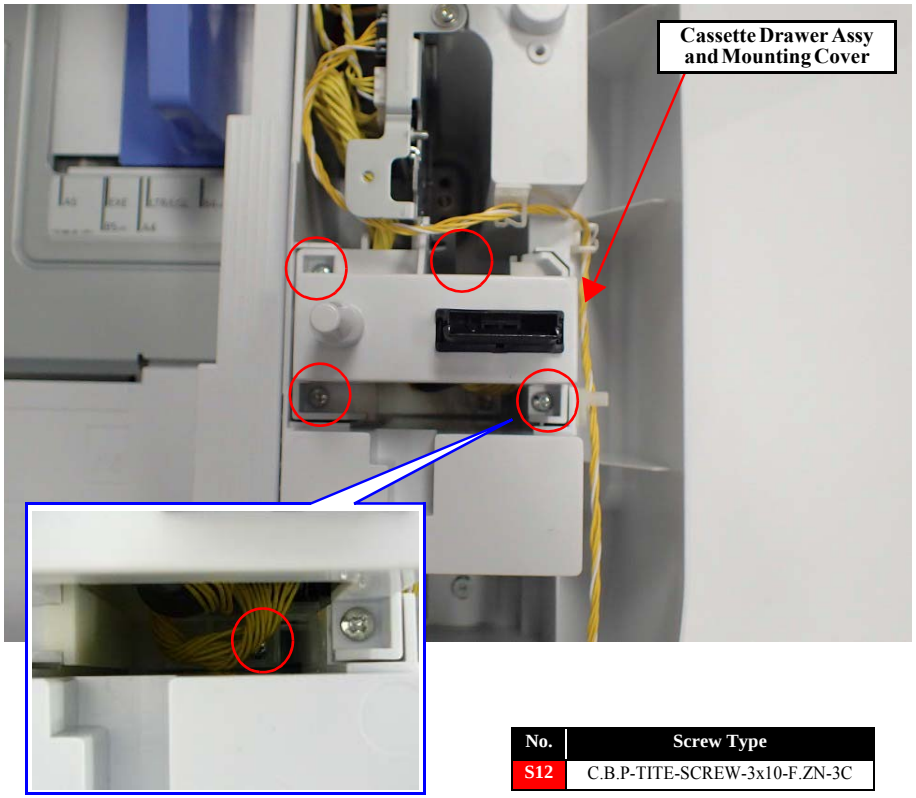


No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C
S29	C.C.P-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S13:○ x1, S29:○ x1), and remove the Grounding Frame Assy.

A7	B7	C7
D7	E7	F7

Option Drive Frame Assy

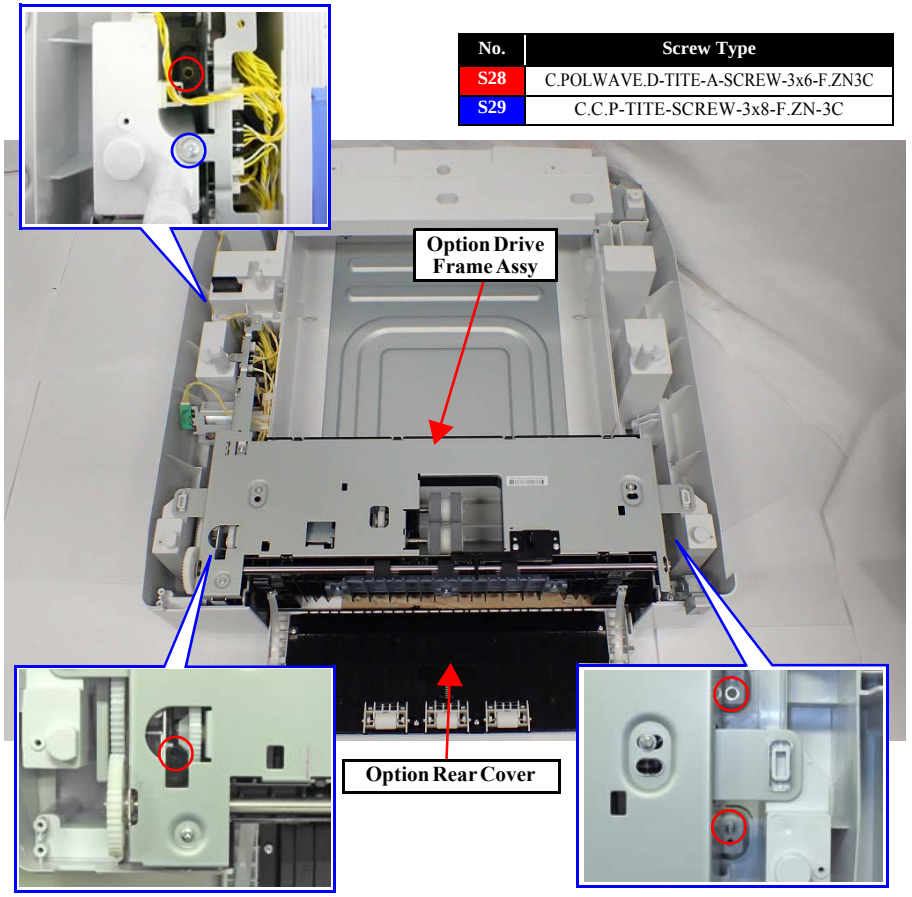


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Open the Option Rear Cover.
2. Remove the five screws (S12: ○) fixing the Cassette Drawers.

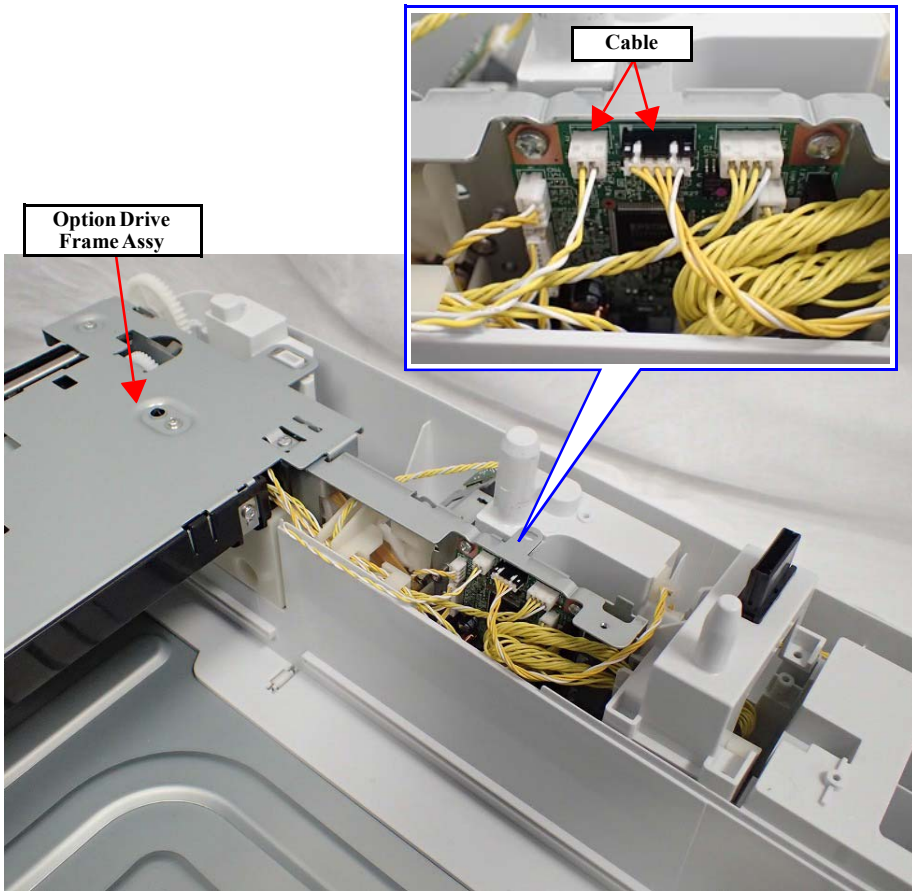
Option Drive Frame Assy

No.	Screw Type
S28	C.POLWAVE.D-TITE-A-SCREW-3x6-F.ZN3C
S29	C.C.P-TITE-SCREW-3x8-F.ZN-3C



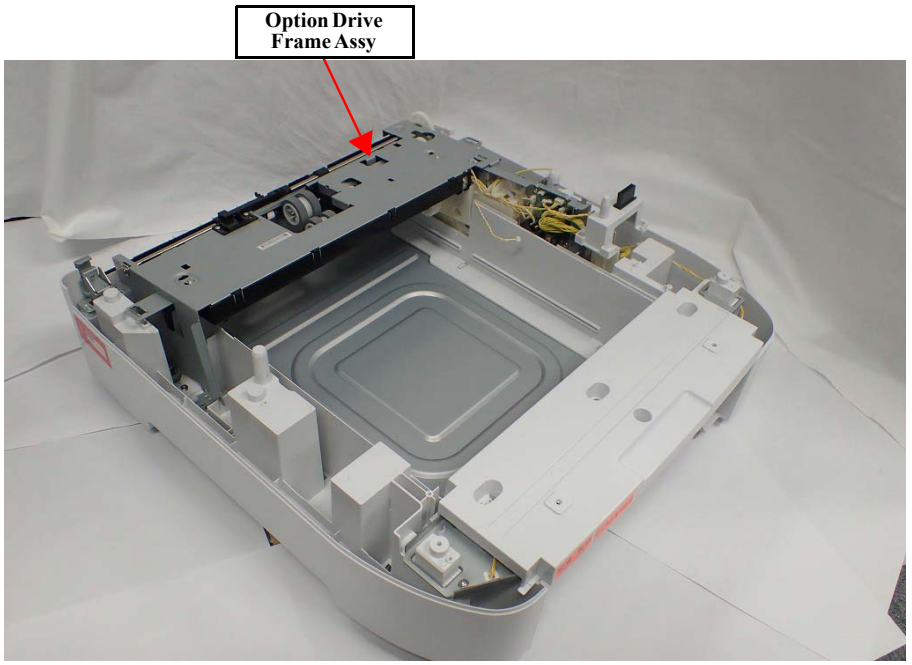
3. Remove the four screws (S28: ○) and one screw (S29: ○) fixing the Option Drive Frame Assy.

Option Drive Frame Assy



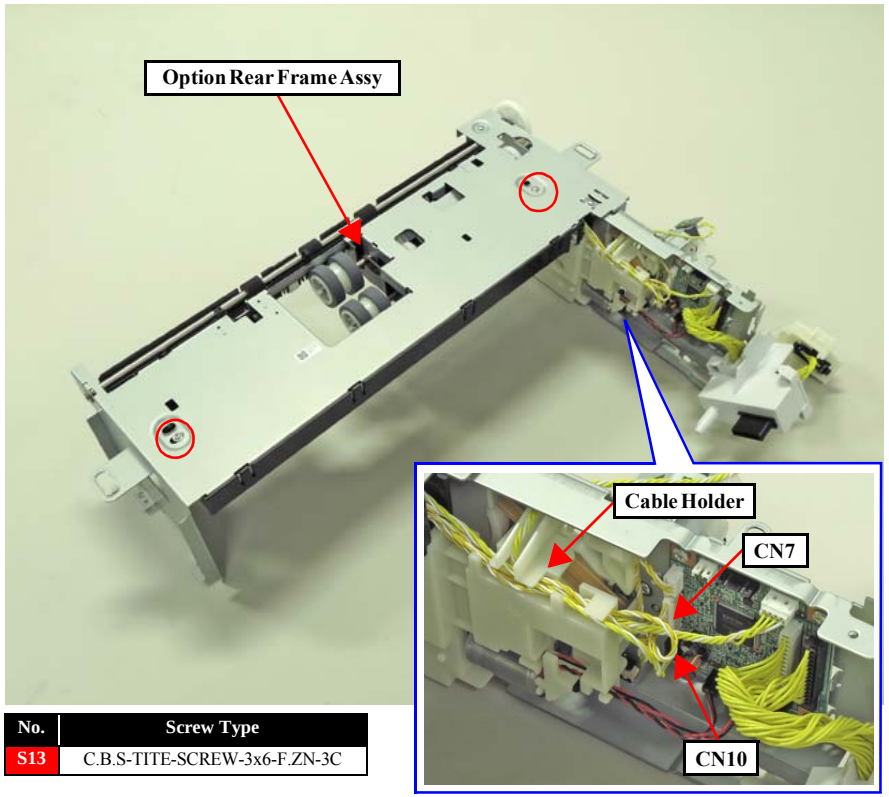
4. Disconnect the two cables from Option Cassette Board.

Option Drive Frame Assy



5. Remove the Option Drive Frame Assy.

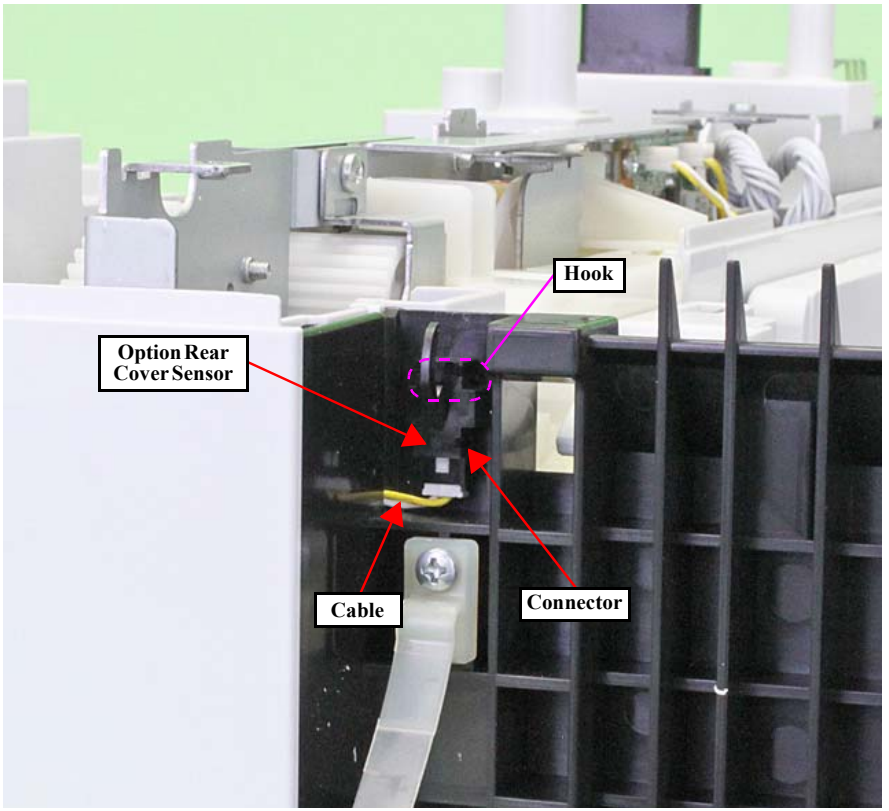
A8	B8	C8	Option Rear Frame Assy
D8	E8	F8	



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

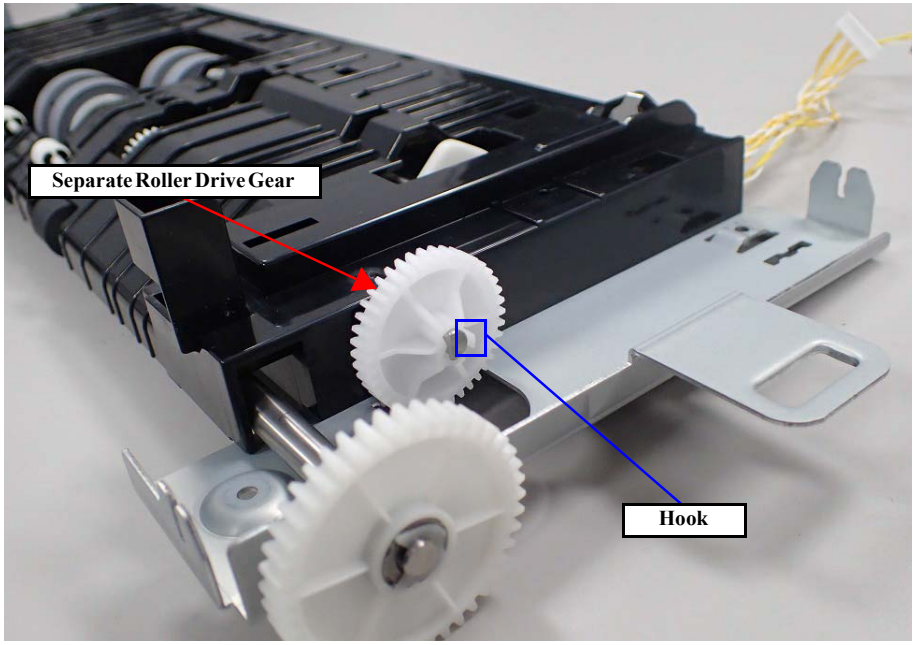
1. Remove the cable from the connector (CN7, CN10) of the board.
2. Release the cables from the Cable Holder.
3. Remove the two screws (S13: ○), then remove the Option Rear Frame Assy.

