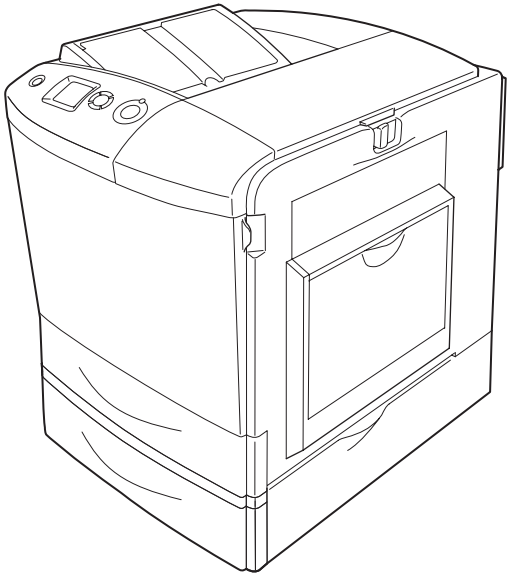
SERVICE MANUAL



A4 Full Color Laser Printer

EPSON AcuLaser C2600/2600

EPSON

SEPG04005

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PRECAUTIONS

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

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

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

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

DANGER

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

WARNING

1. REPAIRS ON EPSON PRODUCT SHOULD BE PERFORMED ONLY BY AN EPSON CERTIFIED REPAIR TECHNICIAN.
2. MAKE CERTAIN THAT THE SOURCE VOLTAGES IS THE SAME AS THE RATED VOLTAGE, LISTED ON THE SERIAL NUMBER/RATING PLATE. IF THE EPSON PRODUCT HAS A PRIMARY AC RATING DIFFERENT FROM AVAILABLE POWER SOURCE, DO NOT CONNECT IT TO THE POWER SOURCE.
3. ALWAYS VERIFY THAT THE EPSON PRODUCT HAS BEEN DISCONNECTED FROM THE POWER SOURCE BEFORE REMOVING OR REPLACING PRINTED CIRCUIT BOARDS AND/OR INDIVIDUAL CHIPS.
4. IN ORDER TO PROTECT SENSITIVE MICROPROCESSORS AND CIRCUITRY, USE STATIC DISCHARGE EQUIPMENT, SUCH AS ANTI-STATIC WRIST STRAPS, WHEN ACCESSING INTERNAL COMPONENTS.

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

About This Manual

This manual describes basic functions, theory of electrical and mechanical operations, maintenance and repair procedures of the printer. The instructions and procedures included herein are intended for the experienced repair technicians, and attention should be given to the precautions on the preceding page.

Manual Configuration

This manual consists of six chapters and Appendix.

CHAPTER 1.PRODUCT DESCRIPTIONS
Provides a general overview and specifications of the product.

CHAPTER 2.OPERATING PRINCIPLES
Describes the theory of electrical and mechanical operations of the product.

CHAPTER 3.TROUBLESHOOTING
Describes the step-by-step procedures for the troubleshooting.

CHAPTER 4.DISASSEMBLY / ASSEMBLY
Describes the step-by-step procedures for disassembling and assembling the product.

CHAPTER 5.ADJUSTMENT
Provides Epson-approved methods for adjustment.

CHAPTER 6.MAINTENANCE
Provides preventive maintenance procedures and the lists of Epson-approved lubricants and adhesives required for servicing the product.

APPENDIX Provides the following additional information for reference:

- Connector pin assignments
- Electric circuit boards components layout
- Electrical circuit boards schematics
- Exploded diagram & Parts List

Symbols Used in this Manual

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

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

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

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

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

Provides helpful tips and cautions on reassembly procedures, especially when incorrect reassembling may affect the print quality.

General Precautions

To prevent possible accidents during maintenance work, strictly observe the servicing warnings and cautions described in this manual.

Power Supply

- **Before starting any service procedure, turn the printer power off and unplug the power cord from the wall outlet.**
  When the power supply cable must be connected, be aware of the potential for electrical shock and do all tasks by following the procedures in this manual.
- **Do not touch any live parts unless instructed to do so.**
- **Make sure to ground the printer properly. Otherwise a short circuit may cause an electric fire or shock.**
- **Handle the power cable with care observing the precautions listed below.**
  - **Do not plug too many leads into a single socket.**
  - **Do not damage or tamper with the power cable.**
  - **Avoid putting heavy objects on the cable, plucking it, and bending it forcedly. To do so may damage the cable and cause an electric fire and shock.**
  - **Do not insert or remove the power cable with wet hands to prevent electric shock.**
  - **Never replace the fuse on the Power Supply Board (high pressure/low pressure) under any circumstances.**

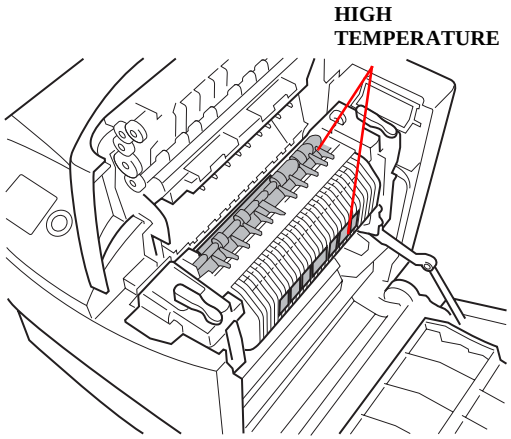
Mechanical Components

- **When servicing any driving assembly (e.g., gears), turn the power off and unplug the power cord to prevent injuries.**
- **Do not touch the driving part (e.g., gears) while the assembly (printer) is operating.**

High Temperature Assembly

WARNING

- **When working with hot parts (Fuser Unit etc.), turn the power off and unplug the power cord to prevent burns or injuries. After unplugging the power cable, wait until the part or unit cools down before starting maintenance work.**
- **Make sure to wait the hot section to cool enough especially when accessing near the section immediately after printing.**



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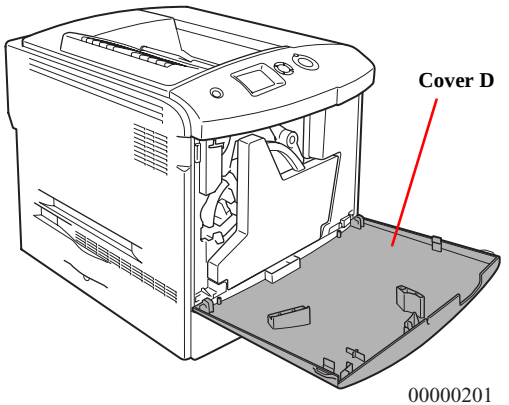
Laser Beam

WARNING

- **Understand hazardous nature of the laser beam, use extreme caution to avoid injury of yourself and anyone around you. Letting a laser beam get directly into your eyes could result in loss of vision.**
  Since the laser beam has a narrower frequency band and more coherent phases than any other light (sunlight, electric light), the beam has excellent monochromaticity and convergence, thus it reaches long distances. Because of these characteristics, the laser beam converges into one point, causing high density and high temperature, which is harmful to the human body.
- **Never turn the interlock switch on forcibly while servicing to prevent the laser beam from emitting accidentally. The interlock switch is designed to be turned off when the cover D is opened.**
- **When performing maintenance work, be sure to turn the power off and unplug the power cord.**
- **If you need to work on the printer with power applied, strictly follow the instructions in this manual.**
- **Never disassemble the Laser Scanner Unit under any conditions.**
- **Be sure to take off a wristwatch, ring or any other metal materials especially when working on the printer with the power applied.**



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Handling Parts

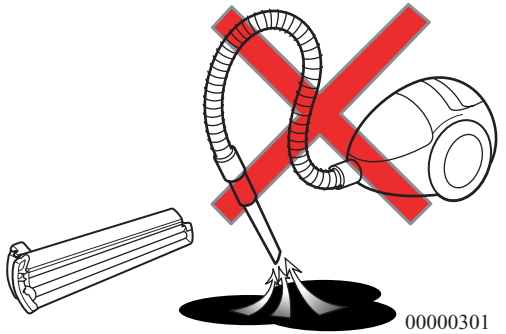
WARNING

- **Be careful not to throw out your back when handling heavy parts while taking care not to drop those parts.**
- **Always wear gloves to perform maintenance work since the printer has many sharp edges.**
- **Do not work with wet or oily hands, or may cause you to drop parts or affect the function of the printer.**
- **Use only specified genuine parts for maintenance.**
- **Do not repair or replace the ICs and other electrical components on the power circuit board (including fuse) under any circumstances.**

Handling Consumables

WARNING

- **To avoid dust explosion or ignition, never bring any consumables close to flame or throw them into fire.**
- **Take extra care not to inhale the developing powder (such as toner), and get it into your mouth and eyes. Use extreme caution to avoid injury of yourself and anyone around you.**
- **Before starting your work, spread a sheet of paper over the working place to prevent interior of the product and the place becoming tainted.**
- **If the developer or oil adheres to your skin or clothes, wipe it off thoroughly with dry rags before rinsing with water.**
- **Do not disassemble the toner cartridges.**
- **To prevent ignition, explosion, burn, injury, etc., do not use a general vacuum cleaner for cleaning dropped toner. (To do so may cause the toner to catch fire by sparks in the vacuum cleaner.)**



Irregular Use of the Printer

WARNING

- **Cautions when performing work with covers or parts removed**
  - **As a general rule, do not power the printer while covers or parts are removed.**
  - **If you need to remove covers or parts from the printer with power applied, take care of your fingers and clothes so as not to get entangled by moving parts such as the driving belt, gears, and fans.**
- **Altering the printer is banned under any circumstances.**

Revision Status

Revision	Date of Issue	Description
A	APR. 28, 2005	First release

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CHAPTER

1

PRODUCT DESCRIPTION

1.1 Overview

This printer is a non-impact color page printer that takes advantage of a laser and electrophotographic technologies.
It provides 600 dpi of resolution and 7.5 ppm (A4, color printing) or 30 ppm (A4, monochrome printing) of print speed.

1.1.1 Engine Features

- ☐ High speed 4-cycle A4 engine

Table 1-1. Print Speed (When Printing A4)

	Color printing	Monochrome printing
Simplex printing	7.5 ppm	30 ppm
Duplex printing	7.5 ppm	20 ppm

- ☐ Two models: color and monochrome
  The monochrome model has one black toner cartridge bundled as standard. Adding three black toner cartridges (option) allows the printer to print up to 20,000 copies. Furthermore, the monochrome model can be upgraded to color model.
  The color model can be operated as monochrome model by replacing the color toners with black ones or removing them.

- ☐ Compact and light weight, suitable for desktop placement

Dimension	435 mm (W) x 516 mm (D) x 425 mm (H)
Weight	35 kg

- ☐ Paper supply (Maximum of 1150 sheets, 3-bin paper feed is possible)

Paper cassette		
Standard	MP Tray	150 sheets
	Lower paper cassette	500 sheets
Option	Paper cassette unit	500 sheets
Maximum		1150 sheets

- ☐ Paper eject capacity is 250 sheets, face-down only.

1.1.2 Controller Features

- ☐ High speed intelligent controller
  - ■ CPU: VR5532A (350 MHz)
  - ■ RAM
    Standard RAM: 64 MB
    Expanded RAM: 512 MB (When two 256 MB DIMMs are installed.)
  - ■ Support for optional large capacity, 40 GB HDD.
- ☐ Color technology
  - ■ nPGI, which allows low price, high quality printing
- ☐ Wide LCD panel with backlight
  The new wide LCD panel supporting a maximum of 22 digits and 5 lines (132 x 65 dots) provides improved operation and visibility.
  Improved serviceability with the addition of the Help function (with description and graphics).
- ☐ Interface
  - ■ USB interface (Rev. 2.0 HS, Supports bi-directional (D4))
  - ■ Network interface (10Base-T/100Base-TX)
  - ■ Parallel interface (IEEE1284)
  - ■ Type-B interface

1.1.3 Software Features

- ☐ Adobe PostScript 3 (17 fonts), PCL6 (monochrome) as standard
  ESC/Page Color, PCL5e, FX, LQ, and IBM emulations are also provided
- ☐ Printer status and printer environment monitor with use of bi-directional EJL and MIB
- ☐ Version upgrade function for engine program ROM
- ☐ Support for DCC command (DIAG command only)
- ☐ Support for firmware overwrite using RCC (full or partial overwrite)
- ☐ Support for manual duplex

1.2 Basic Specifications

1.2.1 Process Specifications & System

- Printing method: Semiconductor laser beam scan and electrophotography with dry single component system.
- Exposure light source: Semiconductor laser
- Photoconductor: Organic photoconductor
- Charging: Wire electrode scorotron
- Development: 1-component non-contact development system
- Toner: 1-component non-magnetic toner
- Primary transfer: Intermediate transfer belt method
- Fixing: Roller heat fixing system

1.2.2 Printer Basic Specifications

RESOLUTION

600 x 600 dpi

WARMING UP TIME

- 120 V: 80 seconds or less (at 23 °C, 55 % RH, rated voltage)
- 230 V: 80 seconds or less (at 23 °C, 55 % RH, rated voltage)

OPERATION MODE

This engine supports the following operation modes.

- B/W mode: Supports Toner cartridge K x 1
- 4xB/W mode: Supports Toner cartridge K x 4
- Color mode: Supports Toner cartridges Y x 1, M x 1, C x 1, and K x 1.

PRINT MODE

- Color mode: Color mode using Y, M, C, K toner (color mode only)
- Monochrome mode: Normal black and white mode, enabling printing at the highest speed of the main unit.

PRINTING SPEED MODE

- Std. mode (plain paper 1): Makes prints at the maximum speed of the engine.
- Std. mode (plain paper 2): This mode is to make prints on papers with less fixability (such as bond papers) at the maximum speed of the engine. As the fuser unit takes a substantial amount of time to increase its temperature for fixing toner onto the papers firmly, the first print time becomes slow. When it comes to a continuous printing, however, the printing can be performed at the maximum speed of the engine.
- Low speed mode 1: Slows down the speed of printing on papers with thickness of 90 g/m^2 (24 lb) or more to sustain the fixability.
- Low speed mode 2: Slows down the speed of printing on envelopes for the better fixability or on transparents for the stable permeability.

FIRST PRINT TIME

The following table shows the time from receiving a start command to when trailing edge of the paper leaves the paper eject roller. Note that the time given in the tables does not apply when the printer is in the conditions described in "1.12 Engine Restrictions" *(p.34)*.

☐ Monochrome mode*1

Table 1-2. Monochrome Mode (Unit: Seconds or Less)

Paper size	Simplex printing				Duplex printing	
	Std. mode (Plain paper 1)	Std. mode (Plain paper 2*2)	Low speed mode 1	Low speed mode 2	Std. mode (Plain paper 1)	Std. mode (Plain paper 2*2)
A4	9.3	19.3	17.9	26.6	13.3	23.3
A5	8.9	18.9	17.1	25.0	12.9	22.9
B5	9.1	19.1	17.6	25.9	13.1	23.1
LT	9.2	19.2	17.8	26.3	13.2	23.2
EXE	9.2	19.2	17.7	26.1	13.2	23.2

☐ Color mode*1

Table 1-3. Color Mode (Unit: Seconds or Less)

Paper size	Simplex printing				Duplex printing	
	Std. mode (Plain paper 1)	Std. mode (Plain paper 2*2)	Low speed mode 1	Low speed mode 2	Std. mode (Plain paper 1)	Std. mode (Plain paper 2*2)
A4	15.3	25.3	23.9	32.6	23.3	33.3
A5	14.9	24.9	23.1	31.0	22.9	32.9
B5	15.1	25.1	23.6	31.9	23.1	33.1
LT	15.2	25.2	23.8	32.3	23.2	33.2
EXE	15.2	25.2	23.7	32.1	23.2	33.2

Note *1: The above speed are the same for any paper feeder including the option cassette.

*2: The mode to be used for papers that are hardly fixed.
As the temperature for the fixation is set higher than that of the other modes, it takes relatively long period of time until the temp. reaches the required level.

CONTINUOUS PRINTING SPEED

This excludes operations that fall under the restrictions on printing speed explained in "1.12 Engine Restrictions" *(p.34)*.

☐ Monochrome mode

Table 1-4. Monochrome Mode (Unit: PPM)

Paper size	Simplex printing			Duplex printing
	Std. mode (Plain paper 1, 2)	Low speed mode 1	Low speed mode 2	Std. mode (Plain paper 1, 2)
A4, B5, LT	30	4.2	2.6	20
A5, EXE	30	4.2	2.6	20
Envelope C6, MON, DL, C5, Com-#10	–	–	2.6	–
User defined size	30	4.2	2.6	–

☐ Color mode

Table 1-5. Color Mode (Unit: PPM)

Paper size	Simplex printing			Duplex printing
	Std. mode (Plain paper 1, 2)	Low speed mode 1	Low speed mode 2	Std. mode (Plain paper 1, 2)
A4, B5, LT	7.5	2.9	2.1	7.5
A5, EXE	7.5	2.9	2.1	7.5
Envelope C6, MON, DL, C5, Com-#10	–	–	2.1	–
User defined size	7.5	2.9	2.1	–

PAPER FEED REFERENCE

Center-line reference for each paper size and for both MP tray and 500-sheet cassette (optional).

PAPER FEED

Table 1-6. Paper Feed

Paper feed		Sheet capacity Height capacity	Paper type/Paper size	Acceptable paper basis weight*
Standard	MP tray	150 sheets	Standard paper: EPSON high quality plain paper	82 g/m^2
		16.5 mm	Plain paper/recycled paper: A4, A5, B5, LT, GLT, HLT, EXE	64 to 90 g/m^2
		60 sheets	Transparency: A4, LT	–
		50 sheets	Labels: A4, LT EPSON coated papers: A4	–
		75 sheets	Thick Paper: A4, A5, B5, LT, GLT, HLT, EXE	91 to 163 g/m^2
		15 sheets	Envelopes: C5, C6, Com-#10, DL, Monarch, ISO-B5	–
		16.5 mm	User defined size: Width 98 to 216/ Length 148 to 297	64 to 163 g/m^2
	Lower paper cassette (C1)	500 sheets	Standard paper: EPSON high quality plain paper	82 g/m^2
		55 mm	Plain paper: A4, LT	64 to 90 g/m^2
Option	Paper cassette unit (C2)	500 sheets	Standard paper: EPSON high quality plain paper	82 g/m^2
		55 mm	Plain paper: A4, LT	64 to 90 g/m^2
	Duplex	–	A4, LT, B5, A5, EXE	64 to 90 g/m^2

Note *: Refer to "1.3 Paper Specifications" *(p.22)*.

OPTIONAL PAPER SOURCE COMBINATION

Installing an optional paper cassette unit enables the printer to load the maximum number of papers as shown in the table below.

Table 1-7. Optional Paper Source Combination

Combination			(1)	(2)
Standard	MP tray	150 sheets*	○	○
	Lower paper cassette (C1)	500 sheets*	○	○
Option	Paper cassette unit (C2)	500 sheets*	–	○
Total number of sheets			650 sheets	1150 sheets

Note *: Standard paper: EPSON high quality plain paper (82 g/m^2)

SUPPORTED PAPER SIZE, TYPE AND ORIENTATION

☐ Supported paper

Table 1-8. List of Supported Paper Size, Type and Orientation

Paper			Paper size Dimensions in mm (inches)		MP tray	Standard lower paper cassette	Optional paper cassette unit	Paper orientation	Duplex printing
			Vertical (length)	Horizontal (width)					
Standard	A4		297.00	210.00	○	○	○	SEF	○
	A5		210.00	148.00	○	–	–	SEF	○
	JIS-B5		257.00	182.00	○	–	–	SEF	○
	LT		279.40 (11.00")	215.90 (8.50")	○	○	○	SEF	○
	HLT		215.90 (8.50")	139.70 (5.50")	○	–	–	SEF	–
	GLT		266.70 (10.50")	203.20 (8.00")	○	–	–	SEF	–
	EXE		266.70 (10.50")	184.15 (7.25")	○	–	–	SEF	○
	User defined paper size		148.00 to 297.00	98.00 to 216.00	○	–	–	Free	–
Special paper	Transparency		A4: 297.00	A4: 210.00	○	–	–	SEF	–
			LT: 279.40	LT: 215.90	○	–	–	SEF	–
	Labels		A4: 297.00	A4: 210.00	○	–	–	SEF	–
			LT: 279.40	LT: 215.90	○	–	–	SEF	–
	Envelopes	MONARCH	190.50 (7 1/2)	98.43 (3 7/8)	○	–	–	SEF	–
		Com-#10	241.30 (9 1/2)	104.78 (4 1/8)	○	–	–	SEF	–
		DL	220.00	110.00	○	–	–	SEF	–
		C5	229.00	162.00	○	–	–	SEF	–
		C6	162.00	114.00	○	–	–	SEF	–
		ISO-B5	250.00	176.00	○	–	–	SEF	–

Note 1: SEF (Short Edge Feed): Set paper to be loaded from its short side.

2: The supported sizes differ depending on the destination.

3: For the orientation of envelopes, refer to "Envelope orientation" *(p.18)*.

4: Curls must be straightened.

☐ Paper orientation

Paper Feed	MP Tray	Cassette (C1/C2)
Paper Orientation/ Feeding Direction	Place Print Side Down. ←	Place Print Side Up. →

☐ Envelope orientation

Feeding Direction	← 01000101	← 01000201
Envelope Types	MONARCH, DL, Com- #10, C6	C5

NOTE 1: *Place papers in the MP tray with the printable side face down.*

2: *When the flap is closed, printing on the reverse (flap side) is not available.*
(The flap may adhere to the transfer belt and open, which may result in paper wrinkles and paper jams.)

3: *Only envelopes without tape or glue can be used.*

4: *Change the fuser unit lever when printing envelopes.*
(For details, refer to "1.14 Notes on Fuser Pressure" (p.35).)

5: *Only envelopes with trapezoid shaped flaps can be fed with the flap opened.*
Envelopes with triangular shaped flaps should not be used. (It may cause a slip off or stack defect.)

PAPER EJECT

Only for face-down (FD) 250 sheets

NOTE: *Standard paper: EPSON high quality plain paper (82 g/m^2)*

DIMENSIONS AND WEIGHT

☐ Stand alone outline dimensions and weight

Table 1-9. Stand Alone Outline Dimensions and Weight

	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
Main unit	431	518	425	37*1 / 33*2
500-sheet cassette unit (option)	408	482	140	5
Duplex unit (option)	132	282	220	0.9

Note : Manufacturing tolerance is ± 5 mm in dimensions and ± 0.5 kg in weight.

Note *1: Includes consumables.

*2: Initial condition (exc. Toner Cartridges)

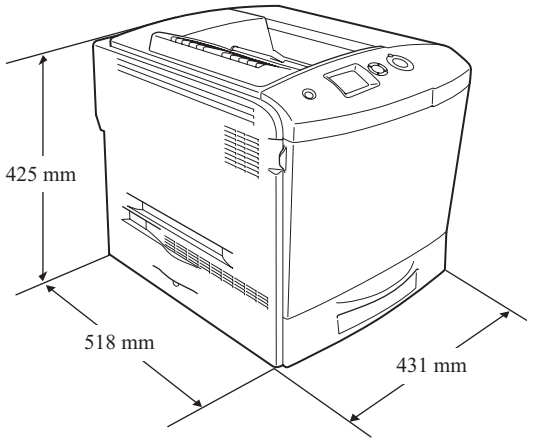


Figure 1-1. Dimensions (Main Unit)

☐ Outline dimensions and weight with options installed

Table 1-10. Outline Dimensions and Weight With Options Installed

	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
Main unit + Optional paper cassette unit	431	518	538	42*
Main unit + Duplex unit	447	518	425	38*
Main unit + Optional paper cassette unit + Duplex unit	447	518	538	43*

Note : Manufacturing tolerance is ± 5 mm in dimensions and ± 0.5 kg in weight.

Note *: Includes consumables.

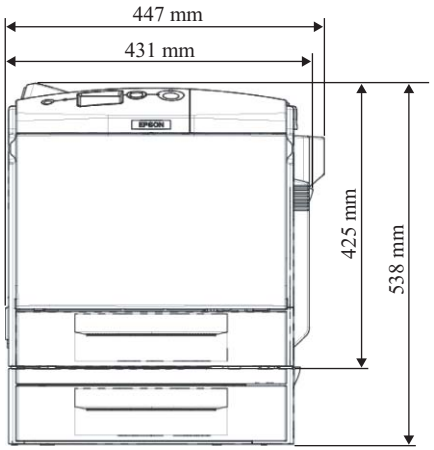


Figure 1-2. Dimensions (Including Options)

CONSUMABLES AND PERIODIC REPLACEMENT UNIT

Table 1-11. List of Consumables and Periodic Replacement Unit

Classification	Replacement unit
Consumables	Toner cartridge (Black, Cyan, Yellow, Magenta)
	Photoconductor unit
	Fuser unit
	Waste toner collector
	Filter
Periodic replacement units	Transfer belt unit (TRANSFER, Assy; ASP)
	Cleaning tape (MOUNTING PLATE, ANTI-STATIC; ASP)
	Cleaner clutch (CLUTCH, CLEANER)
	2nd transfer clutch (CLUTCH, 2ND TRANSFER)
	Paper eject roller (COVER Assy., FU; ASP)
	Post-fixing roller (COVER Assy., FU; ASP)
	Pickup roller (ROLLER ASSY, PICK UP)

NOTE: *For detailed specifications, refer to* "1.9 Consumables/Periodic Replacement Unit" *(p.30)*.

POWER SUPPLY

☐ Power supply operating voltage/frequency
- ■ AC 110 V to 120 V ± 10 %, 50 Hz / 60 Hz ± 3 Hz
- ■ AC 220 V to 240 V ± 10 %, 50 Hz / 60 Hz ± 3 Hz

☐ Power supply for the controller
- ■ DC 5.0 V ± 5 %, 2A
- ■ DC 3.3 V ± 5 %, 5A

POWER CONSUMPTION

The maximum rated current is measured with all engine options and controller options installed.

Table 1-12. List of Power Consumption

			120V	230V
Maximum rated current			10 A or less	6 A or less
Power consumption	Maximum		880 W	900 W
	Continuous printing average	Color	335 W	332 W
		Monochrome	567 W	583 W
	Average during standby with the heater on		96 W	99 W
	Sleep mode*		10 W or less	12 W or less
	Power supply off		0 W	0 W

Note *: Refer to "Table 1-13. Operating State" *(p.20)*.

CONSUMPTION CURRENT

- ☐ 500-sheet cassette unit (option)
  - ■ 5 V / 0.3 A or less
  - ■ 24 V / 0.35 A or less
- ☐ Duplex unit (option)
  - ■ 5 V / 0.1 A or less
  - ■ 24 V / 1.0 A or less

OPERATING STATE

This printer operates in the following 3 operating states.

Table 1-13. Operating State

Operational mode	Explanation
Operating state	Performs a print job in various printing mode upon receiving a command from the controller.
Standby state	Standby state. Switches to this mode automatically after completing a print job (exits out of the operating state) without receiving any commands.
Sleep state	Switches to this mode on receiving a command from the controller. Supporting BAM and International Energy Star Program (power consumption 21W or less within 30 minutes after the printing operation)

PRODUCT LIFETIME

Table 1-14. Product Lifetime

	Product lifetime
Main unit	300,000 pages (color*1) or 600,000 pages (monochrome)*2 or 5 years; whichever comes first.
Optional paper cassette unit	400,000 pages*3
Duplex unit	600,000 pages*4

Note *1: 1,200,000 pages for single color images

*2: 480,000 pages when the ratio of color and monochrome is 1:1 (1,200,000 images)

*3: 2/3 of the main unit max pages (Monochrome 600,000 pages)

*4: When all of the main unit max pages (Monochrome 600,000 pages) are made by duplexing.

NOISE

☐ Sound pressure

Table 1-15. Sound Pressure

		Operating state	Standby state	Sleep state
Main unit	Color mode	56 dB (A)	40 dB (A)	Background noise
	Monochrome mode	56 dB (A)	40 dB (A)	

Note : Reference values

☐ Sound power

Table 1-16. Sound Power

		Operating state	Standby state	Sleep state
Main unit	Color mode	68 dB (A)*	52 dB (A)	Background noise
	Monochrome mode	66 dB (A)*	52 dB (A)	
With all optional installations (reference value)		Exceeds the main unit values by less than 1 db	52 dB (A)	

Note *: The method of measuring and calculation conforms to ISO-7779 and ISO-9296. (Employing standard values for RAL-UZ85 (BAM standard))

Note : (A) indicates that the value has been adjusted with consideration of human sensitivity to frequencies (correction by A characteristic).

EXHAUST GAS

Table 1-17. Exhaust Gas

	Value
Ozone Concentration	0.02 mg/m^3 or less (the measuring method conforms to BAM)
Styrene Concentration	0.07 mg/m^3 or less (the measuring method conforms to BAM)
Fine Particles Concentration	0.075 mg/m^3 or less (the measuring method conforms to BAM)
TVOC	0.40 mg/m^3 or less

1.3 Paper Specifications

1.3.1 Paper Type

- ☐ Standard paper
  - ■ RX-80 paper (Monochrome), 4024 paper (20 lb) (Monochrome), EPSON high quality plain paper (A4)
- ☐ Plain paper
  - ■ 64 g/m^2 to 90 g/m^2 (17 lb to 24 lb) (General purpose copy papers and recycled papers.)
  - ■ Recommended recycled paper: Recommended Recycling Copy classic
- ☐ Special paper
  - ■ EPSON transparency sheets (A4, LT)
  - ■ Labels
  - ■ Thick papers (91 g/m^2 to 163 g/m^2)
  - ■ Envelopes (75 g/m^2 to 105 g/m^2)
  - ■ EPSON coated papers (A4) (Guarantees only the paper feedability)

CHECK POINT

- ■ **lb: Ream weight = Total weigh of 500 sheets of 17" x 22" sized paper**
- ■ **g/m^2: 1 g/m^2 = 0.2659763 lb**
- ■ **Before purchasing a large amount of paper, test the paper if it can be printed normally.**

1.3.2 Paper That May Cause Printing Defects, Paper Jams or Printer Malfunction

- ☐ Transfer paper (carbon paper, non-carbon paper), thermal paper, impact paper, acid paper
- ☐ Paper that is too thin or too thick
- ☐ Paper that is wet or damp
- ☐ Paper with special coatings or color printer paper with processed surfaces
- ☐ Glossy (too slick) paper, or paper with too rough surface
- ☐ Paper that the roughness is significantly different by side
- ☐ Paper with punch holes or perforations
- ☐ Creased, curled or torn paper
- ☐ Irregularly shaped paper or paper with non-perpendicular corners
- ☐ Labels that peel off easily
- ☐ Paper with glue, staples or paper clips attached to it
- ☐ Special paper for ink jet applications (super-fine, glossy, glossy film, etc.)
- ☐ Paper previously used in a thermal or ink jet printer
- ☐ Transparencies for other color laser printers or color photocopiers
- ☐ Paper that has been already printed with other color/monochrome laser printers or photocopiers
- ☐ Sheets of paper stuck together
- ☐ Postcards for ink jet printers, unofficial postcards, and adhesive postcards
- ☐ Iron print coated paper (for both ink jet and laser printers)
- ☐ Paper that is deteriorated or discolored, due to temperatures lower than 235 ºC.

1.3.3 Paper Feed Types

Table 1-18. Paper Feed Types

Feeder		Standard paper	Plain paper	Special paper			
				Transpar-ency	Labels	Thick paper, Coated paper	Envelopes
Standard	MP tray	○	◆	◆	◆	◆	◆
	Paper cassette	○	◆	X	X	X	X
Option	Paper cassette unit	○	◆	X	X	X	X
	Duplex unit	○	◆	X	X	X	X

Note :

○ : Paper feed and image quality is guaranteed.

◆ : Paper feed and printing is possible. However, this is limited to types of paper for general applications. Image quality is not guaranteed.

X : Paper feed is impossible.

1.3.4 Printing Area

MAXIMUM PRINTABLE AREA

☐ 208 mm (width) x 289 mm (length)

NOTE: *Although papers smaller than the maximum printable size can be printed without margins, continuous printing on such papers, especially if the left, right, top, and bottom margins beyond the paper exceed 4 mm, causes contamination inside the printer and paper jam.*

GUARANTEED PRINTING AREA

The guaranteed printing area is shown below. The minimum left, right, top and bottom margins are 4 mm for any type of paper.

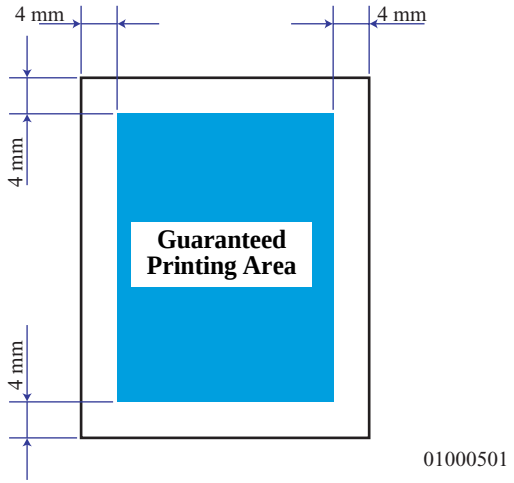


Figure 1-3. Guaranteed Printing Area

1.4 Reliability and Serviceability

1.4.1 Reliability

MPBF/MTBF

☐ 60,000 pages or more*1 / 3,000 hours or more*2

NOTE ***1:*** *Assuming the ratio of color and monochrome is 1:1*
2: *Assuming an average power-on time is 300 hours per month.*

PAPER FEED RELIABILITY

☐ Jam rate

Table 1-19. Jam Rate

Reliability issue	Paper Type			
	Environment A*1		Environment B*2	
	Simplex printing	Duplex printing	Simplex printing	Duplex printing
Standard paper	1/4000 sheets or less	2/4000 sheets or less	3/4000 sheets or less	6/4000 sheets or less
Plain paper	1/2000 sheets or less	2/2000 sheets or less	3/2000 sheets or less	6/2000 sheets or less
Special paper	1/100 sheets or less	–	3/100 sheets or less	–

☐ Paper feed error / multiple sheet feeding*3 / paper wrinkles / creased corner rate*4

Table 1-20. Paper Feed Error/Multiple Sheet Feeding/ Paper Wrinkles/Creased Corner Rate

Reliability issue	Paper Type			
	Environment A*1		Environment B*2	
	Simplex printing	Duplex printing	Simplex printing	Duplex printing
Standard paper	1/1000 sheets or less	2/1000 sheets or less	3/1000 sheets or less	6/1000 sheets or less
Plain paper	1/500 sheets or less	2/500 sheets or less	3/500 sheets or less	6/500 sheets or less
Special paper	1/25 sheets or less	–	3/25 sheets or less	–

Note *1: Conditions for environment A (15 to 28 °C / 35 to 70 % RH)
Paper size: Standard-size
Humidity control: no regulation

*2: Conditions for environment B (10 to 30 °C / 15 to 65, 85 % RH)
Paper size: Standard-size
Humidity control: uncontrolled packed papers

*3: The multiple sheet feeding rate does not include the performance at the boundary of the originally loaded papers and additionally replenished papers.

*4: Counts creases more than C1 mm.

PRINTING START POSITION ACCURACY

Table 1-21. Printing Start Position Accuracy

A4/A3	Simplex printing	Duplex printing
Main scanning direction Reference point (c)	± 2.0 mm	± 3.0 mm
Sub-scanning direction Reference point (a)	± 2.5 mm	± 2.5 mm

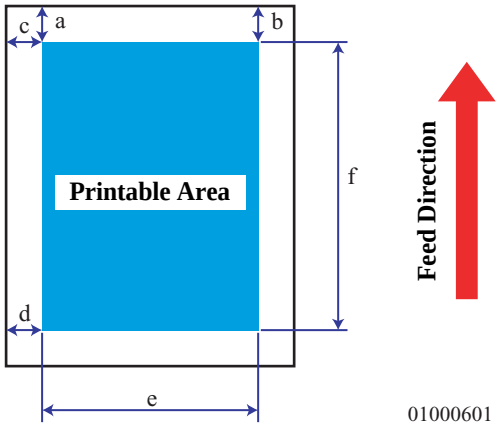


Figure 1-4. Printing Start Position Accuracy

SKEW

Table 1-22. Skew

A4	Simplex printing	Duplex printing
Main scanning direction (| a-b |)	1.47 mm	2.21 mm
Sub-scanning direction (| c-d |)	2.05 mm	3.07 mm

Table 1-23. Length Standard of Measurement

		A4
Simplex printing Duplex printing	Main scanning direction (e)	208 mm
	Sub-scanning direction (f)	289 mm

HEIGHT OF CURL ON OUTPUT PAPER

Table 1-24. Height of Curl on Output Paper

Paper type	Height of Curl
Standard paper, Plain paper	30 mm or less
Transparency	15 mm or less
Other special papers	No regulation

Note 1: The same for simplex and duplex printing

2: Measurement conditions:
Image occupation rate 5 % misaligned monochrome printing, or color printing with 5 % of each color (total 20 %).
Print 10 sheets of 1p/J intermittent printing, then measure after an interval of 1 minute.
Differs in accordance with the image occupation rate/array pattern printing conditions.

1.4.2 Durability

PRINT VOLUME

- ☐ Average: 8,000 pages/month*1
- ☐ Maximum: 48,000 pages/month (Color mode)*2
  120,000 pages/month (Monochrome mode)*3

NOTE ****1:*** *Product lifetime 480,000 pages assuming the ratio of color and monochrome printing is 1:1; 5 years assuming the usage is 8,000 page/months.*

****2:*** *The ratio of color and monochrome printing is 1:1*
Color printing only:30,000 pages/month

****3:*** *6,000 pages (MaxPV/day) x 20 days*

1.4.3 Serviceability

MTTR

- ☐ Average 30 minutes or less
  The MTTR value indicated above represents the time for service personnel to locate and correct the malfunction only, and the time for examining malfunction is not included.

1.5 Service Conditions

AMBIENT TEMPERATURE AND HUMIDITY

Table 1-25. Ambient Temperature and Humidity

	Temperature (ºC)	Humidity (%RH)	Other
Operating	10 to 35	15 to 85	No condensation allowed
Non-operating	0 to 35	10 to 85	

AIR PRESSURE (ALTITUDE)

76 kPa or more (2,500 m or less)

LEVELNESS

Difference between front and back or left and right should be 1 º or less

ILLUMINATION

3,000 lx or less (do not expose to direct sunlight)

1.5.1 Space Requirements

In order to ensure that the printer operates properly, provide at least as much space as shown in the diagram below.

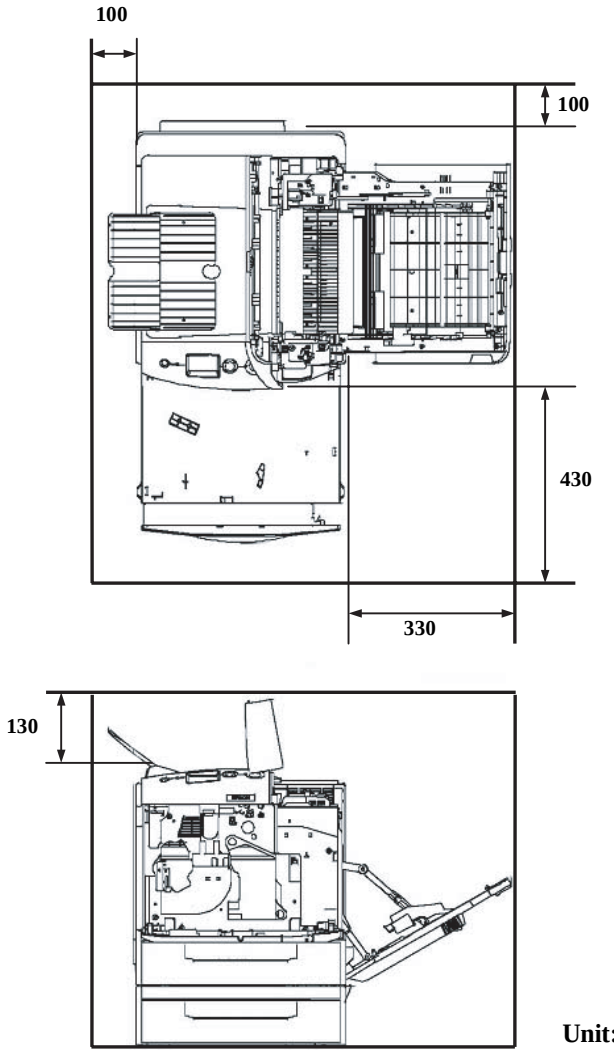


Figure 1-5. Space Requirements

1.6 Conditions for Storage and Transport

AMBIENT TEMPERATURE AND HUMIDITY CONDITIONS

Table 1-26. Ambient Temperature and Humidity Conditions

Condition	Temperature (°C)		Humidity (%RH) (No condensation allowed)		Guarantee period
Normal conditions	0 to 35		15 to 80		12 months after manufacture
Harsh conditions	High	35 to 40	High	80 to 95	Maximum of one month
	Low	-20 to 0	Low	5 to 15	

RESISTANCE TO AIR PRESSURE (ALTITUDE)

0 to 2,500 m
(However, this is not applicable when pressurized to 70.9275 kPa or more during air transportation.)

DROPPING

No damage with 1 corner, 3 edges, and 6 sides dropping when packed.
Conforms to divisional Assessment Standard of Transport (T-AE-05-001).

Table 1-27. Dropping

		Dropping height	Package weight (referential)
Standard	Main unit	42 cm	45.4 kg
Option	Duplex unit	82 cm	1.7 kg
	500-sheet cassette unit	82 cm	6.8 kg

VIBRATION

No damage under the following conditions
Conforms to divisional Assessment Standard of Transport (T-AE-05-001).

Frequency	5 to 55 Hz
Acceleration	1.5 G (However, constant 7.5 mm double amplitude is assumed between 5 and 10 Hz.)
Direction of application	XYZ 3 directions
Frequency sweep	Logarithmic sweep 10 minutes one way.
Number of cycles	3 cycles for each direction (1 hour each)

COMPRESSION

Conforms to divisional Assessment Standard of Transport (T-AE-05-001).

1.7 Electrical Characteristics

NOTE: *The following sections do not include any optional units.*

ELECTRICAL FAST TRANSIENT /BURSTS (AC LINE NOISE)

Ensure the following conditions using evaluation methods compliant with IEC61000-4-4.

- ☐ 1 kV: No errors excluding insignificant dot errors
- ☐ 2 kV: No damage to parts

INSTANTANEOUS OUTAGES

No effect on printing quality.

- ☐ DIP: 1 cycle 100 % (at -10 % of rated current)

RESISTANCE TO STATIC ELECTRICITY

Ensure the following conditions using evaluation methods compliant with IEC61000-4-2 and CISPR 24.

- ☐ Contact electric discharge 4.5 kV: No error on any device after applying
- ☐ Aerial electric discharge 8.5 kV: No error on any device after applying

INRUSH CURRENT

- ☐ 100 A and 1/2 cycles or less for a cold start in an atmosphere at 23 ºC or more.

INSULATION RESISTANCE

- ☐ 10 MΩ or more

WITHSTAND VOLTAGE

No dielectric break down during application of the voltages shown below for a one minute period.

Table 1-28. Withstand Voltage

Model Type	Between primary and secondary supply transformers	Between power supply line and chassis
120 V	AC 1250 V	AC 1000 V
230 V	AC 1500 V	AC 3000 V

LEAK CURRENT

- ☐ 120 V: 0.25 mA or less
- ☐ 230 V: 3.5 mA or less

1.8 Compatible Specification

SAFETY STANDARD

Table 1-29. Safety Standards

Model Type	Applicable Standards
120 V	UL60950 3rd Edition CSA C22.2 No.60950
230 V	IEC60950 3rd Edition

SAFETY STANDARD (LASER TRANSMISSION)

Table 1-30. Safety Standards (Laser Transmission)

Model Type	Applicable Standards
120 V	FDA21CFR Chapter 1, Subchapter J, Section 1010, 1040
200 V series	Compliant with IEC60825-1

Note : Refer to the Laser Specification
Wave length: 770-800 nm
Maximum output rating: 15 mW

EMI STANDARDS

Table 1-31. EMI Standards

Model Type	Applicable Standards
120 V	FCC Part 15 Subpart B, Class B
230 V	EN55022 (CIRSPR Publication 22), Class B EN61000-3-2 (Harmonics) Class A

ELECTRICAL POWER HIGH FREQUENCY

- ☐ 230V: EN61000-3-3 (Flicker)

POWER CONSUMPTION

Conforms to International Energy Star Program standards

MISCELLANEOUS

- ☐ Toner: Have no affect on the human body (conforms to OSHA, TSCA, EINECS)
- ☐ OPC: Have no affect on the human body (conforms to OSHA)
- ☐ Ozone generation: Conforms to UL478 5th edition
- ☐ Materials: Does not contain any materials prohibited in each country, nor harmful substances above the permitted values

1.9 Consumables/Periodic Replacement Unit

CAUTION

The print page-based service life values of the Consumables and Periodical Replacement Parts are guidelines. The number of printable pages changes depending on how they are printed. The number of printable pages decreases depending on the intermittent printing (where a few pages, one to several pages, are printed each time), paper size, paper orientation, thick paper printing, printed document, frequent power-on/off, etc. Hence, the number of printable pages of the consumables and periodical replacement parts may become less than a half depending on the operating conditions and environment of the user.

1.9.1 Specifications

☐ Consumables (replaced by the user)

Table 1-32. Consumables

Name	Configuration	Lifetime (pages)	External dimensions (mm)	Weight (kg)
Toner cartridge (K) (developer cartridge)	Development, Toner hopper	5,000*1	336 (W) 82 (D) 67 (H)	0.9
Toner cartridge (C) Toner cartridge (M) Toner cartridge (Y) (developer cartridge)		2,000*1		0.8
		5,000*1		0.9
Photoconductor unit (a Waste toner collector and a filter unit are included in the package)	Waste toner collection space integrated drum cartridge	Monochrome: 40,000	378 (W) 111 (D) 159 (H)	1.3
		Color: 10,000		
Waste toner collector*2 (A filter is included in the package)	Waste toner tank	Monochrome: 60,000	256 (W) 50 (D) 225 (H)	0.2
		Color: 15,000		
Filter*2	Toner filter Ozone filter	15, 000	327 (W) 37 (D) 46 (H)	0.1
Fuser unit (120V)	Fuser	80,000	394 (W) 113 (D) 140 (H)	2.3
Fuser unit (230V)	Fuser	80,000		2.3

Note *1: Approximate number of printed pages using A4 continuous printing at 5 % image occupation rate.
The cartridge lifetime varies according to the paper size and type of printing (toner save mode etc.).

*2: Replaced at the same time as photoconductor unit or the Waste toner collector.

Note : For details on the part life, see "1.15 Life Details" *(p.36)*.

☐ Periodic replacement units (replaced by service personnel)

Table 1-33. Periodic Replacement Units

Name	Lifetime (pages)
Transfer unit	Monochrome: 100,000 Color: 60,000
Cleaning tape	
Cleaner clutch	150,000
2nd transfer clutch	150,000
Paper eject roller	300,000
Post-fixing roller	300,000
Pickup roller	200,000

1.9.2 Conditions for Storage and Transport

☐ Ambient temperature and humidity conditions

Table 1-34. Ambient Temperature and Humidity Conditions

Condition	Temperature (°C)		Humidity (%RH) (No condensation allowed)		Guarantee period
Normal conditions	0 to 35		15 to 80		18 months (unopened*)
Harsh conditions	High	35 to 40	High	80 to 95	Maximum of one month
	Low	-20 to 0	Low	5 to 15	

Note *: Storage time after opening is 12 months in the normal operating environment.

☐ Resistance to Air Pressure (altitude)
740 to 1013 hPa (2,500 m or less)
(However, this is not applicable when pressurized to 70.9275 kPa or more during air transportation.).

☐ Package dropping
Direction of drop: 1 corner, 6 sides, 3 edges
Dropping height: No damage with the conditions below

Table 1-35. Package Dropping

Package name		Configuration	Dropping height	Reference (package weight)
Toner cartridge (Y, M, C)	2,000	Toner cartridge	82 cm	1.2 kg
Toner cartridge (K, Y, M, C)	5,000	Toner cartridge	82 cm	1.3 kg
Photoconductor unit		Photoconductor unit, Waste toner collector, Filter unit	82 cm	1.98 kg
Waste toner collector		Waste toner collector, Filter unit	82 cm	0.43 kg
Fuser unit		Fuser unit	82 cm	3.2 kg

1.10 Maintenance

Table 1-36. Maintenance

Maintenance item	Period	Maintenance method
• Paper feed roller • Paper feed pad • Retard roller	When paper feed problem occurs	Wipe with a wet or dry cloth.
• Photoconductor wire cleaning	When a warning is issued (Clean Parts a)	Clean by pulling out the cleaning knob on the photoconductor cartridge.
• Exposure window cleaning	When a warning is issued (Clean Parts b)	Clean by repeatedly pulling out the cleaning knob.
• Patch sensor cleaning	When an error is issued (Clean Sensor)	Clean by opening and closing cover D.

1.11 External Appearance and Unit Names

1.11.1 Unit Names

Table 1-37. List of Unit Names

No.	Name	No.	Name	No.	Name
1	Operation panel	7	Lock release lever (Cover A)	13	Rear cover
2	Cover B	8	MP tray	14	AC inlet
3	Output tray	9	Lock release lever (MP tray)	15	Duplex unit (Option)
4	Cover D	10	Handle (right)	16	Optional paper cassette unit
5	Lower paper cassette	11	Handle (left)	17	Cover E
6	Cover A	12	Power switch		

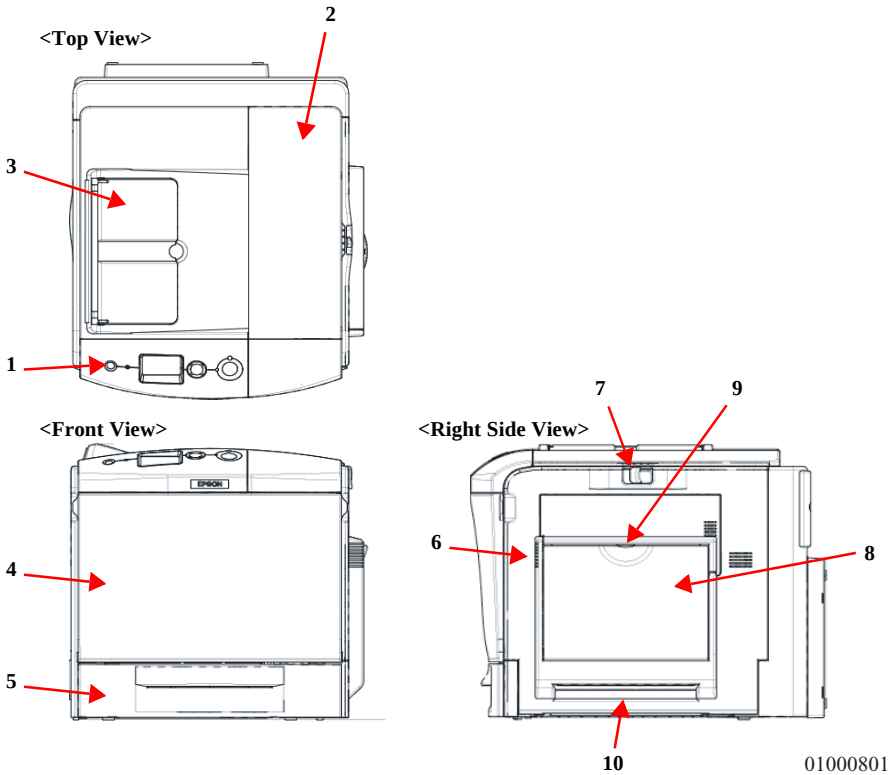


Figure 1-6. External Appearance 1

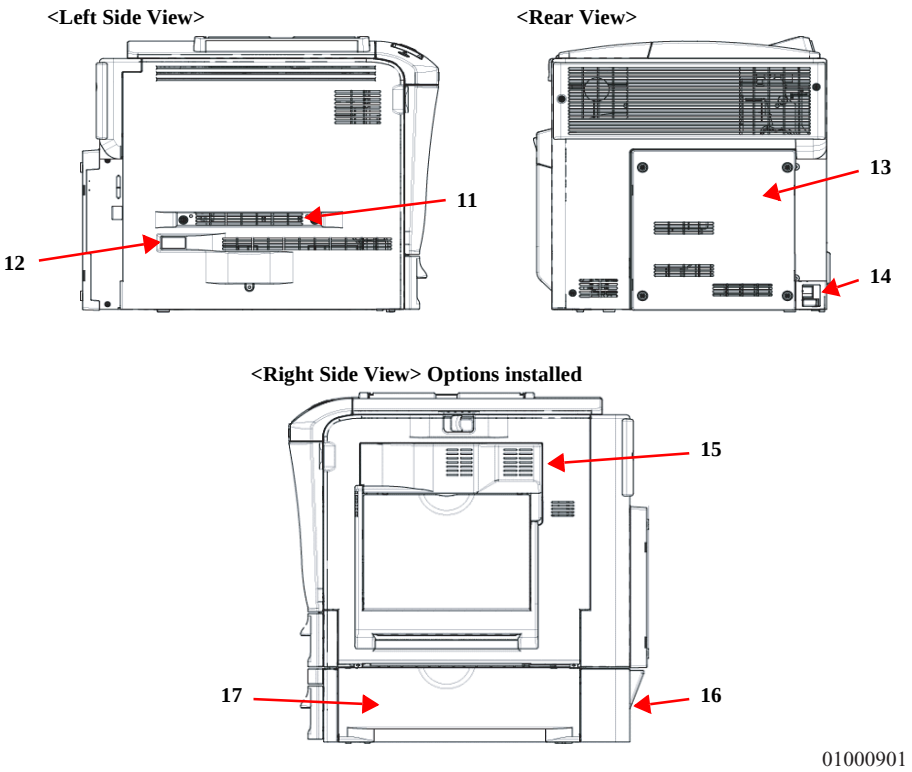


Figure 1-7. External Appearance 2

1.12 Engine Restrictions

1.12.1 Factors Limiting Printing Speed

☐ Fuser cool down control

When the temperature of the Fusing roller edge reaches 235 °C, printing operation stops for about 40 seconds until the temperature falls to 225 °C. If the temperature of the Fusing roller edge reaches 194 °C when printing on smaller width papers, printing operation stops for about 55 seconds until the temperature falls down enough. (Monochrome printing speed becomes slow.)

☐ Toner supply operations within a cartridge during a continuous Monochrome printing.

When performing monochrome printing continuously, the rotary starts rotating in process of print job in order to supply toner. (The speed of simplex monochrome printing turns down.)

1. When the number of continuously printed pages reaches 255 (counted with Vsync), the print process is interrupted while the rotary rotates 360° (until the Vsync counts another 1) to supply toner.
2. When the integrated value of the toner counter reaches a certain level, the print process is interrupted while the rotary rotates 360° (until the Vsync counts another 1) to supply toner.

When performing duplex printing, the printing speed does not turn down as the rotary rotates while the duplex unit is re-feeding the paper.

☐ Toner supply control

After 3 hours have passed since the power-on without any printing operations, developer rollers are rotated to stir toner inside of them in order to prevent banding on printout from occurring. (This may cause delay in printing.)

☐ Patch Control (AIDC)

Patch control is activated by the engine factors on occasions described below.

- At power on
- When the Photoconductor unit is replaced
- When the Toner cartridge is replaced
- When the target value is changed due to the lifetime of the toner cartridge. (It may affect printing speed.)*

Note *: Approximate frequency is as follows. (5 % duty or color printing with 5 % of each color, in case printing 5,000 pages continuously.)

- *In color mode of color model:* *Max. 16 times*
- *In B/W mode (4xB/W mode) of color model:* *4 times*
- *B/W mode:* *4 times*
- *4xB/W mode:* *1-2 times (4 times in 20,000 pages)*

Printing stop time is as follows.

- Color mode: 60 seconds
- B/W mode: 22 seconds
- 4xB/W mode: 52 seconds

1.12.2 Toner Duty Limiting Value

150 % (to prevent Fuser unit from twisting paper jam)

NOTE: *Even if it exceeds 150 %, the engine (mechanical controller) does not force a hard stop.*

1.13 Notes When Replacing Consumables and Installing Optional Products

1.13.1 Consumables

- ☐ Toner cartridge
  - ■ When replacing the toner cartridges on occasion other than the toner end occurs, move the toner cartridge to the replacement position using the control panel.
- ☐ Photoconductor unit
  - ■ Can be replaced while the power supply to the main unit is either on or off.
  - ■ Avoid replacing with a second hand unit before the product lifetime otherwise the lifetime will not be counted correctly.
- ☐ Fuser unit
  - ■ Can be replaced while the power supply to the main unit is either on or off.
  - ■ Avoid replacing with a second hand unit before the product lifetime otherwise the lifetime will not be counted correctly.

1.13.2 Options

- ☐ Duplex Unit
  - ■ Turn off the main unit before installing.
  - ■ When installed with the main unit power supply turned on, the unit will not be detected.
- ☐ Optional paper cassette unit
  - ■ Turn off the main unit before installing.
  - ■ When installed with the main unit power supply turned on, the unit will not be detected.
- ☐ Option parts to expand the controller function
  - ■ Turn off the main unit before installing, or the parts may be broken.

1.14 Notes on Fuser Pressure

Fuser unit is equipped with a pressure setting lever to switch between 2 levels of pressures.
When the lever is not correctly set, toner offset, fix level reduction, paper wrinkle, or OHP haze defects may be caused.

The relation between the fuser pressure and speed mode is as follows.

Table 1-38. The Relation between the Fuser Pressure and Speed Mode

Fuser pressure	Printing speed mode		
	Std. mode	Low speed mode 1	Low speed mode 2
Low pressure	–	–	Envelopes
Standard	Standard paper, plain paper	Thick paper, labels	Transparency

1.15 Life Details

Regarding the lifetime of consumables and periodic replacement units:

☐ Lifetime management methods
When the followings are fulfilled, it is required to replace the consumables or the periodic replacement unit. (For more information, refer to "2.5.5 Control of Consumables and Components Needing Periodic Replacement" *(p.134)*.)

Table 1-39. Lifetime Management Methods

Unit	Conditions
Toner cartridge	• Dot count value • Development operation time
Photoconductor unit	• Cumulative counted number of the Vsync. • Cumulative number of pages counted per color. • Waste toner full detection
Fuser unit	• Cumulative time of rotation of the Gate roller (duration gate clutch is ON) • Cumulative time of rotation of the Main Drive Motor while the temperature of the thermistor located at the edge of the heat roller rises above given level. • Cumulative time of rotation of the Main Drive Motor. • Cumulative time of rotation of the Main Drive Motor while the temperature of the thermistor located at the center of the heat roller rises above given level in Plain paper 2 mode. • Cumulative number of cool-down cycles performed after printing on narrow papers. • Time period that the temperature of the center of the pressure roller is kept above a prescribed level.
Transfer belt unit	• Cumulative counted number of the Vsync. • Number of paper feed for 2nd transfer

☐ Life Details

■ Color Model

Table 1-40. Monochrome Mode (CMYK installed)

			Print Volume: 1kp/M				Print Volume: 8kp/M			
Unit	Specification (page)	Printing speed	Continuous printing (page)	1p/J (page)	2p/J (page)	4p/J (page)	Continuous printing (page)	1p/J (page)	2p/J (page)	4p/J (page)
Photoconductor unit*1	40,000	Std. mode (plain paper 1)	31,100	11,700	17,300	22,700	40,000	13,300	21,000	29,500
		Std. mode (plain paper 2)								
		Low speed mode 1	9,500	7,100	8,200	8,900	10,600	7,700	9,000	9,800
		Low speed mode 2								
Fuser unit*2	80,000	Std. mode (plain paper 1)	80,000*3/50,000*4	51,000	62,000	70,000	80,000*3/50,000*4	80,000	80,000	80,000
		Std. mode (plain paper 2)	78,000	37,000	51,000	62,000	50,000	49,000	80,000	60,000
		Low speed mode 1	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
		Low speed mode 2								
Transfer belt unit*5	100,000	Std. mode (plain paper 1)	100,000	63,900	93,900	100,000	100,000	72,600	100,000	100,000
		Std. mode (plain paper 2)								
		Low speed mode 1	52,600	39,000	44,800	48,400	58,400	42,000	48,900	53,300
		Low speed mode 2								
Cleaner clutch	150,000 cycle	Std. mode (plain paper 1)	1,673,900	140,200	263,200	468,800	5,289,500	148,700	294,800	579,700
		Std. mode (plain paper 2)								
		Low speed mode 1	140,200	72,500	95,500	140,200	148,700	74,700	99,400	149,200
		Low speed mode 2								
2nd transfer clutch	150,000 cycle	Std. mode (plain paper 1)	1,681,300	73,200	142,800	272,700	3,299,200	74,800	149,000	296,300
		Std. mode (plain paper 2)								
		Low speed mode 1	140,300	49,200	73,200	115,700	146,300	49,900	74,800	119,400
		Low speed mode 2								

Note *1: Print volume: 1 kp/M, 8kp/M
Average print ratio is 5 %.
Power ON: Once a day
This indicates the value when the waste toner collector full is not detected in advance.
(If the average print ratio of all colors is 5 %, the collector still has room for waste toner when the part life is detected by the cumulative pages.)

*2: Print volume: 1 kp/M, 8kp/M
Power ON: Once a day

*3: 50 kp/j, makes a pause for more than 1 minute.

*4: Shorten its life when the fusing roller has been used with its edges at high temp. for a long time due to the continuous printing.

*5: Print volume: 1 kp/M, 8kp/M
Average print ratio is 5 %.
Power ON: Once a day

Table 1-41. Color Mode

Unit	Specification (page)	Printing speed	Print Volume: 1kp/M				Print Volume: 8kp/M			
			Continuous printing (page)	1p/J (page)	2p/J (page)	4p/J (page)	Continuous printing (page)	1p/J (page)	2p/J (page)	4p/J (page)
Photoconductor unit*1	10,000	Std. mode (plain paper 1)	10,000	7,000	8,700	9,900	10,000	7,600	9,600	10,000
		Std. mode (plain paper 2)								
		Low speed mode 1	6,200	5,100	5,600	5,900	6,700	5,300	5,900	6,300
		Low speed mode 2								
Fuser unit*2	80,000	Std. mode (plain paper 1)	60,000	42,000	49,000	54,000	80,000	72,000	80,000	80,000
		Std. mode (plain paper 2)	60,000	32,000	42,000	49,000	80,000	38,000	60,000	60,000
		Low speed mode 1	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
		Low speed mode 2								
Transfer belt unit*5	60,000	Std. mode (plain paper 1)	60,500	38,200	47,300	53,600	68,200	41,200	51,800	59,500
		Std. mode (plain paper 2)								
		Low speed mode 1	33,900	27,600	30,500	32,100	36,200	29,200	32,300	34,100
		Low speed mode 2								
Cleaner clutch	150,000 cycle	Std. mode (plain paper 1)	137,600	72,500	95,500	140,200	145,800	74,700	99,400	148,700
		Std. mode (plain paper 2)								
		Low speed mode 1	137,600	72,500	95,500	140,200	145,800	74,700	99,400	148,700
		Low speed mode 2								
2nd transfer clutch	150,000 cycle	Std. mode (plain paper 1)	138,900	73,200	96,800	142,800	146,000	74,800	99,600	149,000
		Std. mode (plain paper 2)								
		Low speed mode 1	138,900	73,200	96,800	142,800	146,000	74,800	99,600	149,000
		Low speed mode 2								

Note *1: Print volume: 1 kp/M, 8kp/M
Average print ratio is 5 %.
Power ON: Once a day
This indicates the value when the waste toner collector full is not detected in advance.
(If the average print ratio of all colors is 5 %, the collector still has room for waste toner when the part life is detected by the cumulative pages.)

*2: Print volume: 1 kp/M, 8kp/M
Power ON: Once a day

*3: 50 kp/j, makes a pause for more than 1 minute.

*4: Shorten its life when the fusing roller has been used with its edges at high temp. for a long time due to the continuous printing.

*5: Print volume: 1 kp/M, 8kp/M
Average print ratio is 5 %.
Power ON: Once a day

■ Monochrome Model

Table 1-42. Monochrome Mode

			Print Volume: 1kp/M				Print Volume: 8kp/M			
Unit	Specification (page)	Printing speed	Continuous printing (page)	1p/J (page)	2p/J (page)	4p/J (page)	Continuous printing (page)	1p/J (page)	2p/J (page)	4p/J (page)
Photoconductor unit*1	40,000	Std. mode (plain paper 1)	40,000	12,800	19,800	27,200	40,000	13,600	21,600	30,600
		Std. mode (plain paper 2)								
		Low speed mode 1	10,200	7,500	8,700	9,500	10,700	7,800	9,100	99,00
		Low speed mode 2								
Fuser unit*2	80,000	Std. mode (plain paper 1)	80,000*3/50,000*4	51,000	62,000	70,000	80,000*3/50,000*4	80,000	80,000	80,000
		Std. mode (plain paper 2)	78,000	37,000	51,000	62,000	50,000	49,000	80,000	60,000
		Low speed mode 1	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
		Low speed mode 2								
Transfer belt unit*5	100,000	Std. mode (plain paper 1)	100,000	63,900	93,900	100,000	100,000	72,600	100,000	100,000
		Std. mode (plain paper 2)								
		Low speed mode 1	52,600	39,000	44,800	48,400	58,400	42,000	48,900	53,300
		Low speed mode 2								
Cleaner clutch	150,000 cycle	Std. mode (plain paper 1)	1,673,900	140,200	263,200	468,800	5,289,500	148,700	294,800	579,700
		Std. mode (plain paper 2)								
		Low speed mode 1	140,200	72,500	95,500	140,200	148,700	74,700	99,400	149,200
		Low speed mode 2								
2nd transfer clutch	150,000 cycle	Std. mode (plain paper 1)	1,681,300	73,200	142,800	272,700	3,299,200	74,800	149,000	296,300
		Std. mode (plain paper 2)								
		Low speed mode 1	140,300	49,200	73,200	115,700	146,300	49,900	74,800	119,400
		Low speed mode 2								

Note *1: Print volume: 1 kp/M, 8kp/M
Average print ratio is 5 %.
Power ON: Once a day
This indicates the value when the waste toner collector full is not detected in advance.
(If the average print ratio of all colors is 5 %, the collector still has room for waste toner when the part life is detected by the cumulative pages.)

*2: Print volume: 1 kp/M, 8kp/M
Power ON: Once a day

*3: 50 kp/j, makes a pause for more than 1 minute.

*4: Shorten its life when the fusing roller has been used with its edges at high temp. for a long time due to the continuous printing.

*5: Print volume: 1 kp/M, 8kp/M
Average print ratio is 5 %.
Power ON: Once a day

1.16 Controller Specifications

1.16.1 Controller Basic Specifications

- CPU: VR5532A (350 MHz)
- Enhanced technology: nPGI, CRIT, RIT (CLC)
- RAM: SDRAM
  - Standard: 64 MB (64 MB SDRAM DIMM in the expansion RAM slot (S0))
  - Expansion RAM slot: 2-slot expansion RAM slot (1 slot is already used by standard RAM) Maximum 512 MB
  - Expansion RAM: 16 MB, 32 MB, 64 MB, 128 MB, and 256 MB RAM DIMM for Epson (from Buffalo)
- Program ROM: 16 MB Flash ROM
- Expansion ROM: 1 slot. Can be used for installing enhanced fonts or PCL5C option.
- Panel: LCD 22 digits, 5 line; 3 LEDs; 6 buttons
- Interface
  - Standard
    - USB interface: 1 ch (Rev. 2.0 HS (with D4 support))
    - Network interface: 1 ch (10Base-T/100Base-TX)
    - Parallel interface: 1 ch (IEEE1284 compliant bi-directional B-type connector, Compatibility, Nibble, ECP)
    - Type-B interface: 1 slot
- Printer setting: Panel setting, EJL command, and MIB.
  Memory element - 128 Kbits serial type EEPROM
- Printer mode
  - Standard: ESC/Page Color, Adobe PostScript 3 (17 fonts), PCL6, PCL5e, ESC/P2, FX, I239X
  - Option: PCL5C
    Possible to operate in color mode of AcuLaser C2600 or of AcuLaser 2600 that upgraded to color model
  - Other: EJL mode
    DCC mode
    RCC mode
- Auxiliary software: Status Sheet, Toner Check Sheet
  Maintenance Mode (Engine Status Sheet, Print Log Report)
  Update function for mechanical controller firmware
  EpsonNet Config (Web)
- Installation method: Fixed to the main body

1.16.2 Controller Configuration

Two types of controllers are defined in the EEPROM to enable switching between color (AcuLaser C2600) and monochrome (AcuLaser 2600) models. Switching between AcuLaser C2600 and AcuLaser 2600 is done by using the model information in the EEPROM.

- Soft jumper 1

1	AcuLaser C2600
2	AcuLaser 2600

- Soft jumper 2-16
  Undefined

NOTE: *This definition is set by the EJL command, not by the control panel and MIB. This setting is changed if the main board is replaced while at work. (Refer to* "5.1.3 Adjustment Execution Timing" *(p.366).**)*

1.16.3 External Interface Specifications

The printer provides the following host interfaces.

- ☐ USB interface (Rev. 2.0 HS, Supports bi-directional (D4))
- ☐ Network interface (10Base-T/100Base-TX)
- ☐ Parallel interface (IEEE1284)
- ☐ Type-B interface

The locations of the respective interfaces are shown below.

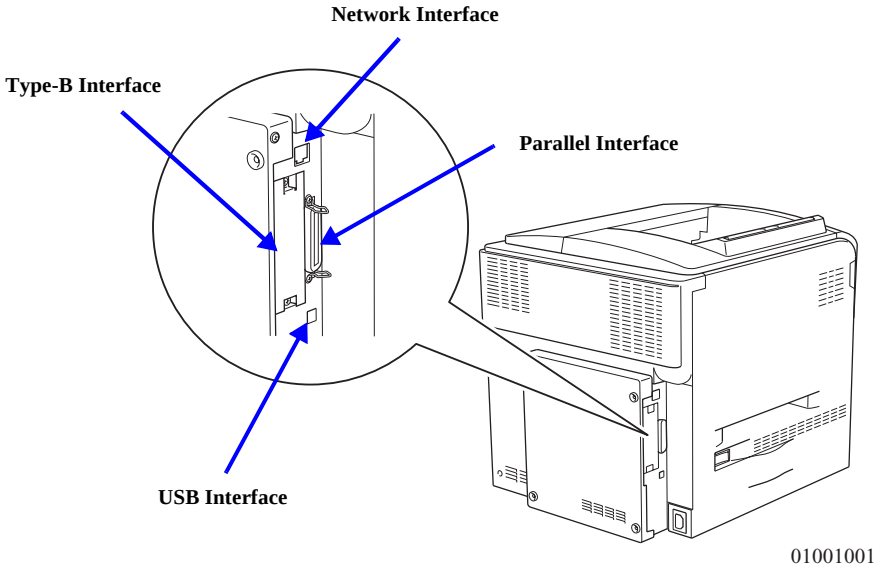


Figure 1-8. Location of External Interfaces

PARALLEL INTERFACE SPECIFICATIONS

- ☐ Interface type: IEEE1284 bidirectional high-speed parallel interface
- ☐ Operation mode: Compatibility, Nibble, ECP
- ☐ Connector type name: 57RE-40360-830B (D7A) DDK or equivalent one
- ☐ Compliant plug: Equivalent to AMPHENOLE

CMD: PJL, EJL, PCL, ESCPAGE-04, ESCPAGECOLOR-01, PCLXL, POSTSCRIPT, PCL5C*1, *2

Note *1: Hidden when operating in monochrome mode.
*2: Added when the PCL5C option DIMM is installed.

At the factory default settings, there are two types of MDL and DES which remain unchanged even if the printer operating mode of the model is changed to color or to 1- or 4-cartridge monochrome.

MDL for the color model is AcuLaser C2600 and for the monochrome model is AcuLaser 2600.
DES for the color model is EPSON AcuLaser C2600 and for the monochrome model is EPSON AcuLaser 2600.

USB INTERFACE SPECIFICATIONS

Universal Serial Bus Specification Rev.2.0 HS is supported.

- ☐ USB model specific number: 33

When the printer is connected to the PC by the USB port, the interface does not support D4. However D4 support is available if the EPSON external LAN option is connected. The CMD of Device ID differs from the parallel interface with D4L3 being added. Printer Name and Product Name are common to both AcuLaser C2600 and AcuLaser 2600.

CMD: PJL, EJL, PCL, ESCPAGE-04, ESCPAGECOLOR-01, PCLXL, POSTSCRIPT, PCL5C*1, *2, D4L3

Note *1: Hidden when operating in monochrome mode.
*2: Added when the PCL5C option DIMM is installed.

NETWORK INTERFACE SPECIFICATIONS

This printer supports 10BaseT/100BaseTX Ethernet interfaces as standard.

- ☐ Printing protocol
  - ■ TCP/IP
    LPR, FTP, IPP, PORT2501, PORT9100
  - ■ Microsoft Network
    Net BIOS over TCP/IP, Net BIOS over NetBEUI
  - ■ Netware
    Operation mode: Standby (factory default setting), NDS Print Server, Bindery Print Server, Remote Printer
  - ■ AppleTalk
- ☐ Management protocol
  - ■ TCP/IP
    SNMP, HTTP, TELNET, DHCP, BOOTP, APIPA, PING, DDNS, mDNS*, SNTP, SSDP, ENPC
  - ■ MS Network (NetBEUI)
    SNMP, ENPC
  - ■ NetWare
    SNMP, ENPC
  - ■ AppleTalk
    SNMP, ENPC

Note *: mDNS is used with Rendezvous.

NOTE: *Entity Type*
Refer to "Option interface specifications" *(p42)*.

OPTION INTERFACE SPECIFICATIONS

The printer is provided with one Type-B optional interface slot as standard.

- ☐ Main System Type: MTP600dpi, PW5100dt600dpi, PRG(*****)rev, AP800ma, SPD0fast, D4
  Asterisks (*****) indicate ROM version.
- ☐ Printer Name: The factory default setting is the same as Product Name.
- ☐ Product Name*1: Color model: AcuLaser C2600
  monochrome model: AcuLaser 2600
- ☐ Emulation Type/Entity Type

Table 1-43. Emulation Type/Entity Type

Emulation	Emulation Type	Entity Type
PS	POSTSCRIPT-00	LaserWriter
ESC/Page Color	ESCPAGECOLOR-01	EPSONPAGECOLOR1
ESC/Page	ESCPAGE-04	–
LJ4	PCL5E-00	EPSONPCL5
I239X	PRPXL24-01	EPSONPRPXL24
GL2	HPGL2-01	EPSONHPGL2
FX	ESCP9	EPSONFX
ESCP2	ESCPL2	EPSONLQ2
PCLXL	PCLXL	EPSONPCLXL
PCL5C*2	PCL5C-00	EPSONPCL5C

Note *1: The product name remains unchanged even if the printer operating mode is switched between color and monochrome. (Remains at factory default settings.)

*2: Only when the PCL5C option DIMM is installed.Hidden when operating in monochrome mode.

1.17 Control Panel

1.17.1 External Appearance and Names

Table 1-44. Indicators

Indicators	Function
LCD	4 lines x 20 characters (132 x 65 dots)
Ready LED	On: The printer is ready to print. Off: The printer cannot print. If an error occurs, the printer cannot print and the Ready LED goes off.
Data LED	On: Received data still remains in the printer unprinted. Off: Valid print data does not exist in the printer. Blinking: The printer is receiving or processing print data.
Error LED	Blinking 1: The printer can recover from the error and continue the job when the [Start/Stop] button is pressed. If "Auto Cont" is set to ON, the error is cancelled automatically after a certain interval without pressing the [Start/Stop] button. On: An error that must be canceled by the operator has occurred. When the error is canceled the printer recovers automatically. Blinking 2: An error where the operator must cancel the error and press the [Start/Stop] button has occurred. Setting "Auto Cont" to ON has no effect.

Note : Blinking 1: The LED blinks on and off at 0.3 second intervals.
Blinking 2: The LED blinks on and off at 0.6 second intervals.

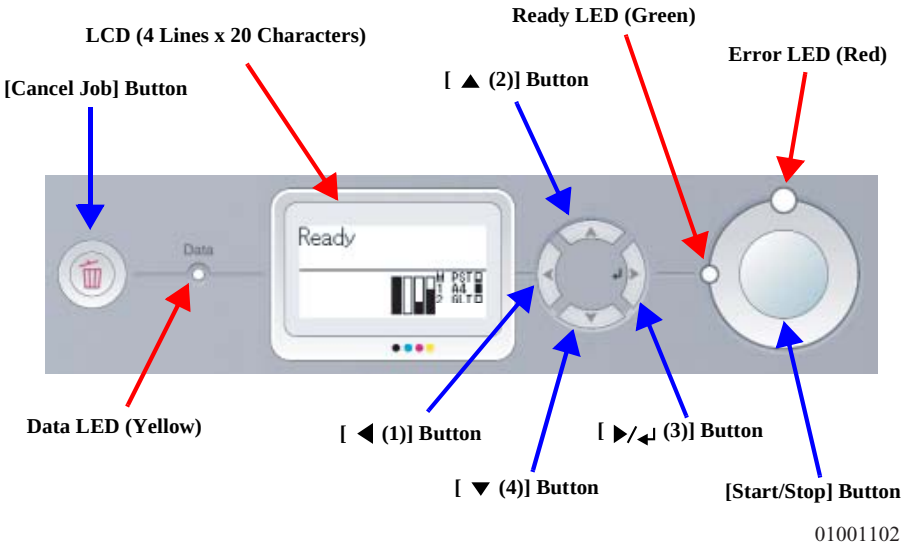


Figure 1-9. External View of Control Panel

☐ Summary of Button Functions

Table 1-45. Summary of Button Functions

Button Name	Ready	Offline	Error	Warning	Panel Setting	Help
Start /Stop	Sets printer to offline.	1. Short press: Sets printer to Ready. 2. Long press (2 seconds or longer): Forcibly ejects paper.	1. Recoverable error: Cancels the error. 2. Unrecoverable error: Displays “Unable Clear Error”.	Switches between Ready/Offline while a warning is displayed	Leaves Panel Setting and returns to the original mode	In the Help mode Switches between Ready/Offline
Cancel Job	1. Short press: Deletes printing data. 2. Long press (2 seconds or longer): Deletes all printing data.	1. Short press: Deletes printing data. 2. Long press (2 seconds or longer): Deletes all printing data.	1. Short press: Deletes printing data. 2. Long press (2 seconds or longer): Deletes all printing data.	1. Short press: Deletes printing data. 2. Long press (2 seconds or longer): Deletes all printing data.	Leaves Panel Setting 1. Short press: Deletes print data. 2. Long press (2 seconds or longer): Deletes all print data.	Leaves Help 1. Short press: Deletes print data. 2. Long press (2 seconds or longer): Deletes all print data.
▶/↵ (3)	Enters the Information Menu in the Panel Setting mode.	Enters the Information Menu in the Panel Setting mode.	Enters the Information Menu in the Panel Setting mode.	Enters the Information Menu in the Panel Setting mode.	1. When a Menu is displayed: Switches to displaying an Item. 2. When a non-executable Item is displayed: Switches to displaying a Value. 3. When an executable Item is displayed: Executes printing or processing. 4. When a Value is displayed: Sets the Value.	Disabled
◀ (1)	Disabled	Disabled	1. When Help is available: Enters Help. 2. When Help is not available: Disabled	1. When Help is available: Enters Help. 2. When Help is not available: Disabled	1. When a Menu is displayed: Returns to the normal mode. 2. When an Item or Value is displayed: Returns to the previous level.	Leaves the Help mode and returns to the original mode.
▲ (2)	Disabled	Disabled	Disabled	Switches the warning displayed when multiple warnings occur.	1. When a Menu is displayed: Displays the previous/next Menu 2. When an Item is displayed: Displays the previous/next Item 3. When a Value is displayed: Displays the previous/next Value	Displays the previous/ next Help screen.
▼ (4)	Disabled	Disabled	Disabled	Switches the warning displayed when multiple warnings occur.	1. When a Menu is displayed: Displays the previous/next Menu 2. When an Item is displayed: Displays the previous/next Item 3. When a Value is displayed: Displays the previous/next Value	Displays the previous/ next Help screen.

1.17.2 Panel Settings List

The printer settings are listed below.

Underlined value in the Setting value column are factory default settings.

Information Menu

Setting	Setting values
Status Sheet	–
Toner Check Sheet*1	–
Reserve Job List*2	–
Form Overlay List*3	–
Network Status Sheet*4	–
AUX Status Sheet*5	–
USB Extl/FstatusSht*6	–
PS3 Status Sheet	–
PS3 Font List	–
ESC/Page Font Sample*7	–
LJ4 Font Sample	–
ESCP2 Font Sample	–
FX Font Sample	–
I239X Font Sample	–
C Toner*8*9	E******F to E□□□□□□F
M Toner*8*9	E******F to E□□□□□□F
Y Toner*8*9	E******F to E□□□□□□F
K Toner*8*9	E******F to E□□□□□□F
Toner Ave.*8*9	E******F to E□□□□□□F
Photocon*8	E******F to E□□□□□□F
Fuser Unit*8	E******F to E□□□□□□F
Total Pages*8	0 to 99999999
Color Pages*8*10	0 to 99999999
B/W Pages*8*10	0 to 99999999

Note *1: Not displayed when operating in B/W mode.

*2: Displayed only when job is registered in Quick Print Job.

*3: Displayed only when there is Form Overlay. All the registered color forms and monochrome forms are printed.
It will be printed that each form is a color or monochrome.

*4: Displayed only when “Network I/F = On”.

*5: Displayed only when Type-B interface with Level 3 support is installed and started up with “AUX I/F = On”.

*6: Displayed only when a USB device with D4 support is connected and started up with “USB I/F = On”.

*7: Not displayed on the panel.

*8: This item is for display only and cannot be changed.

*9: If the printer is operating in B/W mode, only K toner is displayed. When operating in 4xB/W mode, the display change as follows.
C Toner → KC Toner
M Toner → KM Toner
Y Toner → KY Toner
K Toner → KK Toner
Toner Ave.: Added when operating in 4xB/W mode.

*10:Availabe only in the color mode.

Tray Menu

Setting	Setting values
MP Tray Size	**A4**, A5, B5, LT, HLT, GLT, EXE, MON, C10, DL, C5, C6, IB5
LC1 Size	**A4**, LT
LC2 Size*1	**A4**, LT
MP Type	**Plain**, Letterhead, Recycled, Color, Transprncy, Labels
LC1 Type	**Plain**, Letterhead, Recycled, Color
LC2 Type*1	**Plain**, Letterhead, Recycled, Color

Note *1: Displayed only when the optional paper cassette unit is installed.

Emulation Menu

Setting	Setting values
Parallel	**Auto**, LJ4, ESCP2, FX, I239X, PS3, GL2, P5C*2
USB	**Auto**, LJ4, ESCP2, FX, I239X, PS3, GL2, P5C*2
Network	**Auto**, LJ4, ESCP2, FX, I239X, PS3, GL2, P5C*2
AUX*1	**Auto**, LJ4, ESCP2, FX, I239X, PS3, GL2, P5C*2

Note *1: Displayed only when the Type-B interface is installed.

*2: Displayed only when the optional P5C module is installed.

Printing Menu

Setting	Setting values
Page Size	**A4**, A5, B5, LT, HLT, GLT, EXE, MON, C10, DL, C5, C6, IB5, CTM*1
Wide A4	**Off**, On
Orientation	**Port**, Land
Resolution	**600**, 300
RITech	**On**, Off
Toner Save	**Off**, On
Image Optimum	**Auto**, Off, On
Top Offset	-99.0 to **0.0** to 99.0 mm step 0.5 mm
Left Offset	-99.0 to **0.0** to 99.0 mm step 0.5 mm
Top Offset B	-99.0 to **0.0** to 99.0 mm step 0.5 mm
Left Offset B	-99.0 to **0.0** to 99.0 mm step 0.5 mm

Note *1: CUSTOM (user defined) size (width x length) is as follows.
Length: 148 mm ~ 297 mm
Width: 98 mm ~ 216 mm

Setup Menu

Setting	Setting values
Lang	**English**
Lang	Français
Sprache	Deutsch
Lingua	Italiano
IDIOMA	ESPAÑOL
SPRÅK	SVENSKA
Sprog	Dansk
Taal	Nederlands
Kieli	SUOMI
Líng.	Português
语言	中文
顯示語言	繁體中文
언어	한국어
Time Out	0, 5 to **60** to 300 step 1
Paper Source	**Auto**, MP, LC1, LC2*1
MP mode	**Normal**, Last
ManualFeed	**Off**, 1st Page, EachPage
Copies	**1** - 999
Quantity*2	**1** - 999
Duplex	**Off**, On
Binding	**Long Edge**, Short Edge
Start Page*3	**Front**, Back
Paper Type	**Normal**, Thick, Trnsprnc
Page Side	**Front**, Back
Skip Blank Page*4	**Off**, On
Auto Eject Page	**Off**, On
Size Ignore	**Off**, On
Auto Cont	**Off**, On
Page Protect	**Auto**, On
Toner Out	**Stop**, Continue
LCD Contrast	0 to **7** to 15
Panel Lock*5	**Off**, On

Note *1: Displayed and selectable only when the optional paper cassette unit is installed.

*2: Not displayed on the panel nor printed on the Status Sheet. Can be set with EJL and PJL. It is not stored on EEPROM.

*3: Displayed and selectable only when the duplex unit is installed. The following paper sizes are available for duplex printing; A4, A5, Letter, EXE, and B5. Other sizes are available for simplex printing.

*4: Valid in the PCL5e and ESC/Page, ESC/P2, FX, and I239X modes.

*5: Not displayed on the panel nor printed on the Status Sheet. Can be set with EJL, EPSON Net Config (Web), etc.

Mode Config Menu

Setting	Setting values
Remove All Toner*1	–
Change Mode*2 B/W	–
Change Mode*2 4xB/W	–
Change Mode*2 Color	–
KC Toner*3	Enable, Disable
KM Toner*3	Enable, Disable
KY Toner*3	Enable, Disable
KK Toner*3	Enable, Disable

Note *1: Removes all C, M, Y, and K toners. Used for example, at shipping.
This operation is executable only from the panel. Operation from EJL and MIB are not supported.