A9			Option Rear Cover Sensor



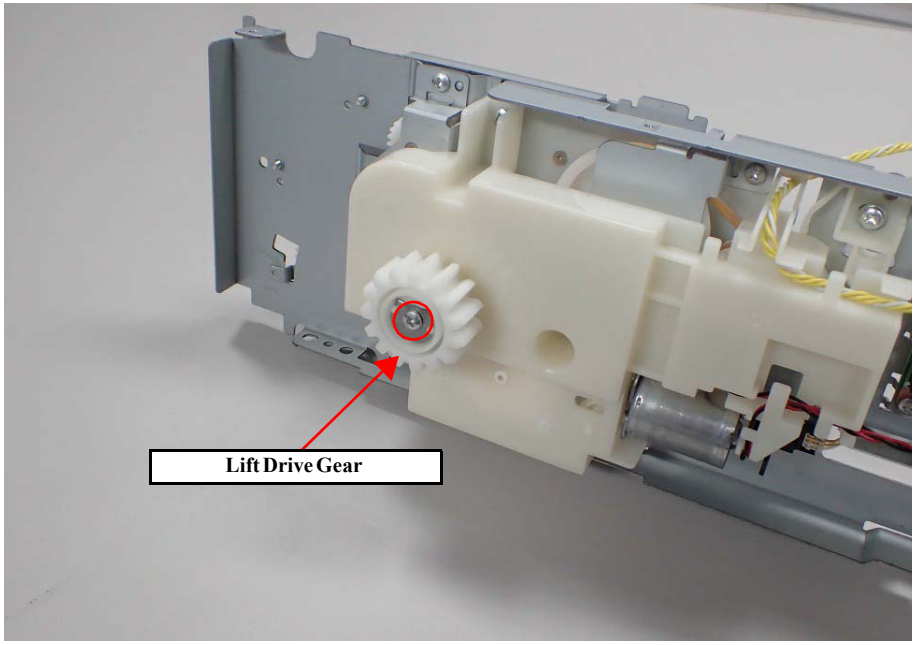
1. Disengage the hook, then remove the Option Rear Cover Sensor.
2. Disconnect the cables from the connector.

B9 Separate Roller Drive Gear



1. Release the hook, and remove the Separate Roller Drive Gear.

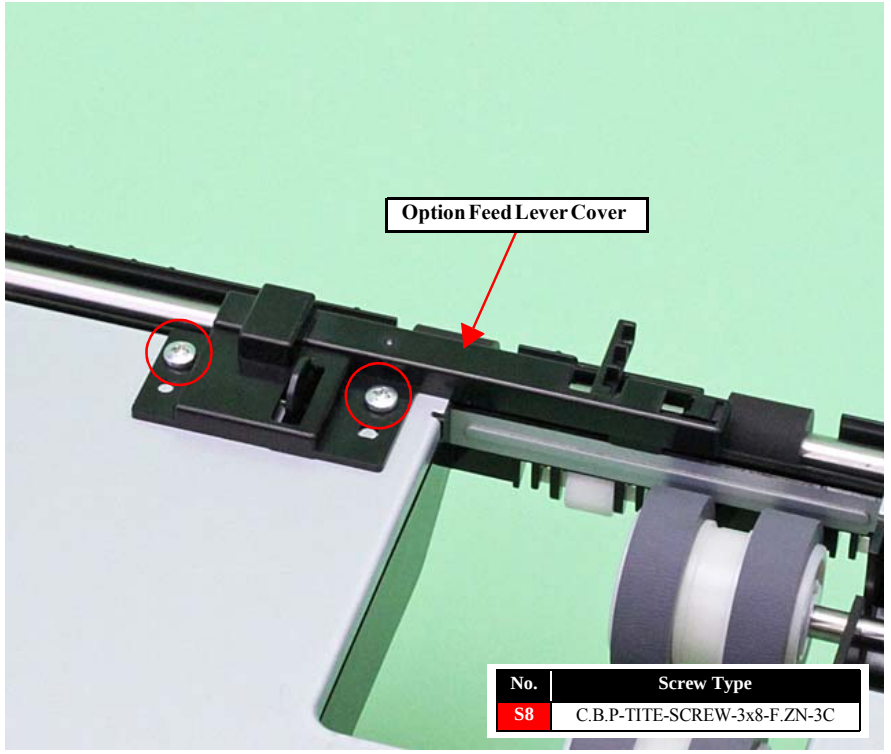
C9 Lift Drive Gear



No.	Screw Type
S9	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the screw (S9:○), and remove the Lift Drive Gear.

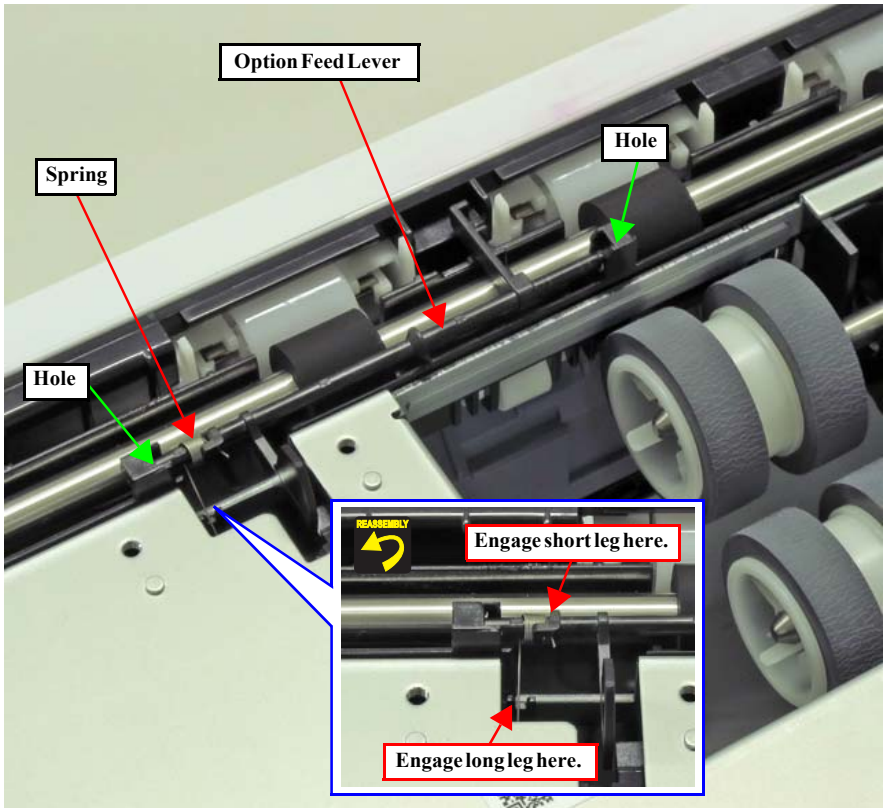
			Option Feed Lever Cover
D9	E9	F9	



No.	Screw Type
S8	C.B.P-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S8: ○), then remove the Option Feed Lever Cover.

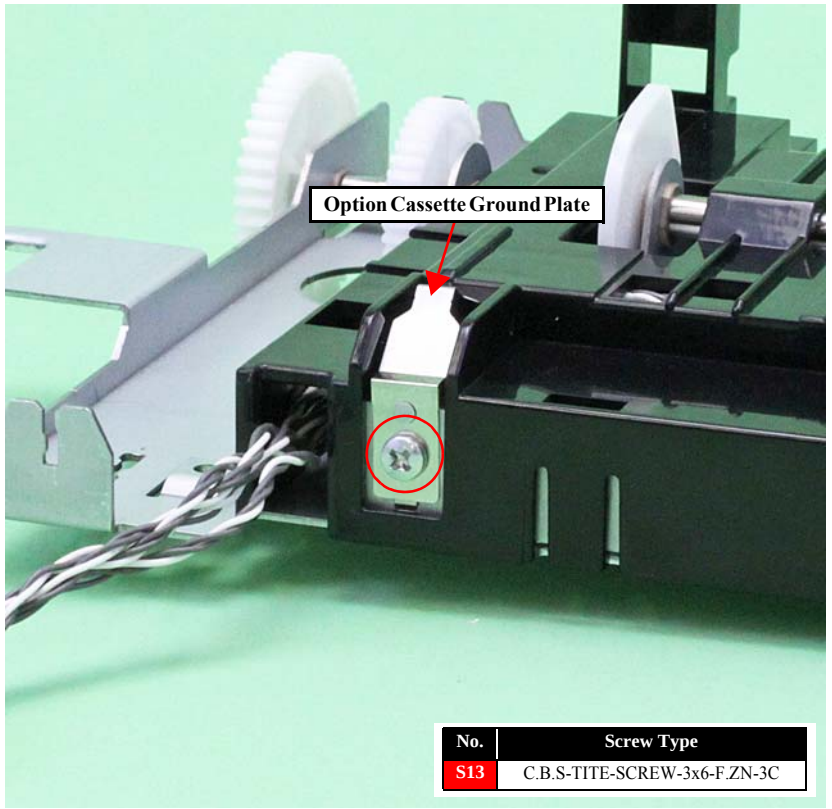
			Option Feed Lever
D10	E10	F10	



1. Release the Option Feed Lever from the holes of the cover.
2. Remove the Option Feed Lever with the spring.

REASSEMBLY Make sure to attach the spring as shown above.

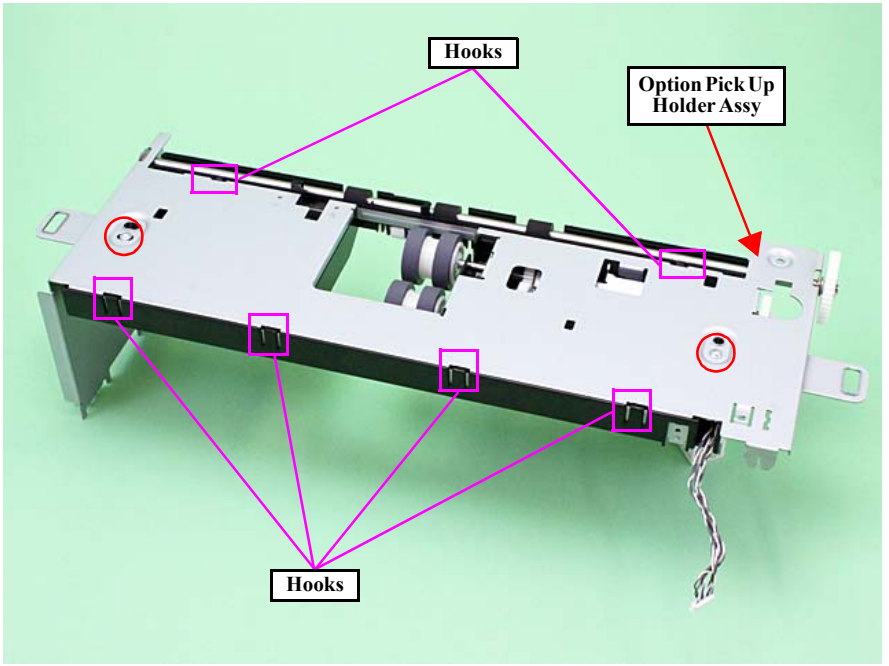
			Option Cassette Grounding Plate
D11	E11	F11	



No.	Screw Type
S13	C.B.S-TITE-SCREW-3x6-F.ZN-3C

1. Remove the screw (S13: ○), then remove the Option Cassette Ground Plate.

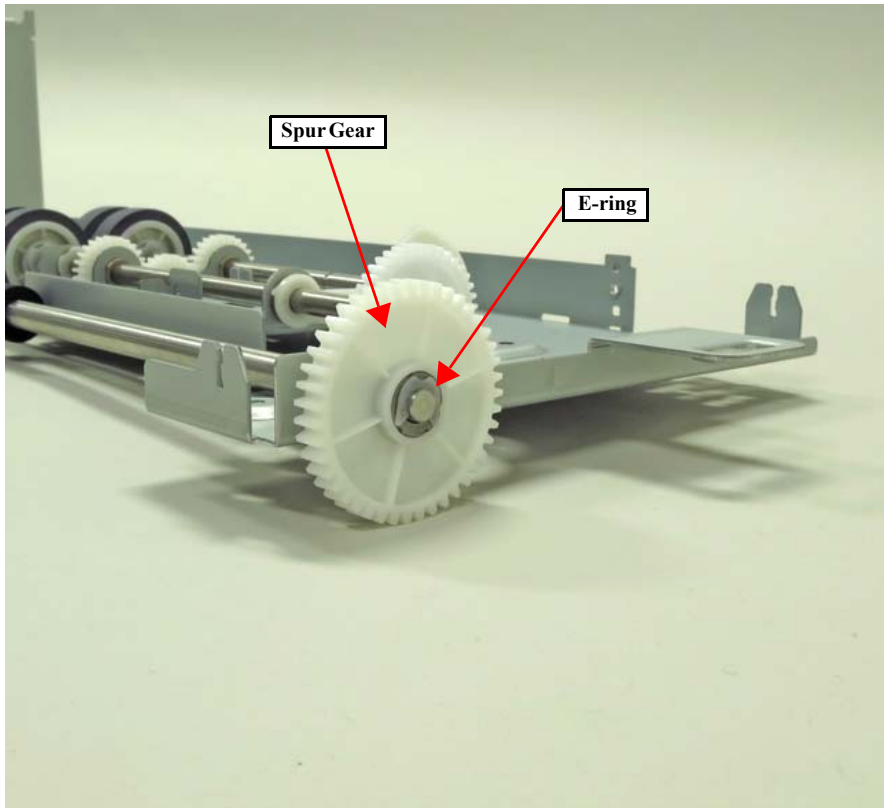
			Option Pickup Holder Assy
D12	E12		



No.	Screw Type
S29	C.C.P-TITE-SCREW-3x8-F.ZN-3C

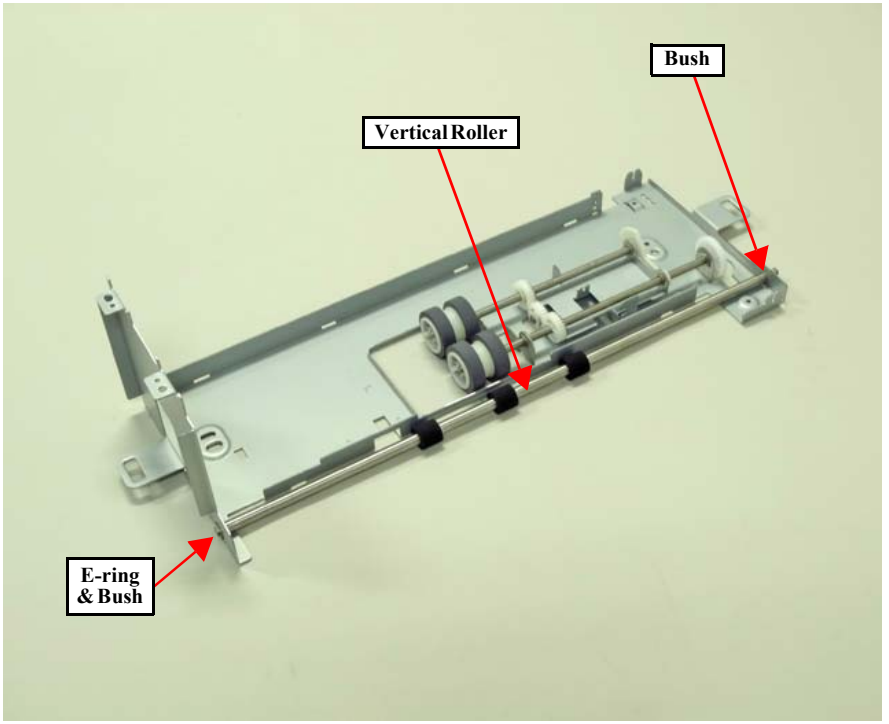
1. Remove the two screws (S29: ○).
2. Disengage the six hooks, then remove the Option Pick Up Holder Assy.

			Spur Gear (with E-ring)
D13	E13		



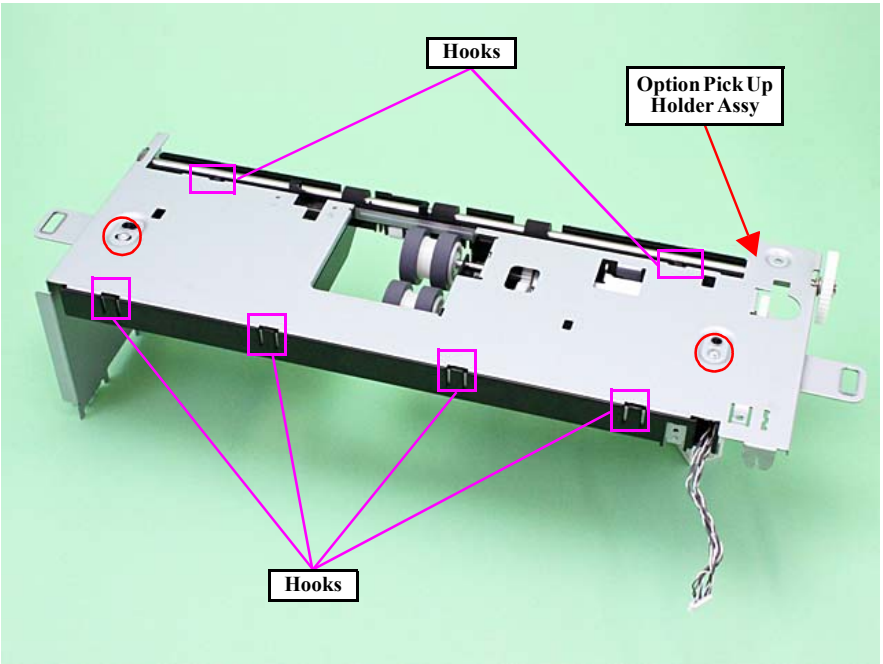
1. Remove the E-ring, then remove the Spur Gear.

			Vertical Roller
	E14		



1. Remove the E-ring.
2. Remove the two bushes.
3. Pull out the Vertical Roller.

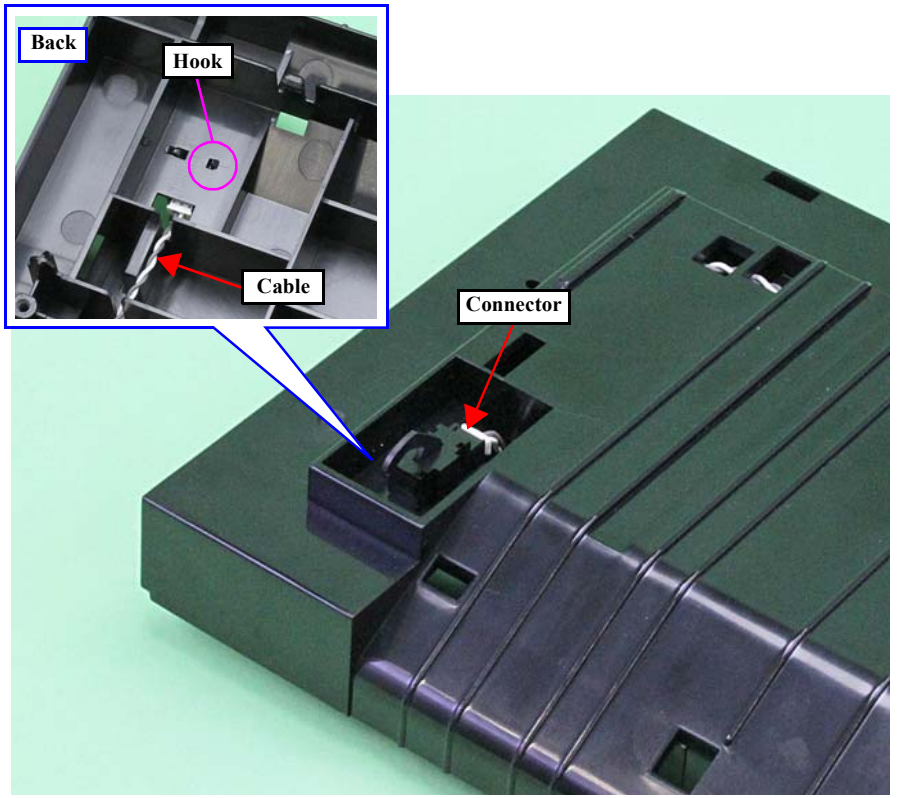
F12 Option Pickup Holder Assy



No.	Screw Type
S29	C.C.P-TITE-SCREW-3x8-F.ZN-3C

1. Remove the two screws (S29: ○).
2. Disengage the six hooks, then remove the Option Pick Up Holder Assy.

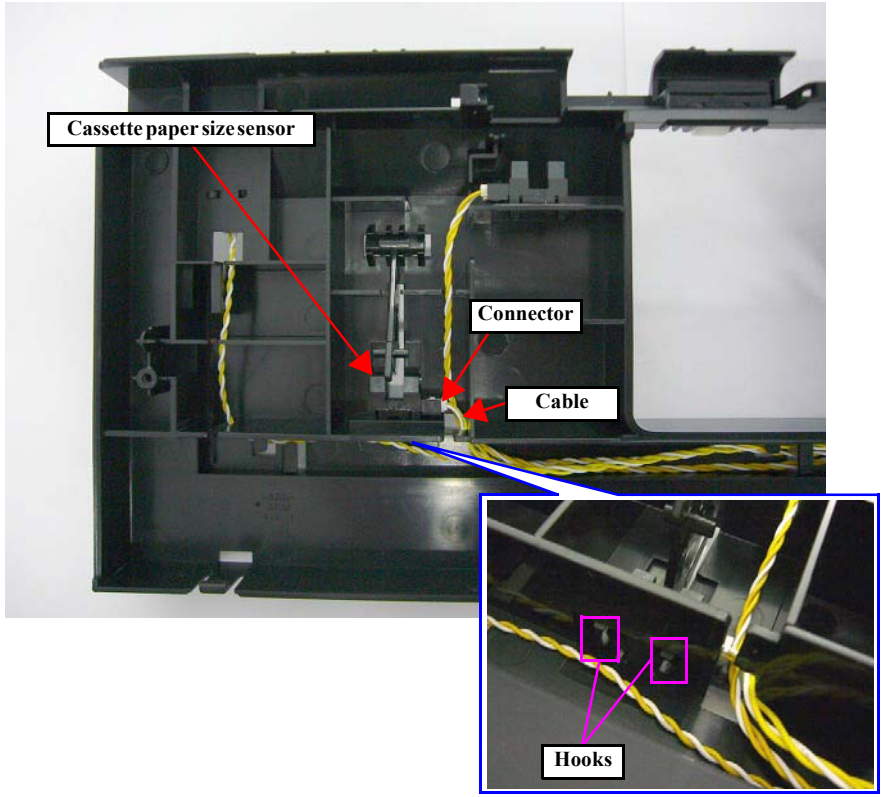
F13 Cassette Detection Sensor



1. Disengage the hook and remove the sensor.
2. Disconnect the cable from the connector of the sensor.

F13

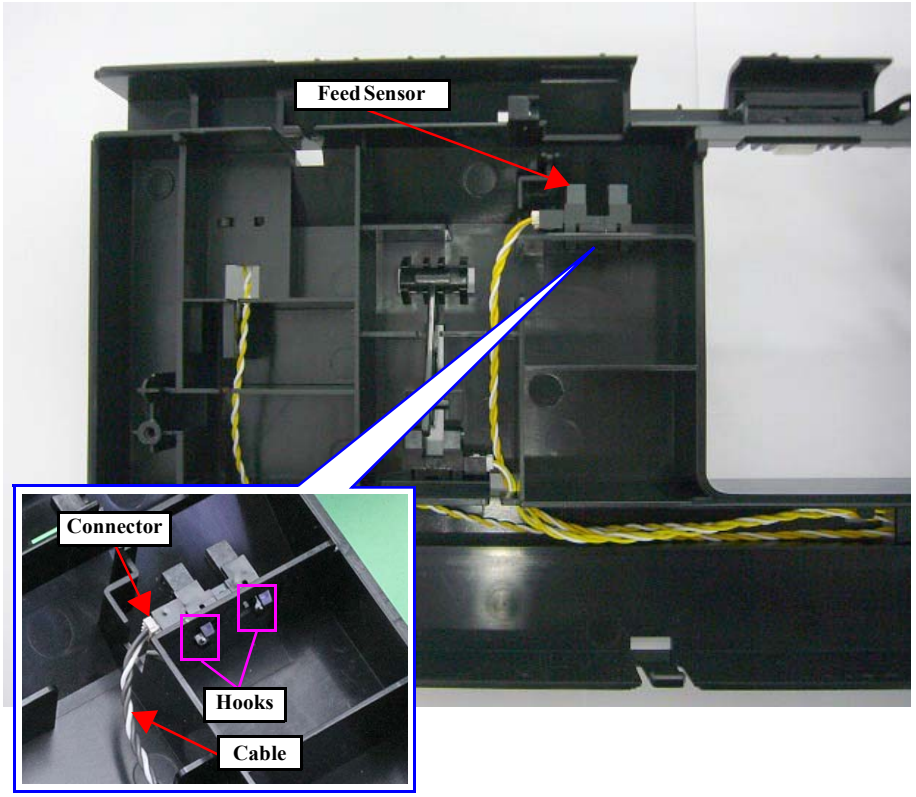
Cassette Paper Size Sensor



1. Disengage the hook and remove the sensor.
2. Disconnect the cable from the connector of the sensor.

F13

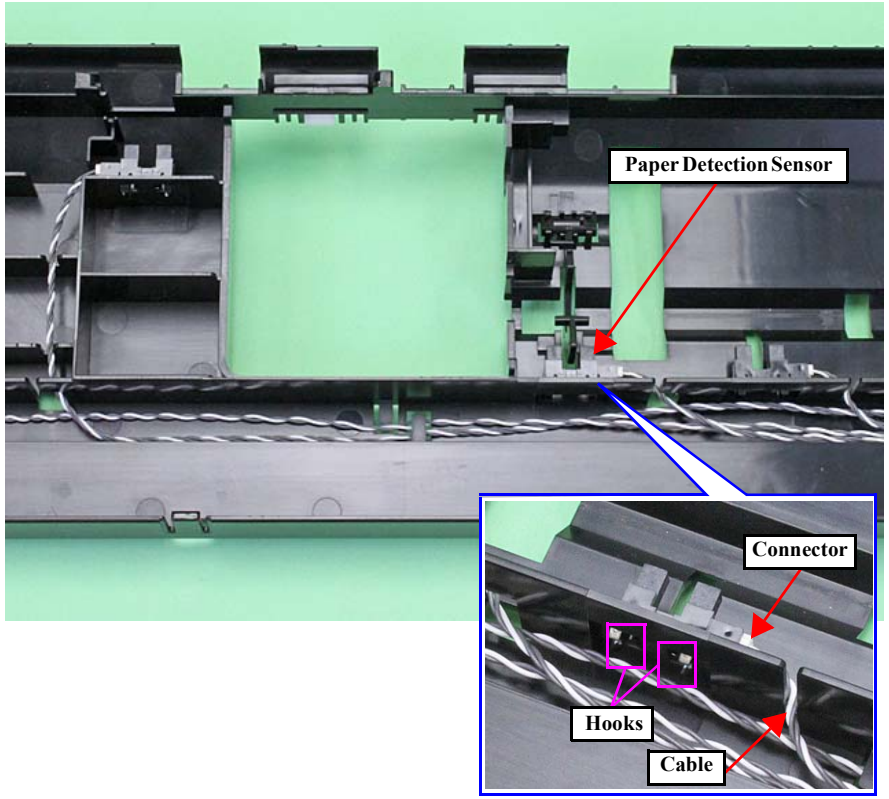
Feed Sensor



1. Disengage the four hooks and remove the sensor.
2. Disconnect the cable from the connector of the sensor.

F13

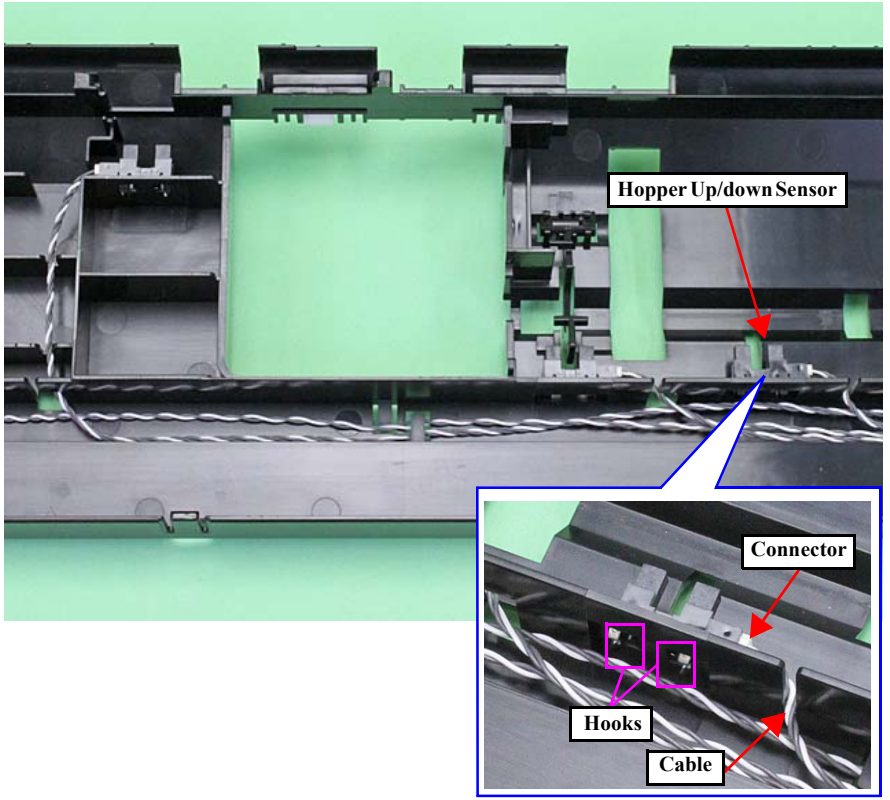
Paper Detection Sensor



1. Disengage the four hooks and remove the sensor.
2. Disconnect the cable from the connector of the sensor.

F13

Hopper Up/Down Sensor



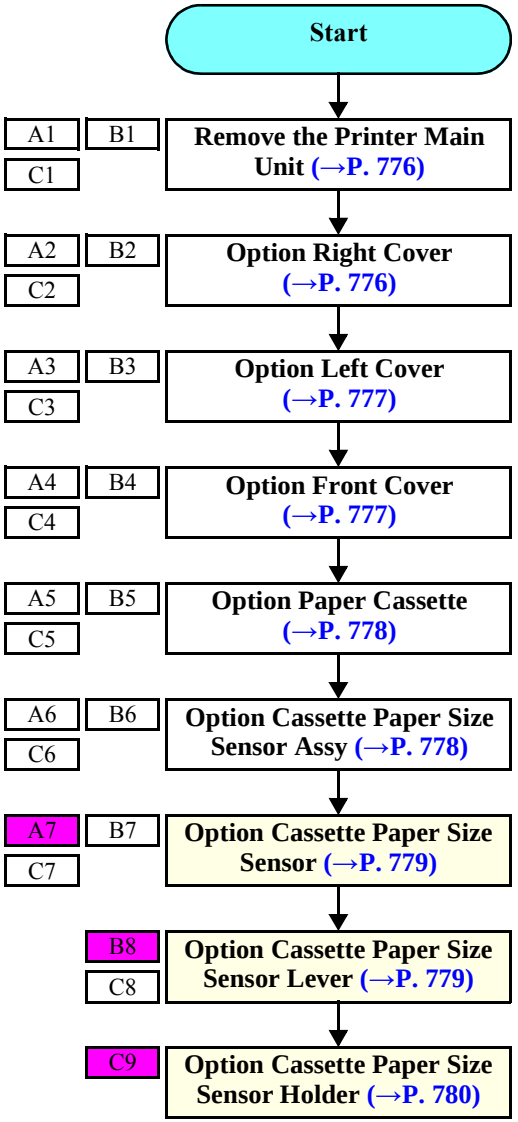
1. Disengage the four hooks and remove the sensor.
2. Disconnect the cable from the connector of the sensor.