*2: Switches the printer operating mode (B/W mode, 4xB/W mode, or color mode).
This operation is executable only from the panel. Operation from EJL and MIB are not supported.
Current mode is not displayed.

- B/W: Starts the process for removing C, M, and Y toners. Reboot the printer after removing the C, M and Y toners. After the reboot, the printer becomes a B/W mode.
- 4xB/W: Replaces the C, M, and Y toners with K toners. Reboot the printer after replacing the C, M and Y toners. After the reboot, the printer becomes a 4xB/W mode.
- Color: Changes from the monochrome mode (B/W mode or 4xB/W mode) to the color mode. When changing from B/W mode, reboot the printer after installing the C, M and Y toners. When changing from 4xB/W mode, reboot the printer after replacing the K toners in the C, M, and Y toner positions with the C, M, and Y toners. After the reboot, the printer becomes a color printing mode.

*3: The toner cartridge specified with KC, KM, KY and KK is made disabling. It is displayed only 4xB/W mode.
This operation is executable only from the panel. Operation from EJL and MIB are not supported.

Reset Menu

Setting	Setting values
Clear Warning	–
Clear All Warnings	–
Reset	–
Reset All	–
SelecType Init	–
Change Toner*1	C (KC)*2
Change Toner*1	M (KM)*2
Change Toner*1	Y (KY)*2
Change Toner	K (KK)*2

Note *1: Not displayed operating in B/W mode.

*2: Characters in the bracket are displayed in 4xB/W mode.

Quick Print Job Menu*1

Setting	Setting values
User	xxxxxxxxxxxxxxx
Job*2	xxxxxxxxxxxxxxx
Copies*3	1 ~ 999
Delete*3*4	–

Note *1: This menu is not displayed when none of Verify Job, Re-print Job, or Stored Job is registered.

*2: This item is displayed when at the User display, “Value” (User name) is selected and the Enter switch is pressed.

*3: This item is displayed, selectable, and executable when at the Job display, “Value” (Job name) is selected and the Enter switch is pressed.
Exits the SelecType mode after execution.

*4: By executing “Delete” the menu changes to “Job”. User is displayed when no jobs are registered.
Exits SelecType when there are no users.

Confidential Job Menu*1

Setting	Setting values
User	xxxxxxxxxxxxxxxx
Enter Password*2	xxxx
Job*3	xxxxxxxxxxxxxxxx
Copies*4	1 ~ 999
Delete*4*5	–

Note *1: This menu is not displayed when no Confidential Job is registered.

*2: This item is displayed when at the User display, “Value” (User name) is selected and the Enter switch is pressed.
Passwords are entered using the 1 [◀], 2 [▲], 3 [▶/↵], and 4 [▼] buttons.

*3: After the password is input at the Enter Password display, if the password entered is correct, this item is displayed.

*4: This item is displayed, selectable, and executable when at the Job display, “Value” (Job name) is selected and the Enter switched is pressed.
Exits the SelecType mode after execution.

*5: By executing “Delete”, the menu changes to “Job” User is displayed when no jobs are registered.
Exits SelecType when there are no users.

Parallel Menu*1

Setting	Value
Parallel I/F	**On**, Off
Speed	**Fast**, Normal
Bi-D	Nibble, **ECP**, Off
Buffer Size	**Normal**, Maximum, Minimum

Note *1: After this item is changed, the setting value takes effect after a warm boot or after the power is turned on again. While it is reflected in the Status Sheet and EJL read-back, the actual change takes effect after a warm boot or after the power is turned on again.

USB Menu

Setting	Value
USB I/F*1	**On**, Off
USB Speed*1	**HS**, FS
USB ExtI/Fconfg*2	**No**, Yes
Get IP Address*3	Panel, Auto, PING
IP Address*3*4*5	0.0.0.0 to 255.255.255.255
Subnet Mask*3	0.0.0.0 to 255.255.255.255
Gate Way*3	0.0.0.0 to 255.255.255.255
Netware*3	On, Off
AppleTalk*3	On, Off
MS Network*3	On, Off
Rendezvous*3	On, Off
USB Ext I/F Init*3	–
Buffer Size*1	**Normal**, Maximum, Minimum

Note *1: After this item is changed, the setting value takes effect after a warm boot or after the power is turned on again. While it is reflected in the Status Sheet and EJL read-back, the actual change takes effect after a warm boot or after the power is turned on again.

*2: Displayed only when a USB external device with D4 support is connected.
Changed to “USB Config = No” automatically when exiting the panel settings.

*3: Displayed only when a USB external device with D4 support is connected, and “USB Config = Yes”
Content of the display depends on the USB external device settings.

*4: Displayed only when “Get IPAddress = Auto”. Cannot be changed.

*5: When Get IPAddress is changed from “Panel” or “PING” to “Auto”, the panel setting values are saved.
Then when “Auto” is changed to “Panel” or “PING”, the saved setting values are displayed.
192.168.192.168 if the settings are not made from the panel.

Network Menu*1

Setting	Value
Network I/F	**On**, Off
Network Config	**No**, Yes
Get IP Address*2	Panel, **Auto**, PING
IP Address*2*3	0.0.0.0 to 255.255.255.255
Subnet Mask*2	0.0.0.0 to 255.255.255.255
Gate Way*2	0.0.0.0 to 255.255.255.255
Netware*2	**On**, Off
AppleTalk*2	**On**, Off
MS Network*2	**On**, Off
Rendezvous*2	**On**, Off
Link Speed*2	**Auto**, 100 Full, 100 Half, 10 Full, 10 Half
Buffer Size	**Normal**, Maximum, Minimum

Note *1: After this item is changed, the setting value takes effect after a warm boot or after the power is turned on again. While it is reflected in the Status Sheet and EJL read-back, the actual change takes effect after a warm boot or after the power is turned on again.

*2: Displayed and selectable only when “Network Config = Yes”.

*3: The actual valid value is displayed (but cannot be changed) when “Get IPAddress = Auto”.
When “Get IPAddress = Auto” is changed to “Panel” or “PING”, the former value set for “Panel” or “PING” is displayed.
When “Get IPAddress = Auto”, IP Address is not shown on the Status Sheet.

AUX Menu*1*2

Setting	Value
AUX I/F	**On**, Off
AUX Config*3	**No**, Yes
Get IP Address*3*4	Panel, Auto, PING
IP Address*3*4*5	0.0.0.0 to 255.255.255.255
Subnet Mask*3*4	0.0.0.0 to 255.255.255.255
Gate Way*3*4	0.0.0.0 to 255.255.255.255
Netware*3*4	On, Off
AppleTalk*3*4	On, Off
MS Network*3*4	On, Off
Rendezvous*3*4*6	On, Off
AUX Init*3*4	–
Buffer Size	**Normal**, Maximum, Minimum

Note *1: After this item is changed, the setting value takes effect after a warm boot or after the power is turned on again. While it is reflected in the Status Sheet and EJL read-back, the actual change takes effect after a warm boot or after the power is turned on again.

*2: Displayed only when Type-B host interface is installed

*3: Displayed and selectable or executable when a Type-B host interface supporting Level 3 is installed. When the printer becomes printing ready, “AUX Config = No” returns automatically.

*4: Displayed and selectable or executable when “AUX Config = Yes” is selected.
The value of the setting is valid when the printer is ready to print and the network card is started again. For this reason, once the setting value is changed, executing “AUX Status Sheet” of the Test Print menu before the panel setting mode is exited results in the setting value before the change being used in printing. Not displayed in the Status Sheet of the main unit.

*5: The actual valid value is displayed (but cannot be changed) when “Get IPAddress = Auto”.
When “Get IPAddress = Auto” is changed to “Panel” or “PING”, the former value set for “Panel” or “PING” is displayed.

*6: Displayed and can be set when Type-B supporting Rendezvous is installed.

ESC/Page Menu*1

Setting	Value
Auto CR	**On**, Off
Auto FF	**On**, Off
CR Function	**CR**, CR+LF
LF Function	**CR+LF**, LF
FF Function	**CR+FF**, FF
Error Code	**Ignore**, Space
Avoid Error	**Off**, On
PGI	**On**, Off
TriColorSpace	**Normal**, sRGB
CM Media Type	**Off**, Opt1, Opt2
Process Mode	**1**, 2

Note *1: Not displayed on the panel nor printed on the Status Sheet.

LJ4 Menu

Setting	Value
FontSource	**Resident**, Download*1, ROM A*2
Font Number	**0** to available (Max 65535)
Pitch*3	0.44 to **10.00** to 99.99 cpi step 0.01cpi
Height*3	4.00 to **12.00** to 999.75 pt. step 0.25 pt.
SymSet	**IBM-US**, Roman-8, Roman-9, ECM94-1, 8859-2 ISO, 8859-9 ISO, 8859-10 ISO, 8859-15 ISO,PcBlt775, IBM-DN, PcMultiling, PcE.Europe, PcTk437, PcEur858, Pc1004, WiAnsi, WiE.Europe, WiTurkish, WiBALT, DeskTop, PsText, VeInternati, VeUS, MsPublishin, Math-8, PsMath, VeMath, PiFont, Legal, UK, ANSI ASCII, Swedis2, Italian, Spanish, German, Norweg1, French2, Windows, McText, PcIcelandic, PcLt774, PcTurk1, PcPortugues, PcEt850, PcTurk2, PcCanFrench, PcSl437, PcNordic, 8859-3 ISO, 8859-4 ISO, WiBaltic, WiEstonian, WiLatvian, Mazowia, CodeMJK, BpBRASCII, BpAbicomp, PcGk437, PcGk851, PcGk869, 8859-7 ISO, WiGreek, Europe3, PcCy855, PcCy866, PcLt866, PcUkr866, PcLit771 8859-5 ISO, WiCyrillic, Bulgarian, Hebrew7, 8859-8 ISO, Hebrew8, PcHe862, Arabic8, PcAr864, 8859-6 ISO, OCR A, OCR B, Pc866Cyr, Pc866Ukr,WinCyr, ISOCyr, Pc8Grk, Pc851Grk, WinGrk, ISOGrk, Greek8, Pc862Heb, Pc864Ara, HPWARA
Form	5 to **60***4 to **64***4 to 128 Lines
Source SymSet*5	0 to **277** to 3199
Dest SymSet	0 to **277** to 3199
CR Function	**CR**, CR+LF
LF Function	**LF**, CR+LF
Tray Assign	4, **4K**, 5S

Note *1: Displayed only when some download fonts exist.

*2: Displayed only when the optional font is installed in the ROM socket.

*3: One of them is displayed, depending on the type of font selected. Fixed pitch font is “Pitch” and proportional font is “Height”. For bitmap fonts, neither is displayed. Both “Pitch” and “Height” may be displayed. (when “Font Source” or “Font Number” is changed when PCL5 is not started internally)

*4: 60 when A4/LT configuration is LT, and 64 when it is A4.

*5: When Value of SymSet is changed, when the font specified by Font Number does not have its Symbol Set, this causes Font Source = Resident and Font Number = 0. Therefore, if printing using this Symbol set is desired, values of Font Source and Font Number must be set to the font supporting this Symbol set.

GL2 Menu

Setting	Value
GLMode	**LJ4GL2**, GLlike
Scale	**Off**, A0, A1, A2, A3
Origin	**Corner**, Center
Pen	**Pen0**, Pen1, Pen2*1, Pen3*1, Pen4*1, Pen5*1, Pen6*1
End	**Butt**, Square, Triangular, Round
Join	**Mitered**, Miteredbeveled, Triangular, Round, Beveled, None
Pen0	0.05 to **0.35** to 5.00 mm step 0.05 mm
Pen1	0.05 to **0.35** to 5.00 mm step 0.05 mm
Pen2*1	0.05 to **0.35** to 5.00 mm step 0.05 mm
Pen3*1	0.05 to **0.35** to 5.00 mm step 0.05 mm
Pen4*1	0.05 to **0.35** to 5.00 mm step 0.05 mm
Pen5*1	0.05 to **0.35** to 5.00 mm step 0.05 mm
Pen6*1	0.05 to **0.35** to 5.00 mm step 0.05 mm

Note *1: Displayed only in the GLlike mode.

PS3 Menu

Setting	Value
Error Sheet	**Off**, On
Coloration*1	**Color**, Mono
Image Protect	**Off**, On

Note *1: Displayed only when operating in color mode.

ESCP2 Menu

Setting	Value
Font	**Courier**, Prestige, Roman, Sans serif, Roman T, Orator S, Sans H, Script, OCR A, OCR B
Pitch	**10cpi**, 12cpi, 15cpi, Prop.
Condensed	**Off**, On
T.Margin	0.40 to **0.50** to 1.50 inch step 0.05 inch
Text	1 to **62***1 to **66***1 to available (Max: 67) Lines
CGTable	**PcUSA**, Italic, PcMultilin, PcPortugue, PcCanFrenc, PcNordic, PcTurkish2, PcIcelandic, PcE.Europe, BpBRASCII, BpAbicomp, Roman-8, PcEur858, ISO Latin1, 8859-15ISO, PcSl437, PcTurkish1, 8859-9 ISO, Mazowia, CodeMJK, PcGk437, PcGk851, PcGk869, 8859-7 ISO, PcCy855, PcCy866, PcUkr866, PcLit771, Bulgarian, Hebrew7, Hebrew8, PcHe862, PcAr864, PcAr864Ara, PcAr720, PcLit774, Estonia, ISO Latin2, PcLat866
Country	**USA**, France, Germany, UK, Denmark, Sweden, Italy, Spain1, Japan, Norway, Denmark2, Spain2, LatinAmeric, Korea, Legal
Auto CR	**On**, Off
Auto LF	**Off**, On
Bit Image	**Dark**, Light, BarCode
ZeroChar	**0**, ϕ

Note *1: 62 when A4/LT configuration is LT, and 66 when it is A4.

FX Menu

Setting	Value
Font	**Courier**, Prestige, Roman, Sans serif, Script, Orator S, OCR A, OCR B
Pitch	**10cpi**, 12cpi, 15cpi, Prop.
Condensed	**Off**, On
T.Margin	0.40 to **0.50** to 1.50 inch step 0.05 inch
Text	1 to **62**[*1] to **66**[*1] to available (Max:67) Lines
CGTable	**PcUSA**, Italic, PcMultilin, PcPortugue, PcCanFrenc, PcNordic, PcTurkish2, PcIcelandic, PcE.Europe, BpBRASCII, BpAbicomp, Roman-8, PcEur858, ISO Latin1, 8859-15 ISO
Country	**USA**, France, Germany, UK, Denmark, Sweden, Italy, Spain1, Japan, Norway, Denmark2, Spain2, LatinAmeric
Auto CR	**On**, Off
Auto LF	**Off**, On
Bit Image	**Dark**, Light, BarCode
ZeroChar	**0**, ϕ

Note *1: 62 when A4/LT configuration is LT, and 66 when it is A4.

I239X Menu

Setting	Value
Font	**Courier**, Prestige, Gothic, Orator, Script, Presentor, Sans serif
Pitch	**10cpi**, 12cpi, 15cpi, 17cpi, 20cpi, 24cpi, Prop.
Code Page	**437**, 850, 858, 860, 863, 865
T.Margin	0.30 to **0.40** to 1.50 inch step 0.05 inch
Text	1 to **63**[*1] to **67**[*1] to available (Max:67) Lines
Auto CR	**Off**, On
Auto LF	**Off**, On
Alt. Graphics	**Off**, On
Bit Image	**Dark**, Light
ZeroChar	**0**, ϕ
CharacterSet	1[*2], 2[*2]

Note *1: 63 when A4/LT configuration is LT, and 67 when it is A4.

*2: 1 when A4/LT configuration is LT, and 2 when it is A4.

Support Menu*1

Setting	Value
HDD Format*2	–
PS3 HDD Init*2	–
Sleep Mode*3	5, 15, **30**, 60, 120, 180, 240Min
LCD Backlight*4	**Auto**, On, Off

Note *1: Displayed only when the “Support Mode” has been activated by a special operation when the power is turned on.

*2: Displayed and executable only when the optional HDD unit is installed.

*3: Default switching time to Sleep Mode is 30 minutes.
Sleep Mode cannot be disabled by panel setting.

*4: Cannot be set with EJL and MIB.

Printer Adjust Menu*1

Setting	Value
Normal*2	-4 ~ 5
Normal Back*2	-4 ~ 5
Thick*2	-4 ~ 5
Trnsprnc*2	-4 ~ 5
Envelop*2	-4 ~ 5
Highland*3	0, 1
Feed Offset*4	0 ~ **5** ~ 15
Scan Offset*4	-3.5 to **0.0** to 3.5 step 0.5 mm
Feed Offset2*4	-3.5 to **0.0** to 3.5 step 0.5 mm
Scan Offset2*4	-3.5 to **0.0** to 3.5 step 0.5 mm

Note *1: Displayed only when the “Support Mode” has been activated by a special operation when the power is turned on.
This menu is not localized.

*2: Adjusts the secondary transfer bias. The setting value is held by the engine.
If this setting value is changed, the printer reboots after the setting is changed and exits the menu.

*3: Set the highland support mode. 1: Highland mode, 0: Normal mode.
If this setting value is changed, the printer reboots after the setting is changed and exits the menu.

*4: If this setting value is changed, the printer reboots after the setting is changed and exits the menu.

Maintenance Menu*1

CAUTION

"Definition Noise" and "Gradation Noise" in the Maintenance Menu is designed for developing/evaluating the product. Never execute these items while servicing.

Setting	Value
Engin Status Sheet	–
Print Log Report	–
Reset TR Counter	–
Reset CT Counter	–
Reset CL Counter*2	–
Configuration Sheet	–
Roller Timing	0 ~ 255*3
Cleaner Timig	0 ~ 255*3
Clear Error Log	–
Definition Noise	0 ~ **3** ~ 7
Gradation Noise	0 ~ **3** ~ 7

Note *1: Displayed only when the "Maintenance Mode" has been activated by a hidden operation when the power is turned on.
This menu is not localized.

*2: Resets both the Cleaner clutch and the 2nd transfer clutch counters. The printer reboots after the execution.

*3: The setting holds in engine controller.
If this setting value is changed, the printer does not reboot.

USER SETTING ITEMS OTHER THAN THE ONES IN THE SETTING MENU

The following is a list of user settings not included in the Setup Menu.
These items are not cleared with Initialization in the Initialization Menu.

Item	Setting value	Default	Setting Method
PrinterName	32-byte character string	Product name abbreviation	EJL, PrinterName command
Device ID MFG	32-byte character string	(Undefined)	EJL
Device ID MDL	32-byte character string	(Undefined)	EJL
Device ID DES	32-byte character string	(Undefined)	EJL
Device ID CID	32-byte character string	(Undefined)	EJL

1.17.3 Explanation of Menu and Settings

The following are items specific to this printer.

Information Menu

- Toner Check Sheet
  Prints a check sheet for checking the level of toner remaining in each of the toner cartridges when operating in color or 4xB/W mode.
  When operating in color mode, the check sheet is printed using all C, M, Y, and K toners.
  When operating in 4xB/W mode, the check sheet is printed using the black toner and each of the black toners in the C, M, and Y toner positions. (Refer to "1.24 Toner Check Sheet" *(p.79)*.)
- Toner Ave.
  This menu is available only when the printer is in the B/W mode. It displays the average amount of toner left in the four black toner cartridges.
- Color Pages, B/W Pages
  Displayed only when operating in color mode. When operating in 1- or 4-cartridge monochrome mode, only the Total Pages is displayed.
  On the Engine Status Sheet, all information is printed regardless of the mode.

Setup Menu

- Lang
  Simplified Chinese (China), traditional Chinese (Taiwan), and Korean are added to language settings.
- Toner Out
  Sets whether to stop printing by causing "Toner Out" error or continue printing without causing the error.
  By default, printing is stopped by causing "Toner Out" error.
  When operating in 4xB/W mode, printing continues until all toners meet the "Toner Out" condition. Printing does not stop if there is at least one cartridge with remaining toner.
  In color mode, it is possible to continue printing in monochrome mode if the black toner is not in "Toner Out" conditions even when the color toners are.

Mode Config Menu

- Remove All Toner
  Specify this operation when removing all toners from the printer.
  Execution of the operation is as follows.

Table 1-46. Remove All Toner

Step	Panel Message	Operation
1	Please Wait	
2	Remove Toner (first (Y) toner cartridge)	Open the cover and remove the corresponding toner. Close the cover.
3	Please Wait	Jump to the last step when operating in B/W mode.
4	Remove Toner (second (M) toner cartridge)	Open the cover and remove the corresponding toner. Close the cover.
5	Please Wait	
6	Remove Toner (third (C) toner cartridge)	Open the cover and remove the corresponding toner. Close the cover.
7	Please Wait	
8	Remove Toner (fourth (K) toner cartridge)	Open the cover and remove the corresponding toner. Close the cover.
9	Please Wait	
10	Please Shutdown	Turn off the power.

Turn on the power again after all toners are removed. "Install x Toner" is displayed and the printer enters the toner installation mode. Operation cannot be canceled during processing. When operating in B/W mode, "Please Shutdown" is displayed after "Please Wait" when the first cartridge is removed, and then the process finishes.

- Change Mode B/W
  Execute this operation for replacing the toner cartridges when switching from color or 4xB/W mode to B/W mode. When the operation is complete, the printer reboots automatically and switches to B/W mode.

- Change Mode 4xB/W
  Executes this operation for replacing the toners when switching from color or B/W mode to 4xB/W mode. When the operation is complete, the printer reboots automatically and switches to 4xB/W mode.
- Change Mode Color
  Executes this operation for replacing the toners when switching from B/W mode or 4xB/W mode to color mode. When the operation is complete, the printer reboots automatically and switches to color mode. Operation for switching from B/W mode is different from that from 4xB/W mode.
- KC Toner, KM Toner, KY Toner, KK Toner
  Specifies a toner cartridge(s) to stop using it (them). This item is displayed only when the printer is in 4xB/W mode. To specify the cartridge, print the Toner Check Sheet and check the four bars printed on the sheet. The bars are printed with the corresponding cartridge's names (KK, KM, KC, and KY). Enter the name to stop using the cartridge whose bar is light and faint. This enables the printer to provide stable print quality. Disabling all cartridges is not allowed. And when an incorrect cartridge or no cartridge is installed, this setting cannot be made. The cartridges disabled should be set to "Enable" to be used again.

  The setting is not saved in controller's EEPROM. The setting is saved in each toner cartridge. This operation is executable only from the panel. Operation from EJL and MIB are not supported.

NOTE 1: *For example, when "Change Mode 4xB/W" is selected, and if a cyan toner cartridge is installed instead of a black toner cartridge while "Install C TnrCart" is displayed on the panel, the message turns to "Please wait" followed by "Replace Toner C → K" to prompt the operator to replace the cartridge with a black one. This process continues until three black toner cartridges are set in place. If the selected color mode is different from the combination of the toner cartridge(s) installed in the printer for some reason (such as turning off the power while replacing the cartridges), the same process will occur.*

2: *About Change Mode*
If the printer power is off before the finish of Change Mode process (before the insertion or installation or exchange the last toner cartridge), the mode does not change to new mode.
The mode will change to new mode after detecting last correct toner cartridge.
Therefore, the mode switch can be canceled by turning off the power while displaying "Change Toner to y", "Remove Toner", or "Install x TnrCart". Do not turn off the power while displaying "Please Wait".

Support Menu

- Sleep Mode
  Specifies the time to enter Sleep Mode. (Unit is in minutes.)
  The printer enters Sleep Mode after the specified time.
- LCD Backlight
  Controls the panel's backlight.

Table 1-47. Backlight Status by Condition

Setting	When Power is OFF	From Power ON to End of the Self Test	During Sleep Mode	Other Than the Statuses Left
Auto	OFF	ON	OFF	ON
On	OFF	ON	ON	ON
Off	OFF	ON	OFF	OFF

Printer Adjust Menu

- Secondary transfer bias setting
  Sets the secondary transfer bias for Normal (plain paper), Normal Back (reverse side of plain paper), Thick, Trnsprnc, and Envelop sheets.
  Values can be set in 10 levels, from - 4 to 5.
  If this setting value is changed, the printer reboots after the setting is changed and exits the menu.
- Highland
  Correct abnormal printing by the abnormal electrical discharge in highland area.
  0: Normal, 1: Highland setting on

Table 1-48. Highland

	FRAM Address	Setting value	Comment
Highland = 0	56, 57, 58, 59 28	0 0	Vpp Highland Flag
Highland = 1	56, 57, 58, 59 28	-50 1	Vpp Highland Flag

Maintenance Menu

CHECK POINT

Basically, the adjustment program (LPssp) is used to make the adjustments described below. For details, refer to Chapter 5 " Adjustment" *(p.364)*.

- ☐ Reset TR Counter
  Resets the counter of the transfer belt unit consumption. The counter must be reset after the transfer belt unit is replaced with a new one. Performing this operation reboots the printer.
  The setting of the Separation roller timing (FRAM Address 98) and Cleaner timing (FRAM Address 97) will be reset simultaneously. After end of this setting, print "Configuration Sheet" and set the Roller Timing and Cleaner Timing.
- ☐ Reset CT Counter
  Resets the counter of the cleaning tape consumption. This operation must be performed whenever the cleaning tape is replaced with a new one, regardless of the reason. Performing this operation reboots the printer.
- ☐ Configuration Sheet, Roller Timing, Cleaner Timing
  - ■ Configuration Sheet:
    Print the adjustment sheet for contact timing for the transfer roller and cleaner.
    The adjustment is done according to the following procedures.
    1. Confirm the Roller Timing and Cleaner Timing of Maintenance Menu is zero.
    2. Print the Configuration Sheet.
    3. Calculate the Roller Timing and Cleaner Timing from the print result.
    4. Input the Roller Timing and Cleaner Timing from above results.
    5. Again, print the Configuration Sheet and check the result.
  - ■ Roller Timing: Set the value to FRAM Address 98
  - ■ Cleaner Timing: Set the value to FRAM Address 97
- ☐ Reset CL Counter
  Resets the counter of the cleaner clutch and the 2nd transfer clutch consumption.

1.17.4 Special Operations

LIST OF SPECIAL OPERATING FUNCTIONS

The following is a list of the special operating functions supported by this printer. Do not let these functions (except Hex Dump, Support mode, and Initialization of panel settings) available to users.

Table 1-49. List of Special Operating Functions

Function	Operating procedure
Hex Dump	Turn on the power while pressing the [Start/Stop] button.
Support mode	Turn on the power while pressing the [▼] button.
Initialization of EEPROM	Turn on the power while pressing the [Start/Stop] + [Cancel Job] + [◀] buttons.
Initialization of panel settings	Turn on the power while pressing the [Cancel Job] button.
Forced erase of flash ROM module	Turn on the power while pressing the [Cancel Job] + [▲] + [▼] + [▶/↵] buttons.
Update program ROM	Turn on the power while pressing the [Start/Stop] + [Cancel Job] + [▼] buttons.
Copy ROM module	Turn on the power while pressing the [Start/Stop] + [Cancel Job] + [▶/↵] button.
Maintenance mode	Turn on the power while pressing the [◀] + [▲] + [▼] + [▶/↵] buttons.
Update engine program ROM	Turn on the power while pressing the [Start/Stop] + [Cancel Job] + [▲] + [▼] buttons.
RAM check of all sectors	Turn on the power while pressing the [Start/Stop] + [◀] + [▲] + [▶/↵] buttons.
Reset CPU when a service call occurs	Press the [Cancel Job] + [◀] + [▲] + [▼] + [▶/↵] buttons when a service call error occurs.
Display detailed information when a service call occurs	Press the [Cancel Job] + [◀] + [▶/↵] buttons when a service call error occurs
Print an error sheet	Press the [▶/↵] button after CPU reset when a service call error occurs.

1.18 Printer Status

1.18.1 List of Printer Messages

The following is a list of messages displayed by the printer.

Table 1-50. List of Printer Messages

Display	Sort	Error LED status	Status code
(Displays when turn on the power)	Status	–	–
Service Req Cffff	Service call error*1	Blinking (All LEDs blink simultaneously)	6000
Service Req Eggg	Service call error*1	Blinking (All LEDs blink simultaneously)	6001 to 6999
Formatting HDD	Status	–	–
Optional RAM Error	Error	On	–
ROM CHECK	Status	–	–
RAM CHECK	Status	–	–
HDD CHECK	Status	–	–
Unable Clear Error	Status	On	–
SELF TEST	Status	–	–
Reset All	Status	All blinking	1004
Reset	Status	–	1004
Cancel All Print Job	Status	–	1003
Cancel Print Job	Status	–	1003
Please Shutdown	Status	–	–
Jam- Paper Size Error	Error	On	4016
Paper Jam W W W W W*2	Error	On	4234
NonGenuineToner uuuu	Error	Blinking 2	4241 to 4255
Toner Cart Error uuuu	Error	On	4238
Remove Toner	Error	On	4258
Install uuuu TnrCart	Error	On	4235
Install Photoconductor	Error	On	4235

Table 1-50. List of Printer Messages

Display	Sort	Error LED status	Status code
Install Waste T Box	Error	On	4235
Install Fuser	Error	On	4235
Clean Sensor	Error	On	4228
Replace Toner uuuu	Error	Blinking 2	4236
Change Toner to x	Error	On	4259 to 4262
Replace Photoconductor	Error	On	4236
Replace Waste T Box	Error	On	4236
Replace Fuser	Error	On	4236
Printer Open	Error	On	4239
Manual Feed sss*3	Error	Blinking 2	1013
Turn Paper	Error	On	4013
Can't Print Duplex	Error	Blinking 1	3005
Paper Out ttt*4 sss*5	Error	On	4010
Paper Set ttt*4 sss*5	Error	Blinking 1	3003
Print Overrun	Error	Blinking 1	3000
Mem Overflow	Error	Blinking 1	3001
Duplex Memory Overflow	Error	Blinking 1	3004
Invalid Data	Error	Blinking 1	3007
Color Data Received	Error	Blinking 1	3008
Invalid HDD	Error	On	4202
Invalid N/W Module	Error	On	4240
Invalid PS3	Error	On	4201
Invalid P5C	Error	On	4256
Invalid AUX I/F Card	Error	On	4014
Invalid ROM A	Error	On	4003
Write Error ROM P	Error	On	4006
Please Wait	Status	–	1019
Reset to Save	Status	–	–
Writing ROM P	Status	–	1005
Menus Locked	Warning	–	–

Table 1-50. List of Printer Messages

Display	Sort	Error LED status	Status code
(Displayed during Panel Setting)			
Reserve JobCanceled	Warning	–	2565
Form Data Canceled	Warning	–	2570
Hard Disk Full	Warning	–	2569
PS3 Hard Disk Full	Warning	–	2561
Can't Print	Warning	–	2072
Collate Disabled	Warning	–	2013
Check Paper Size	Warning	–	2004
Image Optimum	Warning	–	2002
Check Paper Type	Warning	–	2008
Need Memory	Warning	–	2003
Format Error ROM A	Warning	–	2000
Form Feed	Status	–	1008
(Displayed during test printing)			
Warming Up	Status	–	1006
Calibrating Printer	Status	–	1014
Cooling Down	Status		1016
Offline	Status	–	1001
Cancel Print Job (by host)	Status	–	1003
Clean Parts v v	Warning	–	2065~2071
uuuu Toner Low	Warning	–	2571
Worn Photoconductor	Warning	–	2571
Waste Toner Box Near full	Warning		2571
Worn Fuser	Warning	–	2571
Worn Transfer Unit	Warning	–	2571
Sleep	Status	–	1007
NonGenuine Toner Cartridge	Warning	–	2571
Ready	Status	–	1000
(Displayed during printing)	Status	–	1009

Table 1-50. List of Printer Messages

Display	Sort	Error LED status	Status code
(Communication with inactive I/F)	Status	–	1012
(Job being executed (ready))	Status	–	1002

Note *1: For details, refer to "1.18.6 Service Call Error Messages" *(p71)*.

*2: W = MP, A (feed cover), B (fuser top cover), C1, or C2

*3: The appropriate value among those for Paper Size in the panel settings is displayed.

*4: The appropriate value among those (except Auto) for Paper Source in the panel settings is displayed.

*5: The appropriate value among those for paper size in the panel settings Tray Menu is displayed.

1.18.2 Status Messages and Troubleshooting

The following are items specific to this printer.

Sleep

☐ Explanation
The Sleep Mode in AcuLaser C2600/2600 is applying to Blue Angel Mark and Energy Star Program.
Turns to sleep mode automatically in 30 minutes. (Default)

1.18.3 Warning Messages and Troubleshooting

The following lists the items in the specification specific to this printer.
Warnings do not affect the status of the LEDs.

Clean Parts v v (v = a, b)

☐ Explanation/Remedy
Open cover D (front cover), pull and push the lever indicated by "v" several times, and then close the cover to clear the error.

- a: For cleaning the photoconductor wire (Cleaning Knob a)
- b: For cleaning the exposure window (Cleaning Knob b)

The bit allocation of status code is as follows.

- a: bit 0
- b: bit 1

For details on cleaning, refer to "Patch Sensor" *(p.388)* or "Exposure Window" *(p.388)*.

uuuu Toner Low

☐ Explanation
When remaining toner is low level, this message will appear.

Mode	uuuu
Color Mode	C, M, Y, K
B/W mode	K
4xB/W mode	KC, KM, KY, KK

NOTE: *In 4xB/W mode, this message will appear when the mean value of four cartridges reaches the low level.*

1.18.4 Error Messages and Troubleshooting

The following are items specific to this printer.

Remove Toner

☐ Explanation
This message is displayed to indicate the specific toner cartridge to be removed when switching the printer operating mode (color, B/W, or 4xB/W).

☐ Remedy
Open the cover, remove the specified cartridges, and close the cover to proceed to the next step.

Install uuuu TnrCart

☐ Explanation
The uuuu indicates a name of toner cartridge that is not installed. Even when two or more Toner cartridges are not installed, only one color is displayed at a time. Even in 4xB/W mode, only K is displayed as uuuu.

☐ Remedy
Open the cover, install the cartridge(s) indicated in the message, and close the cover to proceed to the next step.

Change Toner to x

☐ Explanation
When replacing the toner, this message is displayed to indicate that the toner needs to be replaced with toner "x".
x = Y, M, C, or K in color mode
x = K in B/W mode or 4xB/W mode

☐ Remedy
Open the cover, replace the specified cartridges with the cartridges indicated on the panel, and close the cover to proceed to the next step.

NonGenuineToner uuuu

☐ Explanation
A non-genuine Toner cartridge is installed.
uuuu = YMCK in color mode.
uuuu = KK KC KM KY in 4xB/W mode.

☐ Remedy
This is cleared when a correct toner cartridge is installed and the cover is closed.
If the [Start/Stop] button is pressed without replacing the toner cartridge, the error changes to a warning and the printer becomes printable state.

NOTE: *Do not disclose the following information to the users.*
Criteria for judging a toner as non-genuine.
- *Manufacturer of the toner is not EPSON (when the character string "EPSON" cannot be detected).*
- *Toner Low Flag is set but the toner remaining is not reached to the rated value.*
- *Toner capacity is not the rated value, (2 K: 80, 5 K: 200)*

Clean Sensor

☐ Explanation
The ADC sensor is stained.

☐ Remedy
Open and close Cover D (front cover) until "Clean Sensor" is cleared.

Printer Open

☐ Explanation
Cover A, B, D and/or E is opened.
E is not displayed unless paper is fed from the optional cassette.

☐ Remedy
Close all the covers to clear the error.

NOTE: *The bit allocation of composite cover open errors is as follows.*
bit 0: A, B, D and/or E cover is open. Other bits are not in use.

Paper Jam W W W W (W = MP, C1, C2, E, A, B)

☐ Explanation

There is a paper jam at the position W indicated above.
The priority order when there are multiple paper jams is as follows.
MP > A > B > E > C1 > C2

NOTE: *The bit allocation of status code (composite jam) is as follows.*
A: bit1, B: bit2, C1: bit3, C2: bit4, MP: bit5
No bit is allocated to E. Displayed together with C2.

☐ Remedy

- MP: Paper jam in MP Tray
  Remove the paper from the MP Tray, and open and close Cover A to clear the error.
- C1: Paper jam in the standard cassette
  Remove the jammed paper from the standard cassette and then set the cassette again to clear the error.
- C2: Paper jam in the optional cassette
  Remove the paper from the optional cassette, set the cassette again, and open and close Cover E to clear the error.
- A, B: Paper jam in the paper feed
  Remove the paper from the paper feed and close Cover A or Cover B to clear the error.

Explanation	MP bit5	A bit1	B bit2	C1 bit3	C2 bit4	Panel/MIB View
Jam in the MP tray	○	○				MP, A
Jam in the standard cassette		○		○		A, C1
Jam in the optional cassette		○			○	A, E, C2
Retained after fixing (paper is retained in the fuser)		○	○			A, B
Gate in sensor not reached (jam in the standard tray or near the duplex refeed)		○				A
Transfer out sensor not reached (jam near the intermediate transfer media)		○				A
Fuser out sensor not reached (jam near the fuser unit)		○	○			A, B
Paper eject in sensor not reached (jam in front of the paper eject)		○	○			A, B
Retained at gate in sensor (jam in the standard tray or near the duplex refeed)		○				A
Retained before the paper eject (jam near the paper output area)		○	○			A, B
Remaining before the gate (jam in the standard tray or near the duplex refeed)		○				A
Remaining after transfer (jam near the intermediate transfer media)		○				A
Remaining at the fuser out sensor (jam near the fuser unit)		○	○			A, B
Remaining before the paper eject (jam in front of the paper exit)		○	○			A, B

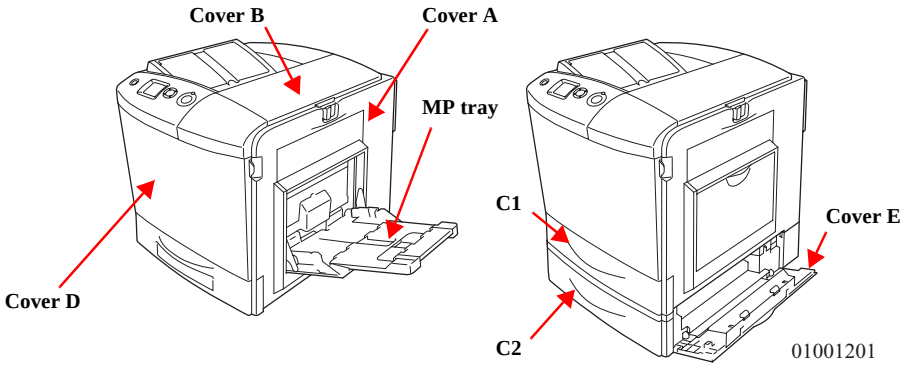


Figure 1-10. Cover Names

Color Data Received

☐ Explanation
This error occurs when the printer is in B/W mode or 4xB/W mode and receives color data. It occurs as soon as the printer receives the data (at beginning of the job).

☐ Remedy
Press the [Job Cancel] button to delete the job, or press the [Start/Stop] button after converting the color data into monochrome.

NOTE: *Setting the "Auto Continue" to ON allows color data to be automatically converted to monochrome and printed without the error.*
Valid only for ESC/Page and PS3.

Invalid P5C

☐ Explanation
This error occurs when the P5C option other than for this printer is installed or when the P5C option is installed when operating in monochrome mode.

☐ Remedy
This error is cleared if the P5C option is removed after turning off the power.

Toner Cart Error uuuu

☐ Explanation
This error occurs when the toner cartridge is broken.

☐ Remedy
This error is cleared after the corresponding cartridge is changed to normal one and the printer is rebooted.
The corresponding toner cartridge automatically moves to the exchange position when the error occurs.
uuuu = KK KC KM KY in 4xB/W mode.

NOTE: *The condition is judged by GSOD (Video I/F status);*

- *Bit6: Abnormality Y of the CS memory*
- *Bit5: Abnormality M of the CS memory*
- *Bit4: Abnormality C of the CS memory*
- *Bit3: Abnormality K of the CS memory*

Turn Paper

☐ Explanation
After printing, printer detects if the width of the paper that is set on MP Tray is narrower than that specified by the driver.

☐ Remedy
The error is cleared by removing paper from the MP Tray. Set the paper in the correct direction.
This error will occur when the paper width specified by the printer driver is 210 mm or more and actual paper width of printing is 180mm or less.

Replace Toner uuuu

☐ Explanation/Remedy
This message will appear when the toner out or the toner cartridge is reached to exchange position after execution of the "Change Toner x" of "Reset Menu".

1.18.5 Help Messages

The following are the contents of the Help messages displayed on the LCD panel.

☐ Jam-Paper Size Error: 4016

The page is printed on the different size of paper, set correct size paper to the tray	Remove all paper from MP tray and close it  01001302	Open Cover A and pull out any sheet of paper  01001402	Pull out any sheet of paper in duplex unit  01001502	Close cover A and set paper to MP Tray	Press the button to close the help  01001601

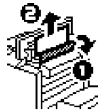
☐ Paper JAM MP: 4234

Remove all paper from MP tray  01001702	Pull out any sheet of paper and close MP Tray  01001302	Open and close Cover A  01001802	Press the button to close the help  01001601

☐ Paper Jam A: 4234

Remove all paper from MP tray and close it  01001702	Open Cover A and pull out any sheet of paper  01001402	Pull out any sheet of paper in duplex unit  01001502	Close cover A and set paper to MP Tray	Press the button to close the help  01001601

☐ Paper Jam B: 4234

Open Cover A and B  01001902	Pull out any sheets of paper  01002002	Close covers B and A	Press the button to close the help  01001601

☐ Paper JAM C1: 4234

Pull out the standard lower cassette  01002102	Pull out any sheet of paper  01002202	Reinsert the paper cassette	Press the button to close the help  01001601

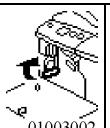
☐ Paper Jam C2: 4234

Pull out the optional paper cassette  01002302	Pull out any sheet of paper  01002402	Reinsert the optional paper cassette	Press the button to close the help  01001601

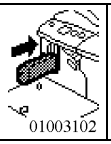
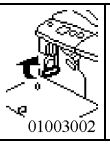
☐ Paper Jam E: 4234

Open Cover E  01002502	Pull out any sheet of paper  01002602	Close Cover E	Press the button to close the help  01001601

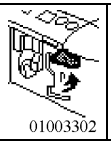
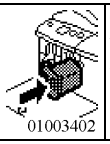
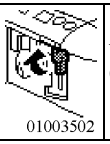
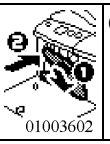
☐ Remove Toner: 4258

Open Cover D  01002702	Open the toner cartridge cover  01002802	Remove the toner cartridge  01002902	Close the toner cartridge cover  01003002	Close Cover D	Press the button to close the help  01001601

☐ Install uuuu TnrCart: 4235

Open Cover D  01002702	Open the toner cartridge cover  01002802	Install the toner cartridge  01003102	Close the toner cartridge cover  01003002	Close Cover D	Press the button to close the help  01001601

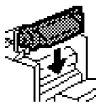
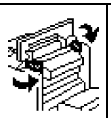
☐ Install Photoconductor: 4235

Open Cover D  01002702	Remove the waste toner collector  01003202	Turn the blue knob to release position  01003302	Insert photo-conductor unit  01003402	Turn the blue knob to the original position  01003502	Set the waste toner collector  01003602	Close cover D	Press the button to close the help  01001601

☐ Install Waste T Box: 4235

Open Cover D  01002702	Set the waste toner collector  01003602	Close Cover D	Press the button to close the help  01001601

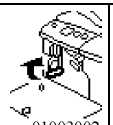
☐ Install Fuser: 4235

Open Cover A and B  01001902	Install Fuser unit  01003702	Turn the handles to lock position  01003802	Close covers B and A	Press the button to close the help  01001601	

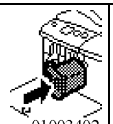
☐ Clean Sensor: 4228

Open Cover D  01002702	Close Cover D	Press the button to close the help  01001601

☐ Replace Toner uuuu/Change Toner to x:4236/4259 to 4262

Open Cover D  01002702	Open the toner cartridge cover  01002802	Remove the toner cartridge  01002902	Insert new toner cartridge shown by panel  01003102	Close the toner cartridge cover  01003002	Close Cover D	Press the button to close the help  01001601

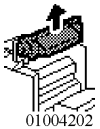
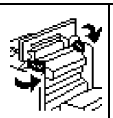
☐ Replace Photoconductor: 4236

Open Cover D  01002702	Remove the waste toner collector  01003202	Turn the blue knob to release position  01003302	Remove the photocon-ductor unit  01003902	Insert photo-conductor unit  01003402	Turn the blue knob to the original position  01003502	Set the waste toner collector  01003602	Close cover D
Press the button to close the help  01001601							

☐ Replace Waste T Box: 4236

Open Cover D  01002702	Remove the waste toner collector  01003202	Take the cap off and close the lid with it  01004002	Set the new waste toner collector  01003602	Close Cover D	Press the button to close the help  01001601

☐ Replace Fuser: 4236

Open Cover A and B  01001902	Turn the handles to unlock position  01004102	Remove fuser unit  01004202	Install Fuser unit  01003702	Turn the handles to lock position  01003802	Close covers B and A	Press the button to close the help  01001601

☐ Can't Print Duplex: 3005

Make sure you are using an appropriate type and size of paper for duplex unit.	Pressing Start/Stop button print the rest of print job on one side of the paper	Press the button to close the help  01001601

☐ Paper Set ttt sss: 3003

The paper loaded in the specified paper source does not match the required paper size.	Replace the loaded paper with the correct size paper and press Start/Stop button	Press the button to close the help  01001601

☐ Mem Overflow: 3001

Adding printer memory is recommended. Press the Start/Stop button to resume printing or	press the Cancel button to cancel the print job	Press the button to close the help  01001601

☐ Duplex Mem Overflow: 3004

Adding printer memory is recommended. Press the Start/Stop button to print back of the next sheet or	press the Cancel button to cancel the print job	Press the button to close the help  01001601

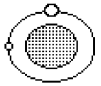
☐ Color Data Received: 3008

Color print data is received. Press the Start/Stop button to print data in monochrome or	press the Cancel button to cancel the print job	Press the button to close the help  01001601

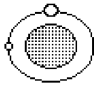
☐ Collate Disabled: 2013

Specified number of copies is no longer possible due to a lack of memory or free disk space of HDD	Press the button to clear the warning  01004302

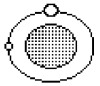
☐ Check Paper Size: 2004

The paper size setting is different from the size of loaded paper	Remove all paper from MP tray  01001702	Put correct size paper to MP Tray	Press the button to clear the warning  01004302

☐ Image Optimum: 2002

The print quality is automatically reduced by the printer. Adding printer memory is recommended	Press the button to clear the warning  01004302

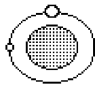
☐ Check Paper Type: 2008

The media loaded in the printer does not match the paper type setting in the printer driver	Press the button to clear the warning  01004302

☐ Need Memory: 2003

Adding printer memory is recommended.	Press the button to close the help  01001601

☐ Offline: 1001

Press the button to return Ready state  01004302	Press the button to close the help  01001601

☐ Clean Parts a: 2065 to 2071

Open Cover D  01002702	Remove the waste toner collector  01003202	Move the cleaning knob a in and out a few times  01004402	Set the waste toner collector  01003602	Close Cover D	Press the button to close the help  01001601

☐ Clean Parts b: 2065 to 2071

Open Cover D  01002702	Remove the waste toner collector  01003202	Move the cleaning knob b in and out a few times  01004502	Set the waste toner collector  01003602	Close Cover D	Press the button to close the help  01001601

☐ Waste Toner Box Near Full: 2571

Prepare Waste toner collector	To clear the warning, execute Clear All Warning on the control panel	Press the button to close the help  01001601

☐ Worn Photoconductor: 2571

Prepare Photoconductor unit	To clear the warning, execute Clear All Warning on the control panel	Press the button to close the help  01001601

☐ Worn Fuser: 2571

Prepare Fuser unit	To clear the warning, execute Clear All Warning on the control panel	Press the button to close the help  01001601

☐ Worn Transfer Unit: 2571

Transfer unit is a service parts Contact your dealer	To clear the warning, execute Clear All Warning on the control panel	Press the button to close the help  01001601

☐ uuuu Toner Low: 2571

Prepare Toner cartridge	To clear the warning, execute Clear All Warning on the control panel	Press the button to close the help  01001601

1.18.6 Service Call Error Messages

This section shows the service call error message of this printer. (For details, refer to Chapter3 “Troubleshooting”.)

SERVICE CALL ERRORS

Table 1-51. List of Service Call Errors

Category	Error code	Explanation
Engine Related	E090	Patch sensing error
	E091	Low voltage power supply error
	E092	Fuser fuse cut-off error
	E093	Photoconductor unit fuse cut-off error
	E094	Inside thermistor error
	E095	HSYNC error
	E096	VSYNC error
	E111	Optional drive motor error
	E112	Photoconductor drive motor error
	E113	Rotary drive motor error
	E115	Whole drive motor error
	E116	Scanner motor error
	E123	Large temperature variation
	E124	High temperature error
	E125	Low temperature error 2
	E126	Low temperature error 1
	E132	Mechanism controller memory error
	E144	Transfer belt unit life
	E153	Ozone fan error
	E154	Toner fan error
	E155	Fuser fan error
	E156	Power supply fan error
	E256	The transfer belt unit lever is not set back
	E998	Engine communication error

Table 1-51. List of Service Call Errors

Category	Error code	Explanation
Controller Related	C0017	CPU error (undefined interruption)
	C0081	CPU error (TLB modification exception)
	C0082	CPU error (TLB miss exception [Load/Fetch])
	C0083	CPU error (TLB miss exception [Store])
	C0084	CPU error (address error exception [Load/Fetch])
	C0085	CPU error (address error exception [Store])
	C0086	CPU error (bus error exception [Fetch])
	C0087	CPU error (bus error exception [Load/Store])
	C0088	CPU error (SYSCALL exception)
	C0089	CPU error (Break exception)
	C0090	CPU error (reserving command exception)
	C0091	CPU error (unused coprocessor exception)
	C0092	CPU error (FPU exception)
	C0093	CPU error (TLB exception)
	C0094	CPU error (XTLB exception)
	C0095	CPU error (cache exception)
	C0096	CPU error (Trap exception)
	C0097	CPU error (FPU exception)
	C0098	CPU error (watch exception)
	C0128 ~ C0254	CPU error (undefined trap)
	C0255	CPU error (NMI exception)
	C0256	CPU error (divide by 0)
	C0257	CPU error (arithmetic overflow)
	C0258	CPU error (break occurrence)
	C0800	IPL error (controller defect)
	C0998	Engine communication error (only at power-on)
	C0999	Engine flash ROM has no program data
	C1002	Standard RAM error (standard size is undefined, etc.)
	C1010	Verification error

Table 1-51. List of Service Call Errors

Category	Error code	Explanation
Controller Related	C1020	RAM error (slot 0)
	C1021	RAM error (slot 1)
	C1120	ROM checksum error (bit 0 to 7) (program)
	C1121	ROM checksum error (bit 8 to 15) (program)
	C1122	ROM checksum error (bit 16 to 23) (program)
	C1123	ROM checksum error (bit 24 to 31) (program)
	C1200	EEPROM writing error
	C1210	EEPROM writing times limit
	C1400	Engine initialization error
	C1500	CCNV hardware error
	C1550	Initialization hardware error for SRAM for compression
	C1600	Video series hardware error (including PWM IC calibration error)
	C1610	Video series hardware error (VCNV error)
	C1800	Illegal SPD
	C1999	Other hardware errors
	C2000	Software error
	C0017	CPU error (undefined interruption)
	C0081	CPU error (TLB modification exception)
	C0082	CPU error (TLB miss exception [Load/Fetch])

1.19 Expanding the RAM

When the memory is insufficient, the printer displays the following error messages.

- ☐ Mem Overflow
- ☐ Image Optimum
- ☐ Need Memory
- ☐ Duplex Mem Overflow

The following methods can be used to clear the errors.
To ensure a stable operation, add more memory.

- ☐ In color printing, change the compression format to the non-reversible compression.
- ☐ Set an unused I/F to Off.

1.20 Handling Precautions

1.20.1 Precautions When Turning Off the Power

This printer is equipped internally with nonvolatile memory (EEPROM). This nonvolatile memory preserves the settings for printer functions. If the power is turned off during writing to the nonvolatile memory, the contents of the nonvolatile memory cannot be guaranteed. Therefore, when the power is turned on again, or when Reset All is executed, the panel setting values may return to the factory default settings, or a Service Call Error may occur.
And if the power is turned off during writing to HDD, the contents of the HDD cannot be guaranteed and unexpected problem may occur.
Accordingly, the power must not be turned off in the following cases when data is being written to the nonvolatile memory.

- ☐ From the time the power is turned on until the Ready LED lights up steadily
- ☐ When the Ready LED is blinking
- ☐ When the printer is printing (while the paper feed motor is operating)
  To stop printing, make printing unavailable, or perform Job Cancel.
- ☐ When the Data LED is on or blinking

1.20.2 Precautions for High Temperature Parts

Since the fuser unit inside of the printer becomes very hot, be sure not to touch the fuser unit when you open the covers to handle paper jam, etc.

1.21 Status Sheet

As this printer has two models; AcuLaser C2600 (color model) and AcuLaser 2600 (monochrome model), there are two types of Status Sheet for corresponding each of the two models. Even though the color model can be used in monochrome mode, and the monochrome model can be switched to color mode, the model names printed on the Status Sheet remains unchanged from the original ones.

Status Sheet is shown in Figure 1-11 *(p.76)* and Figure 1-12 *(p.76)*.

INFORMATION

The Status Sheet contains the product names (English only), remaining amount, warnings, and part number of consumables that can be replaced by the user. “Needed soon” is added when the amount reaches the level where a warning occurs. Two Part Numbers are indicated for C, M, and Y toners: one for 5,000 and the other for 2,000. Also, two Part Numbers are indicated for the Fuser unit: one for 120 V and the other for 220 V. The Part Number of consumables is indicated with the lower digits excluding S05.

Name	Part Numbers
Toner Cartridge Cyan	5,000: 0228 / 2,000: 0232
Toner Cartridge Magenta	5,000: 0227 / 2,000: 0231
Toner Cartridge Yellow	5,000: 0226 / 2,000: 0230
Toner Cartridge Black	0229 (only 5,000 for black)
Photoconductor Unit	1107
Fuser Unit 120 (110-120 V)/220 (220-240 V)	3019/3018
Waster Toner Collector	0233

The toner remaining amount for Toner cartridge Cyan, Magenta, and Yellow are not printed in the case of B/W mode. However, the part numbers of the color toners are indicated.
In the case of 4xB/W mode, the printout changes as follows.

Toner Cartridge Cyan → Toner Cartridge Black (C)
Toner Cartridge Magenta → Toner Cartridge Black (M)
Toner Cartridge Yellow → Toner Cartridge Black (Y)

The printed part numbers correspond to the color toners. (Not the black Toner cartridge.)

Print copies

Total Pages	This is the number of printed pages.
Color Pages	This is the number of pages printed in color
B/W Pages	This is the number of pages printed in monochrome

The above is in the case of color mode. Color Pages and B/W Pages are not printed in monochrome mode.
For checking the number of color pages when operating in monochrome mode, print the Engine Status Sheet.

The following information is added when options are installed.

RAM DIMM	Added to Installed Memory and Available Memory.
Type B	AUX is added to Installed Interface.
Lower Cassette Unit	Lower Cassette 2 is added to Other Options.
Duplex Unit	Duplex Print Unit is added to Other Options.
HDD	Hard Disk xx GB is added to Other Options.
P5C	P5C is added to Installed Emulation. A 5-digit Version is added in the Firmware Revision, separated by a space. It is added after the PS3 version.

When “NonGenuine Toner” occurs, the following message is printed in Other Options.

Other Options

The installed toner cartridges differ from the genuine EPSON cartridges for this printer. Printouts and remaining toner readings may be different from those obtained using genuine EPSON cartridges.

THE LOWEST DESCRIPTION SECTION OF THE STATUS SHEET

1. Firmware version in DDYM format beginning with IA
2. Type of code ROM device
   - *: Flash
     space: Mask ROM

   Always "*" in the case of this printer.
3. Version of CMTD in 4 digits beginning with A or @.
4. Version of mechanical controller of the engine in 10 digits beginning with MC.
5. USB ID
   A string of 18-digit alphanumeric characters with the below format.
   - 29: Fixed value
   - P: Fixed value
   - Digits 4 to 7: Product code
   - Digits 8 to 13: 6-digit serial number
   - 14 digits: Last digit of the year (4 for 2004)
   - Digits 15 to 16: Month of production (01, 02, ..., 11, 12)
   - Digits 17 to 18: Day of production (01, 02, ..., 30, 31)

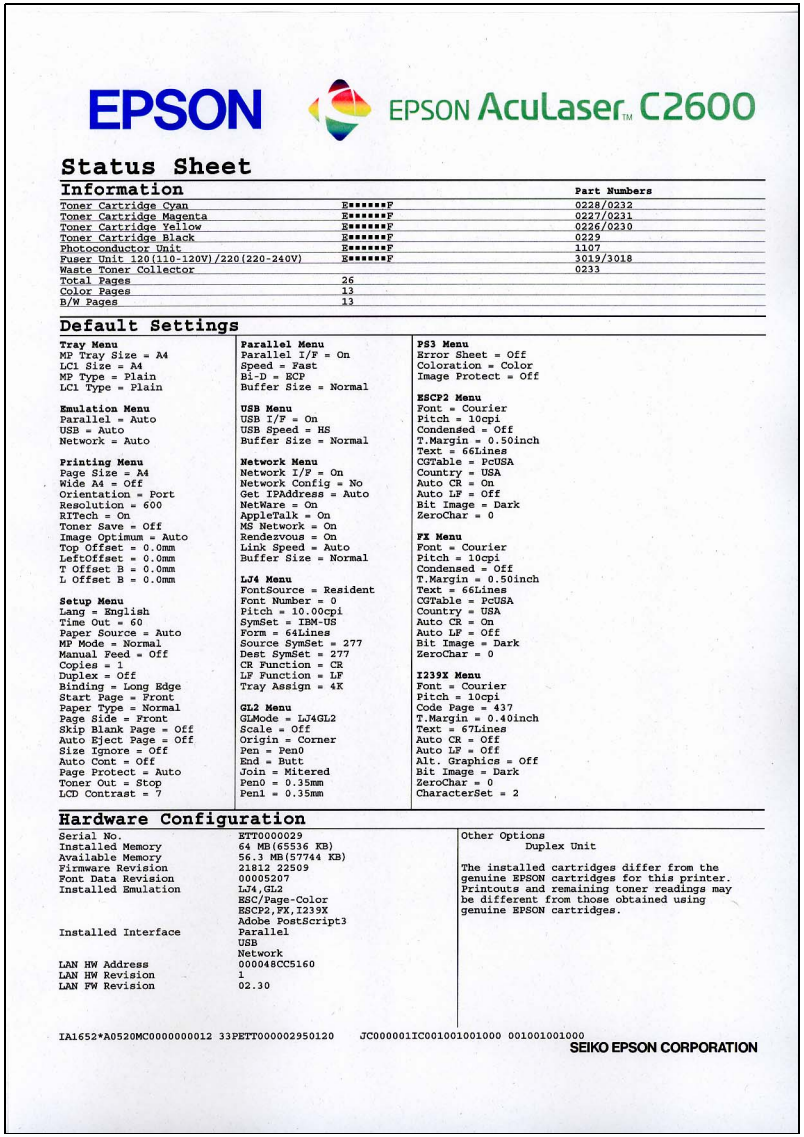
   The information is written in the main unit assembly line. All 18 digits are "*" before any value is written.
6. Latest connection status of the USB communication mode
   - H: HS
     F: FS
     space: No USB connection
7. USB's communication mode
   - D: D4 compliant device connected
     space: non D4 compliant device
8. Type-B level
   - 3: Type B with L3 support
     space: other than L3
9. IEEE1284 negotiation result
   - e: ECP connection
     n: Nibble
     space: Compatibility
10. Number of jams in 6 digits beginning with JC.
11. Number of replacements (xxxxxxxxxxxx) and number of error recoveries (yyyyyyyyyyyy) for each Toner cartridge beginning with IC.
    Each 3-digit x or y correspond to C, M, Y, and K. xxxxxxxxxxxx and yyyyyyyyyyyy are separated by a space.

    In 4xB/W mode, the information on the three black cartridges installed in the C, M, and Y positions are indicated corresponding to the position.

    In B/W mode, the indicating style is the same as the color mode.

COLOR CALIBRATION INFORMATION

G: Increase Gradation, D: Increase Definition, 600: means 600 dpi. Displayed only when calibration data is registered in EEPROM, and they mean calibration data for 600 dpi, Increase Gradation, etc. depending on the combination.
MMMM: Month, DD: Day, YYYY: Year, HH: Hour, MM: Minutes, and they indicate the date and time the calibration data was created.



EPSON EPSON AcuLaser C2600

Status Sheet

Information

		Part Numbers
Toner Cartridge Cyan	E▪▪▪▪▪▪F	0228/0232
Toner Cartridge Magenta	E▪▪▪▪▪▪F	0227/0231
Toner Cartridge Yellow	E▪▪▪▪▪▪F	0226/0230
Toner Cartridge Black	E▪▪▪▪▪▪F	0229
Photoconductor Unit	E▪▪▪▪▪▪F	1107
Fuser Unit 120(110-120V)/220(220-240V)	E▪▪▪▪▪▪F	3019/3018
Waste Toner Collector		0233
Total Pages	26	
Color Pages	13	
B/W Pages	13	

Default Settings

Tray Menu
MP Tray Size = A4
LC1 Size = A4
MP Type = Plain
LC1 Type = Plain

Emulation Menu
Parallel = Auto
USB = Auto
Network = Auto

Printing Menu
Page Size = A4
Wide A4 = Off
Orientation = Port
Resolution = 600
RITech = On
Toner Save = Off
Image Optimum = Auto
Top Offset = 0.0mm
LeftOffset = 0.0mm
T Offset B = 0.0mm
L Offset B = 0.0mm

Setup Menu
Lang = English
Time Out = 60
Paper Source = Auto
MP Mode = Normal
Manual Feed = Off
Copies = 1
Duplex = Off
Binding = Long Edge
Start Page = Front
Paper Type = Normal
Page Side = Front
Skip Blank Page = Off
Auto Eject Page = Off
Size Ignore = Off
Auto Cont = Off
Page Protect = Auto
Toner Out = Stop
LCD Contrast = 7

Parallel Menu
Parallel I/F = On
Speed = Fast
Bi-D = ECP
Buffer Size = Normal

USB Menu
USB I/F = On
USB Speed = HS
Buffer Size = Normal

Network Menu
Network I/F = On
Network Config = No
Get IPAddress = Auto
NetWare = On
AppleTalk = On
MS Network = On
Rendezvous = On
Link Speed = Auto
Buffer Size = Normal

LJ4 Menu
FontSource = Resident
Font Number = 0
Pitch = 10.00cpi
SymSet = IBM-US
Form = 64Lines
Source SymSet = 277
Dest SymSet = 277
CR Function = CR
LF Function = LF
Tray Assign = 4K

GL2 Menu
GLMode = LJ4GL2
Scale = Off
Origin = Corner
Pen = Pen0
End = Butt
Join = Mitered
Pen0 = 0.35mm
Pen1 = 0.35mm

PS3 Menu
Error Sheet = Off
Coloration = Color
Image Protect = Off

ESCP2 Menu
Font = Courier
Pitch = 10cpi
Condensed = Off
T.Margin = 0.50inch
Text = 66Lines
CGTable = PcUSA
Country = USA
Auto CR = On
Auto LF = Off
Bit Image = Dark
ZeroChar = 0

FX Menu
Font = Courier
Pitch = 10cpi
Condensed = Off
T.Margin = 0.50inch
Text = 66Lines
CGTable = PcUSA
Country = USA
Auto CR = On
Auto LF = Off
Bit Image = Dark
ZeroChar = 0

I239X Menu
Font = Courier
Pitch = 10cpi
Code Page = 437
T.Margin = 0.40inch
Text = 67Lines
Auto CR = Off
Auto LF = Off
Alt. Graphics = Off
Bit Image = Dark
ZeroChar = 0
CharacterSet = 2

Hardware Configuration

Serial No.	ETT0000029
Installed Memory	64 MB(65536 KB)
Available Memory	56.3 MB(57744 KB)
Firmware Revision	21812 22509
Font Data Revision	00005207
Installed Emulation	LJ4,GL2 ESC/Page-Color ESCP2,FX,I239X Adobe PostScript3
Installed Interface	Parallel USB Network
LAN HW Address	000048CC5160
LAN HW Revision	1
LAN FW Revision	02.30

Other Options
Duplex Unit

The installed cartridges differ from the genuine EPSON cartridges for this printer. Printouts and remaining toner readings may be different from those obtained using genuine EPSON cartridges.

IA1652*A0520MC0000000012 33PETT000002950120 JC000001IC001001001000 001001001000

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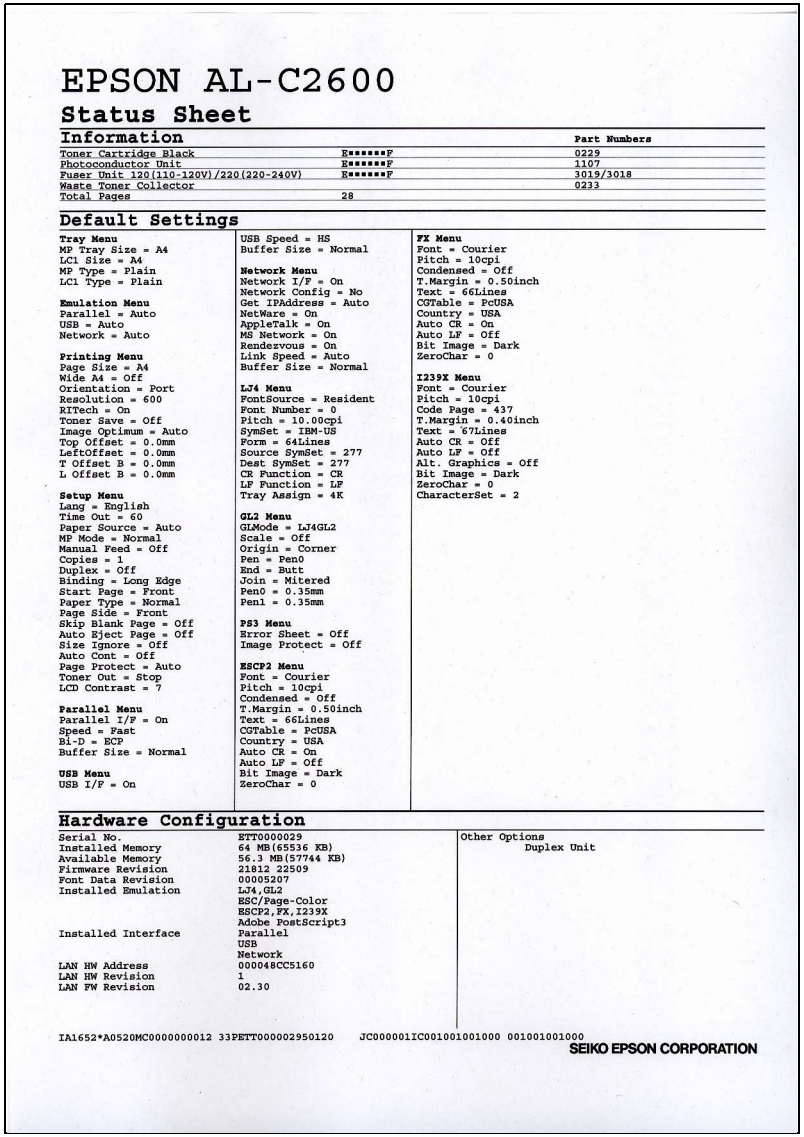
Figure 1-11. Status Sheet for color mode



EPSON AL-C2600

Status Sheet

Information

		Part Numbers
Toner Cartridge Black	E▪▪▪▪▪▪F	0229
Photoconductor Unit	E▪▪▪▪▪▪F	1107
Fuser Unit 120(110-120V)/220(220-240V)	E▪▪▪▪▪▪F	3019/3018
Waste Toner Collector		0233
Total Pages	28	

Default Settings

Tray Menu
MP Tray Size = A4
LC1 Size = A4
MP Type = Plain
LC1 Type = Plain

Emulation Menu
Parallel = Auto
USB = Auto
Network = Auto

Printing Menu
Page Size = A4
Wide A4 = Off
Orientation = Port
Resolution = 600
RITech = On
Toner Save = Off
Image Optimum = Auto
Top Offset = 0.0mm
LeftOffset = 0.0mm
T Offset B = 0.0mm
L Offset B = 0.0mm

Setup Menu
Lang = English
Time Out = 60
Paper Source = Auto
MP Mode = Normal
Manual Feed = Off
Copies = 1
Duplex = Off
Binding = Long Edge
Start Page = Front
Paper Type = Normal
Page Side = Front
Skip Blank Page = Off
Auto Eject Page = Off
Size Ignore = Off
Auto Cont = Off
Page Protect = Auto
Toner Out = Stop
LCD Contrast = 7

Parallel Menu
Parallel I/F = On
Speed = Fast
Bi-D = ECP
Buffer Size = Normal

USB Menu
USB I/F = On
USB Speed = HS
Buffer Size = Normal

Network Menu
Network I/F = On
Network Config = No
Get IPAddress = Auto
NetWare = On
AppleTalk = On
MS Network = On
Rendezvous = On
Link Speed = Auto
Buffer Size = Normal

LJ4 Menu
FontSource = Resident
Font Number = 0
Pitch = 10.00cpi
SymSet = IBM-US
Form = 64Lines
Source SymSet = 277
Dest SymSet = 277
CR Function = CR
LF Function = LF
Tray Assign = 4K

GL2 Menu
GLMode = LJ4GL2
Scale = Off
Origin = Corner
Pen = Pen0
End = Butt
Join = Mitered
Pen0 = 0.35mm
Pen1 = 0.35mm

PS3 Menu
Error Sheet = Off
Image Protect = Off

ESCP2 Menu
Font = Courier
Pitch = 10cpi
Condensed = Off
T.Margin = 0.50inch
Text = 66Lines
CGTable = PcUSA
Country = USA
Auto CR = On
Auto LF = Off
Bit Image = Dark
ZeroChar = 0

FX Menu
Font = Courier
Pitch = 10cpi
Condensed = Off
T.Margin = 0.50inch
Text = 66Lines
CGTable = PcUSA
Country = USA
Auto CR = On
Auto LF = Off
Bit Image = Dark
ZeroChar = 0

I239X Menu
Font = Courier
Pitch = 10cpi
Code Page = 437
T.Margin = 0.40inch
Text = 67Lines
Auto CR = Off
Auto LF = Off
Alt. Graphics = Off
Bit Image = Dark
ZeroChar = 0
CharacterSet = 2

Hardware Configuration

Serial No.	ETT0000029
Installed Memory	64 MB(65536 KB)
Available Memory	56.3 MB(57744 KB)
Firmware Revision	21812 22509
Font Data Revision	00005207
Installed Emulation	LJ4,GL2 ESC/Page-Color ESCP2,FX,I239X Adobe PostScript3
Installed Interface	Parallel USB Network
LAN HW Address	000048CC5160
LAN HW Revision	1
LAN FW Revision	02.30

Other Options
Duplex Unit

IA1652*A0520MC0000000012 33PETT000002950120 JC000001IC001001001000 001001001000

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Figure 1-12. Status Sheet for monochrome mode

1.22 Engine Status Sheet

CAUTION

Do not disclose this information to the user.

It can be output from the Maintenance Menu. For details of the Engine Status Sheet, refer to Chapter6 “Maintenance”.

1.23 Paper Handling Algorithm

ENGINE CONTROL, CM

Table 1-52. Engine control, CM

Page Size	Paper Type	EJL PAPER FACE	Paper Source	Paper type (set by driver)	MP or LC1, 2 Type*2	Engine Control (Video sheet specified)
Envelop*1	—	—	—	—	—	Envelope specified (8EH)
IB5	—	—	—	—	—	Envelope specified (8EH)
Other than Envelope	Normal	—	Auto	Specified	Plain Letterhead Recycled Color	Plain paper specified (8AH) + Fuser Level 1
					Trnsprnc	Transparency specified (8CH)
					Labels	Label or thick paper specified (8BH) + Fuser Level 1
				Not specified	—	Plain paper specified (8AH) + Fuser Level 1
			Other than Auto	—	—	Plain paper specified (8AH) + Fuser Level 1
	Thick	FRONT	—	—	—	Label or thick paper specified (8BH) + Transfer Level 1 (ABH)
		BACK	—	—	—	Label of thick paper specified (8BH) + Transfer Level 2 (ACH)
	Trnsprnc		—	—	—	Transparency specified (8CH)
	Rough	—	—	—	—	Plain paper specified (8AH) + Fuser Level 2

Note *1: MON, C10, C5, C6, DL

*2: The paper type actually supplied, set in the panel for the paper source.

PAPER FEED

In AcuLaser C2600/2600, papers other than plain A4 and LT paper are fed from the MP Tray.

DUPLEX

Page Size	Paper Type	Auto duplex
A4, A5, B5, LT, EXE	Normal	Possible

Note : In cases other than above, duplex printing is not possible

PRINTER ADJUST MENU

Set the second transfer bias. It reads by FRAM data setting command (FAH), and it sets by setting command (7AH).

1.24 Toner Check Sheet

1.24.1 For Color Mode

The following pattern is printed. Each pattern is printed with the basic K, C, M, and Y colors.

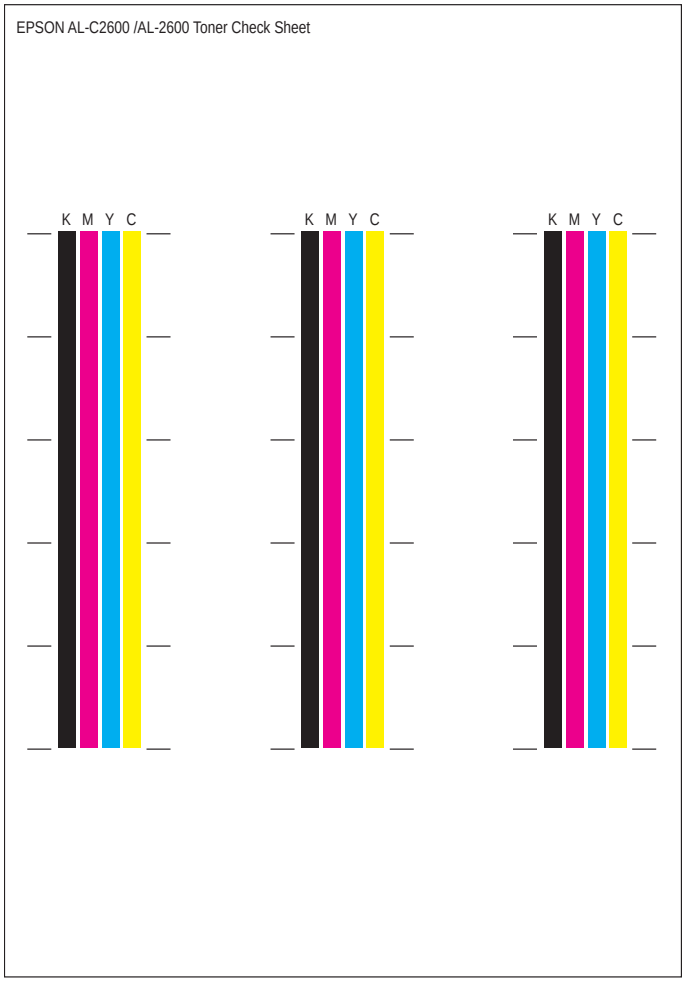


Figure 1-13. Toner Check Sheet for color mode

1.24.2 For 4xB/W Mode

The following pattern is printed. The pattern is printed using the K cartridges installed in the positions corresponding to K, C, M, and Y colors.

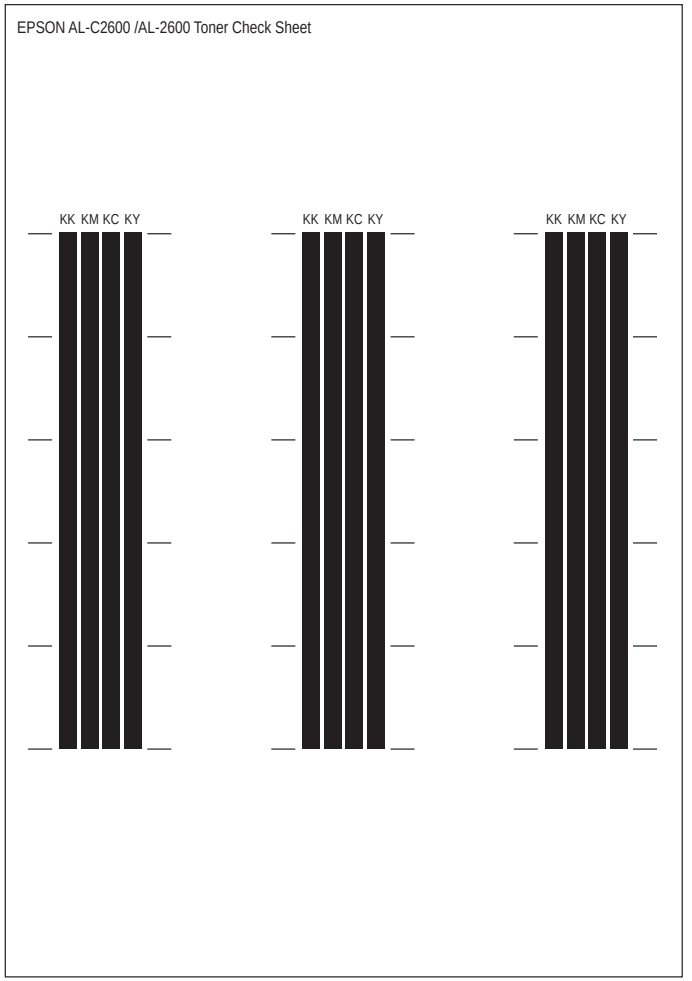
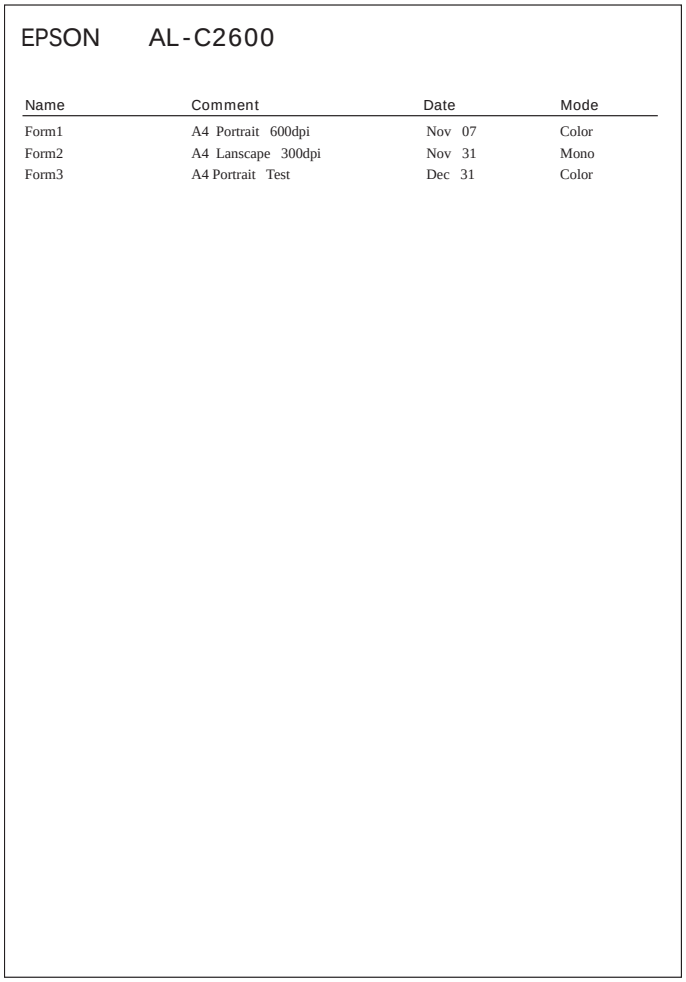


Figure 1-14. Toner Check Sheet for 4xB/W mode

1.25 Form Overlay List

The following shows the sample of Form Overlay List. The color information (color or monochrome) of Form that is registered in the last row will be added to all the models that follows the AcuLaser C2600/2600.



EPSON AL-C2600

Name	Comment	Date	Mode
Form1	A4 Portrait 600dpi	Nov 07	Color
Form2	A4 Lanscape 300dpi	Nov 31	Mono
Form3	A4 Portrait Test	Dec 31	Color

Figure 1-15. Form Overlay List

1.26 Switching between Color Mode and Monochrome Mode

The printer is designed to function in the following three models.

- ☐ Color mode
- ☐ B/W mode (monochrome printing mode with 1 black toner cartridge)
- ☐ 4 x B/W mode (monochrome printing mode with 4 black toner cartridges)

The methods to switch the print mode are given in the table below.

1.26.1 Switching of Operation Mode

Table 1-53. Switching of Operation Mode

Mode	Step	Panel Message	Operation
Color mode to B/W mode	1	"Ready" or "Sleep"	Press the [Enter (▶/↵)] button to access the control panel menus.
	2	"Mode Config. Menu"	Press the [Down (▼)] button repeatedly until Mode Config. Menu appears on the LCD panel, then press the [Enter (▶/↵)] button.
	3	"Change Mode B/W"	Press the [Down (▼)] button repeatedly until Change Mode B/W is displayed, then press the [Enter (▶/↵)] button.
	4	"Remove Toner"	Remove the currently installed color toner cartridge.
	5	–	After all color toner cartridges are removed from the printer, the printer automatically changes to the B/W mode. Note : If EPSON Status Monitor 3 is not installed, make sure that the Color Toner Cartridges check box on the Optional Settings dialog box is not selected. The Optional Settings dialog box appears by clicking the [Settings...] button on the Optional Settings tab.
Color mode to 4 x B/W mode	1	"Ready" or "Sleep"	Press the [Enter (▶/↵)] button to access the control panel menus.
	2	"Mode Config. Menu"	Press the [Down (▼)] button repeatedly until Mode Config. Menu appears on the LCD panel, then press the [Enter (▶/↵)] button.
	3	"Change Mode 4 x B/W"	Press the [Down (▼)] button repeatedly until Change Mode 4 x B/W is displayed, then press the [Enter (▶/↵)] button.
	4	"Change Toner to K"	Remove the currently installed color toner cartridge and install a black toner cartridge. Note : If the wrong toner cartridge is installed, the printer does not go to the next step. Follow the instructions that appear on the LCD panel.
	5	–	After all color toner cartridges are replaced by the black cartridges, the printer automatically changes to the 4 x B/W mode. Note : If EPSON Status Monitor 3 is not installed, make sure that the Color Toner Cartridges check box on the Optional Settings dialog box is not selected. The Optional Settings dialog box appears by clicking the [Settings...] button on the Optional Settings tab.

Table 1-53. Switching of Operation Mode

Mode	Step	Panel Message	Operation
B/W mode to color mode	1	"Ready" or "Sleep"	Press the [Enter (▶/↵)] button to access the control panel menus.
	2	"Mode Config. Menu"	Press the [Down (▼)] button repeatedly until Mode Config. Menu appears on the LCD panel, then press the [Enter (▶/↵)] button.
	3	"Change Mode Color"	Press the [Down (▼)] button repeatedly until Change Mode Color is displayed, then press the [Enter (▶/↵)] button.
	4	"Install xx TnrCart"	Insert a toner cartridge of the color indicated as xx (C, M, or Y) into the printer. Note : If the wrong toner cartridge is installed, the printer does not go to the next step. Follow the instructions that appear on the LCD panel.
	5	–	After all color toner cartridges are installed, the printer changes to the Color mode. Note : If EPSON Status Monitor 3 is not installed, select the Color Toner Cartridges check box on the Optional Settings dialog box. The Optional Settings dialog box appears by clicking the [Settings...] button on the Optional Settings tab.
B/W mode to 4 x B/W mode	1	"Ready" or "Sleep"	Press the [Enter (▶/↵)] button to access the control panel menus.
	2	"Mode Config. Menu"	Press the [Down (▼)] button repeatedly until Mode Config. Menu appears on the LCD panel, then press the [Enter (▶/↵)] button.
	3	"Change Mode 4 x B/W"	Press the [Down (▼)] button repeatedly until Change Mode 4 x B/W is displayed, then press the [Enter (▶/↵)] button.
	4	"Insert K TnrCart"	Insert a black toner cartridge into the printer. Note : If the wrong toner cartridge is installed, the printer does not go to the next step. Follow the instructions that appear on the LCD panel.
	5	–	After three black toner cartridges are installed, the printer automatically changes to the 4 x B/W mode. Note : If EPSON Status Monitor 3 is not installed, make sure that the Color Toner Cartridges check box on the Optional Settings dialog box is not selected. The Optional Settings dialog box appears by clicking the [Settings...] button on the Optional Settings tab.
4 x B/W mode to B/W mode	1	"Ready" or "Sleep"	Press the [Enter (▶/↵)] button to access the control panel menus.
	2	"Mode Config. Menu"	Press the [Down (▼)] button repeatedly until Mode Config. Menu appears on the LCD panel, then press the [Enter (▶/↵)] button.
	3	"Change Mode B/W"	Press the [Down (▼)] button repeatedly until Change Mode B/W is displayed, then press the [Enter (▶/↵)] button.
	4	"Remove Toner"	Remove the currently installed black toner cartridge.
	5	–	After three of the black toner cartridges are removed from the printer, the printer automatically changes to the B/W mode. Note : If EPSON Status Monitor 3 is not installed, make sure that the Color Toner Cartridges check box on the Optional Settings dialog box is not selected. The Optional Settings dialog box appears by clicking the [Settings...] button on the Optional Settings tab.

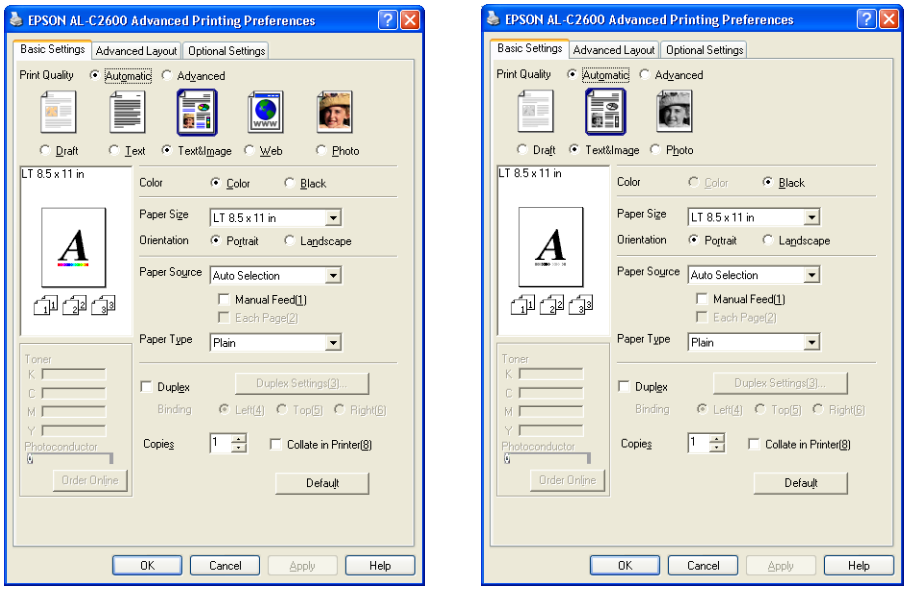
Table 1-53. Switching of Operation Mode

Mode	Step	Panel Message	Operation
4 x B/W mode to color mode	1	"Ready" or "Sleep"	Press the [Enter (▶/↵)] button to access the control panel menus.
	2	"Mode Config. Menu"	Press the [Down (▼)] button repeatedly until Mode Config. Menu appears on the LCD panel, then press the [Enter (▶/↵)] button.
	3	"Change Mode Color"	Press the [Down (▼)] button repeatedly until Change Mode Color is displayed, then press the [Enter (▶/↵)] button.
	4	"Change Toner to xx"	Remove the currently installed black toner cartridge and insert a toner cartridge of the color indicated as xx (C, M, or Y). Note : If the wrong toner cartridge is installed, the printer does not go to the next step. Follow the instructions that appear on the LCD panel.
	5	–	After three of the black toner cartridges are replaced by the color toner cartridges, the printer automatically changes to the Color mode. Note : If EPSON Status Monitor 3 is not installed, select the Color Toner Cartridges check box on the Optional Settings dialog box. The Optional Settings dialog box appears by clicking the [Settings...] button on the Optional Settings tab.

1.26.2 Switching of Printer Driver

EPSON STATUS MONITOR 3 IS INSTALLED.

The driver switches to the corresponding mode automatically when it acquires the information on the toner cartridges installed on the printer.



Color Mode **Monochrome Mode**

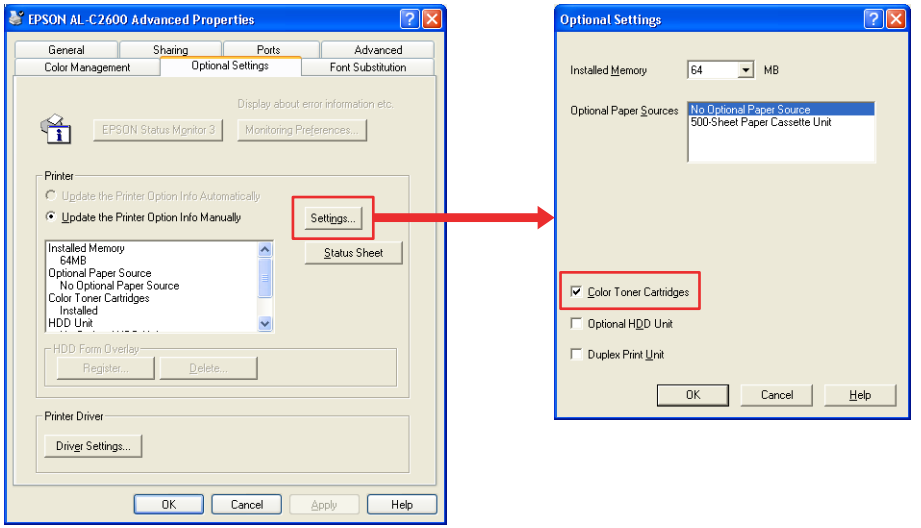
01005101

Figure 1-16. Printer Driver

EPSON STATUS MONITOR 3 IS NOT INSTALLED.

The mode setting of the printer driver should be changed manually to switch the mode.

1. Control Panel → Printer and FAX → Properties → "Optional Settings" tab
2. Click [Settings...] → Check/Uncheck the "Color Toner Cartridges"



01005201

Figure 1-17. Printer Driver Setup

CHECK POINT

If the setup above is not performed, U/I remains its original state.
In monochrome mode (Only black toner is installed), if the printing is carried out with "Color Toner Cartridges" selected on the printer driver, "Color Data Received" (flashing error) is displayed on the LCD panel of the printer.
Once the message is displayed, press [Start/Stop] button to convert and print the data in monochrome.

CHAPTER

2

OPERATING PRINCIPLE

2.1 Print Process

2.1.1 Print Process Overview

This printer is a full color laser printer that uses the principle of electrophotographic recording. A color image, which consists of four colors; yellow, magenta, cyan and black (simply called YMCK from here on), can be printed with the four colors of toner. The printer creates an image for one color with a corresponding toner on the photoconductor drum and transfers it on the intermediate transfer belt. The process is repeated for each color to complete a full-color toner image on the belt, which is finally transferred on the paper.

The major steps of the print process are described below.

1. Charging: Charges the photoconductor drum surface.
2. Exposure: A laser beam electrostatically draws images to be printed on the drum.
3. Developing: Develops the image on the drum with toner.
4. Primary transfer: Transfers the toner image on the drum to the intermediate transfer belt.
5. Discharging: Discharges the drum surface.
6. Cleaning: Removes remnants of toner on the drum.
7. Repeat: In the full color mode, steps (1) to (6) are repeated for each of four colors of toner overlaying them onto the transfer belt to form a color toner image on the belt. (This step is not performed in the B/W mode since the mode uses single (black) toner only.)
8. Secondary transfer: Transfers the complete monochrome or color toner image on the belt to the paper as the paper is pressed against the belt.
9. Discharging: Discharges the paper.
10. Cleaning: Cleans the belt surface.
11. Fusing: Fixes the toner image on the paper with heat and pressure.

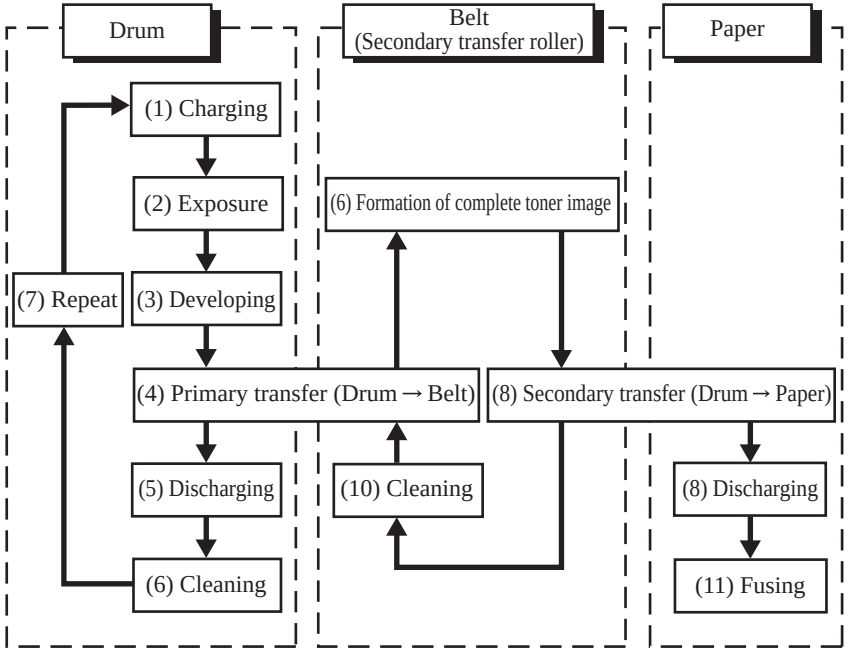


Figure 2-1. Print Process Overview

2.1.2 Print Process Diagram

The diagram below illustrates the entire print process.

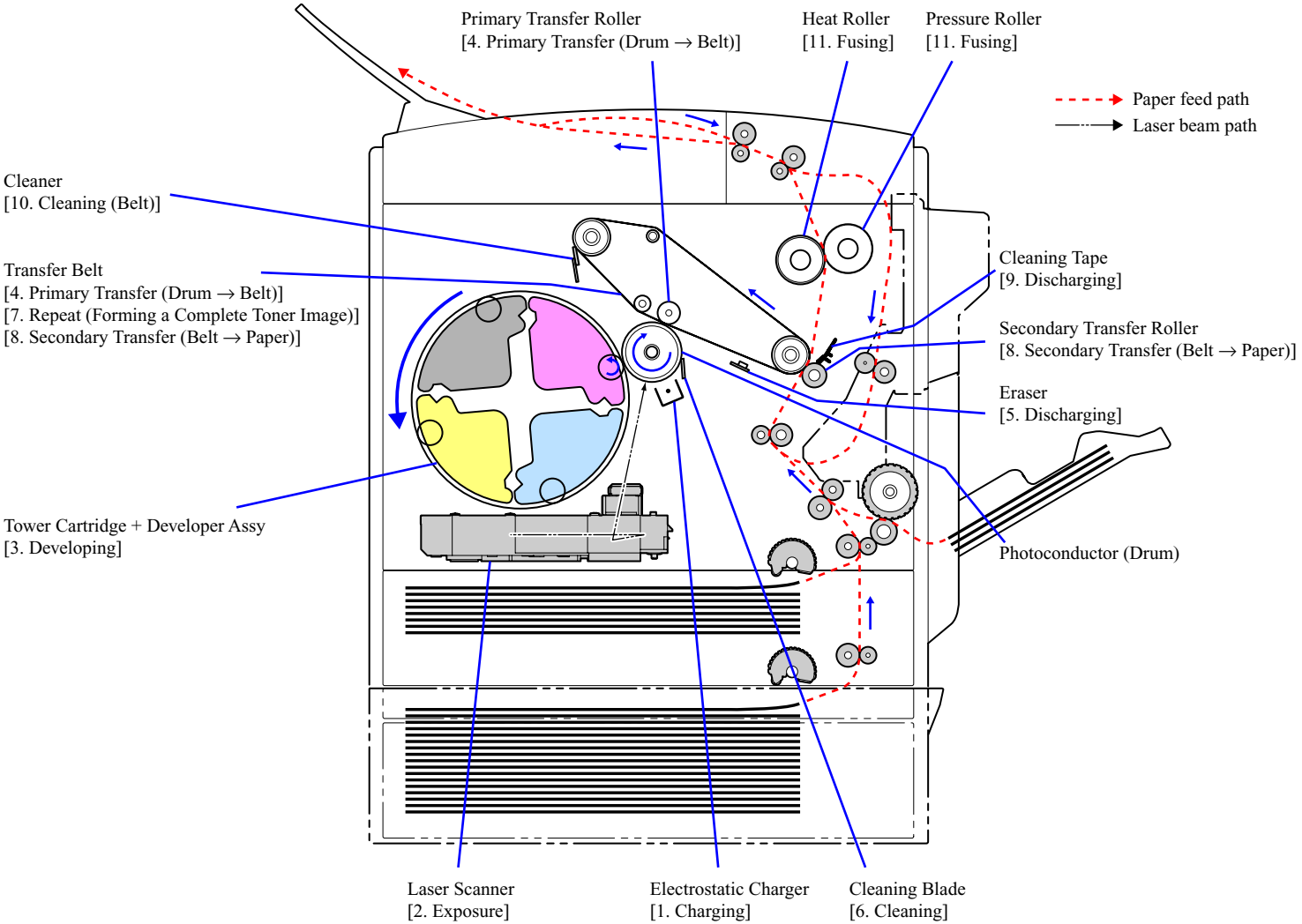


Figure 2-2. Print Process Diagram

2.1.3 Technical Explanation of Print Process

This section describes the operating principles of the printing process and the main components.

2.1.3.1 Charging Process

PRINCIPLE OF CHARGING

In charging process, the surface of the photoconductor drum, which rotates at a constant rate, is uniformly charged to a negative charge by a corona discharge generated by the scorotron charger in the photoconductor unit.

PHOTOCONDUCTOR UNIT

- ☐ Photoconductor Drive Motor

  Drives the photoconductor unit.

- ☐ Charging Device

  This printer employs a scorotron charger, which generates a corona discharge, as drum charging system. The scorotron charger, consists of a corona discharging wire (a tungsten wire) with a grounded backing plate, parts to support the wire, and a grid, maintains a fixed gap with the drum. When a high voltage is applied to the corona discharging wire, the wire produces negative ions. The negative ions move through the grid and adhere to the surface of the drum to charge it uniformly. The potential of the surface is controlled to the desired potential by the grid which is charged and maintained at the desired potential. The corona discharging wire (tungsten wire) is gold plated to protect the wire and to increase its life. The wire is cleaned by taking in and out the finger grip located on the Photoconductor Unit when dust or spattered toner adheres to it causing an unevenness of printout (because the foreign matters on the wire prevent the drum from being charged uniformly). An unevenness of printout can also be caused by discharge products on the wire. They are formed by the degeneration of ozone which is produced by corona discharging.
  There is a mechanism to blow air to the wire(s) to prevent ozone from accumulating and forming extraneous products on the wire(s), .

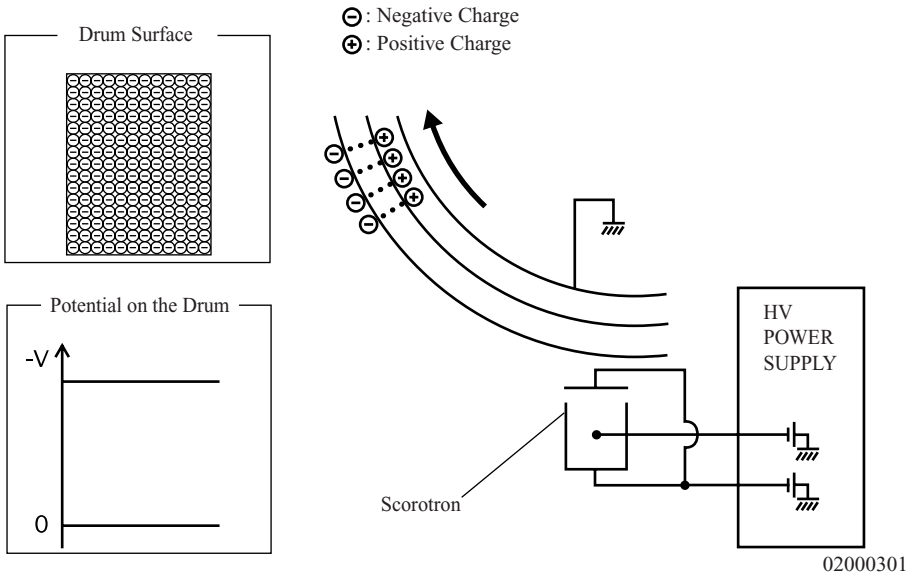


Figure 2-3. Charging

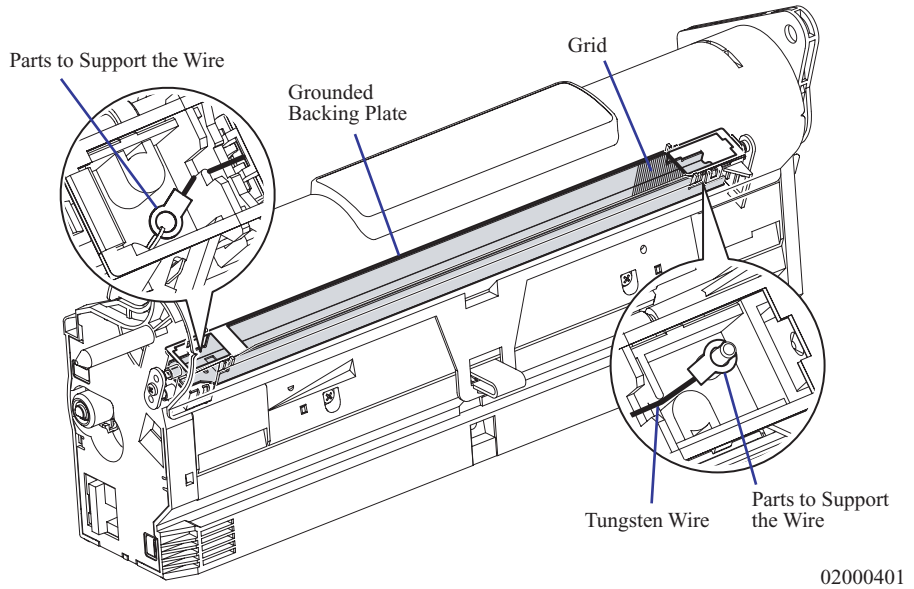


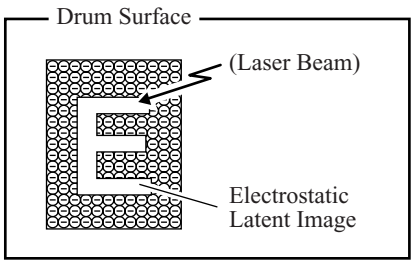
Figure 2-4. Scorotron

2.1.3.2 Exposure

At the "Exposure" process, a laser beam is applied to the negatively charged surface of the drum to form an invisible electrostatic latent image onto the drum.

PRINCIPLE OF EXPOSURE

- The laser beam is emitted from a laser diode in the ROS ASSY, and directed by the polygon mirror, fixed mirror and lens of the Scanner Assy in the ROS ASSY. A single laser beam is output from the laser diode.
- The laser beam is irradiated according to the print data (image data) from the printer controller. The laser beam is output only when a pixel data (minute dot composing the print data) exists. (On parts to be developed by toner, the laser diode turns ON, and on parts not to be developed, the laser diode turns OFF.) The drum surface irradiated by the laser beam becomes a conductor, the negative charge on the drum flows to the positive side, and the potential on the surface of the drum is reduced in the result. The section of the drum surface where the potential has reduced becomes the electrostatic latent image.



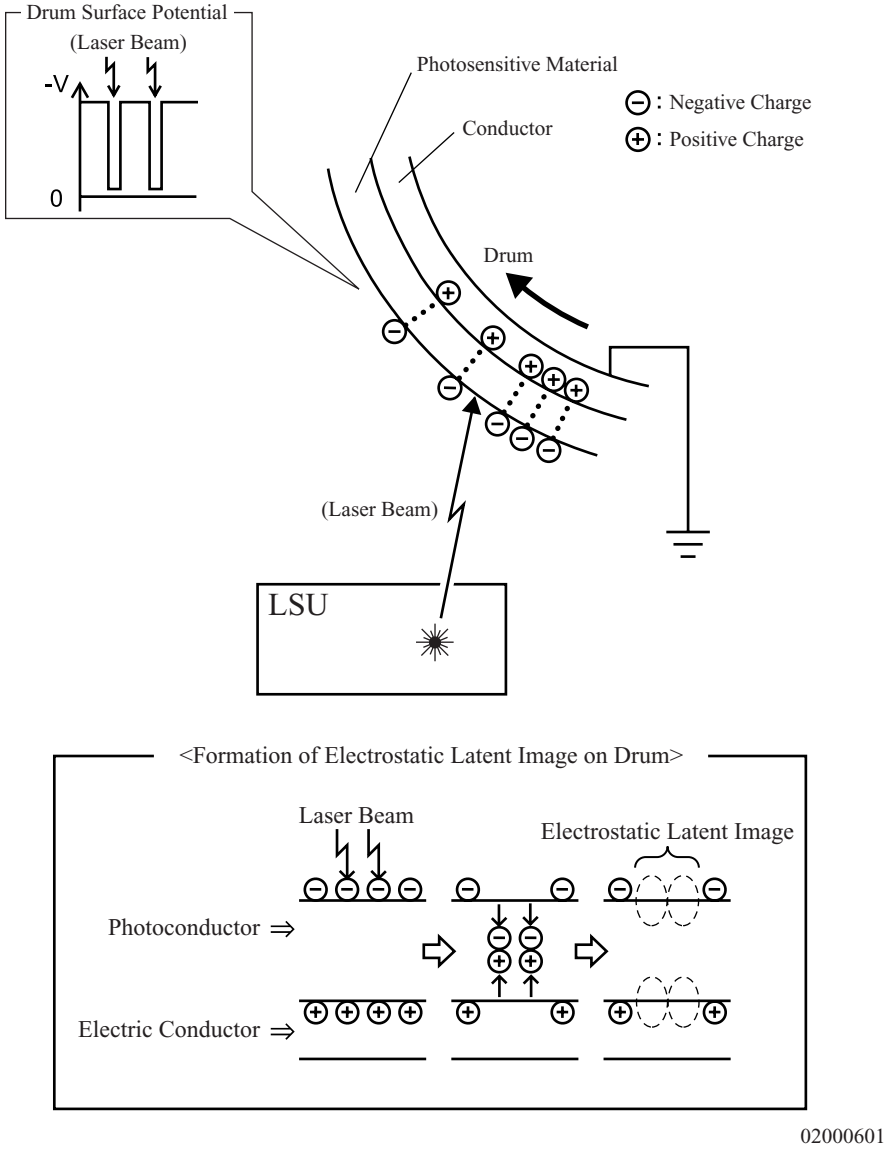


Figure 2-5. Principle of Exposure

LASER SCANNING UNIT

LSU is the exposure unit that outputs the laser beam to make an electrostatic latent image on the drum surface.
The main components of the LSU are described below.

- Laser Diode/Monitor Circuit

  An image data is input to LSU as electric signals.
  The laser diode converts image data (electric signals) to optical signals that switch the laser on and off.
  The output state of the laser diode (the amount of light emitted from the diode) is monitored by the monitor circuit at any time and the circuit controls the light intensity to keep it constant because a variation of the intensity causes an inadequate electrostatic latent image. This is called “APC (Auto Power Control)”.

- Scanner Motor

  Scanner motor consists of a motor that operates at a fixed speed and a polygon mirror attached to the motor’s rotary shaft. The polygon mirror is octagon-shaped and its eight lateral sides are covered with reflecting mirrors. The laser beam emitted from the laser diode is irradiated on the polygon mirror which is rotating by the polygon motor. As the mirror is rotating, the reflecting angle of the laser beam changes each time it is bounced off the mirror. This allows the laser to scan across on the drum from side to side. The laser can scan one horizontal line on the drum while it hits on one reflecting mirror.

- Lens, Fixed Mirror and Window

  The laser beam reflected by the polygon mirror passes through the lens, mirror and window on the way to the drum surface. The lens functions to compensate for aberration, the mirror ensures an optical path, and the window prevents foreign bodies from entering into the LSU.

- Hsync Sensor

  The timing to start scanning on the drum by the laser must be accurate to create an electrostatic latent image precisely corresponding to the image data. The Hsync sensor is used to correct the timing. When the Hsync sensor receives a laser beam, it generates an electric signal for detecting the initial position for each scanning line (reference position to start scanning). Then the signal is sent to the printer controller via the engine controller and the printer controller returns a command to start scanning. Scanning by the laser beam starts upon receiving the command sent to the exposure control circuit in the LSU via the same route.

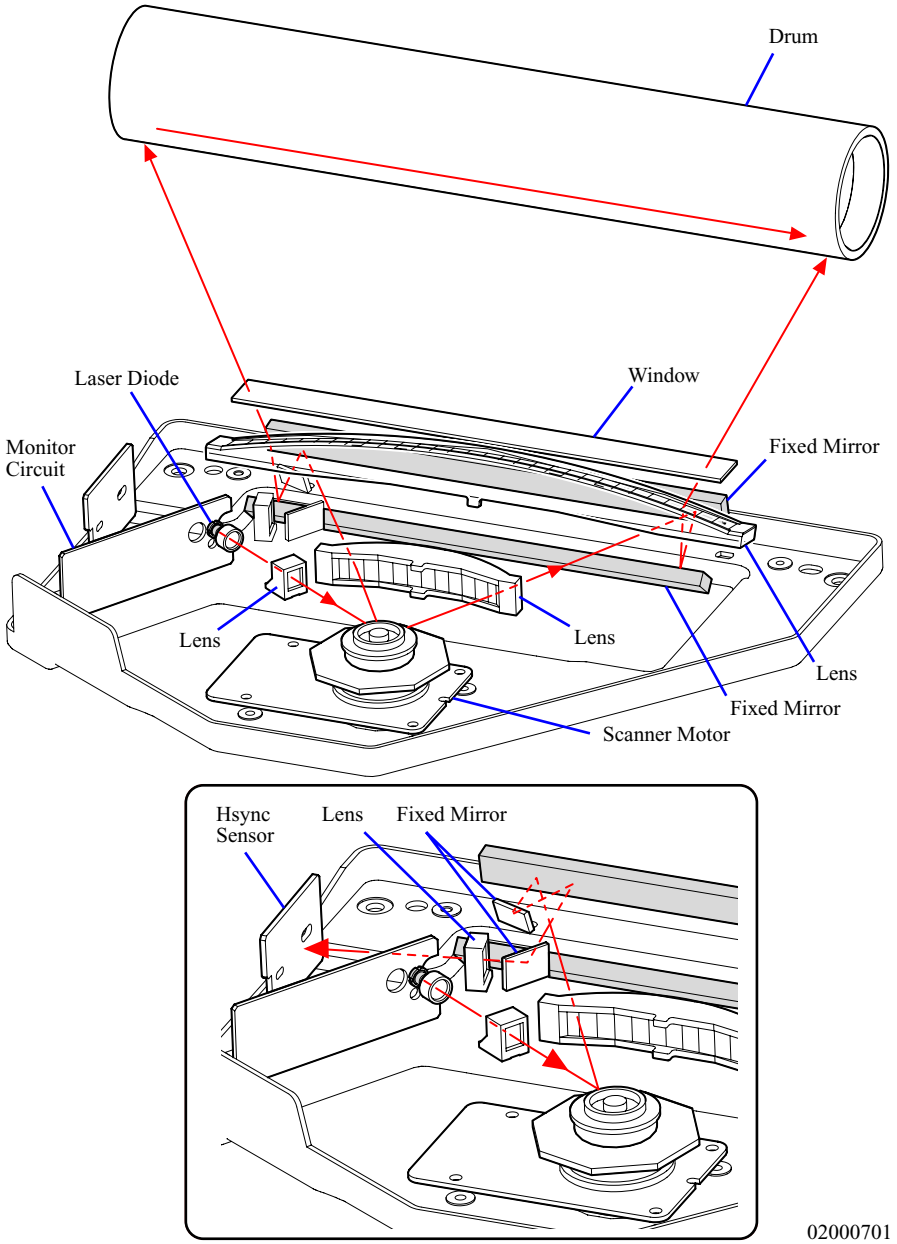


Figure 2-6. LSU

2.1.3.3 Development Process

In the development process, toner is electrically applied to a pattern of electrical charges (an electrostatic image) on the drum to form a visible image on it.

PRINCIPLE OF DEVELOPMENT

- Rotary Development System

  This printer employs the Rotary Development System, which rotates a wheel composed of four toner and developer units (toner cartridges) to set the units into position one-by-one to develop the electrostatic image with one color at a time.

- Single Component Noncontact Development System

  The toner used for the printer is one component type and nonmagnetic. To produce negative electrostatic charge on the toner, the toner is rubbed against the development roller which is negatively charged by the HVPS. Then the toner jumps the gap between the roller and the photoconductor drum by being attracted to the electrostatic image on the drum because the image is charged positively in comparison with the other part on the drum. This system, which transfers toner to the drum without mechanical contact, is called noncontact developing system.

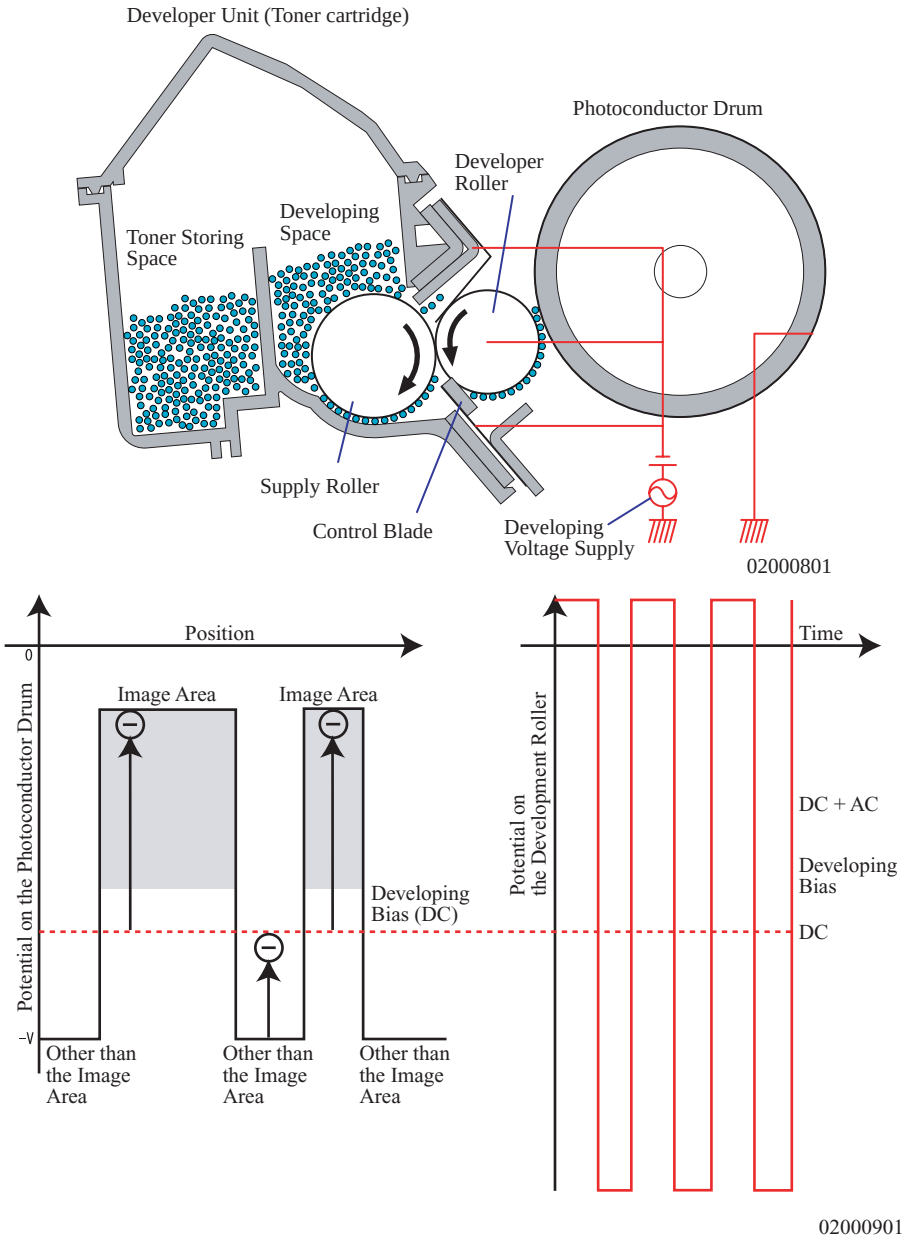


Figure 2-7. Principle of Development

☐ Toner Supply

The inside of the developer unit is separated into two spaces with a low partition, which is a part of the unit's housing. The one space is used to store toner and an amount of toner needed for developing is moved to the other space (developing space) from the storing space. The movement of the toner is performed in the order given below when the rotary unit, which contains the four developer units, rotates.

1. A developer unit is set to the position to develop an image on the drum with the toner.
2. The remaining toner in the developing space flows into the toner storing space.
3. All the toner falls down to the upper area of the developer unit as the unit becomes upside-down and the toner is stirred so that the remaining toner and toner that was in the storing space are mixed well.
4. The toner required for development is supplied to the developing space again.

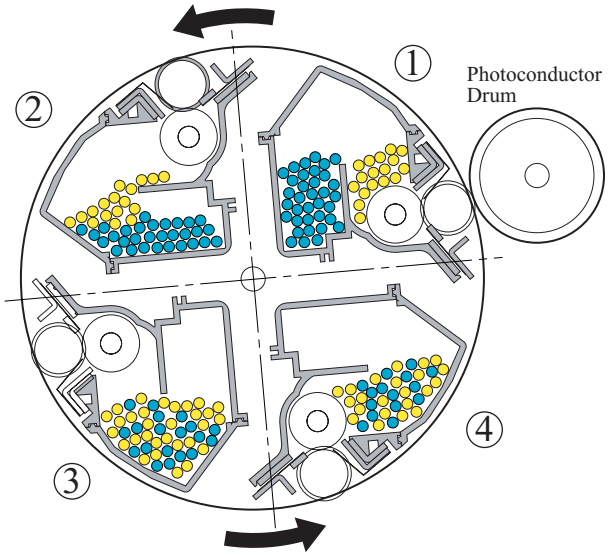


Figure 2-8. Movement of Toner

ROTARY UNIT

The rotary unit is designed to hold the four developers (toner cartridge) and bring them into position for developing one-by-one by rotation of itself.

- ☐ Rotary Drive Motor

  Rotates the rotary unit.

- ☐ Development Drive Motor

  Rotates the Developer Roller.

- ☐ Rotary HP Sensor

  This is a photo-interrupter sensor that detects the position of the rotary unit so that the rotary unit stops in a correct position. It detects the position by detecting the tab (tab for HP detection) attached to the side surface of the unit.

- ☐ Lock Assy, RT

  Stops the rotary unit at a prescribed position.
  When the rotary unit stops, the lock lever is pulled down by the spring to lock the stop tab attached to one side surface of the rotary unit.
  Releasing the lock to rotate the rotary unit again is made possible by pulling down the lock lever using the solenoid.

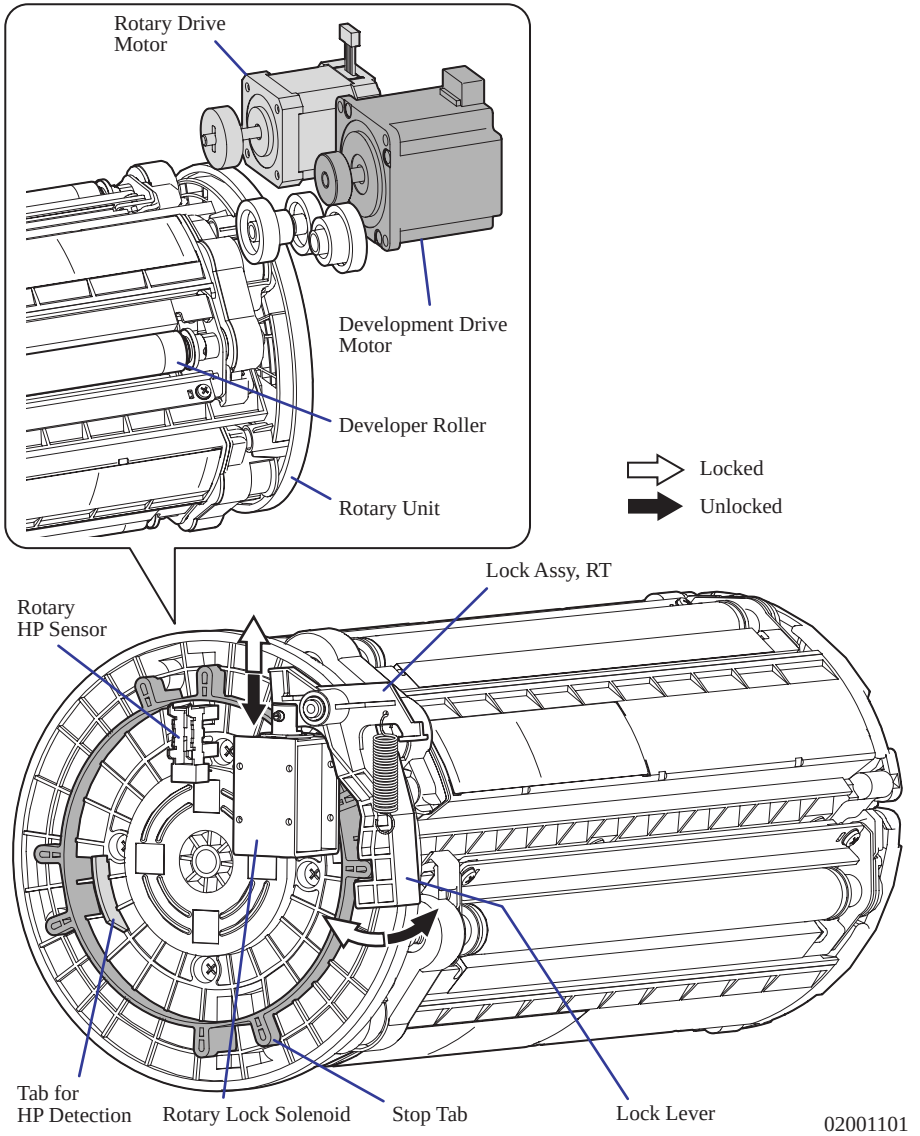


Figure 2-9. Rotary Unit

DEVELOPER ASSY (TONER CARTRIDGE)

- Supply Roller

  The two rollers rotate simultaneously and the toner in the developing space in the developer unit is supplied to the developer roller from the supply roller. The supplied toner is charged by friction when it is rubbed against the developer roller, and coats the entire surface of the roller.

- Developer Roller

  The toner on the developer roller is transferred to the surface of the photoconductor drum in a prescribed position. The roller and the drum does not make contact with each other since the printer employs the noncontact method as described in *" 2.1.3.3 Development Process (p91)"*. To maintain a constant gap between them, the developer roller is equipped with two gap-bearings, whose diameter is larger than that of the roller, on its both ends.

- Control Blade

  The amount of toner adhered to the developer roller is adjusted to the right amount by the control blade. The blade also charges the toner negatively.

- Member for Collection of Toner

  The collection member scrapes off the toner remaining on the developer roller and return it into the developing space.

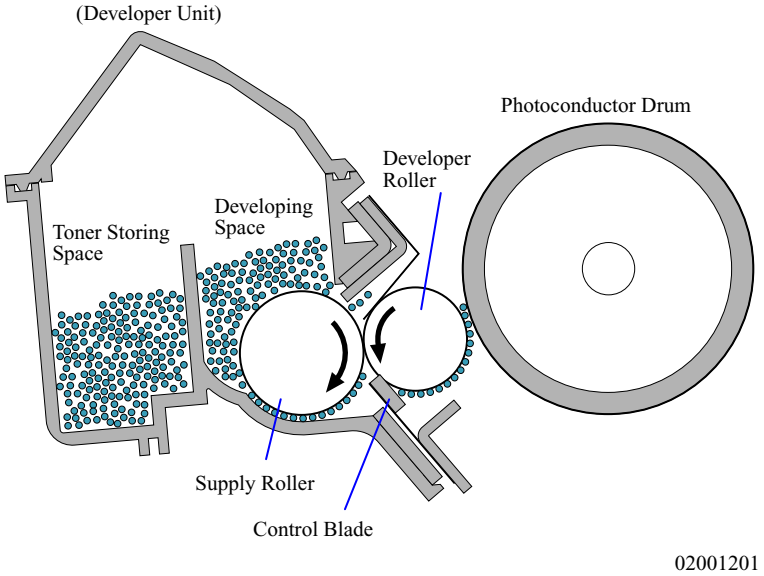


Figure 2-10. Developer Assy

2.1.3.4 Primary Transfer (Drum to Belt)

In the primary transfer process, the toner image formed on the photoconductor drum surface is transferred to the transfer belt surface.

PRINCIPLE OF PRIMARY TRANSFER

The entire surface of the transfer belt carries a positive charge supplied from HVPS via the electrode roller. As the toner on the drum is negatively charged, it is attracted to the belt accordingly.

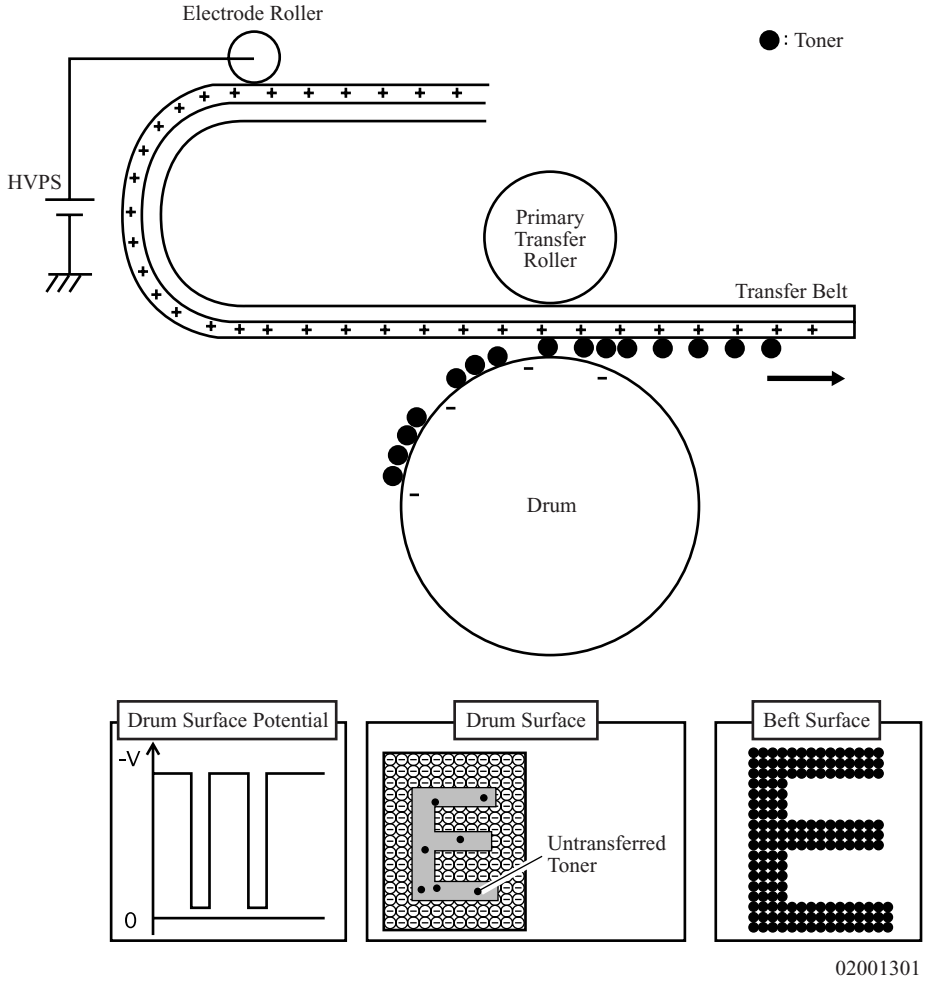


Figure 2-11. Primary Transfer (Drum to Belt)

TRANSFER BELT UNIT

☐ Photoconductor Drive Motor

Rotates the transfer belt.

☐ Primary Transfer Support Roller/Primary Transfer Back-up Roller

To ensure the primary transfer, the two rollers press the transfer belt from its backside against the drum by operation of the tension lever. The normal position of the rollers is designed to make the transfer belt be in contact with the drum, however, in the following cases, the rollers should be set to the position to keep the belt away from the drum.

- When replacing the drum (Photoconductor unit): To avoid an accidental contact with the belt.
- When transporting: To prevent the belt from getting a trace of rollers. In this case, the rollers are moved away from the belt a little enough to release the belt tension.

☐ Electrode Roller

The electrode roller is in contact with the conductive layer that is on one end of the transfer belt. The roller is positively charged with the primary transfer bias from HVPS and charges the entire surface of the belt positively through the conductive layer.

☐ Vsync Sensor

While the transfer belt rotates, the Vsync sensor detects the rotational position and rotation number of the belt by detecting a Vsync detection portion.

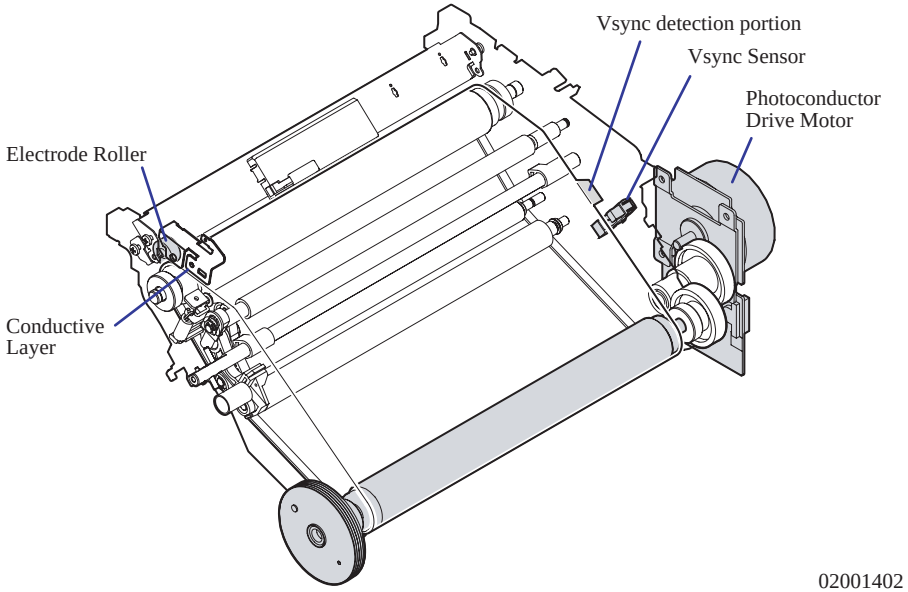


Figure 2-12. Primary Transfer (Drum to Belt)

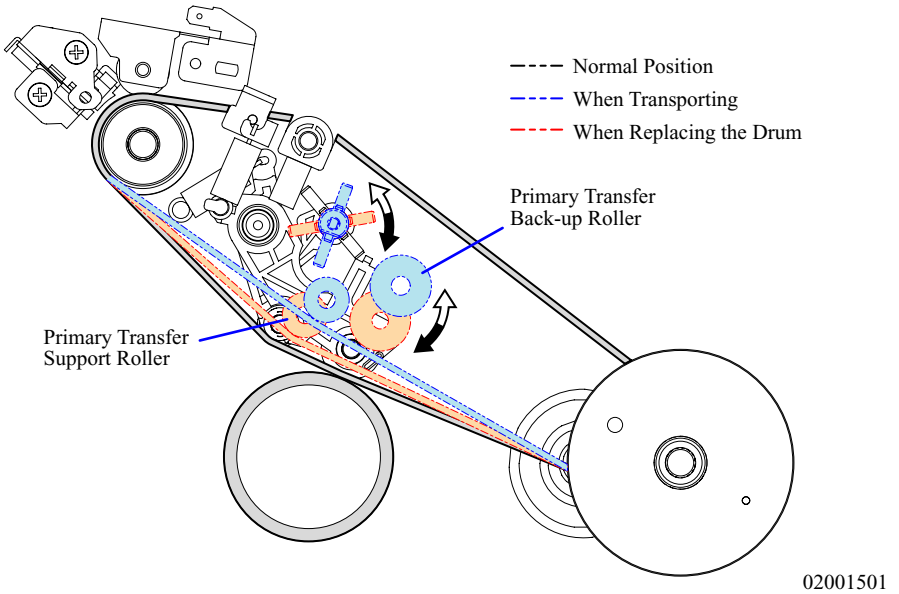


Figure 2-13. Transfer Belt Position

2.1.3.5 Cleaning and Discharging the Drum

In this process, remnant toner and charge on the drum surface are removed.

PRINCIPLE OF CLEANING

Toner that was not transferred to the belt in the primary transfer process remains on the drum surface. Since the remaining toner hinders subsequent processes, it is scraped off by a cleaning blade that is in contact with the drum, and is collected in the waste toner collection space in the photoconductor unit.

PHOTOCONDUCTOR UNIT

The waste toner collected in the waste toner collection space is stirred by the spiral stirrer to be spread evenly in the space. If the amount of the waste toner exceeds a certain level, the toner moves to a transparent box in the collection space. If the amount of the toner in the transparent box exceeds the given level, the waste toner full state detection sensor (a photo-interrupter sensor) detects that the box is full.

PRINCIPLE OF DISCHARGING

The charge remains on the drum surface after the primary transfer process. Since remnant charge on the drum surface hinders subsequent processes, it is removed by LED light emitted from the eraser.

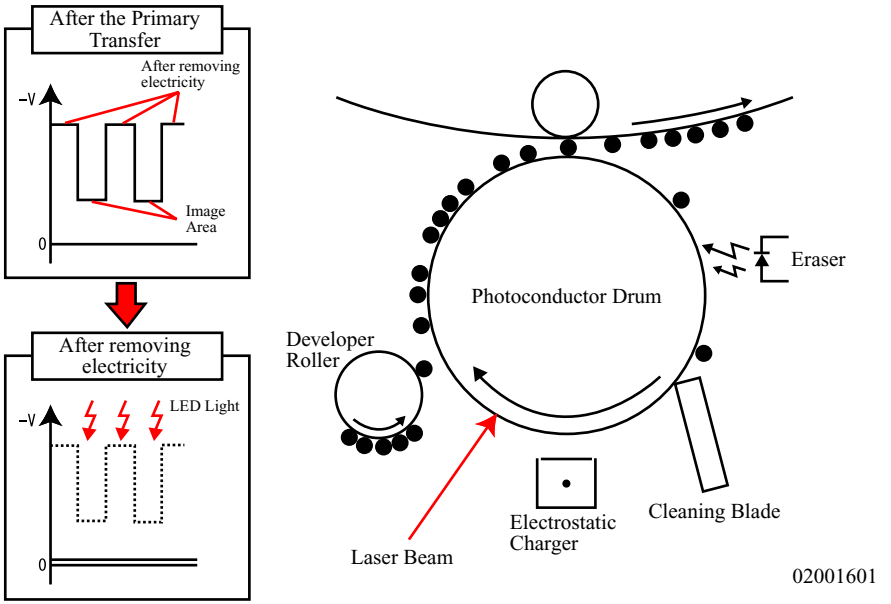


Figure 2-14. Cleaning the Drum

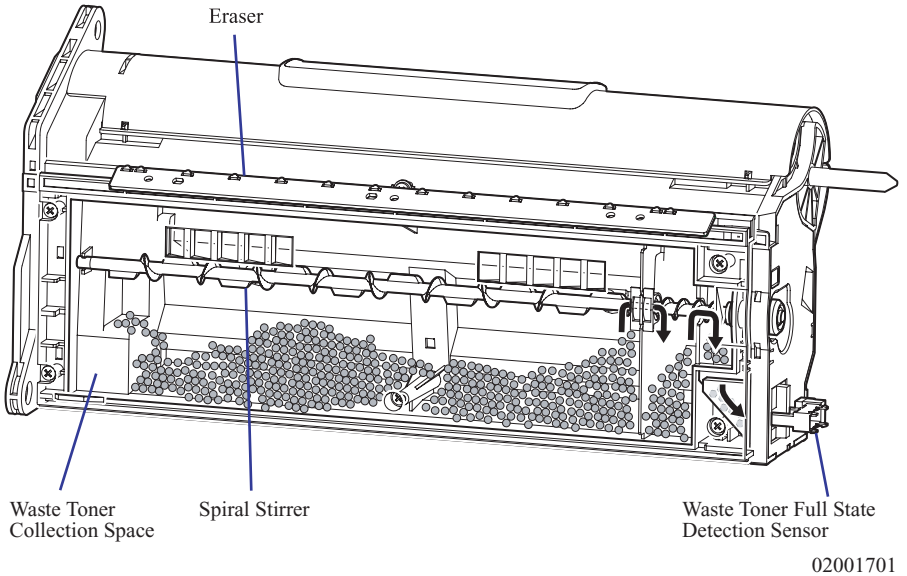


Figure 2-15. Photoconductor Unit

2.1.3.6 Repeat (Forming a Complete Toner Image)

When printing in color mode, the whole process for the primary transfer is repeated for each of four colors (YMCK) to complete a full color toner image on the transfer belt.

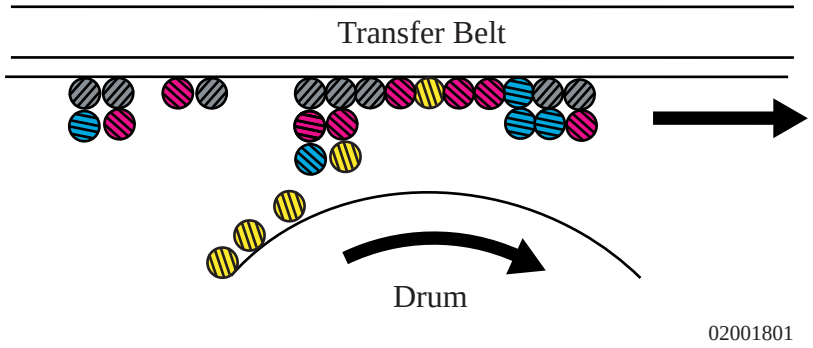


Figure 2-16. Repeat 1

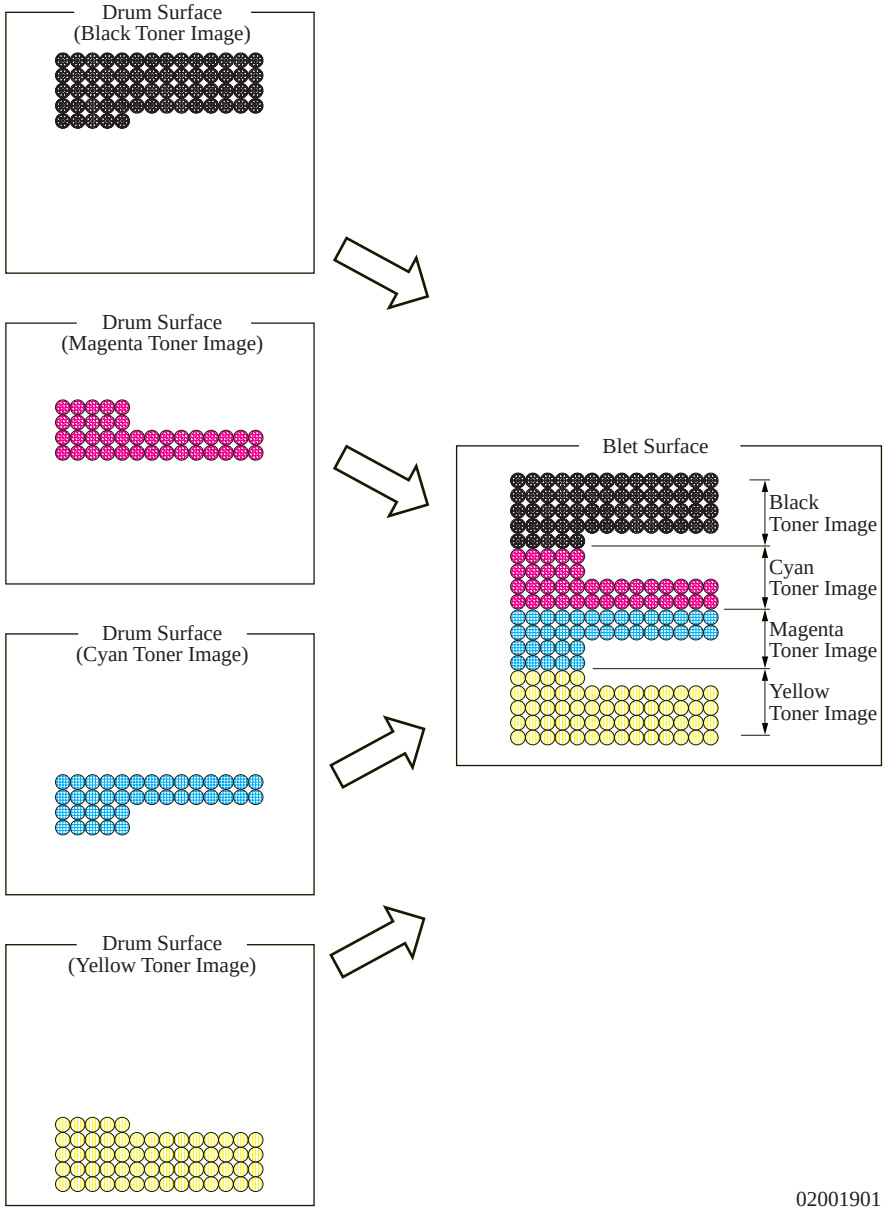


Figure 2-17. Repeat 2

2.1.3.7 Secondary Transfer (Belt to Paper)

The secondary transfer is the final transferring process, which applies the complete toner image on the belt to the paper.

PRINCIPLE OF SECONDARY TRANSFER

The complete toner image is retained on the Transfer Belt surface because of the primary transfer bias applied to the belt. In the secondary transfer process, a bias voltage higher than that of the primary transfer is supplied to the 2nd Transfer Roller. The roller moves toward the Transfer Belt from backside of the paper to press it against the belt. This causes the paper to carry a high positive charge and attract the toner image from the Transfer Belt to it. With the toner image transferred on it, the paper goes toward the fusing section by the belt rotation. When completing the secondary transfer, the 2nd Transfer Roller moves away from the Transfer Belt.

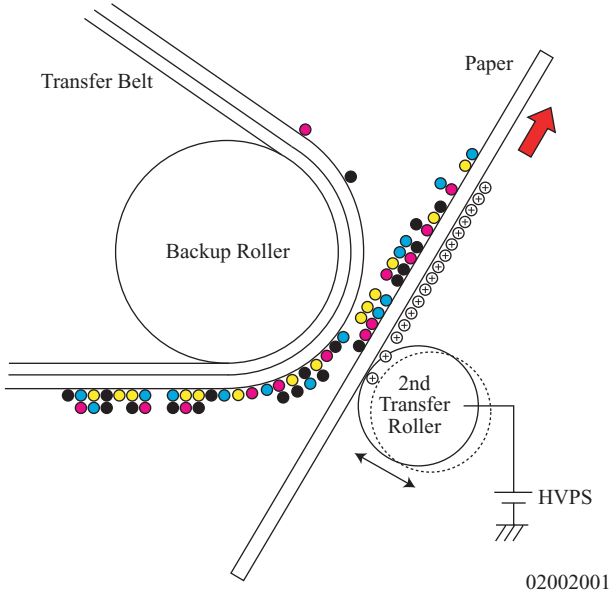


Figure 2-18. Secondary Transfer (Belt to Paper)

2ND TRANSFER ROLLER UNIT

- 2nd Transfer Roller

  This is a conductive roller and carries a high positive bias supplied from HVPS. It makes contact with the backside of the paper (the opposite side of the side to be printed) to charge the paper positively.

- 2nd Transfer Roller Clutch

  This clutch switches the drive force of the main drive motor to the 2nd transfer roller cam.

- 2nd Transfer Roller Cam

  The cam, which is driven by the main drive motor, moves the 2nd transfer roller to/away from the transfer belt.

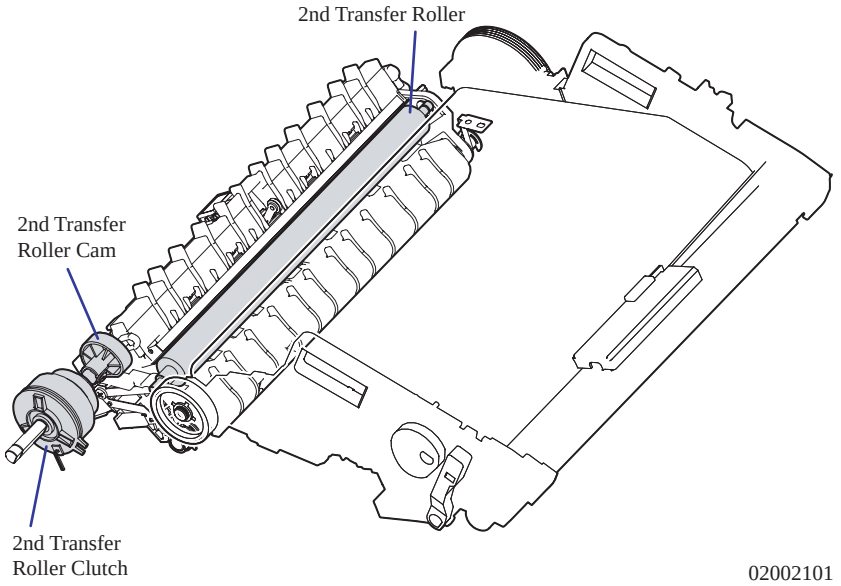


Figure 2-19. 2nd Transfer Roller Unit

2.1.3.8 Discharging

PRINCIPLE OF DISCHARGING

In the discharging process, the charge on the backside of the paper is neutralized/ removed by the discharging cloth.

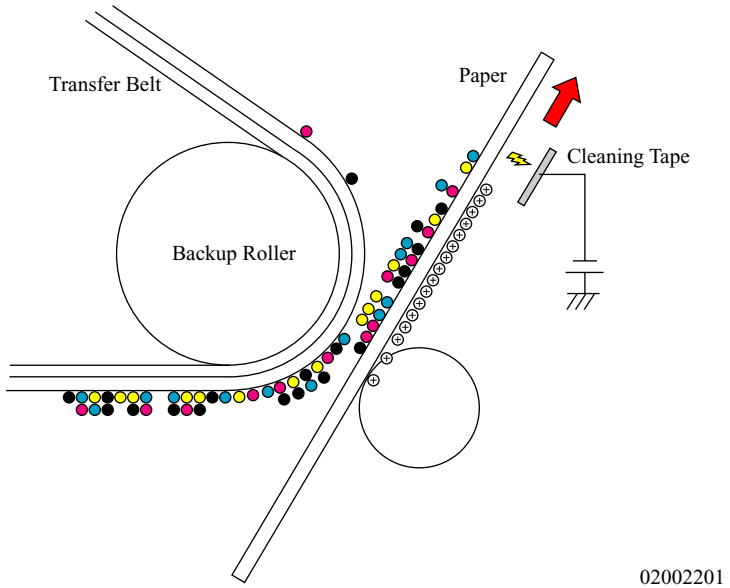


Figure 2-20. Discharging

2ND TRANSFER ROLLER UNIT

☐ Cleaning Tape

A cleaning tape neutralizes/removes the remnant charge generated during the “second transfer” process in order to prevent toner from splashing on surrounding metal parts as well as to keep papers from sticking or winding in the paper path, fusing part, or paper eject tray.

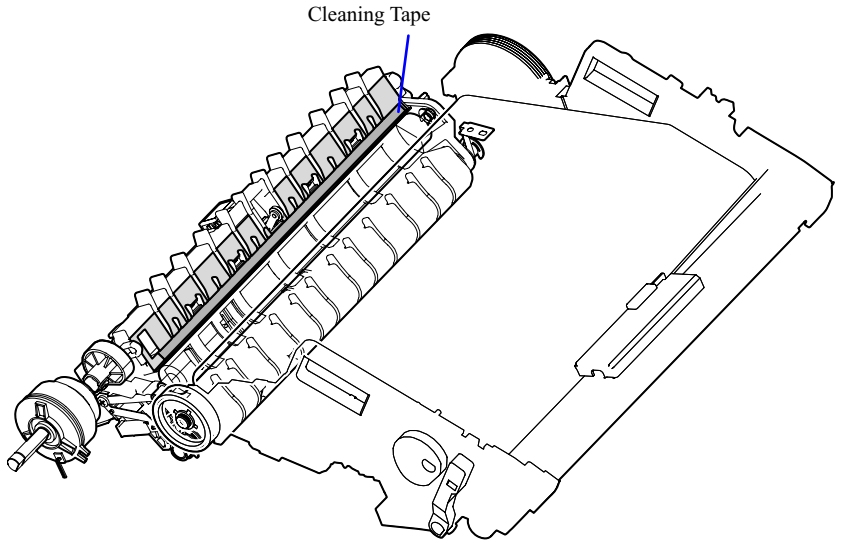


Figure 2-21. 2nd Transfer Roller Unit

2.1.3.9 Cleaning the Transfer Belt

In the cleaning (belt) process, the toner remaining on the belt surface is removed after the toner image is transferred to the paper.

PRINCIPLE OF CLEANING

The toner that is not transferred to the paper at secondary transfer process remains on the belt. Since the remaining toner hinders subsequent processes, it is scraped off by the cleaning blade and collected into the waste toner collection space in the transfer belt unit. While the cleaning blade is scraping the toner off, a spill prevention sheet covers the upper part of the waste toner collection space to prevent the toner from spilling outside of the space. The collected toner is then carried from the space to the waste toner collector by rotation of the spiral stirrer in the space.

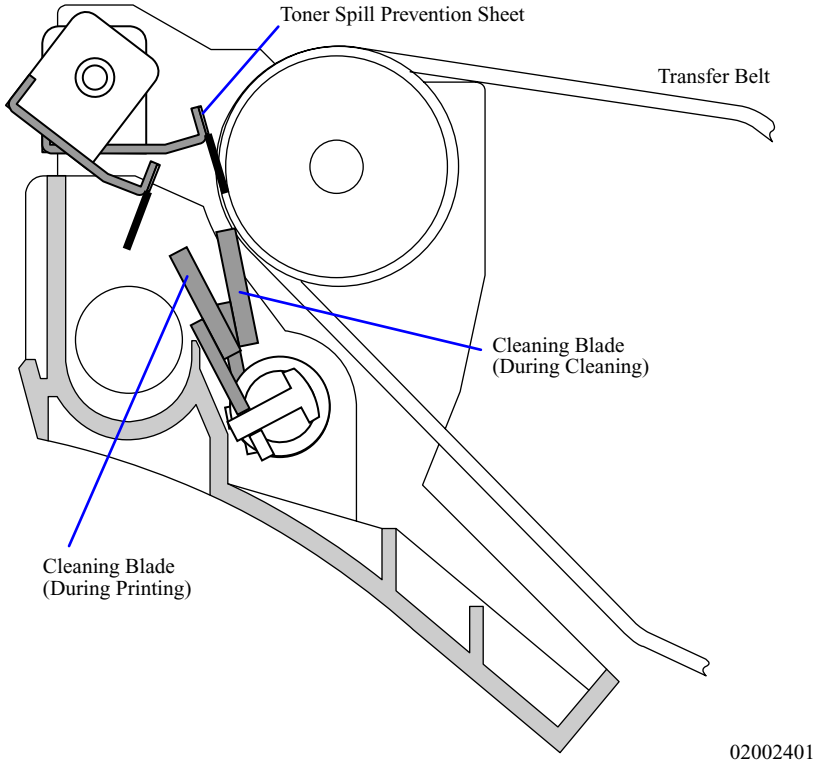


Figure 2-22. Principle of Cleaning

TRANSFER BELT UNIT

- Cleaner Clutch

  This clutch switches the drive force of the main drive motor to the cleaning blade cam.

- Cleaning Blade Cam, Cleaning Blade Lever, Cleaning Blade

  The cleaning blade contacts the belt when the cleaning is in progress and is kept away from the belt while the toner image being formed on the belt. The movement is made by the cleaning blade cam, which is driven by the main motor power, and the cleaning blade lever operated by the cam rotation.

- Spiral

  The spiral is driven by the main motor and carries the waste toner to the waste toner collector.

- Waste Toner Collector

  Collects the remaining toner on the belt.

- Waste Toner Collector Full State Detection Sensor

  A photo-interrupter sensor that detects the collector is full.

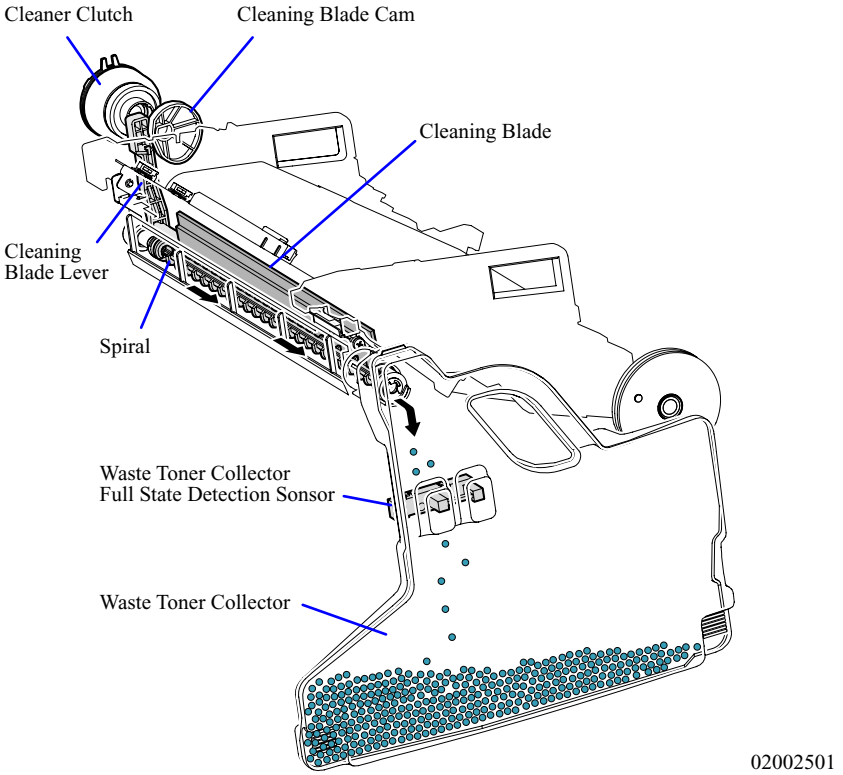


Figure 2-23. Transfer Belt Unit/Waste Toner Collector

2.1.3.10 Fusing

In the fusing process, toner is fixed on a paper with heat and pressure.

PRINCIPLE OF FUSING

The toner image on the paper, which is transferred from the belt, is fixed by the heat from the heaters inside the heat roller and pressure roller and the pressure of these two rollers.

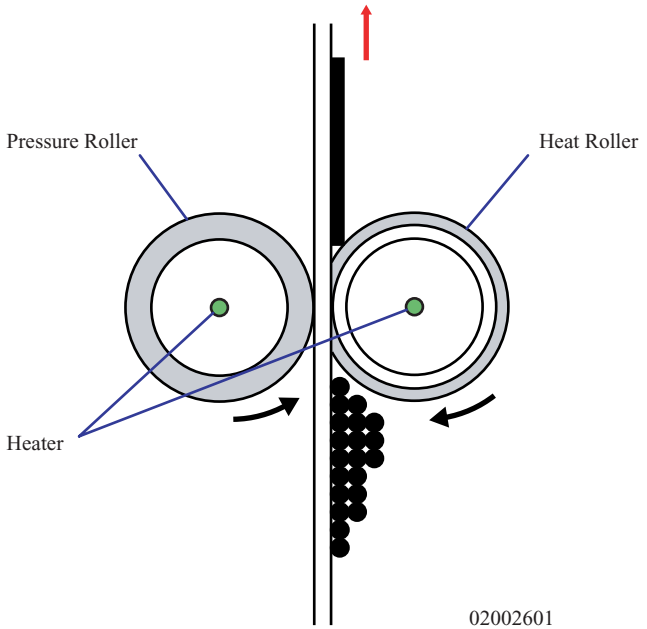


Figure 2-24. Principle of Fusing

FUSER UNIT

- Heat Roller

  Applies heat to fix the toner to the paper.

- Pressure Roller

  Applies heat and pressure to fix the toner to the paper.
  In addition, a high positive voltage given to the roller surface supports the paper to attract the toner firmly to prevent it from flying off during the fusing process.

- Peeling Board

  Peel the paper off the heat roller to prevent the paper from sticking around the roller.

- Heater

  Both the heat roller and the pressure roller include a halogen heater inside of themselves. The halogen heaters, which seals a heating coil in it, raise the temperature of rollers to a certain level to fix the toner.

- Thermistor

  Monitors the temperature of the roller surface. When it detects an abnormal high temperature, the power supply to the heaters is cut off.

- Thermostat

  When the temperature of the heat roller and pressure roller rises to a certain level, the thermostat closes the circuit of the heater.

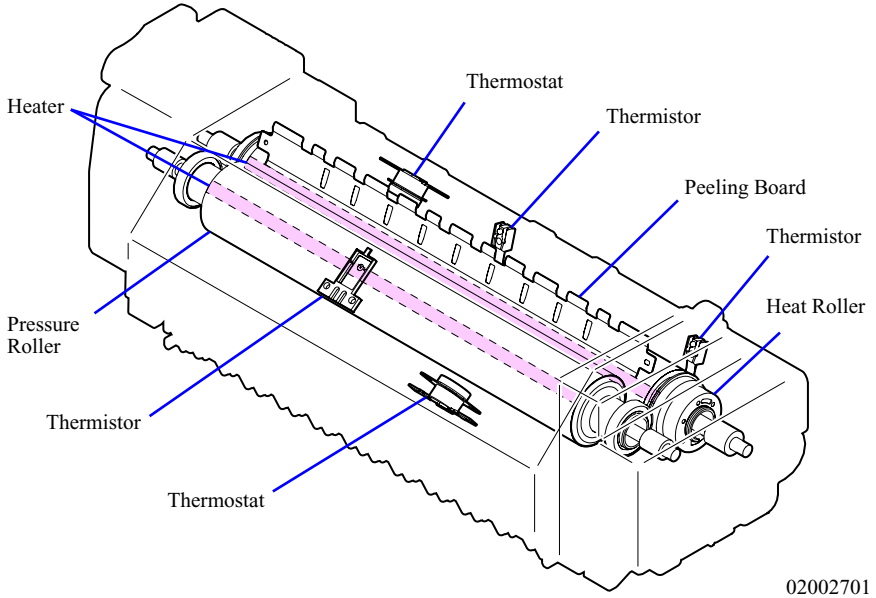


Figure 2-25. Fuser Unit

2.2 Paper Feed Mechanism

This section explains the paper feeding mechanism of the printer dividing it into the following three sections.

- ☐ Main Unit
  - ■ Until the paper is set at the position before the secondary transfer (registration) from when it is fed into the printer (pickup)
  - ■ Until the paper is ejected after the registration
  - ■ MP tray
- ☐ Duplex Printing
- ☐ Paper feed from the Opt. Feeder

The diagram on the right shows the paper feed path indicating the rollers to feed the paper and sensors that detect the paper presence.

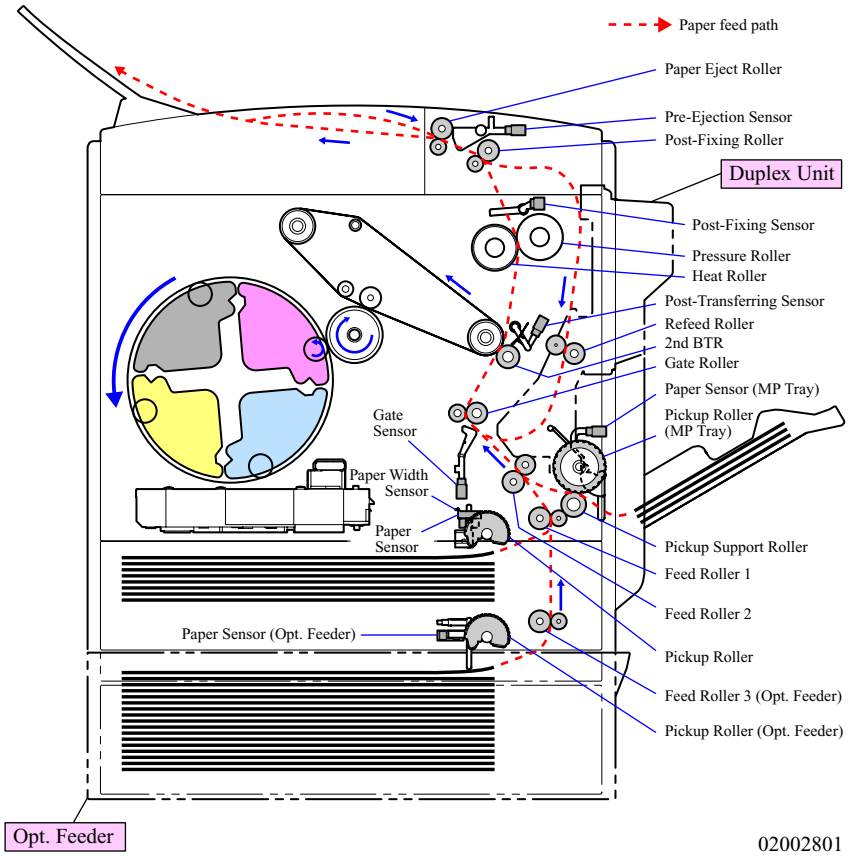


Figure 2-26. Paper Feed Path Layout

2.2.1 Main Unit Paper Feed Mechanism

2.2.1.1 Until the Paper is Set at the Position Before the Secondary Transfer (Registration)

By turning on the Pickup Clutch for a certain period of time, the Pickup Roller rotates by 360 degrees to feed one sheet of paper to the Feed Roller 1. The paper supplied to the Feed Roller 1 is transported to the Feed Roller 2 and then hit against the Gate Roller for skew correction. Then the Gate Clutch and Feed Clutch start to rotate by being turned on for a given time to transport the paper to the secondary transfer section.

PAPER CASSETTE

- ☐ Lift Plate Lock Mechanism

  When the Lift Plate is pressed down, it is locked by the lock lever on the right side of the cassette. The lock is released when the cassette is set into the main unit and the paper in it is lifted up to the feeding (pickup) position by the Lift Plate which lifts up by the spring force.

- ☐ Paper Cassette Sensor

  A mechanical contact switch that detects whether the Paper Cassette is installed or not. The printer detects the Paper Cassette while the switch is pressed down by the actuator of the cassette.

- ☐ Paper Sensor

  A photo-interrupter sensor that detects whether the paper is loaded or not. The actuator works depending on whether the paper is loaded, and the shield board on the actuator switches ON/OFF the sensor.

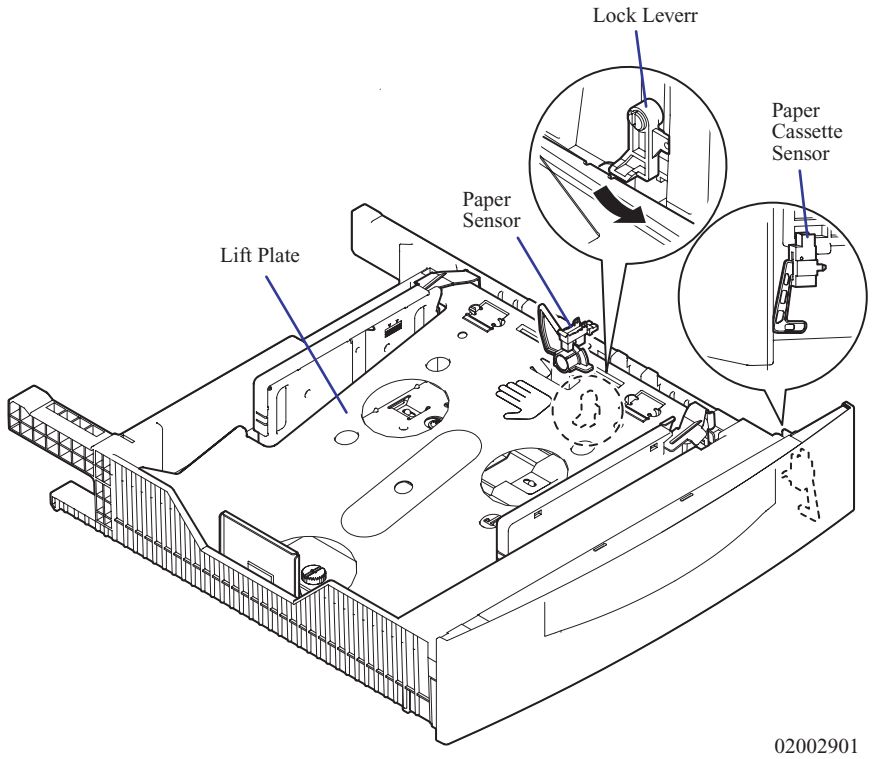


Figure 2-27. Paper Cassette

☐ Mechanism to Feed One Sheet

The two corners on the bottom edge of the paper in the cassette are pressed by two tabs equipped with the cassette when the paper is lifted up by the Lift Plate. When the Pickup Roller rotates with the paper pressed by the tabs, one sheet of paper placed on the top of the loaded papers is warped first. Then, by the force of the paper to take up the warp, the sheet is released from the tabs and fed to the Feed Roller 1.

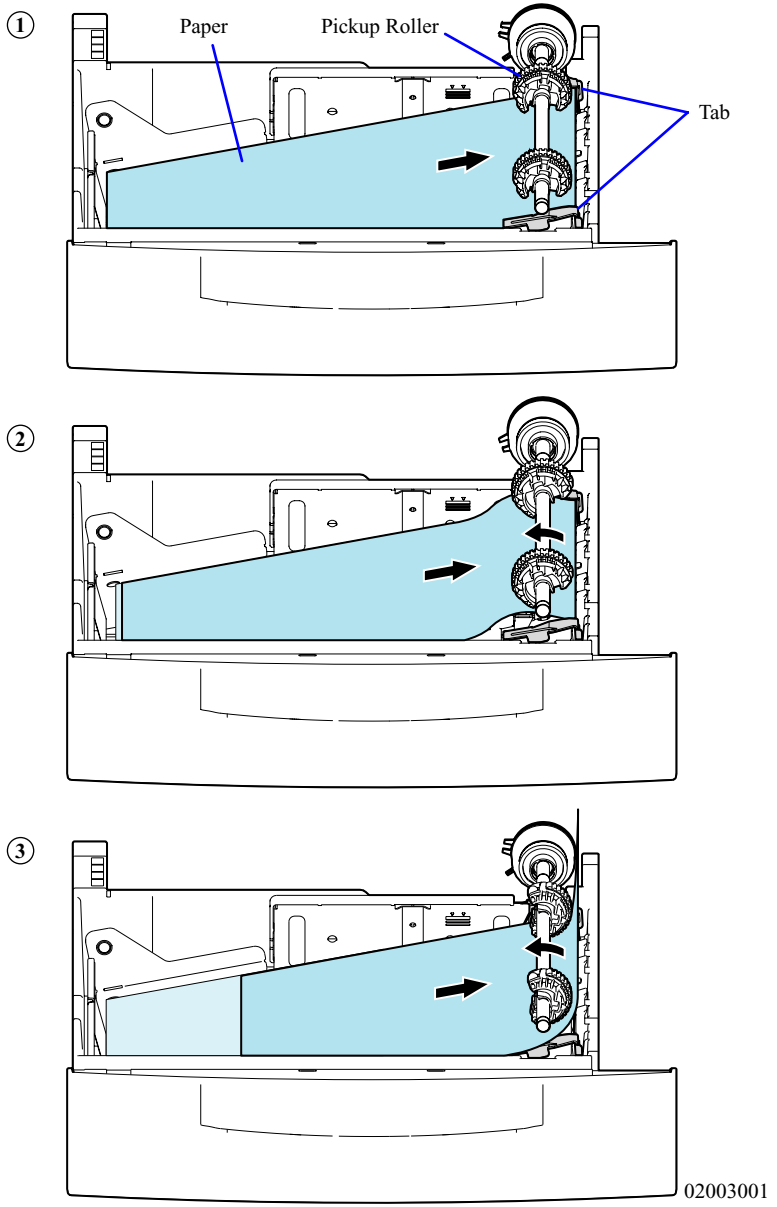


Figure 2-28. Tab Separation Process

MAIN UNIT

- Main Drive Motor

  A DC motor that drives all the motors for feeding papers.

- Pickup Clutch

  Transmits/interrupts the drive force from the Main Drive Motor to the Pickup Roller.

- Pickup Roller

  A half-moon shaped roller that feeds the paper to the Feed Roller 1.

- Feed Clutch

  Transmits/interrupts the drive force from the Main Drive Motor to the Feed Roller.

- Feed Roller 1/Feed Roller 2

  Transports the paper fed from the cassette to the registration position by the drive force of the Main Drive Motor.

- Paper Width Detection Sensor

  A photo-interrupter sensor that detects the size of the paper fed into the Main Unit. The actuator works with the paper passing, and the shield board on the actuator switches on/off the sensor. The sensor detects whether the paper width is wider or narrower than the standard width (210 mm).

- Gate Sensor

  A photo-interrupter sensor that detects the paper is reached at the registration position. The actuator works with the paper passing, and the shield board on the actuator switches on/off the sensor.

- Gate Clutch

  Transmits/interrupts the drive force from the Main Drive Motor to the Gate Roller.

- Gate Roller

  This roller is driven by the Main Drive Motor to send the paper to secondary transfer process in exact timing with the beginning of the secondary transfer. In order to take up any slackness in the paper and send it without skew, the leading edge of the paper is pushed against the Gate Roller, which is not rotating at that time, by the drive force of the Feed Roller. Then the paper is transported to the secondary transfer section as the Gate Roller starts to rotate.

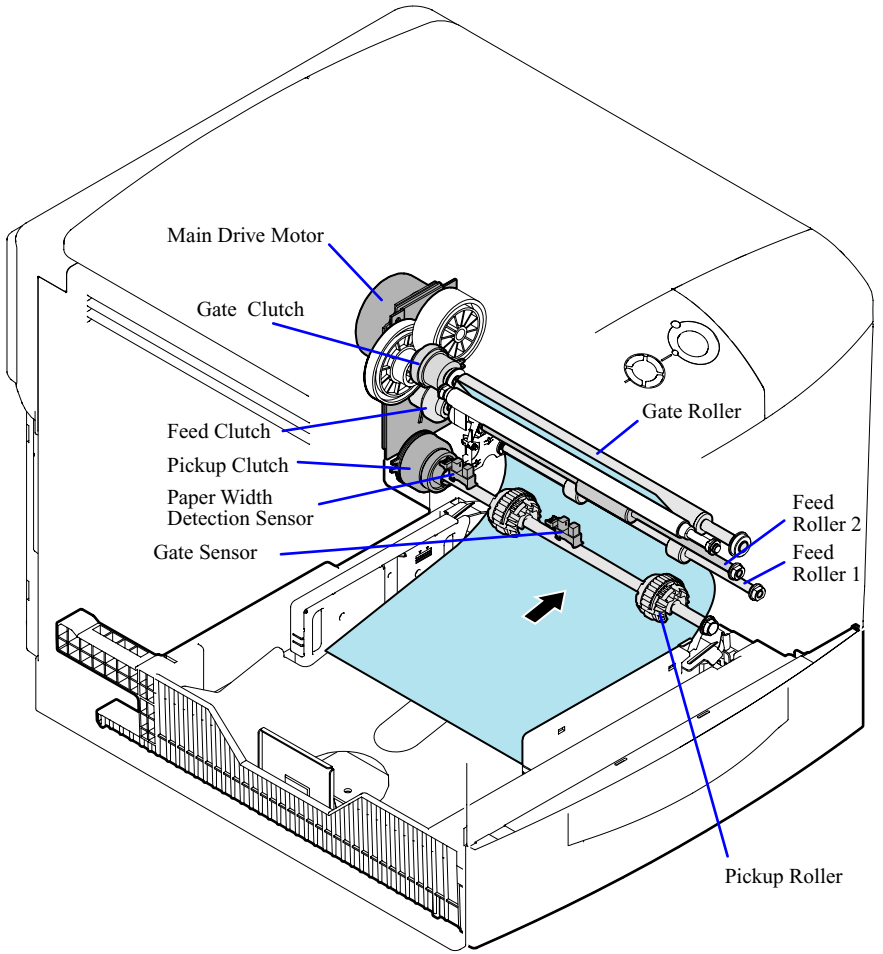


Figure 2-29. Main Unit Paper Feed System Main Components

2.2.1.2 Until the Paper is Ejected After the Registration

The paper sent to the secondary transfer section is then transported to the fusing section by the Transfer Belt and the 2nd Transfer Roller, while the toner image on the belt is transferred onto the paper. In the fusing section, the paper is transported by the Heat Roller and the Pressure Roller in the Fuser Unit and then ejected out of the printer by the Post-fixing Roller and Paper Eject Roller.