7.4.3.33 Option Cassette Unit 4

OUTLINE

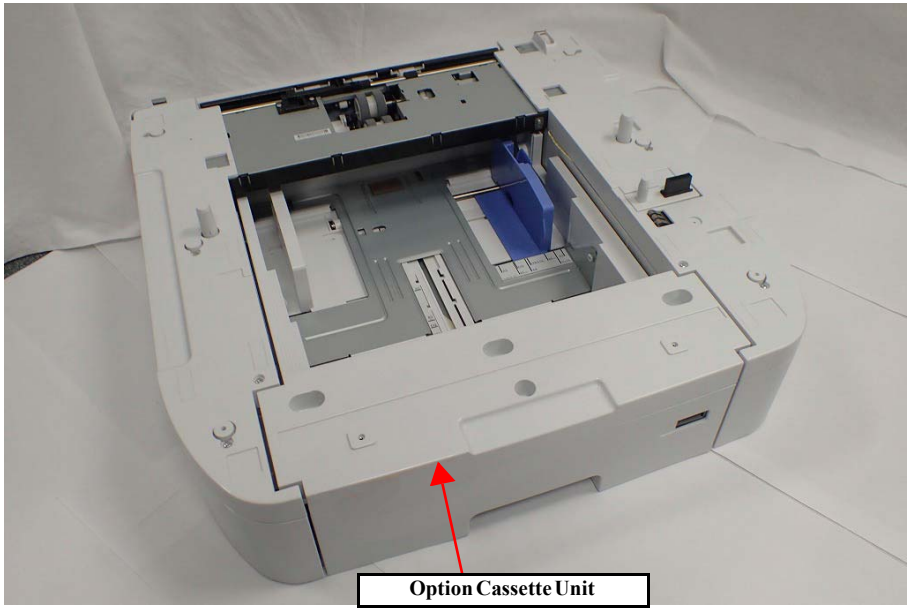
Part or Component	Guide	Time		
		Disassembly/ Reassembly	Adjustment/ Inspection	Total
Option Cassette Paper Size Sensor	A	8 min 32 sec	---	8 min 32 sec
Option Cassette Paper Size Sensor Lever	B	8 min 41 sec	---	8 min 41 sec
Option Cassette Paper Size Sensor Holder	C	8 min 41 sec	---	8 min 41 sec

ASSEMBLY FLOWCHART



A1	B1
C1	

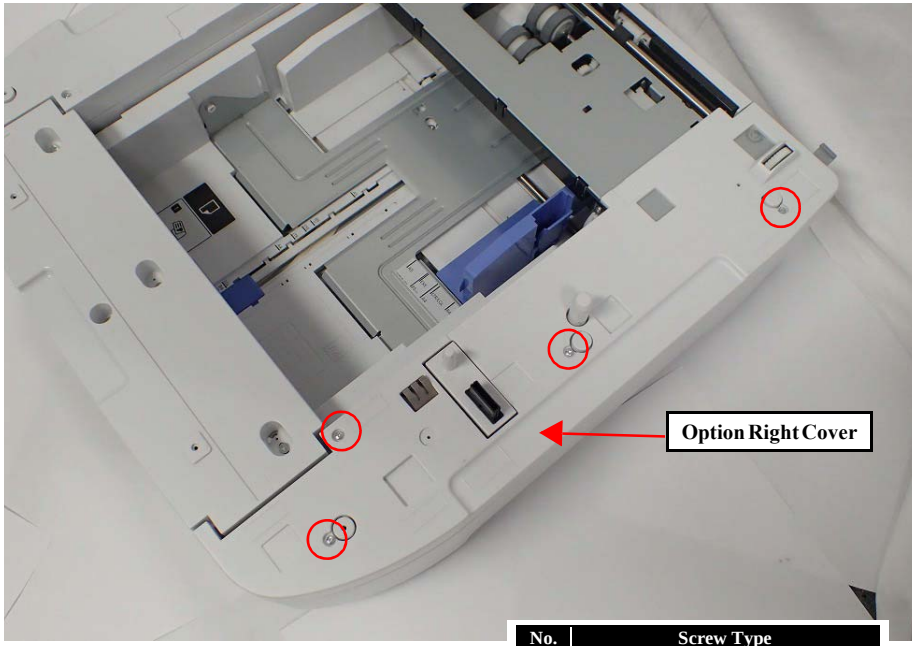
Remove the Printer Main Unit



1. Remove the Printer main Unit from Option Cassette Unit.

A2	B2
C2	

Option Right Cover

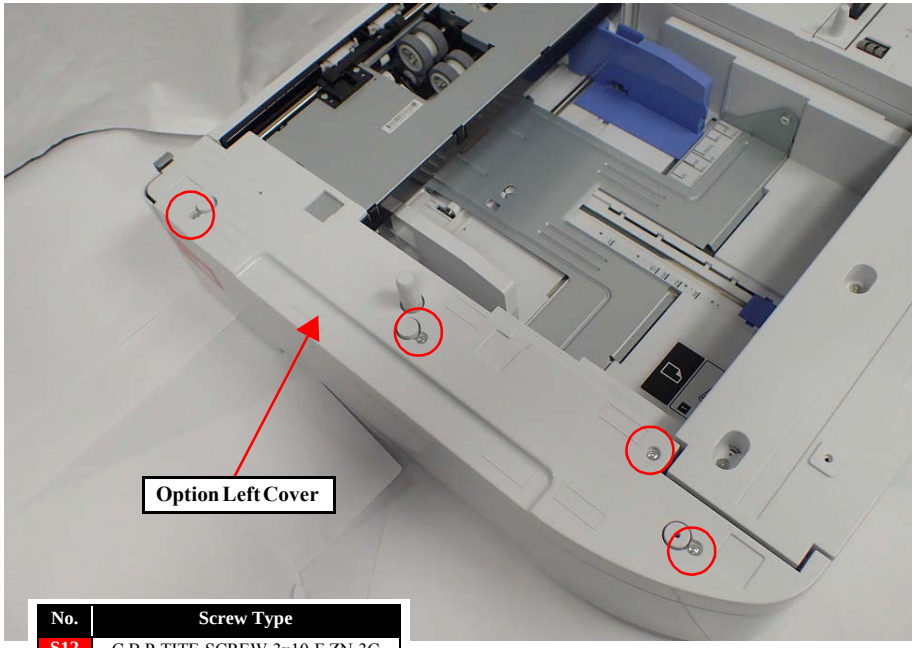


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the four screws (S12: ○), then remove the Option Right Cover.

A3	B3
C3	

Option Left Cover

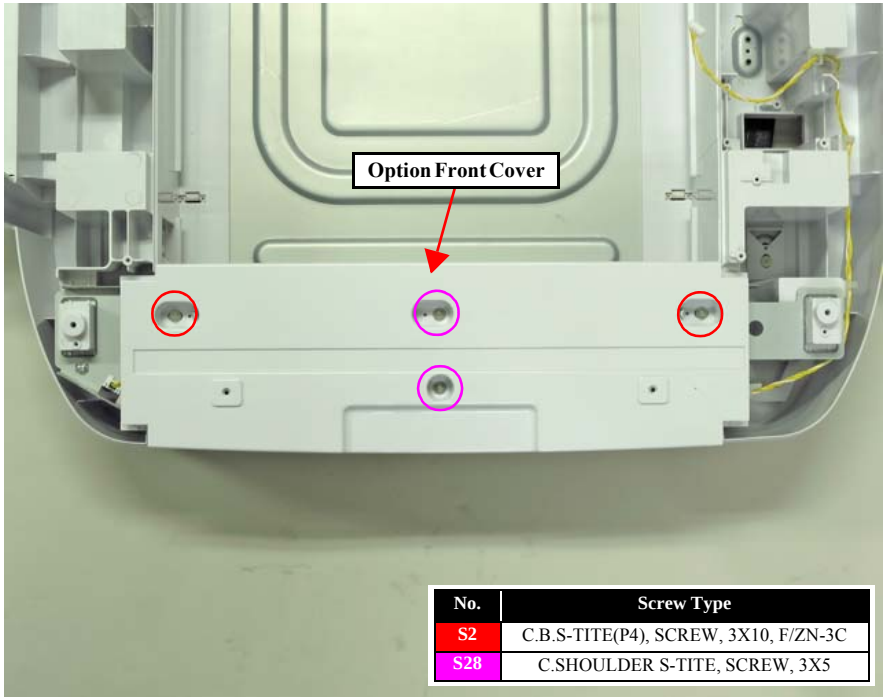


No.	Screw Type
S12	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Remove the four screws (S12: ○), then remove the Option Left Cover.

A4	B4
C4	

Option Front Cover

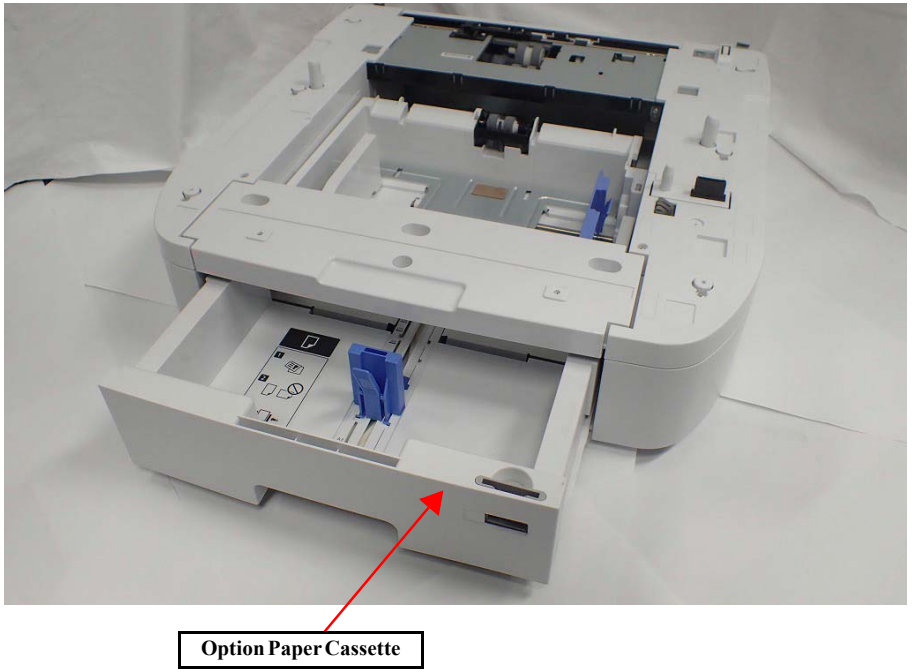


No.	Screw Type
S2	C.B.S-TITE(P4), SCREW, 3X10, F/ZN-3C
S28	C.SHOULDER S-TITE, SCREW, 3X5

1. Remove the two screws (S2: ○), and the two screws (S28: ○) then remove the Option Front Cover.

A5	B5
C5	

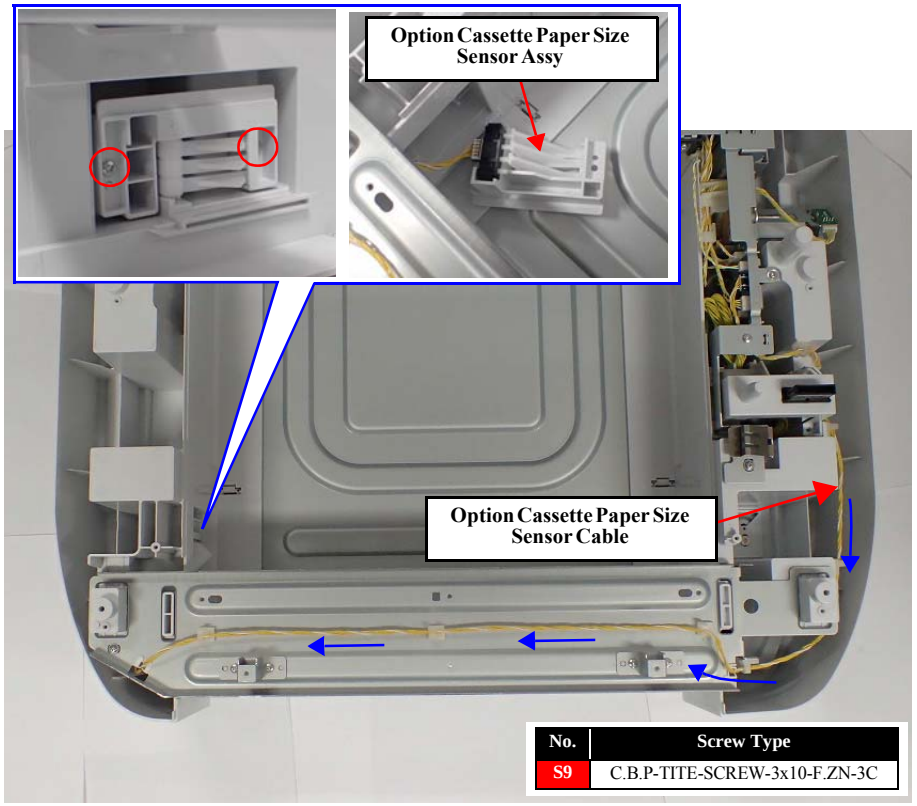
Option Paper Cassette



1. Remove the Option Paper Cassette.

A6	B6
C6	

Option Cassette Paper Size Sensor Assy

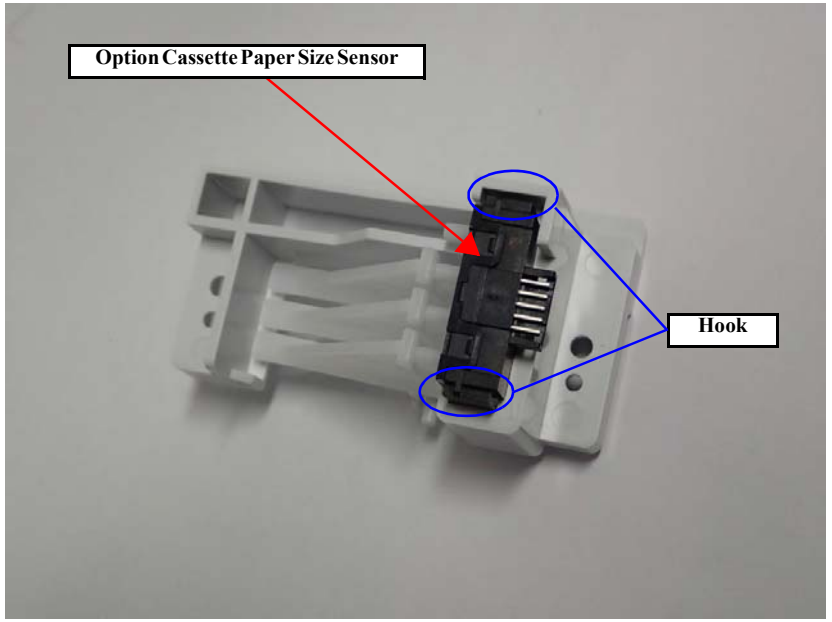


No.	Screw Type
S9	C.B.P-TITE-SCREW-3x10-F.ZN-3C

1. Disconnect the Option Cassette Paper Size Sensor Cable from Option Cassette Board.
2. Send the Option Cassette Paper size Sensor Cable to direction of the arrow.
3. Remove two screws (S2:○), and Pull out the Option Cassette Paper Size Sensor Assy.
4. Disconnect the Option Cassette paper Size Sensor Cable from the Option Cassette Paper Size Sensor Assy.