MAIN UNIT

- Post-Transferring Sensor

  A photo-interrupter sensor that detects the paper passed through the secondary transfer section.
  The actuator works with the paper passing, and the shield board on the actuator switches on/off the sensor.

- Post-Fixing Sensor

  A photo-interrupter sensor that detects the paper passed through the Fuser Unit.
  The actuator works with the paper passing, and the shield board on the actuator switches on/off the sensor.

- Post-Fixing Roller

  Transports the paper ejected from the Fuser Unit to the Paper Eject Roller by the drive force of the Main Drive Motor. When the Duplex Unit is installed, the roller is driven by the Switch Back Motor on the Duplex Unit.

- Pre-Ejection Sensor

  A photo-interrupter sensor that detects the paper has reached the ejection section.
  The actuator works with the paper passing, and the shield board on the actuator switches on/off the sensor.

- Paper Eject Roller

  Ejects the printed paper out of the printer by the drive force of the Main Drive Motor. When the Duplex Unit is installed, the roller is driven by the Switch Back Motor on the Duplex Unit.

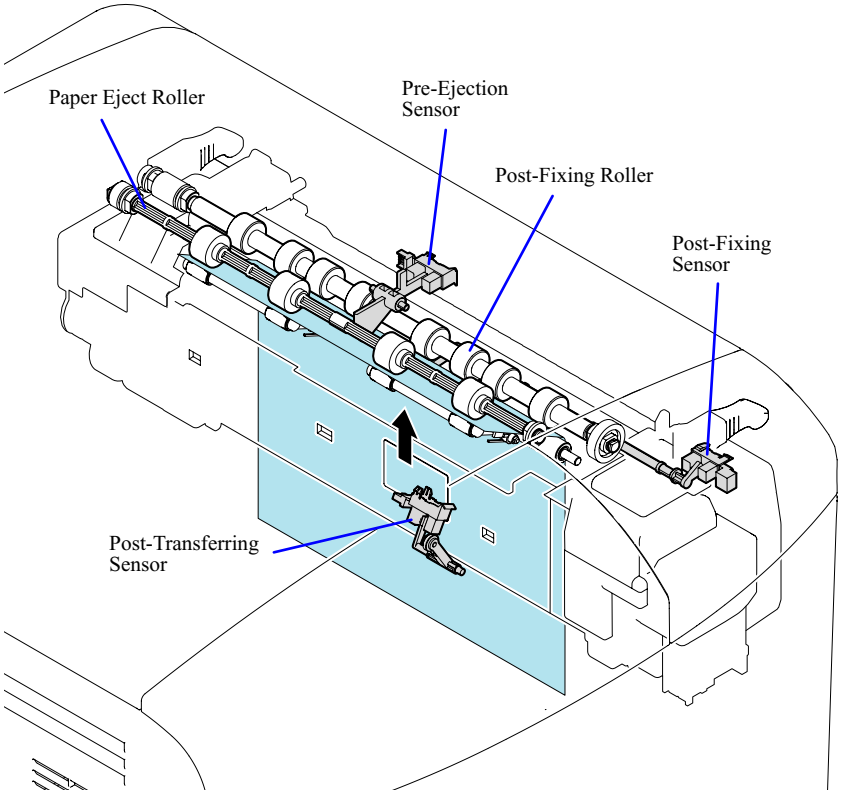


Figure 2-30. Main Unit Paper Feed System <Main Component>

2.2.1.3 MP Tray

The paper in the MP Tray is lifted to the feeding (pickup) position by the Lift Plate which is driven by the Lift Plate Cam. The cam starts to rotate when the Lift Plate Clutch is turned on. Then the paper is fed to the Feed Roller 2 by the Pickup Roller which starts to rotate when the MP Tray Pickup Clutch is kept ON for a predetermined time.

MAIN UNIT

- Paper Sensor

  A photo-interrupter sensor that detects whether the paper is loaded or not in the MP Tray. The actuator works depending on whether the paper is installed, and the shield board on the actuator switches on/off the sensor.

- Lift Plate Clutch

  Transmits/interrupts the drive force from the Main Drive Motor to the cam that moves the Lift Plate up and down.

- Lift Plate

  Lifts the paper to the pickup position. The plate is moved up and down by the Lift Plate Cam.

- Pickup Clutch

  Transmits/interrupts the drive force from the Main Drive Motor to the Pickup Roller.

- Pickup Roller

  Feeds paper in the MP Tray into the printer by the drive force of the Main Drive Motor.

- Anti-Multi Feed Roller

  A roller with a torque limiter, which rotates by a predetermined torque, to prevent multiple-sheet feeds.
  When multiple sheets are fed between the roller and the Pickup Roller at a time, this roller does not rotate because a predetermined torque is not obtained due to less friction resistance between the papers.

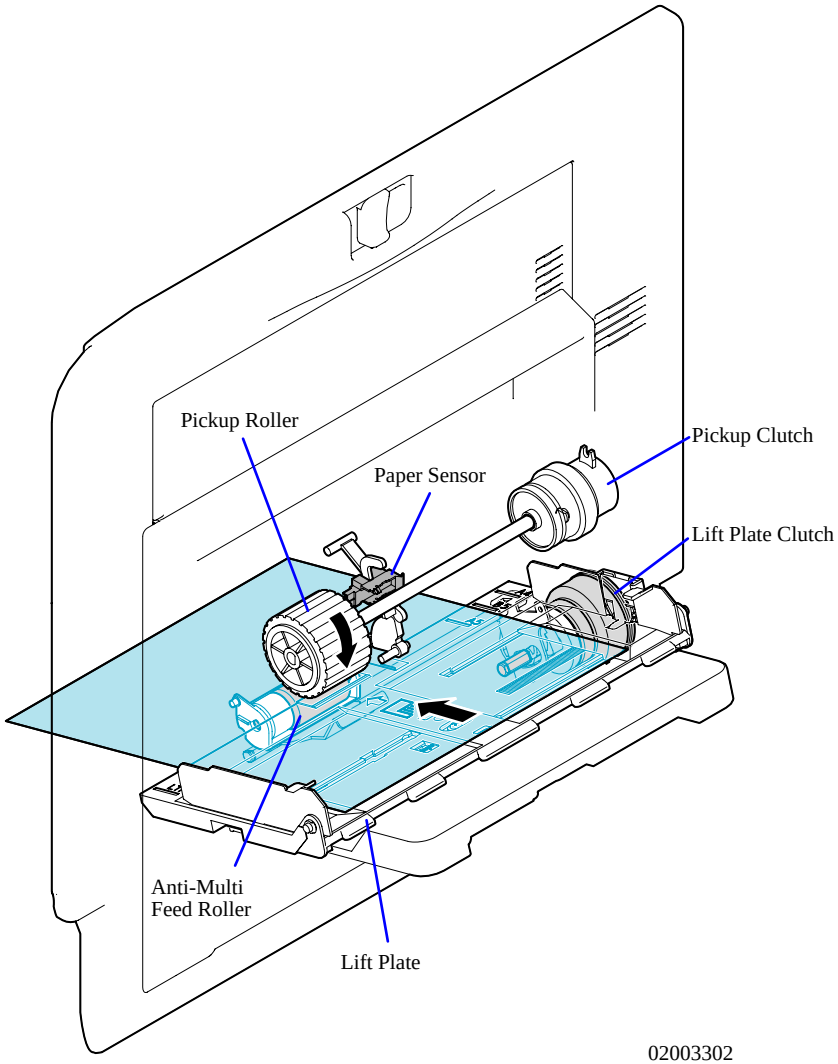


Figure 2-31. MP Tray

2.2.2 Duplex Printing

After the paper is ejected from the Fuser Unit, the Switch Back Motor of the Duplex Unit rotates in reverse to transport the paper to the paper refeed path. Then the paper is transported to the registration position by the Refeed Roller for skew correction, and sent to secondary transfer section again.

DUPLEX UNIT

- Drawer Connector

  Connects the Duplex Unit electrically to the printer.
  When the Duplex Unit is installed in the printer, the printer detects it by an Unit installation detection signal (/DUP_SET).

- Switch Back Motor

  A stepping motor that rotates the rollers listed below in normal/reverse.

  - Refeed Roller
  - Post-Fixing Roller
  - Paper Eject Roller

- Refeed Roller

  Transports the paper fed to the refeed path to the registration position by the drive force of the Switch Back Motor.

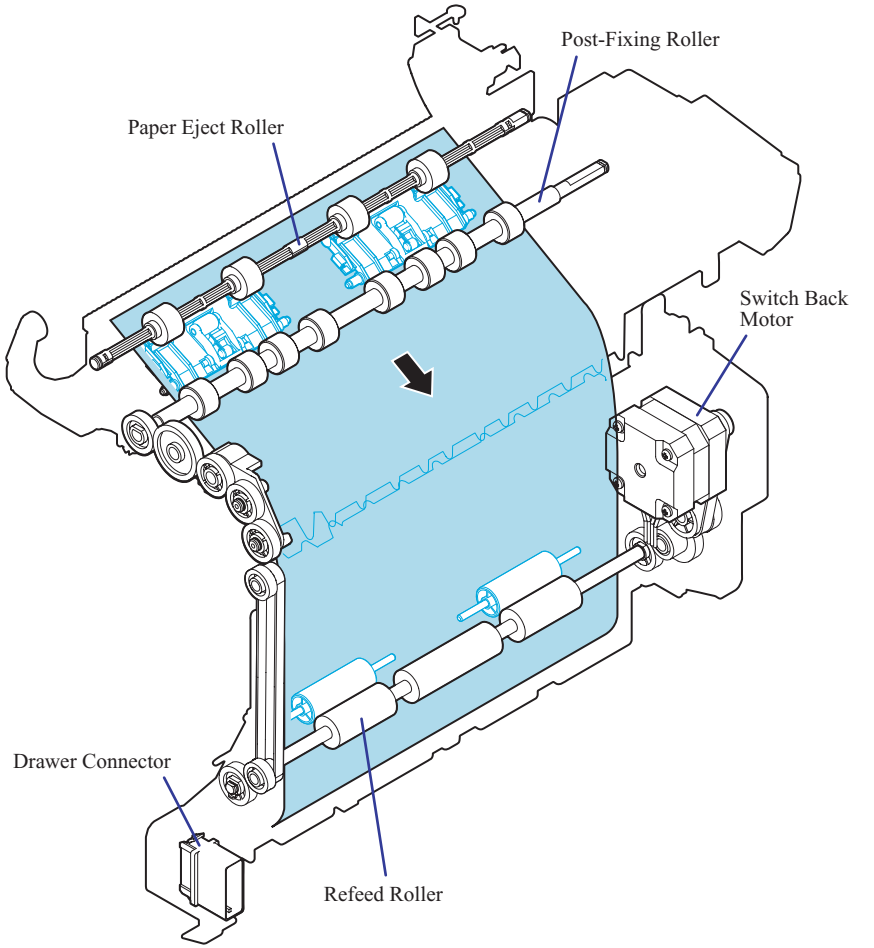


Figure 2-32. Duplex Printing Unit

2.2.3 Paper Feed from Opt. Feeder Unit

When the Pickup Clutch is turned on for a certain period of time, the Pickup Roller rotates by 360 degrees to feed one sheet of paper into the Feed Roller 3. Then the paper is fed into the printer.

OPT. FEEDER UNIT

CHECK POINT

The paper cassette used as the Opt. Feeder is the same one used in the Main Unit. See Section 2.2.1.1 for the information on the cassette mechanism.

- Drawer Connector

  Connects the Opt. Feeder electrically to the printer.
  When the Opt. Feeder is installed in the printer, the printer detects it by an Unit installation detection signal (/OP_SET).

- Opt. Feeder Drive Motor

  A DC motor that drives the rollers below.

  - Pickup Roller
  - Feed Roller 3

- Pickup Clutch

  Transmits/interrupts the drive force from the Opt. Feeder Drive Motor to the Pickup Roller.

- Pickup Roller

  Feeds the paper in the paper cassette into the printer by the drive force of the Opt. Feeder Drive Motor.

- Feed Clutch

  Transmits/interrupts the drive force from the Opt. Feeder Drive Motor to the Feed Roller 3.

- Feed Roller 3

  Transports the paper fed by the Pickup Roller into the printer by the drive force of the Opt. Feeder Drive Motor.

- Paper Sensor

  A photo-interrupter sensor that detects whether the paper is loaded or not in the paper cassette. The actuator works depending on whether the paper is loaded or not, and the shield board on the actuator switches on/off the sensor.

- Cover Open Sensor

  A mechanical contact switch that detects whether the cover for resolving jams on the right side of the paper cassette is open or closed.
  The printer detects that the cover is closed while the switch is pressed down by the actuator of the cover.

- Paper Cassette Sensor

  A mechanical contact switch that detects whether the Paper Cassette is installed or not.
  The printer detects that the cassette is installed while the switch is pressed down by the back-end of the cassette.

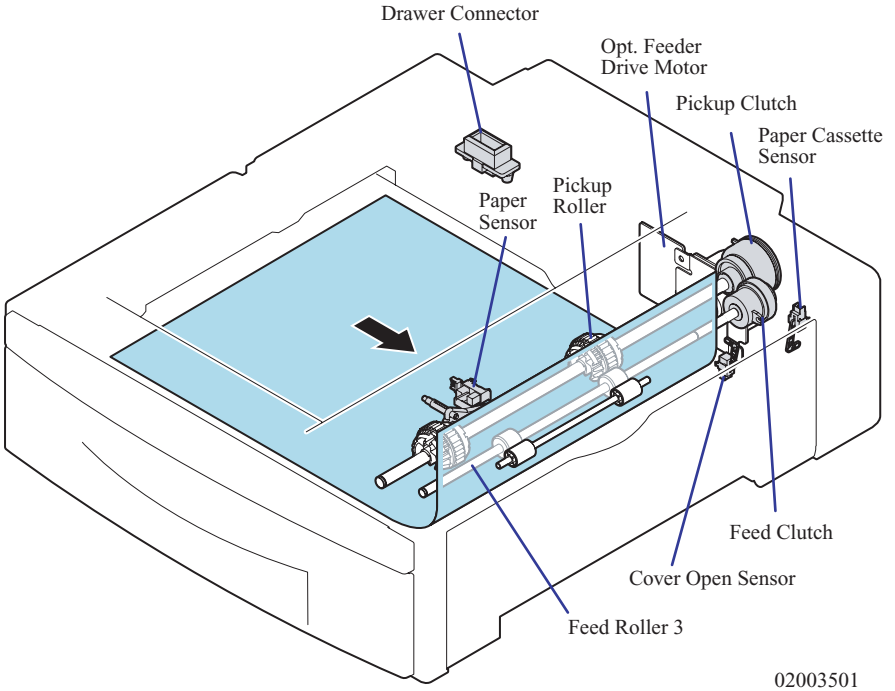


Figure 2-33. Opt. Feeder Unit

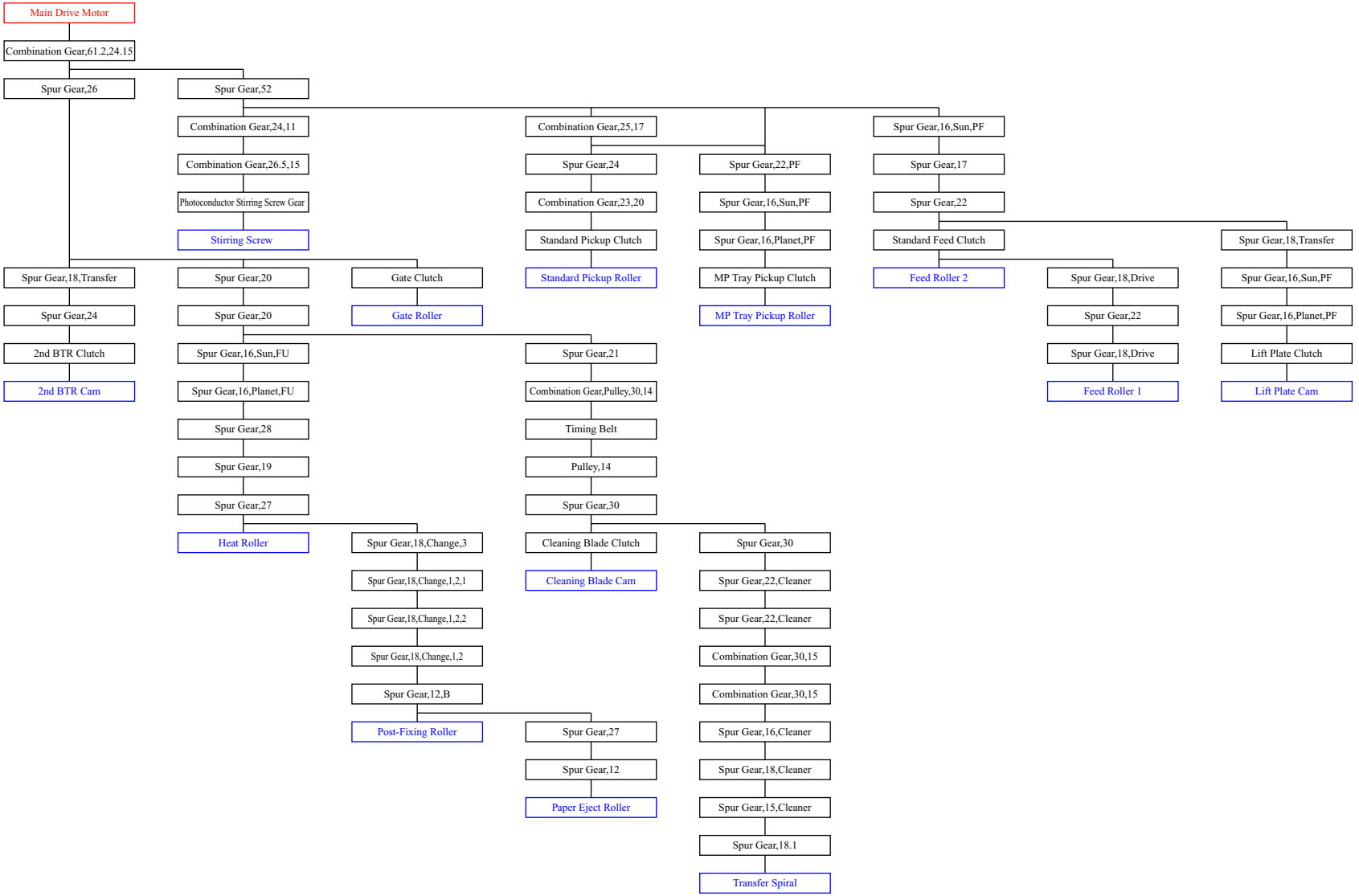
2.3 Drive

This printer is driven by the motors listed below. This section illustrates the drive transmission path by each motor.

- Main Drive Motor
- Photoconductor Drive Motor
- Rotary Drive Motor
- Development Drive Motor
- Duplex Motor (Switch back motor)
- Opt. Feeder Motor

2.3.1 Main Drive Motor

DRIVE TRANSMISSION PATH



02003601

Figure 2-34. Drive Transmission Path

COMPONENT LAYOUT

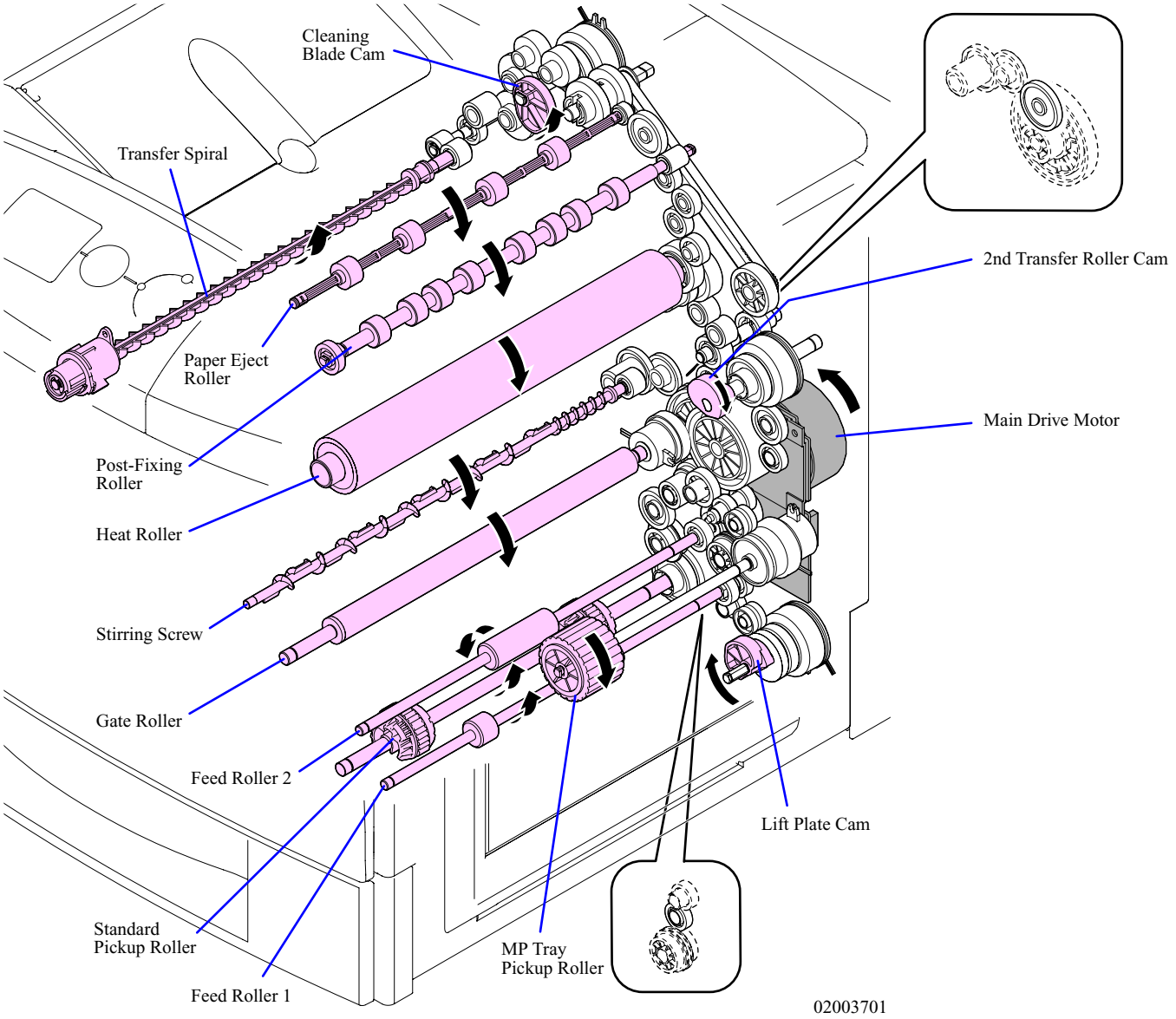


Figure 2-35. Component Layout

2.3.2 Photoconductor Drive Motor

DRIVE TRANSMISSION PATH

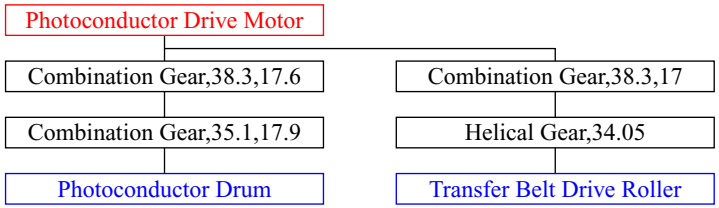


Figure 2-36. Drive Transmission Path

COMPONENT LAYOUT

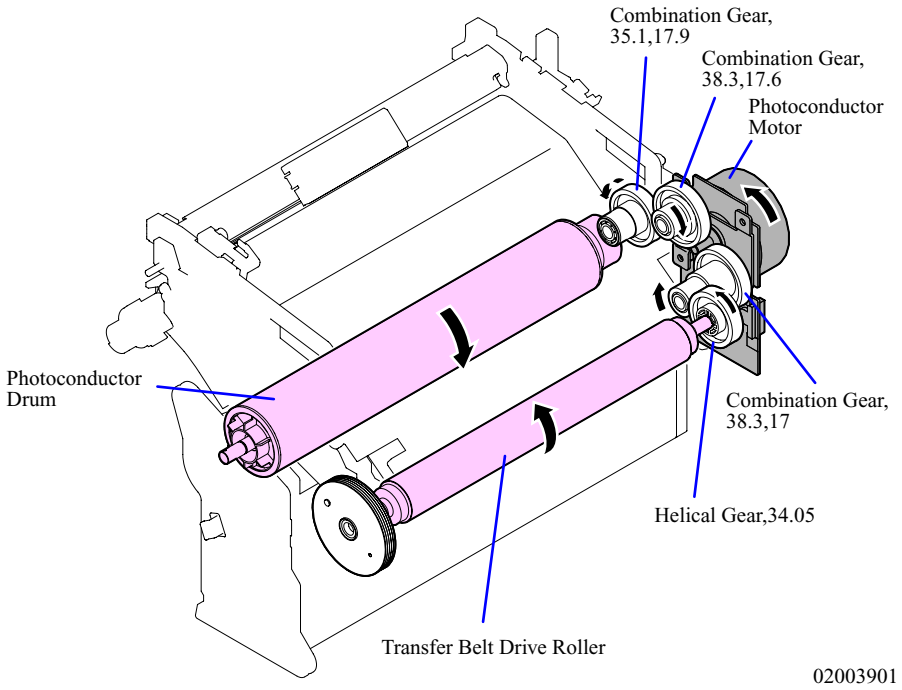


Figure 2-37. Component Layout

2.3.3 Rotary Drive Motor

DRIVE TRANSMISSION PATH

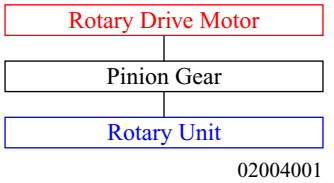


Figure 2-38. Drive Transmission Path

COMPONENT LAYOUT

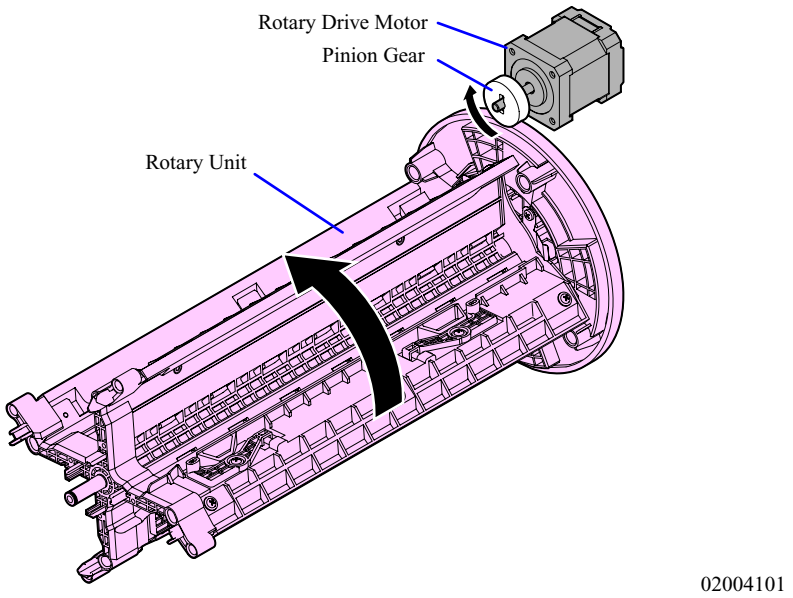


Figure 2-39. Component Layout

2.3.4 Development Drive Motor

DRIVE TRANSMISSION PATH

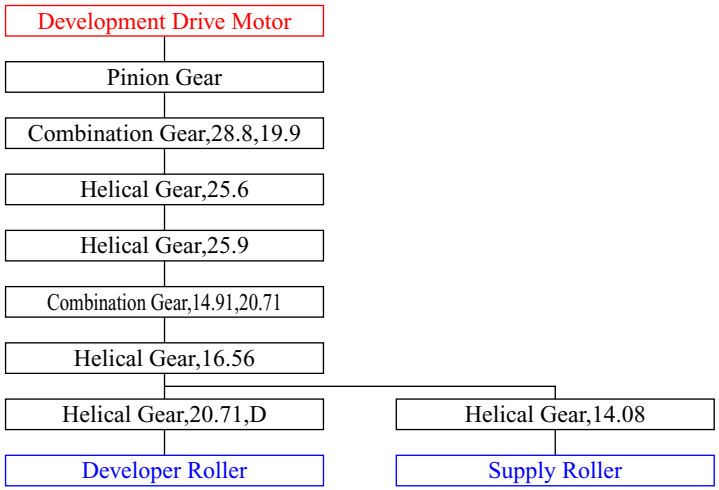


Figure 2-40. Drive Transmission Path

COMPONENT LAYOUT

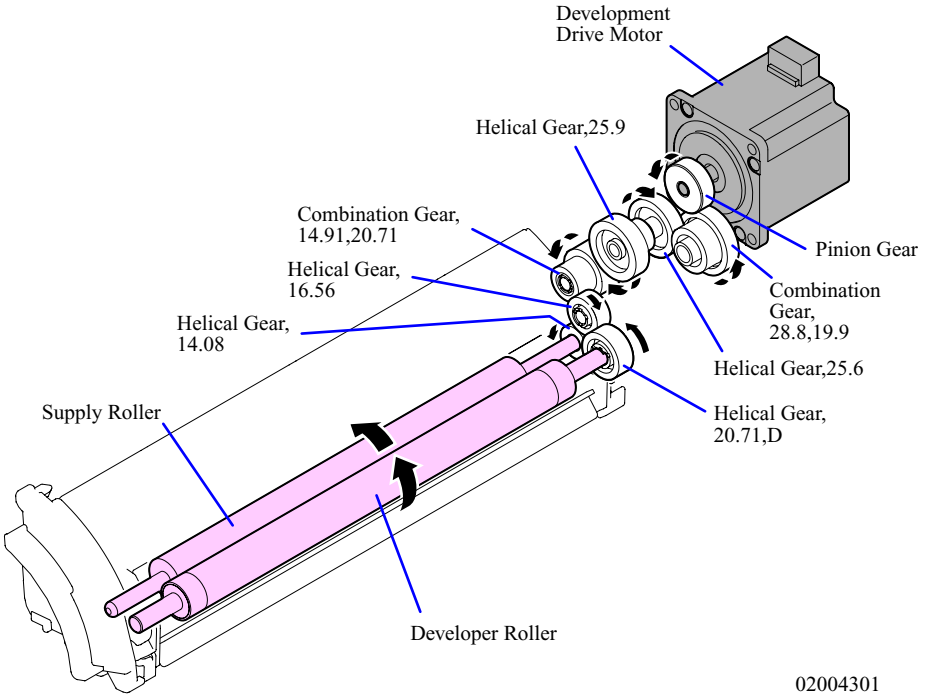


Figure 2-41. Component Layout

2.3.5 Duplex Motor

DRIVE TRANSMISSION PATH

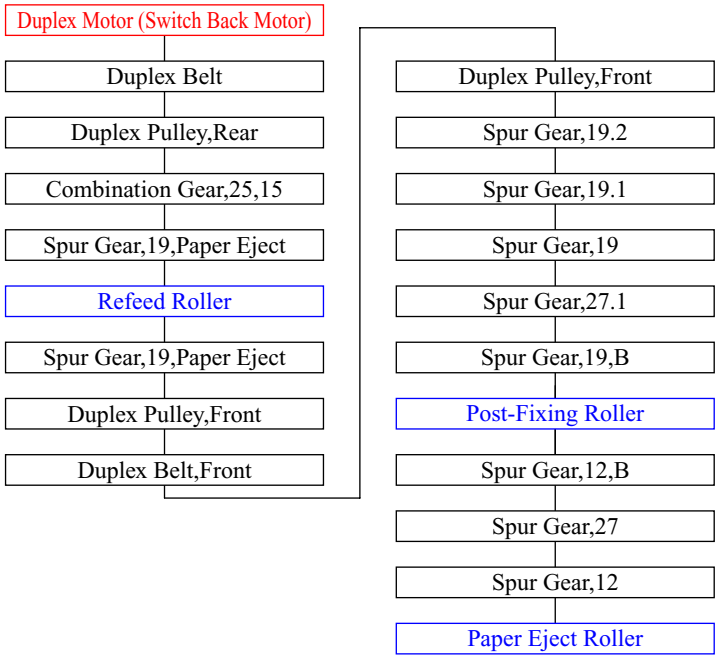


Figure 2-42. Drive Transmission Path

COMPONENT LAYOUT

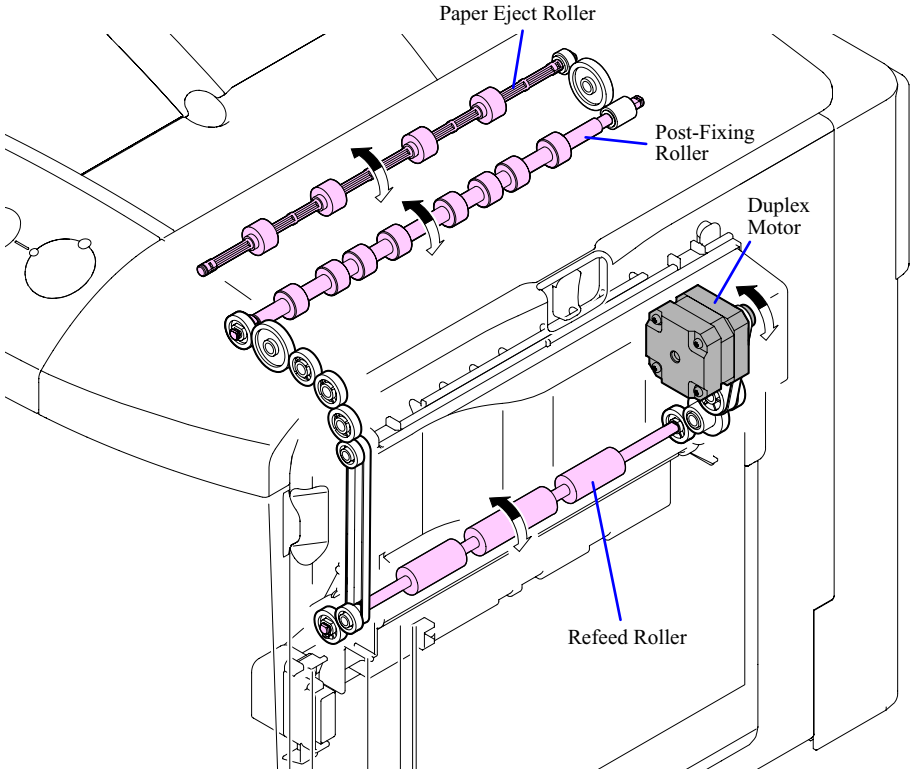


Figure 2-43. Component Layout

2.3.6 Opt. Feeder Motor

DRIVE TRANSMISSION PATH

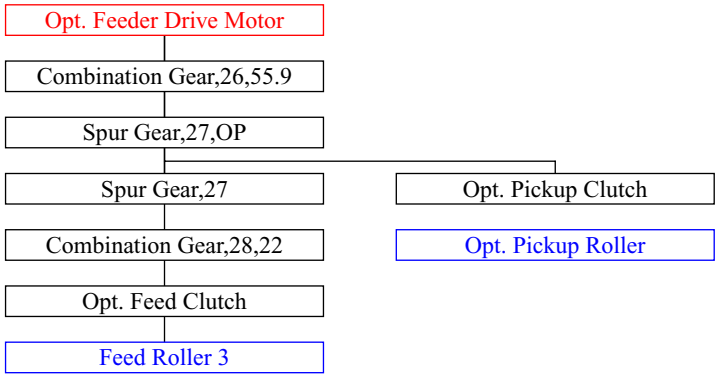


Figure 2-44. Drive Transmission Path

COMPONENT LAYOUT

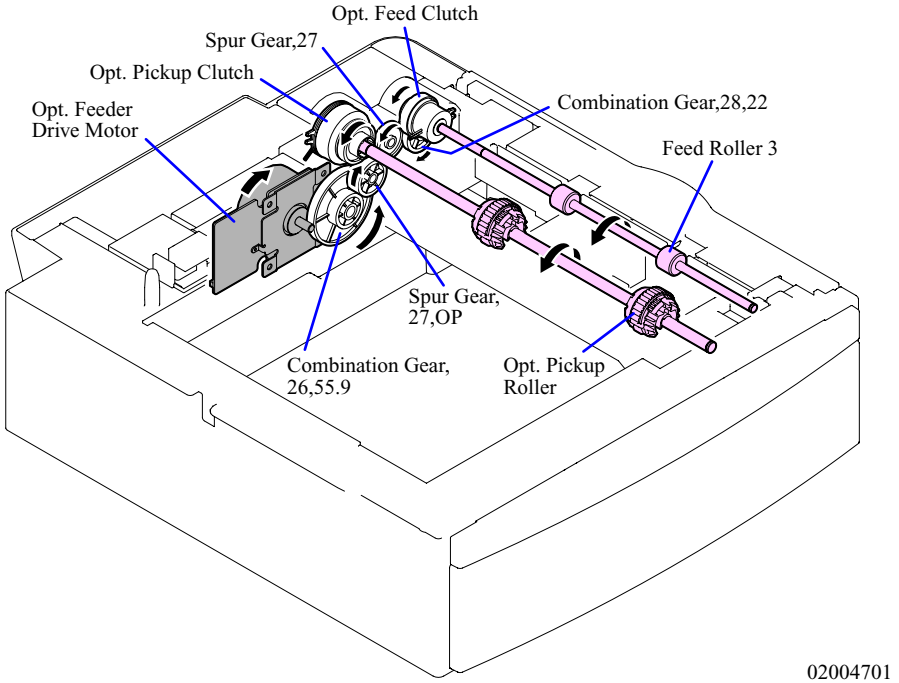


Figure 2-45. Component Layout

2.4 Electrical

2.4.1 Electronic Circuit Board / R/W Module

Table 2-1. List

Class.	Fig.	Name	Function
Main Unit	1	Controller Board (Main Board)	■ Communicates with the host computer ■ Receives print data ■ Image processing ■ Communicates with the engine controller
	2	Engine Controller Board	■ Communicates with the controller ■ Controls the operation of each component when printing
	3	HVPS Board (High Voltage Power Supply)	Generates biases listed below: ■ Charging bias ■ Development bias ■ Primary transfer bias ■ Secondary transfer bias ■ Cleaning tape bias ■ Fusing pressure roller bias
	4	LVPS Board (Low Voltage Power Supply)	Generates +3.3VDC/+5VDC used in the logic circuits and +5VDC/+24VDC used in the engine.
	5	Drive Board	Controls the components listed below: ■ Development drive motor ■ Rotary drive motor ■ Rotary lock solenoid ■ Cleaner clutch
	6	R/W Module	Performs wireless communication with CSISs on toner cartridges to read and write the CSIS information.
	7	NVM Board	Contains the NVM that stores engine information.
Duplex Unit	8	Drive-B Board	Controls the Switch Back Motor in the duplex unit.
Opt. Feeder	9	SUB Board	Gives feedbacks to the engine controller and controls the following components in the Opt. Feeder Unit. ■ Opt. Feeder Drive Motor ■ Paper Sensor ■ Cover Open Sensor ■ Paper Cassette Sensor

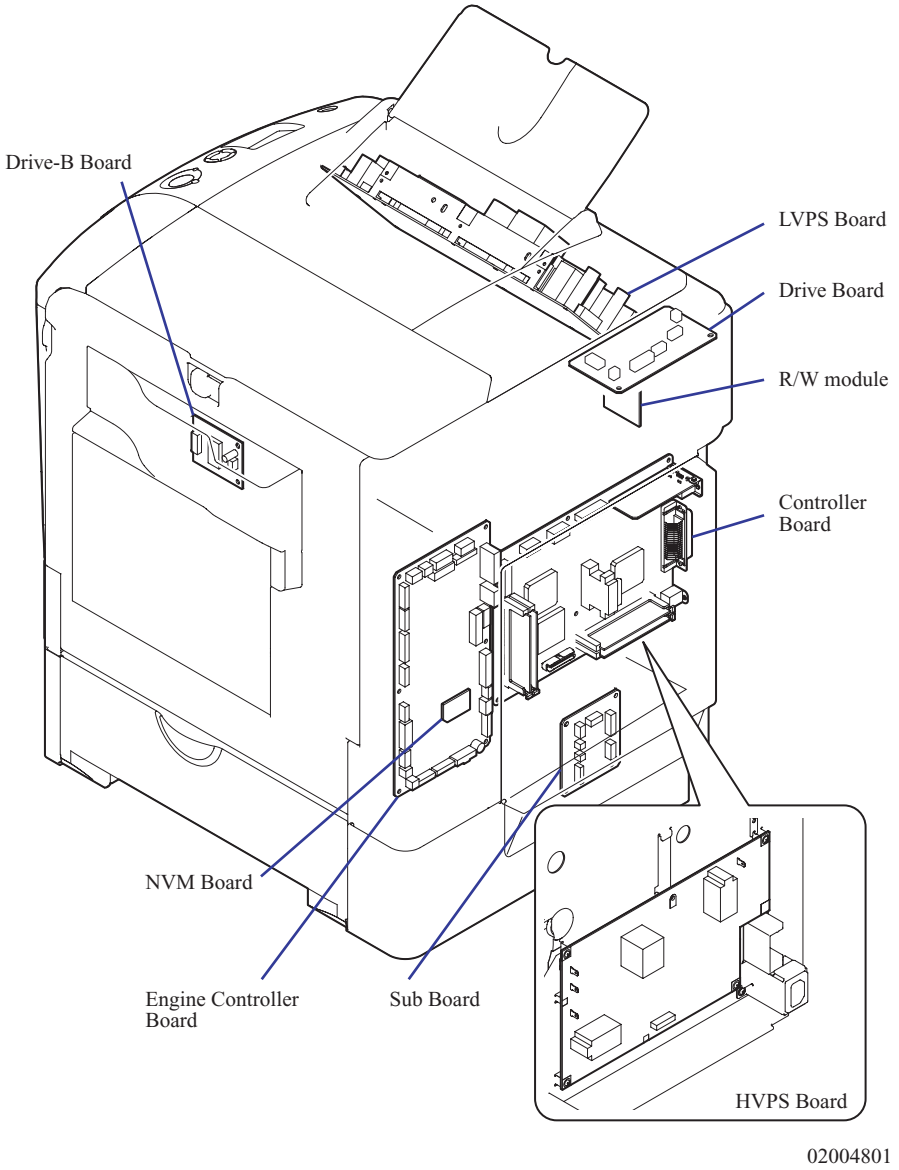


Figure 2-46. Electronic Circuit Board / R/W Module

2.4.2 Motor

Table 2-2. List

Class.	Fig.	Name	Driven parts
Main Unit	1	Main Drive Motor	■ Paper feed rollers ■ Fuser Unit ■ 2nd Transfer Roller Cam ■ Spiral in the Photoconductor Unit to stir and feed waste toner ■ Transfer Belt Cleaning Blade Cam ■ Spiral in the Intermediate Transfer Unit to stir and feed waste toner
	2	Photoconductor Drive Motor	■ Photoconductor Drum ■ Transfer Belt
	3	Rotary Drive Motor	■ Rotary
	4	Development Drive Motor	■ Developer Roller
Duplex Unit	7	Duplex Motor	■ Duplex printing paper feed rollers
Opt. Feeder	8	Opt. Feeder Motor	■ Opt. Feeder paper feed rollers

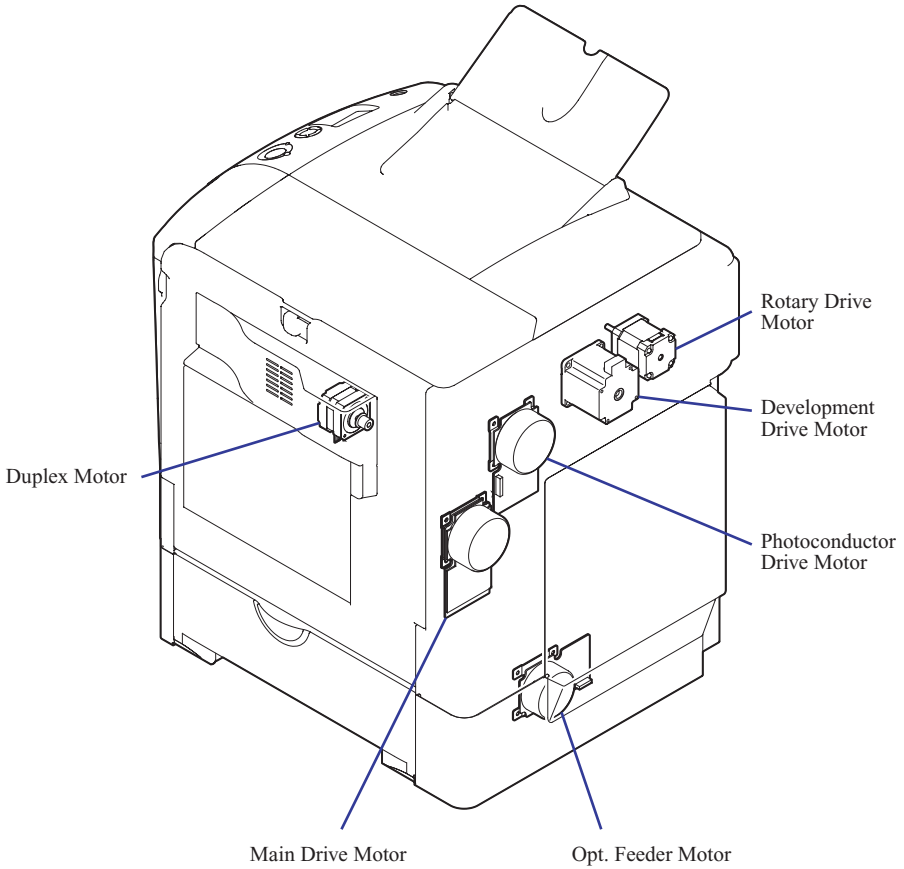


Figure 2-47. Motor

2.4.3 Solenoids and Clutches

Table 2-3. List of Solenoid

Class.	Fig.	Name	Function
Main Unit	1	Rotary Lock Solenoid	Locks the rotation of the rotary.

Table 2-4. List of Clutch

Class.	Fig.	Name	Function
Main Unit	2	2nd Transfer Clutch	Transmits/interrupts the drive force from the Main Drive Motor to the 2nd Transfer Roller Cam.
	3	Cleaner Clutch	Transmits/interrupts the drive force from the Main Drive Motor to the Cleaning Blade Cam.
	4	Pickup Clutch	Transmits/interrupts the drive force from the Main Drive Motor to the Pickup Roller.
	5	Feed Clutch	Transmits/interrupts the drive force from the Main Drive Motor to the Feed Roller 1 and the Feed Roller 2.
	6	Gate Clutch	Transmits/interrupts the drive force from the Main Drive Motor to the Gate Roller.
	7	Lift Plate Clutch	Transmits/interrupts the drive force from the Main Drive Motor to the cam that moves the Lift Plate up and down.
	8	Pickup Clutch (MP Tray)	Transmits/interrupts the drive force from the Main Drive Motor to the Pickup Roller.
Opt. Feeder	9	Pickup Clutch	Transmits/interrupts the drive force from the Opt. Feeder Drive Motor to the Pickup Roller.
	10	Feed Clutch	Transmits/interrupts the drive force from the Opt. Feeder Drive Motor to the Feed Roller 3.

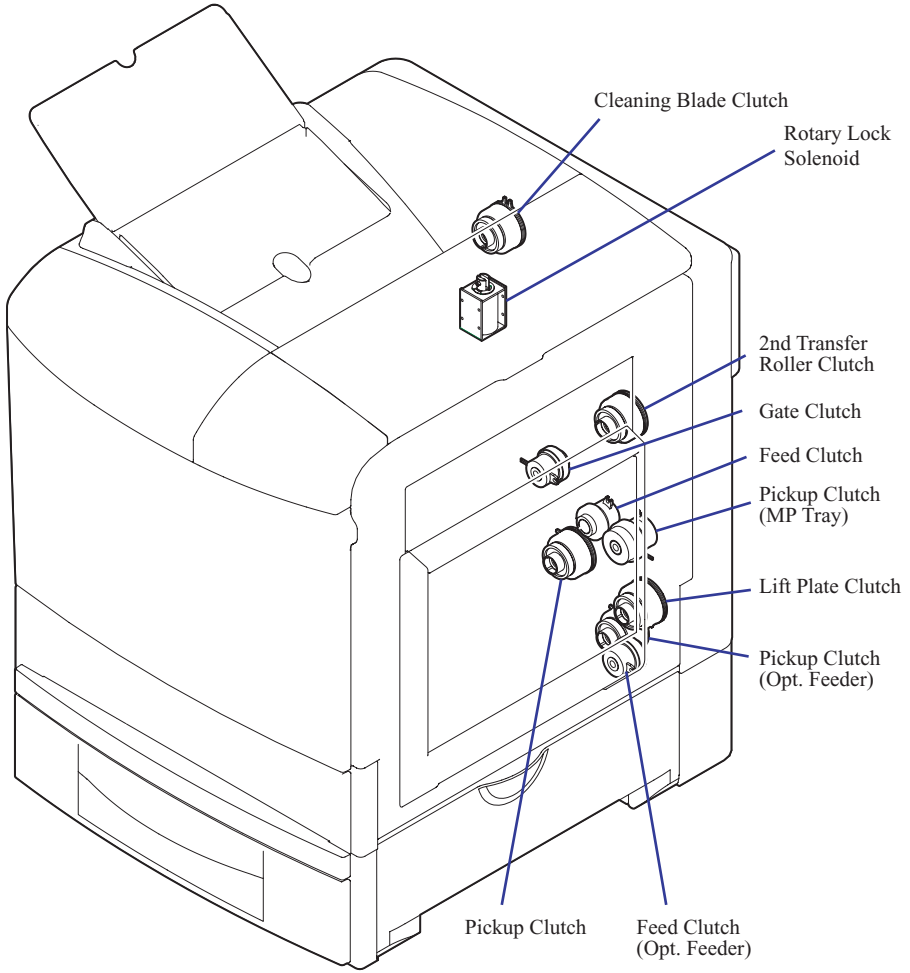


Figure 2-48. Solenoids and Clutches

2.4.4 Sensors and Switches

Table 2-5. List

Class.		Fig.	Name	Function
Main Unit	Paper detection	1	MP Tray Paper Sensor	Detects whether paper is loaded in the MP tray.
		2	Paper Sensor	Detects whether paper is loaded in the standard cassette.
		3	Paper Width Sensor	Detects the width of the paper that is fed into the printer.
		4	Gate Sensor	Detects the paper passing.
		5	Post-Transferring Sensor	Detects the paper passing.
		6	Post-Fixing Sensor	Detects the paper passing.
		7	Pre-Ejection Sensor	Detects the paper passing.
	Unit detection	8	Waste Toner Collector Detection Switch	Detects whether the waste toner collector is installed.
		9	Standard Cassette Switch	Detects whether the standard cassette is installed.
	Life detection	10	Photoconductor Waste Toner Full State Sensor	Detects a full state of the waste toner collection space in the photoconductor unit.
		11	Waste Tone Collector Full State Sensor	Detects a full state of the waste toner collector.
	Control	12	Power Supply Switch	Switches ON/OFF of the power supply from the AC power to the printer.
		13	HSYNC Sensor	Detects the signal for the engine controller to determine the timing to start scanning in main-scanning direction.
		14	VSYNC Sensor	Detects the rotation cycle and number of rotations of the transfer belt.
		15	Patch Sensor	Scans a patch image on transfer belt.
		16	Rotary Position Sensor	Detects the reference point to stop the rotary unit at the specified positions.
		17	Temperature and Humidity Sensor	Detects the temperature and humidity in the printer.
Opt. Feeder	Paper detection	18	Opt. Feeder Paper Sensor	Detects whether the paper is loaded in the optional cassette.
	Unit detection	19	Opt. Feeder Cassette Switch	Detects whether the optional cassette is installed.
	Cover open detection	20	Opt. Feeder Cover Switch	Detects whether the cover for resolving jams in Opt. Feeder is open or closed.

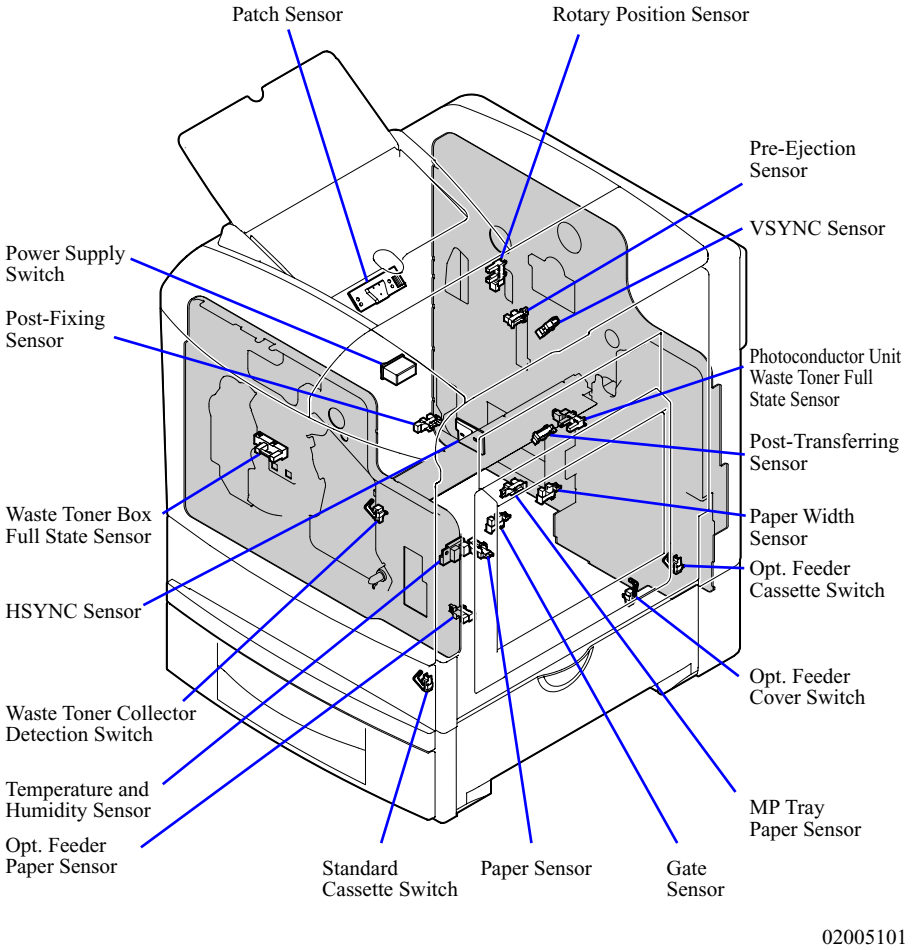
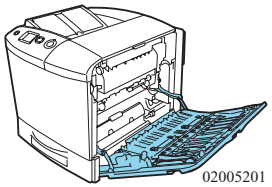
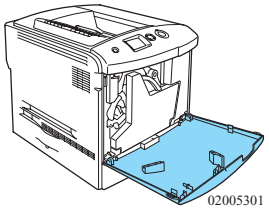
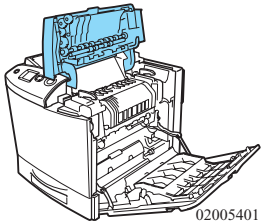
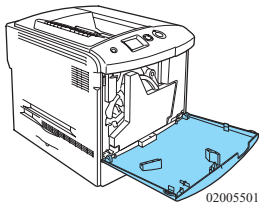


Figure 2-49. Sensors and Switches

2.4.5 Interlock Switch

Table 2-6. List

Fig.	Name	Corresponding Covers	Cutoff Voltages
1	Interlock SW R	Cover A  02005201	24V line
2	Interlock SW F	Cover D  02005301	
3	Interlock SW T	Cover B  02005401	
4	Interlock SW	Cover D  02005501	5V line for laser diode

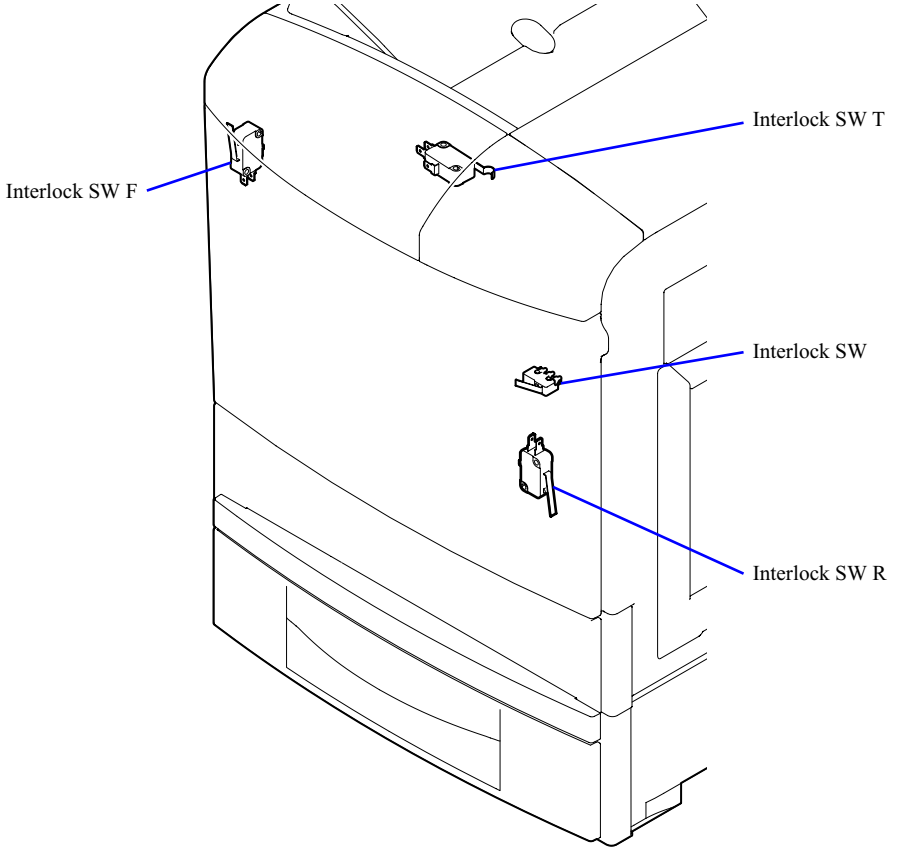


Figure 2-50. Interlock Switch

2.4.6 Fan

Table 2-7. List

Fig.	Name	Function
1	Ozone Fan	Transfer the toner dispersed in the "development" process to the filter.
2	Toner Fan	Introduces the air into the printer to generate an air stream that goes through the Photoconductor Unit and its duct with operation of the Ozone Fan. The airstreams allow the printer to take ozone, which is created in the drum charging process, out of the printer via the filter.
3	Power Supply Fan	Generates an air stream that goes over the LVPS to cool it. And the exhausted air cools the Rotary Drive Motor and Developer Motor by going through over them.
4	Fuser Fan	☐ The upper part Exhausts a hot air created by the Fuser Unit through the duct on the upper and rear on the unit. ☐ The lower part Exhausts a hot air created by the Main Drive Motor and the Photoconductor Drive Motor which are located behind the main and engine controller boards.

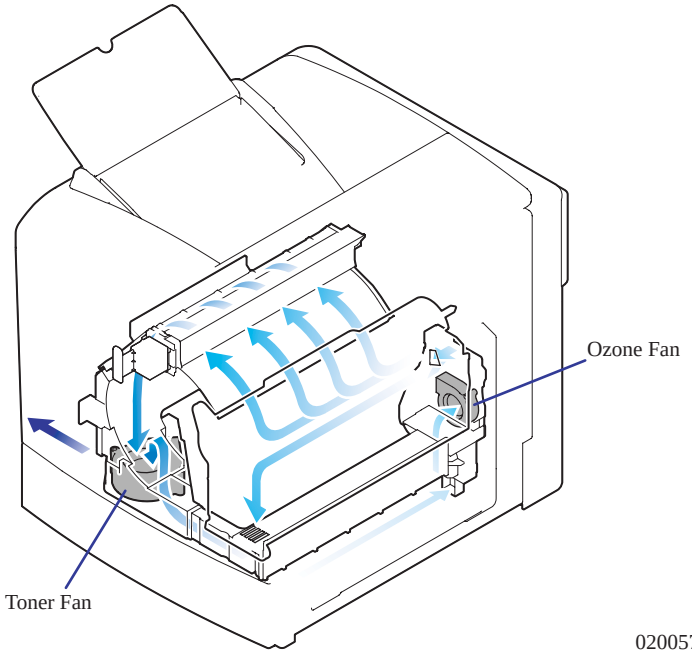


Figure 2-51. Ozone Fan / Toner Fan

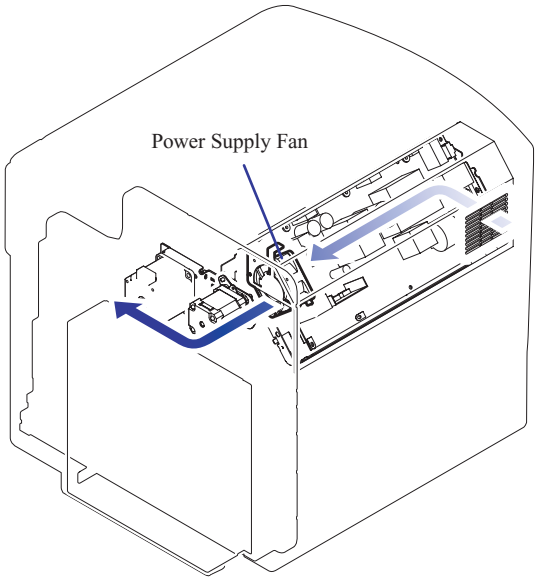


Figure 2-52. Power Supply Fan

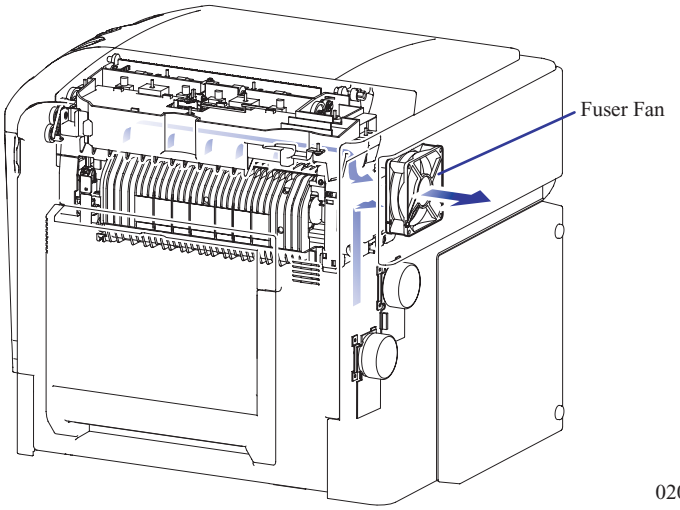


Figure 2-53. Fuser Fan

2.5 Control

This section describes the main controls performed by this printer.

2.5.1 Hardware for Control

VSYNC

VSYNC is a falling edge signal generated when the protrusion on the right edge of the transfer belt passes through the VSYNC Sensor (a photo-interrupter sensor). By detecting the VSYNC signals, the engine measures the rotation period and rotation number of the belt as references for the timing of image formation and the unit life.

TEMPERATURE AND HUMIDITY SENSOR

Detects the temperature and humidity in the printer to optimize the transfer biases at the primary transfer and secondary transfer.

PATCH SENSOR

A reflective photo sensor that detects the patch density created on the transfer belt to perform the image-optimization control (process control).
This sensor emits an infrared light to the patch and receives the reflected ray from it to detect the density.

NVM

A nonvolatile memory for storing engine information. The NVM is mounted on the NVM board connected to the engine controller board.

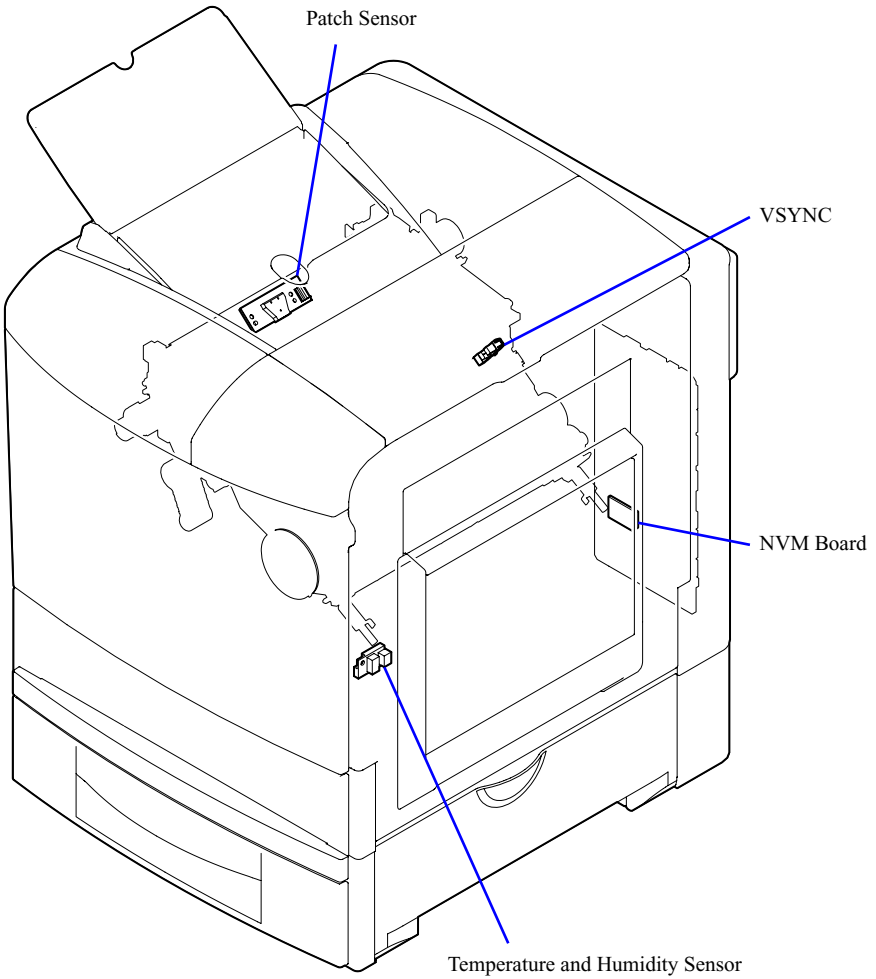


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Figure 2-54. Hardware for Control

2.5.2 Image-Stabilizing Control

Controls for providing stable print quality are described in this section.

2.5.2.1 Process Control

To provide a stable print quality, the parameters required for creating a color image should be corrected on a timely basis.
The control of whole print process including the correction of parameters is called “process control”.
In the process control, toner patches for process control are created on the belt surface. The patch sensor detects the patch density to execute the following controls:

- High-voltage setting values for the electric charger and the developer
- The power of the laser beam
- Gradation correction (The data acquisition and transmission for the gradation correction is executed on the engine controller side, and the actual control is carried out by the main controller.)

EXECUTION TIMING

- ☐ When the power is turned on for the first time after purchase.
- ☐ When the photoconductor unit is replaced with a new one.
- ☐ When the toner cartridge(s) is replaced.
  The printer executes the control when it detects the replaced cartridge(s) is different from the previous one(s).
- ☐ When the printer judges that target values* for the control need to be corrected based on the status of cartridges.

***NOTE*:** *The target values to determine the exposure power and the DC bias.*

CHARGE / DEVELOPMENT VOLTAGE CONTROL

☐ Purpose

In order to correct the charge voltage and developing voltage so that the density of a solid image of each color becomes a prescribed level.

☐ Target Values for Control

The values for each color is set according to the following information:

■ Information on the toner status of use

Information obtained from the relationship between the toner consumption and the drive time of the developer roller.

☐ Control

Six different developing voltages are used to create six solid color patches respectively on the transfer belt to detect their density by the Patch Sensor. The developing voltage for the printer is determined for each color based on the detected density and the target density. And the charging voltage is also determined according to the determined developing voltage.

LASER BEAM POWER CONTROL

☐ Purpose

To determine the laser beam power so that the density of thin lines becomes a prescribed level.

☐ Target Values for Control

The values for each color is set according to the following information:

■ Information on the toner status of use

Information obtained from the relationship between the toner consumption and the drive time of the development roller.

☐ Control

Four different types of laser beam power are used to create four patches respectively on the transfer belt to detect their density by the Patch Sensor. The optimum laser beam power for the printer is determined for each color based on the detected density and the target density.

GRADATION PATTERN MEASUREMENT

☐ Purpose

The gradation correction is executed by the engine controller based on the correction information sent from the main controller.

☐ Control

A gradation pattern composed of patches in different densities is created on the transfer belt to measure each density by the Patch Sensor. The measured data is processed and converted into 8-bit data and sent to the main controller.

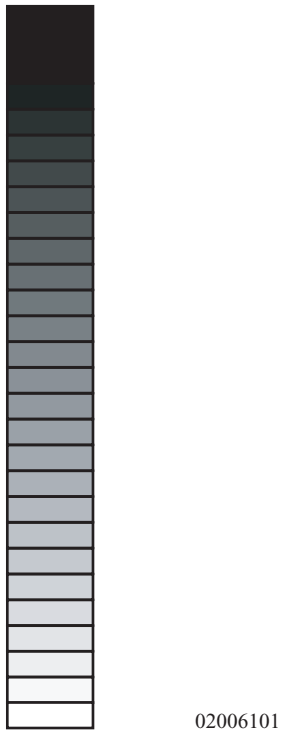


Figure 2-55. Tone Pattern

GRADATION CORRECTION

Executes the gradation correction by the main controller based on the 8-bit data for each gradation transmitted from the engine controller.

☐ Purpose

To adjust the density so that the image data input from the host computer is printed in appropriate density.

☐ Control

Based on the 8-bit data sent from the engine controller, the main controller creates a gradation pattern composed of patches in different densities on the transfer belt to measure their density by the Patch Sensor. According to the measured density, a measurement table is created to select which screen to use for printing in order to obtain a required density level.

2.5.2.2 Registration Control

This controls the rotating speed of the photoconductor drum when the laser beam "draws" an electrostatic image on it in order to prevent the print from being out of color registration. As the laser draws the image for each color by turns in the color mode, the intervals of lines drawn by the laser in sub-scanning direction may vary by each color due to the drum's variation in speed. To prevent this from occurring, the printer performs the following operations:

1. Measuring a rotation period of the Transfer Belt

   Rotates the transfer belt on several conditions and detects the Vsync detection portion to obtain the rotation period of the belt. The correction value is calculated based on the obtained value.

2. Obtaining synchronization margin of error for Hsync

   Calculates the synchronization error time between the Vsync signal and Hsync signal. The margin of error obtained from the calculation is used to calculate a value to control the Hsync.

3. Setting the value to control the Photoconductor drive motor

   Calculates and sets the controlled variable in value to control the speed of the photoconductor drive motor based on the correction value obtained from the above procedures.

2.5.2.3 Transfer Bias Control

This control is performed to change the transfer bias depending on the ambient temperature and the type of paper in order to provide stable print quality.

JUDGING THE TEMPERATURE AND HUMIDITY

The temperature and humidity detected by the temperature and humidity sensor are classified to eight and five stages for temperature and humidity respectively. This creates a bias determination table consisting of eight columns for temperature level by five rows for humidity level, which determines the transfer bias in accordance with the conditions such as paper type.

PRIMARY TRANSFER BIAS

The primary transfer bias is set depending on the factors below.

- Temperature level
- Humidity level

Table 2-8. Primary Transfer Bias value Determination Table

		Temperature Level							
		1	2	3	4	5	6	7	8
Humidity Level	0	a	b	c	d	e	f	g	h
	1	i	j	k	l	m	n	o	p
	2	q	r	s	t	u	v	w	x
	3	y	z	A	B	C	D	E	F
	4	G	H	I	J	K	L	M	N

SECONDARY TRANSFER LOWER LIMIT VOLTAGE

In addition to the temperature and humidity factors, the factors such as paper type are combined to determine the secondary transfer lower limit voltage. A bias determination table (eight temp. levels by five humidity levels) is created for each of the factors listed below.

- Paper types (plain paper / thick paper / OHP / postcard / envelope)
- Plain paper is further classified into the following conditions for duplexing:
  - When printing on the first one-side
  - When printing on the reverse side in black and white
  - When printing on the reverse side in full-color
- Thick paper is further classified into Thick Paper Bias 1 or Thick Paper Bias 2
- Temperature level
- Humidity level

Table 2-9. Secondary Transfer Lower Limit Voltage Determination Table Plain Paper / The First One-Side

		Temperature Level							
		1	2	3	4	5	6	7	8
Humidity Level	0	a	b	c	d	e	f	g	h
	1	i	j	k	l	m	n	o	p
	2	q	r	s	t	u	v	w	x
	3	y	z	A	B	C	D	E	F
	4	G	H	I	J	K	L	M	N

SECONDARY TRANSFER ELECTRIC CURRENT

The secondary transfer electric current is determined using almost the same way as the secondary transfer lower limit bias. A current determination table (eight temp. levels by five humidity levels) is created for each of the factors listed below.

- Paper types (plain paper / thick paper / OHP / postcard / envelope)
- Plain paper is further classified into the following conditions for duplexing:
  - When printing on the first one-side
  - When printing on the reverse side
- Thick paper (label) is further classified into Thick Paper Bias 1 or Thick Paper Bias 2
- Paper width
- Temperature level
- Humidity level

Table 2-10. Secondary Transfer Electric Current Determination Table Plain Paper / The First One-Side / Paper Width Level 0

		Temperature Level							
		1	2	3	4	5	6	7	8
Humidity Level	0	a	b	c	d	e	f	g	h
	1	i	j	k	l	m	n	o	p
	2	q	r	s	t	u	v	w	x
	3	y	z	A	B	C	D	E	F
	4	G	H	I	J	K	L	M	N

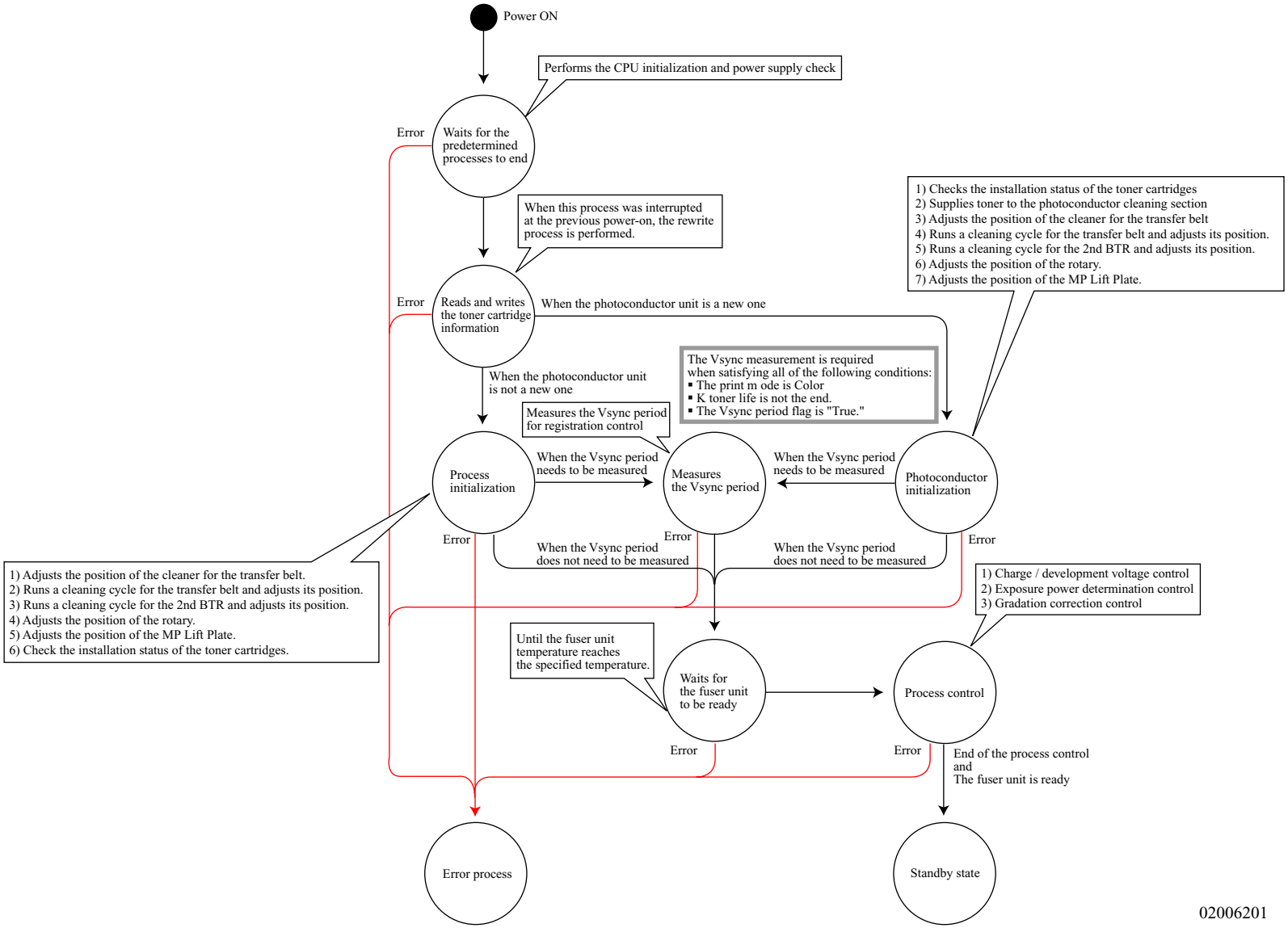
2.5.2.4 Discharging bias control

The absolute value of the discharging bias grows larger in proportion to the number of printed pages.
As the life of the cleaning tape is controlled by the number of the printed pages, the discharging bias is determined according to the consumption status of the cleaning tape. The applicable bias level is decided in accordance with the number of printed pages by dividing 100,000 pages into 25 stages.

2.5.3 Operation Sequence

☐ Engine Initialization Sequence (Boot Sequence)

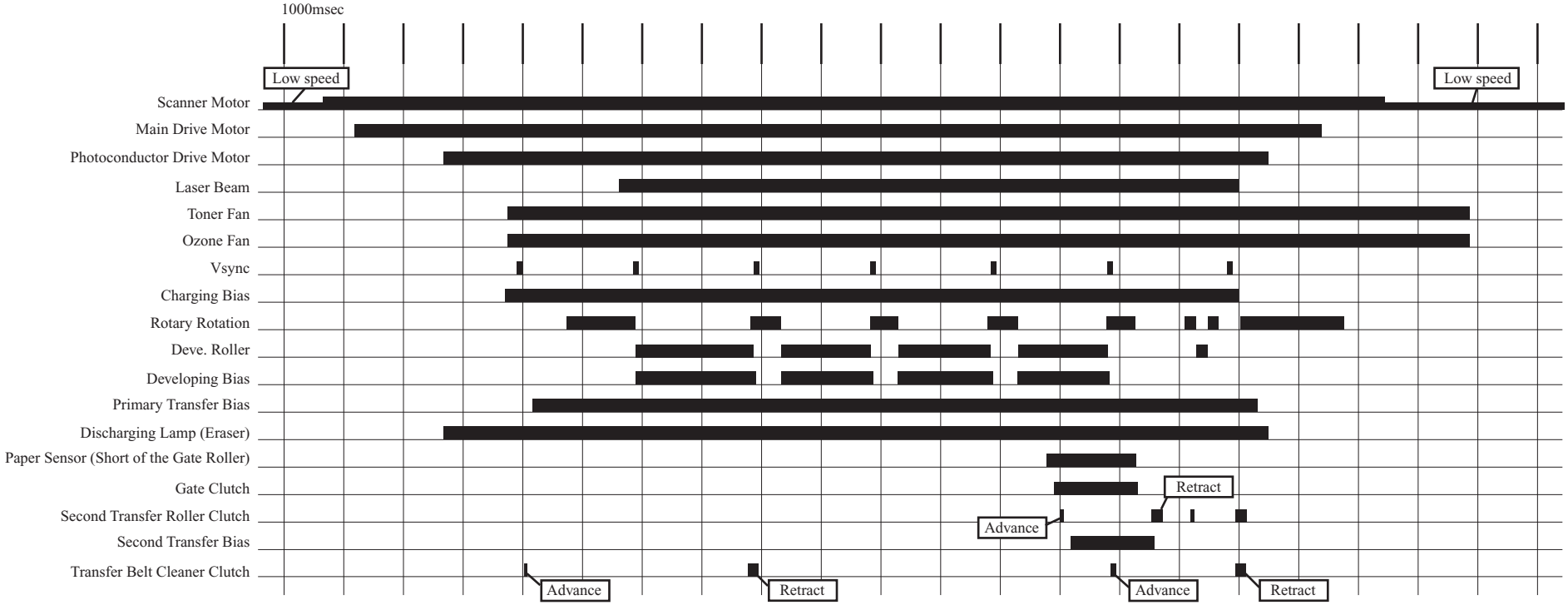
The flowchart shows the predetermined sequence performed by the printer each time it is powered on to be ready for printing in the color mode.



☐ Operation Timing of the Main Components

The following chart shows the operation timing of the main components of the printer when printing under the following conditions:

■ Color printing / The first one-side / The scanner motor rotating at low speed



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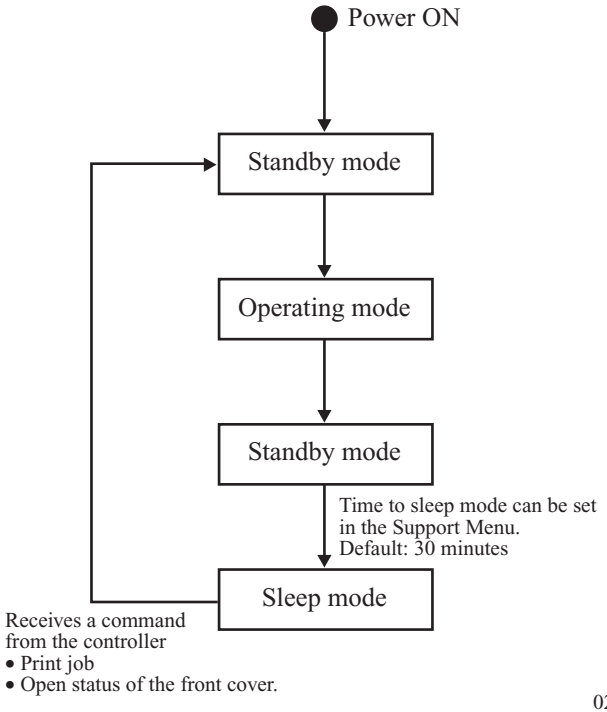
2.5.4 Operating Mode

The printer has the following three operating modes:

☐ List of Operation Modes

Mode	Status	Panel display	Power Consumption	24V Circuit
Standby mode	Ready-to-print	Ready	111 W or less	ON
Print mode	Printing in progress		• Maximum: 1200 W • Continuous printing in color: 500 W • Continuous printing in monochrome: 700 W	ON
Sleep mode	Saving electricity	Sleep	21 W or less	OFF

☐ Mode Change Flowchart



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2.5.5 Control of Consumables and Components Needing Periodic Replacement

The method to detect the life of consumables and components needing periodic replacement and how to detect that they are replaced are given in the following table.

Table 2-11. List of Life Control

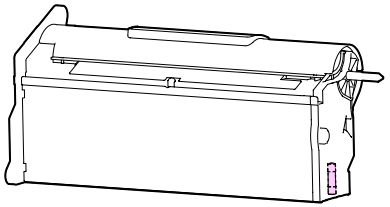
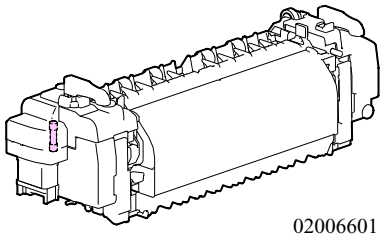
	Unit Name	Detection of New Unit	Factors for Judging the Lifetime
Consumables	Photoconductor unit	The printer determines that the unit is new when the fuse for detecting new part of the unit is conducting energized.  02006501	The lifetime of the unit is controlled by counting the following items. The unit is detected or warned that it has reached the end of life when any one of them reaches/satisfies a prescribed value/condition. • The number of Vsync detection → the number of rotations of photoconductor • The number of printed pages • Detecting a full state of the Photoconductor waste toner box When the waste toner collection space in the photoconductor unit is detected as full by the waste tower full state detection sensor, the status becomes “Near-End”. Once the status turns to “Near-End”, the printer starts to count the number of printed dots to inform “End” status when the amount of dots exceed a given level.
	Toner cartridge	The printer judges the cartridge as new by detecting the new flag in the CSIC.	The lifetime of the unit is controlled by counting the following items. The unit is detected or warned that it has reached the end of life when any one of them reaches/satisfies a prescribed value/condition. • The number of printed dot • Operating time of the developer drive motor → operating rotating time of the developer roller
	Fuser unit	The printer determines that the unit is new when the fuse for detecting new part of the unit is energized.  02006601	The lifetime of the unit is controlled by counting the following items. A warning message will appear when any one of them reaches/satisfies a prescribed value/condition. • The time taken for the paper to pass through the gate roller → the time taken for the paper to pass through the fixing roller • Operating time of the main drive motor → operating time of the fixing roller • Heat roller central area high-temperature time (detected by the thermistor located at the center of the roller) Monitors the temperature of the roller and counts the time in which the temperature reaches or exceeds the predetermined level since the continuance high temperature may damage the rubber part of the heat roller. • Heat roller end area high-temperature time (detected by the HR thermistors located at the one end of the roller) Monitors the temperature of the roller and counts the time in which the temperature reaches or exceeds the predetermined level since the continuance of high temperature may damage the rubber part of the heat roller. • Pressure roller high-temperature time (detected by the PR thermistor) Monitors the temperature of the roller and counts the time in which the temperature reaches or exceeds the predetermined level since the continuance of high temperature may damage the rubber part of the heat pressure roller. • The number of cool-down cycles when printing on narrow paper The left and right margins of the heat roller become hotter than its central portion when printing on a narrow paper because the margins does not contact with the paper. To prevent this, the printer runs the cool-down cycle and the number of the cycles is counted.

Table 2-11. List of Life Control

	Unit Name	Detection of New Unit	Factors for Judging the Lifetime
Consumables	Waste toner collector	End status → new part installation	The lifetime of the part is controlled by monitoring the following condition. • Waste Toner Box Full Detection The printer detects the waste toner collector is close or come to its end by the waste toner box full detection sensor. When the part is detected as full by the sensor, the status becomes "Near-End". Once the status turns to "Near-End", the printer starts to count the number of printed dots to inform "End" status when the amount of dots exceed a given level.
Periodic Replacing Component	Transfer unit	There is no new part detection system. (After installing a new unit, the lifetime counter in the NVM on the engine controller should be cleared using the control panel.)	The lifetime of the unit is controlled by counting the following items. A warning message will appear when any one of them reaches/satisfies a prescribed value/condition. • The number of detecting Vsync → number of rotations of transfer belt • The number of created images (color:4, mono.:1)
	Cleaner Clutch*1	There is no new part detection system. (After installing a new part, the lifetime counter in the NVM on the engine controller should be cleared using the control panel.)	The following item is counted. • The number of times that the clutch is activated in order to make the cleaner blade engaged/disengaged.
	2nd Transfer Clutch*1	There is no new part detection system. (After installing a new part, the lifetime counter in the NVM on the engine controller should be cleared using the control panel.)	The following item is counted. • The number of times that the clutch is activated in order to make the 2nd transfer roller engaged/disengaged.
	Cleaning Tape	There is no new part detection system. (After installing a new part, the lifetime counter in the NVM on the engine controller should be cleared using the control panel.)	The following item is counted. • The number of printed pages
Other	Warning to clean charging wires	When the photoconductor unit is a new one, or the cover D is opened for more than five seconds.	The printer determines whether a cleaning is needed or not by counting the following values.A warning message to clean the wires will appear when any one of them reaches a specified value. • The number of detecting Vsync • The number of printed pages

Note : For the following consumables and periodic replacement units, lifetime count is not performed.

- Filter Unit
- COVER ASSY., FU (Eject roller)
- Pickup Roller

Note "*1": Though the number of times is counted, the timing for replacement is not indicated because they should be replaced at the same as replacing the Transfer Unit.

2.6 Electrical Circuit Operation Principle

This section describes the operating principle of the electric circuit.

2.6.1 Electric Circuit

HARDWARE CONFIGURATION

The electric circuit of the printer is energized by the following two hardwares.

- ☐ High Voltage Power Supply (HVPS)

  Generates the following biases:

  - ■ Charging bias
  - ■ Development bias
  - ■ Primary transfer bias
  - ■ Secondary transfer bias
  - ■ Cleaning tape bias
  - ■ Fusing pressure roller bias

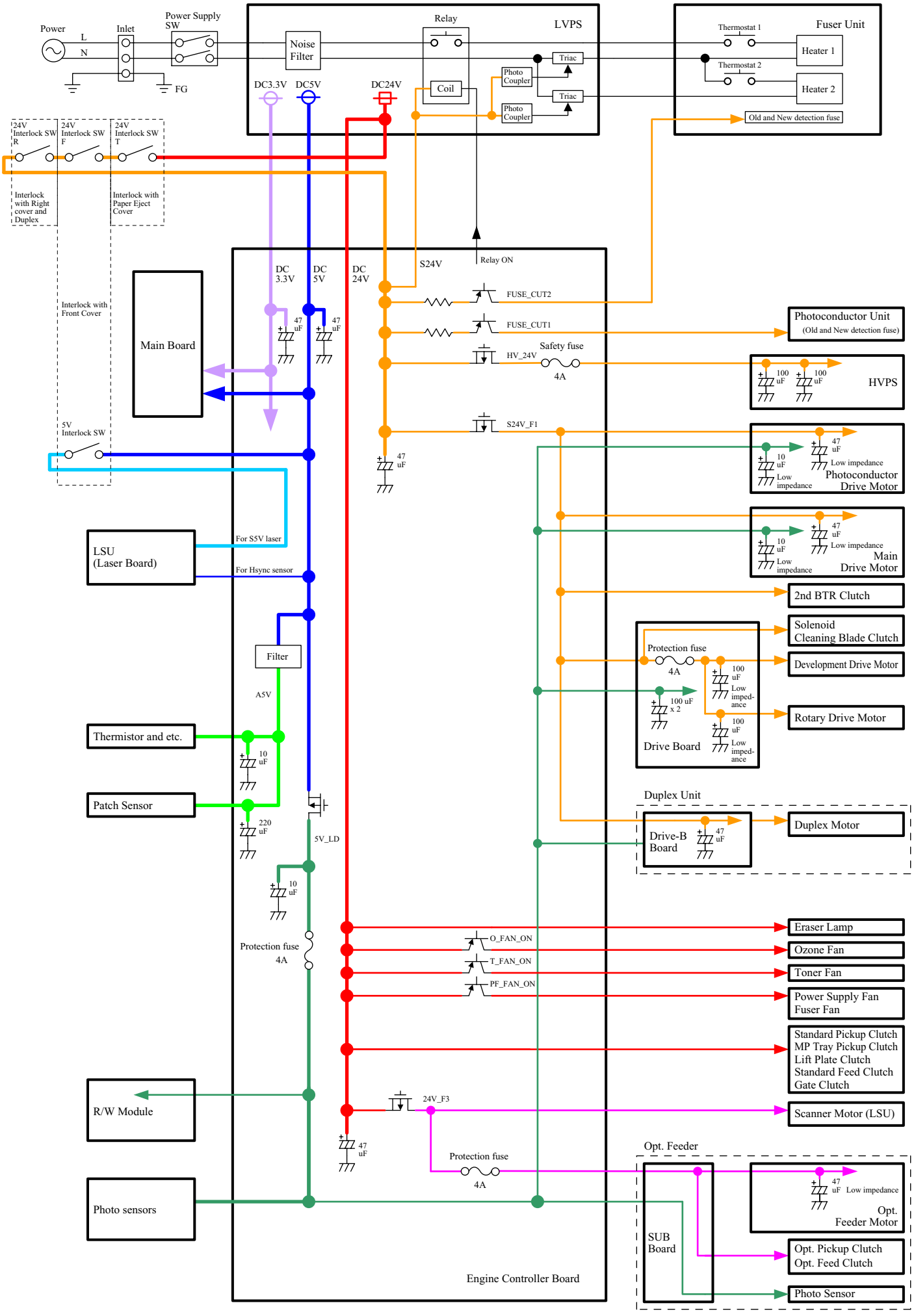
- ☐ Low Voltage Power Supply (LVPS)

  Generates the following power supply voltages with the AC input power:

  - ■ For logic circuit: +3.3 VDC, +5 VDC
  - ■ For engine drive: +5 VDC, +24 VDC

POWER DISTRIBUTION DIAGRAM

The power distribution diagram is given on the following page.


Power
L
N
Inlet
Power Supply SW
FG
Noise Filter
LVPS
Relay
Coil
Triac
Triac
Photo Coupler
Photo Coupler
DC3.3V
DC5V
DC24V
Thermostat 1
Thermostat 2
Fuser Unit
Heater 1
Heater 2
Old and New detection fuse
24V Interlock SW R
24V Interlock SW F
24V Interlock SW T
Interlock with Right cover and Duplex
Interlock with Paper Eject Cover
Interlock with Front Cover
5V Interlock SW
Main Board
DC 3.3V
DC 5V
DC 24V
S24V
Relay ON
47 uF
47 uF
47 uF
FUSE_CUT2
FUSE_CUT1
HV_24V
Safety fuse
4A
S24V_F1
Photoconductor Unit
(Old and New detection fuse)
HVPS
100 uF
100 uF
Photoconductor Drive Motor
10 uF
Low impedance
47 uF
Low impedance
Main Drive Motor
2nd BTR Clutch
Solenoid Cleaning Blade Clutch
Development Drive Motor
Rotary Drive Motor
Protection fuse
4A
100 uF x 2
Drive Board
Duplex Unit
Drive-B Board
Duplex Motor
LSU (Laser Board)
For S5V laser
For Hsync sensor
Filter
A5V
Thermistor and etc.
Patch Sensor
10 uF
220 uF
5V_LD
10 uF
Protection fuse
4A
O_FAN_ON
T_FAN_ON
PF_FAN_ON
Eraser Lamp
Ozone Fan
Toner Fan
Power Supply Fan
Fuser Fan
Standard Pickup Clutch
MP Tray Pickup Clutch
Lift Plate Clutch
Standard Feed Clutch
Gate Clutch
R/W Module
24V_F3
Scanner Motor (LSU)
47 uF
Protection fuse
4A
Opt. Feeder
Photo sensors
SUB Board
47 uF
Low impedance
Opt. Feeder Motor
Opt. Pickup Clutch
Opt. Feed Clutch
Photo Sensor
Engine Controller Board

02006701

2.6.2 Engine Control Circuit

The electric circuit for controlling engine drive consists of the following boards.

HARDWARE CONFIGURATION

☐ MAIN-B Board (Engine Controller)

Contains CPU, ASIC and controls the engine drive communicating with the engine controller and other control boards.

CPU	Model Name:	HD64F2633
	Built-in Flash ROM capacity:	256 kbyte
	Built-in RAM capacity:	16 kbyte
	Clock frequency:	24.576 MHz
ASIC	Model Name:	E05C19AB
	Clock frequency:	24.576 MHz

☐ Drive Board

Controls the operations of the following components:

- Stepping motor
- Solenoid
- Clutch

Driver IC (x2)	Model Name:	SLA7044M
	2-phase stepping motor for unipolar drive	

☐ Drive-B Board

Double-ended drive motor driver (stepping motor)

Driver IC (x2)	Model Name:	LB1845
	2-phase stepping motor for unipolar drive	

☐ SUB Board

Controls the operations of the following components of the optional paper feeder:

- Optional feed drive motor (a DC servomotor)
- Solenoid
- Sensor switch

☐ FRAM Board

Contains the NVM that stores engine information

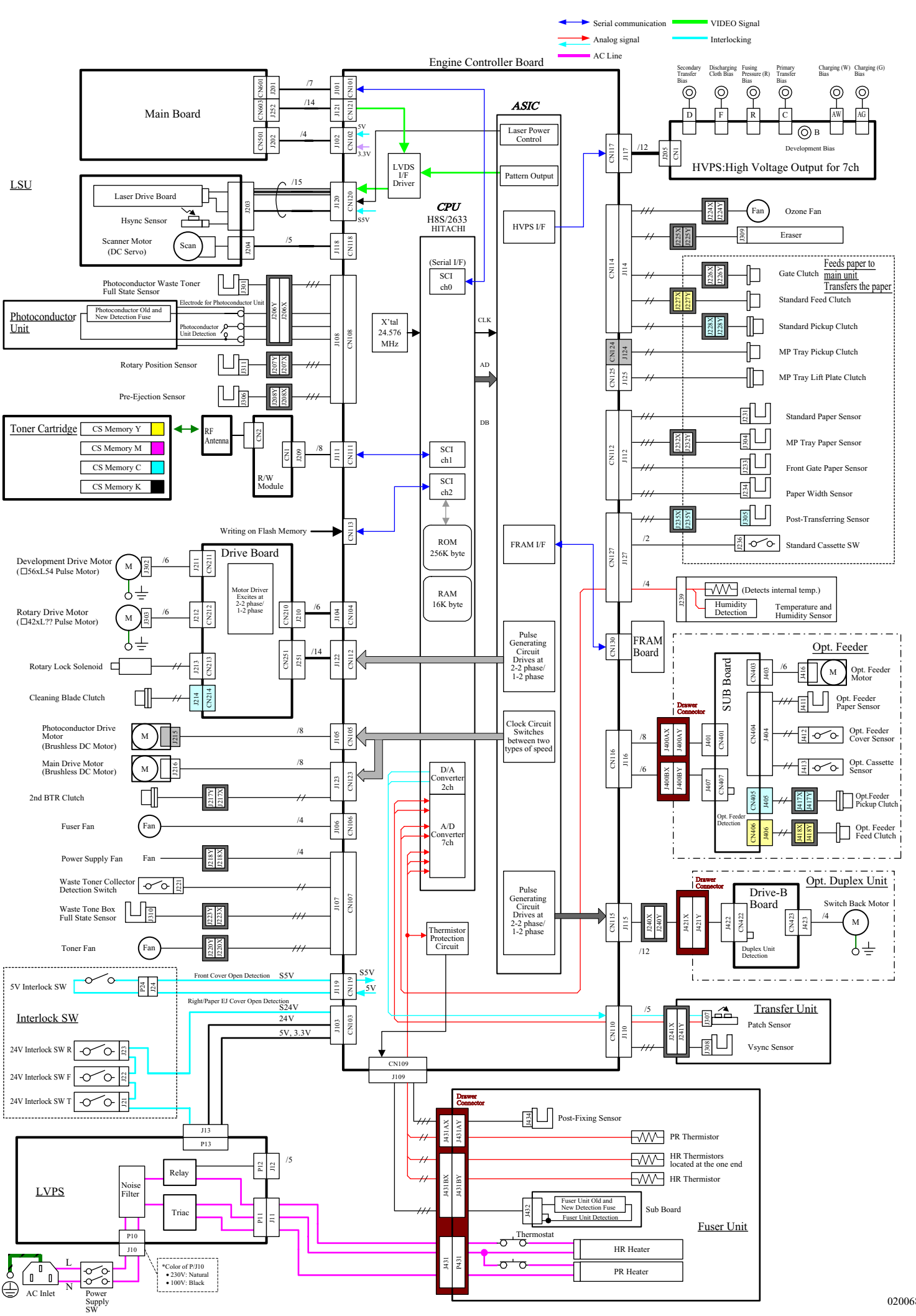
NVM (FRAM)	Capacity:	4 kbit

☐ R/W Module

Performs a wireless communication with the nonvolatile memory of the toner cartridges.

ENGINE CONTROLLER CIRCUIT BLOCK DIAGRAM

The engine controller circuit block diagram is given on the following page.


Serial communication
Analog signal
AC Line
VIDEO Signal
Interlocking
Engine Controller Board
ASIC
Laser Power Control
Pattern Output
HVPS I/F
FRAM I/F
Pulse Generating Circuit Drives at 2-2 phase/ 1-2 phase
Clock Circuit Switches between two types of speed
Pulse Generating Circuit Drives at 2-2 phase/ 1-2 phase
CPU
H8S/2633
HITACHI
(Serial I/F)
SCI ch0
SCI ch1
SCI ch2
X'tal 24.576 MHz
CLK
AD
DB
ROM 256K byte
RAM 16K byte
D/A Converter 2ch
A/D Converter 7ch
Thermistor Protection Circuit
LVDS I/F Driver
Main Board
LSU
Laser Drive Board
Hsync Sensor
Scanner Motor (DC Servo)
Scan
Photoconductor Unit
Photoconductor Old and New Detection Fuse
Electrode for Photoconductor Unit
Photoconductor Unit Detection
Photoconductor Waste Toner Full State Sensor
Rotary Position Sensor
Pre-Ejection Sensor
Toner Cartridge
CS Memory Y
CS Memory M
CS Memory C
CS Memory K
RF Antenna
R/W Module
Writing on Flash Memory
Drive Board
Motor Driver Excites at 2-2 phase/ 1-2 phase
Development Drive Motor (☐56xL54 Pulse Motor)
Rotary Drive Motor (☐42xL?? Pulse Motor)
Rotary Lock Solenoid
Cleaning Blade Clutch
Photoconductor Drive Motor (Brushless DC Motor)
Main Drive Motor (Brushless DC Motor)
2nd BTR Clutch
Fuser Fan
Power Supply Fan
Waste Toner Collector Detection Switch
Waste Tone Box Full State Sensor
Toner Fan
5V Interlock SW
Front Cover Open Detection
Right/Paper EJ Cover Open Detection
Interlock SW
24V Interlock SW R
24V Interlock SW F
24V Interlock SW T
LVPS
Noise Filter
Relay
Triac
AC Inlet
Power Supply SW
*Color of P/J10
• 230V: Natural
• 100V: Black
Secondary Transfer Bias
Discharging Cloth Bias
Fusing Pressure (R) Bias
Primary Transfer Bias
Charging (W) Bias
Charging (G) Bias
Development Bias
HVPS:High Voltage Output for 7ch
Ozone Fan
Eraser
Feeds paper to main unit
Transfers the paper
Gate Clutch
Standard Feed Clutch
Standard Pickup Clutch
MP Tray Pickup Clutch
MP Tray Lift Plate Clutch
Standard Paper Sensor
MP Tray Paper Sensor
Front Gate Paper Sensor
Paper Width Sensor
Post-Transferring Sensor
Standard Cassette SW
(Detects internal temp.)
Humidity Detection
Temperature and Humidity Sensor
FRAM Board
Opt. Feeder
SUB Board
Drawer Connector
Opt. Feeder Motor
Opt. Feeder Paper Sensor
Opt. Feeder Cover Sensor
Opt. Cassette Sensor
Opt.Feeder Pickup Clutch
Opt. Feeder Feed Clutch
Opt. Feeder Detection
Opt. Duplex Unit
Drive-B Board
Switch Back Motor
Duplex Unit Detection
Transfer Unit
Patch Sensor
Vsync Sensor
Post-Fixing Sensor
PR Thermistor
HR Thermistors located at the one end
HR Thermistor
Fuser Unit Old and New Detection Fuse
Fuser Unit Detection
Sub Board
Fuser Unit
Thermostat
HR Heater
PR Heater
02006801

2.6.3 Controller

This section gives detailed information on the controller.

HARDWARE CONFIGURATION

- CPU
  - Model Name: VR5532A
  - Clock frequency: 350MHz
- ASIC
  - CLC
  - FAIO
  - PCC
- ROM
  - Program: 16MB (DIMM)
  - Font: 4MB (implemented in the Program DIMM)
- Extended ROM
  - A slot: Overlay ROM module
PCL5C module
- RAM
  - SDRM 64bit DIMM
  - 2 slots
  - Standard: 64MB
  - Expanded: 16, 32, 64, 128, 256 (Max. 512MB)
- Standard I/F
  - Parallel I/F
  - USB2.0
  - 10BaseT/100BaseTX Network Interface
- Option I/F
  - Type-B
- HDD
  - High-capacity type (40 GB) support

CONTROLLER CIRCUIT BLOCK DIAGRAM

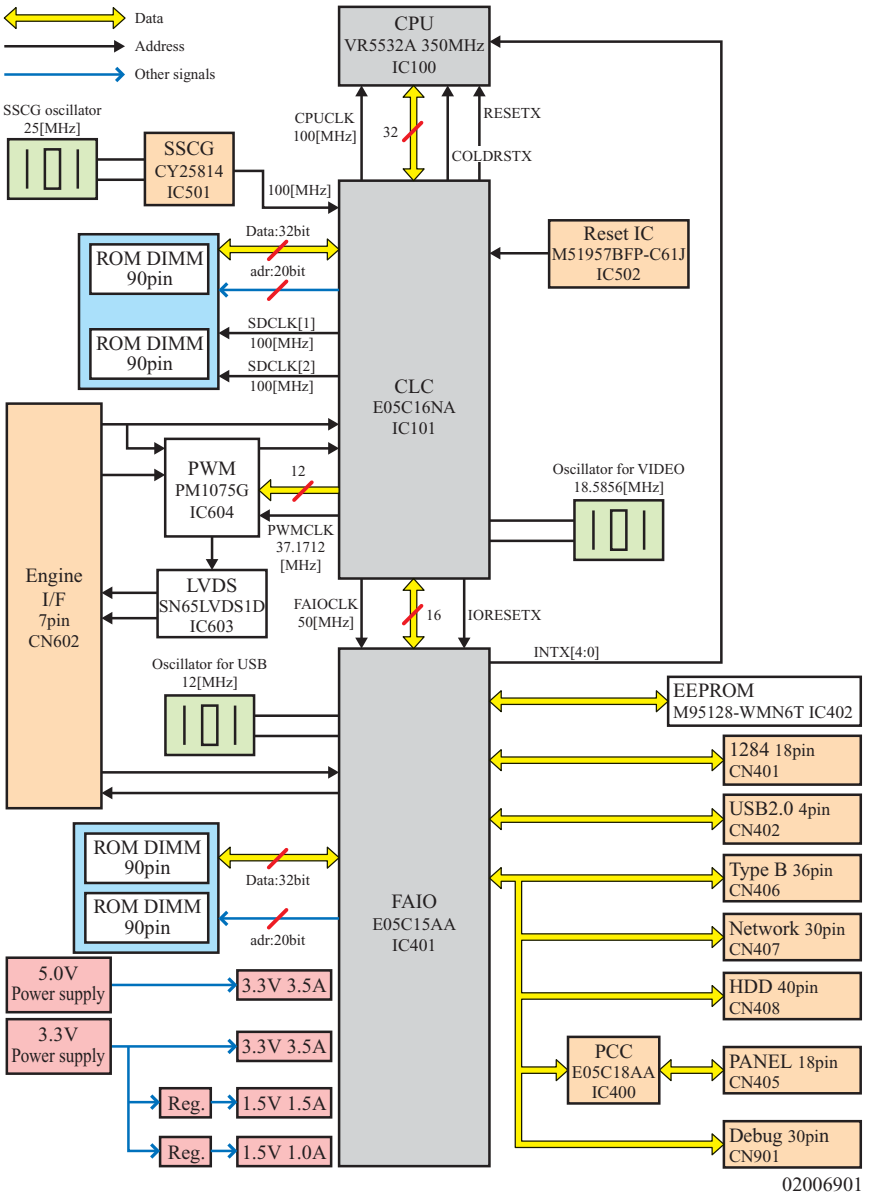


Figure 2-56. Controller Circuit Block Diagram

CHAPTER

3

TROUBLESHOOTING

3.1 Overview

For efficient troubleshooting, verify the condition of the trouble carefully, and refer to the troubleshooting procedures given in this chapter, the operating principles (chapter 2) and wiring connection diagrams (chapter 7).

3.1.1 Procedure Outline for Troubleshooting

Perform troubleshooting work according to the following flowchart.

	Step	Reference
1	Verify the condition of the trouble	■ Information from the user ■ Test on the printer to check the trouble status ■ Print and check the status sheet ■ Print and check the engine status sheet ■ Check the print quality
↓		
2	Preliminary Check	Refer to “3.1.2 Preliminary Check (p.142)”.
↓		
3	Troubleshooting	Refer to “3.1.4 Procedure for Troubleshooting (p.143)”.
↓		
4	Check if the trouble returns to normal	---
↓		
5	Preventative maintenance	Refer to Chapter6 “Maintenance”.
↓		
6	Finish	---

3.1.2 Preliminary Check

Before starting troubleshooting, make sure that the following conditions are all met.

1. The power supply voltage must be within the specification limits (measure the voltage at the electric outlet).
2. The POWER CORD must be free from damage, short circuit or breaking, and should be connected properly to the power source.
3. The printer must be grounded properly.
4. The printer should not be located in a place where it can be exposed to too high or low temperature, too high or low humidity, or abrupt temperature change.
5. The printer should not be located near waterworks, humidifiers, heaters or flames, in a dusty atmosphere, or in a place where the printer can be directly exposed to air blasts from an air conditioner.
6. The printer should not be located in a place where volatile or inflammable gases are produced.
7. The printer should not be located in a place where it can be exposed to direct sunlight.
8. The printer must be located in a well-ventilated place.
9. The printer must be placed on a solid, stable and flat surface.
10. The paper used must conform to the specifications. (Standard paper is recommended.)
11. There should be no errors in handling of the printer.
12. The periodic replacement parts must have been replaced at the right time.
13. The two firmwares for the controller and the engine controller should be the latest version.

3.1.3 Precautions in Performing Troubleshooting Work

1. Be sure to unplug the POWER CORD before starting troubleshooting work unless instructed to plug it.

WARNING

Never touch any live parts unnecessarily when the power is on.Never touch the power switch/inlet part even after the power switch is turned OFF as the part is alive unless the power cord is unplugged.

2. Never perform work with the power turned ON, covers removed, and the interlock and the safety switches turned ON.

WARNING

Never perform work with the power turned ON, covers removed, and the interlock and the safety switches turned ON. If you need to work under the conditions mentioned above, be sure to disconnect the connector on the LSU if not necessary, or a laser beam may be emitted from the LSU.

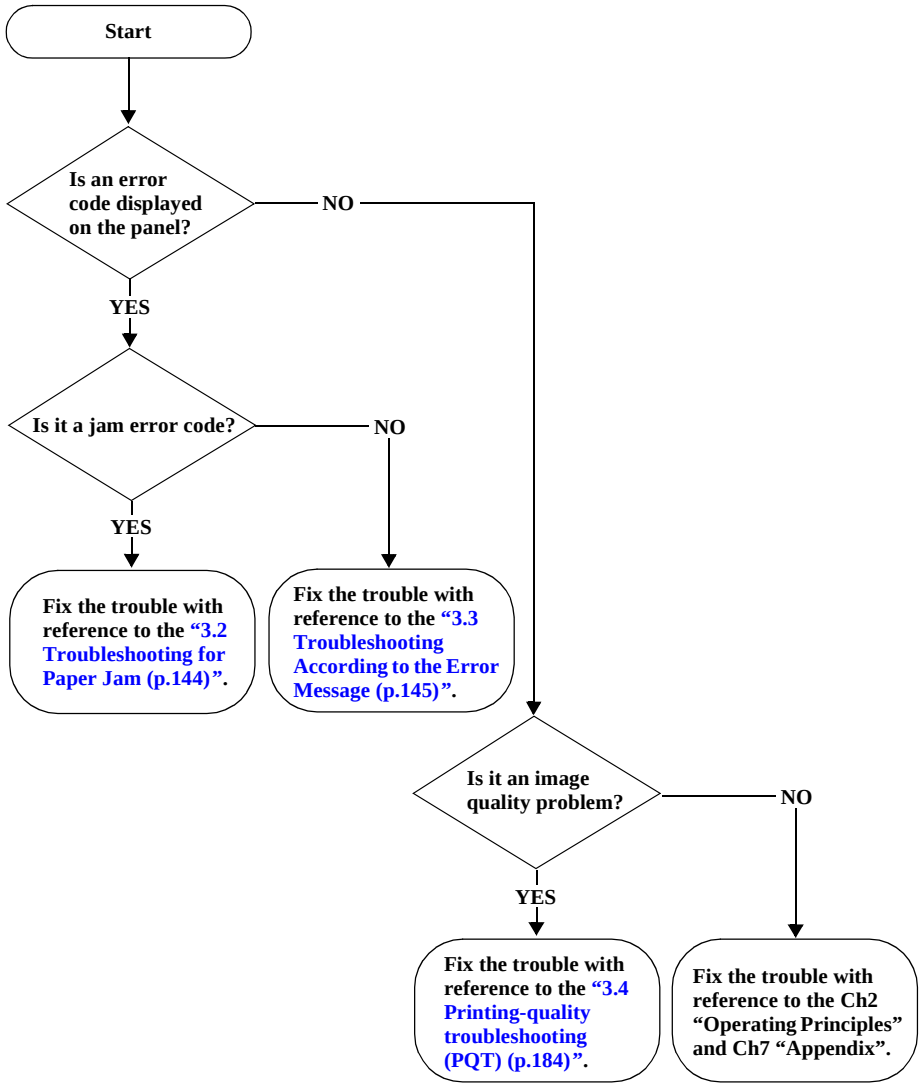
3. If you perform work with the power turned ON, covers removed, and the interlock and safety switches turned ON, be careful of a high voltage supplied from the high-voltage power supply.

WARNING

If you perform work with the power turned ON, covers removed, and the interlock and safety switches turned ON, never touch the high-voltage power supply and any other high voltage output part as a high voltage may be output from HVPS.

4. When touching any hot surfaces, take care not to burn yourself.
5. Wear a wrist strap to discharge static electricity from your body.

3.1.4 Procedure for Troubleshooting



3.2 Troubleshooting for Paper Jam

If the printer does not recover from paper jam errors even after removing the jamming papers, there may be something wrong with the parts listed in the table below.

Message	Jammed Location	Defect Parts
Paper Jam MP A	A	DETECTOR, HP; E (Sensor A)
		CLUTCH, FEED
		CLUTCH, PICK UP, MP
Paper Jam A C1	B	ROLLER ASSY., PICK UP
		CLUTCH, PICK UP
		CLUTCH, FEED
		DETECTOR, HP; E (Sensor A)
Paper Jam A E C2	C	ROLLER ASSY., PICK UP
		CLUTCH, PICK UP
		CLUTCH, FEED
		BOARD ASSY., SUB C585 SUB
		DETECTOR, HP; E (Sensor A)
Paper Jam A	D	CLUTCH, GATE
		DETECTOR, HP; E (Sensor B)
		2ND TRANSFER Assy; ASP
Paper Jam A B	E	CONNECTOR, DUPLEX; B
		STEPPING MOTOR ASSY., DUPLEX
		BOARD ASSY., DRV, C585 DRV-B
		Fuser unit
		DETECTOR, HP; E (Sensor C)
		DETECTOR, HP; E (Sensor D)

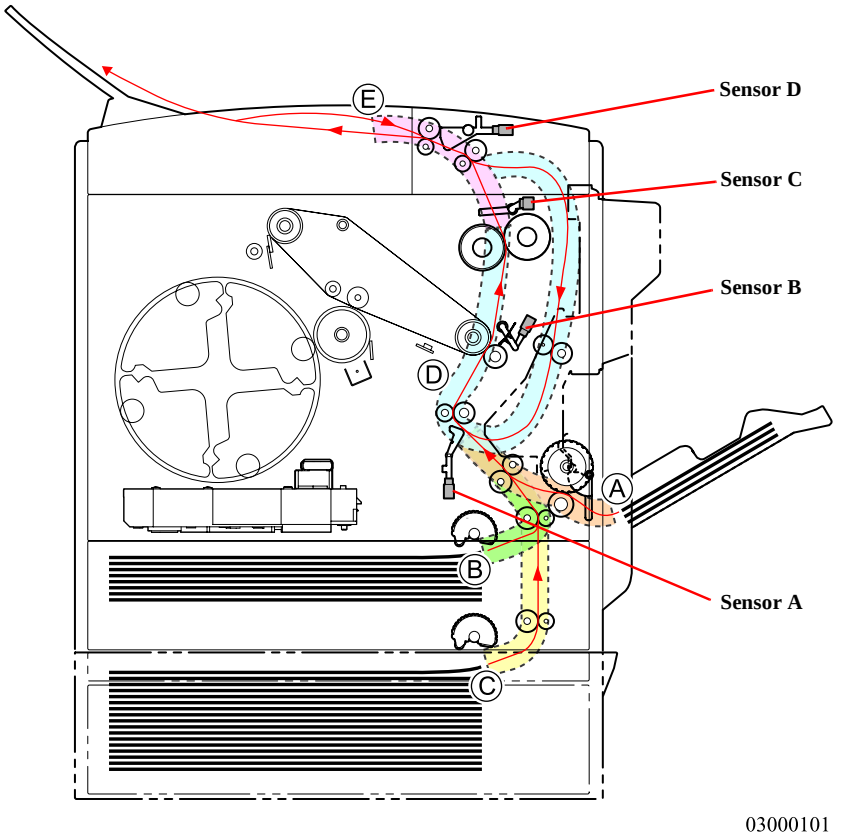


Figure 3-1. Jammed Location

3.3 Troubleshooting According to the Error Message

3.3.1 List of Error Message

Message	Error Occurrence	T/S
Replace Waste T Box	Occurs even though the waste toner collector is not full.	page 147
Install Waste T Box	Occurs even though the waste toner collector is installed.	page 148
Printer Open	Occurs even though the all covers are closed.	page 149
Clean Sensor	The printer does not recover from the error.	page 151
Install Photoconductor	Occurs even though the photoconductor unit is installed.	page 153
Replace Photoconductor	Occurs even though a brand-new photoconductor unit is installed.	page 154
	Occurs when just several sheets are printed since a brand-new photoconductor was installed.	
Paper Out	Occurs even though papers are properly loaded in the printer.	page 155

3.3.2 List of Service Request

Class	Code	Description	T/S
E	090	Inconsistent patch sensing	page 158
E	091	Low voltage power supply error	page 159
E	092	Blown fuser fuse	page 160
E	093	Blown photoconductor unit fuse	page 161
E	094	Printer thermistor error	page 162
E	095	HSYNC error	page 163
E	096	VSYNC error	page 164
E	111	Optional feeder drive motor error	page 165
E	112	Photoconductor drive motor error	page 166
E	113	Rotary drive motor error	page 167
E	115	Main drive motor error	page 168
E	116	Scanner motor error	page 169
E	123	Large temperature change	page 170
E	124	Abnormally high temperature	page 171
E	125	Abnormally low temperature 2	page 172
E	126	Abnormally low temperature 1	page 173
E	132	Inconsistent engine controller memory	page 174
E	144	Transfer belt unit end of life	page 175
E	153	Ozone fan error	page 176
E	154	Toner fan error	page 177
E	155	Fuser fan error	page 178
E	156	Power supply fan error	page 179
E	256	Transfer belt unit lever out-of-position	page 180
E	998	Engine communication error	page 181
C	0017	CPU error (undefined interruption)	3.3.4.1 Engine Related Error *(p.158)*
C	0081	CPU error (TLB modification exception)	
C	0082	CPU error (TLB miss exception [Load/Fetch])	
C	0083	CPU error (TLB miss exception [Store])	
C	0084	CPU error (address error exception [Load/Fetch])	
C	0085	CPU error (address error exception [Store])	
C	0086	CPU error (bus error exception [Fetch])	
C	0087	CPU error (bus error exception [Load/Store])	

Class	Code	Description	T/S
C	0088	CPU error (SYSCALL exception)	3.3.4.1 Engine Related Error *(p.158)*
C	0089	CPU error (Break exception)	
C	0090	CPU error (reserving command exception)	
C	0091	CPU error (unused coprocessor exception)	
C	0092	CPU error (FPU exception)	
C	0093	CPU error (TLB exception)	
C	0094	CPU error (XTLB exception)	
C	0095	CPU error (cache exception)	
C	0096	CPU error (Trap exception)	
C	0097	CPU error (FPU exception)	
C	0098	CPU error (watch exception)	
C	0128-0254	CPU error (undefined trap)	
C	0255	CPU error (NMI exception)	
C	0256	CPU error (divide by 0)	
C	0257	CPU error (arithmetic overflow)	
C	0258	CPU error (break occurrence)	
C	0800	IPL error (controller defect)	
C	0998	Engine communication error (only when power-on)	
C	999	Engine flash ROM has no program data	
C	1000	Standard RAM error (not installed, etc.)	
C	1001	Standard RAM error (standard stack is undefined, etc.)	
C	1002	Standard RAM error (standard size is undefined, etc.)	
C	1020	RAM error (slot 0)	
C	1021	RAM error (slot 1)	
C	1400	Engine initialization error	
C	1700	Built-in network hard ware error	
C	1720	Network board uninstalled	
C	1999	Other hardware errors	
C	2000	Software error	

3.3.3 Troubleshooting for Error Message

Replace Waste T Box

☐ Error Occurrence/Error Detection Method

After the Waste Toner Full State Sensor turns ON, the printer starts to count printed dots and causes the error when the number of dots reaches a predetermined value.

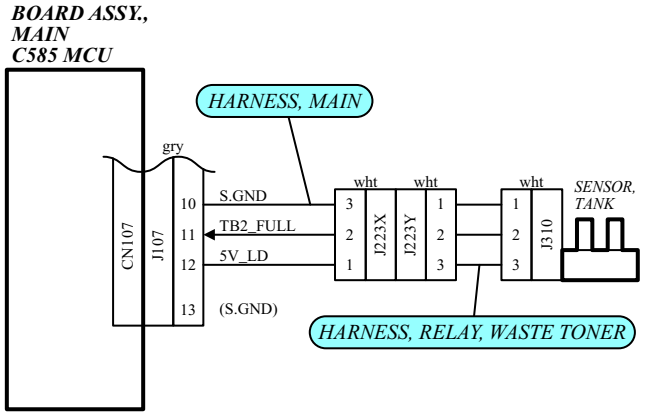
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	SENSOR, TANK	page 283
2	HARNESS, RELAY, WASTE TONER	---
3	HARNESS, MAIN	---
4	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check if the sensing element of the sensor is dirty.
2	Check the connection status between the sensor and the MCU. [SENSOR, TANK] - [HARNESS, RELAY, WASTE TONER] - [HARNESS,MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN107)
3	Replace the [SENSOR, TANK].
4	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03000201

Install Waste T Box

☐ Error Occurrence/Error Detection Method

This error occurs when the Waste Toner Collector Detection Switch turns OFF.

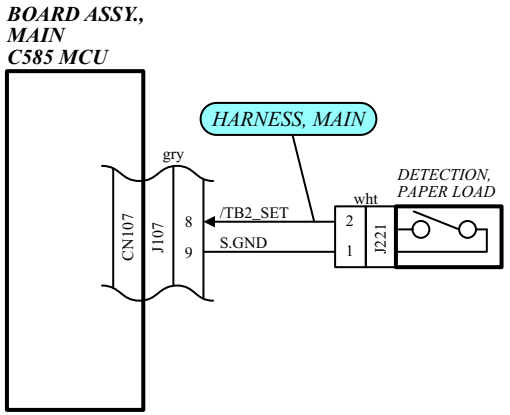
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	Waste Toner Collector	page 310
2	DETECTION, PAPER LOAD	page 283
3	HARNESS, MAIN	---
4	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check if the actuator of the Waste Toner Collector operates normally.
2	Check if the sensor is mounted correctly.
3	Check the connection status between the sensor and the MCU. [DETECTION, PAPER LOAD] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN107)
3	Replace the [DETECTION, PAPER LOAD].
4	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03000301

Printer Open

☐ Error Occurrence/Error Detection Method
This error occurs when the cover opened and the Open/Close Detection Switch turns OFF.

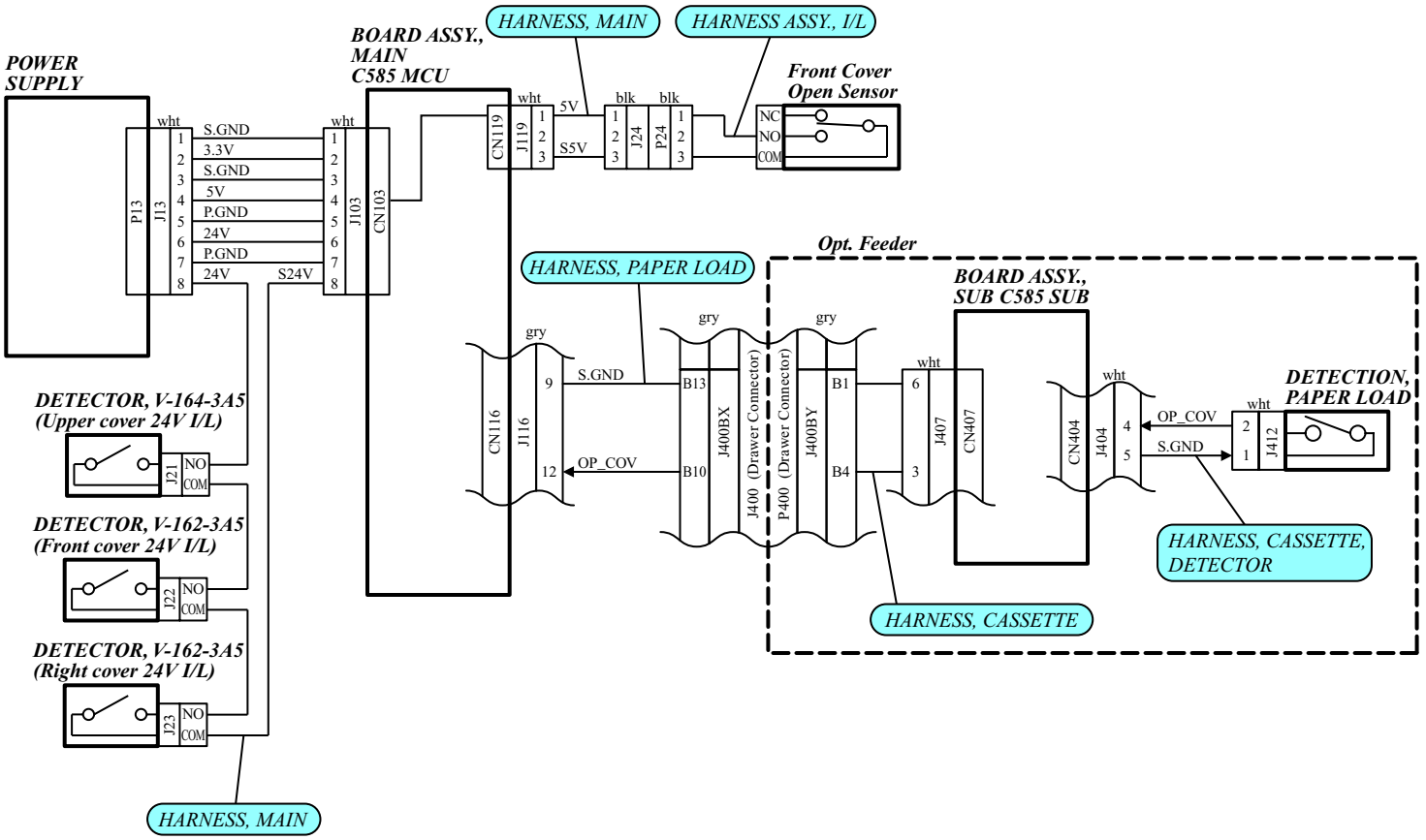
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	DETECTOR, V-162-3A5 (Right cover 24V I/L)	page 249
2	DETECTOR, V-164-3A5 (Upper cover 24V I/L)	page 243
3	DETECTOR, V-162-3A5 (Front cover 24V I/L)	page 249
4	HARNESS Assy., I/L (Front cover 5V I/L)	---
5	DETECTION, PAPER LOAD	page 349
	BOARD ASSY., SUB C585 SUB	page 350
6	HARNESS, MAIN	---
7	HARNESS, CASSETTE, DETECTOR	---
8	HARNESS, CASSETTE	---
9	CONNECTOR, OP	page 347
10	HARNESS, PAPER LOAD	---
11	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check if the actuators attached on the covers to press the switches operate normally.
2	Check the connection status between the switch and the MCU.
	■ 24 V system switches - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN103)
	■ 24 V system switches - [HARNESS, MAIN] - [POWER SUPPLY] (CNP13)
	■ 5 V system switches - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN119)
	■ [DETECTION, PAPER LOAD] - [HARNESS, CASSETTE, DETECTOR] - [BOARD ASSY., SUB C585 SUB] (CN404) - [BOARD ASSY., SUB C585 SUB] (CN407) - [HARNESS, CASSETTE] - [CONNECTOR, OP] - [HARNESS, PAPER LOAD] - [BOARD ASSY., MAIN C585 MCU] (CN116)
3	Replace the switch.
4	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03000401

Clean Sensor

☐ Error Occurrence/Error Detection Method

If the value calculated based on the density level detected by the Patch Sensor falls outside the predetermined range, this error occurs.

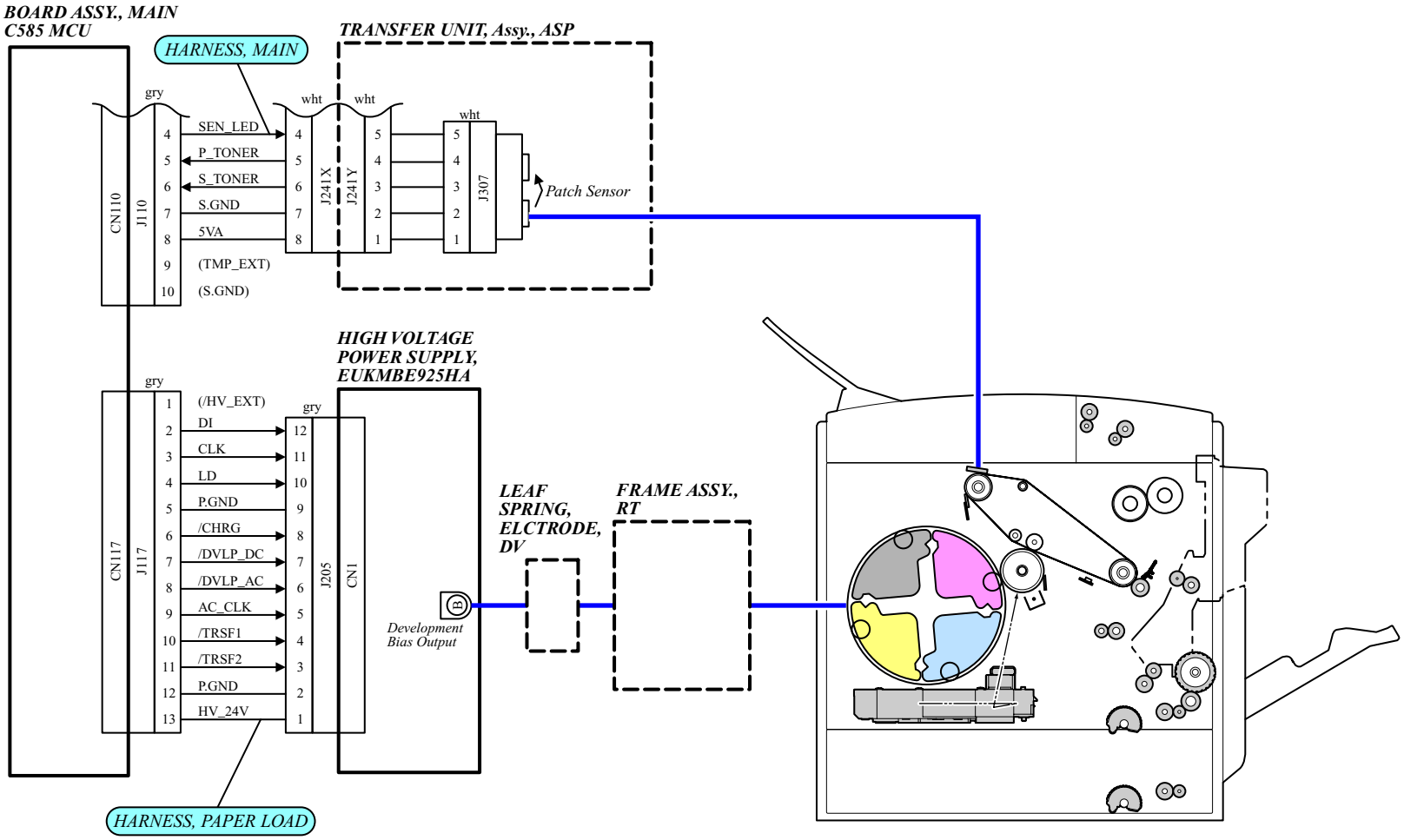
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	LEAF SPRING, ELECTRODE, DV	page 273
2	Toner cartridge	page 238
3	Photoconductor unit	page 235
4	HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA	page 314
5	TRANSFER UNIT, Assy., ASP	page 284
6	HARNESS, MAIN	---
7	BOARD ASSY., MAIN C585 MCU	page 310
8	FRAME ASSY., RT	page 274

☐ Check Point

No.	Check Point
1	Open and close the Cover D to clean the density sensor.
2	Check the contact point on the HVPS where outputs developing bias for any abnormality. (such as missing screw, or deformation of electrode spring)
3	Check if the electrode spring on the rotary side becomes deformed.
4	Check the connection status between the Density Sensor (Transfer Belt Unit) and the MCU. [TRANSFER UNIT, Assy., ASP] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN110)
5	Replace the toner cartridge.
6	Replace the photoconductor unit.
7	Replace the [HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA].
8	Replace the [TRANSFER UNIT, Assy., ASP].
9	Replace the [FRAME ASSY., RT].

☐ Diagram


BOARD ASSY., MAIN
C585 MCU
HARNESS, MAIN
TRANSFER UNIT, Assy., ASP
gry
wht
wht
wht
CN110
J110
J241X
J241Y
J307
4 SEN_LED
5 P_TONER
6 S_TONER
7 S.GND
8 5VA
9 (TMP_EXT)
10 (S.GND)
Patch Sensor
HIGH VOLTAGE
POWER SUPPLY,
EUKMBE925HA
gry
gry
CN117
J117
J205
CN1
1 (/HV_EXT)
2 DI
3 CLK
4 LD
5 P.GND
6 /CHRG
7 /DVLP_DC
8 /DVLP_AC
9 AC_CLK
10 /TRSF1
11 /TRSF2
12 P.GND
13 HV_24V
B
Development
Bias Output
LEAF
SPRING,
ELCTRODE,
DV
FRAME ASSY.,
RT
HARNESS, PAPER LOAD
03000501

Install Photoconductor

☐ Error Occurrence/Error Detection Method

A photoconductor installation status is detected by a closed-circuit created between the Photoconductor Unit, the [Electrode Assy., PC], and the Engine Controller at the time of the installation.

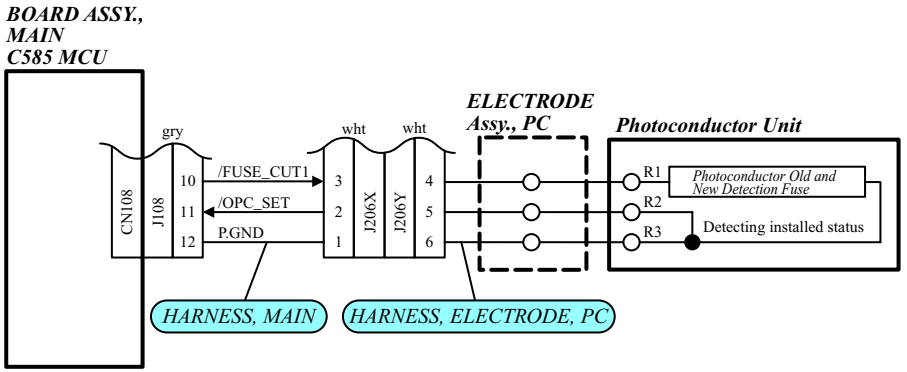
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	ELECTRODE Assy., PC	page 265
2	Photoconductor unit	page 235
3	HARNESS, MAIN	---

☐ Check Point

No.	Check Point
1	Check the connection status between the Photoconductor Unit and the MCU. [Photoconductor unit] - [ELECTRODE Assy., PC] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN108)
2	Replace the [Photoconductor unit].
3	Replace the [ELECTRODE Assy., PC].

☐ Diagram



03000601

Replace Photoconductor

☐ Occurs even though a brand-new Photoconductor unit is installed.

■ Error Occurrence/Error Detection Method

The printer cannot detect the new Photoconductor because the fuse on the unit for detecting “new” is broken.

■ Possible Parts Caused the Error

No.	Part Name	Reference
1	Photoconductor unit	page 235

■ Check Point

No.	Check Point
1	Replace the [Photoconductor unit].

☐ Occurs when just several sheets are printed since a brand-new photoconductor was installed.

■ Error Occurrence/Error Detection Method

An error of the sensor that detects an amount of waste toner in the Waste Toner Collecting Space in the Photoconductor Unit.

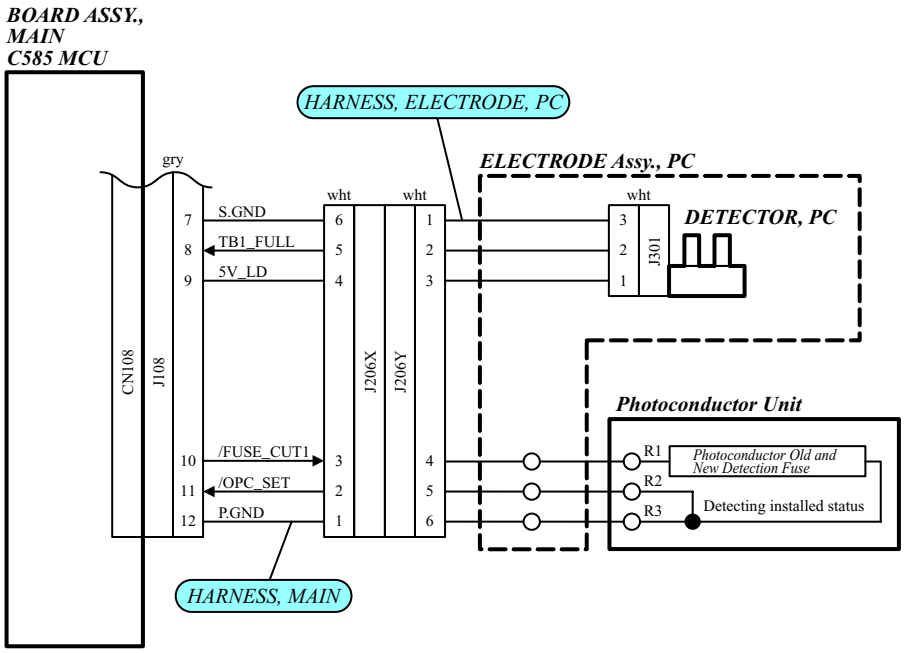
■ Possible Parts Caused the Error

No.	Part Name	Reference
1	DETECTOR, PC	page 265

■ Check Point

No.	Check Point
1	Replace the [DETECTOR, PC].

☐ Diagram



03000701

Paper Out

☐ Error Occurrence/Error Detection Method

This error occurs when the Paper Sensor turns off.

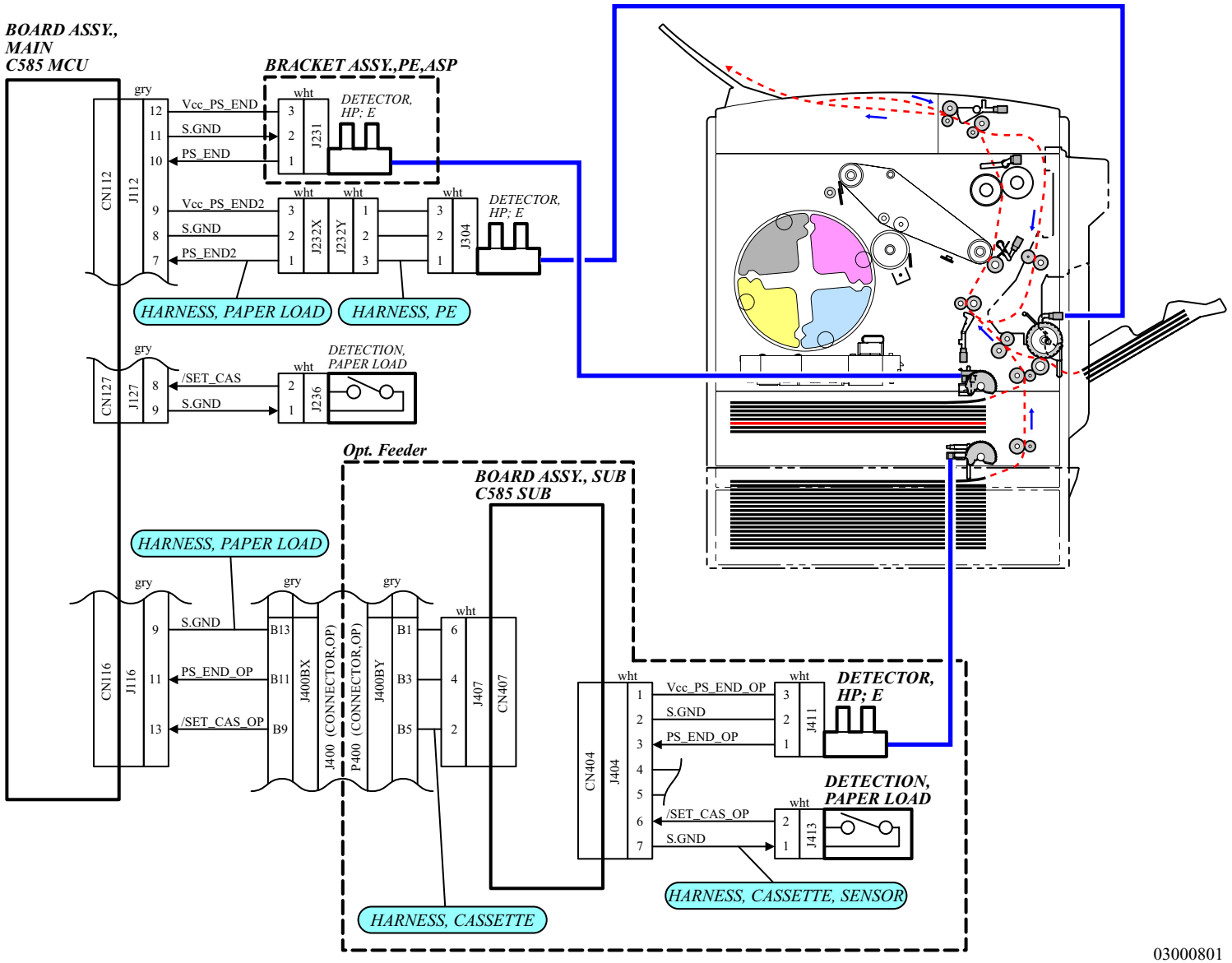
☐ Possible Parts Caused the Error

Section	No.	Part Name	Reference
Standard Paper Feeder	1	LATCH, CASSETTE	page 339
	2	BRACKET ASSY., PE, ASP	page 262
	3	DETECTION, PAPER LOAD	page 341
Optional Paper Feeder	1	CONNECTOR, OP	page 347
	2	LATCH, CASSETTE	page 339
	3	DETECTOR, HP; E	page 346
	4	DETECTION, PAPER LOAD	page 349
MP tray	1	DETECTOR, HP; E	page 323

☐ Check Point

Section	No.	Check Point
Standard Paper Feeder	1	Check if the Lift Plate operates normally. Insert the paper cassette into the printer and judge the operation status of the Lift Plate by the sound created when it is moved up.
	2	Replace the [BRACKET ASSY., PE, ASP].
	3	Replace the [DETECTION, PAPER LOAD].
Optional Paper Feeder	1	Check if the Lift Plate operates normally. Insert the paper cassette into the printer and judge the operation status of the Lift Plate by the sound created when it is moved up.
	2	Replace the [CONNECTOR, OP].
	3	Replace the [DETECTOR, HP; E].
	4	Replace the [DETECTION, PAPER LOAD].
MP tray	1	Replace the [DETECTOR, HP; E].

☐ Diagram


BOARD ASSY., MAIN C585 MCU
BRACKET ASSY.,PE,ASP
CN112
J112
gry
wht
Vcc_PS_END
S.GND
PS_END
Vcc_PS_END2
S.GND
PS_END2
J231
J232X
J232Y
J304
DETECTOR, HP; E
DETECTOR, HP; E
HARNESS, PAPER LOAD
HARNESS, PE
CN127
J127
/SET_CAS
S.GND
J236
DETECTION, PAPER LOAD
Opt. Feeder
BOARD ASSY., SUB C585 SUB
HARNESS, PAPER LOAD
CN116
J116
S.GND
PS_END_OP
/SET_CAS_OP
J400BX
J400 (CONNECTOR,OP)
P400 (CONNECTOR,OP)
J400BY
J407
CN407
CN404
J404
Vcc_PS_END_OP
S.GND
PS_END_OP
J411
DETECTOR, HP; E
/SET_CAS_OP
S.GND
J413
DETECTION, PAPER LOAD
HARNESS, CASSETTE, SENSOR
HARNESS, CASSETTE
03000801

3.3.4 Troubleshooting for Service Request Error

When checking a connection status is required, check for the followings.

- **Disconnected connectors, or incorrect connection**
- **Broken pins on the connector**
- **Breaking of harnesses**

3.3.4.1 Engine Related Error

E090: Inconsistent patch sensing

☐ Error Occurrence/Error Detection Method

If the value calculated based on the density level detected by the Patch Sensor falls outside the predetermined range, this error occurs.

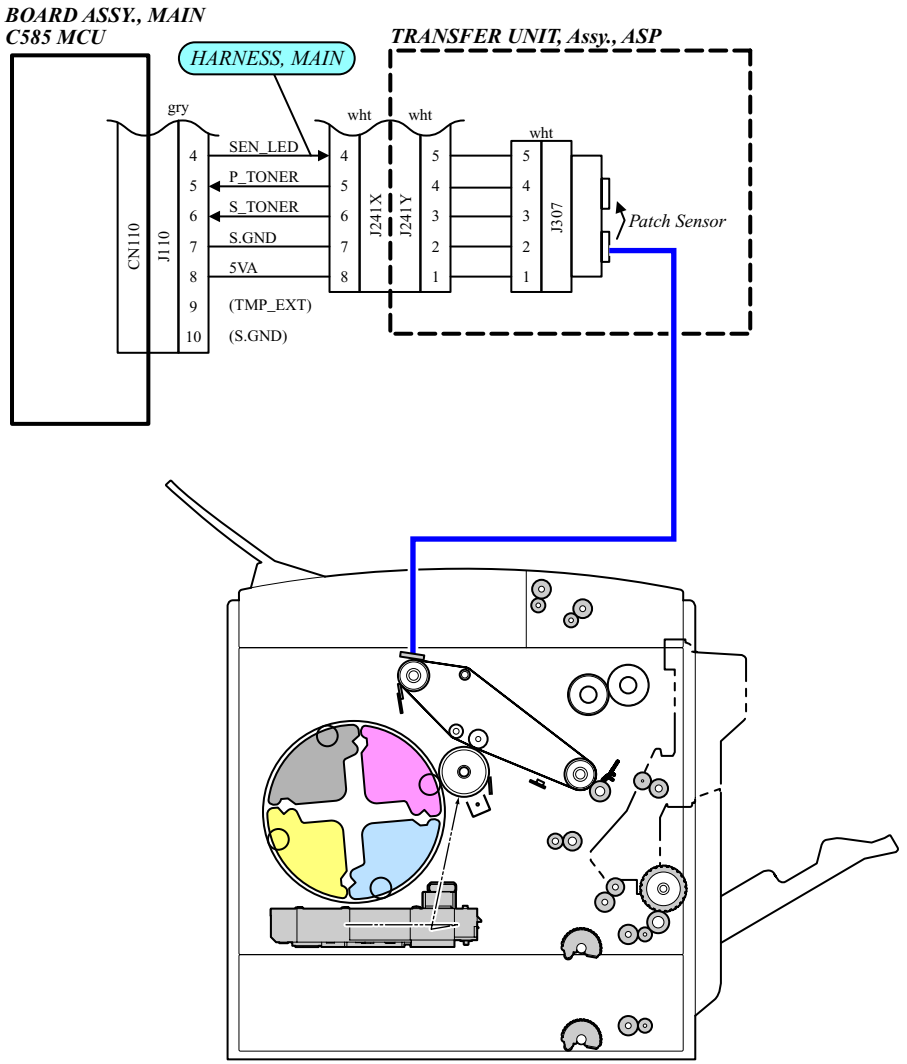
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	TRANSFER UNIT, Assy., ASP	page 284
2	HARNESS, MAIN	---
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Open and close the Cover D to clean the density sensor.
2	Check the connection status between the Density Sensor (Transfer Unit, Assy., ASP) and the MCU.
	[TRANSFER UNIT, Assy., ASP] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN110)
	Inspect the sensor cleaner on the transfer unit for any abnormality.
3	Replace the [TRANSFER UNIT, Assy., ASP].
4	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03002801

E091: Low voltage power supply error

☐ Error Occurrence/Error Detection Method

The printer monitors the 24 V output from the Low Voltage Power Supply after the mechanical controller comes back to normal status from resetting status, and if the 24 V signal changes to “L”, it is detected by the printer and causes this error.

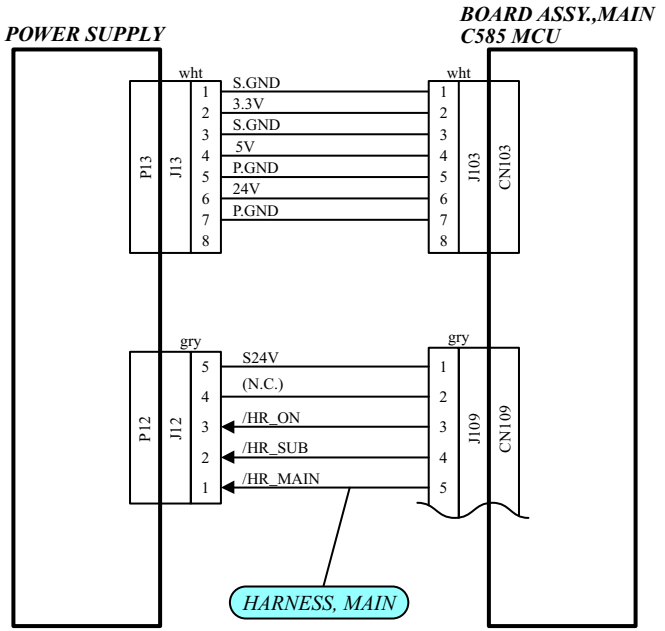
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	POWER SUPPLY (230 V) / POWER SUPPLY (120 V)	page 319
2	HARNESS, MAIN	---
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the LVPS and the MCU. ■ [POWER SUPPLY] (P13) - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN103) ■ [POWER SUPPLY] (P12) - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN109)
2	Replace the [POWER SUPPLY].
3	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03001001

E092: Blown fuser fuse

☐ Error Occurrence/Error Detection Method

This error occurs when the printer still detects that the Fuser Unit is new even after cutting off the fuse for detecting new unit on the Fuser Unit.

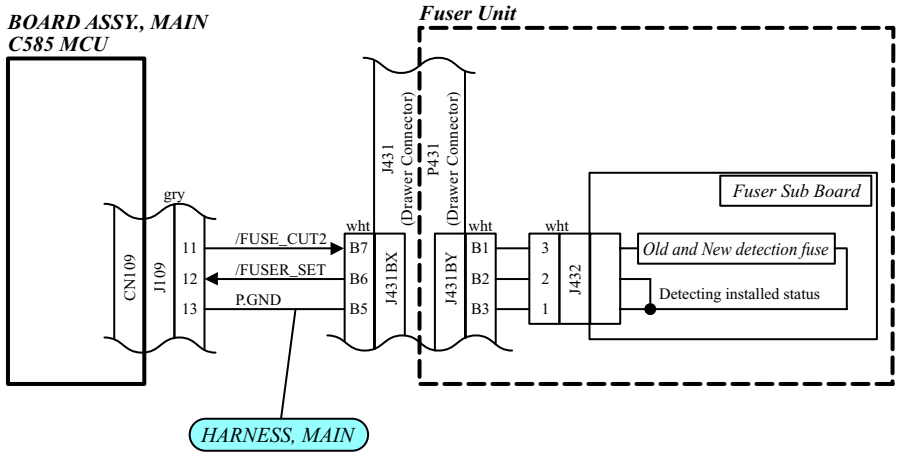
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	Fuser unit	page 237
2	HARNESS, MAIN	---
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the Fuser Unit and the MCU.
	[Fuser unit] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN109)
3	Replace the [Fuser unit].
4	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03001101

E093: Blown photoconductor unit fuse

☐ Error Occurrence/Error Detection Method

This error occurs when the printer still detects that the Photoconductor Unit is new even after cutting off the fuse for detecting new unit on the Photoconductor Unit.

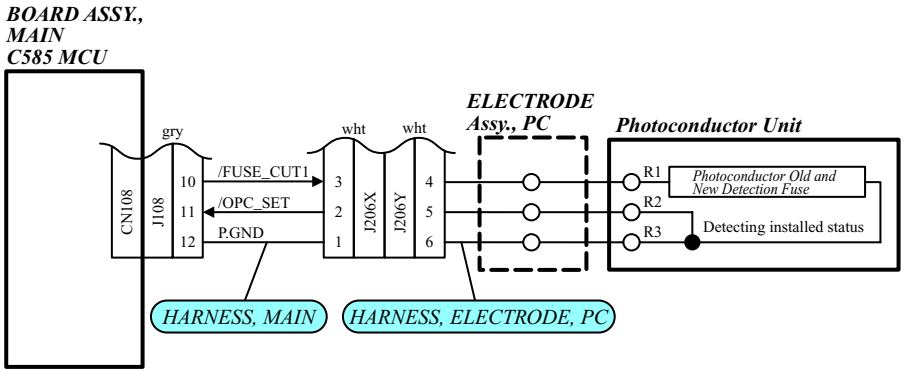
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	HARNESS, MAIN	---
2	Photoconductor unit	page 235
3	ELECTLODE Assy., PC	page 265
4	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the Photoconductor Unit and the MCU.
	[Photoconductor unit] - [ELECTRODE Assy., PC] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN108)
2	Replace the Photoconductor Unit.
3	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03000601

E094: Printer thermistor error

☐ Error Occurrence/Error Detection Method

- ■ If the average temperature of temperatures detected by the Temp./Humidity Sensor falls outside the predetermined range, this error occurs.
- ■ If the average humidity of humidities detected by the Temp./Humidity Sensor falls outside the predetermined range, this error occurs.

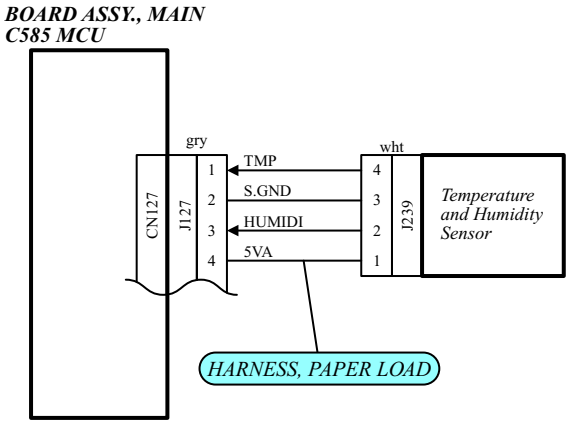
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	DETECTOR, HUMIDITY	page 315
2	HARNESS, PAPER LOAD	---
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the sensor and the MCU. [DETECTOR, HUMIDITY] - [BOARD ASSY., MAIN C585 MCU] (CN127)
2	Replace the [DETECTOR, HUMIDITY].
3	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03001201

E095: HSYNC error

☐ Error Occurrence/Error Detection Method

This error occurs when the Hsync signal could not be detected at the right moment according to the scan cycle.

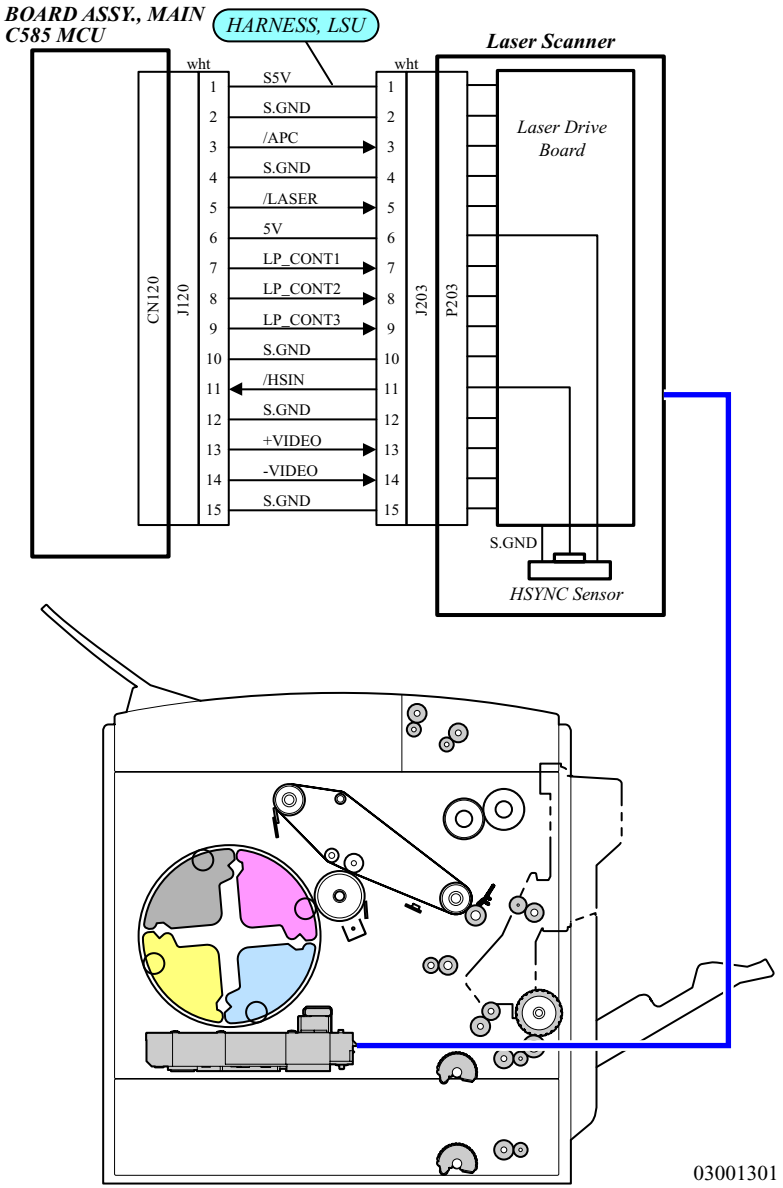
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	Laser Scanner	page 269
2	HARNESS, LSU	---
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the LSU and the MCU.
	[Laser Scanner] - [HARNESS, LSU] - [BOARD ASSY., MAIN C585 MCU] (CN120)
2	Replace the [Laser Scanner].
3	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



E096: VSYNC error

☐ Error Occurrence/Error Detection Method

This error occurs when the printer fails to detect the VSYNC at a predetermined interval that is set for each of three operation modes (start-up, normal, low speed) of the Photoconductor drive motor.

*Photoconductor drive motor drives the Photoconductor and the Transfer Belt.

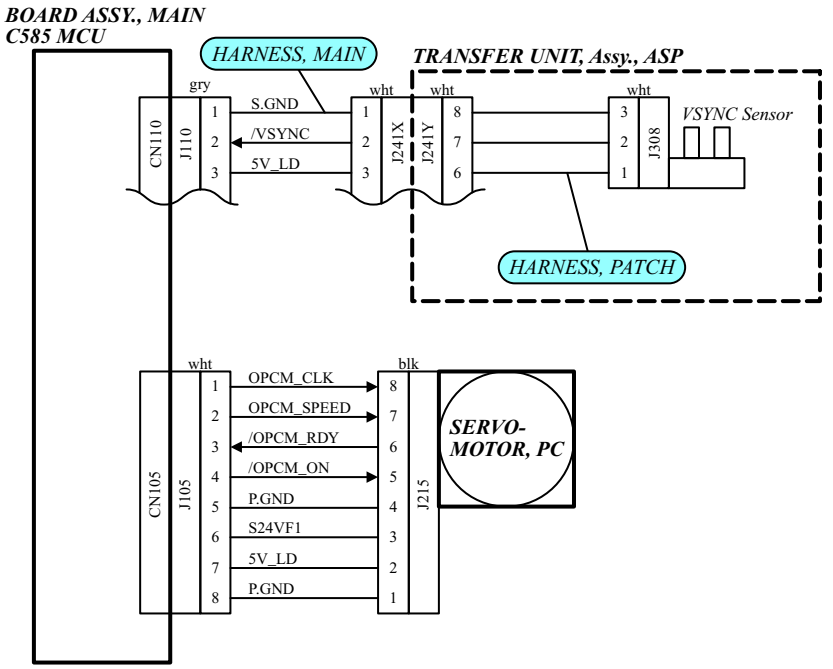
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	TRANSFER UNIT, Assy., ASP	page 284
2	HARNESS, MAIN	---
3	SERVOMOTOR, PC	page 299

☐ Check Point

No.	Check Point
1	Check the connection status between the sensor and the MCU. [TRANSFER UNIT, Assy., ASP] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN110)
2	Check the flag for detecting VSYNC (convex portion) on the extreme right of the Transfer Belt for any abnormality.
3	Replace the [TRANSFER UNIT, Assy., ASP].
4	Check the connection status between the Motor and the MCU. [SERVOMOTOR, PC] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN105)
5	Replace the [SERVOMOTOR, PC].

☐ Diagram



03001401

E111: Optional feeder drive motor error

☐ Error Occurrence/Error Detection Method

The number of revolutions of the paper feed motor for the optional feeder falls outside the predetermined range. The motor does not send “ready” signal, or the printer cannot detect the “ready” signal.

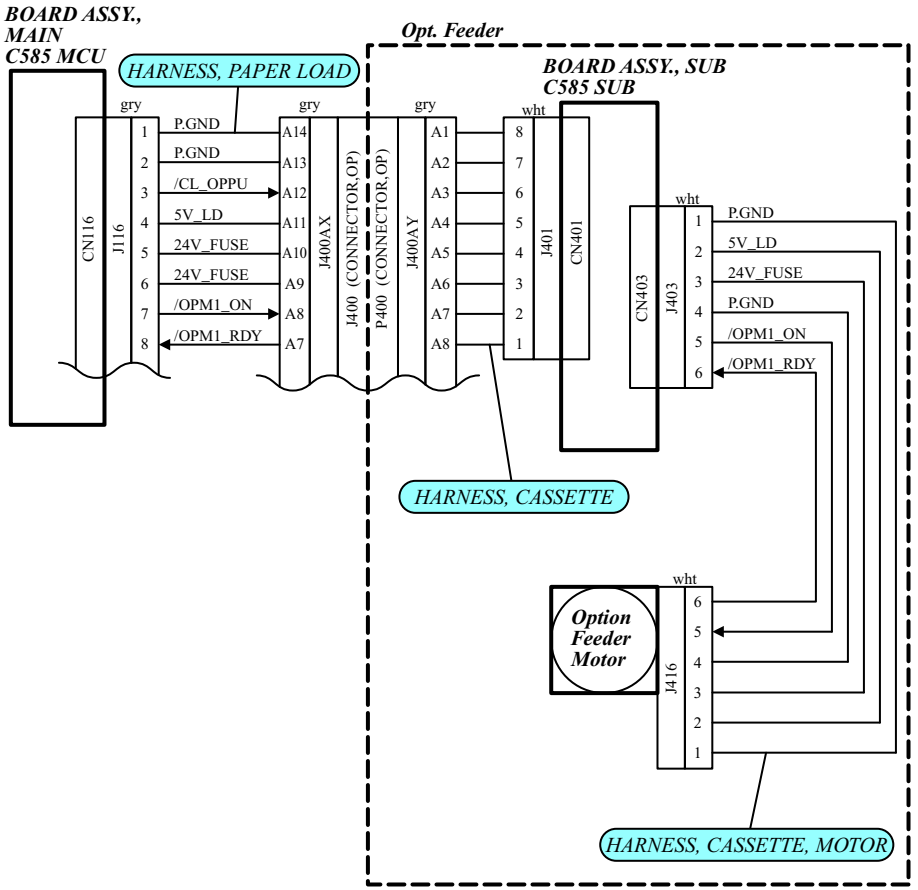
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	DC MOTOR, OP	page 350
2	HARNESS, CASSETTE, MOTOR	---
3	BOARD ASSY., SUB C585 SUB	page 350
4	HARNESS, CASSETTE	---
5	CONNECTOR, OP	page 347
6	HARNESS, PAPER LOAD	---
7	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status for the all connections between the Motor and the MCU.
	[DC MOTOR, OP] - [HARNESS, CASSETTE, MOTOR] - [BOARD ASSY., SUB C585 SUB] (CN403) - [BOARD ASSY., SUB C585 SUB] (CN401) - [HARNESS, CASSETTE] - [CONNECTOR, OP] - [HARNESS, PAPER LOAD] - [BOARD ASSY., MAIN C585 MCU] (CN116)
2	Replace the [DC MOTOR, OP].
3	Replace the [BOARD ASSY., SUB C585 SUB].
4	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03001501

E112: Photoconductor drive motor error

☐ Error Occurrence/Error Detection Method

The number of revolutions of the Photoconductor drive motor falls outside the predetermined range. The motor does not send “ready” signal, or the printer cannot detect the “ready” signal.

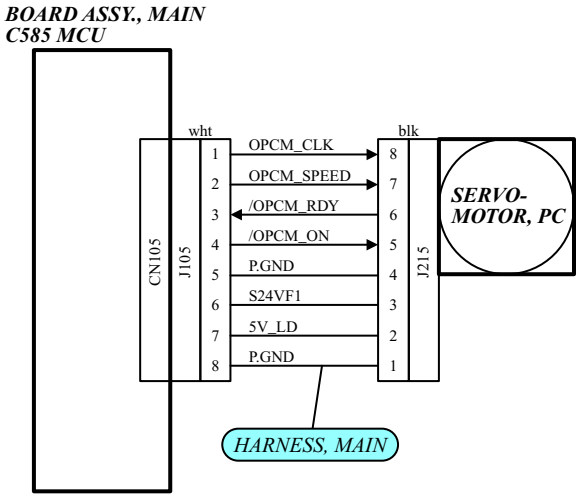
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	SERVOMOTOR, PC	page 299
2	HARNESS, MAIN	---
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
2	Check the connection status between the Motor and the MCU.
	[SERVOMOTOR, PC] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN105)
3	Replace the [SERVOMOTOR, PC].
4	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03001601

E113: Rotary drive motor error

☐ Error Occurrence/Error Detection Method

The position of the Rotary is detected by the Rotary HP Sensor.When the printer fails to detect the Rotary position at a predetermined interval that is set for each operation cycle of the Rotary, the printer judges that the Rotary does not rotate normally and causes the error.

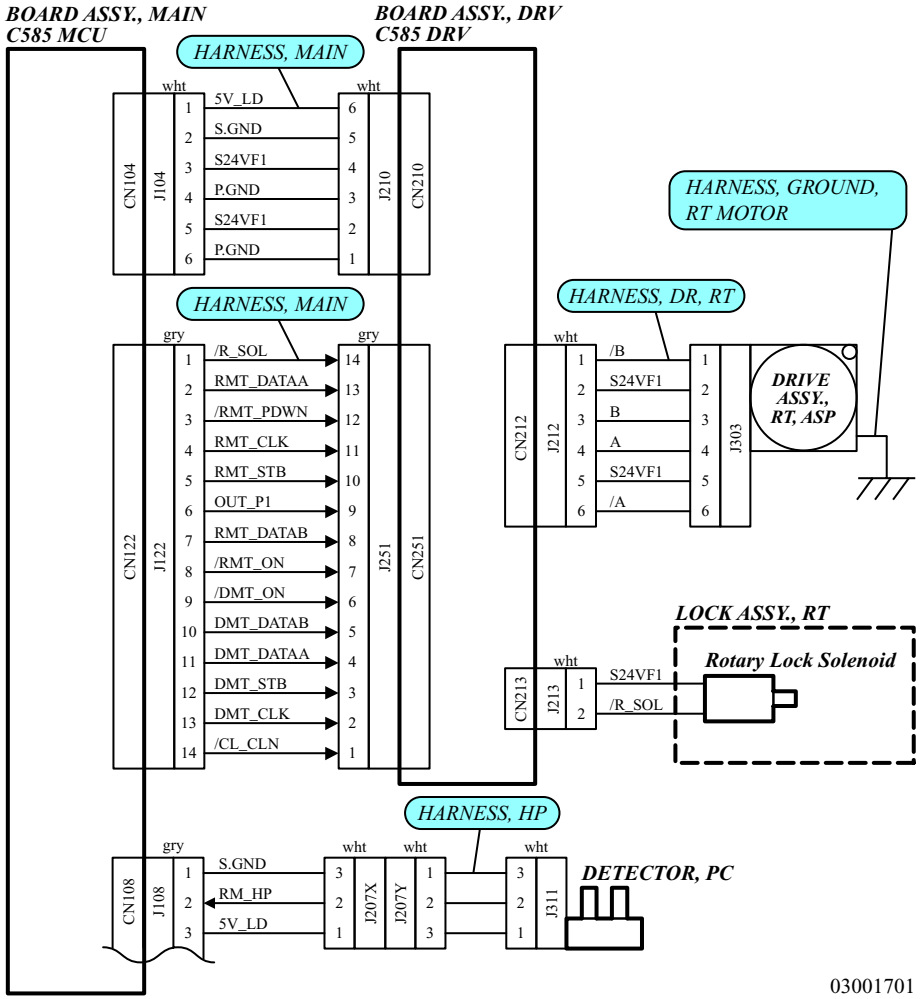
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	LOCK ASSY., RT	page 272
2	DETECTOR, PC	page 273
3	HARNESS, HP	---
4	HARNESS, MAIN	---
5	DRIVE ASSY., RT, ASP	page 304
6	BOARD ASSY., DRV, C585 DRV	page 312
7	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the Motor and the MCU.
	[DRIVE ASSY., RT, ASP] - [BOARD ASSY., DRV, C585 DRV] (CN212) - [BOARD ASSY., DRV,C585 DRV] (CN210, CN251) - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN104, CN122)
2	Remove the rear cover of the printer to let the printer perform initializing operation, and check if the rotary lock lever operates normally.
3	Check the connection status between the Rotary Lock Unit and the MCU.
	[LOCK ASSY., RT] - [BOARD ASSY., DRV, C585 DRV] (CN213) - [BOARD ASSY., DRV, C585 DRV] (CN210, CN251) - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN104, CN122)
4	Replace the [LOCK ASSY., RT].
5	Remove the rear cover to let the printer perform initializing operation, and check if the rotary stops at its home position.
6	Check the connection status between the Rotary HP Sensor and the MCU.
	[DETECTOR, PC] - [HARNESS, HP] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN108)
7	Replace the [DETECTOR, PC].
8	Replace the [DRIVE ASSY., RT, ASP].
9	Replace the [BOARD ASSY., DRV, C585 DRV].
10	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



E115: Main drive motor error

☐ Error Occurrence/Error Detection Method

The number of revolutions of the Main Drive Motor falls outside the predetermined range. The motor does not send “ready” signal, or the printer cannot detect the “ready” signal.