A7	B7
C7	

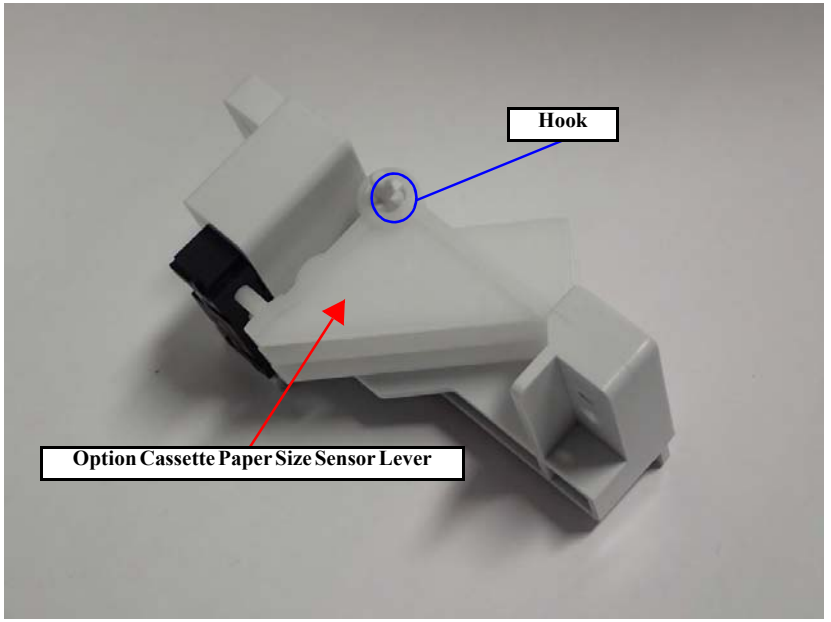
Option Cassette Paper Size Sensor



1. Release the hook, and remove the Option Cassette Paper Size Sensor.

	B8
C8	

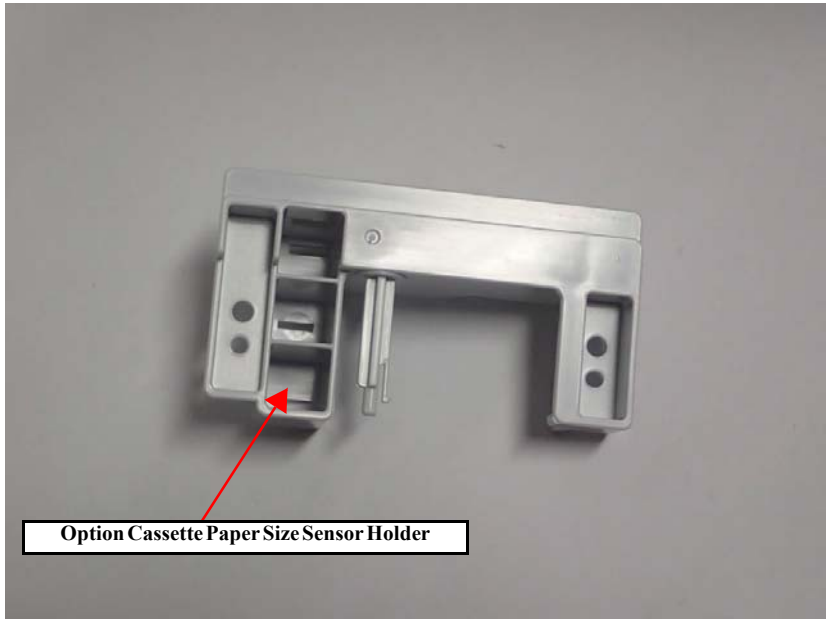
Option Cassette Paper Size Sensor Lever



1. Release the hook, and remove the Option Cassette Paper Size Sensor Lever.

C9

Option Cassette Paper Size Sensor Holder



CHAPTER

8

MAINTENANCE/INSPECTION

8.1 Cleaning

Excepting the Print Head, there is no parts or components that need to be cleaned on a regular basis. Clean the printer as need arises. When cleaning, make sure to observe the methods and cautions described below.

☐ Cleaning Method

- Exterior parts such as housing
  wipe the surface using a soft clean cloth moistened with water. Use of an unwoven cloth is recommended for coated or transparent part to prevent damaging the surface.
- Inside the printer
  Use a vacuum cleaner for removing paper dust.
- Rubber or plastic rollers in the paper feed mechanism such as LD Roller/ Pickup Roller
  If paper dust adhered to the roller surface drops the frictional force and causes paper feed problems, moisten a cloth with water and wring the water out, then wipe the dust off the roller using the cloth.
- Scanner Glass
  Wipe the scanner glass using a soft clean cloth.
  When oil stain or stubborn stains are attached, clean with a small amount of glass cleaner attached to a soft cloth.

CAUTION	■ **Do not wipe transparent parts with a cloth moistened with alcohol or diluted alcohol. Doing so may make the transparent parts cloudy.** ■ **When wiping paper dust off the LD Roller/Pickup Roller, do not wipe against the grain of the roller surface.**

8.2 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, refer to "8.2.1 Lubrication Points and Instructions (p783)" for the repairing procedures below, and apply the specified type and amount of the grease to the specified part of the printer mechanism.

☐ Grease

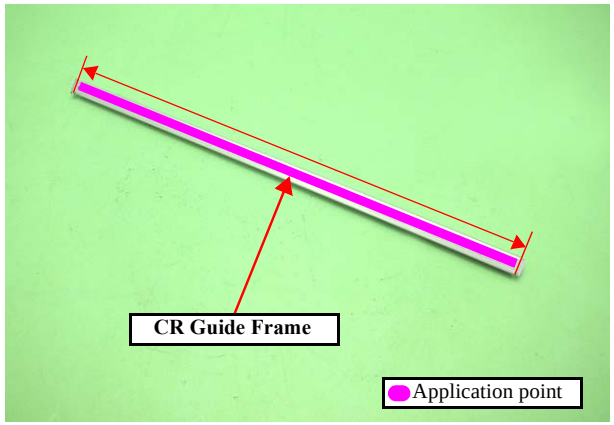
Type	Name	EPSON Part Code	Supplier
Grease	G-96	1590700	EPSON
Grease	G-97	1635441	EPSON

☐ Tools

Name	Availability	EPSON Part Code
Injector	O*	---
Brush	O*	---

Use tools whose specifications are specified in "8.2.1 Lubrication Points and Instructions" *(p.783)*.

8.2.1 Lubrication Points and Instructions



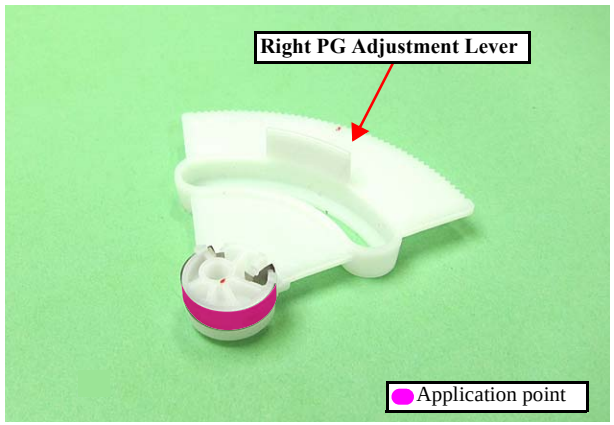
<Lubrication Point>
CR Guide Frame

<Type>
G-97

<Application Amount>
Appropriate amount

<Remarks>
Lubricate with injector on the contact surface between CR Guide Frame and CR Unit.

Figure 8-1. Lubrication of the CR Guide Frame



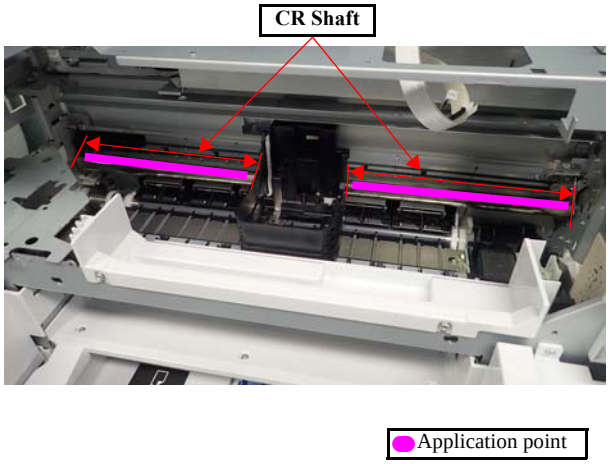
<Lubrication Point>
Right PG Adjustment Lever

<Type>
G-97

<Application Amount>
Appropriate amount

<Remarks>
Lubricate with brush on the contact surface between Right PG Adjustment Lever and CR Bearing.

Figure 8-2. Lubrication of the Right PG Adjustment Lever



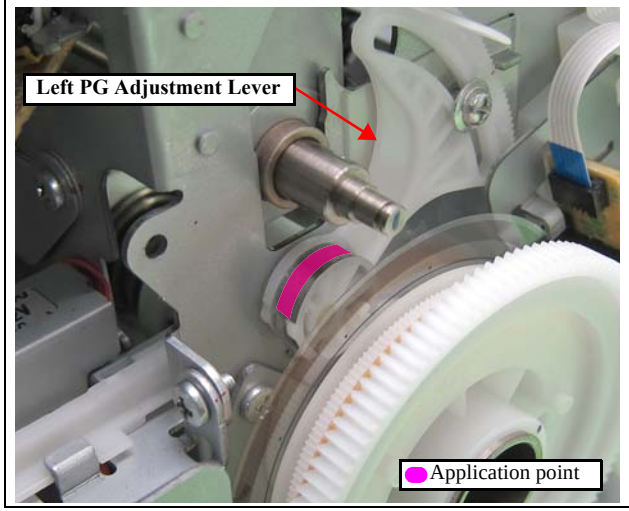
<Lubrication Point>
CR Shaft

<Type>
G-97

<Application Amount>
Appropriate amount

<Remarks>
Apply with brush.

Figure 8-3. Lubrication of the CR Shaft



<Lubrication Point>
Left PG Adjustment Lever

<Type>
G-97

<Application Amount>
Appropriate amount

<Remarks>
Lubricate with brush on the contact surface between Left PG Adjustment Lever and APG Gear.

Figure 8-4. Lubrication of the Left PG Adjustment Lever

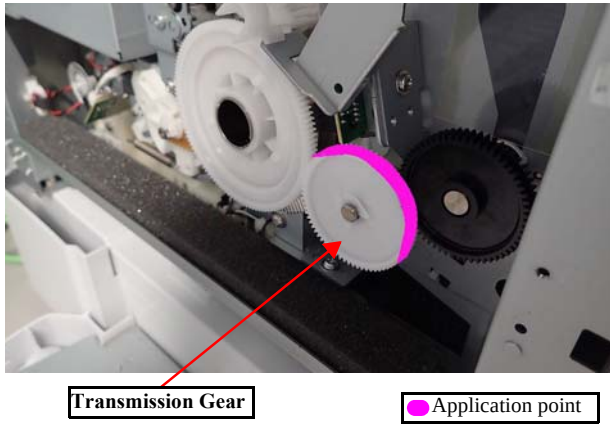
	<Lubrication Point> Transmission Gear
	<Type> G-96
	<Application Amount> 0.1g
	<Remarks> Lubricate with brush on the entire circumference of Transmission Gear.

Figure 8-5. Lubrication of the Transmission Gear

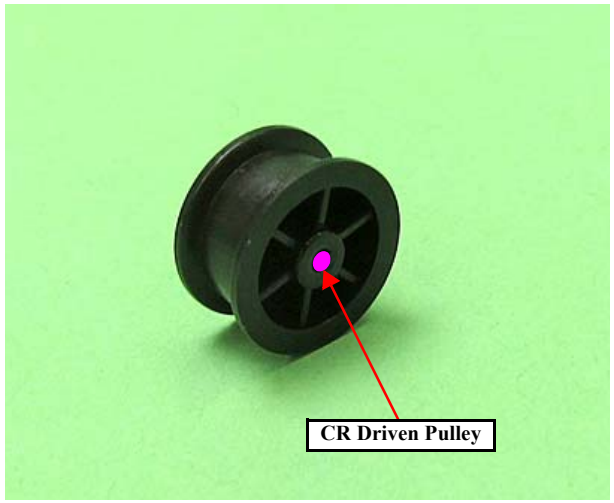
	<Lubrication Point> CR Driven Pulley
	<Type> G-97
	<Application Amount> ϕ 1 mm × 1 mm
	<Remarks> Lubricate with injector on the hole on CR Driven Pulley.

Figure 8-6. Lubrication of the CR Driven Pulley

8.3 USB F/W Update

By using USB Memory, WF-C8690/C8690a/C8610/C8190/C8190a can be updated firmware without Internet connection.

Refer to USB F/W Update procedure below.

Be sure to get agreement with customer before execute F/W update.

USB F/W UPDATE PROCEDURE

1. USB setup

   1-1. Insert USB memory to PC, and create new folder:

- **When creating a folder, it is necessary to create it with a specific name for each product.**
  - **WF-C8690/C8690a : FWG925TL**
  - **WF-C8610 : FWG926TL**
  - **WF-C8190/C8190a : FWG924TL**

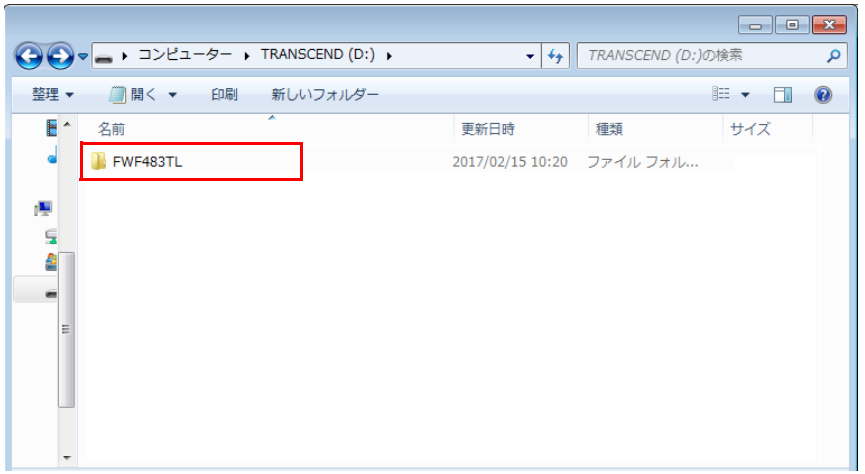


Figure 8-7. USB F/W Update procedure (1)

1-2. Copy firmware data& license data into the folder.

CAUTION	☐ **Both of firmware data& license data must be copied in the folder.** **Do not copy any other data in the folder.** ☐ **Each of firmware data& license data must be the name of** ■ **Firmware data: "same as folder name".efu** ■ **License data: license.txt** ☐ **Use firmware data& license data with original (delivered) combination as they have combination limitation.**

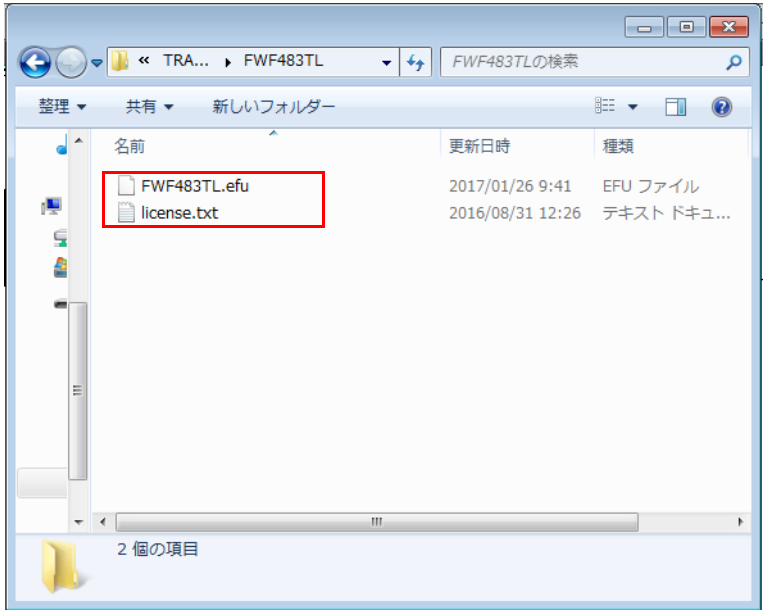
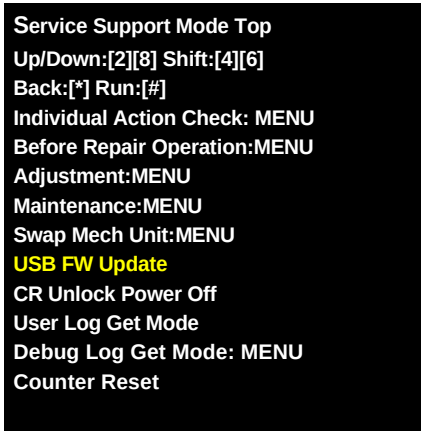


Figure 8-8. USB F/W Update procedure (2)

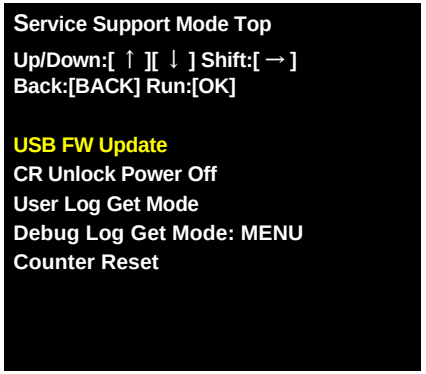
2. Execute firmware update.

2-1. Start the printer in service support mode.
(Refer to "5.1 Service Support Mode" *(p.100)*)

2-2. Select the "USB FW Update" from service support mode top menu



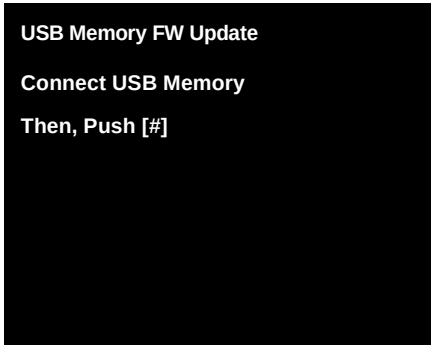
[WF-C8690/C8690a/C8610]



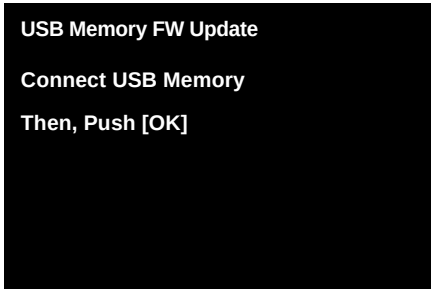
[WF-C8190/C8190a]

Figure 8-9. USB F/W Update procedure (3)

2-3. Insert USB memory and push [#] button when below screen shown.



[WF-C8690/C8690a/C8610]



[WF-C8190/C8190a]

Figure 8-10. USB F/W Update procedure (4)

2-4. Firmware Update execute screen will be shown.
(Current firmware data version and update data version will be shown)
Push the [#] button and execute firmware update.

```
USB Memory FW Update

Current Version        *********
Update Data Version    *********

Update?
Done:        Push[#]
Cancel:      Push[*]
```

[WF-C8690/C8690a/C8610]

```
USB Memory FW Update

**********
**********

Update?
Done:        Push[OK]
Cancel:      Push[BACK]
```

[WF-C8190/C8190a]

Figure 8-11. USB F/W Update procedure (5)

2-5. Firmware update process screen will be shown.

CAUTION

- **Do not remove USB memory, or power off the printer during firmware update.**

```
USB Memory FW Update

Now FW Updating...
Please wait.
```

Figure 8-12. USB F/W Update procedure (6)

2-6. Below screen will be shown after complete firmware update.
Push [0] button and finish firmware update when it's shown.

```
EPSON PRINTER
Program Update Mode
FINISHED       MAIN
ROM VERSION  xxxxxxxxxxxxx
ROM1 FIXSUM  xxxx
ROM2 FIXSUM  xxxx
ROM3 FIXSUM  xxxx
```

Figure 8-13. USB F/W Update procedure (7)

8.4 Product Swap

8.4.1 Overview

This product has two kinds of information data in the PCB ROM, and can be take over the these information data to new product by moving the PCB ROM to new product.

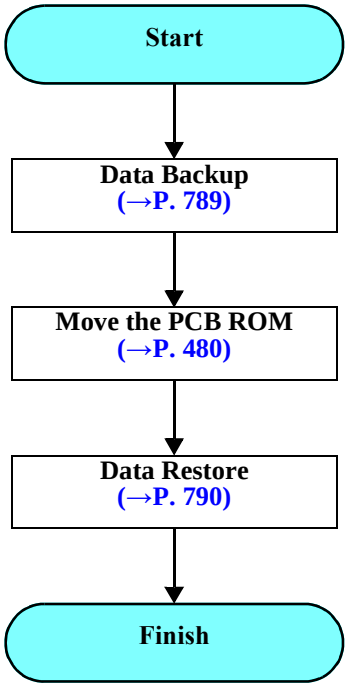
- Mech Unique data (Adjustment value etc.)
- User Setting Data (User Setting data, Serial Number etc)

When perform the product swap, it is necessary to take over the “user setting data” only to swapping product.
Therefore, you need over write the “Mech Unique data” of swapping product after moving the PCB ROM.

The work procedure at product swap will be explained from the next section.

8.4.2 Working procedure of Product Swap

8.4.2.1 Flowchart



8.4.2.2 Detail of procedure

DATA BACKUP

☐ **Overview**

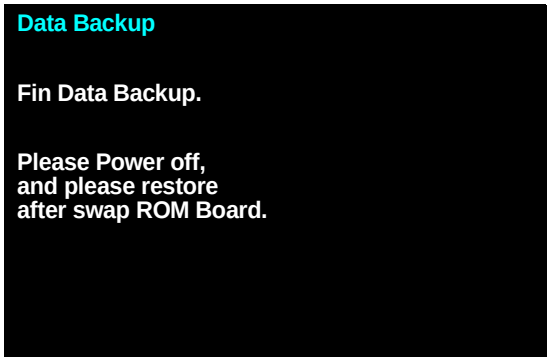
Back up the Mech Unique data saved in the to the back up storage area of Main Board.

☐ **Execution timing**

- Before swapping the product

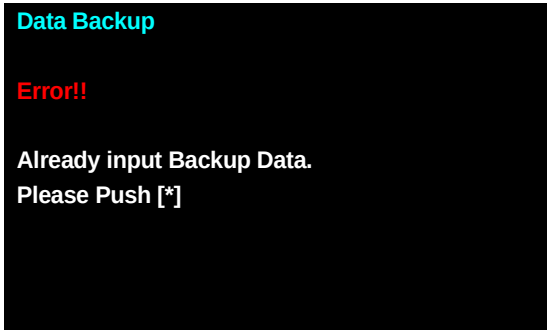
☐ **Working procedure**

1. Start the Printer by Service Support Mode.
   (Refer to "5.1 Service Support Mode" *(p.100)*)
2. Select the "Swap Mech Unit: MENU" from Service Support Mode Top menu.
3. Select the "Data Backup" from Swap Mech Unit:Menu.
4. Push [#] Button, and execute the data back up.
5. When the following data backup contemplate screen is displayed, turn off the printer and remove the PCB ROM, and then install it to the new printer.



CHECK POINT

If the following message is displayed, the backup data is already saving to the backup storage area of Main Board. In this case, delete the backup data of backup storage area, and execute the data backup again.
(Refer to " Data delete" *(p.791)*)



DATA RESTORE

☐ Overview

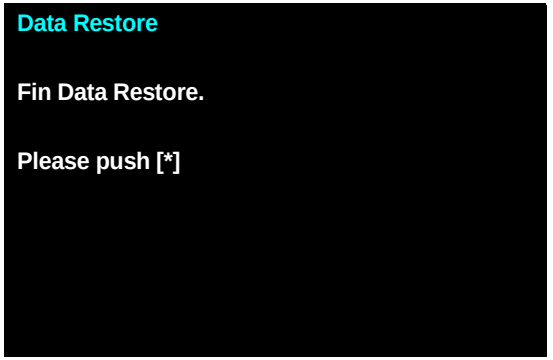
Restore the backup data to PCB ROM.

☐ Execution timing

- After swapping the product

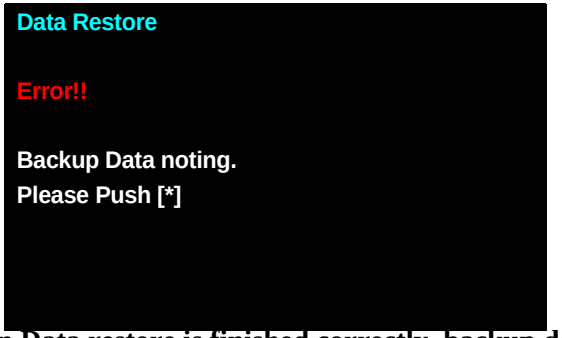
☐ Working procedure

1. Start the Printer by Service Support Mode.
   (Refer to "5.1 Service Support Mode" *(p.100)*)
2. Select the “Swap Mech Unit: MENU” from Service Support Mode Top menu.
3. Select the “Data Restore” from Swap Mech Unit:Menu.
4. Push [#] Button, and execute the data Restore.
5. When Data restore is complete, following message is displayed.



CHECK POINT

- **If backup data is not saving to the backup storage area of Main Board, following message is displayed.**



- **When Data restore is finished correctly, backup data is deleted automatically**

DATA DELETE

☐ Overview

Delete the backup data in the backup storage area of Main Board.

☐ Execution timing

- When backup can not be executed
  (Backup data is already saves to backup storage area of Main Board)

☐ Working Procedure

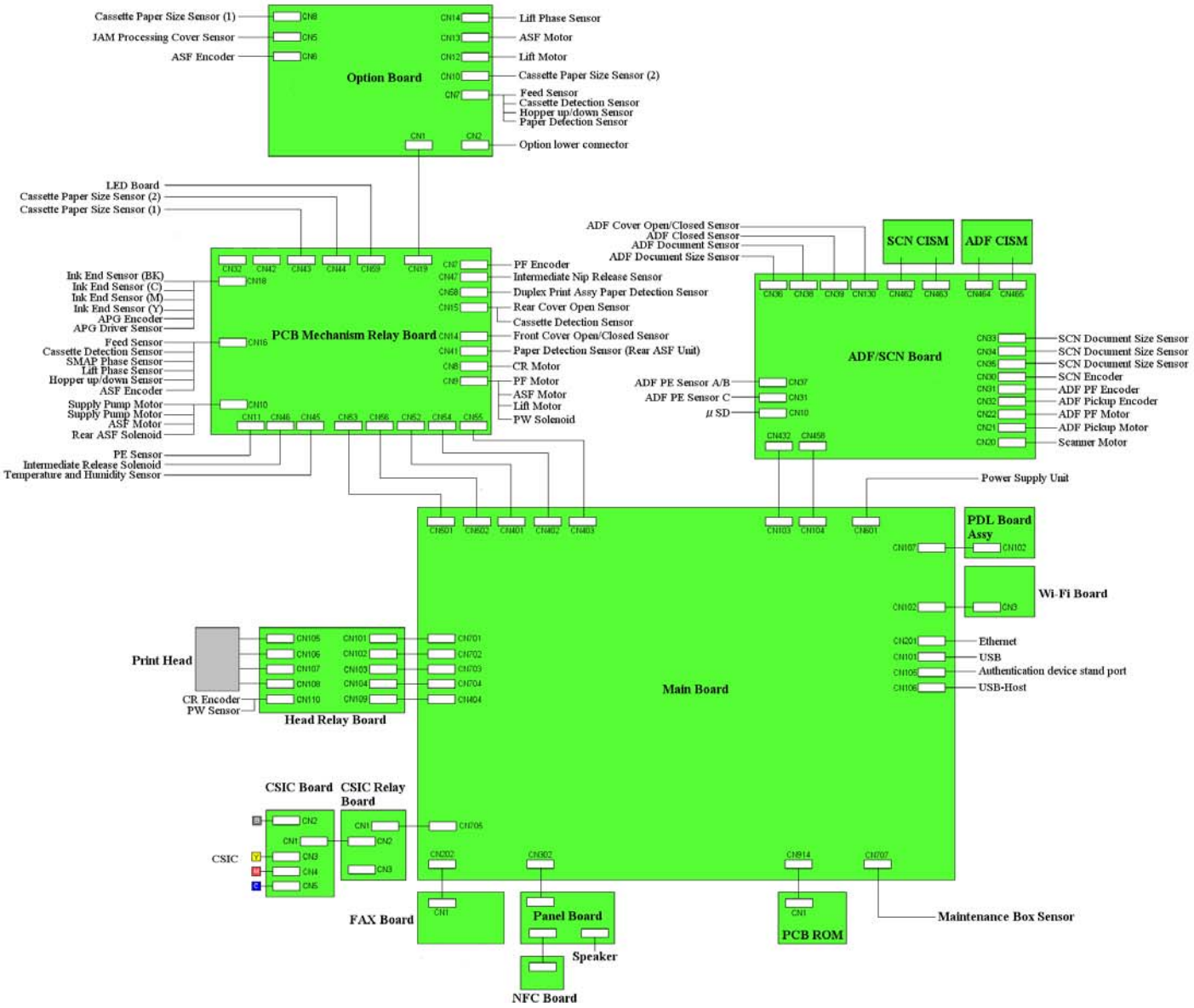
1. Start the Printer by Service Support Mode.
   (Refer to "5.1 Service Support Mode" *(p.100)*)
2. Select the “Swap Mech Unit: MENU” from Service Support Mode Top menu.
3. Select the “Data Delete” from Swap Mech Unit:Menu.
4. Push [#] button, and execute the backup data delete.

CHAPTER

9

APPENDIX

9.1 Connection Diagram



9.2 Part Names Conversion Table

- WF-C8690/WF-C8690a/WF-C8610

ASP Name		Name used in This Manual	
Name	Remarks	Name	Remarks
HOUSING,FRONT,ASSY.CG68,IEI		Front Housing	
PANEL ASSY.,CG68,ASP	*WF-C8690/C8690a	Panel Assy	
PANEL ASSY.,EEB,CG69,ASP	*WF-C8610		
COVER,FRONT,ASSY.,ASP		Front Cover Assy	
STACKER,ASSY.,CF34,ASP		Stacker Assy	
HOUSING,FRONT,RIGHT,UPPER		Front Right Cover	
PAPER SUPPORT,MIDDLE,ASSY.CF34;IEI		Paper Guide Assy	
GUIDE,PAPER SUPPORT;B		Paper Guide Support	
HOUSING,REAR,UPPER		Upper Rear Housing	
COVER,CONNECTOR,MFP,ASP		Connector Cover	
COVER,REAR,ASF,ASSY.,ASP		Duplex Print Cover Assy	
HARNESS,GROUND,PANEL		Panel Grounding Wire	
HOUSING,FRONT,MIDDLE		Upper Middle Housing	
HOUSING,FRONT,LEFT		Front Left Housing	
HOUSING,FRONT,RIGHT		Front Right Housing	
DECORATION,LEFT,SC		Left SC Cover	
DECORATION,RIGHT,SC		Right SC Cover	
HOUSING,REAR ASSY.;C,ASP		Rear Case Assy	
STAY SC ASSY CG68,IEI		ADF/SCN Support Stand	
LABEL,ACCESS,POINT,A		---	
LABEL,CAUTION,USB		---	
LABEL,ACCESS,POINT,D1		---	
HOUSING,REAR,RIGHT,ADF		Rear Right Housing	
HOUSING,REAR,LEFT,ADF		Rear Left Housing	
HOUSING,LEFT ASSY.CG68;IEI		Left Housing	
HOUSING,RIGHT ASSY.CG68;IEI		Right Housing	
BOARD ASSY.,MAIN,CG68,ASP		Main Board	

ASP Name		Name used in This Manual	
Name	Remarks	Name	Remarks
BOARD ASSY.,INTERFACE	7023A,STANDARD_ringer	FAX Board Assy	
CR CONTACT MODULE		CRCM Board	
WIRELESS LAN USB MODULE		Wi-Fi Board	
BOARD ASSY.,SUB		PCB Relay CRCM Board	
MEMORY CARD	*WF-C8690/C8690 only	PDL SD Card	
BOARD ASSY.,MAIN	*WF-C8690/C8690 only	PDL Board Assy	
BOARD ASSY.,PROG		PCB ROM	
HARNESS	MAIN-SUB_M 1,2175295-01	Relay Cable	CN403 - CN55
HARNESS	MAIN-SUB_M 2,2175296-01	Relay Cable	CN402 - CN54
HARNESS	MAIN-SUB_M 3,2175297-01	Relay Cable	CN401 - CN52
HARNESS	MAIN-SUB_M 4,2175298-01	Relay Cable	CN502 - CN56
HARNESS	MAIN-SUB_M 5,2175299-01	Relay Cable	CN501 - CN53
BOARD ASSY.,SUB	7021A,STANDARD	PCB Head Relay Board	
BOARD ASSY.,SUB	7022A,STANDARD	PCB Mechanism Relay Board	
HARNESS	MAIN-HEAD 1,2175288-01	Head Relay FFC	
HARNESS	MAIN-HEAD 2,2175289-01	Head Relay FFC	
HARNESS	MAIN-CRCM,2175290-01	CRCM Relay FFC	
HARNESS	MAIN-PCL,2175287-01	FFC	CN107 - CN102
HARNESS	MAIN-FAX 2,2175292-01	FFC	CN202 - CN1
CABLE,CRCM;B		CRCM FFC	
BOARD ASSY.,POWER SUPPLY		Power Supply Unit	
PW SHUTTER.,ASSY.CG68;IEI		PW Drive Shutter	
MOTOR,APG.,ASSY.CG68;IEI		APG Motor Assy	
DRIVE APG.,ASSY.CG68;IEI		APG Drive Assy	
BOARD ASSY.,ENCODER,PF,ASSY.,SEC		PF Encoder Assy	
TIMING BELT,PF		PF Timing Belt	
DRIVE,PF ASSY.,IEI		PF Drive Assy	
DRIVE ASF,ASSY.,ASP		ASF Drive Assy	
IS DECOMP PUMP,ASSY.,IEI		Decompression Pump Unit	
MOTOR ASSY.,CR		CR Motor Assy	