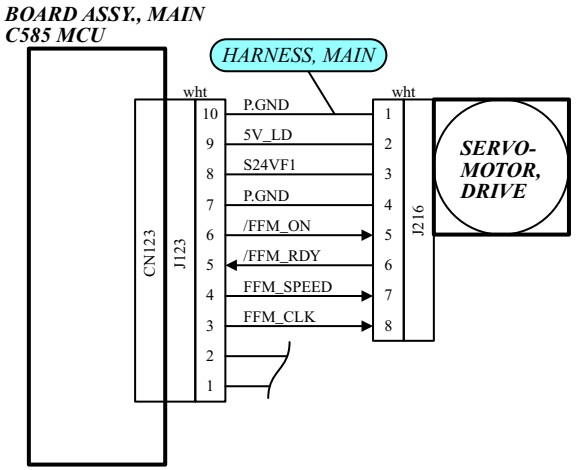
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	SERVOMOTOR, DRIVE	page 300
2	HARNESS, MAIN	---
3	Fuser unit	page 237
4	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the Motor and the MCU. [SERVOMOTOR, DRIVE] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN123)
2	Check the paper feed path for remaining papers.
3	Remove the MCU Board and rotate the motor with your hand to check if the motor rotates normally without any interference.
4	Check if the roller and gear of the Fuser Unit are damaged.
5	Replace the [SERVOMOTOR, DRIVE].
6	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03001801

E116: Scanner motor error

☐ Error Occurrence/Error Detection Method

The number of revolutions of the Scanner Motor falls outside the predetermined range. The motor does not send “ready” signal, or the printer cannot detect the “ready” signal.

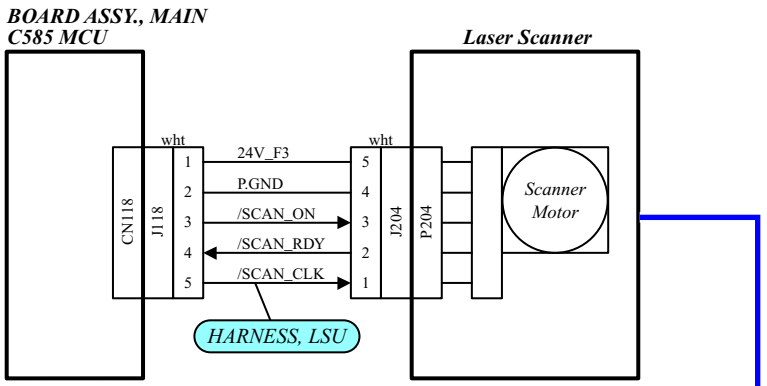
☐ Possible Parts Caused the Error

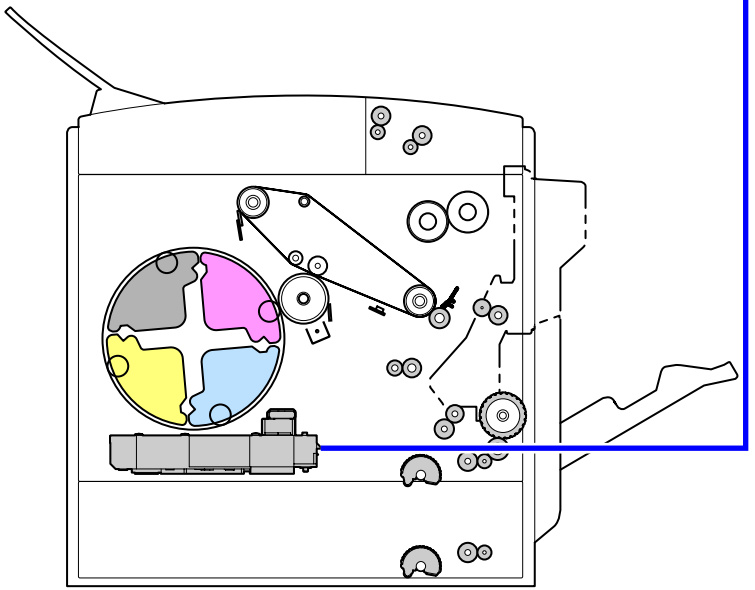
No.	Part Name	Reference
1	Laser Scanner	page 269
2	HARNESS, LSU	---
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check if the starting sound of the motor is audible.
2	Check the connection status between the LSU and the MCU.
	[Laser Scanner] (P204) - [HARNESS, LSU] - [BOARD ASSY., MAIN C585 MCU] (CN118)
3	Replace the [Laser Scanner].
4	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram





03001901

E123: Large temperature change

☐ Error Occurrence/Error Detection Method

The temperatures detected by the three thermistors are higher than those detected at a prescribed period of time ago, and the difference exceeds a specified limit.

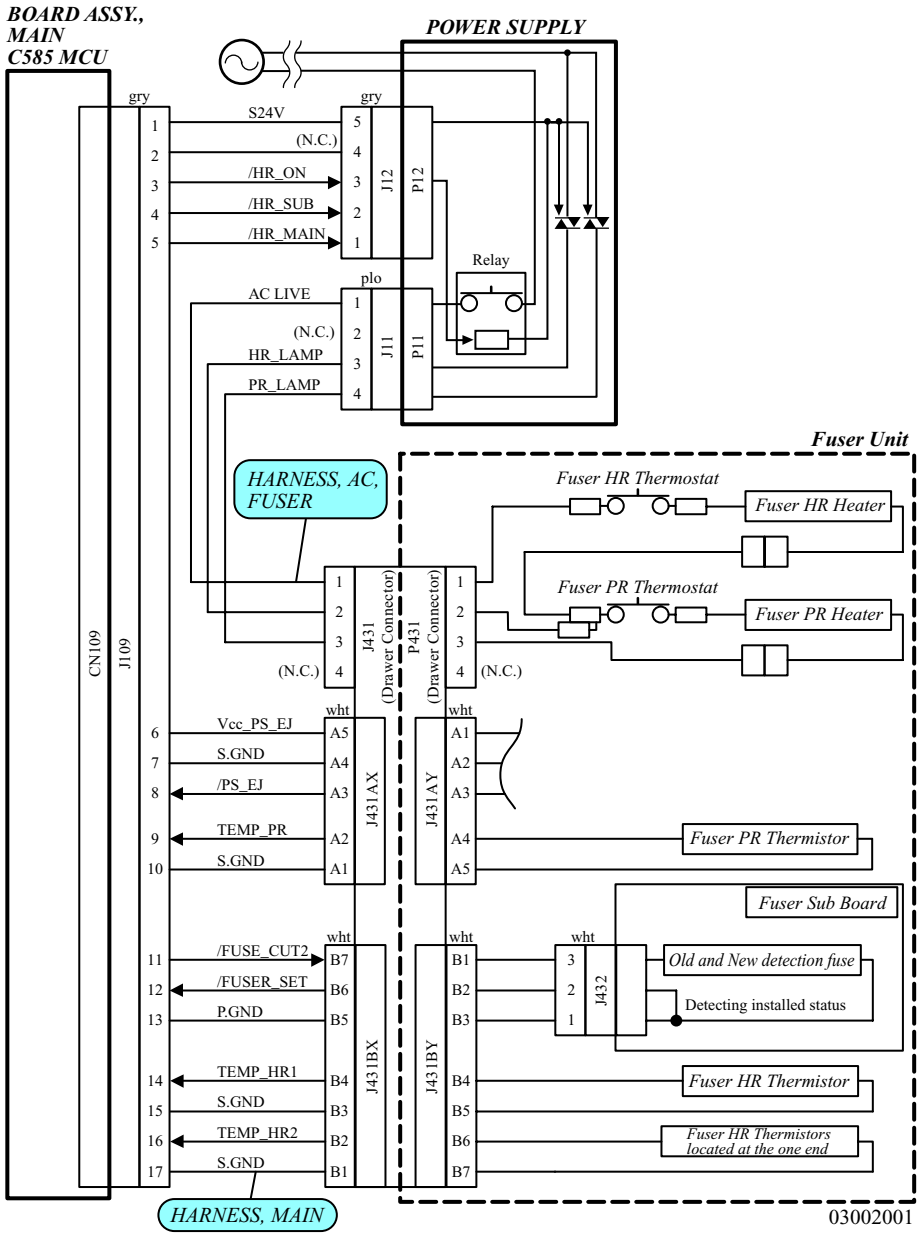
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	Fuser unit	page 237
2	POWER SUPPLY (230 V) / POWER SUPPLY (120 V)	page 319
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check if the NIP lever is used at the position for envelopes.
2	Check the Fuser Unit for the followings. ■ Check if paper is jammed at the Fuser. ■ Check the fuser roller for any scratch or foreign material. ■ Rotate the green knob on the backside of the fuser unit in order to check if the spur gear 19 and heat roller turn smoothly.
3	Replace the [Fuser unit].
4	Replace the [POWER SUPPLY].
5	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



E124: Abnormally high temperature

☐ Error Occurrence/Error Detection Method

The temperatures detected by the three thermistors have exceeded a specified limit for a prescribed period of time.

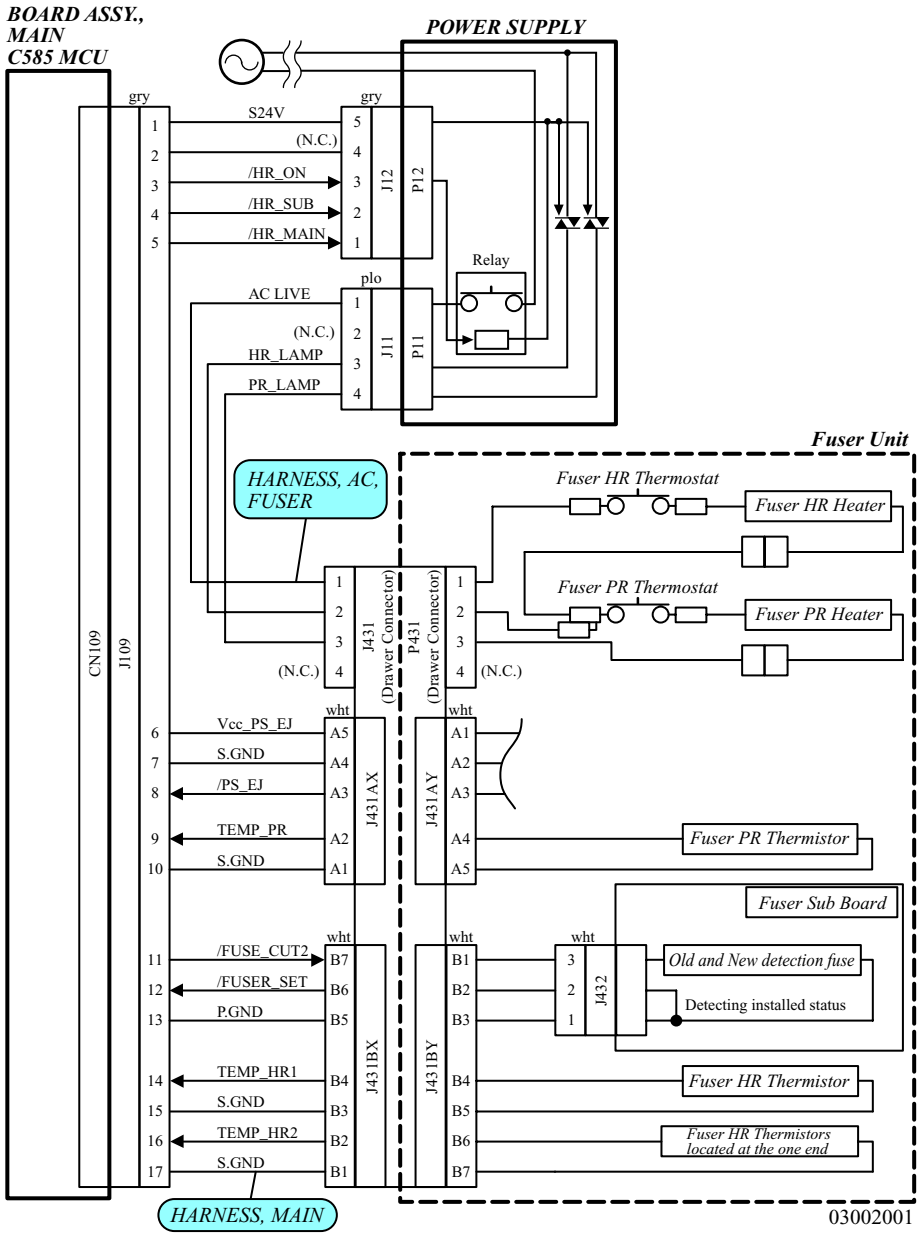
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	Fuser unit	page 237
2	POWER SUPPLY (230 V) / POWER SUPPLY (120 V)	page 319
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check if the NIP lever is used at the position for envelopes.
2	Check the Fuser Unit for the followings. ■ Check if paper is jammed at the Fuser. ■ Check the fuser roller for any scratch or foreign material. ■ Rotate the green knob on the backside of the fuser unit in order to check if the spur gear 19 and heat roller turn smoothly.
3	Replace the [Fuser unit].
4	Replace the [POWER SUPPLY].
5	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



E125: Abnormally low temperature 2

☐ Error Occurrence/Error Detection Method

The temperatures detected by the three thermistors are below a specified limit.

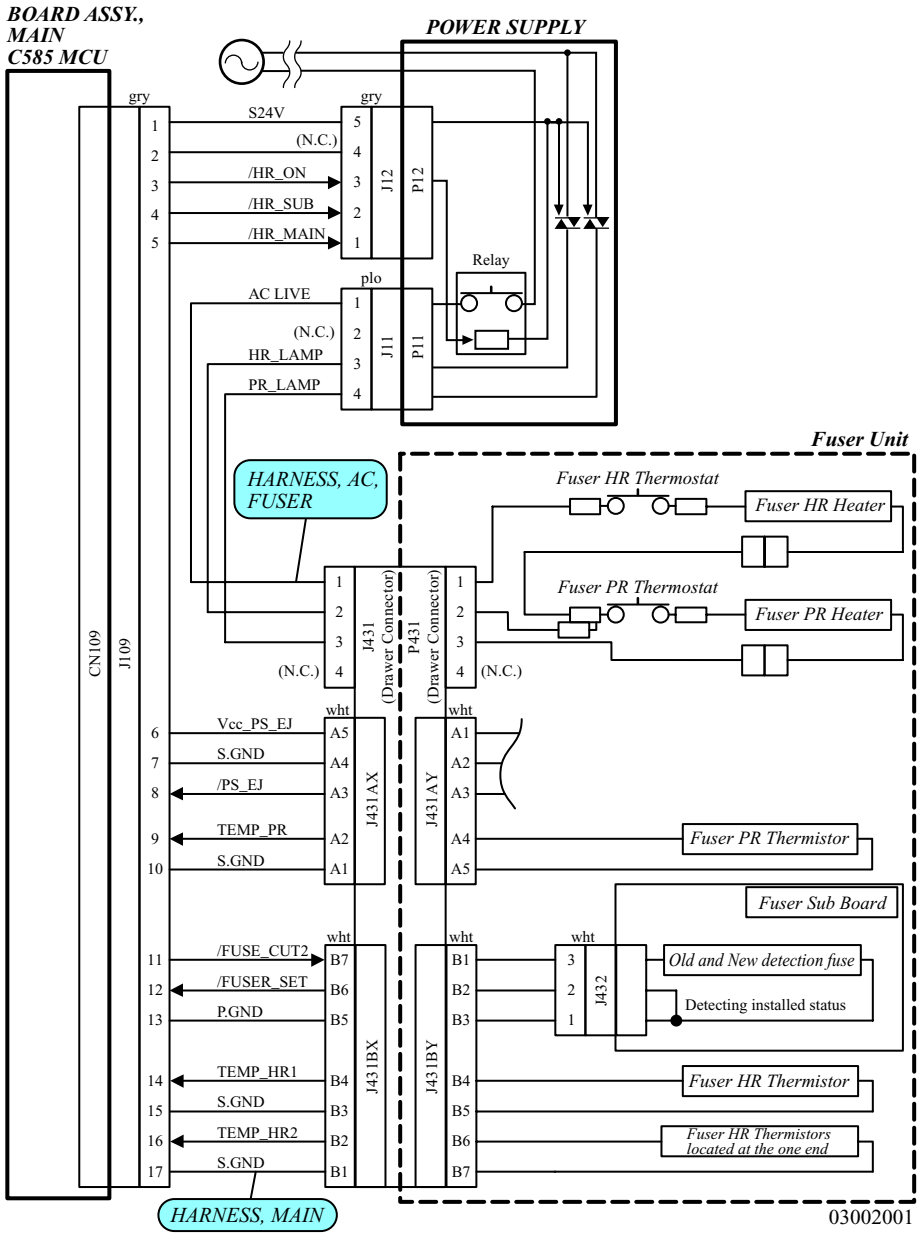
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	Fuser unit	page 237
2	POWER SUPPLY (230 V) / POWER SUPPLY (120 V)	page 319
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check if the NIP lever is used at the position for envelopes.
2	Check the Fuser Unit for the followings.
	■ Check if paper is jammed at the Fuser.
	■ Check the fuser roller for any scratch or foreign material.
	■ Rotate the green knob on the backside of the fuser unit in order to check if the spur gear 19 and heat roller turn smoothly.
3	Replace the [Fuser unit].
4	Replace the [POWER SUPPLY].
5	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



E126: Abnormally low temperature 1

☐ Error Occurrence/Error Detection Method

The temperature of the Heat Roller and the Pressure Roller do not reach the specified temperature within a fixed time period after the heater is turned on.

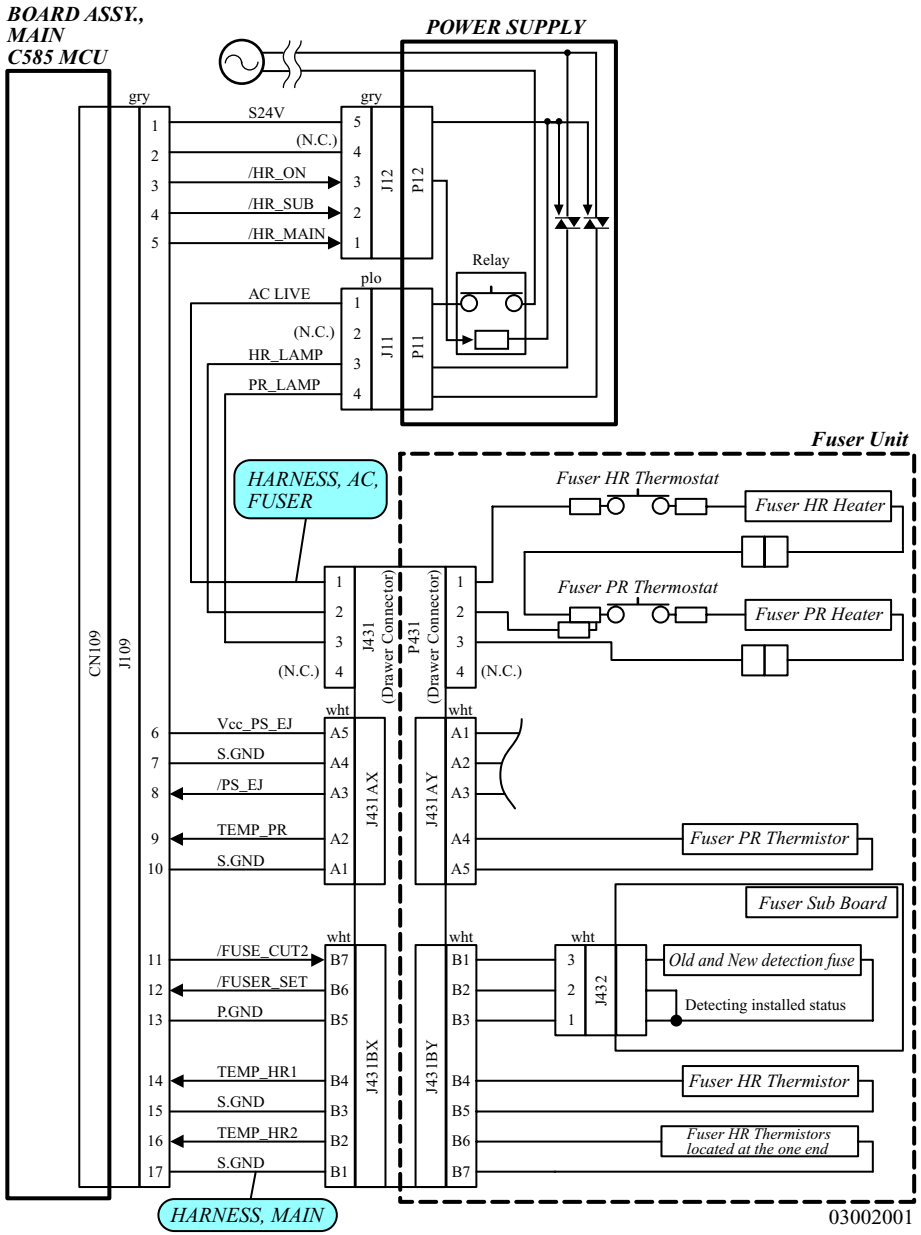
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	Fuser unit	page 237
2	POWER SUPPLY (230 V) / POWER SUPPLY (120 V)	page 319
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check if the NIP lever is used at the position for envelopes.
2	Check the Fuser Unit for the followings. ■ Check if paper is jammed at the Fuser. ■ Check the fuser roller for any scratch or foreign material. ■ Rotate the green knob on the backside of the fuser unit in order to check if the spur gear 19 and heat roller turn smoothly.
3	Replace the [Fuser unit].
4	Replace the [POWER SUPPLY].
5	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



E132: Inconsistent engine controller memory

☐ Error Occurrence/Error Detection Method

The engine controller writes preset values on an area of memory at startup to read the written values by itself. Then the controller compares the written values with the read ones, and it causes the error if any difference is found. The difference is caused by memory failure (memory board failure) or communication error between the controller and the memory.

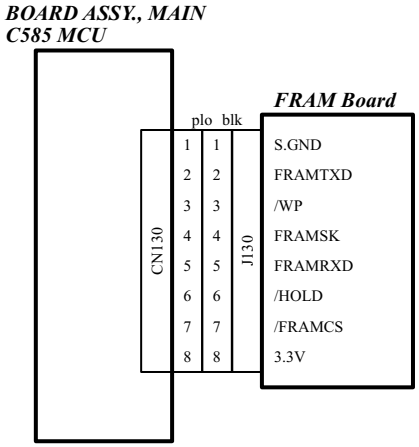
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the FRAM Board for the connection status. Check if the connector is securely connected.
2	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03002101

E144: Transfer belt unit end of life

☐ Error Occurrence/Error Detection Method

- The Transfer Belt Unit has reached its end of life.
- The life counter for the unit stored on the FRAM on the engine controller is not correct, or is corrupt.

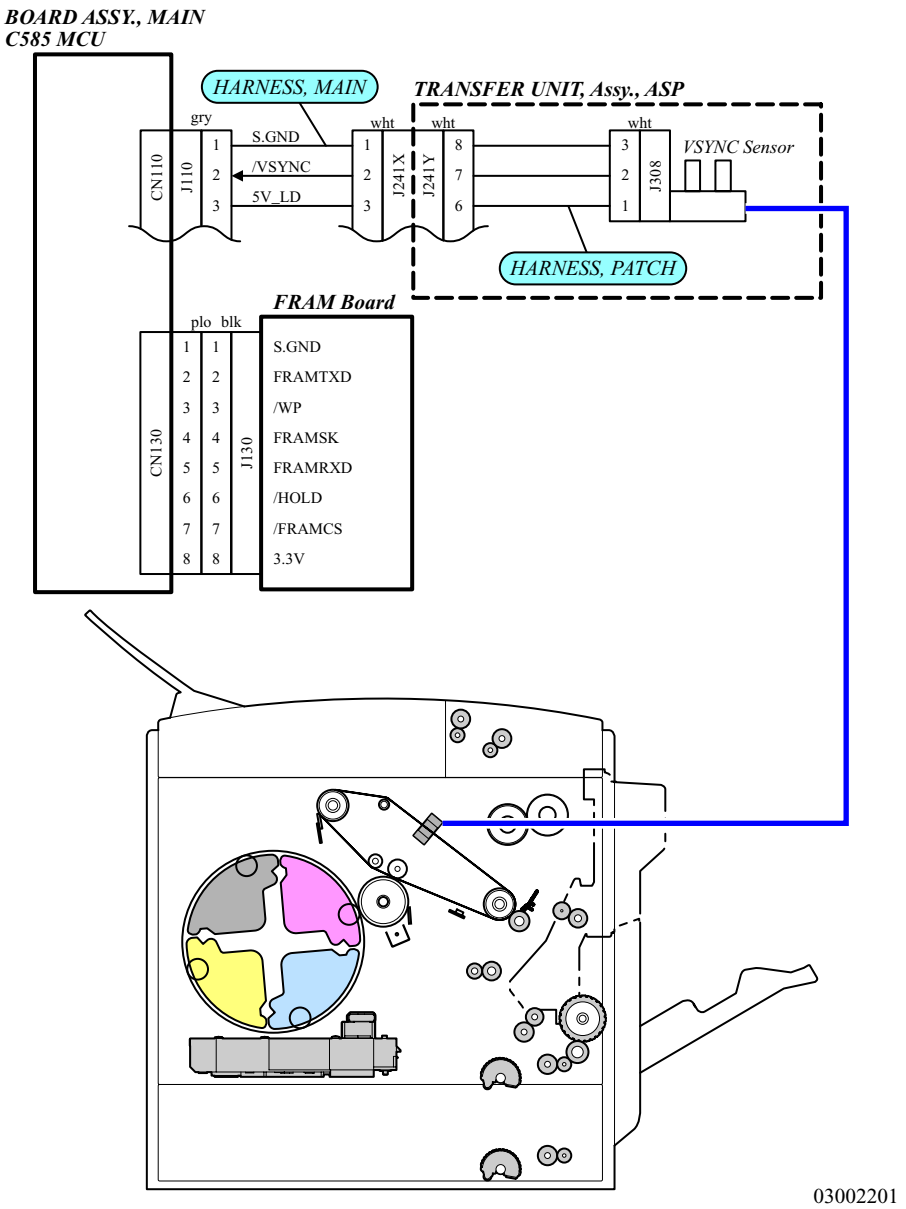
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	TRANSFER UNIT, Assy., ASP	page 284

☐ Check Point

No.	Check Point
1	Replace the [TRANSFER UNIT, Assy., ASP], and the reset the life counter.

☐ Diagram



03002201

E153: Ozone fan error

☐ Error Occurrence/Error Detection Method

The number of revolutions of the Ozone Fan falls outside the predetermined range. The fan does not send “ready” signal, or the printer cannot detect the “ready” signal.

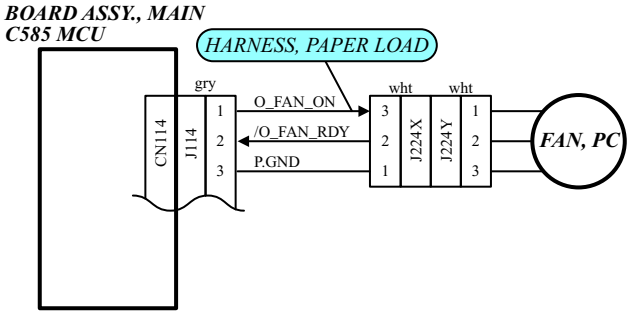
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	FAN, PC	page 265
2	HARNESS, PAPER LOAD	---
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the Fan and the MCU. [FAN, PC] - [HARNESS, PAPER LOAD] - [BOARD ASSY., MAIN C585 MCU] (CN114)
2	Replace the [FAN, PC].
3	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03002301

E154: Toner fan error

☐ Error Occurrence/Error Detection Method

The number of revolutions of the Toner Fan falls outside the predetermined range. The fan does not send “ready” signal, or the printer cannot detect the “ready” signal.

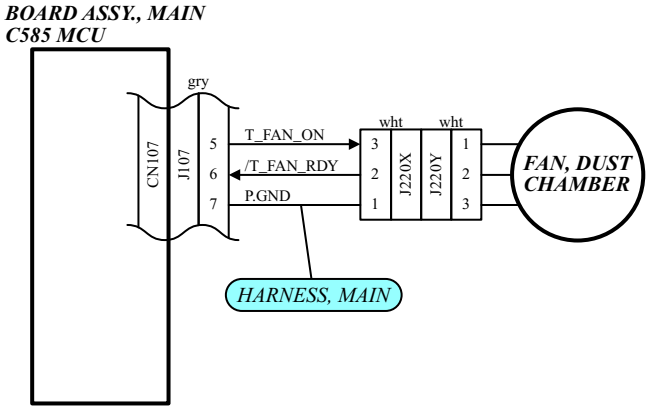
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	FAN, DUST CHAMBER	page 264
2	HARNESS, MAIN	---
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the Fan and the MCU. [FAN, DUST CHAMBER] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN107)
2	Replace the [FAN, DUST CHAMBER].
3	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03002401

E155: Fuser fan error

☐ Error Occurrence/Error Detection Method

The number of revolutions of the Fuser Fan falls outside the predetermined range. The fan does not send “ready” signal, or the printer cannot detect the “ready” signal.

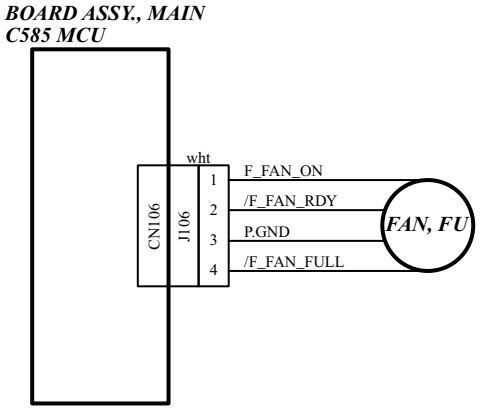
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	FAN, FU	page 293
2	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the Fan and the MCU. [FAN, FU] - [BOARD ASSY., MAIN C585 MCU] (CN106)
2	Replace the [FAN, FU].
3	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03002501

E156: Power supply fan error

☐ Error Occurrence/Error Detection Method

The number of revolutions of the Fuser Fan falls outside the predetermined range. The fan does not send “ready” signal, or the printer cannot detect the “ready” signal.

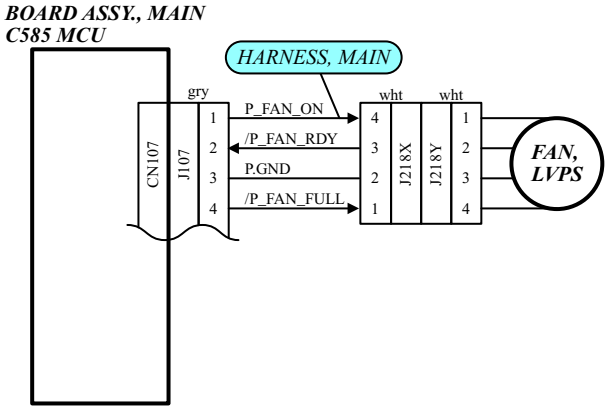
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	FAN, LPS	page 318
2	HARNESS, MAIN	---
3	BOARD ASSY., MAIN C585 MCU	page 310

☐ Check Point

No.	Check Point
1	Check the connection status between the Fan and the MCU. [FAN, LPS] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN107)
2	Replace the [FAN, LPS].
3	Replace the [BOARD ASSY., MAIN C585 MCU].

☐ Diagram



03002601

E256: Transfer belt unit lever out-of-position

☐ Error Occurrence/Error Detection Method

This error occurs when the printer fails to detect the VSYNC at a predetermined interval after it is turned on for the first time.

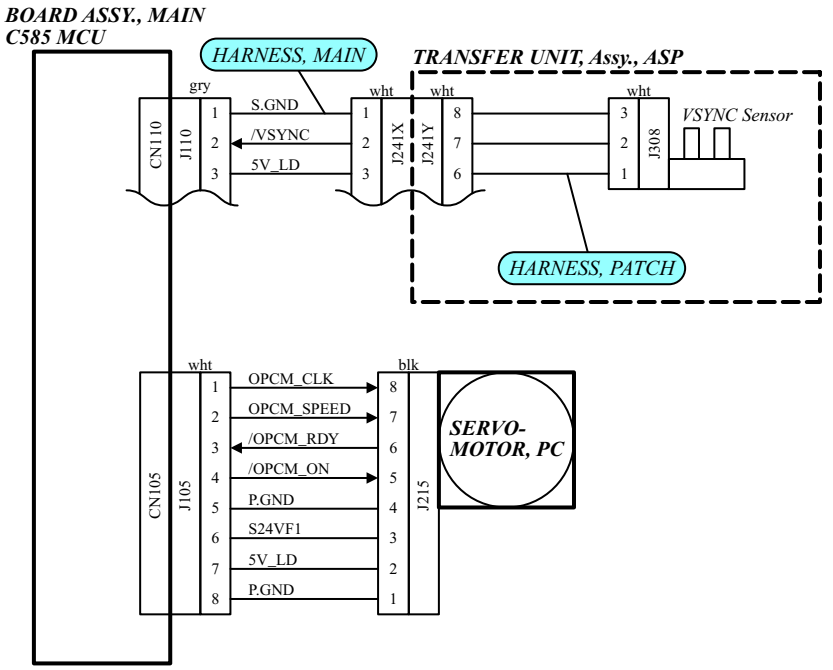
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	TRANSFER UNIT, Assy., ASP	page 284
2	HARNESS, MAIN	---
3	SERVOMOTOR, PC	page 299

☐ Check Point

No.	Check Point
1	Check if the photoconductor lock lever is set to printing position.
2	Check the connection status between the sensor and the MCU. [TRANSFER UNIT, Assy., ASP] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN110)
3	Check the flag for detecting VSYNC (convex portion) on the extreme right of the Transfer Belt for any abnormality.
4	Replace the [TRANSFER UNIT, Assy., ASP].
5	Check the connection status between the Motor and the MCU. [SERVOMOTOR, PC] - [HARNESS, MAIN] - [BOARD ASSY., MAIN C585 MCU] (CN105)
6	Replace the [SERVOMOTOR, PC].

☐ Diagram



03001401

E998: Engine communication error

☐ Error Occurrence/Error Detection Method

This error occurs due to a parity error or an undefined command sent or received in a communication between the controller and the engine controller.

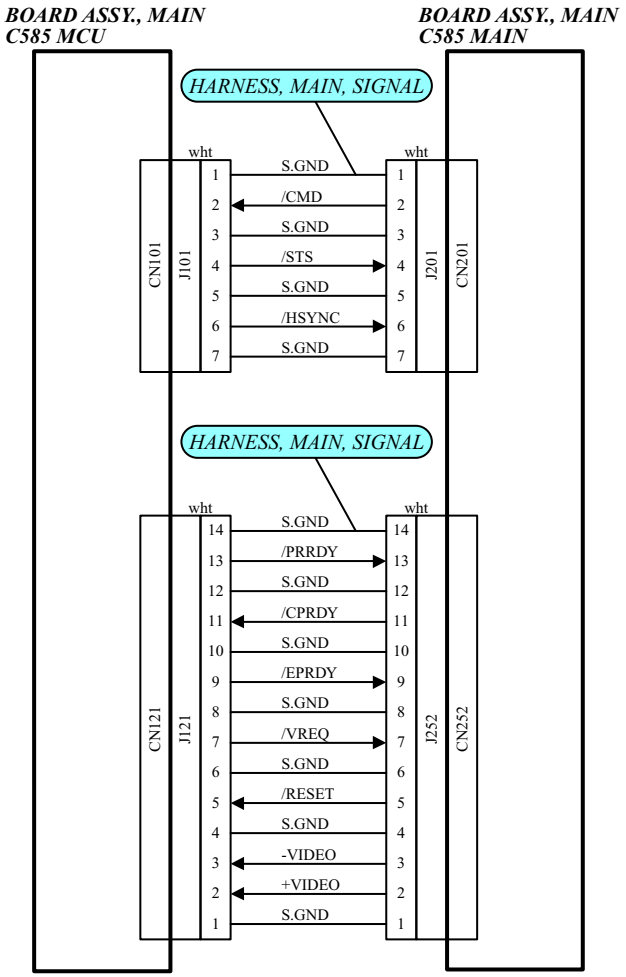
☐ Possible Parts Caused the Error

No.	Part Name	Reference
1	HARNESS, MAIN, SIGNAL	---
2	BOARD ASSY., MAIN C585 MCU	page 310
3	BOARD ASSY., MEMORY, C533 PROG (59571)	---
4	BOARD ASSY., MAIN, C585 MAIN	page 309

☐ Check Point

No.	Check Point
1	Check the firmware version of both of the Engine and the Main controllers and update them as necessary.
2	Check the connection status between the MCU and the Main controller.
	[BOARD ASSY., MAINC585 MCU] (CN101, CN121) - [HARNESS, MAIN, SIGNAL] - [BOARD ASSY., MAIN, C585 MAIN] (CN201, CN252)
3	Replace the [BOARD ASSY., MAIN C585 MCU].
4	Replace the [BOARD ASSY., MEMORY, C533 PROG (59571)].
5	Replace the [BOARD ASSY., MAIN, C585 MAIN].

☐ Diagram



03002701

3.3.4.2 Controller Related Error

When a controller related error occurs, make sure to check the initial check items listed below first. If the error still occurs after that, replace the part given on an error basis in the Failed Parts List on the next page to perform troubleshooting.

- ☐ Initial Check
  - ■ Check that the printer is grounded properly.
  - ■ Check that the connectors are connected to the controller board securely and correctly.
  - ■ Check that the DIMM is connected to the controller board securely and correctly.
  - ■ Power the printer off and on several times.
  - ■ Check that the printer is not in electrically noisy environments.

When powering the printer off and on again, do not turn it on immediately after turning it off. Make sure to wait at least for a few seconds before the power-on.

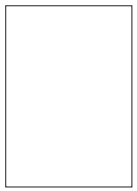
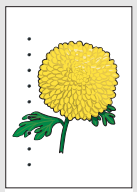
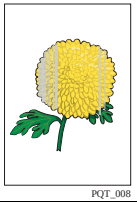
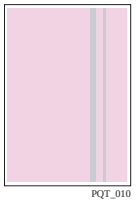
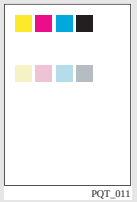
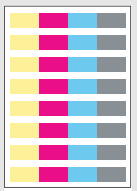
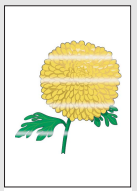
☐ Failed Parts List

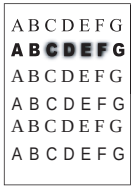
Error Code	Description	Controller Board	Program DIMM	Opt. ROM DIMM	Std. RAM DIMM	Opt. RAM DIMM	Network Board	Video I/F Cable	Engine Controller Board
C0017	CPU error (undefined interruption)	@							
C0081	CPU error (TLB modification exception)	@							
C0082	CPU error (TLB miss exception [Load/Fetch])	@							
C0083	CPU error (TLB miss exception [Store])	@							
C0084	CPU error (address error exception [Load/Fetch])	@							
C0085	CPU error (address error exception [Store])	@							
C0086	CPU error (bus error exception [Fetch])	@							
C0087	CPU error (bus error exception [Load/Store])	@							
C0088	CPU error (SYSCALL exception)	@							
C0089	CPU error (Break exception)	@							
C0090	CPU error (reserving command exception)	@							
C0091	CPU error (unused coprocessor exception)	@							
C0092	CPU error (FPU exception)	@							
C0093	CPU error (TLB exception)	@							
C0094	CPU error (XTLB exception)	@							
C0095	CPU error (cache exception)	@							
C0096	CPU error (Trap exception)	@							
C0097	CPU error (FPU exception)	@							
C0098	CPU error (watch exception)	@							
C0128-C0254	CPU error (undefined trap)	@							
C0255	CPU error (NMI exception)	@							
C0256	CPU error (divide by 0)	@							
C0257	CPU error (arithmetic overflow)	@							
C0258	CPU error (break occurrence)	@							
C0800	IPL error (controller defect)	@	@						
C0998	Engine communication error (only when power-on)	@						@	@
C999	Engine flash ROM has no program data		@						
C1000	Standard RAM error (not installed, etc.)				@				
C1001	Standard RAM error (standard stack is undefined, etc.)				@				
C1002	Standard RAM error (standard size is undefined, etc.)				@				
C1020	RAM error (slot 0)				@				
C1021	RAM error (slot 1)					@			
C1022	RAM error (slot 2)					@			
C1100	ROM checksum error (bit 0 to 15) (font)		@						
C1101	ROM checksum error (bit 16 to 31) (font)		@						
C1120	ROM checksum error (bit 0 to 7) (program)		@						
C1121	ROM checksum error (bit 8 to 15) (program)		@						
C1122	ROM checksum error (bit 16 to 23) (program)		@						
C1123	ROM checksum error (bit 24 to 31) (program)		@						
C1180	Optional ROM module A checksum error			@					
C1181	Optional ROM module B checksum error			@					
C1185	ROM module unsupported			@					
C1200	EEPROM writing error	@							
C1210	EEPROM writing times limit	@							
C1400	Engine initialization error								@
C1700	Built-in network hard ware error						@		
C1720	Network board uninstalled						@		
C1999	Other hardware errors	@							
C2000	Software error		@						

3.4 Printing-quality troubleshooting (PQT)

This section describes troubleshooting procedures for common print quality troubles. With reference to the Print Quality Trouble List, find out the trouble you faces and follow the corresponding PQT, which is provided for each of the symptoms on the following pages.

3.4.1 Print Quality Trouble List

Defect sample	Print-quality trouble		PQT
 PQT_001	Completely blank pages are printed		PQT1
 PQT_002	Printed in solid color	All area of the printout is covered with a solid color	PQT2
		All area of the printout is covered with a solid color except the left, right, top and bottom margins	PQT3
 PQT_004	White or color spots appear on the printout	It occurs cyclically	PQT4
		It does not occur cyclically	PQT5
 PQT_006	Vertical white streaks or bands appear on the printout	They appear on the same position for the four colors	PQT6
		The position is different between the four colors, or appear only on a certain color	PQT7
		The position is the same for each print job except the beginning position.	PQT8
 PQT_008	Vertical color streaks or bands appear on the printout	They appear on the same position for the four colors	PQT9
		The position is different between the four colors, or appear only on a certain color.	PQT10
 PQT_010	Vertical lustered streaks or bands appear on the printout		PQT11
 PQT_011	Images are not printed correctly	Ghost or toner offset (missing area on image) occurs	PQT12
		Toner smudges appears	PQT13
		The background is dark or dirty	PQT14
		The non-printed side of the page is dirty	PQT15
 PQT_015	The printed image is light or faint, or too dark	All of the four colors are too dark	PQT16
		Only a certain color is too dark	PQT17
		All of the four colors are light and faint	PQT18
		Only a certain color is light and faint	PQT19
 PQT_019	Inconsistencies in density appears in the paper feed direction	It occurs cyclically	PQT20
		It occurs on a certain color	PQT21
		It occurs at random	PQT22

Defect sample	Print-quality trouble		PQT
 PQT_021	Inconsistencies in density appears vertical to the paper feed direction		PQT6 PQT7 PQT8 PQT9 PQT10
		Printed area near the paper edges is light and faint	PQT23
		Left side of the printed image is light and faint	PQT24
		The density on the left and right side of the printed image differs depend on color (e.g. cyan is too dark on the right side while magenta is too dark on the left side)	PQT25
 PQT_026	Other troubles	Hollow characters	PQT26
		Scaly pattern	PQT27
		Toner splash	PQT28
		Blur	PQT29
		Skew	PQT30

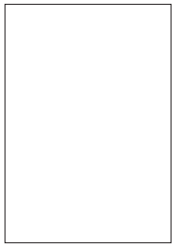
NOTE: *When inconsistencies in density appears vertical to the paper feed direction, refer to the troubleshooting for "Vertical White Streaks or Bands" or "Vertical Color Streaks or Band".*

3.4.2 Printing-quality troubleshooting

PQT-1: COMPLETELY BLANK PAGES

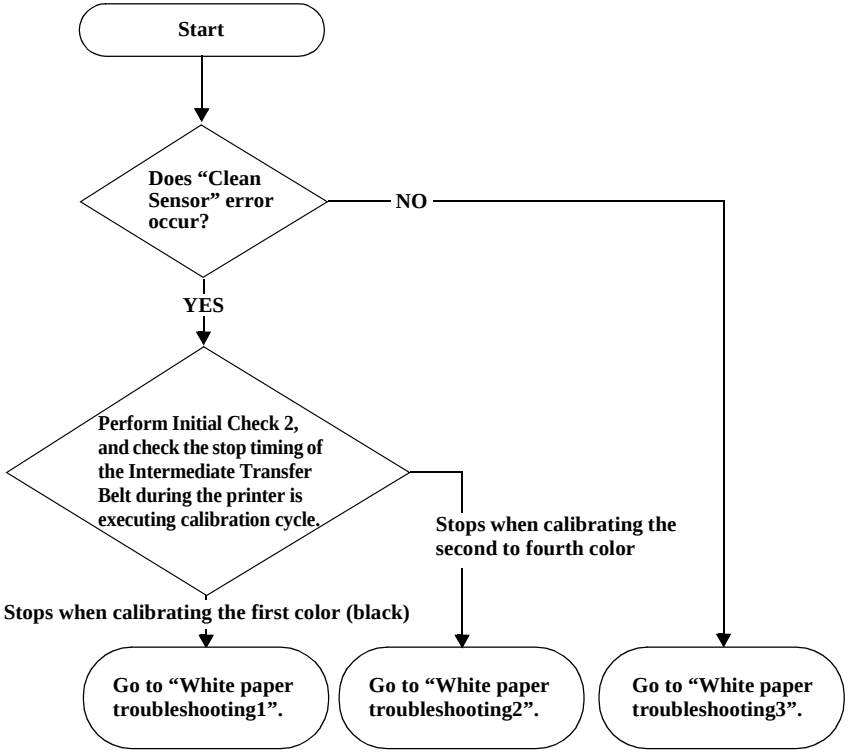
☐ Symptom

Even though a paper is ejected, nothing is printed on it.



PQT_001

☐ Initial Check 1



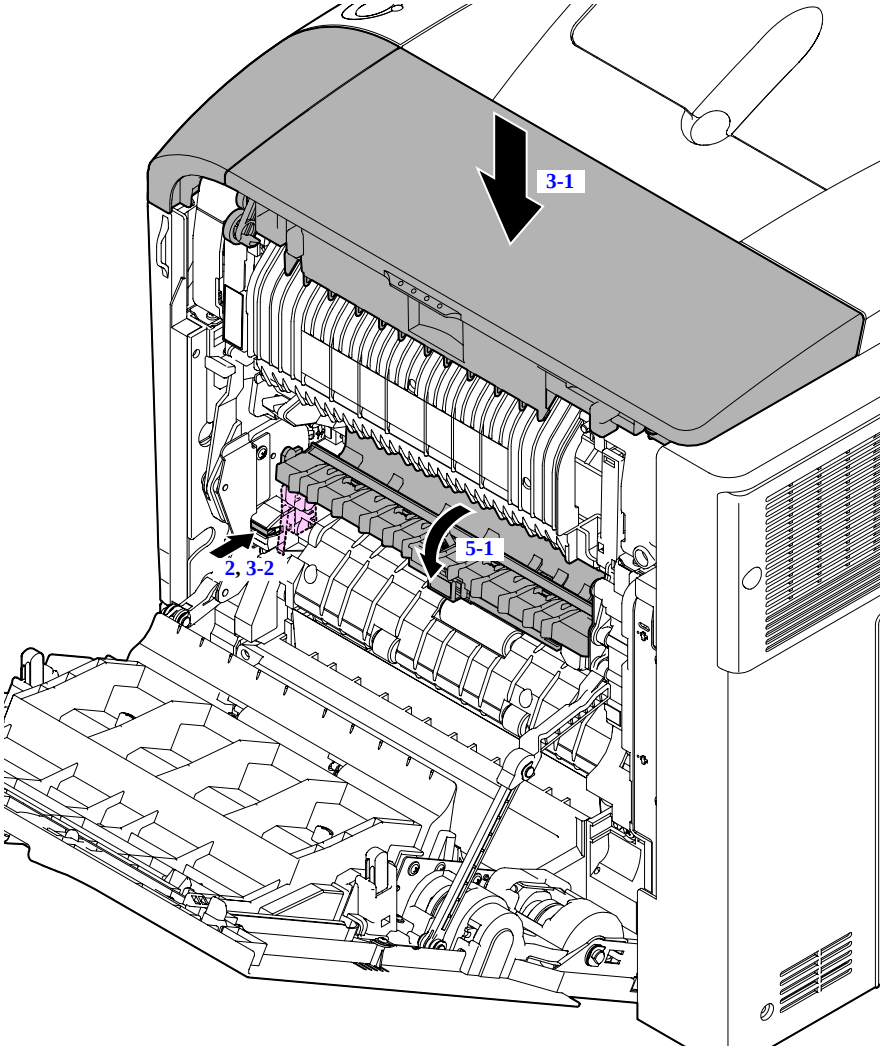
☐ Initial Check 2

WARNING

Operating the printer with its interlock forcibly unlocked is required for the procedures given below. Be extremely careful with the following.

- **Perform the work with due attention to the laser beam so as not to get the beam directly onto your body.**
- **When unlocking the interlock with a driver or similar tool, be careful not to apply excessive force or the interlock may be damaged.**

1. Turn the printer off.
2. Open the Cover A, and unlock the interlock by pushing the point indicated in the figure with a driver or similar tool.
3. With the Cover A opened, turn the interlock switch on by inserting a driver into the place shown in the figure while pressing the Cover B with your hand.
4. Turn the printer on with the interlock switch is on.The printer starts a calibration cycle.
5. Lower the 2ND TRANSFER Assy., ASP and check the toner patch created on the transfer belt to know when the belt stops (which color patch is created).



03002901

Figure 3-2. Initial Check

TROUBLESHOOTING FOR COMPLETE BLANK PAGE 1

No.	Cause	Check Point	Defect Parts
1	Video signal line is not connected to the LSU.	Check the connection status between the LSU, the MCU and the controller.	■ HARNESS, LSU ■ HARNESS, MAIN, SIGNAL
		LSU ↔ Harness, LSU ↔ MCU (CN120) ↔ Harness on the Main Board, Signal ↔ Controller (CN252)	
2	There is a dirt or foreign material on the laser path between the LSU and the OPC.	Clean the exposure window.	---
		Check the laser path between the exposure window and the Photoconductor drum for any dirt or foreign material.	
3	The electric charge wire for the drum are broken.	Replace the Photoconductor Unit.	Photoconductor unit
4	The black toner is not transported on the Developer Roller in the K Toner Cartridge.	Replace the K Toner Cartridge.	Toner cartridge (Black)
5	The Developer Roller in the K Toner Cartridge is not rotating.	Replace the K Toner Cartridge.	■ Toner cartridge (Black) ■ STEPPING MOTOR ASSY., DV ■ HARNESS, DR, DV ■ BOARD ASSY., DRV C585 DRV ■ HARNESS, MAIN
		Check the connection status between the Developer Motor and the MCU.	
		Motor ↔ [Harness, Drive, Developer] ↔ DRV Board (CN211) ↔ [Harness, Main] ↔ MCU (CN104)	
		Replace the Developer Motor.	
6	Developing bias charging failure	Replace the K Toner Cartridge.	■ Toner cartridge (Black) ■ HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA
		Check the contact point on the HVPS where outputs developing bias for any abnormality.	
		Replace the HVPS.	
7	The lock lever of the Photoconductor Unit is still set in transporting position.	Set the lever to the lock position.	---
8	Primary transfer bias charging failure	Check the primary transfer electrode roller for any dirt.	■ TRANSFER UNIT, Assy., ASP ■ HARNESS, HV, 1ST TRANSFER ■ HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA
		Check the connection status between the HVPS and the primary transfer electrode roller.	
		HVPS ↔ [Harness, HV, Primary Transfer] ↔ Transfer Unit	
		Replace the Transfer Unit.	
		Replace the HVPS.	
9	Engine controller or Main controller failure	Replace the Engine controller or Main controller.	■ BOARD ASSY., MAIN C585 MCU ■ BOARD ASSY., MAIN C585 MAIN

TROUBLESHOOTING FOR COMPLETE BLANK PAGE 2

No.	Cause	Check Point	Defect Parts
1	The toner is not transported on the Developer Roller in the stopped Toner Cartridge.	Replace the stopped Toner Cartridge.	Toner cartridge
2	The Developer Roller in the stopped Toner Cartridge is not rotating.	Replace the stopped Toner Cartridge. Check the connection status between the Rotary Drive Motor and the MCU. Motor ↔ Drive Board (CN212) ↔ DRV Board (CN210, CN122) ↔ [Harness, Main] ↔ MCU (CN104, CN122) Replace the Rotary Drive Motor.	■ Toner cartridge ■ HARNESS, MAIN ■ BOARD ASSY., DRV C585 DRV ■ DRIVE ASSY., RT, ASP
3	Developing bias charging failure	Replace the stopped Toner Cartridge. Check the contact point on the HVPS where outputs developing bias for any abnormality. Replace the HVPS.	■ Toner cartridge ■ HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA
4	Engine controller or Main controller failure	Replace the Engine controller or Main controller.	■ BOARD ASSY., MAIN C585 MCU ■ BOARD ASSY., MAIN C585 MAIN

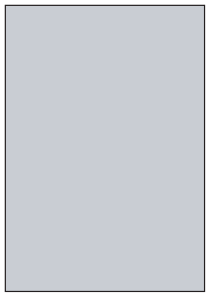
TROUBLESHOOTING FOR COMPLETE BLANK PAGE 3

No.	Cause	Check Point	Defect Parts
1	Transfer cleaner contact/noncontact control failure	Power the printer off and back on again.	■ CLUTCH,CLEANER ■ TRANSFER UNIT, Assy., ASP
		Perform Timing Adjustment.	
		Replace the cleaner clutch.	
		Replace the TRANSFER UNIT, Assy., ASP.	
2	2ND TRANSFER Assy., ASP installation failure	Install the 2ND TRANSFER Assy., ASP correctly.	---
3	2nd Transfer Roller contact/noncontact control failure	Power the printer off and back on again.	CLUTCH, 2ND TRANSFER
		Perform Timing Adjustment.	
		Replace the 2nd Transfer Clutch.	
4	2nd transfer bias charging failure	Check the connection status between the HVPS and the 2ND TRANSFER Assy., ASP.	■ HARNESS, HV, 2ND TRANSFER ■ ROLLER, 2ND ■ HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA
		HVPS ↔ [Harness, HV, 2nd Transfer] ↔ 2ND TRANSFER Assy., ASP	
		Replace the 2nd Transfer Roller.	
		Replace the HVPS.	
5	Some areas of a toner image clings to the Fuser Unit (toner offset)	Check if the voltage supplied from the AC power supply is normal.	Fuser unit
		Replace the Fuser Unit.	

PQT-2: SOLID COLOR

☐ Symptom

All area of the printout is covered with a solid color



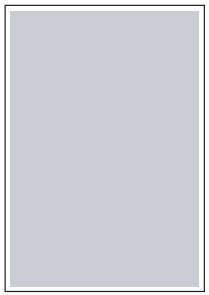
PQT_003

No.	Cause	Check Point	Defect Parts
1	The Photoconductor drum is not charged at all.	Clean the charge wire.	■ ELECTRODE Assy., PC ■ HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA
		Check the connection status between the HVPS and the [Electrode Assy, PC].	
		Replace the [Electrode Assy., PC].	
		Replace the HVPS.	

PQT-3: SOLID COLOR

☐ Symptom

All area of the printout is covered with a solid color except the left, right, top and bottom margins



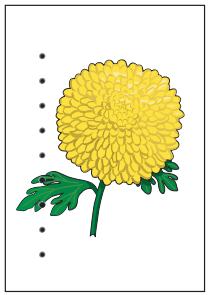
PQT_002

No.	Cause	Check Point	Defect Parts
1	Developing bias charging failure	Check the contact point on the HVPS where outputs developing bias for any abnormality.	HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA
		Replace the HVPS.	

PQT-4: WHITE OR COLOR SPOTS

☐ Symptom

The white and color spots appear cyclically.



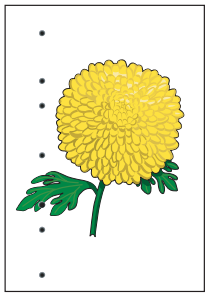
PQT_004

No.	Cause	Check Point	Defect Parts
1	36 mm cycle = Developer Roller cycle	Replace the Toner cartridge.	Toner cartridge
2	51 mm cycle = Primary Transfer Backup Roller cycle	Replace the TRANSFER UNIT, Assy., ASP.	TRANSFER UNIT, Assy., ASP
3	57 mm cycle = 2nd Transfer Roller cycle	Replace the 2nd Transfer Roller.	ROLLER, 2ND
4	91 mm cycle = 2nd Transfer Backup Roller cycle	Replace the TRANSFER UNIT, Assy., ASP.	TRANSFER UNIT, Assy., ASP
5	108 mm cycle = Fuser Roller cycle	Replace the Fuser unit.	Fuser unit
6	111 mm = Fuser Pressure Roller cycle	Replace the Fuser unit.	Fuser unit
7	141 mm cycle = OPC cycle	Replace the Photoconductor unit.	Photoconductor unit
8	The distance from the paper edge to the spot is always the same = Transfer Belt cycle	Replace the TRANSFER UNIT, Assy., ASP.	TRANSFER UNIT, Assy., ASP

PQT-5: WHITE OR COLOR SPOTS

☐ Symptom

The white and color spots does not appear cyclically.



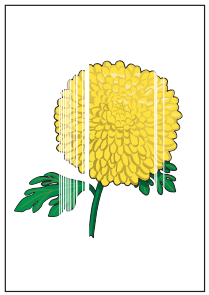
PQT_005

No.	Cause	Check Point	Defect Parts
1	Toner smudge is transferred from the Post-Fusing Separation Plate.	Replace the Fuser unit.	Fuser unit
2	Waste toner overflows from the Waste toner collection space in the Photoconductor unit.	Replace the Photoconductor unit. Check the sensor for detecting the full state and replace it as necessary.	■ Photoconductor unit ■ DETECTOR, PC
3	Toner drops from the Transfer cleaner.	Replace the TRANSFER UNIT, Assy., ASP.	TRANSFER UNIT, Assy., ASP
4	Waste toner overflows from the Waste toner collector.	Replace the Waste toner collector. Check the drive path between the Main drive motor and the Auger screw. Check the sensor for detecting the full state and replace it as necessary.	■ Waste toner collector ■ SERVOMOTOR, DRIVE ■ DETECTION, PAPER LOAD

PQT-6: VERTICAL WHITE STREAKS OR BANDS

☐ Symptom

They appear on the same position for the four colors



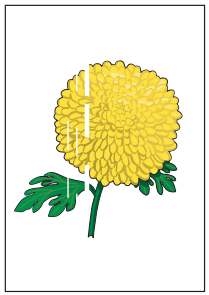
PQT_006

No.	Cause	Check Point	Defect Parts
1	The electric charge wire or charge grid are dirty.	Clean the charge wire. Replace the Ozone filter. Replace the Photoconductor unit.	■ Filter unit ■ Photoconductor unit
2	There is a dirt or foreign material on the laser path between the LSU and the OPC.	Clean the exposure window. Check the laser path between the exposure window and the Photoconductor drum for any dirt or foreign material.	■ Laser Scanner ■ Photoconductor unit
3	There is a foreign material on the Transfer Belt.	Replace the TRANSFER UNIT, Assy., ASP.	TRANSFER UNIT, Assy., ASP
4	LSU failure	Replace the LSU.	Laser Scanner
5	Some areas of a toner image on a paper are wiped away due to contact with the guide while the paper is transported to the fusing section after the 2nd transfer.	Replace the 2ND TRANSFER Assy., ASP. Replace the Fuser unit.	■ 2ND TRANSFER Assy., ASP ■ Fuser unit
6	Some areas of a toner image on a paper are wiped away due to contact with the guide roller after fusing.	Replace the Fuser unit. Replace the Upper fuser cover.	■ Fuser unit ■ COVER Assy., FU, ASP

PQT-7: VERTICAL WHITE STREAKS OR BANDS

☐ Symptom

The position is different between the four colors, or appear only on a certain color.



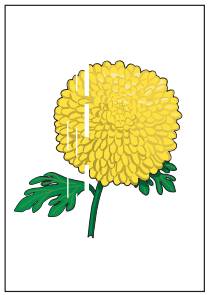
PQT_007

No.	Cause	Check Point	Defect Parts
1	Toner Cartridge failure (e.g. foreign material on the control blade)	Replace the Toner cartridge.	Toner cartridge
2	LSU adjustment failure	Replace the LSU.	Laser scanner

PQT-8: VERTICAL WHITE STREAKS OR BANDS

☐ Symptom

White streaks or bands occurs at random.



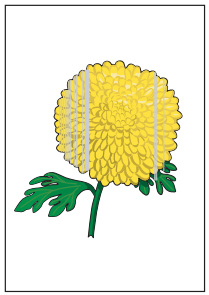
PQT_007

No.	Cause	Check Point	Defect Parts
1	The electric charge wire are dirty.	Clean the charge wire.	Photoconductor unit
		Replace the Photoconductor unit.	

PQT-9: VERTICAL COLOR STREAKS OR BANDS

☐ Symptom

They appear on the same position for the four colors.



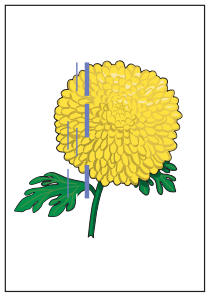
PQT_008

No.	Cause	Check Point	Defect Parts
1	Failure of the cleaner blade of the Photoconductor unit	Replace the Photoconductor unit.	Photoconductor unit
2	The electric charge wire are dirty.	Clean the charge wire.	Photoconductor unit
		Replace the Photoconductor unit.	
3	There is a dirt or foreign material on the laser path between the LSU and the photoconductor drum.	Clean the exposure window.	---
		Check the laser path between the exposure window and the photoconductor drum for any dirt or foreign material.	
4	Waste toner overflows from the Waste toner collection space in the Photoconductor unit.	Replace the Photoconductor unit.	■ Photoconductor unit ■ DETECTOR, PC
		Check the sensor for detecting the full state and replace it as necessary.	
5	Waste toner overflows from the Waste toner collector.	Replace the Waste toner collector.	■ Waste toner collector ■ SERVOMOTOR, DRIVE ■ DETECTION, PAPER LOAD
		Check the drive path between the Main drive motor and the spiral.	
		Check the sensor for detecting the full state and replace it as necessary.	
6	Failure of the cleaner blade of the TRANSFER UNIT, Assy., ASP	Replace the TRANSFER UNIT, Assy., ASP.	TRANSFER UNIT, Assy., ASP

PQT-10: VERTICAL COLOR STREAKS OR BANDS

☐ Symptom

The position is different between the four colors, or appear only on a certain color.



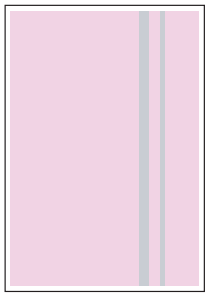
PQT_009

No.	Cause	Check Point	Defect Parts
1	Toner Cartridge failure (e.g. the control blade gets chipped)	Replace the Toner cartridge.	Toner cartridge

PQT-11: VERTICAL LUSTERED STREAKS OR BANDS

☐ Symptom

Lustered streaks or bands appear on a printed image. It tends to appear on a high density area of an image other than area near leading edge of a paper. They may be traces of the thermistor of the fuser roller caused by wear of the fuser roller.



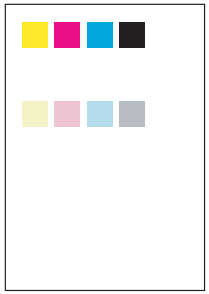
PQT_010

No.	Cause	Check Point	Defect Parts
1	105 mm from the left edge of paper = Trace of thermistor	Replace the Fuser unit.	Fuser unit
2	Other = Trace of rib on the PR Separator	Replace the Fuser unit.	Fuser unit

PQT-12: IMAGES ARE NOT PRINTED CORRECTLY

☐ Symptom

Ghost or toner offset (missing area on image) occurs.



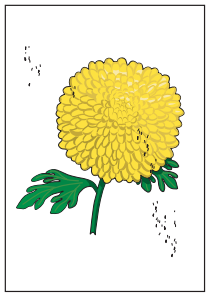
PQT_011

No.	Cause	Check Point	Defect Parts
1	24 mm positive/negative = Development Supply Roller Memory	Power the printer off and back on again.	Toner cartridge
		Replace the Toner cartridge.	
2	36 mm positive/negative = Development Roller Memory	Power the printer off and back on again.	Toner cartridge
		Replace the Toner cartridge.	
3	108 mm positive = Fusing Pressure Roller toner offset	Check if the voltage supplied from the AC power supply is normal.	Fuser unit
		Replace the Fuser unit.	
4	111 mm positive = Fuser Roller toner offset	Check if the voltage supplied from the AC power supply is normal.	Fuser unit
		Replace the Fuser unit.	
5	141 mm positive = OPC Memory	Check the connection status between the Eraser and the MCU.	■ HARNESS, ERASER ■ HARNESS, PAPER LOAD ■ ERASER, PA0003A/ERL
		Eraser ↔ [Harness, Eraser] ↔ [Harness, Paper Feed] ↔ MCU (CN114)	
		Replace the Eraser.	
6	141 mm negative = OPC Memory	Power the printer off and back on again.	■ Photoconductor unit ■ Toner cartridge
		Replace the Photoconductor unit.	
		Replace the Toner cartridge.	
7	The distance from the paper edge to the trouble area is always the same = Transfer Belt Memory	Print a completely blank page data on several sheets.	TRANSFER UNIT, Assy., ASP
		Replace the TRANSFER UNIT, Assy., ASP.	

PQT-13: IMAGES ARE NOT PRINTED CORRECTLY

☐ Symptom

Toner Smudges



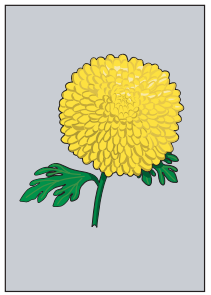
PQT_012

No.	Cause	Check Point	Defect Parts
1	Waste toner overflows from the waste toner collection space in the Photoconductor Unit.	Replace the Photoconductor Unit.	Photoconductor unit
		Check the sensor for detecting the full state and replace it as necessary.	DETECTOR, PC
	There is a scratch or foreign material on the surface of the photoconductor drum.	Replace the Photoconductor unit.	Photoconductor unit
2	Waste toner overflows from the Waste toner collector.	Replace the Waste toner collector.	■ Waste toner collector ■ SERVOMOTOR, DRIVE ■ DETECTION, PAPER LOAD
		Check the drive path between the Main drive motor and the Auger screw.	
		Check the sensor for detecting the full state and replace it as necessary.	
3	Toner overflows from the Toner cartridges.	Replace the Toner cartridge.	Toner cartridge
4	The 2nd Transfer Roller is dirty.	Print a completely blank page data on several sheets.	ROLLER, 2ND
		Replace the 2nd Transfer Roller.	
5	2nd Transfer Roller contact/noncontact control failure.	Power the printer off and back on again.	CLUTCH, 2ND TRANSFER
		Perform Timing Adjustment. (*p.373*)	
		Replace the 2nd Transfer Clutch.	
6	Transfer cleaner contact/ noncontact control failure.	Power the printer off and back on again.	■ CLUTCH, CLEANER ■ TRANSFER UNIT, Assy., ASP
		Perform Timing Adjustment. (*p.373*)	
		Replace the cleaner clutch.	
		Replace the TRANSFER UNIT, Assy., ASP.	
7	The Post-Fusing Separation Plate is dirty or damaged.	Replace the Fuser unit.	Fuser unit

PQT-14: IMAGES ARE NOT PRINTED CORRECTLY

☐ Symptom

The background is dark or dirty



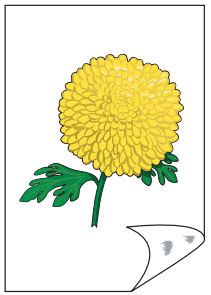
PQT_013

No.	Cause	Check Point	Defect Parts
1	The electric charge wire or charge grid are dirty.	Clean the charge wire.	Photoconductor unit
		Replace the Photoconductor unit.	
2	Toner cartridge contact point failure	Replace the Toner cartridge.	Toner cartridge
3	Developing bias or transferring bias charging failure.	Replace the HVPS.	HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA

PQT-15: IMAGES ARE NOT PRINTED CORRECTLY

☐ Symptom

The non-printed side of the page is dirty.



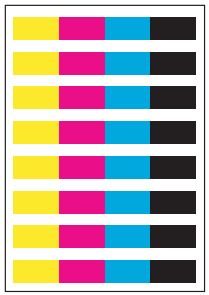
PQT_014

No.	Cause	Check Point	Defect Parts
1	2nd Transfer Roller contact/noncontact control failure.	Power the printer off and back on again.	CLUTCH, 2ND TRANSFER
		Perform Timing Adjustment. (*p.373*)	
		Replace the 2nd Transfer Clutch.	
2	The 2nd Transfer Roller is dirty.	Replace the 2nd Transfer Roller.	ROLLER, 2ND

PQT-16: PRINTED IMAGE IS LIGHT OR FAINT, OR TOO DARK

☐ Symptom

All of the four colors are too dark.



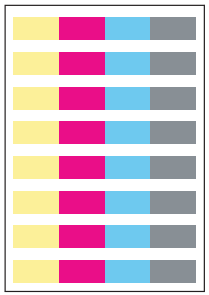
PQT_016

No.	Cause	Check Point	Defect Parts
1	Density adjustment failure.	Replace the Toner cartridge. Open and close the Cover D to clean the density sensor. Clean the exposure window. Clean the charge wire. Replace the Photoconductor unit. Replace the TRANSFER UNIT, Assy., ASP. Replace the engine controller board. Replace the controller board or PROM DIMM.	■ Toner cartridge ■ Photoconductor unit ■ TRANSFER UNIT, Assy., ASP ■ BOARD ASSY., MAIN C585 MCU ■ BOARD ASSY., MAIN C585 MAIN ■ BOARD ASSY., MEMORY, C533 PROG (59571)

PQT-17: PRINTED IMAGE IS LIGHT OR FAINT, OR TOO DARK

☐ Symptom

Only a certain color is too dark.



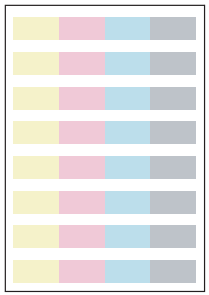
PQT_015

No.	Cause	Check Point	Defect Parts
1	Density adjustment failure.	Replace the Toner cartridge.	Toner cartridge
2	Toner Cartridge failure	Replace the Toner cartridge.	Toner cartridge

PQT-18: PRINTED IMAGE IS LIGHT OR FAINT, OR TOO DARK

☐ Symptom

All of the four colors are light and faint.



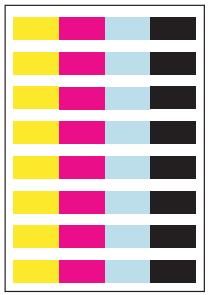
PQT_017

No.	Cause	Check Point	Defect Parts
1	Density adjustment failure.	Replace the Toner cartridge. Open and close the Cover D to clean the density sensor. Clean the exposure window. Clean the charge wire. Replace the Photoconductor unit. Replace the TRANSFER UNIT, Assy., ASP. Replace the engine controller board. Replace the controller board or PROM DIMM.	■ Toner cartridge ■ Photoconductor unit ■ TRANSFER UNIT, Assy., ASP ■ BOARD ASSY., MAIN C585 MCU ■ BOARD ASSY., MAIN C585 MAIN ■ BOARD ASSY., MEMORY, C533 PROG (59571)
2	2nd transfer bias applied on paper leaks to the cleaning tape. (The paper is moistened or electrical resistance of the paper is low)	Replace the papers with new dry ones.	---

PQT-19: PRINTED IMAGE IS LIGHT OR FAINT, OR TOO DARK

☐ Symptom

Only a certain color is light and faint



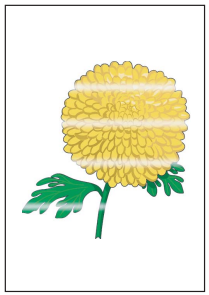
PQT_018

No.	Cause	Check Point	Defect Parts
1	Density adjustment failure.	Replace the Toner cartridge. Open and close the Cover D to clean the density sensor. Clean the exposure window. Clean the charge wire. Replace the Photoconductor unit. Replace the TRANSFER UNIT, Assy., ASP. Replace the engine controller board. Replace the controller board or PROM DIMM.	■ Toner cartridge ■ Photoconductor unit ■ TRANSFER UNIT, Assy., ASP ■ BOARD ASSY., MAIN C585 MCU ■ BOARD ASSY., MAIN C585 MAIN ■ BOARD ASSY., MEMORY, C533 PROG (59571)
2	Toner Cartridge failure	Replace the Toner cartridge.	Toner cartridge
3	Developing bias charging failure.	Check the contact point on the HVPS where outputs developing bias for any abnormality. Replace the HVPS.	HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA
4	Transfer cleaner contact/ noncontact control failure.	Power the printer off and back on again. Perform Timing Adjustment. (*p.373*) Replace the cleaner clutch. Replace the TRANSFER UNIT, Assy., ASP.	■ CLUTCH, CLEANER ■ TRANSFER UNIT, Assy., ASP

PQT-20: INCONSISTENCIES IN DENSITY (PAPER FEED DIRECTION)

☐ Symptom

The symptom appears cyclically.



PQT_019

No.	Cause	Check Point	Defect Parts
1	0.35 mm cycle = LSU Scanner Motor rotating cycle	Replace the LSU.	Laser Scanner
2	24 mm cycle = Development Supply Roller cycle	Replace the Toner Cartridge.	Toner cartridge
3	36 mm cycle = Developer Roller cycle	Replace the Toner Cartridge.	Toner cartridge
4	51 mm cycle = Primary Transfer Backup Roller cycle	Replace the TRANSFER UNIT, Assy., ASP.	TRANSFER UNIT, Assy., ASP
5	57 mm cycle = 2nd Transfer Roller cycle	Replace the 2nd Transfer Roller.	ROLLER, 2ND
6	91 mm cycle = 2nd Transfer Backup Roller cycle	Replace the TRANSFER UNIT, Assy., ASP.	TRANSFER UNIT, Assy., ASP
7	108 mm cycle = Fuser Roller cycle	Replace the Fuser unit.	Fuser unit
8	112 mm = Fuser Pressure Roller cycle	Replace the Fuser unit.	Fuser unit
9	141 mm cycle = OPC cycle	Replace the Photoconductor unit.	Photoconductor unit

PQT-21: INCONSISTENCIES IN DENSITY (PAPER FEED DIRECTION)

☐ Symptom

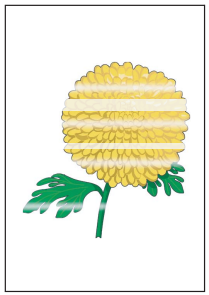
The symptom appears only for a certain color.

No.	Cause	Check Point	Defect Parts
1	Toner cartridge failure	Replace the Toner cartridge.	Toner cartridge

PQT-22: INCONSISTENCIES IN DENSITY (PAPER FEED DIRECTION)

☐ Symptom

The symptom occurs at random.



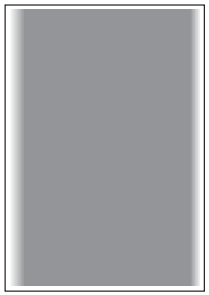
PQT_020

No.	Cause	Check Point	Defect Parts
1	Photoconductor drum grounding failure.	Check the electrode on the bottom of the Photoconductor unit for any dirt.	■ ELECTRODE Assy., PC ■ Photoconductor unit
		Replace the Electrode Assy., PC.	
		Replace the Photoconductor unit.	

PQT-23: INCONSISTENCIES IN DENSITY (VERTICAL TO THE PAPER FEED DIRECTION)

☐ Symptom

Printed area near the paper edges is light and faint.



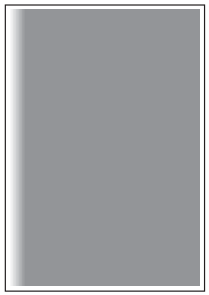
PQT_021

No.	Cause	Check Point	Defect Parts
1	Toner cartridge failure.	Replace the Toner Cartridge.	Toner cartridge
2	Primary transfer contact control failure.	Replace the TRANSFER UNIT, Assy., ASP.	TRANSFER UNIT, Assy., ASP
3	2ND TRANSFER Assy., ASP installation failure.	Install the 2ND TRANSFER Assy., ASP correctly.	---
4	2nd Transfer Roller contact/noncontact control failure.	Power the printer off and back on again.	CLUTCH, 2ND TRANSFER
		Perform Timing Adjustment. (*p.373*)	
		Replace the 2nd Transfer Clutch.	
5	Wear of the Fuser Roller (rubber part comes loose or is damaged).	Replace the Fuser unit.	Fuser unit

PQT-24: INCONSISTENCIES IN DENSITY (VERTICAL TO THE PAPER FEED DIRECTION)

☐ Symptom

Left side of the printed image is light and faint.



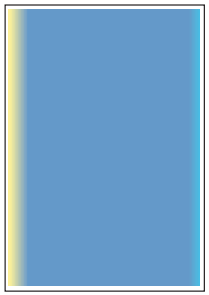
PQT_022

No.	Cause	Check Point	Defect Parts
1	The belt electrode is broken.	The belt electrode is broken.	TRANSFER UNIT, Assy., ASP

PQT-25: INCONSISTENCIES IN DENSITY (VERTICAL TO THE PAPER FEED DIRECTION)

☐ Symptom

The density on the left and right side of the printed image differs depend on color (e.g. cyan is too dark on the right side while yellow is too dark on the left side).



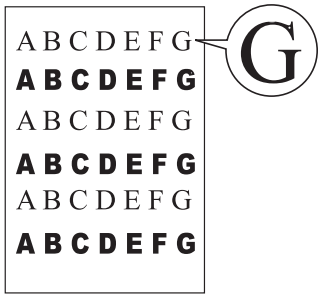
PQT_023

No.	Cause	Check Point	Defect Parts
1	Toner Cartridge failure.	Replace the Toner cartridge.	Toner cartridge
2	LSU adjustment failure.	Replace the LSU.	Laser scanner

PQT-26: OTHER TROUBLES

☐ Symptom

Hollow characters:
Only outlines of characters are printed (the inside areas are not filled in.)



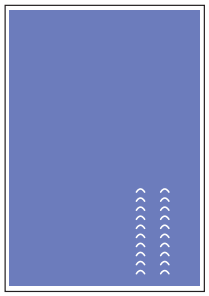
PQT_027

No.	Cause	Check Point	Defect Parts
1	Density adjustment failure.	Power the printer off and back on again.	---
2	The toner has deteriorated.	Replace the Toner cartridge.	Toner cartridge
3	Primary transfer contact control failure (too much load).	Replace the TRANSFER UNIT, Assy., ASP.	TRANSFER UNIT, Assy., ASP

PQT-27: OTHER TROUBLES

☐ Symptom

Scaly patterns appear blurring the image. It tends to appear on the second side of a printout made by duplex printing.



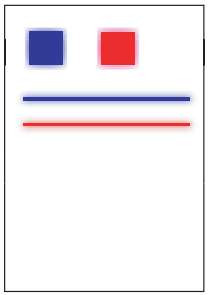
PQT_024

No.	Cause	Check Point	Defect Parts
1	The paper is not strong enough to use for the printer.	Use recommended papers and check if the symptom still appears.	---
2	The cleaning tape is dirty or it is not attached correctly.	Replace the cleaning tape.	MOUNTING PLATE, ANTI-STATIC, ASP

PQT-28: OTHER TROUBLES

☐ Symptom

Toner splash:
Toner smudges are splattering around half-tone patterns or lines of the printed image. It is likely to occur on the area near rear end of the paper.



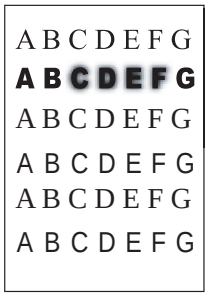
PQT_025

No.	Cause	Check Point	Defect Parts
1	Density adjustment failure.	Power the printer off and back on again.	---

PQT-29: OTHER TROUBLES

☐ Symptom

Blur:
Toner smudges are splattering around characters of the printed image.



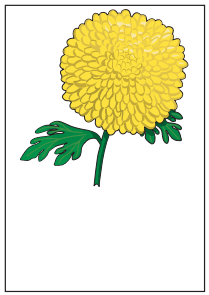
PQT_026

No.	Cause	Check Point	Defect Parts
1	Density adjustment failure.	Power the printer off and back on again.	---

PQT-30: OTHER TROUBLES

☐ Symptom

- The margin of the leading edge of the paper is too narrow or too wide.
- Skew



PQT_028

No.	Cause	Check Point	Defect Parts
1	Gate clutch failure.	Replace the gate clutch.	CLUTCH, GATE

3.5 Test Print

To check the engine operation, it is possible to print engine controller built-in sample without being routed through the main controller. If the problem does not occur on the engine controller built-in sample, the cause of the problem may be main controller.

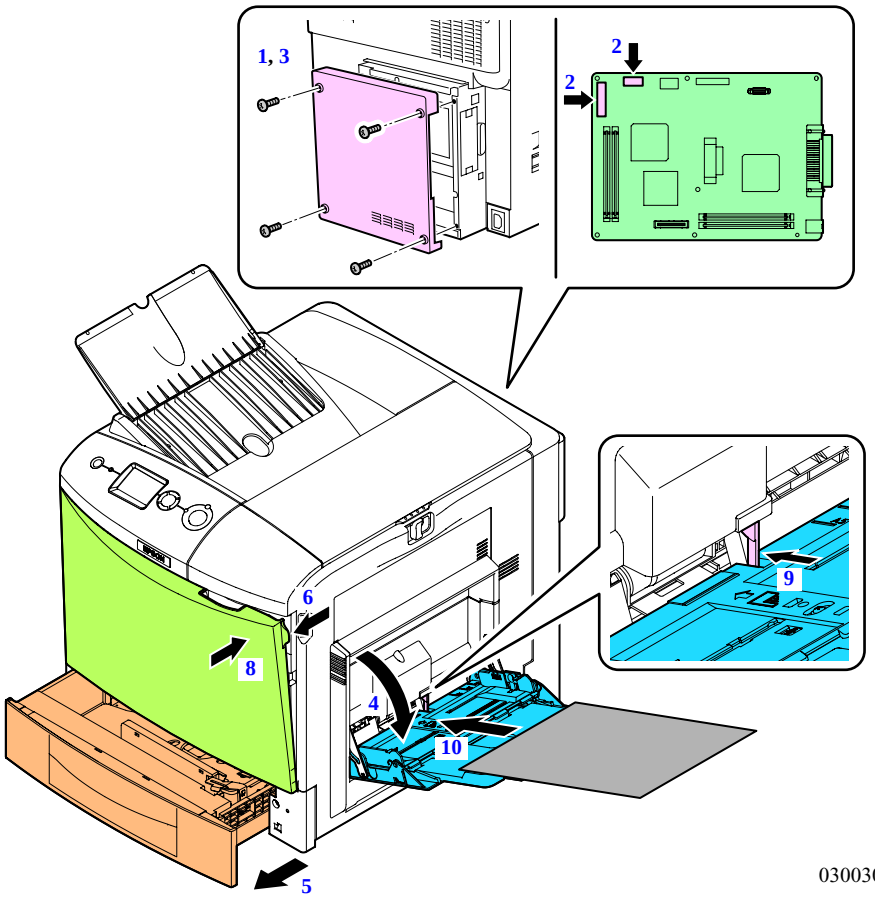
PRINTING PROCEDURE

1. Remove the 4 screws to remove the “COVER HOUSING, CONTROLLER, UNIT”.
2. Disconnect the 2 connectors (CN603: 14pin, CN23: 7pin) on the main controller board.

CHECK POINT

Test print can be performed without the "COVER HOUSING, CONTROLLER, UNIT" being uninstalled. If this is the case, make sure not to touch the board when the printer is turned ON.

3. Re-install the “COVER HOUSING, CONTROLLER, UNIT” with 4 screws.
4. Open the MP tray (without loading the paper).
5. Draw out the standard paper cassette.
6. Release the right latch of the Cover D.
7. Turn on the power.
8. When you hear the rotation sound of the fan inside the printer, close the Cover D firmly.
9. Raise the actuator of the paper-out sensor of the MP tray slowly two times (make the sensor turn on).
10. Load a A4 paper to MP tray, and then test printing pattern will be printed.



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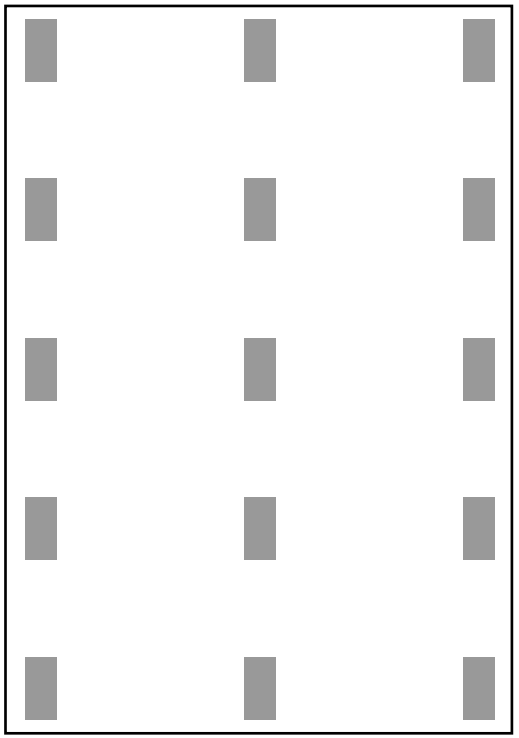
PRINTED PATTERN



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CHAPTER

4

DISASSEMBLY AND ASSEMBLY

4.1 Overview

This section describes procedures for disassembling the main components of the product. Unless otherwise specified, disassembled units or components can be reassembled by reversing the disassembly procedure.

Procedures which, if not strictly observed, could result in personal injury are described under the heading “WARNING”.