ASP Name		Name used in This Manual	
Name	Remarks	Name	Remarks
CABLE,CSIC,INK EJECT,ASP		MB CSIC Assy	
HOLDER,STARWHEEL ASSY.CG68;IEI		Star Wheel Assy	
CARRIAGE,ASSY.CG68;IEI		CR Unit	
SCALE,CR,ASSY.,ASP		CR Scale	
LEVER,BLOCK,COVER,REAR,ASF		Link Lever	
INK SYSTEM,ASSY.,ASP		Maintenance Unit	
STOPPER,TENSION,PF		PF Belt Tension Stopper	
PHOTO INTERRUPTER		* Each Sensors	
BOARD ASSY.,DETECTOR,PW;B		PW Sensor	
POROUS PAD,CR		CR Porous Pad	
SUPPLY,ROLLER,ASSY.;C,SEC		Pickup Roller	
LEVER,DETECTOR,PAPER GUIDE,REAR,ASF;B		Feed Lever	
PAPER GUIDE,DUPLEX, ASSY,CF34;IEI		Middle Duplex Print Guide	
TIMING BELT,CR		CR Timing Belt	
MOUNTING PLATE,HOLDER,ROLLER,2ND ASSY		Mounting Plate Assy	
BOARD ASSY.,ENCODER		APG Drive Sensor	
LEVER,PAPER DETECT,MIDDLE		Paper Jam Sensor Lever	
SHOULDER BOLT,3X4,RASF		C.SHOULDER S-TITE,3x4	
MOUNTING PLATE,SOLENOID,ASSY.,ASP		Nip Release Solenoid	
4 LINE SWITCH		Paper Size Sensor	
COMPRESSION SPRING,2.7,RETARD		Retard Extension Spring	
HARNESS,GROUNDING,RASF		Grounding Wire	
SENSOR,TEMPERATURE,HUMIDITY,HSHCAA106F		Humidity Sensor	
LIFT DRIVE ASSY,CG68;IEI		Lift Drive Assy	
PAPER GUIDE,UPPER,LEFT.,ASSY,;IEI		Paper Guide Upper Left	
PAPER GUIDE,UPPER,CENTER.,ASSY.CG68;IEI		Paper Guide Upper Center	
PAPER GUIDE,UPPER,RIGHT.,ASSY,;IEI		Paper Guide Upper Right	
HOLDER,DETECTOR,PAPER LENGTH		Paper Size Sensor Holder	
LEVER,DETECTOR,PAPER LENGTH		Paper Size Sensor Lever	
ROLLER,DRIVEN,PF,;IEI		Driven Roller	

ASP Name		Name used in This Manual	
Name	Remarks	Name	Remarks
PRINT HEAD,IF476V;ASP		Print Head	
REAR,ASF,ASSY.,ASP		Rear ASF Unit	
SHEET,GUIDE,ROOLER,RASF		Rear ASF Seat Guide	
LEVER,CLUTCH,ASSY.,SEC		Rear ASF Solenoid	
CLUTCH,LD,ASSY.,SEC		Rear ASF Clutch Gear	
SEAL,JOINT,HEAD		Seal Joint Head	
LEAF SENSOR,P599		* Each Sensor	
CABLE,HEAD ASSY.,ASP		Head FFC	
BOARD ASSY.,SENSOR		Ink End Sensor	
USB HOST ASSY,CF34.;IEI		USB Host Assy	
CASSETTE,ASSY.,ASP		Paper Cassette	
DUP ASSY.,ASP		Duplex Print Assy	
BELT,STOPPER,MSF		Rear Band	
INK SUPPLY,ASSY.,ASP		Ink Supply Unit	
HOLDER,RETARD,CASSETTE,ASSY.;IEI		Retard Roller	
LABEL,PAPER SIZE,CASSETTE		Paper Label	
LABEL,CASSETTE POSITION		---	
SCREW MOUNT HEAD ASSY.,ASP		SCREW,MOUNT,HEAD,ASSY	
C.B.EP-TITE SCREW,2.6X17(B=14),F/ZN-3C		C.B.EP-TITE SCREW,2.6X17(B=14),F/ZN-3C	
SCN/ADF ASSY.,ASP		ADF/SCN Unit	
PAPER GUIDE,UPPER,ADF ASSY.,ASP		ADF Cover Assy	
COVER,REAR,ADF,ASP		Rear ADF Cover	
DECORATION,REAR,ADF;B		Rear ADF Base	
COVER,FRONT,ADF,ASP		Front ADF Cover	
DECORATION,FRONT,ADF;B		Front ADF Base	
DOC,SUPPORT,ADF ASSY.,ASP		ADF Document Support Assy	
DOCUMENT,SUPPORT,LOWER,ADF;B		Lower ADF Document Support Assy	
DOCUMENT GUIDE,LOWER,ADF ASSY.,IEI		ADF PF Support Guide	
PAD,ADF ASSY,;SEC		ADF Pad Assy	
HINDGE ASSY.,RIGHT;B		ADF Hinge	

ASP Name		Name used in This Manual	
Name	Remarks	Name	Remarks
HINDGE ASSY.,LEFT;B		ADF Hinge	
MAT,COVER DOCUMENT		Document Mat Cover Assy	
COVER,ASF,CF34,ASP		ASF Cover	
LD ASSY,;SEC		ADF Pickup Roller Assy	
COVER,RIGHT,ADF		Right ADF Cover	
STOPER,DOCUMENT,ADF		Document Stopper	
LABEL,BLIND,PANEL;B		Screw Cover Seal	
LABEL,FUNCTION		---	
PRESSING PLATE,RIGHT,SC		Lower SC Reinforcing plate	
HARNESS	MAIN-MAIN_B 1,2175300-01	ADF/SCN Cable	
HARNESS	MAIN-MAIN_B 2,2175301-01	ADF/SCN Cable	
LABEL,ACCESS,POINT,F		---	
LABEL,EDGE GUIDE OPERATION		---	
LABEL,ACCESS,POINT,B1		---	

- WF-C8190/C8190a

ASP Name		Name used in This Manual	
Name	Remarks	Name	Remarks
HOUSING,FRONT,ASSY.CG68,IEI		Front Housing	
PANEL UNIT CG70,B;IEI		Panel Assy	
COVER,FRONT,ASSY.,ASP		Front Cover Assy	
STACKER,ASSY.,CF34,ASP		Stacker Assy	
COVER,RIGHT,UPPER		Front Right Cover	
PAPER SUPPORT,MIDDLE,ASSY.CF34;IEI		Paper Guide Assy	
COVER,ASF,CF35,ASP		ASF Cover	
HOUSING,PANEL,LEFT		Decoration Case Left	
HOUSING,PANEL,RIGHT		Decoration Case Right	
COVER,CONNECTOR,SFP,ASP		Connector Cover	
COVER,REAR,ASF,ASSY.,ASP		Duplex Print Cover Assy	
HOUSING,UPPER		Upper Housing	
LABEL,FUNCTION		---	
GUIDE,PAPER SUPPORT,SUPPORT;B		Paper Guide Hinge Support	
GUIDE,PAPER,SUPPORT,LEFT;B		Paper Guide Hinge Left	
GUIDE,PAPER,SUPPORT,RIGHT;B		Paper Guide Hinge Right	
HOUSING,FRONT,MIDDLE		Upper Middle Housing	
HOUSING,FRONT,LEFT		Front Left Housing	
HOUSING,FRONT,RIGHT		Front Right Housing	
HOUSING,REAR ASSY.;D,ASP		Rear Case Assy	
LABEL,ACCESS,POINT,A		---	
LABEL,CAUTION,USB		---	
LABEL,ACCESS,POINT,D1		---	
LABEL,ACCESS,POINT,B1		---	
HOUSING,LEFT ASSY.CG68;IEI		Left Housing	
HOUSING,RIGHT ASSY.CG68;IEI		Right Housing	
BOARD ASSY.,MAIN,CG70,ASP		Main Board	
CR CONTACT MODULE		CRCM Board	

ASP Name		Name used in This Manual	
Name	Remarks	Name	Remarks
WIRELESS LAN USB MODULE		Wi-Fi Board	
BOARD ASSY.,SUB		PCB Relay CRCM Board	
MEMORY CARD		PDL SD Card	
BOARD ASSY.,MAIN		PDL Board Assy	
BOARD ASSY.,PROG		PCB ROM	
HARNESS	MAIN-SUB_M 1,2175295-01	Relay Cable	CN403 - CN55
HARNESS	MAIN-SUB_M 2,2175296-01	Relay Cable	CN402 - CN54
HARNESS	MAIN-SUB_M 3,2175297-01	Relay Cable	CN401 - CN52
HARNESS	MAIN-SUB_M 4,2175298-01	Relay Cable	CN502 - CN56
HARNESS	MAIN-SUB_M 5,2175299-01	Relay Cable	CN501 - CN53
BOARD ASSY.,SUB	7021A,STANDARD	PCB Head Relay Board	
BOARD ASSY.,SUB	7022A,STANDARD	PCB Mechanism Relay Board	
HARNESS	MAIN-HEAD 1,2175288-01	Head Relay FFC	
HARNESS	MAIN-HEAD 2,2175289-01	Head Relay FFC	
HARNESS	MAIN-CRCM,2175290-01	CRCM Relay FFC	
CABLE,CRCM;B		CRCM FFC	
BOARD ASSY.,POWER SUPPLY		Power Supply Unit	
PW SHUTTER.,ASSY.CG68;IEI		PW Drive Shutter	
MOTOR,APG.,ASSY.CG68;IEI		APG Motor Assy	
DRIVE APG.,ASSY.CG68;IEI		APG Drive Assy	
BOARD ASSY.,ENCODER,PF,ASSY.,SEC		PF Encoder Assy	
TIMING BELT,PF		PF Timing Belt	
DRIVE,PF ASSY.,IEI		PF Drive Assy	
DRIVE ASF,ASSY.,ASP		ASF Drive Assy	
IS DECOMP PUMP,ASSY.,IEI		Decompression Pump Unit	
MOTOR ASSY.,CR		CR Motor Assy	
CABLE,CSIC,INK EJECT,ASP		MB CSIC Assy	
HOLDER,STARWHEEL ASSY.CG68;IEI		Star Wheel Assy	
CARRIAGE,ASSY.CG68;IEI		CR Unit	
SCALE,CR,ASSY.,ASP		CR Scale	
LEVER,BLOCK,COVER,REAR,ASF		Link Lever	

ASP Name		Name used in This Manual	
Name	Remarks	Name	Remarks
INK SYSTEM,ASSY.,ASP		Maintenance Unit	
STOPPER,TENSION,PF		PF Belt Tension Stopper	
PHOTO INTERRUPTER		* Each Sensor	
BOARD ASSY.,DETECTOR,PW;B		PW Sensor	
POROUS PAD,CR		CR Porous Pad	
SUPPLY,ROLLER,ASSY.;C,SEC		Pickup Roller	
LEVER,DETECTOR,PAPER GUIDE,REAR,ASF;B		Feed Lever	
PAPER GUIDE,DUPLEX, ASSY,CF34;IEI		Middle Duplex Print Guide	
TIMING BELT,CR		CR Timing Belt	
MOUNTING PLATE,HOLDER,ROLLER,2ND ASSY		Mounting Plate Assy	
BOARD ASSY.,ENCODER		APG Drive Sensor	
LEVER,PAPER DETECT,MIDDLE		Paper jam Sensor Lever	
SHOULDER BOLT,3X4,RASF		C.SHOULDER S-TITE,3x4	
MOUNTING PLATE,SOLENOID,ASSY.,ASP		Nip Release Solenoid	
4 LINE SWITCH		Paper Size Sensor	
COMPRESSION SPRING,2.7,RETARD		Retard Extension Sensor	
HARNESS,GROUNDING,RASF		Ground Wire	
SENSOR,TEMPERATURE,HUMIDITY,HSHCAA106F		Humidity Sensor	
LIFT DRIVE ASSY,CG68;IEI		Lift Drive Assy	
PAPER GUIDE,UPPER,LEFT.,ASSY,;IEI		Paper Guide Upper Left	
PAPER GUIDE,UPPER,CENTER.,ASSY.CG68;IEI		Paper Guide Upper Center	
PAPER GUIDE,UPPER,RIGHT.,ASSY,;IEI		Paper Guide Upper Right	
HOLDER,DETECTOR,PAPER LENGTH		Paper Size Sensor Holder	
LEVER,DETECTOR,PAPER LENGTH		Paper Size Sensor Lever	
ROLLER,DRIVEN,PF,;IEI		Driven Roller	
PRINT HEAD,IF476V;ASP		Print Head	
REAR,ASF,ASSY.,ASP		Rear ASF Unit	
SHEET,GUIDE,ROOLER,RASF		Rear ASF Seat Guide	
LEVER,CLUTCH,ASSY.,SEC		Rear ASF Solenoid	
CLUTCH,LD,ASSY.,SEC		Rear ASF Clutch Gear	

ASP Name		Name used in This Manual	
Name	Remarks	Name	Remarks
SEAL,JOINT,HEAD		Seal Joint	
LEAF SENSOR,P599		*Each Sensor	
CABLE,HEAD ASSY.,ASP		Head FFC	
DUP ASSY.,ASP		Duplex Print Assy	
BELT,STOPPER,MSF		Rear Band	
INK SUPPLY,ASSY.,ASP		Ink Supply Unit	
HOLDER,RETARD,CASSETTE,ASSY.;IEI		Retard Roller	
LABEL,PAPER SIZE,CASSETTE		Paper Label	
LABEL,CASSETTE POSITION		---	
SCREW MOUNT HEAD ASSY.,ASP		---	
C.B.EP-TITE SCREW,2.6X17(B=14),F/ZN-3C		C.B.EP-TITE SCREW,2.6X17(B=14),F/ZN-3C	

9.3 Status Sheet Information

The following status sheets can be printed from the printer.

This section explains about each item printed on the status sheets.

- Overview of Status Sheets
  - Printer information sheet: printer settings information
  - Consumables information sheet: supported model numbers of consumables or periodic replacement parts, and the total number of sheets fed into the printer.
  - Usage history sheet: usage history such as the total number of printed pages per function.
  - Service status sheet: in addition to the information included in the above three sheets, information required for servicing is also provided.
- Status Sheet Items
  - Printer Information Sheet (total pages: 3 sheets)

Item			Explanation
Hardware Configuration	Device ID		Device ID (product name) is displayed.
	Serial Number		The serial number of the product is displayed.
	MAC Address		MAC address of the product is displayed.
	<Hardware>	Memory Capacity	Capacity of the memory inside the product is displayed.
		Card Reader Status	Connection condition of a device for user authentication is displayed.
	<Version>	Firmware	Version of the firmware is displayed.
		Main Firmware	Version of the main firmware is displayed.
		Network Firmware	Version of the NW firmware is displayed.
		QPIT	Version of the QPIT is displayed.
Basic settings	Language		The current language setting is displayed.

Item				Explanation
	<Sound settings>	Mute		The setting of mute (on/off) is displayed.
		Normal	Button Press	Sound level setting (0 to 10) is displayed.
			Error Notice	
			Receive Completion Notice	
			Send Completion Notice	
			Print Completion Notice	
			Ring Tone	
			Receiver	
			Sound Type	
Basic settings		Sleep timer setting		Whether the sleep timer is enabled or not is displayed. When enabled, the time period before the product enters sleep mode is also displayed.
		Power Off Timer		The Power Off Timer setting is displayed.
		USB I/F Timeout Setting		USB I/F time out settings are displayed.
		Printing Language	USB	Print language settings are displayed.
			Network	
		Auto Error Solver		Whether the auto error resolver options are enabled or not is displayed.
		Memory Device Interface	Memory Device	Whether the external memory setting is enabled or not is displayed.
			File Sharing	The file sharing setting (which connection way of computers, USB or network, is allowed to access the external memory) is displayed.
		Ink Drying Time		The Ink Drying Time when duplex printing is displayed.
		PC connection via USB		Whether the setting is enabled or not is displayed.
		NFC		Whether the setting is enabled or not is displayed.

Item				Explanation
Paper source settings	Paper cassette	Paper cassette 1 to Paper cassette 4	Paper Size	Paper size and type settings of each of the cassettes and whether the auto paper size detection feature is enabled or not are displayed.
			Paper Type	
			Paper Size Auto Detect	
		Rear paper Feed	Paper Size	
			Paper Type	
		A4/Letter Auto Switching		Whether the auto switching function is enabled or not is displayed.
	Auto Selection-Copy	Auto Selection-Copy	Paper cassette 1 to paper cassette 2, MP tray	Whether the auto paper source selection setting for each of the functions is enabled or not is displayed.
	Auto Selection-Fax	Auto Selection-Fax	Paper cassette 1 to paper cassette 2, MP tray	
	Auto Selection-Other	Auto Selection-Other	Paper cassette 1 to paper cassette 2, MP tray	
		Rear Paper Feed Priority		Whether the setting is enabled or not is displayed.
		Paper Size Notice		Whether the setting is enabled or not is displayed.
		Paper Type Notice		Whether the setting is enabled or not is displayed.
Print settings		Universal Print Settings	Top Offset	The offset setting (-30 to 30) is displayed.
			Left Offset	
			Top Offset in Back	
			Left Offset in Back	
			Check Paper Width	Whether the setting is enabled or not is displayed.
			Skip Blank Page	Whether the setting is enabled or not is displayed.