“CAUTION” signals a precaution which, if ignored, could result in damage to equipment.

Important tips for procedures are described under the heading “CHECK POINT”.

If the assembly procedure is different from the reversed disassembly procedure, the correct procedure is described under the heading “REASSEMBLY”.

Any adjustments required after reassembly of components or parts are described under the heading “ADJUSTMENT REQUIRED”.

When you have to remove any components or parts that are not described in this chapter, refer to the exploded diagrams in the appendix.

4.1.1 Precautions

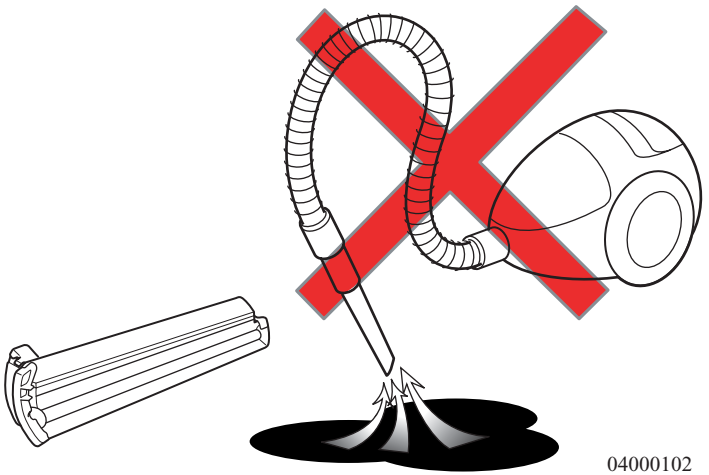
The precautions in the two lists below (**WARNING** and **CAUTION**), must **always** be followed during disassembly and assembly.

WARNING

- **Be sure to turn the printer power off and unplug the power code before starting maintenance work. When the power supply cable must be connected, use extreme caution in working on the power supply and other electronic components.**
- **Never touch the energized or driving parts such as motors, sprocket wheels or gears when the printer is on.**
- **Since this printer is relatively heavy (weighs approximately 37 Kg (82 lbs) excluding attachments and options.), 2 or more personnel are required to carry the product. When transferring, make sure to kneel down enough so as not to throw out your back.**
- **Safety devices: Special care must be taken to maintain safety devices such as fuses and the Interlock S/W, which are provided to prevent the printer from malfunction and accidents, and also carefully check the parts such as panels and covers, which are operated directly by users.**
- **Do not touch the Fuser unit and other high-temperature parts as they remain at hazardous temperature for a certain period of time even after turning off the power of the printer.**
- **If you need to work on the printer with power applied, strictly follow the instructions below.**
  - **In order not to get entangled, keep your hands and cloths clear of the rotary parts such as various types of rollers and a cooling fan.**
  - **Never touch the electrical terminals or high voltage components. (High Voltage Power Supply or Power Supply etc.)**
- **Always wear gloves for disassembly and reassembly to avoid injury from sharp metal edges.**
- **To avoid dust explosion or ignition, never bring any consumables close to flame or throw them into fire.**
- **Be aware that letting the laser beam get into your eyes directly could result in loss of vision.**

WARNING

- **Never open any cover on which a Warning Label for Laser Beam is attached.**
- **Use extreme caution to avoid injury of yourself and anyone around you with a clear understanding of hazardous nature of the laser beam.**
- **The Fuser unit and other high-temperature parts remain at hazardous temperature for a certain period of time even after turning off the power of the printer. To prevent suffering from a burn, be sure to wait until the temperature of the parts cools down to a safe level, then start working on the printer.**
- **Do not vacuum off spilled toner using an usual vacuum cleaner. To do so may cause the sucked toner particles to catch fire by sparks of the electric contacts.**



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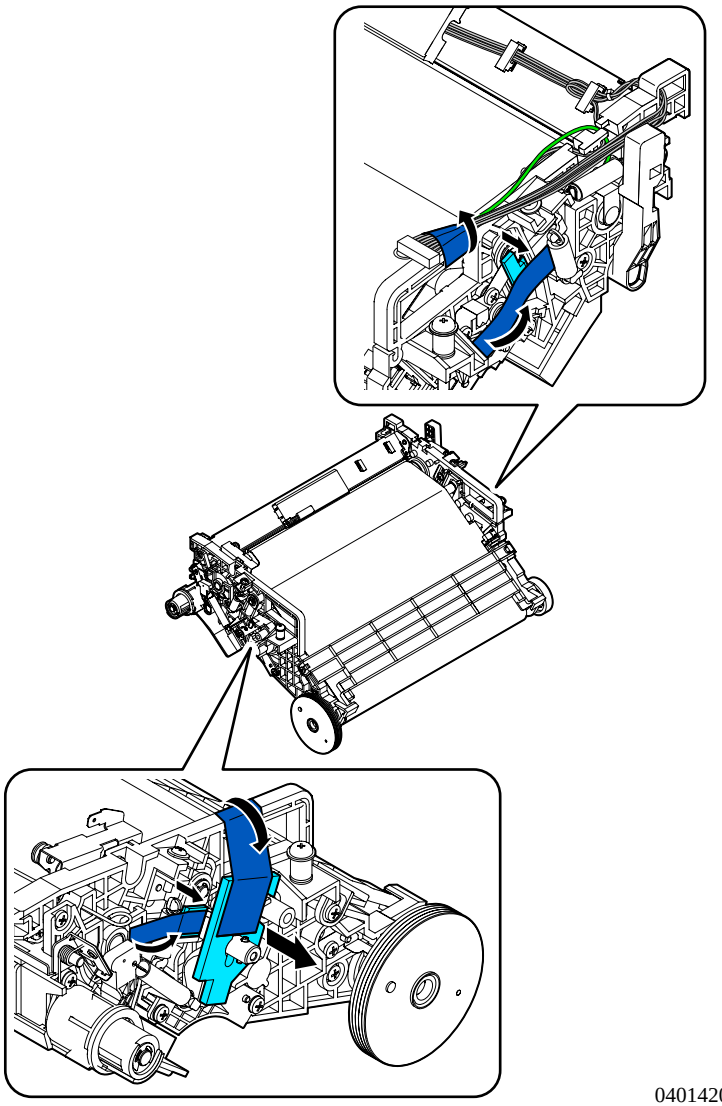
- **Never repair or replace elements such as fuses on the electric circuit board under all circumstances.**

CAUTION

- Never disassemble the Toner cartridges.
- Do not place the Photoconductor unit in any place where it will be subjected to direct sunlight.
- Never disassemble the Laser scanner.
- Never touch elements on the board with bare hands to prevent electric elements like IC from destruction caused by static electricity. Wear an antistatic wrist band as necessary. Use only recommended tools for disassembly, assembly or adjustment of the printer.
- Do not turn the printer's power off until all the motors stops completely.
- Use exclusive packing materials or pallets in case transporting the printer.
- Do not use fluxing materials such as alcohols solvent or thinner.
- Make the specified adjustments when you disassemble the printer.
- As many types of screws are used on this printer, be careful not to attach them at the wrong positions. Doing so may damage the screw and cause printer failure.
- After disassembling and removing the retainers, which secure a harness, make sure to return them to their original state.
- Specific information on the printer, such as remaining amount of consumables, is stored in the FRAM on BOARD ASSY., MAIN C585 MCU and duplicated on the EEPROM on BOARD ASSY., MAIN C585 MAIN every time the printer is turned on. Never replace the FRAM or BOARD ASSY., MAIN C585 MCU which includes the FRAM with one removed from another AcuLaser C2600/2600 printer, or the specific information on the EEPROM is overwritten with information stored on the replaced FRAM at power-on. Once the EEPROM is overwritten, retrieving the previous information becomes impossible. This means that the printer uses another printer's information to control its consumables life resulting in occurrence of incorrect life messages and warnings.

CAUTION

- Each service part is supplied with tapes and protective materials attached. Make sure to remove them before replacing those service parts.
  - e.g. Transfer Unit



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4.1.2 Prohibited Disassembly

Removing the screws or disassembling the parts described below is strictly prohibited.If not observed, it leads to malfunction of the printer.

- ☐ Red screws

  There are some red screws that secure certain parts of the product. This indicates that these parts are precisely adjusted at the factory, and red screws must not be loosened or removed. The parts secured with red screws are shown right.

- ☐ Consumables/After service parts

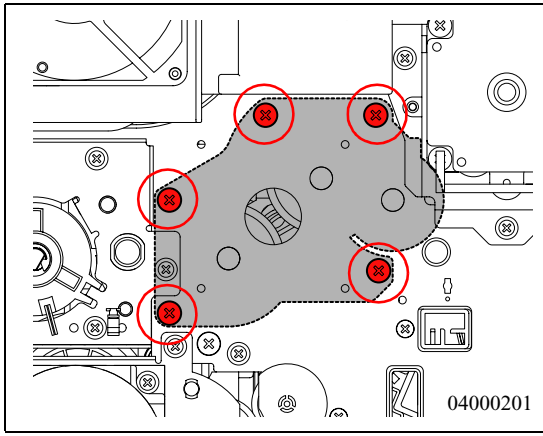
  Do not disassemble the consumables. Additionally, units that are provided as single service parts should not be disassembled.

  e.g.)

  - ■ Fuser Unit
  - ■ TRANSFER UNIT, Assy., ASP
  - ■ Laser Scanner

- ☐ Parts whose disassembling procedures are not given in this manual

  Do not remove any parts whose disassembling procedures are not explained in this manual. Especially, never loosen/remove the screws that secure the frames or the frames themselves as they are precisely adjusted at the factory.



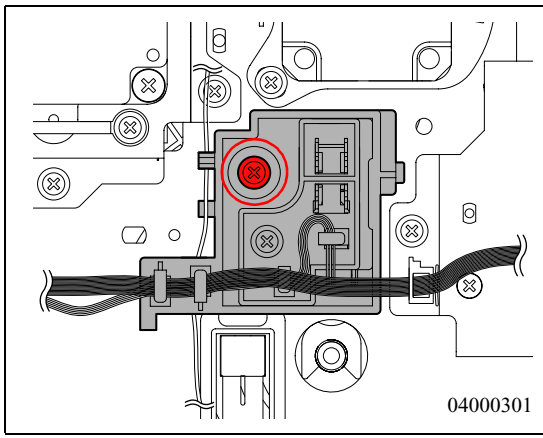
<Parts that must not be disassembled or disconnected>

Screws that secure the DRIVE ASSY., PC

- Red screws x5

<NOTE>

The position of the DRIVE ASSY., PC is precisely adjusted and controlled at the factory.



<Parts that must not be disassembled or disconnected>

Screw that secures the HOLDER, SENSOR, HP, ASSY.

- Red screw x1

<NOTE>

The position of the HOLDER, SENSOR, HP, ASSY. is precisely adjusted and controlled at the factory.

4.1.3 Tools

Use only recommended tools to avoid damaging the printer.
All are commercially available, and should be made ready beforehand.

Table 4-1. Recommended Tools

Name	Code
Phillips screwdriver No.1	1080530
Phillips screwdriver No.2	1083657
Slotted screwdriver	1080523
Tweezers	---
Round nose pliers	1080564
E-Ring holder	---
Plier	---

4.1.4 Inspection After Assembling

Always perform inspections below after any of parts are repaired or replaced.

- ☐ Clean the housing and inside of the engine. ("6.2 Cleaning *(p.387)*")
- ☐ After performing assembly and adjustment, print out a engine status sheet to check the conditions of consumable parts and main after-service parts. Replace them with new ones as necessary.

- ■ **Perform specified adjustment or reset counters after replacing any of the parts that require adjustment. (Refer to Chapter 5 " Adjustment" *(p.364)*)**
- ■ **Before replacing consumables or periodical replacement parts, refer to Chapter 6 "Maintenance" to understand the parts that should be replaced at the same time. (Refer to "6.5 Consumables and Components That Need Periodic Replacement" *(p.396)*)**

- ☐ Check the firmware version and update the firmware as necessary.
- ☐ Print out a few status sheets to verify the print quality of AcuLaser C2600/2600.
- ☐ Print out several pages of data sent by a host computer to determine if AcuLaser C2600/2600 is operating normally.

4.2 Procedures for Disassembly and Assembly

This section explains the procedures for disassembling the product. Unless otherwise stated, reassembly should be carried out in the reverse order of the disassembly procedure. As a general rule, options must be removed before starting work, however, performing maintenance with options installed is also allowed if there is no need to remove them.

CAUTION

When performing work on parts that are controlled as spare parts and have no disassembling procedures explained in this manual, fully observe those parts to recognize how they are attached before starting work.

Refer to the articles below for disassembly and assembly procedures.

- Expressions related to directions mentioned in procedures are defined as follows:
  - FRONT: Near Side direction facing the front side of the printer (Consumable parts side)
  - REAR: Far side direction facing the front side of the printer (I/F Connector side)
  - LEFT: Left direction facing the front side of the printer (Paper Eject side)
  - RIGHT: Right direction facing the front side of the printer (MP tray side)

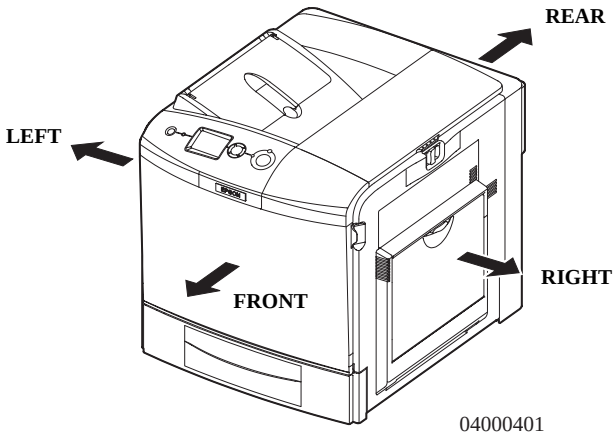


Figure 4-1. Description of Directions

- Interpretation of Figures
  The following explains the meaning of the numbers and symbols used in the figures given in this chapter.
  - "1": Indicates the first disassembling procedure in the section.
  - "1)": Indicates the second disassembling procedure in the section.
  - "1]": Indicates the third disassembling procedure in the section.

  Depending on the section, figures for both the disassembling and reassembling are provided. In such case, the step numbers are given as shown below.
  - "D1": Indicates the first disassembling procedure in the section.
  - "D1)": Indicates the second disassembling procedure in the section.
  - "A1": Indicates the first reassembling procedure in the section.
  - "A1)": Indicates the second reassembling procedure in the section.
- Black arrows on disassembling figures indicate that the part should be moved in the indicated direction. Process numbers that are marked beside black arrows correspond to process order described in the text.
- White arrows contained in disassembling figures indicate front side of the equipment.
- For details of positions of connectors (P/J), refer to "7.1.1 Connectors and Plug and Jack Layout *(p.411)*".
- Connector numbers (e.g. 211X) correspond to "7.1.1 Connectors and Plug and Jack Layout *(p.411)*".

4.3 Disassembly and Reassembly

This section explains procedures mainly for disassembling the components described below.

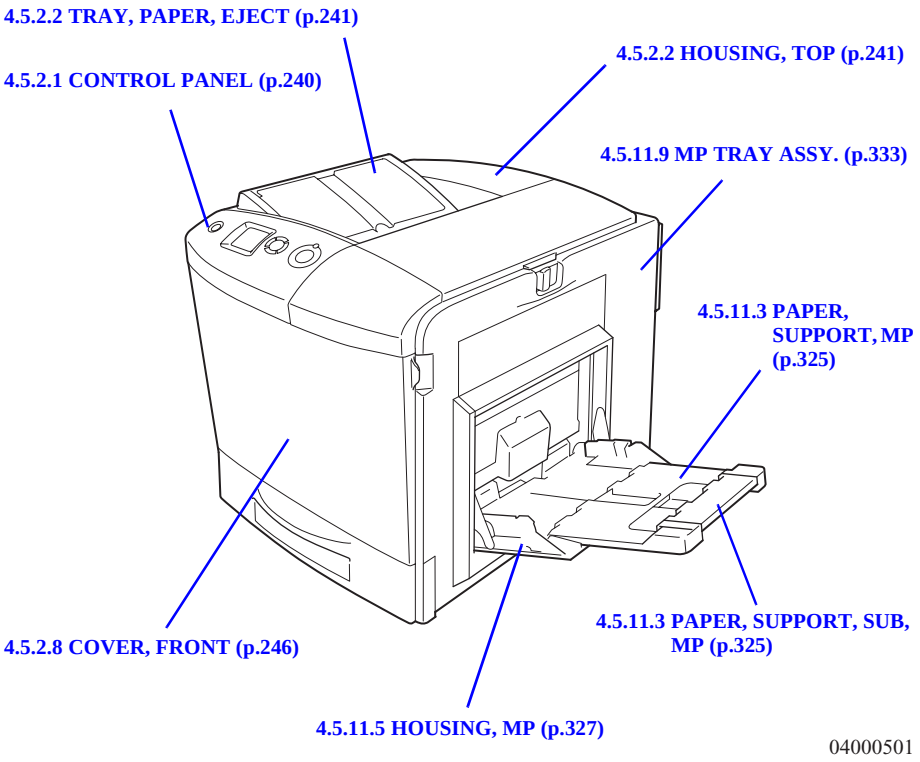


Figure 4-2. Components to be Disassembled (1)

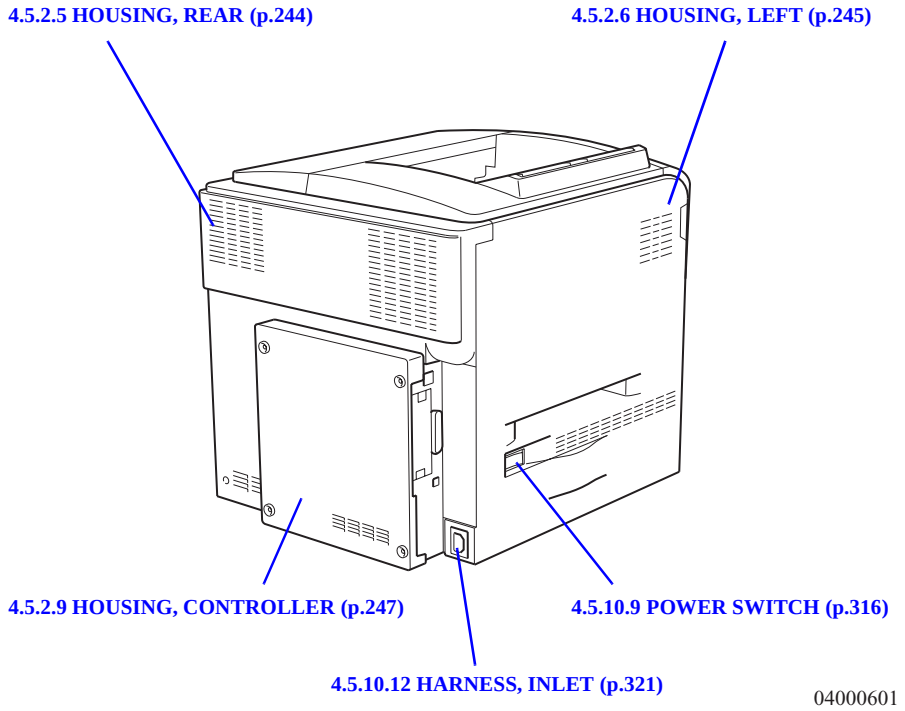


Figure 4-3. Components to be Disassembled (2)

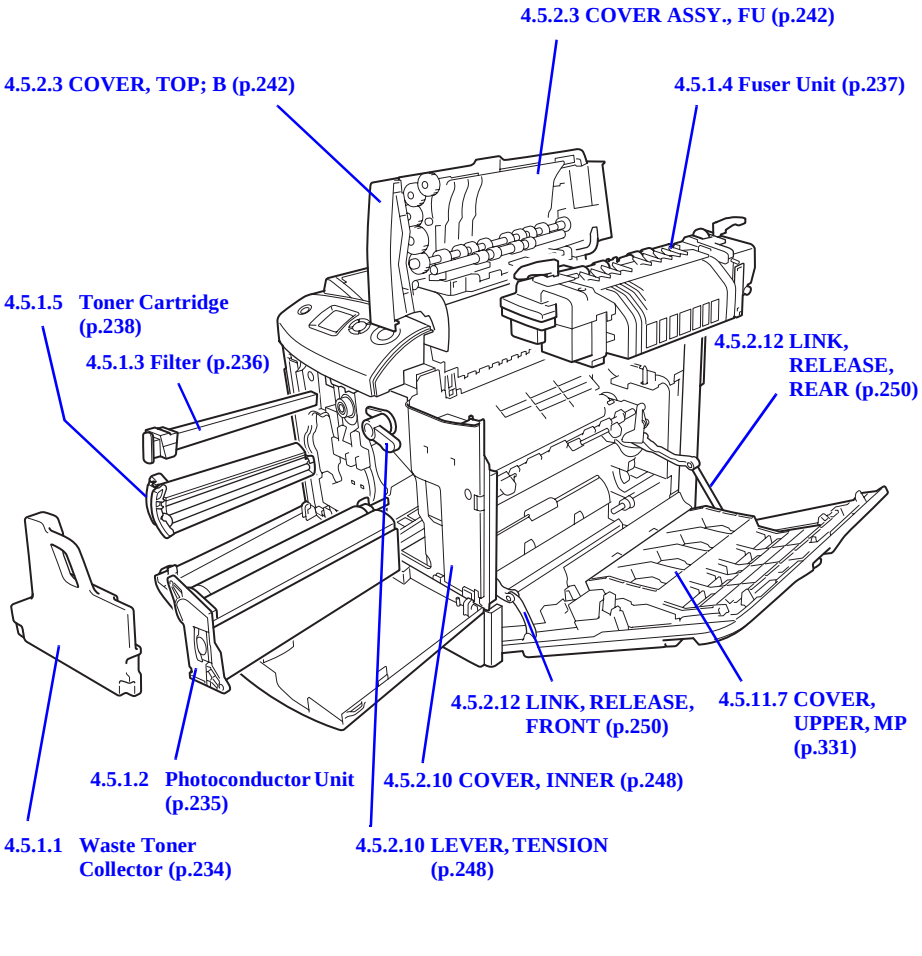


Figure 4-4. Components to be Disassembled (3)

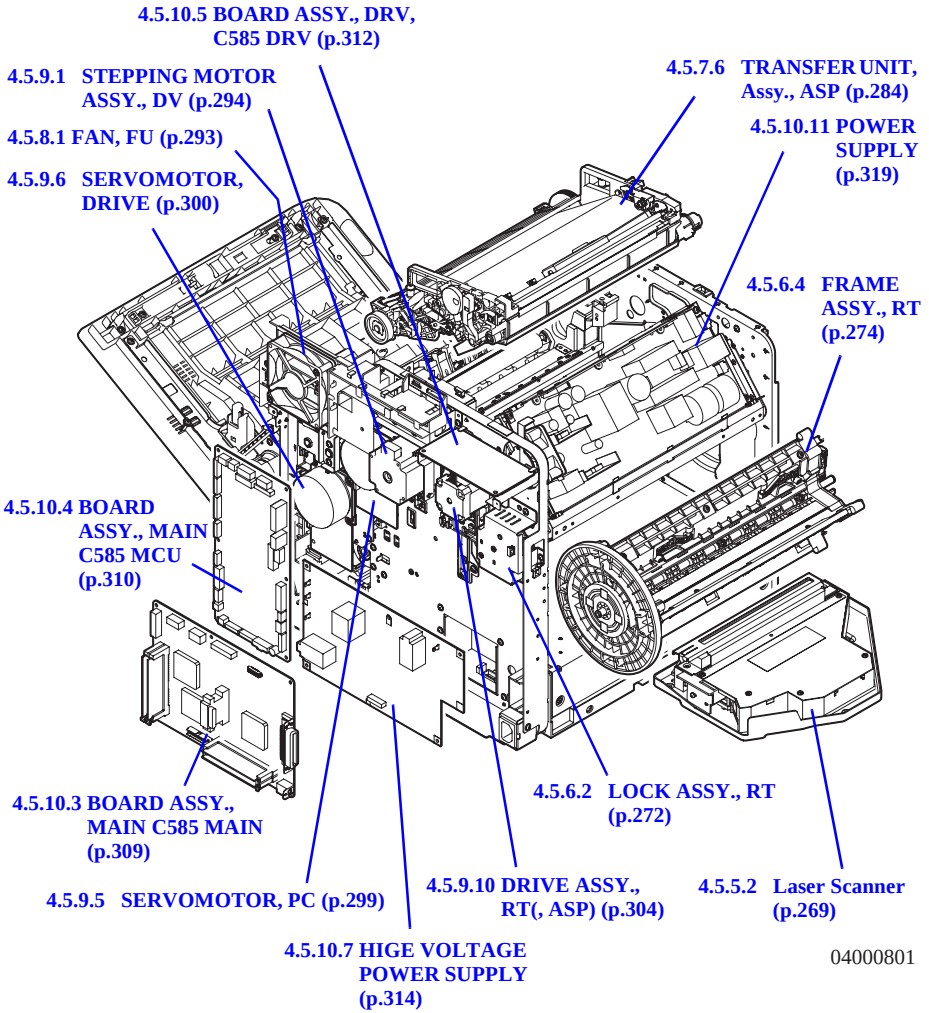


Figure 4-5. Components to be Disassembled (4)

4.4 Disassembling Flowchart

The following diagram shows the disassembling flow of each component.

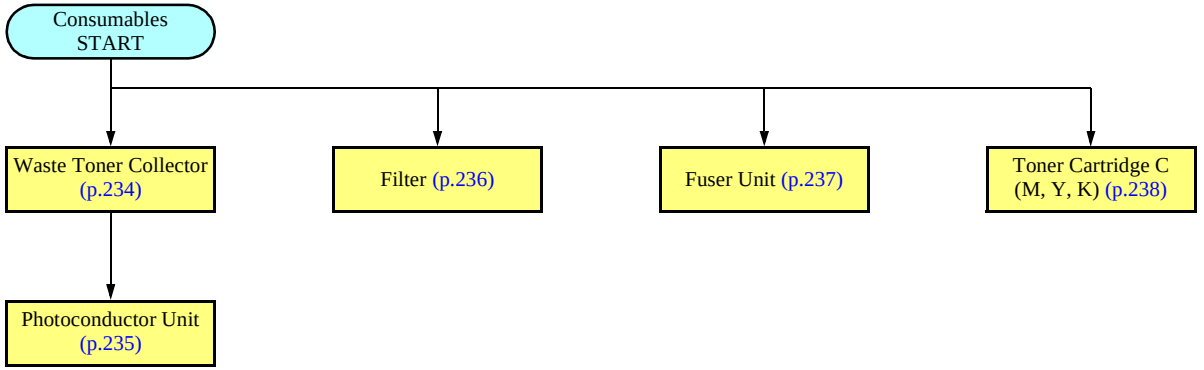


Figure 4-6. Consumables Disassembling Flowchart

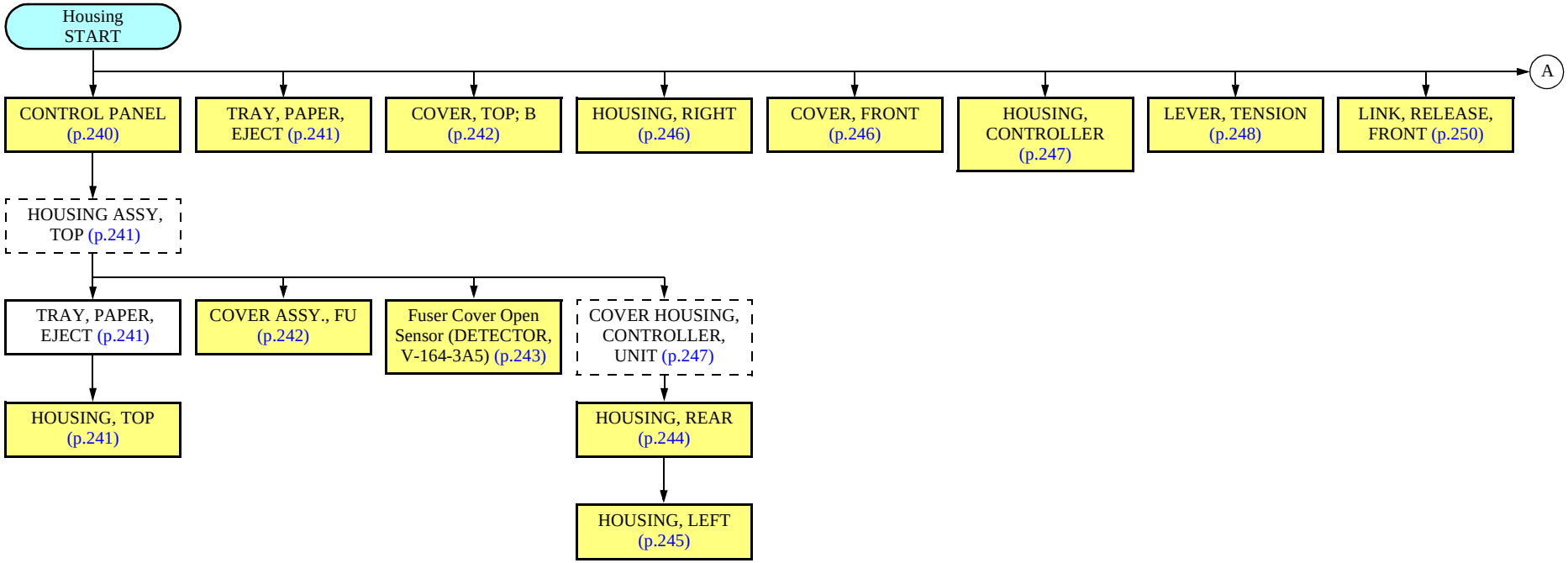


Figure 4-7. Housing Disassembling Flowchart 1

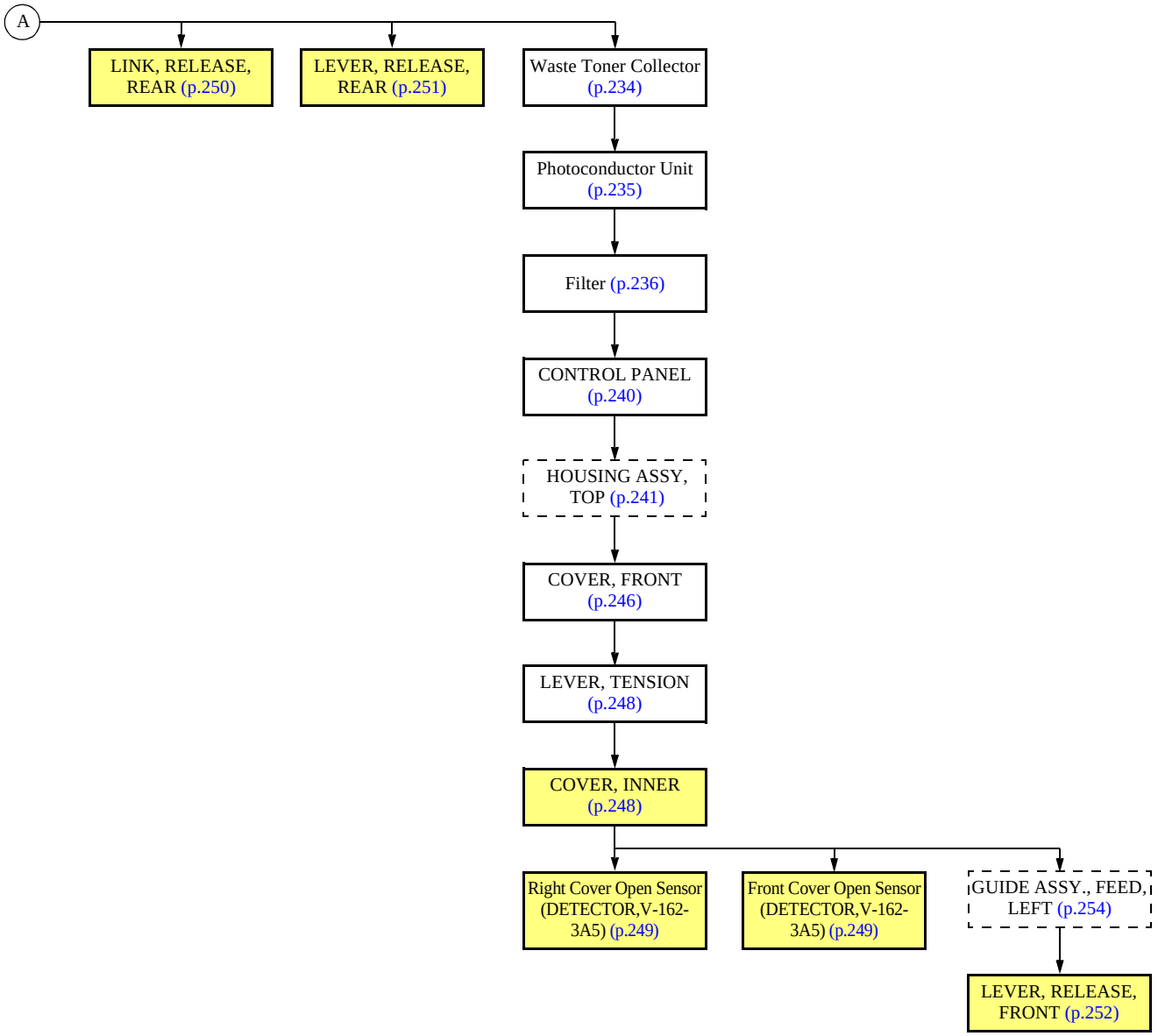


Figure 4-8. Housing Disassembling Flowchart 2

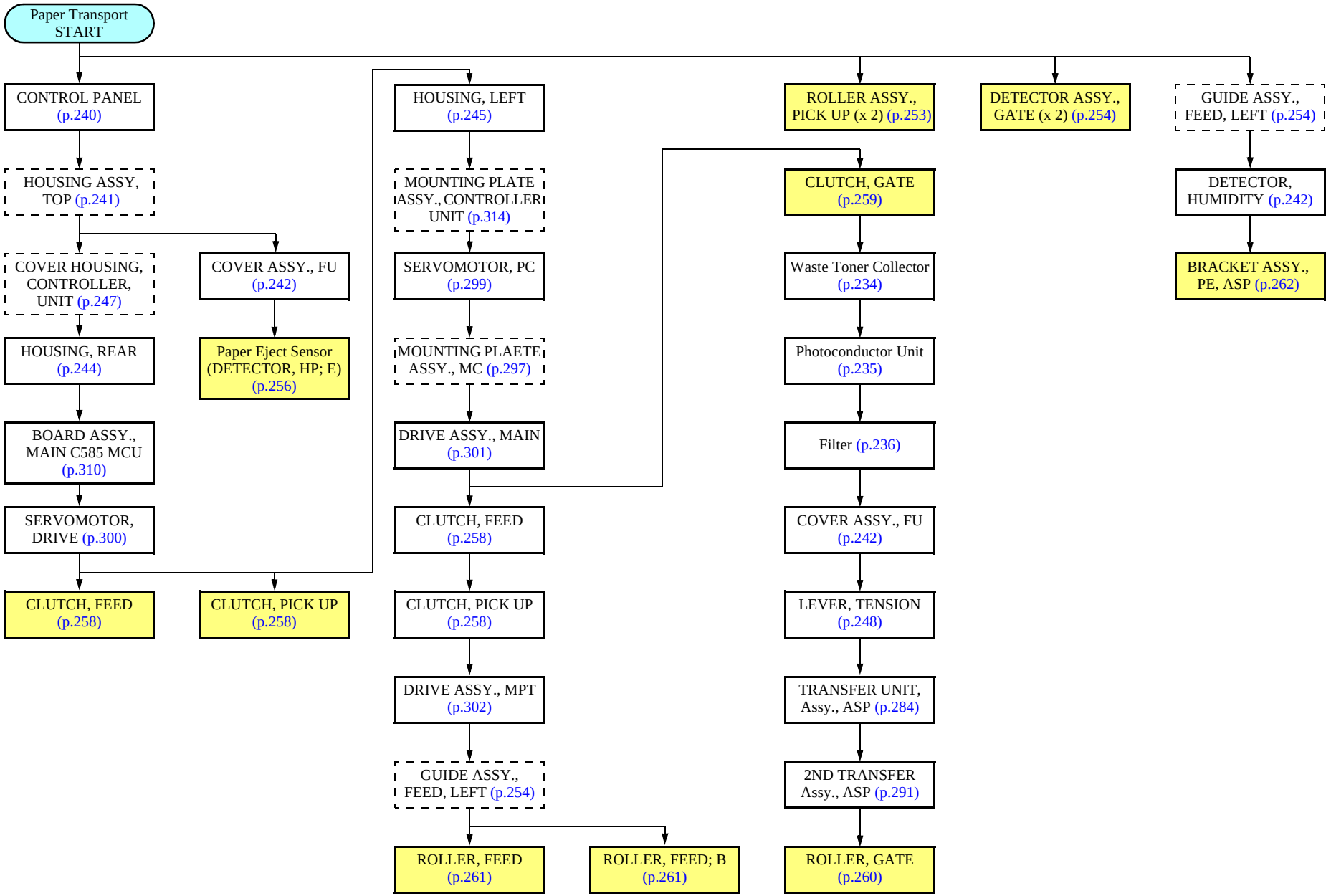


Figure 4-9. Paper Transport Disassembling Flowchart

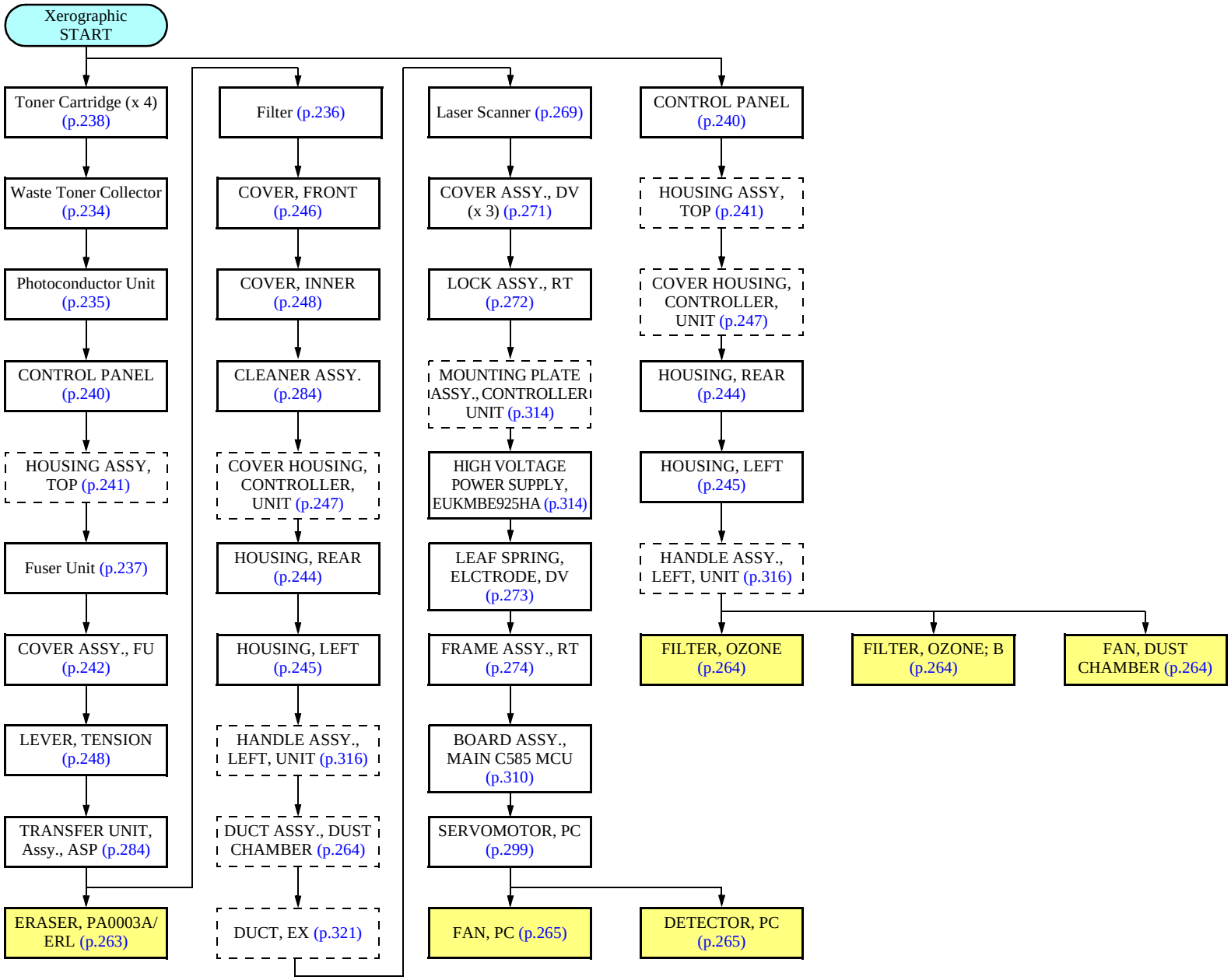


Figure 4-10. Xerographic Disassembling Flowchart

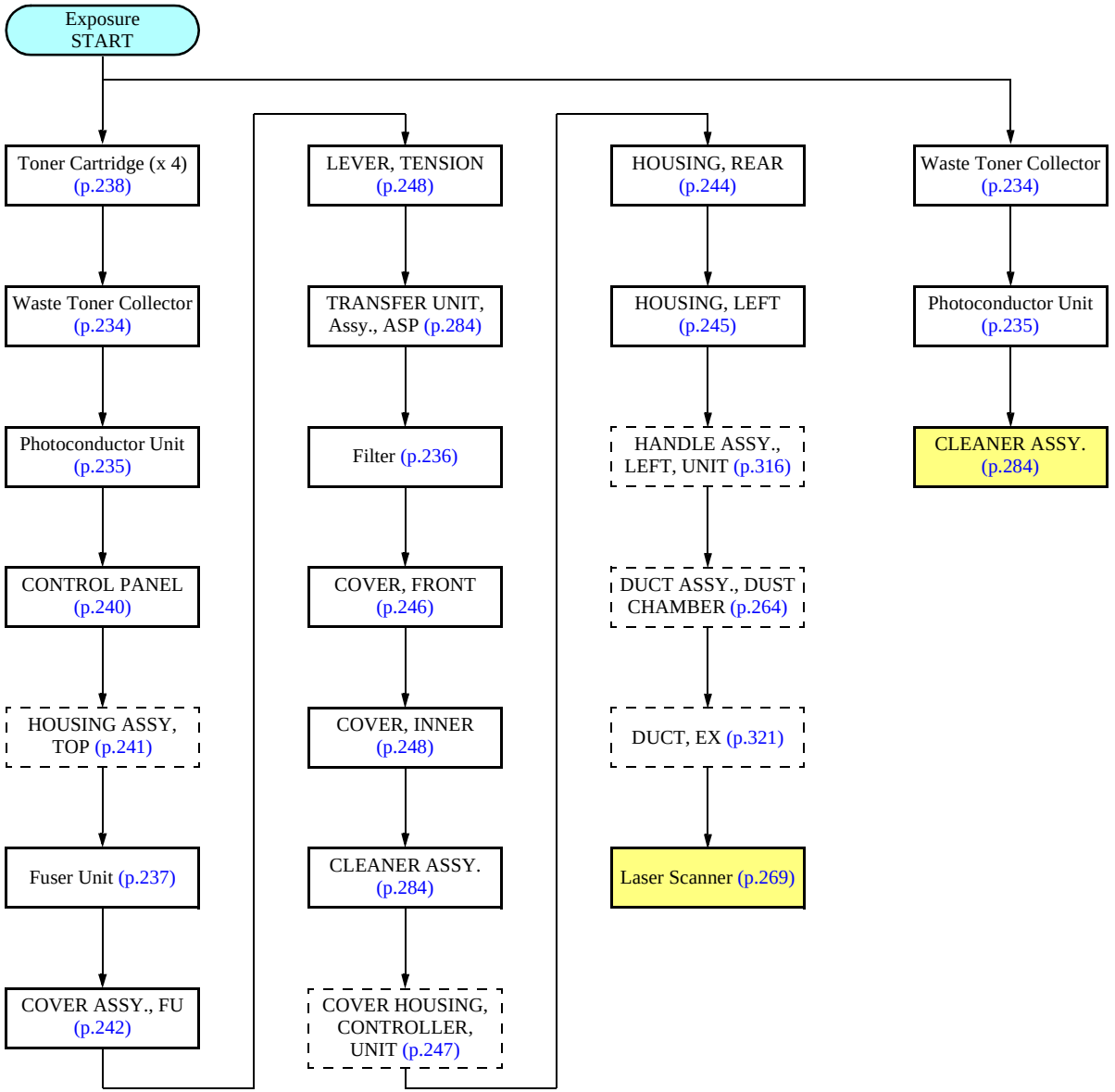


Figure 4-11. Exposure Disassembling Flowchart

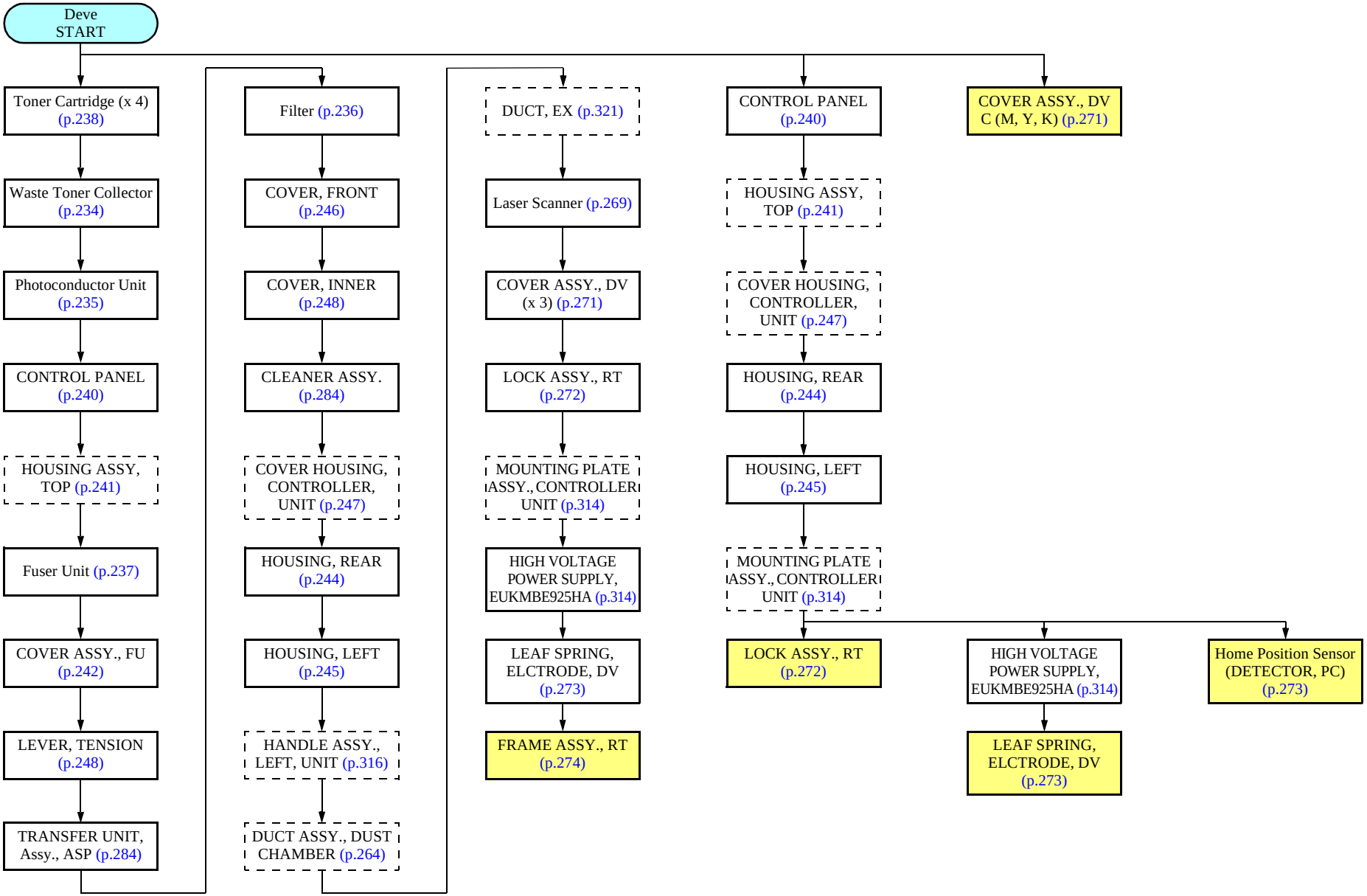


Figure 4-12. Deve Disassembling Flowchart

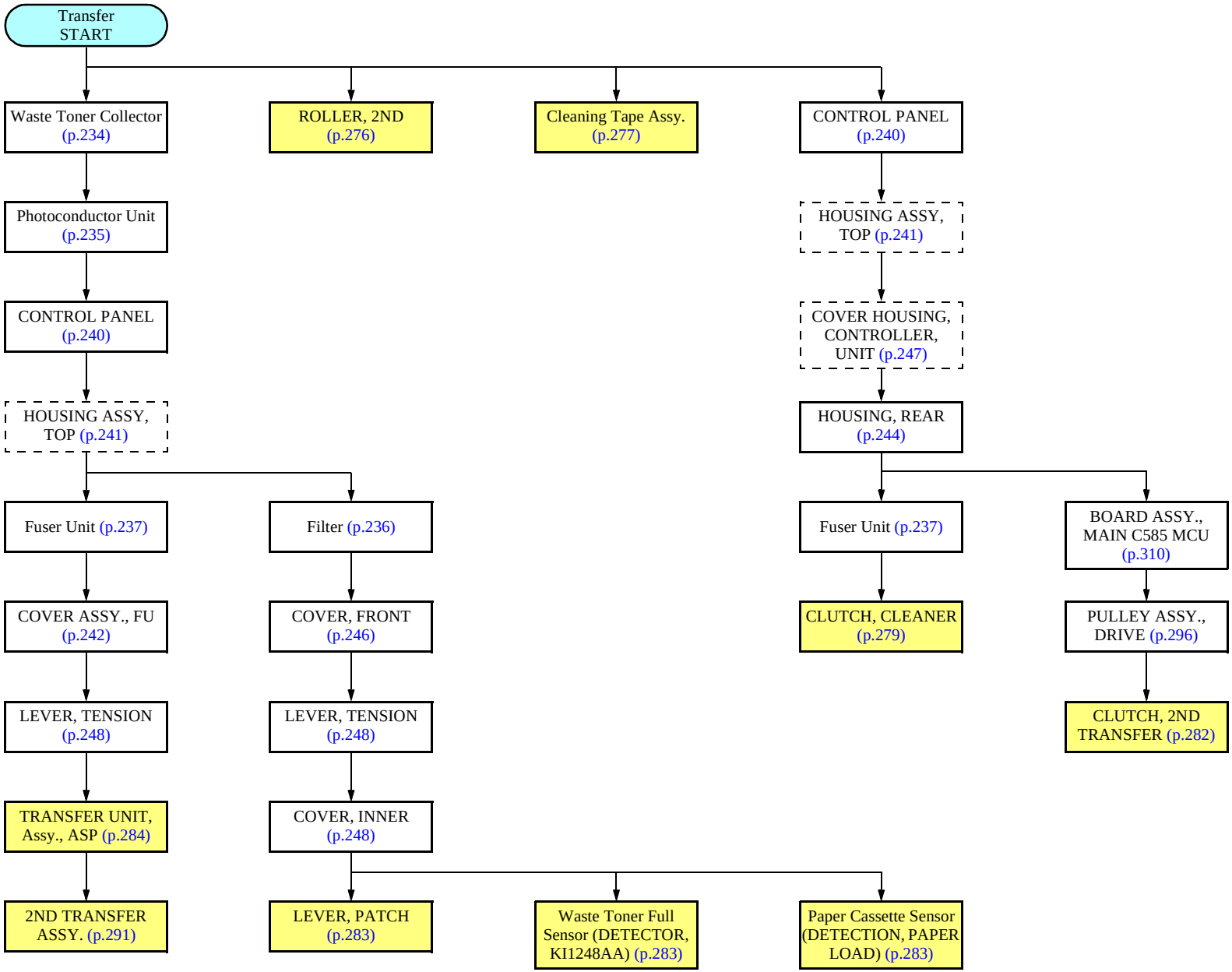


Figure 4-13. Transfer Disassembling Flowchart

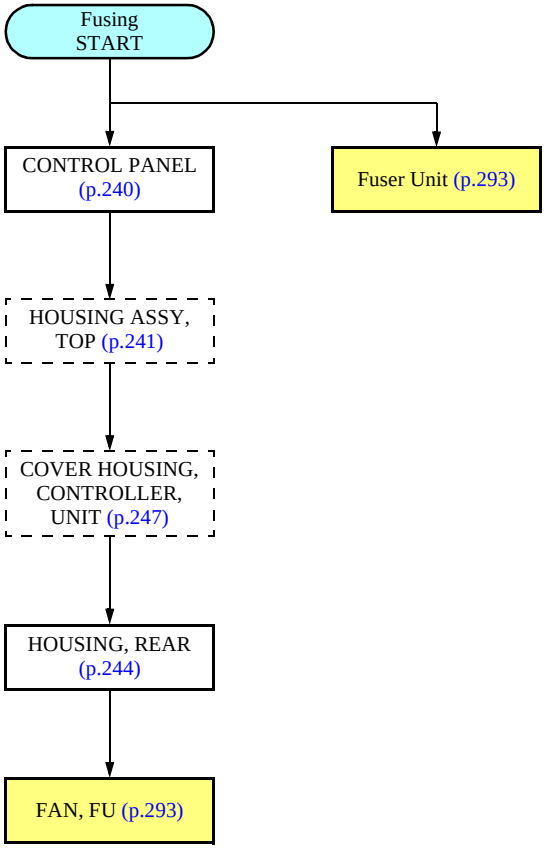


Figure 4-14. Fusing Disassembling Flowchart

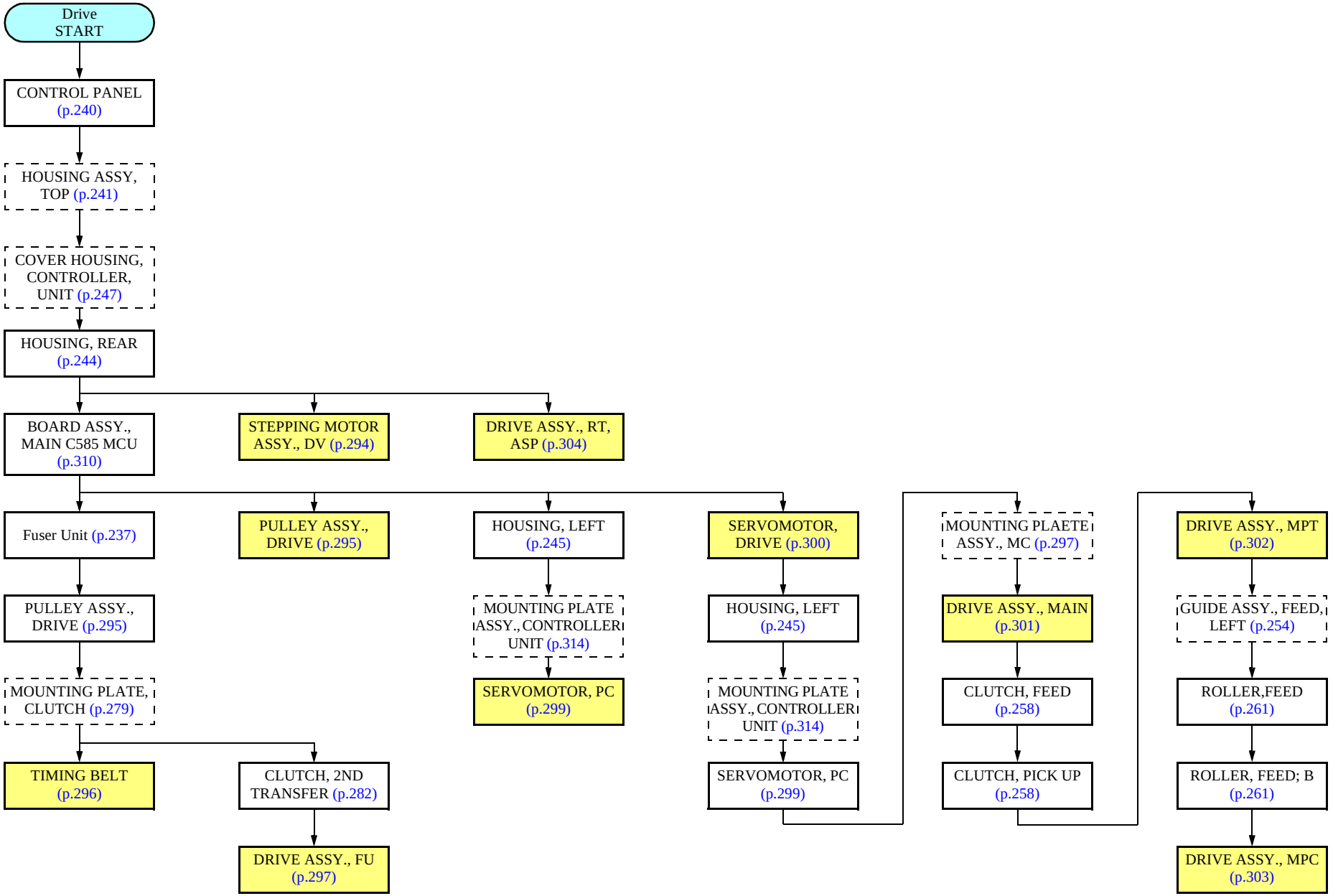


Figure 4-15. Drive Disassembling Flowchart

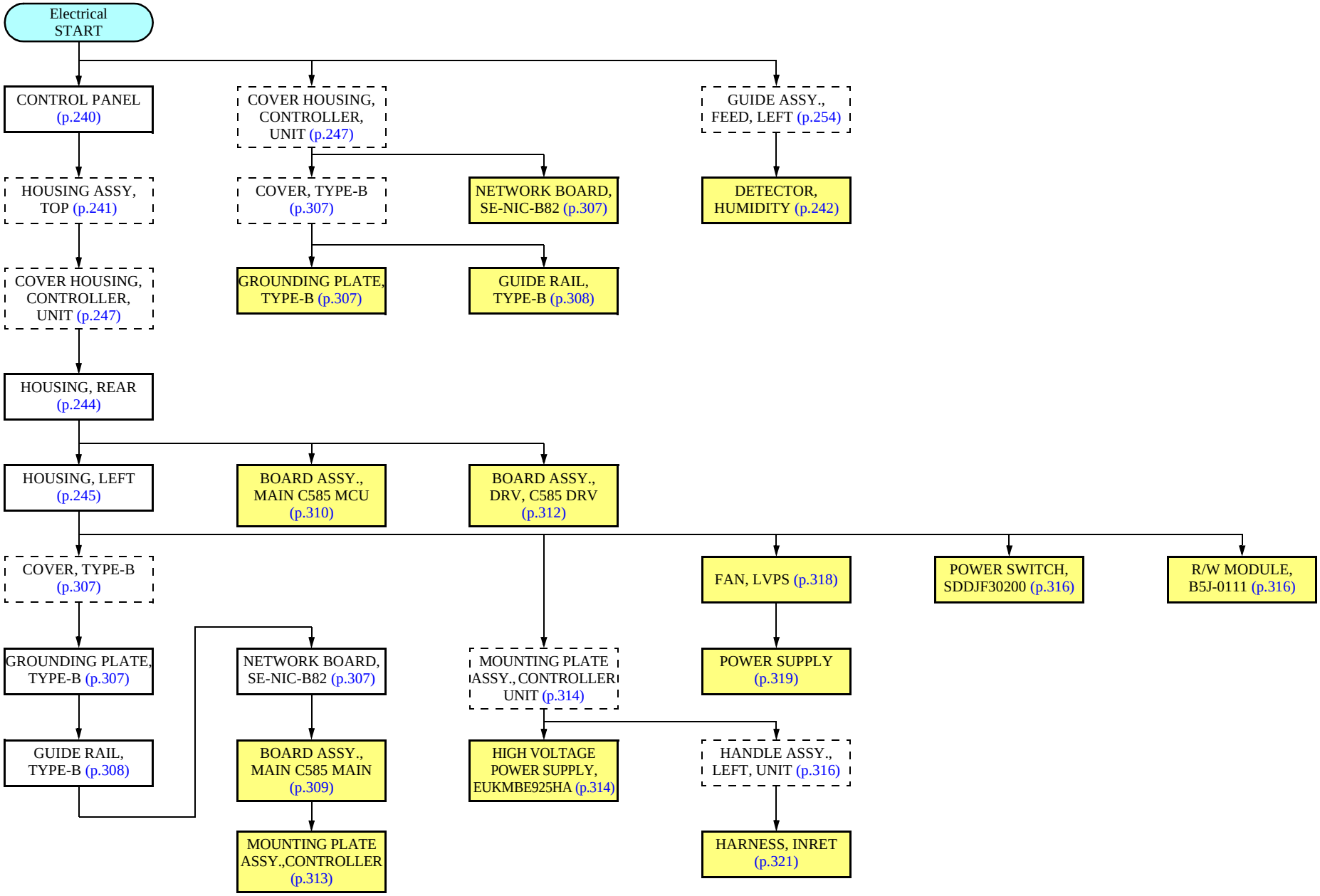


Figure 4-16. Electrical Disassembling Flowchart

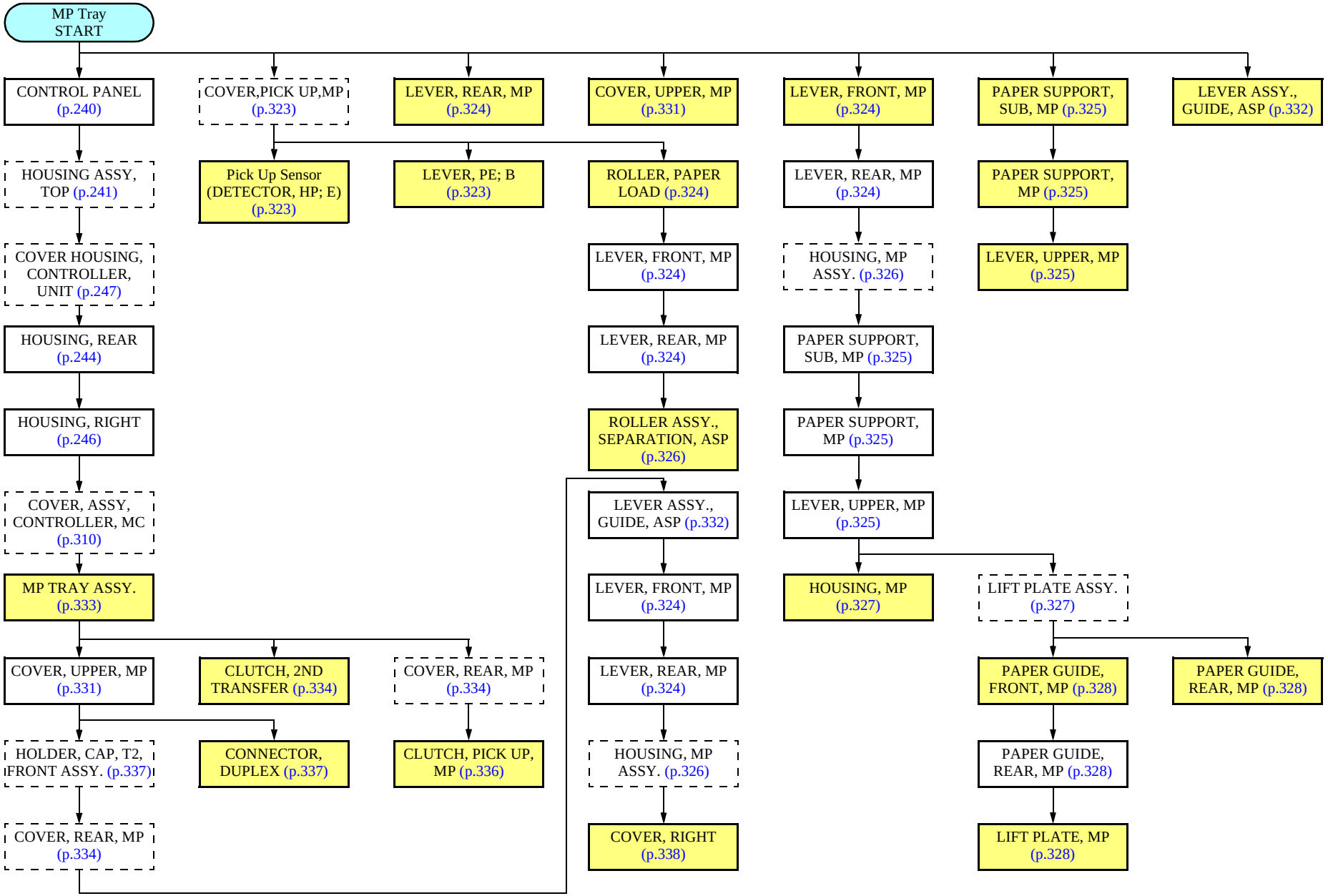


Figure 4-17. MP Tray Disassembling Flowchart

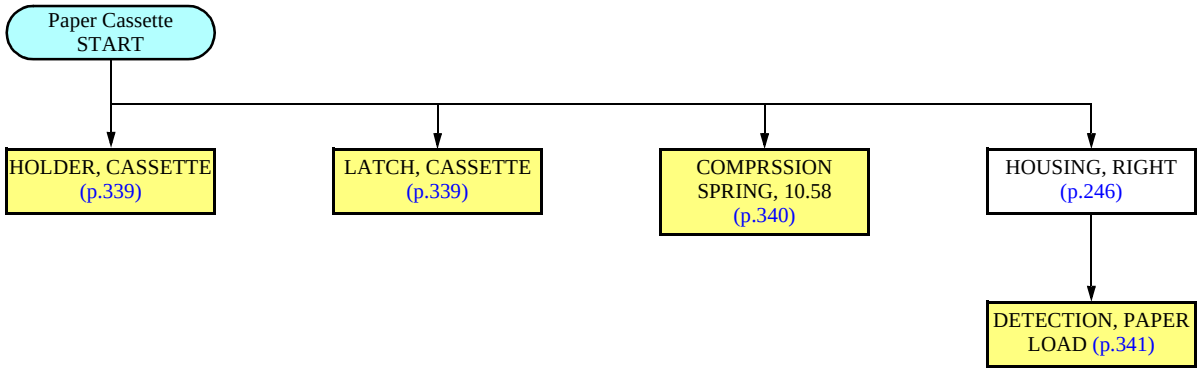


Figure 4-18. Paper Cassette Disassembling Flowchart

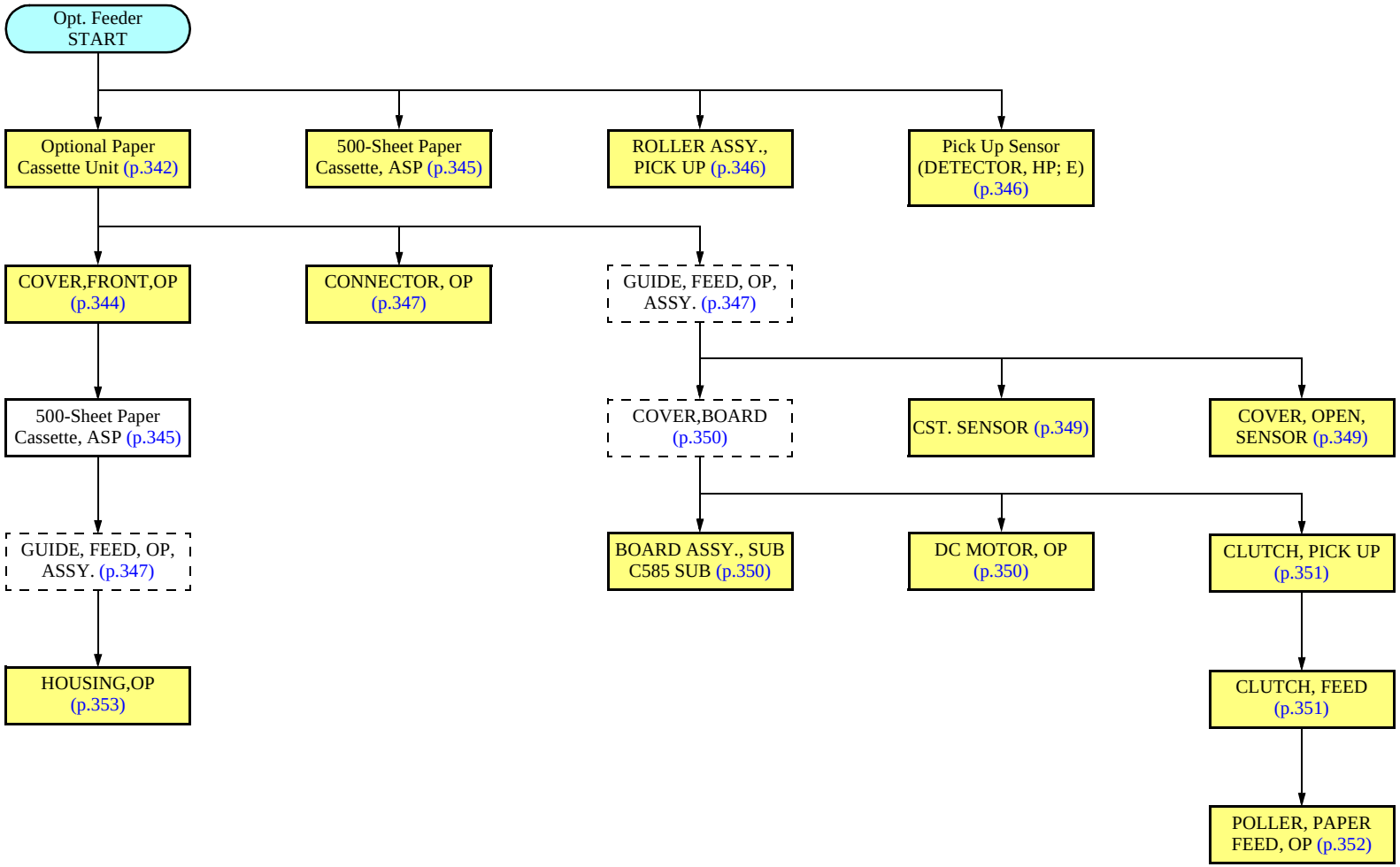


Figure 4-19. Opt. Feeder Disassembling Flowchart

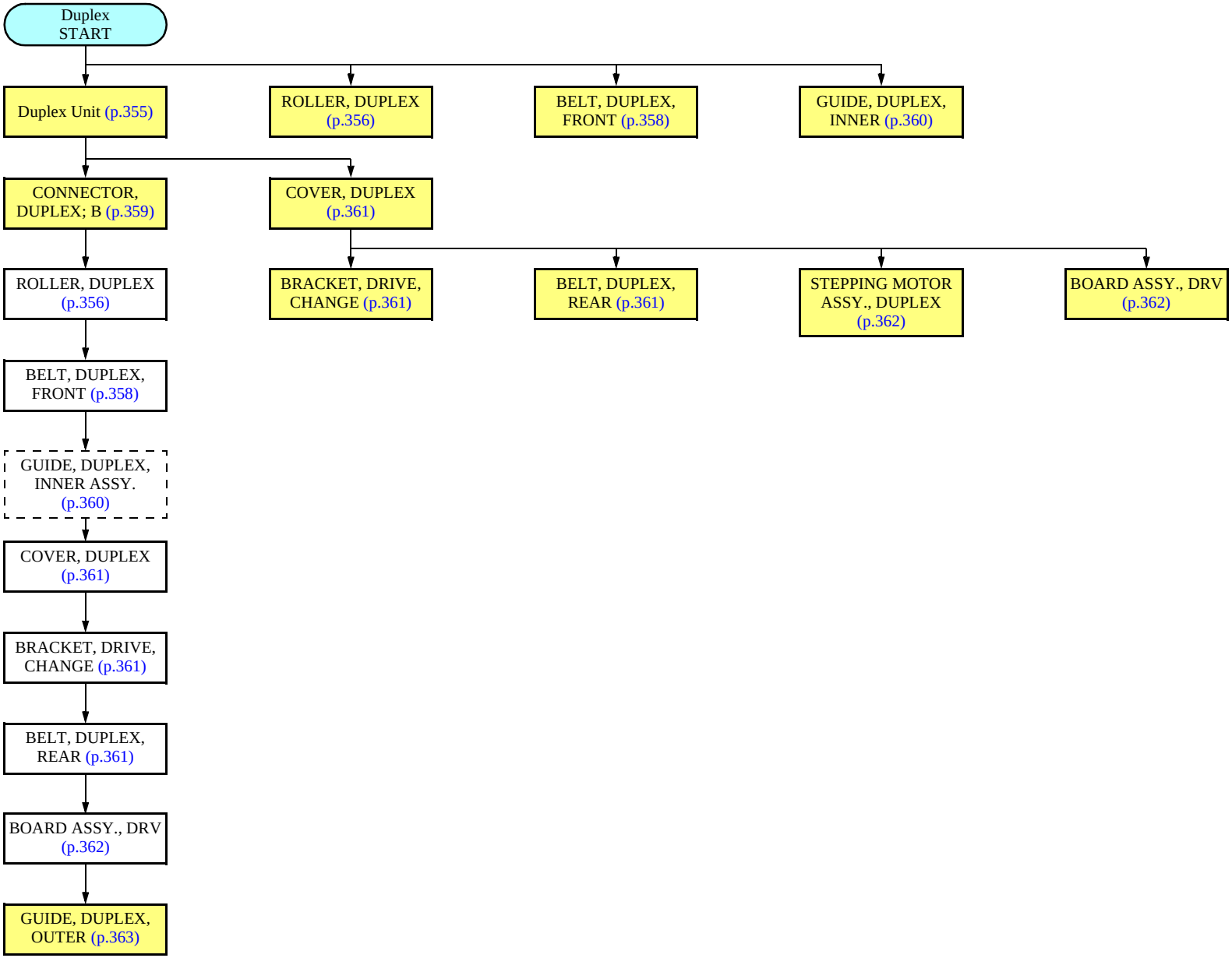


Figure 4-20. Duplex Disassembling Flowchart

4.5 Disassembling/Assembling the Main Unit

4.5.1 Consumables

4.5.1.1 Waste Toner Collector

REMOVAL

D1. Open the COVER, FRONT.

D2. Grip and pull the handle of the Waste toner collector towards you, and lift up to remove the Waste toner collector.

D3. Remove the CAP and cover the hole of the Waste toner collector with the CAP.

CAUTION

When placing the Waste toner collector that is removed, lay it on a flat surface with the capped side facing up to prevent the toner content from spilling out.

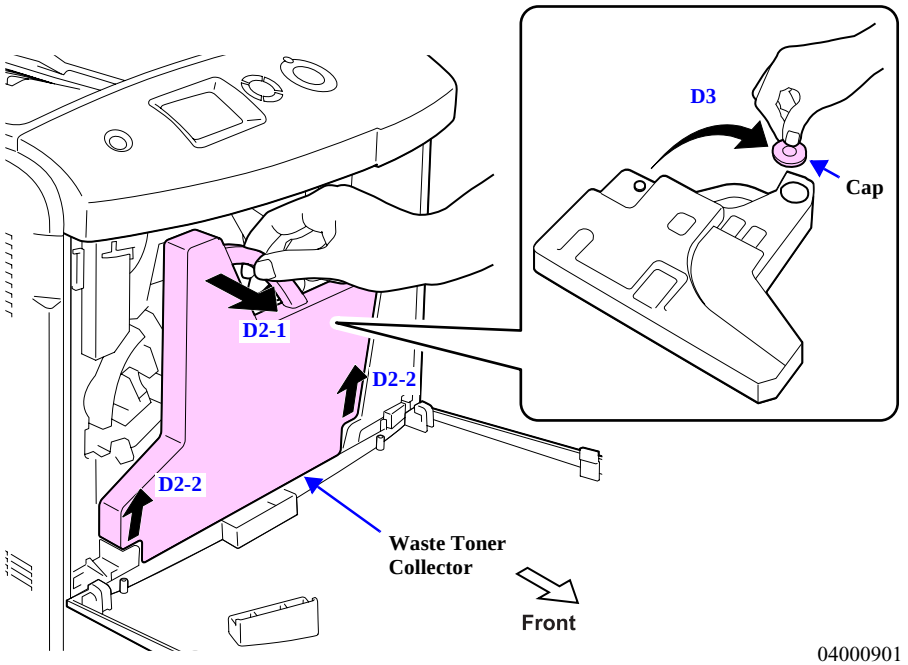


Figure 4-21. Removal of Waste Toner Collector

REINSTALLATION

A1. Remove the CAP and attach to the salient position.

A2. Insert the concave portions on the left and right bottom of the Waste toner collector into the groove of the COVER, INNER with its topside put on the tab.

A3. Close the COVER, FRONT.

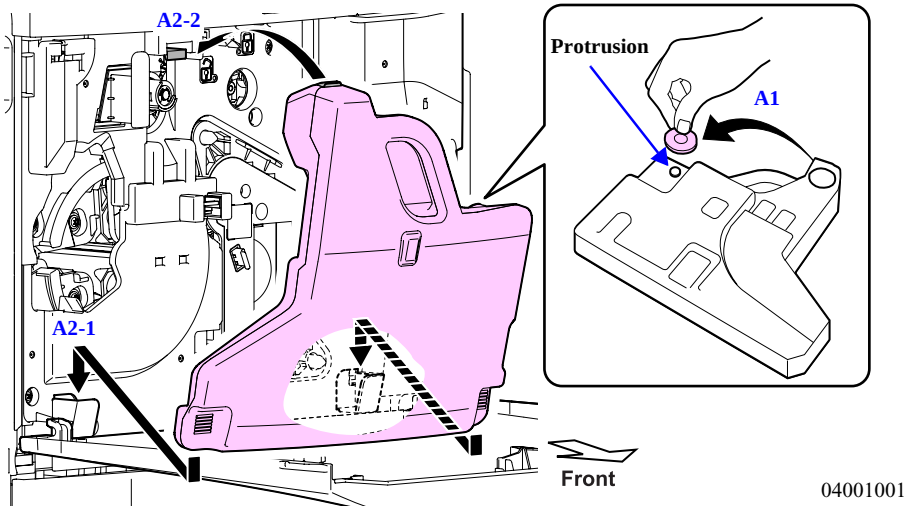


Figure 4-22. Reinstallation of Waste Toner Collector

4.5.1.2 Photoconductor Unit

REMOVAL

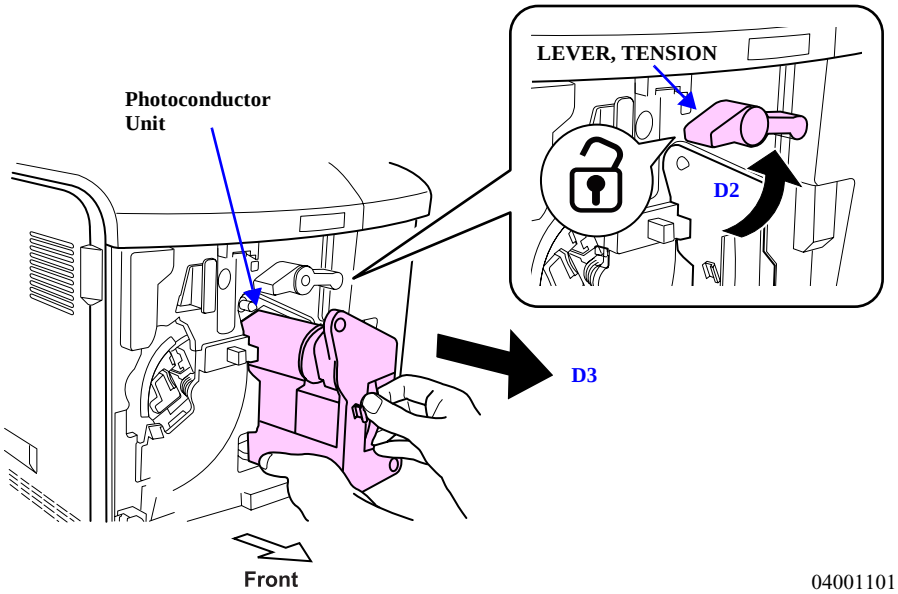
D1. Remove the Waste toner collector. *(p.234)*

D2. Turn the LEVER, TENSION to unlock position.

D3. Draw out the Photoconductor unit from the printer.

CAUTION

- **Once the Photoconductor unit is removed, place the unit horizontally in any place where it will not be subjected to direct sunlight.**
- **Do not touch the drum surface of the Photoconductor unit.**



04001101

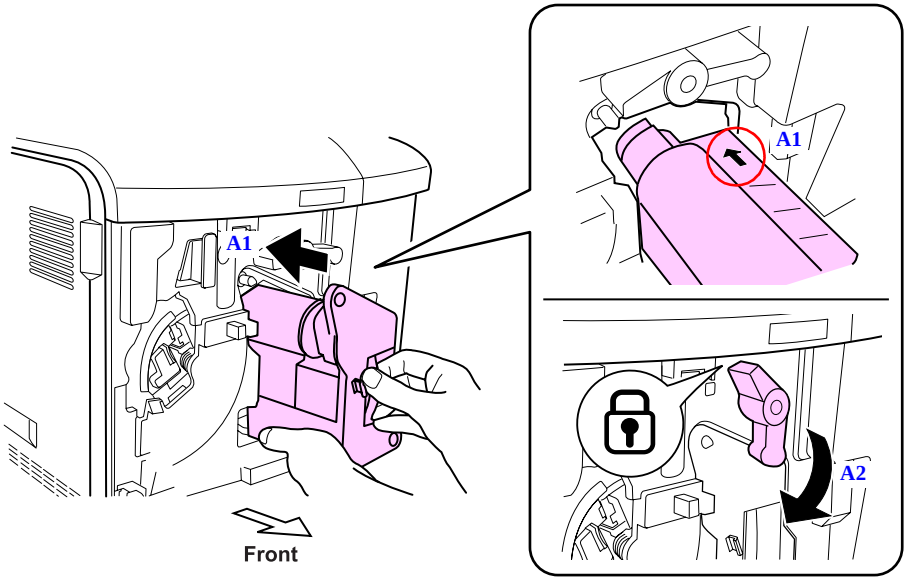
Figure 4-23. Removal of Photoconductor Unit

REINSTALLATION

A1. Insert the Photoconductor unit to the printer with its arrow facing upward.

A2. Return the LEVER, TENSION to lock position.

A3. Attach the Waste toner collector. *(p.234)*



04001201

Figure 4-24. Reinstallation of Photoconductor Unit

4.5.1.3 Filter

REMOVAL

D1. Open the COVER, FRONT.

D2. Draw out the Filter from the printer.

REINSTALLATION

A1. Insert the Filter to the printer.

A2. Close the COVER, FRONT.

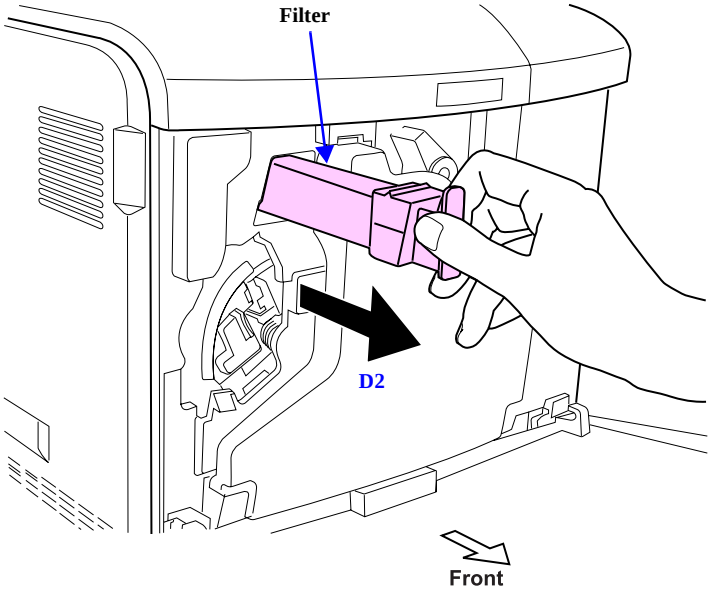


Figure 4-25. Removal of Filter

4.5.1.4 Fuser Unit

REMOVAL

CAUTION

The Fuser unit remains at hazardous temperature for a certain period of time even after turning off the power. Be sure to wait until the parts cool down to a safe level, and then start working on the printer.

D1. Open the MP TRAY ASSY.

D2. Open the COVER ASSY., FU.

D3. Turn the lock levers at the left and right of the Fuser unit to unlock position, and lift the Fuser unit to remove it.

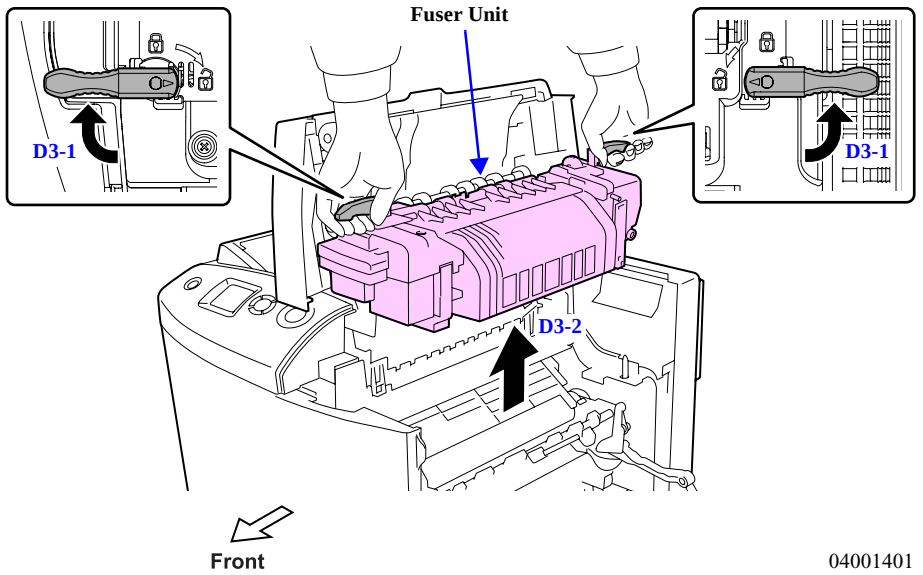


Figure 4-26. Removal of Fuser Unit

REINSTALLATION

A1. Match the 2 positioning holes of the Fuser unit with the fusing drawer connector, and attach the Fuser unit.