Item			Explanation
PDL Print Configuration	<Common settings>	Paper Size	Paper size setting is displayed.
		Paper Type	Paper type setting is displayed.
		Orientation	The orientation setting (portrait or landscape) is displayed.
		Quality	The print quality setting (Draft, Standard, or Best) is displayed.
		Ink Save Mode	Whether the setting is enabled or not is displayed.
		Print Order	The print order setting (print from the first page or last page) is displayed.
		Number of Copies	Standard number of copies (1 to 999) is displayed.
		Binding Margin	The Binding Margin is displayed.
		Auto Paper Ejection	Whether the setting is enabled or not is displayed.
		2-Sided Printing	Whether the setting is enabled or not is displayed.
	<PCL Menu>	Font Source	The Setting of PCL Menu is displayed.
		Font Number	
		Pitch	
		Height	
		Symbol Set	
		Form	
		CR Function	
		LF Function	
		Paper Source Assign	
	<PS3 Menu>	Error Sheet	Whether the setting is enabled or not is displayed.
		Coloration	The color setting (Color or Mono) is displayed.
		Binary	Whether the setting is enabled or not is displayed.
		PDF Page Size	The PDF paper size setting is displayed.
	<Language Version>	PCL	The version of each of the printer language is displayed.
		PS	
		PDF	

Item				Explanation
Scan settings	<Scan to Email> <Scan to Network Folder/FTP> <Scan to Memory Device> <Scan to Cloud>	Subject (“Scan to Email” only)		The subject of email is displayed.
		Color		The color setting (Color or Mono) is displayed.
		File Format		File format setting is displayed.
		Document Open Password (not provided for “Scan to Cloud”)		Whether the password setting is enabled or not is displayed.
		Permissions password (not provided for “Scan to Cloud”)		Whether the password setting is enabled or not is displayed.
			Printing	Whether printing scanned document is permitted or not is displayed.
			Editing	Whether editing scanned document is permitted or not is displayed.
		Resolution (not provided for “Scan to Cloud”)		Scan resolution setting is displayed.
		2-Sided		Whether the 2-sided scanning is enabled or not is displayed.
			Binding Position	Binding position of documents (left/top/--- (in case of one-side scanning)) is displayed.
		Scan area		Original document size setting is displayed.
		Remove shadow		Whether the setting is enabled or not is displayed.
			Surround	The frame width setting (0 to 40 mm/---(in case of the shadow remove setting is disabled)) is displayed.
			Center	The center width setting (0 to 40 mm/---(in case of the shadow remove setting is disabled)) is displayed.
		Remove Punch Holes		Whether the setting is enabled or not is displayed.
			Erasing Position	The erasing setting (left edge/right edge/top edge/bottom edge/--- (in case of the remove punch holes setting is disabled)) is displayed.
			Erase Amount	The erasing amount (0 to 20 mm/--- (in case of the remove punch holes setting is disabled)) is displayed.
		Orientation (Original)		The document orientation setting (portrait or landscape) is displayed.
		Document Type		The quality setting (Text/Text & Image/Photo) is displayed.
		Density		The density setting (-4 to 4) is displayed.
		Filename Prefix (not provided for “Scan to Cloud”)		File name prefix setting for scanned file is displayed.
			Date	Whether the setting is enabled or not is displayed.
			Time of Day	Whether the setting is enabled or not is displayed.
		Compression Ratio (not provided for “Scan to Cloud”)		The Compression Ratio is displayed.
		Attached File Max Size (“Scan to Email” only)		The maximum file size that can be attached to an email is displayed.

Item		Explanation
Admin Settings	Lock Setting	Whether the setting is enabled or not is displayed.
	Access Control	Whether the setting is enabled or not is displayed.
Epson Open Platform Information	Version	The version is displayed.
	Product key	The product key is displayed (“---” is displayed when it is not set).

■ Supply Status Sheet (total pages: 1 sheets)

Item				Explanation
Hardware Configuration		Device ID		Device ID (product name) is displayed.
		Serial Number		The serial number of the product is displayed.
		MAC Address		MAC address of the product is displayed.
		<Hardware>	Memory Capacity	Capacity of the memory inside the product is displayed.
			Card Reader Status	Connection condition of a device for user authentication is displayed.
		<Version>	Firmware	Version of the firmware is displayed.
			Main Firmware	Version of the main firmware is displayed.
			Network Firmware	Version of the NW firmware is displayed.
			QPIT	Version of the QPIT is displayed.
Supply Status	Ink Supply Unit	Black	Part Number	Model number of each of the ink cartridges is displayed. Manufacturer's serial number of each of the ink cartridges is displayed.
			Serial Number	
		Cyan	Part Number	
			Serial Number	
		Magenta	Part Number	
			Serial Number	
		Yellow	Part Number	
			Serial Number	
	Maintenance Box		Part Number	The model number of the Maintenance Box is displayed.
	Periodic Replacement Parts Information	maintenance roller 1 to maintenance roller 2	Part Number	Current value of the counter for the periodic replacement part, the number of replacements of the part, and the model number of the part are displayed.
			Number of Sheets Loaded	
		Rear Paper Feed	Number of Sheets Loaded	
Optional Cassette Information		Cassette 2	Firmware Version	The version of the firmware of cassette 2 is displayed.

■ Usage History Sheet (total pages: 1 sheets)

Item			Explanation
Hardware Configuration	Device ID		Device ID (product name) is displayed.
	Serial Number		The serial number of the product is displayed.
	MAC Address		MAC address of the product is displayed.
	<Hardware>	Memory Capacity	Capacity of the memory inside the product is displayed.
		Card Reader Status	Connection condition of a device for user authentication is displayed.
	<Version>	Firmware	Version of the firmware is displayed.
		Main Firmware	Version of the main firmware is displayed.
		Network Firmware	Version of the NW firmware is displayed.
		QPIT	Version of the QPIT is displayed.
Usage History	First Time Printing		The date and time when the printer printed for the first time is displayed.
Number of Pages	<Sorted by Function>	Total Number of Pages	The total number of printed pages is displayed.
		Total Number of B&W Pages	The total number of pages printed in monochrome is displayed.
		Total Number of Color Pages	The total number of pages printed in color is displayed.
		Total Number of 2-Sided Printing Pages	The total number of printed 2-sided pages is displayed.
		Total Number of 1-Sided Printing Pages	The total number of printed one-sided pages is displayed.
	<Sorted by Paper Size> (1-sided/2-sided, B&W/Color)	A3/Ledger	The total number of printed pages per paper size is displayed. Detailed count per function (one-sided/2-sided, monochrome/color) is also displayed for each paper size.
		A4/Letter	
		A5	
		A6	
		B4/Legal	
		B5	
		Envelope	
		Others	

Item			Explanation
Number of prints	<Sorted by Usage>	B&W Copy	The total number of printed pages for each of the purposes is displayed.
		Color Copy	
		B&W Fax	
		Color Fax	
		B&W Scan	
		Color Scan	
		B&W Print from Computer or Mobile Device	
		Color Print from Computer or Mobile Device	
		B&W Print from Memory Device or Other Functions	
		Color Print from Memory Device or Other Functions	
	<Sorted by Printer Language>	ESC/P-R	The version of each of the printer language is displayed.
		PCL	
		PS and PDF	
		Others	

■ Service Status Sheet (total pages: 8 sheets)

Item				Explanation
Hardware Configuration		Device ID		Device ID (product name) is displayed.
		Serial Number		The serial number of the product is displayed.
		MAC Address		MAC address of the product is displayed.
		<Hardware>	Memory Capacity	Capacity of the memory inside the product is displayed.
			Card Reader Status	Connection condition of a device for user authentication is displayed.
		<Version>	Firmware	Version of the firmware is displayed.
			Main Firmware	Version of the main firmware is displayed.
			Network Firmware	Version of the NW firmware is displayed.
			QPIT	Version of the QPIT is displayed.
Basic Settings		Sleep Timer		Whether the sleep timer is enabled or not is displayed. When enabled, the time period before the product enters sleep mode is also displayed.
		Power Off Settings		Whether the auto power off setting is enabled or not is displayed. When enabled, the time period before the printer automatically turns off is also displayed.
		Ink Drying Time		The Ink Drying Time when duplex printing is displayed.
Paper Source Settings	Paper Cassette	Cassette 1 to Cassette 4	Paper Size	Paper size and type settings for each of the paper sources are displayed.
			Paper Type	
			Paper Size Auto Detect	
		MP tray	Paper Size	
			Paper Type	
Print Settings		Universal Print Settings	Top Offset	The offset setting (-30 to 30) is displayed.
			Left Offset	
			Top Offset in Back	
			Left Offset in Back	
			Check Paper Width	Whether the setting is enabled or not is displayed.
			Skip Blank Page	Whether the setting is enabled or not is displayed.

Item				Explanation
Network Settings		IP Address		The network settings are displayed.
		Subnet Mask		
		Default Gateway		
		Primary DNS Server		
		Secondary DNS Server		
		DNS Domain Name		
		Proxy Server Settings		
		Proxy Server		
		Proxy Server Port Number		
Scan settings	<Scan to Email> <Scan to Network Folder/FTP> <Scan to Memory Device> <Scan to Cloud>	Subject (“Scan to Email” only)		The subject of email is displayed.
		Color Mode		The color setting (Color or Mono) is displayed.
		File Format (not provided for “Scan to Cloud”)		File format setting is displayed.
		Document Open Password (not provided for “Scan to Cloud”)		Whether the password setting is enabled or not is displayed.
		Permissions Password (not provided for “Scan to Cloud”)		Whether the password setting is enabled or not is displayed.
			Printing	Whether printing scanned document is permitted or not is displayed.
			Editing	Whether editing scanned document is permitted or not is displayed.
		Resolution (not provided for “Scan to Cloud”)		Scan resolution setting is displayed.
		2-Sided		Whether the 2-sided scanning is enabled or not is displayed.
			Binding Position	Binding position of documents (left/top/--- (in case of one-side scanning)) is displayed.
		Scan Area (not provided for “Scan to Cloud”)		Original document size setting is displayed.
		Remove Shadow (not provided for “Scan to Cloud”)		Whether the setting is enabled or not is displayed.
			Surround	The frame width setting (0 to 40 mm/---(in case of the shadow remove setting is disabled)) is displayed.
			Center	The center width setting (0 to 40 mm/---(in case of the shadow remove setting is disabled)) is displayed.
		Remove Punch Holes		Whether the setting is enabled or not is displayed.
			Erasing Setting	The erasing setting (left edge/right edge/top edge/bottom edge/--- (in case of the remove punch holes setting is disabled)) is displayed.
			Erase Amount	The erasing amount (0 to 20 mm/--- (in case of the remove punch holes setting is disabled)) is displayed.
		Orientation (original)		The document orientation setting (portrait or landscape) is displayed.
		Document Type		The quality setting (Text/Text & Image/Photo) is displayed.
		Mixed Size Original		The setting of Mixed Size Original is displayed.
		Density		The density setting (-4 to 4) is displayed.

Item				Explanation
Scan settings	<Scan to Email> <Scan to Network Folder/FTP> <Scan to Memory Device> <Scan to Cloud>	Remove Background		---
		File Name Prefix (not provided for “Scan to Cloud”)		---
			Date	Whether the setting is enabled or not is displayed.
			Time	Whether the setting is enabled or not is displayed.
		Continuous Scan (ADF)		---
		Compression Ratio (not provided for “Scan to Cloud”)		The data compression ratio setting (Low/Middle/High) is displayed.
		Attached file Max Size (“Scan to Email” only)		The maximum file size that can be attached to an email is displayed.
Epson Open Platform Information		Product key		The product key is displayed (“---” is displayed when it is not set).
Option Settings		Fax Function		Whether the fax feature is enabled or not is displayed.
		Large-Capacity Paper Feed Unit	Serial Number	Firmware version of each of the option cassettes are displayed.
			FW version	
		Intermediate Unit	Serial Number	
			FW version	
		Optional Cassette 1	Serial Number	
			FW version	
		Optional Cassette 2	Serial Number	
			FW version	
		Optional Cassette 3	Serial Number	
			FW version	
		Finisher Function		
Supply Status	Ink Cartridges	Black	Part number	Model number and manufacturer's serial number of each of the ink cartridges is displayed.
			Serial Number	
		Cyan	Part number	
			Serial Number	
		Magenta	Part number	
			Serial Number	
		Yellow	Part number	
			Serial Number	
	Maintenance Box		Part number	The model number of the Maintenance Box is displayed.

Item				Explanation
Supply Status	Periodic replacement parts	maintenance roller 1 to maintenance roller 4	Part number	Model number of each of the feed rollers is displayed.
			Number of Sheets Loaded	The number of sheets fed by each of the maintenance rollers is displayed.
			Number of Replacements	The number of replacements (the number of times the counter is reset) of each of the paper feed rollers is displayed.
		Rear Paper Feed	Number of Sheets Loaded	---
			Number of Replacements	
		Mist / VOC Filter	Number of Sheets Loaded	
			Number of Replacements	
			Part number	
		Belt unit	Number of Sheets Loaded	
			Number of Replacements	
			Part number	
		Belt cleaner	Number of Sheets Loaded	
			Number of Replacements	
			Part number	
		ADF feed roller	Number of Sheets Loaded	
			Number of Replacements	
			Part number	
		High capacity input unit	Number of Sheets Loaded	
			Number of Replacements	
			Part number	
		Print head serial ID		ID of the print head is displayed.
		Hind head sensor degration		---

Item			Explanation
Usage History	First Time Printing		The data and time the printer printed for the first time are displayed.
	<Sorted by Function>	Total Number of Pages	The total number of pages printed by the printer is displayed.
		Total Number of B&W Pages	The total number of pages printed in monochrome is displayed.
		Total Number of Color Pages	The total number of pages printed in color is displayed.
	<Sorted by Paper Size> (1-sided/2-sided, B&W/ Color)	A3/Ledger	The total number of printed pages per paper size is displayed. Detailed count per function (one-sided/2-sided, monochrome/color) is also displayed for each paper size.
		A4/Letter	
		A5	
		A6	
		B4/Legal	
		B5	
		Envelope	
		Other	
	<Sorted by Usage>	B&W Print from Computer or Mobile Device	The total number of printed pages for each of the purposes is displayed.
		Color Print from Computer or Mobile Device	
		B&W Copy	
		Color Copy	
		B&W Fax	
		Color Fax	
		B&W Print from Memory Device or Other Functions	
		Color Print from Memory Device or Other Functions	

Item			Explanation
Usage History	<Paper Type>	Plain papers	The total number of pages printed on each of the paper types is displayed. notes: Count in number of sheet. Including paper jam.The number does not meet with the other count.
		Letterhead	
		Recycled	
		Color	
		Preprinted	
		High quality plain paper	
		Thick-Paper 1	
		Thick-Paper 2	
		Thick-Paper 3	
		Matte	
		Ultra Glossy Prem. Glossy	
		Prem. semigloss Glossy	
		Envelope	
	Other	The Cumulative number of paper jam	The total number of times a paper jam error occurs is displayed.
	Number of Sheets Scanned	Document Table (Number of pages)	The total number of pages scanned on the scanner glass or in the ADF is displayed.
		ADF (Number of pages)	
		ADF (Number of Fed Sheets)	The total number of document sheets fed by the ADF is displayed.
	Number of Sheets Loaded	Cassette 1 to Cassette 4, Rear Paper Feed, Paper Feed Slot	The total number of printed pages per paper source is displayed.

Item			Explanation
Setting Change History	User Adjustment	Code	Adjustment name and execution date and time of last five adjustments executed by the user are displayed.
		Name	
		Timer of day	
	Cleaning History	Code	Cleaning type and execution date and time of last five cleaning operations are displayed.
		Type	
		Timer of day	
	Nozzles Clogging State	Rank	A number that represents the level of nozzle clogging is displayed.
	Error History	Printer Error	For each of the errors, the following information is displayed - Error Code - Sub Code - Date of Occurrence - Number of Pages - Internal Temperature - Internal Humidity - Paper Path
		Paper Jam Error	
		Fatal Error When Printing	
		Scanner Error	For each of the errors, the following information is displayed - Error Code - Date of Occurrence - Number of Scan Pages
		Fatal Error When Scanning	
		Fax Error	For each of the errors, the following information is displayed - Error Code - Date of Occurrence
		Network Error	
		System Error	
		Other Error	
Coverage	Coverage Raito	PD1 Level	Ink coverage of print jobs finished before printing this status sheet is displayed according to the rule below. L: less than 5%, M: 5% to 20%, H: more than 20%
		PD2 Level	Ink coverage of the last print job is displayed according to the rule below. L: less than 20%, M: 5% to 50%, H: more than 50%
Status	Printer Error		---
	Scanner Error		
	Fax Error		
	Network Error		
	Other Error		