A2. Turn the lock levers on both sides of the Fuser unit to the locked position.

A3. Close the COVER ASSY., FU.

A4. Close the MP TRAY ASSY.

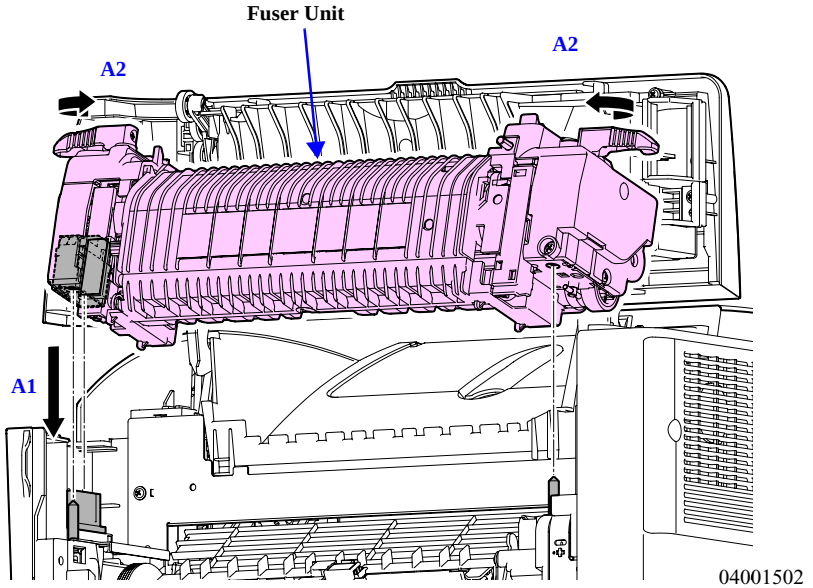


Figure 4-27. Reinstallation of Fuser Unit

4.5.1.5 Toner Cartridge C (M, Y, K)

REMOVAL

D1. Plug in the power cable and turn the printer's power switch on.

D2. Execute "Change Toner C (M, Y, K)" from the "Reset Menu".

D3. Make sure that "Replace Toner C (M, Y, K)" is displayed on the panel, and open the COVER, FRONT.

CAUTION

When handling the Toner cartridges, beware of the following instructions.

- **Do not touch the rollers.**
- **Once removed, place the Toner cartridges horizontally in a safe place.**

D4. Press the knob to open the COVER ASSY., DV, C, and draw out the Toner cartridge C.

WARNING

If you need to disassemble other parts after the Toner cartridge is removed, be sure to turn the printer's power off and unplug the power cable in advance.

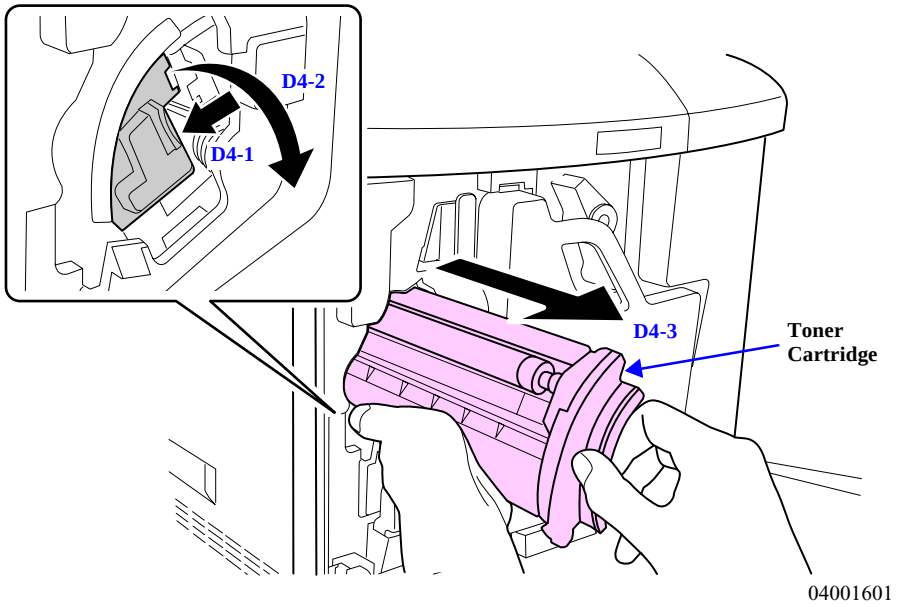


Figure 4-28. Removal of Toner Cartridge

REINSTALLATION

A1. Insert the Toner cartridge C (M, Y, K) and close the Cover Assy., DV, C (M, Y, K).

CAUTION

The structure of the Toner cartridges and the COVER Assy., DVs is designed to allow to insert the cartridge into the COVER Assy., DV only when their colors (C, M, Y, or K) are matched. If it is hard to insert the cartridge, do not try to insert it forcedly. Verify the colors of both the cartridge and the COVER Assy., DV.

A2. Close the COVER, FRONT.

A3. Turn the printer off and unplug the power cable.

4.5.2 Housing

4.5.2.1 CONTROL PANEL

1. Open the COVER, FRONT.
2. Open the MP TRAY ASSY.
3. Open the COVER ASSY., FU.
4. Remove the 2 screws that secure the CONTROL PANEL.
   - C.P.POLYWAVEA,3x6,F/Zn: 1
   - C.B.S-TITE SCREW,3x12,F/Zn: 1

CAUTION

When performing the following work, do not pull the CONTROL PANEL from the MAIN UNIT too hard as they are connected to each other with a harness.

5. While releasing the 2 tabs of the COVER, INNER, tilt the CONTROL PANEL toward front to release the 2 ribs on the front of the CONTROL PANEL, and remove the CONTROL PANEL.
6. Disconnect the connector and the grounding wire terminal from the CONTROL PANEL to remove the CONTROL PANEL.

REASSEMBLY

Route the harness of the CONTROL PANEL through the 2 notches as shown in Figure 4-29.

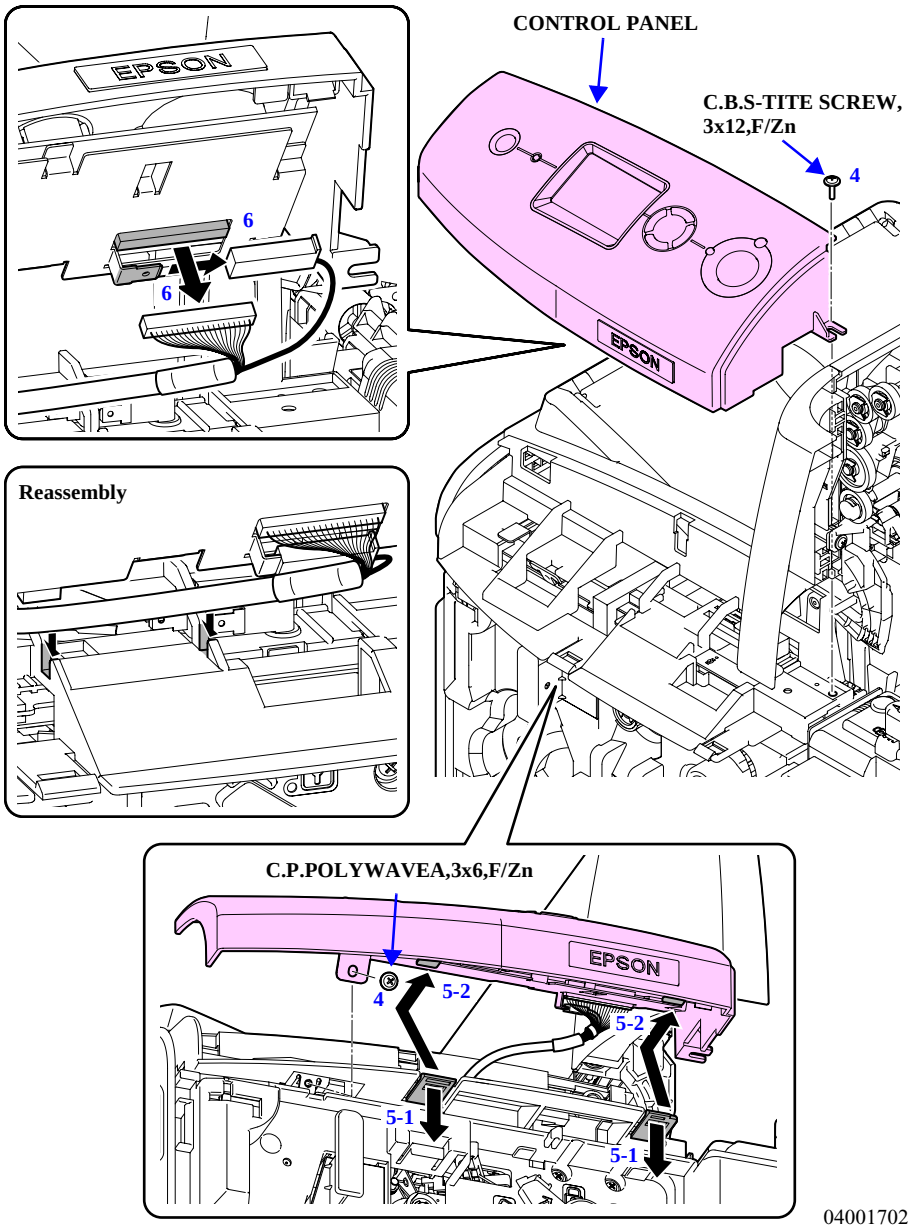


Figure 4-29. Removal of CONTROL PANEL

4.5.2.2 TRAY, PAPER, EJECT/HOUSING, TOP

☐ TRAY, PAPER, EJECT

1. Open the TRAY, PAPER, EJECT.
2. Remove the TRAY, PAPER, EJECT from the HOUSING, TOP by unloosing the two dowels on both sides of the TRAY, PAPER, EJECT.

☐ HOUSING, TOP

1). Remove the CONTROL PANEL. *(p.240)*

2). Remove the screw that secures the HOUSING ASSY., TOP.

- C.B.S-TITE SCREW,3x12,F/Zn: 1

3). Lift up the right side of the HOUSING ASSY., TOP to release the dowel, and then slide the HOUSING ASSY., TOP toward left to release from the tab of the frame.

4). Slide the left rear side of the HOUSING ASSY., TOP toward upper left to release the tab located at the rear.

CAUTION

When performing the following work, keep the HOUSING ASSY., TOP clear of the TRANSFER UNIT, Assy., ASP to avoid scratches.

5). With the COVER ASSY., FU half-closed, remove the HOUSING ASSY., TOP dragging out the harness of the CONTROL PANEL.

6). Remove the TRAY, PAPER, EJECT. *(p.241)*

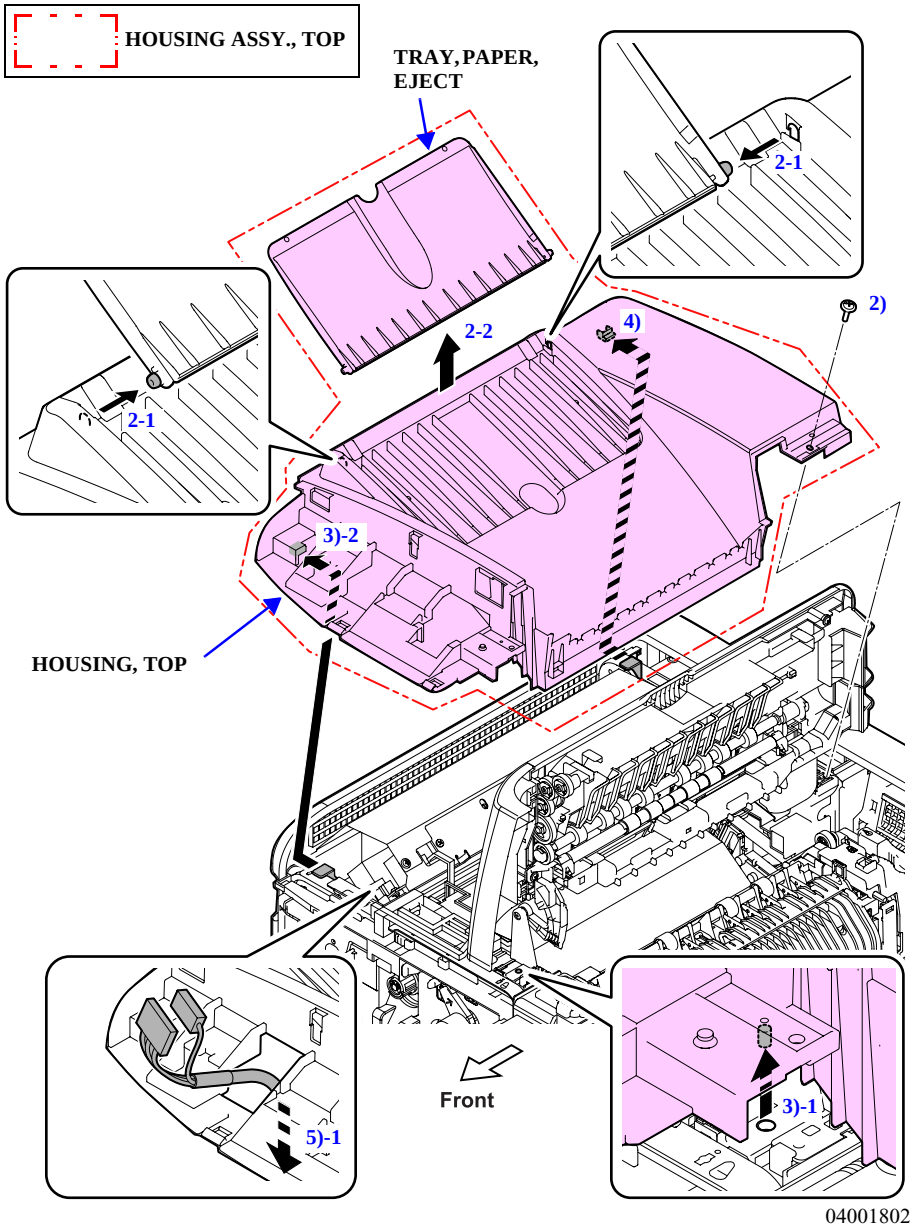


Figure 4-30. Removal of HOUSING, TOP/TRAY, PAPER, EJECT

4.5.2.3 COVER ASSY., FU/COVER, TOP; B

☐ **COVER ASSY., FU**

1. Remove the HOUSING ASSY., TOP. *(p.241)*
2. Disconnect the connector (White 3 pin) from the relay connector.
3. Remove the screw that secures the grounding wire of the COVER ASSY., FU.
   - C.P.POLYWAVEA,3x6,F/Zn: 1
4. Loosen the screw fastening COVER ASSY., FU to the main unit.
   - Securing Screw: 1
5. Bow the topside of the DETECTOR, V-164-3A5, ASSY. toward front to remove the dowel of the COVER ASSY., FU, then remove the COVER ASSY., FU.

REASSEMBLY

Match the 2 dowels of the COVER ASSY., FU with the positioning holes.

☐ **COVER, TOP; B**

1). Open the COVER ASSY., FU.

2). Remove the screw that secures the COVER, TOP; B.
   - C.C.P-TITE SCREW,3x10,F/Zn: 1

3). Move sections indicated in Figure 4-31 inward to remove the 2 dowels, and remove COVER, TOP; B from the COVER ASSY., FU.

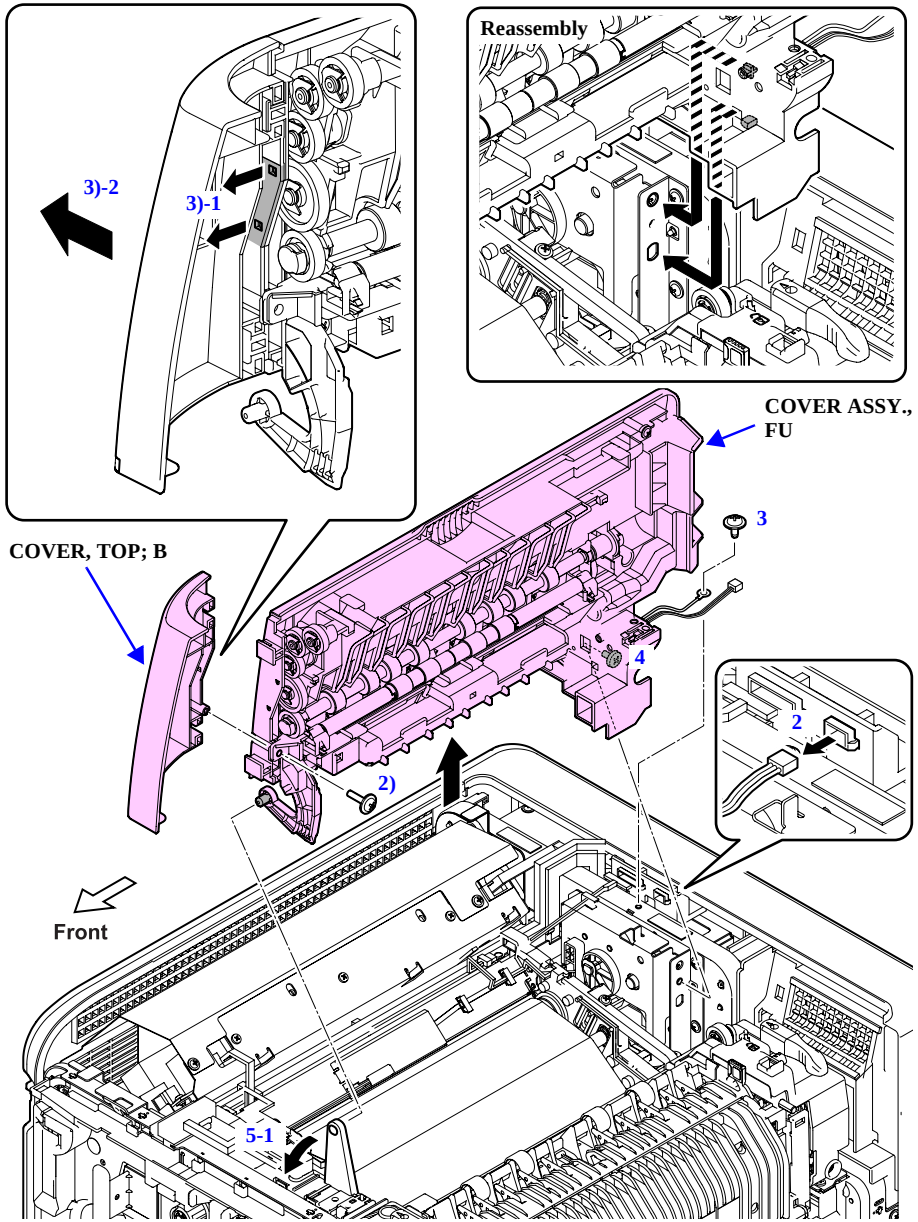


Figure 4-31. Removal of COVER ASSY.,FU/COVER,TOP;B

4.5.2.4 Fuser Cover Open Sensor (DETECTOR, V-164-3A5)

1. Remove the HOUSING, TOP. *(p.241)*
2. Disconnect the 2 connectors from the Fuser cover open sensor.
3. Pinch the 2 tabs and draw out the Fuser cover open sensor.

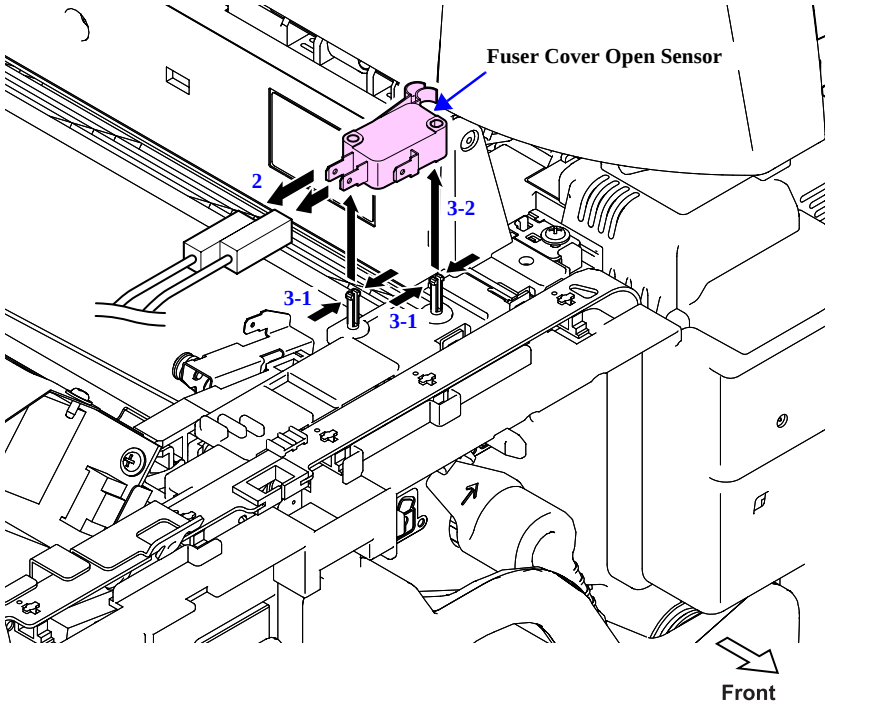


Figure 4-32. Removal of Fuser Cover Open Sensor

4.5.2.5 HOUSING, REAR

1. Remove the HOUSING ASSY., TOP. *(p.241)*
2. Remove the COVER, HOUSING, CONTROLLER, UNIT. *(p.247)*
3. Remove the 3 screws that secure the HOUSING, REAR to remove the HOUSING, REAR.
   - C.C.S-TITE SCREW,3x8,F/Uc: 3

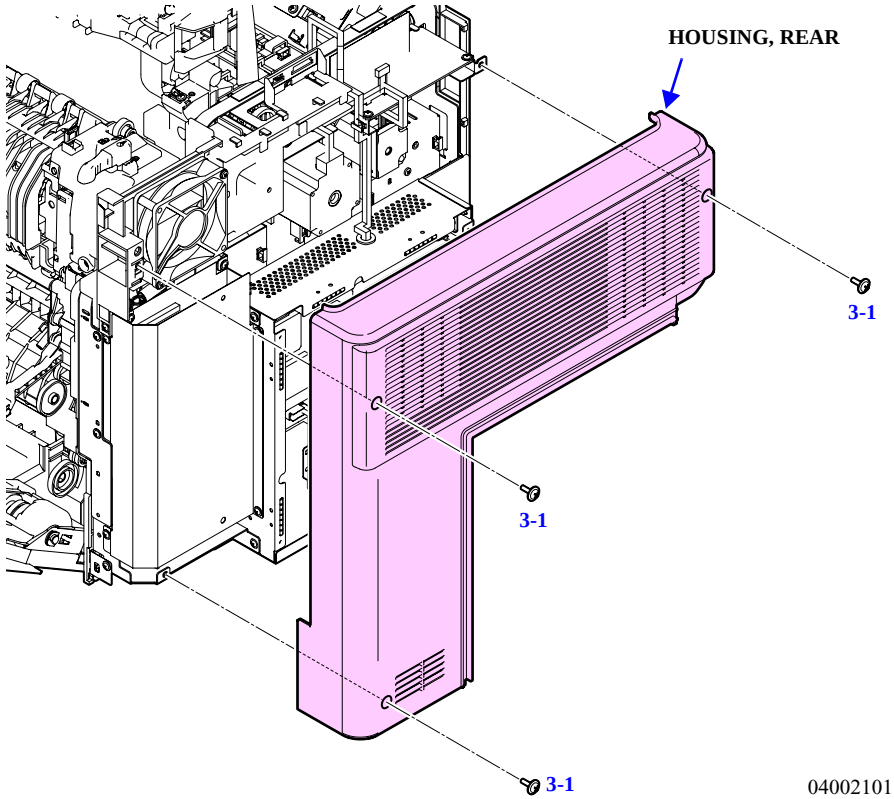


Figure 4-33. Removal of HOUSING, REAR

4.5.2.6 HOUSING, LEFT

1. Remove the HOUSING, REAR. *(p.244)*
2. Remove the 3 screws that secure the HOUSING, LEFT.
   - C.C.S-TITE SCREW,3x8,F/Uc: 3
3. While letting loose the HOUSING, LEFT from the AC inlet at the rear of the main unit, release the tab that secures anteroinferior side of the HOUSING, LEFT to remove the HOUSING, LEFT.

REASSEMBLY

Match the 2 dowels of the HOUSING, LEFT with the positioning holes.

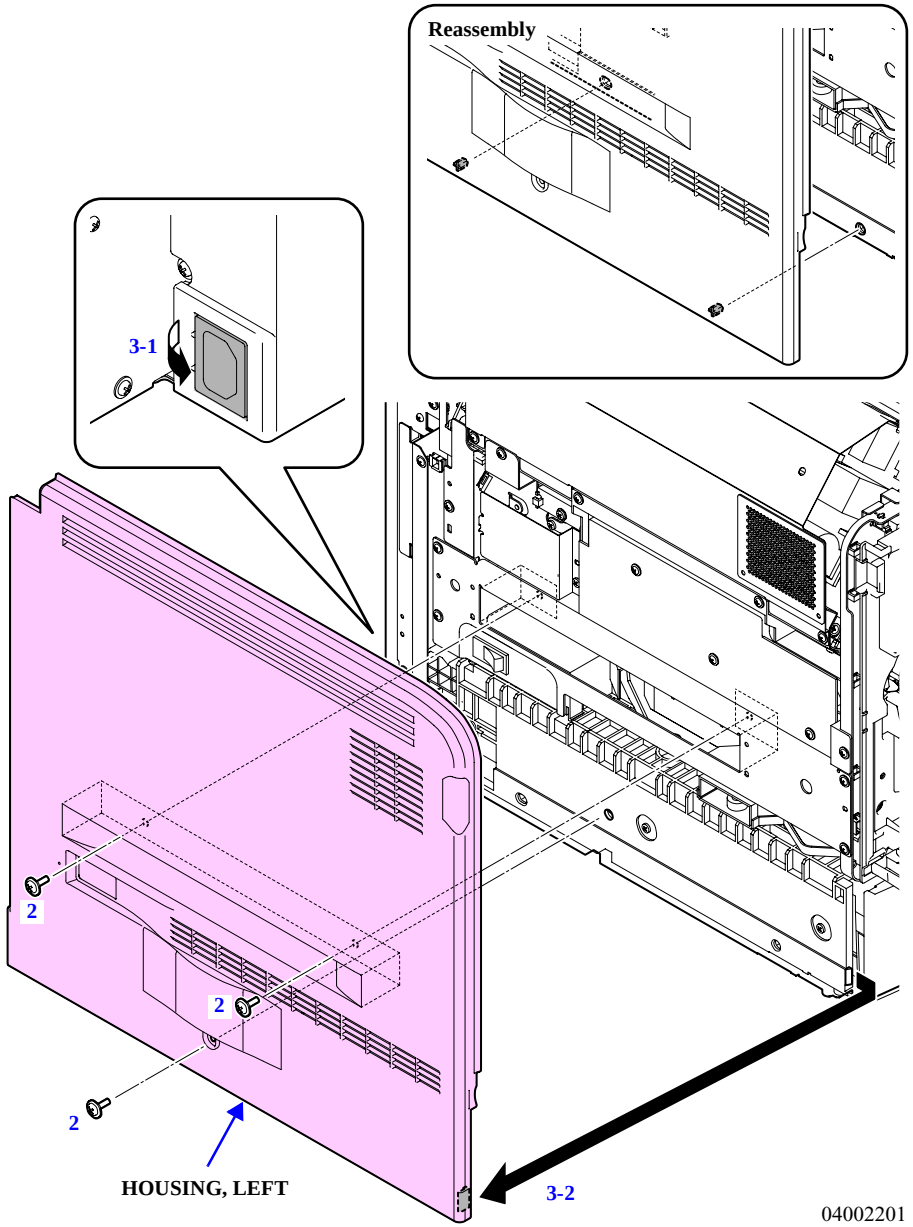


Figure 4-34. Removal of HOUSING, LEFT

4.5.2.7 HOUSING, RIGHT

1. Draw out the Standard lower paper cassette.
2. Open the MP TRAY ASSY.
3. Remove the screw that secures the HOUSING, RIGHT.
   - C.C.P-TITE SCREW,3x8,F/Uc: 1
4. Slide the HOUSING, RIGHT toward right to release the 3 ribs, and remove the HOUSING, RIGHT.

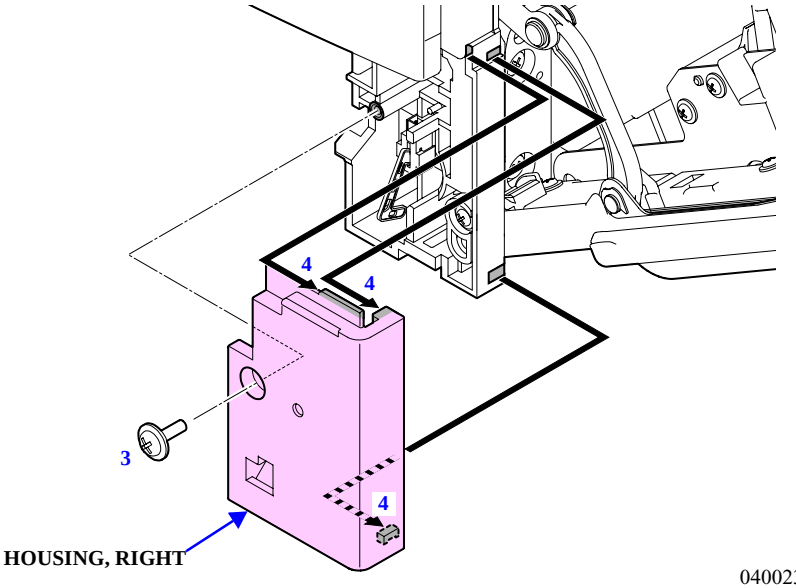


Figure 4-35. Removal of HOUSING, RIGHT

4.5.2.8 COVER, FRONT

1. Open the COVER, FRONT.
2. Remove the STOPPER, SHAFT, COVER that secures the SHAFT, COVER.
3. Remove the SHAFT, COVER that secures the COVER, FRONT.

Align the holes on COVER, FRONT with the holes of the frame before inserting the SHAFT, COVER to joint the COVER, FRONT to the frame.

4. Release the lower left tab of the COVER, FRONT first and lower right tab next from the COVER, INNER, and remove the COVER, FRONT.

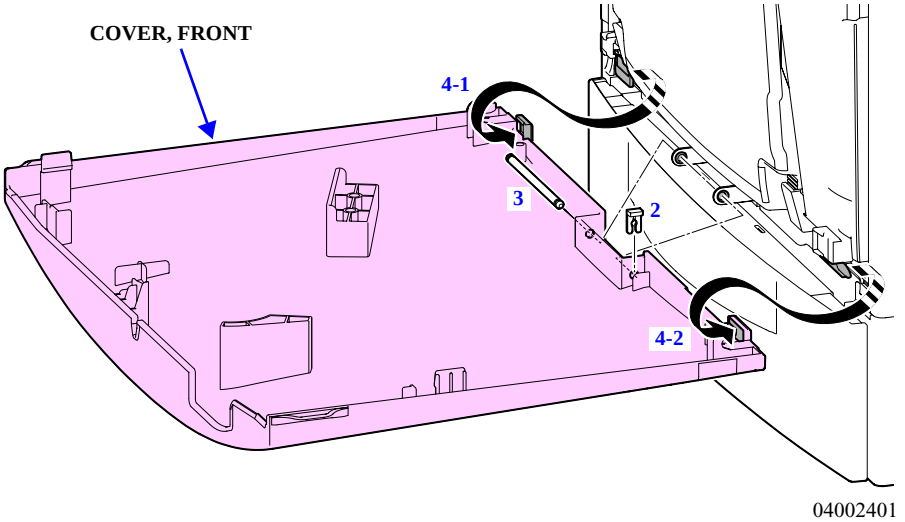


Figure 4-36. Removal of COVER, FRONT

4.5.2.9 HOUSING, CONTROLLER

1. Remove the 4 screws that secure the COVER HOUSING, CONTROLLER, UNIT to remove the COVER HOUSING, CONTROLLER, UNIT.
   - C.C.S-TITE SCREW,3x8,F/Uc: 4
2. Looking from the angle shown in the drawing, stretch the center of the right edge of the HOUSING, CONTROLLER, slide the COVER ASSY., CONTROLLER toward right until it is lifted onto the rib of the HOUSING, CONTROLLER, and release the two tabs on the left side of the COVER ASSY., CONTROLLER.
3. Looking from the angle shown in the drawing, lift up the left side of the COVER ASSY., CONTROLLER to release the 2 tabs at the right side, and remove the HOUSING, CONTROLLER.

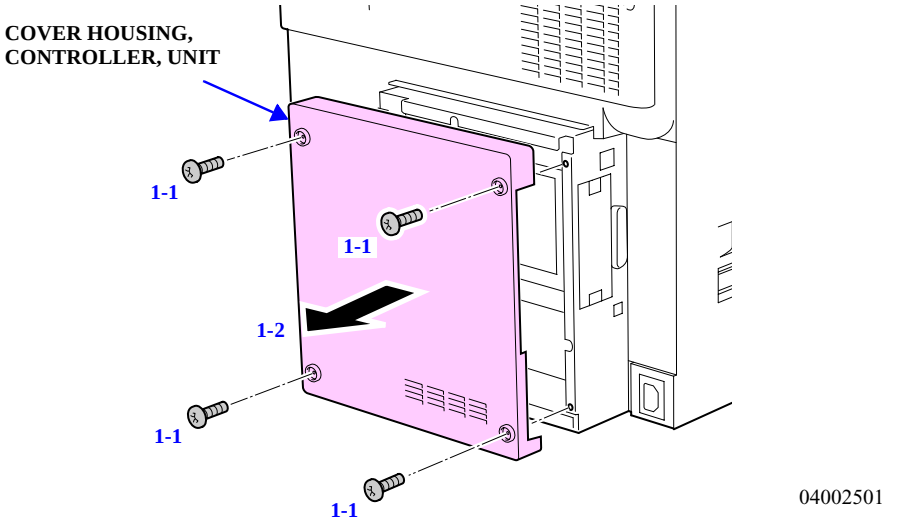


Figure 4-37. Removal of COVER HOUSING, CONTROLLER,UNIT

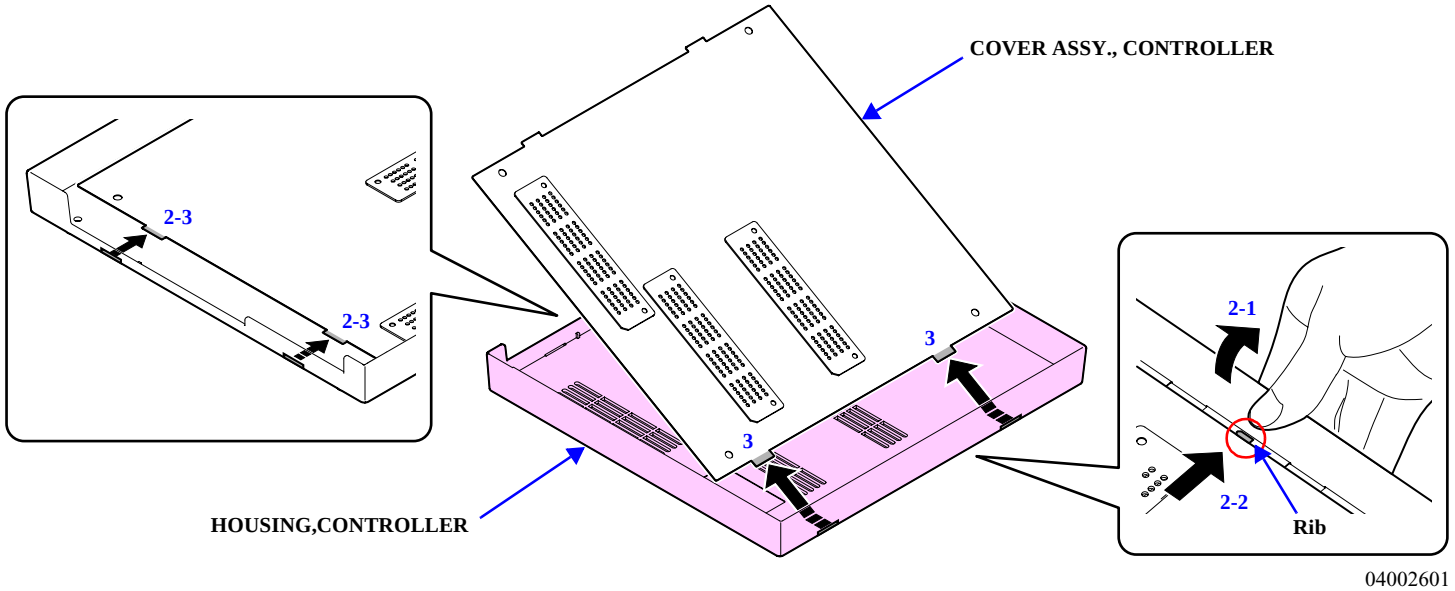


Figure 4-38. Removal of HOUSING, CONTROLLER

4.5.2.10 LEVER, TENSION/COVER, INNER

☐ LEVER, TENSION

1. Open the COVER, FRONT.
2. Remove the screw that secures the LEVER, TENSION to remove the LEVER, TENSION.
   - ■ C.C.S-TITE SCREW,3x6,F/Zn: 1

Insert the LEVER, TENSION into the TRANSFER UNIT, Assy., ASP with attention to their shape of cross section, then secure the LEVER, TENSION with a screw preventing the lever from rotating.

☐ COVER, INNER

1). Remove the Photoconductor unit. *(p.235)*

2). Remove the Filter. *(p.236)*

3). Remove the HOUSING ASSY., TOP. *(p.241)*

4). Remove the COVER, FRONT. *(p.246)*

5). Remove the LEVER, TENSION. *(p.248)*

6). Remove the 6 screws that secure the COVER, INNER.
   - ■ C.C.S-TITE SCREW,3X8,F/Uc: 6

7). Pull the topside of the HOUSING, LEFT toward left and pull the downside of the COVER, INNER toward you to release the 2 tabs. And then slide the COVER, INNER toward upside releasing the other 2 tabs to remove the COVER, INNER.

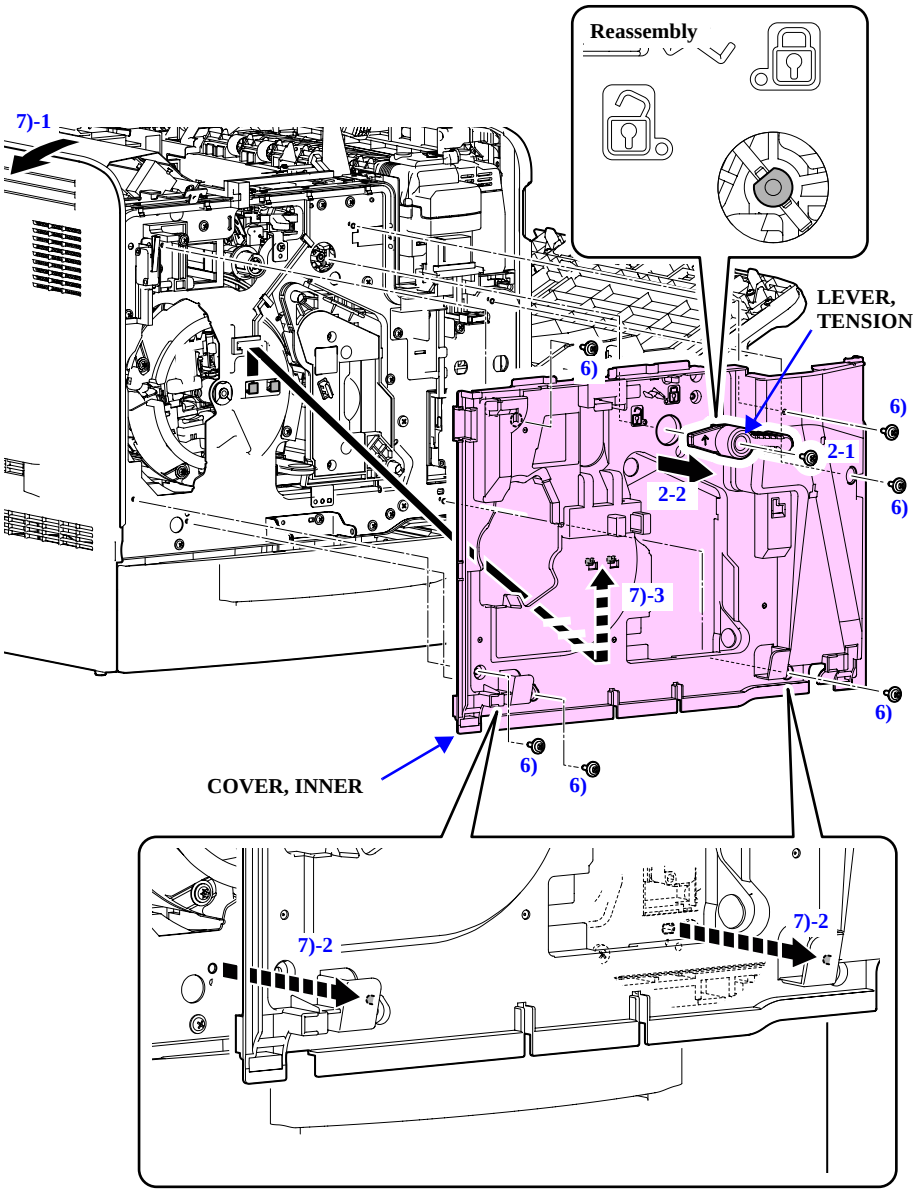


Figure 4-39. Removal of LEVER, TENSION/COVER, INNER

4.5.2.11 Right Cover Open Sensor (DETECTOR,V-162-3A5)/ Front Cover Open Sensor (DETECTOR,V-162-3A5)

☐ **Right Cover Open Sensor**

1. Remove the COVER, INNER. *(p.248)*
2. Remove the screw that secures the Right cover open sensor to remove the Right cover open sensor.
   - ■ C.C.P-TITE SCREW,3x14,F/Zn: 1

REASSEMBLY

1. Match the positioning hole of the Right cover open sensor with the dowel.

3. Disconnect the 2 connectors from the Right cover open sensor.

☐ **Front Cover Open Sensor**

1). Remove the COVER, INNER. *(p.248)*

2). Remove the screw that secures the steel plate, which fixes the sensor, to dismount the steel plate.
   - ■ C.P.POLYWAVEA,3x6,F/Zn: 1

REASSEMBLY

1). Match the positioning holes of the steel plate that fixes the sensor with the dowels.

3). Remove the screw that secures the Front cover open sensor to remove the Front cover open sensor.
   - ■ C.C.P-TITE SCREW,3x14,F/Zn: 1

REASSEMBLY

2). Match the positioning hole of the Front cover open sensor with the dowel.

4). Disconnect the 2 connectors from the Front cover open sensor.

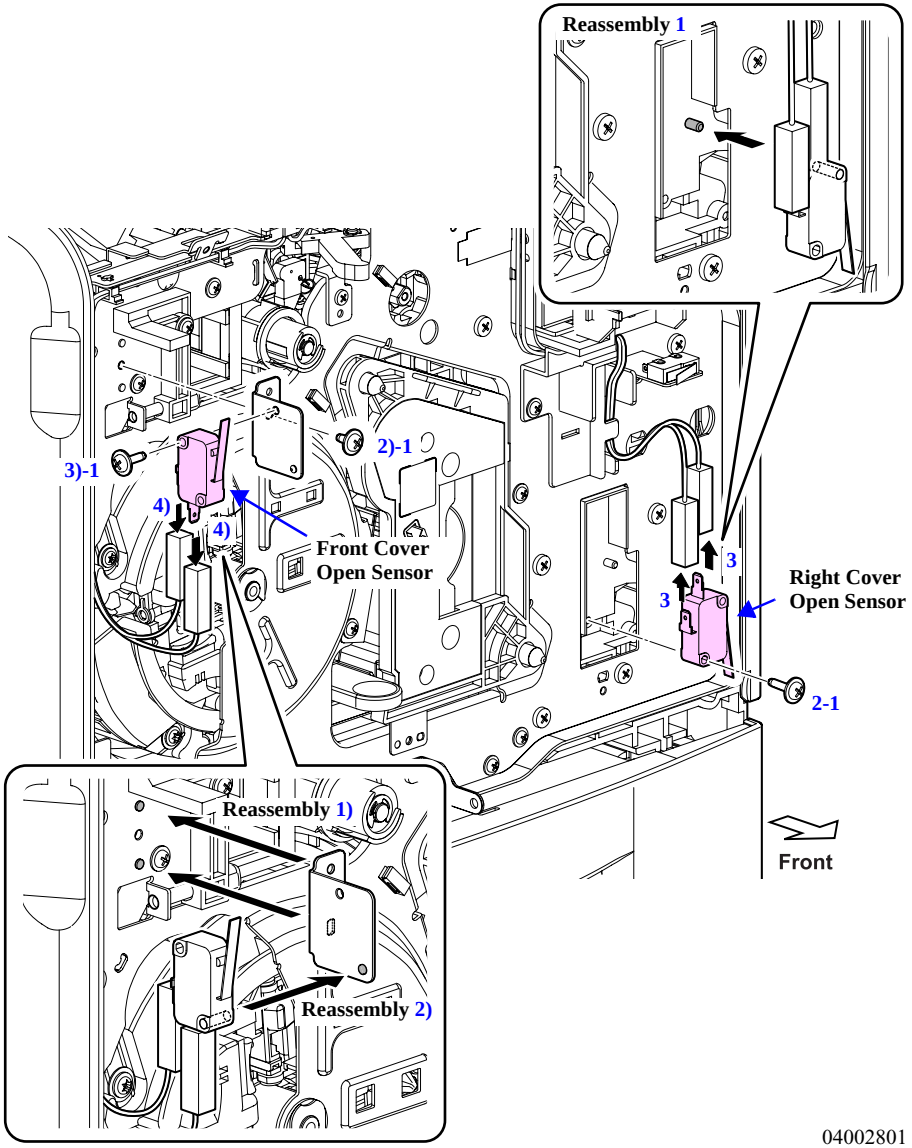


Figure 4-40. Removal of Right Cover Open Sensor/Front Cover Open Sensor

4.5.2.12 LINK, RELEASE, FRONT/LINK, RELEASE, REAR

CAUTION

When performing the following work, beware of the instructions below.

- **Always sustain the MP TRAY ASSY. while at work especially when the Optional paper cassette unit is installed, to prevent the MP TRAY ASSY. from falling off.**
- **Look out for the RELEASE ASSY. as it may pop up owing to the nip pressure of the Fuser unit.**

☐ **LINK, RELEASE, FRONT**

1. Open the MP TRAY ASSY.
2. Remove the E-RING, 4, L/NA and draw out the PIN, RELEASE that connects RELEASE ASSY., FRONT and the MP TRAY ASSY.
3. Remove the E-RING, 4, L/NA and draw out the PIN, RELEASE, FRONT that connects the LINK, RELEASE, FRONT and the Lever, RELEASE, FRONT, then remove the LINK, RELEASE, FRONT.

☐ **LINK, RELEASE, REAR**

1). Open the MP TRAY ASSY.

2). Remove the E-RING, 4, L/NA and draw out the PIN, RELEASE that connects the RELEASE ASSY., REAR and the MP TRAY ASSY.

3). Remove the E-RING, 4, L/NA and draw out the PIN, RELEASE, REAR that connects the LINK, RELEASE, REAR and the LEVER, RELEASE, REAR, then remove the LINK, RELESE, REAR.

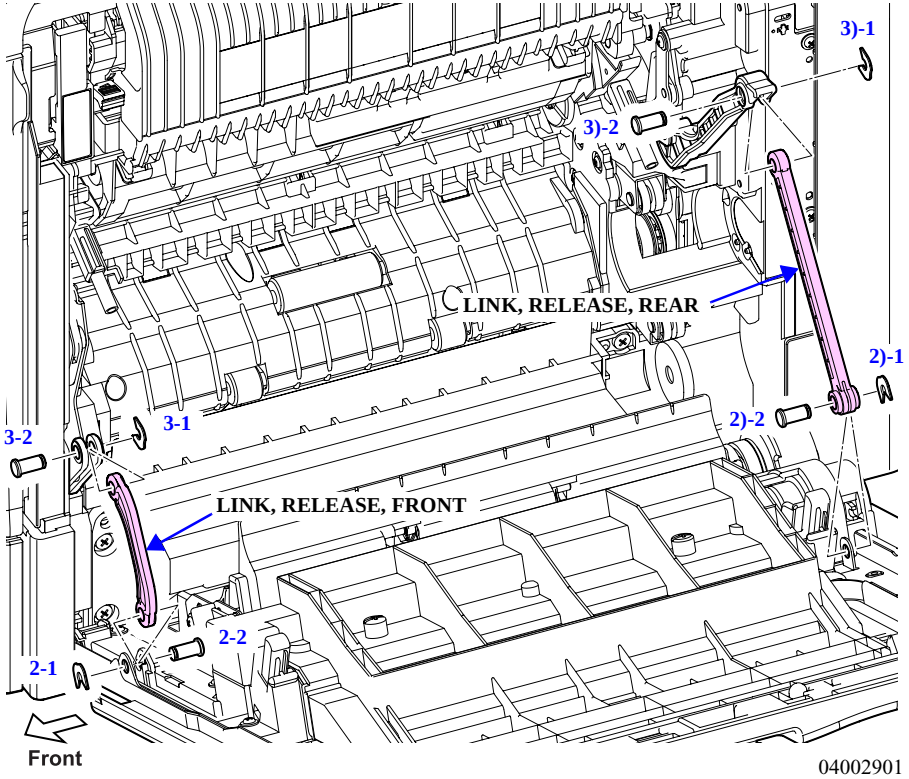


Figure 4-41. Removal of LINK, RELEASE, FRONT/LINK, RELEASE, REAR

4.5.2.13 LEVER, RELEASE, REAR

1. Open the MP TRAY ASSY.
2. Open the COVER ASSY., FU.
3. Unlock the lock lever on the back side of the Fuser unit.
4. Remove the E-RING, 4, L/NA and draw out the PIN, RELEASE that connects the LEVER, RELEASE, REAR and the LINK, RELEASE, REAR.
5. Remove the 2 screws that secure the RELEASE ASSY., REAR, ASSY. to remove the RELEASE ASSY., REAR, ASSY.
   - C.C.P-TITE SCREW,3x8,F/Zn: 2

REASSEMBLY

1. Fold the LEVER, RELEASE, REAR and insert CAM, RELEASE, REAR to the rear of the nipping part of the Fuser unit.
2. Match the 2 attachment shafts of the MOUNTING PLATE ASSY., RELEASE, REAR with the positioning holes.

6. Remove the LEVER, RELEASE, REAR from the attachment shaft of the RELEASE ASSY., REAR, ASSY.

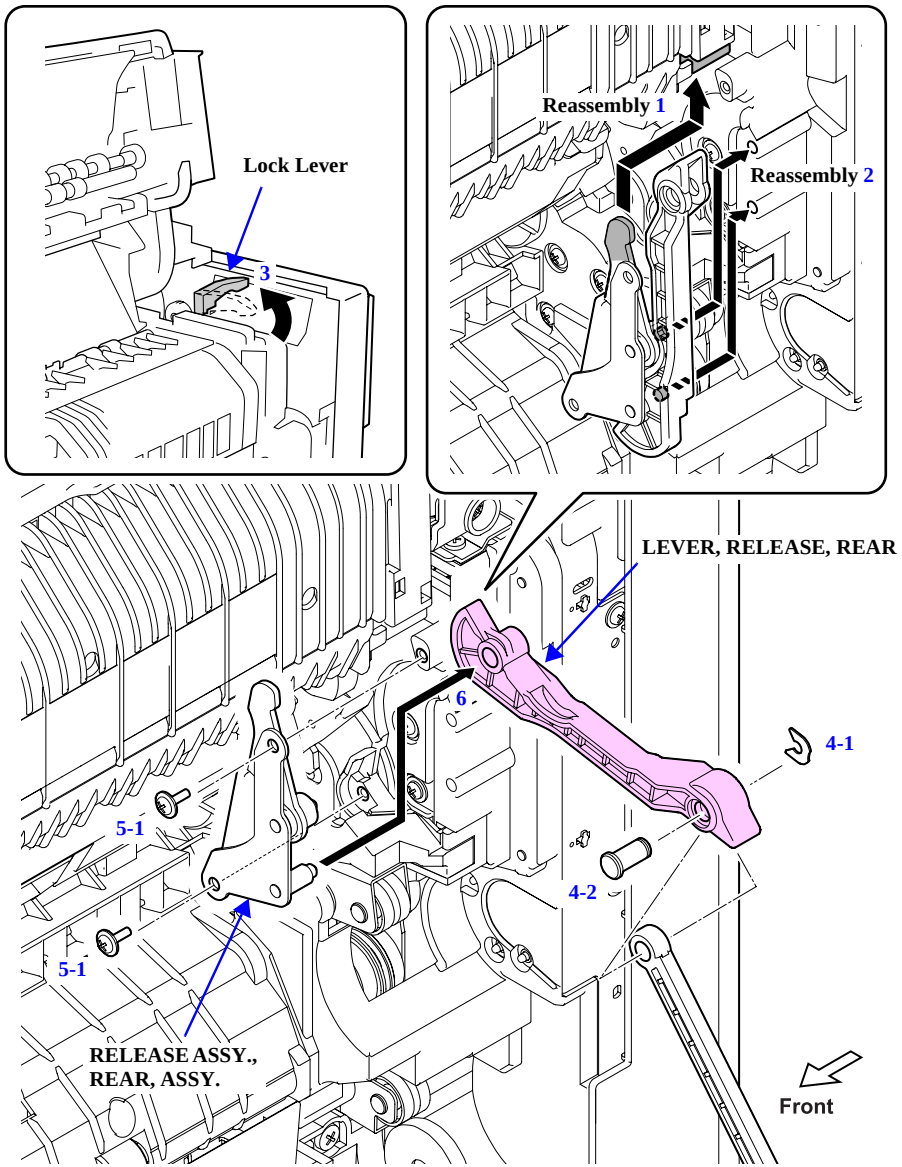


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Figure 4-42. Removal of LEVER, RELEASE, REAR

4.5.2.14 LEVER, RELEASE, FRONT

1. Remove the COVER, INNER. *(p.248)*
2. Open the COVER ASSY., FU.
3. Unlock the lock lever on the front side of the Fuser unit.
4. Remove the GUIDE ASSY., FEED, LEFT. *(p.254)*
5. Remove the E-RING, 4, L/NA and draw out the PIN, RELEASE that connects the LEVER, RELEASE, FRONT and the LINK, RELEASE, FRONT.
6. Remove the 3 screws that secure the RELEASE ASSY., FRONT, ASSY. to remove the RELEASE ASSY., FRONT, ASSY.
   - C.C.P-TITE SCREW,3x8,F/Zn: 2
   - C.P.POLYWAVEA,3x6,F/Zn: 1

REASSEMBLY

1. Fold the LEVER, RELEASE, FRONT, and insert CAM, RELEASE, FRONT to the rear of the nipping part of the Fuser unit.
2. Match the 2 attachment shafts of the MOUNTUING PLATE ASSY., RELEASE, FRONT with the positioning holes.

7. Remove the LEVER, RELEASE, FRONT from the attachment shaft of the RELEASE ASSY., FRONT, ASSY.

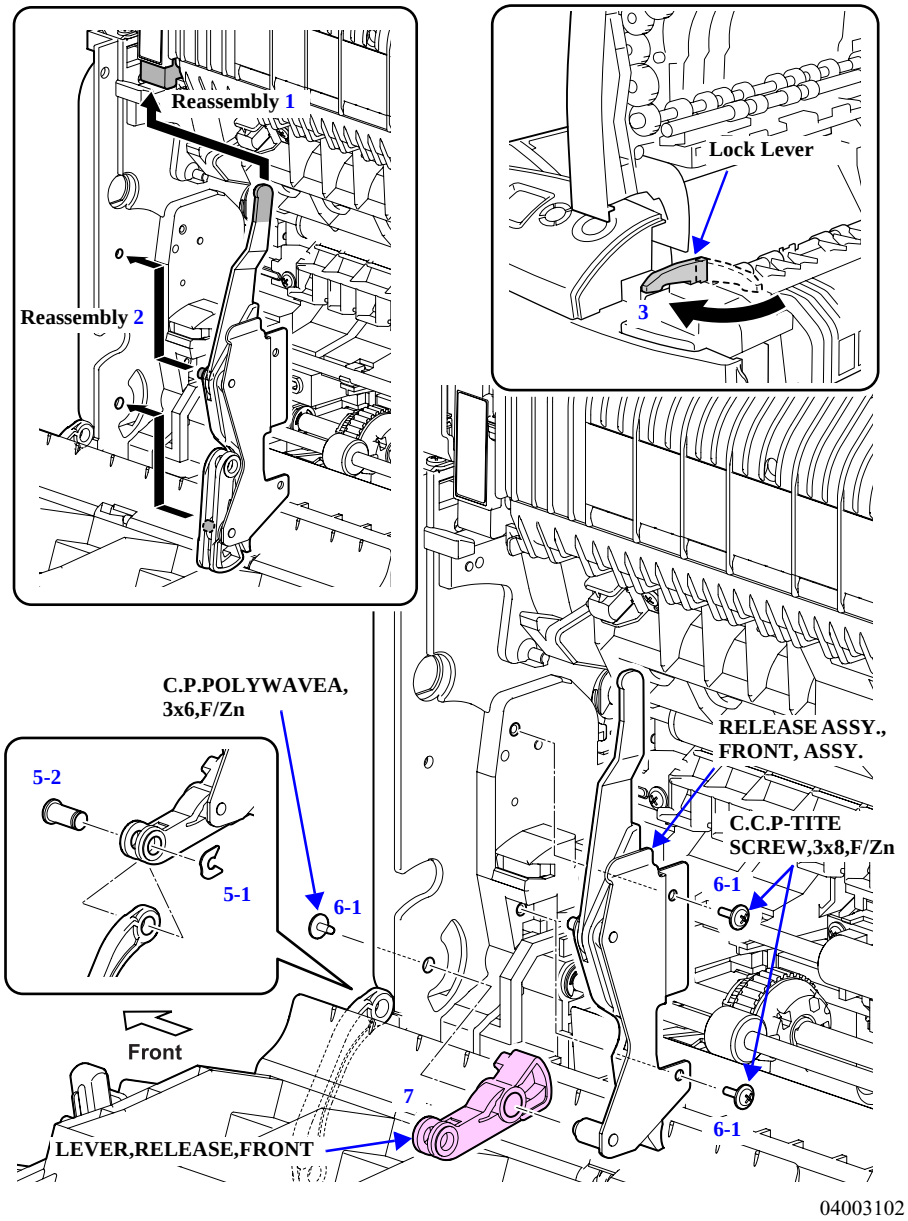

Figure 4-43. Removal of LEVER, RELEASE, FRONT

4.5.3 Paper Transport

4.5.3.1 ROLLER ASSY., PICK UP

1. Draw out the Standard lower paper cassette.

CAUTION

Do not remove the two ROLLER ASSY., PICK UPs all at once when performing the following procedure, otherwise the SHAFT, ROLLER, PICK UP does not rotate when installing them. Make sure to replace the ROLLER ASSY., PICK UP one by one.

2. Rotate the SHAFT, ROLLER, PICK UP, stretch the ROLLER ASSY., PICK UP, and remove the ROLLER ASSY., PICK UP.

REASSEMBLY

Rotate the SHAFT, ROLLER, PICK UP until its cut surface faces downward, and install the ROLLER ASSY., PICK UP by inserting its two dowels into the holes. The ROLLER ASSY., PICK UP cannot be installed inversely as each dowel has different diameter.

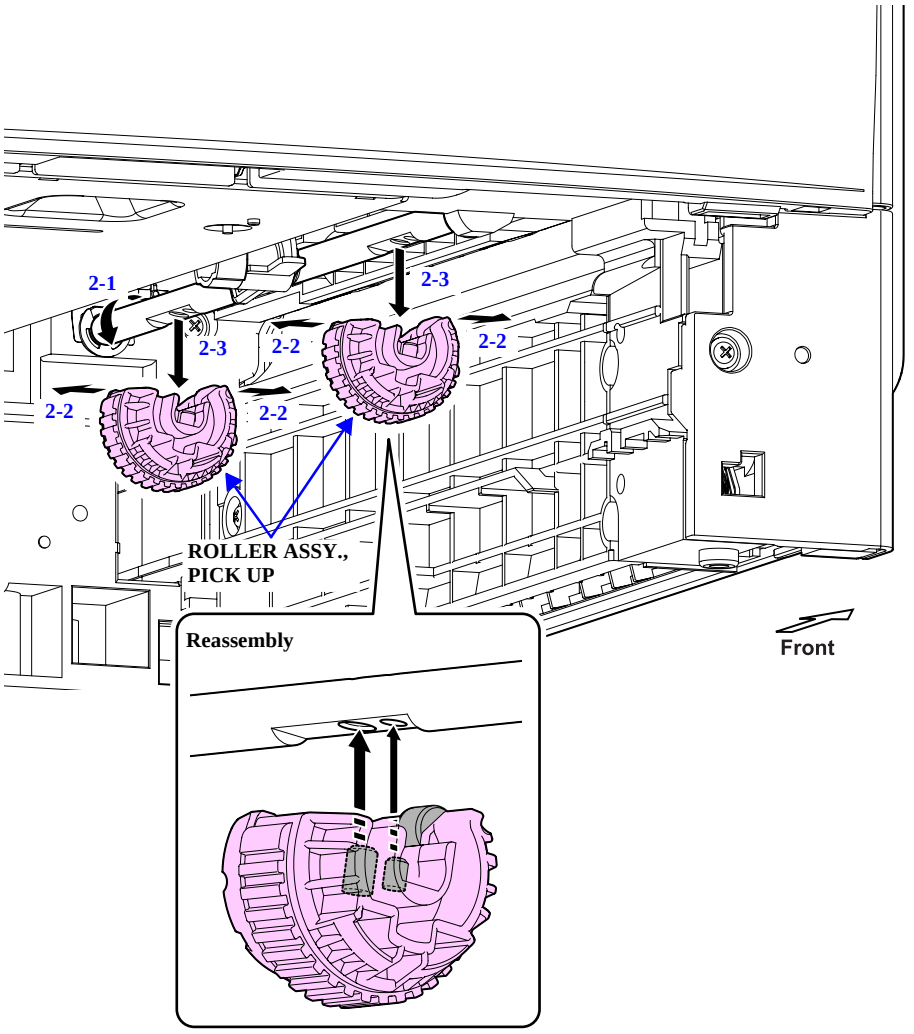

Figure 4-44. Removal of ROLLER ASSY., PICK UP

4.5.3.2 DETECTOR ASSY., GATE

1. Open the MP TRAY ASSY.

CAUTION

1. **When performing the following work, pay attention not to damage the ROLLER, GATE.**

2. Remove the screw that secures the GUIDE, GATE, RIGHT, ASSY. to remove the GUIDE, GATE, RIGHT, ASSY.
   - C.C.P-TITE SCREW,3x8,F/Zn: 1

REASSEMBLY

1. **Insert the 2 attachment shafts of the GUIDE, GATE, RIGHT, ASSY. into the positioning holes.**
2. **Match the notch of the GUIDE, GATE, RIGHT, ASSY. with the salient position.**

3. Remove the 3 screws that secure the GUIDE, ASSY., FEED, LEFT.
   - C.C.P-TITE SCREW,3x8,F/Zn: 3

CAUTION

2. **When performing the following work, take care not to bend the SHEET, CASSETTE.**

4. Slide the upper side of the GUIDE, ASSY., FEED, LEFT toward lower right to release the 4 tabs, and remove the GUIDE, ASSY., FEED, LEFT.

REASSEMBLY

3. **Insert the downside of the GUIDE, ASSY., FEED, LEFT into the clearance between the ROLLER, FEED and the SHEET, CASSETTE.**

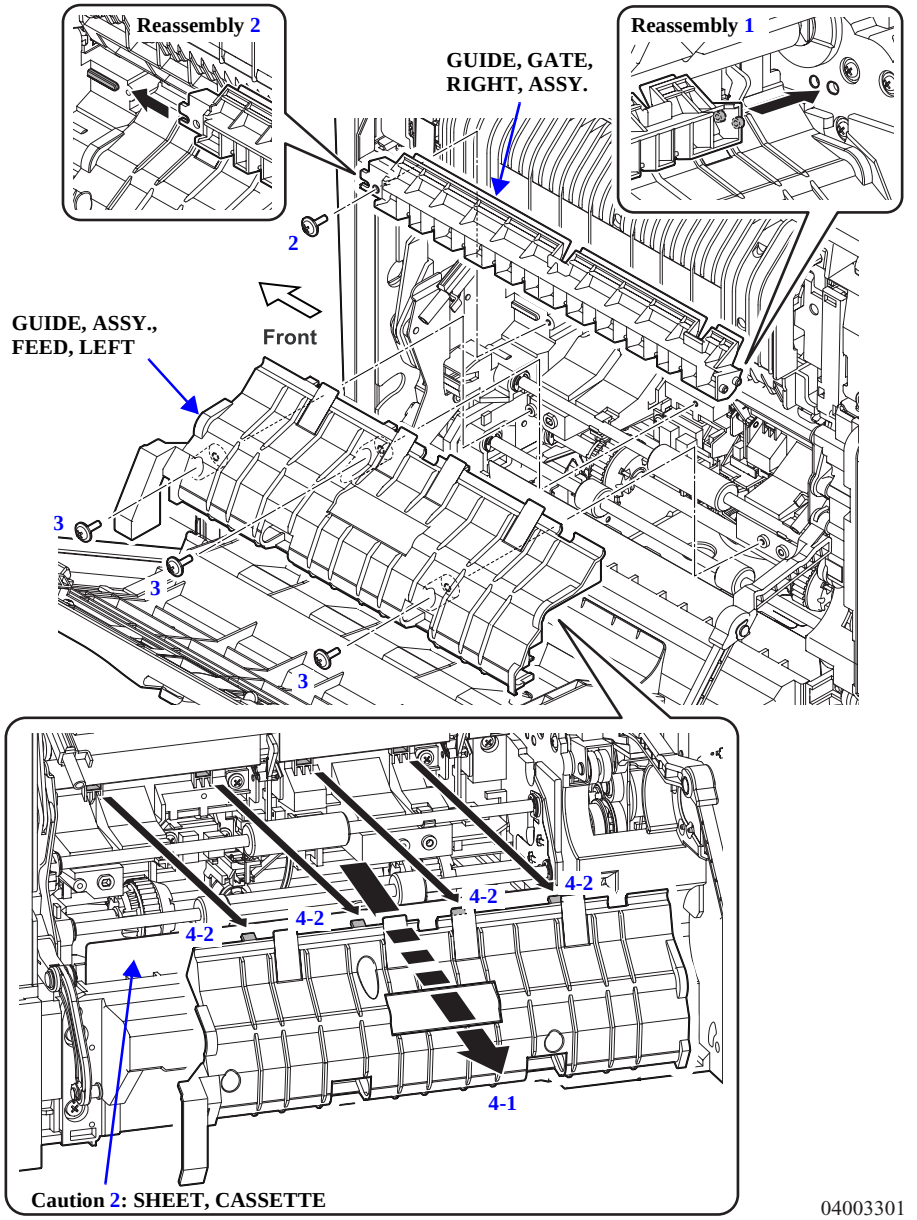

Figure 4-45. Removal of DETECTOR ASSY., GATE 1

5. Remove the two screws that secure the two DETECTOR ASSY., GATEs (one screw each) to remove the DETETOR ASSY., GATEs.

   - C.C.P-TITE SCREW,3x8,F/Zn: 1

REASSEMBLY

4. Hitch the harness connected to the front of the DETECTOR ASSY., GATE onto the tab as shown in Figure 4-46.

5. Match the 4 dowels of the two DETECTOR GATEs with the positioning holes (two dowels for each of the DETECTOR ASSY., GATE).

6. Disconnect the connectors from each sensor.

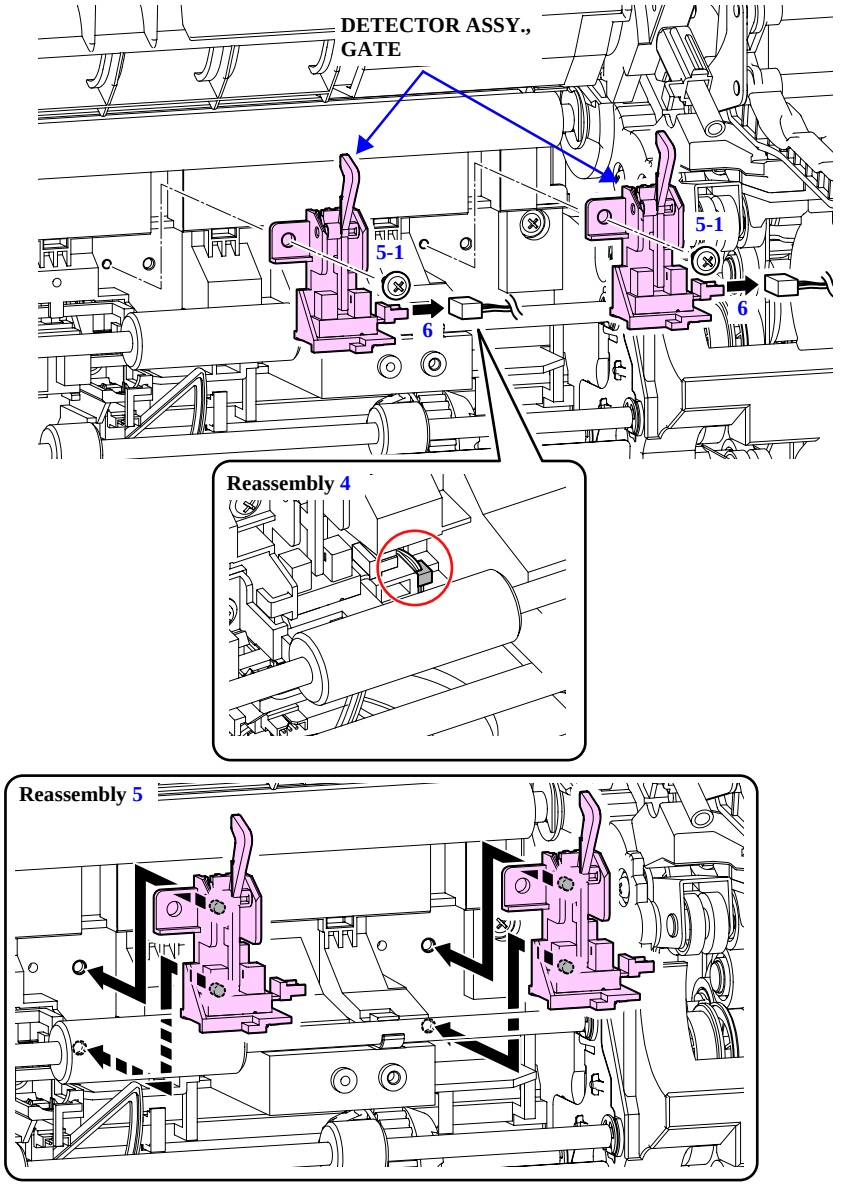

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Figure 4-46. Reinstallation of DETECTOR ASSY.,GATE 2

4.5.3.3 Paper Eject Sensor (DETECTOR, HP; E)

REMOVAL

D1. Remove the COVER ASSY., FU. *(p.242)*

D2. Remove the screw that secures the DUCT, PAPER EJECT, LOWER and slide the DUCT, PAPER EJECT, LOWER toward right side to release 2 tabs to remove the DUCT, PAPER EJECT, LOWER.

- C.C.P-TITE SCREW,3x10,F/Zn: 1

D3. Remove the screw that secures the EJECT ROLLER UNIT and lift up the left side of the EJECT ROLLER UNIT to remove it.

- C.B.P-TITE SCREW,3x8,F/Zn: 1

D4. Remove the 7 screws that secure the GUIDE, PAPER EJECT to remove the GUIDE, PAPER EJECT.

- C.C.P-TITE SCREW,3x10,F/Zn: 7

D5. Disconnect the connector from the Paper eject sensor.

D6. Release the 3 tabs to remove the Paper eject sensor.

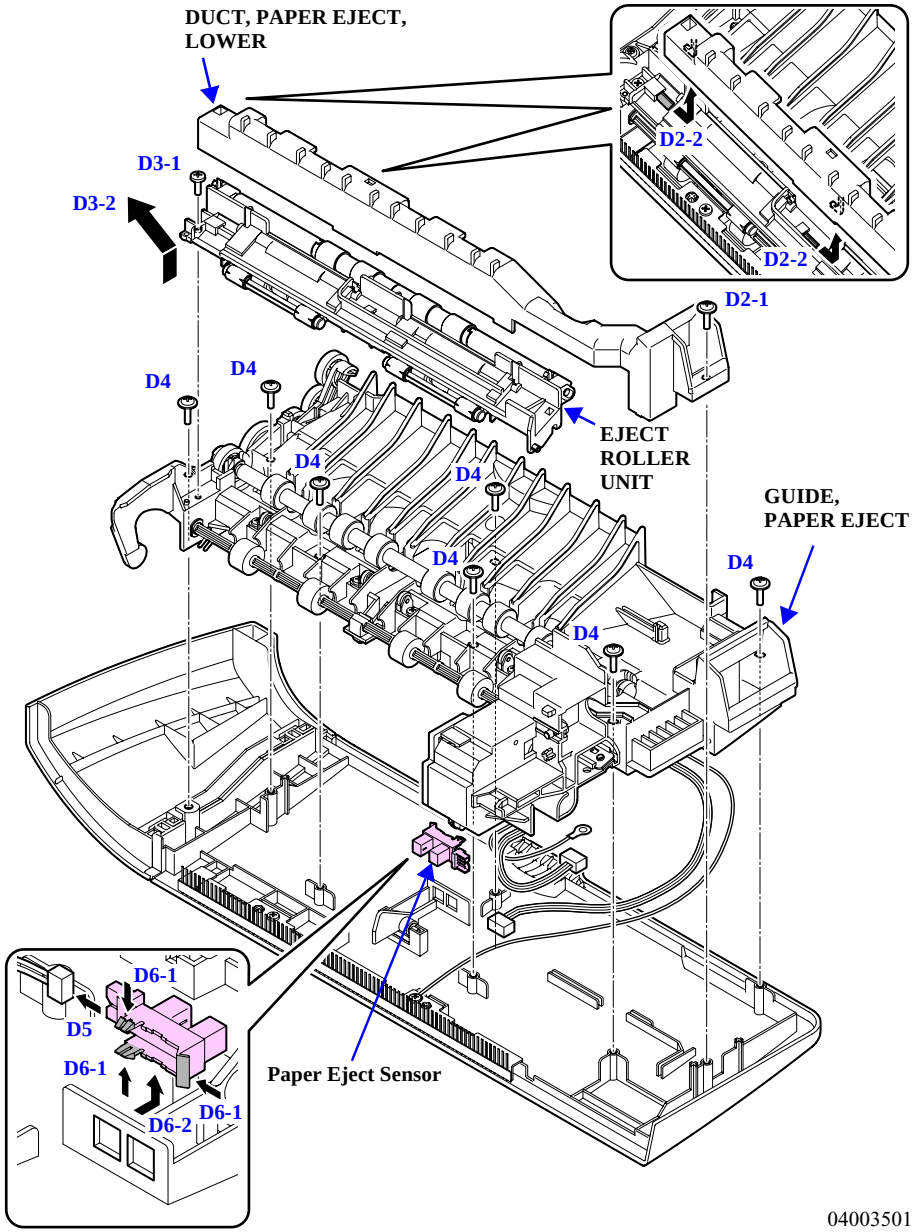

Figure 4-47. Removal of Paper Eject Sensor

REINSTALLATION

A1. Hitch the 3 tabs of the Paper eject sensor to the attachment holes of the COVER, TOP.

A2. Connect the connector to the Paper eject sensor and route both the harness and the grounding wire through the 3 grooves of the COVER, TOP.

CAUTION

When performing the following work, be careful not to pinch the harness or the grounding wire.

A3. Match the 2 positioning holes of the GUIDE, PAPER EJECT with the dowels, and secure the GUIDE, PAPER EJECT with 7 screws.

- C.C.P-TITE SCREW,3x10,F/Zn: 7

A4. Match the attachment shaft and the notch on the right end of the EJECT ROLLER UNIT with the positioning hole and the dowel, and then attach the MOUNTING PLATE to the left end of the shaft of the ROLLER UNIT.

A5. Secure the EJECT ROLLER UNIT with a screw.

- C.B.P-TITE SCREW,3x8,F/Zn: 1

A6. Insert the 2 tabs of the DUCT, PAPER EJECT, LOWER to the notches of the EJECT ROLLER UNIT, and match the positioning hole of the DUCT, PAPER EJECT, LOWER with the dowel.

A7. Secure the DUCT, PAPER EJECT, LOWER with the screw.

- C.C.P-TITE SCREW,3x10,F/Zn: 1

A8. Attach the COVER ASSY., FU. *(p.242)*

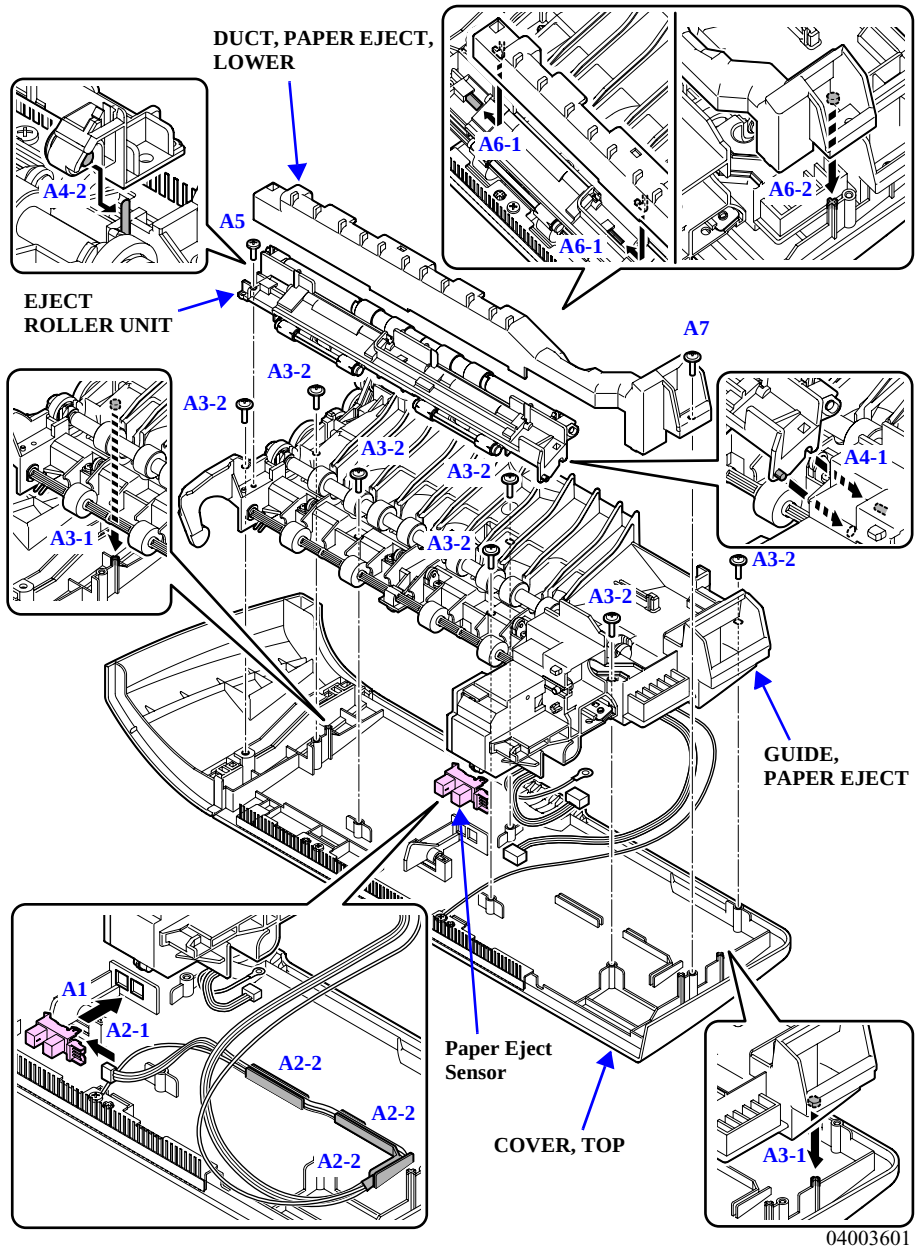

Figure 4-48. Reinstallation of Paper Eject Sensor

4.5.3.4 CLUTCH, FEED/CLUTCH, PICK UP

☐ **CLUTCH, FEED**

1. Remove the SERVOMOTOR, DRIVE. *(p.300)*
2. Remove the RETAINING RING, 4 that secures the CLUTCH, FEED to remove the CLUTCH, FEED from the attachment shaft.
3. Release the harness of the CLUTCH, FEED from both the groove and the edge saddle, and disconnect the connector (Yellow 2 Pin) from the relay connector.

REASSEMBLY

1. **Insert the CLUTCH, FEED to the attachment shaft with attention to their shape of cross-section.**
2. **Match the antirotation tab of the frame with the antirotation groove of the CLUTCH, FEED.**

☐ **CLUTCH, PICK UP**

1). Remove the SERVOMOTOR, DRIVE. *(p.300)*

2). Remove the RETAINING RING, 5, DRIVE that secures the CLUTCH, PICK UP to remove the CLUTCH, PICK UP from the attachment shaft.

3). Release the harness of the CLUTCH, PICK UP from the edge saddle, and disconnect the connector (Blue 2 Pin) from the relay connector.

REASSEMBLY

1). **Insert the CLUTCH, PICK UP to the attachment shaft with attention to their shape of cross-section.**
2). **Match the antirotation tab of the frame with the antirotation groove of the CLUTCH, PICK UP.**

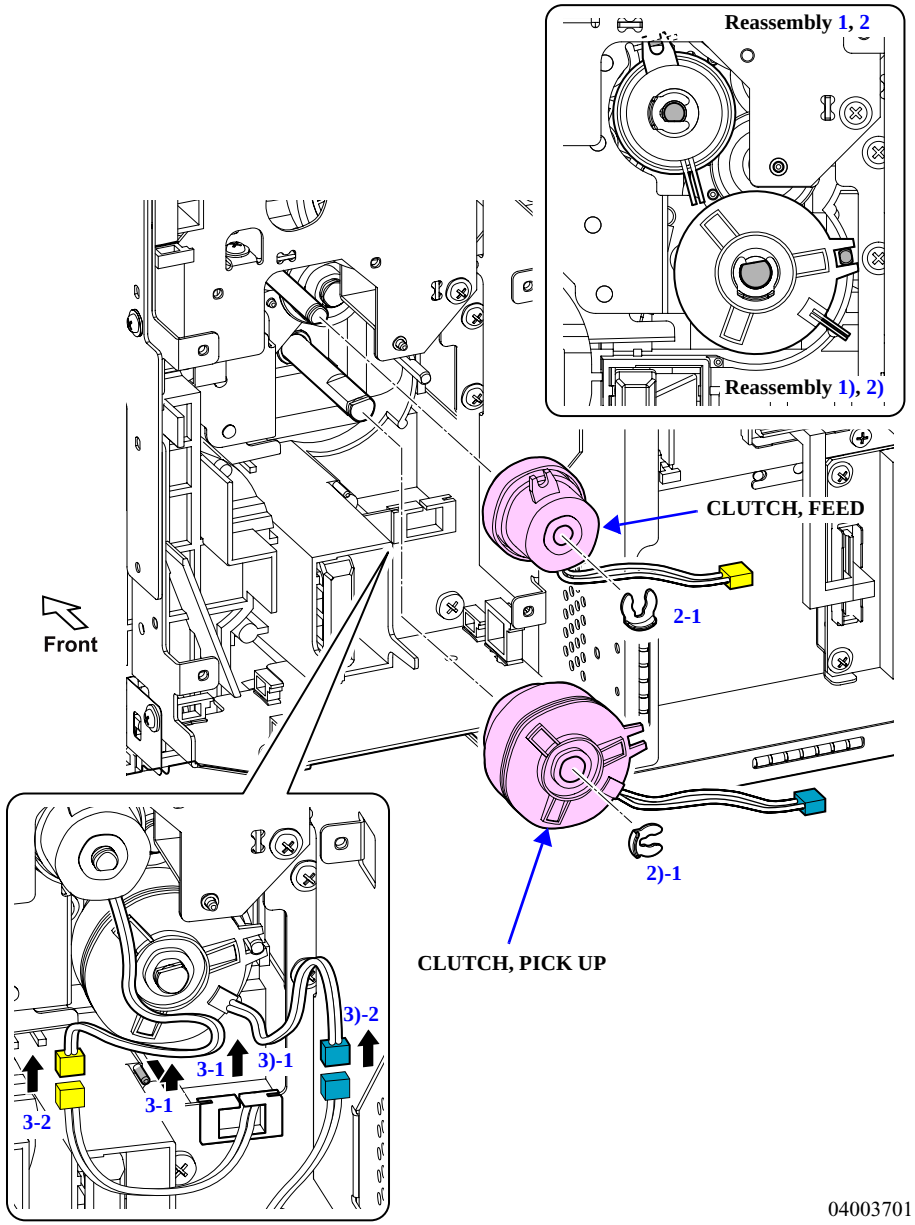

Figure 4-49. Removal of CLUTCH, FEED/CLUTCH, PICK UP

4.5.3.5 CLUTCH, GATE

1. Remove the DRIVE ASSY., MAIN. *(p.301)*
2. Release the harness of the CLUTCH, GATE from both the 3 grooves of the frame and the edge saddle, and disconnect the connector from the relay connector. (White 2 Pin)
3. Remove the RETAINING RING, 4 that secures the CLUTCH GATE, and draw out the CLUTCH GATE.

REASSEMBLY

1. **Insert the CLUTCH, GATE to the attachment shaft with attention to their shape of cross-section.**
2. **Match the antirotation tab of the frame with the antirotation groove of the CLUTCH, GATE.**

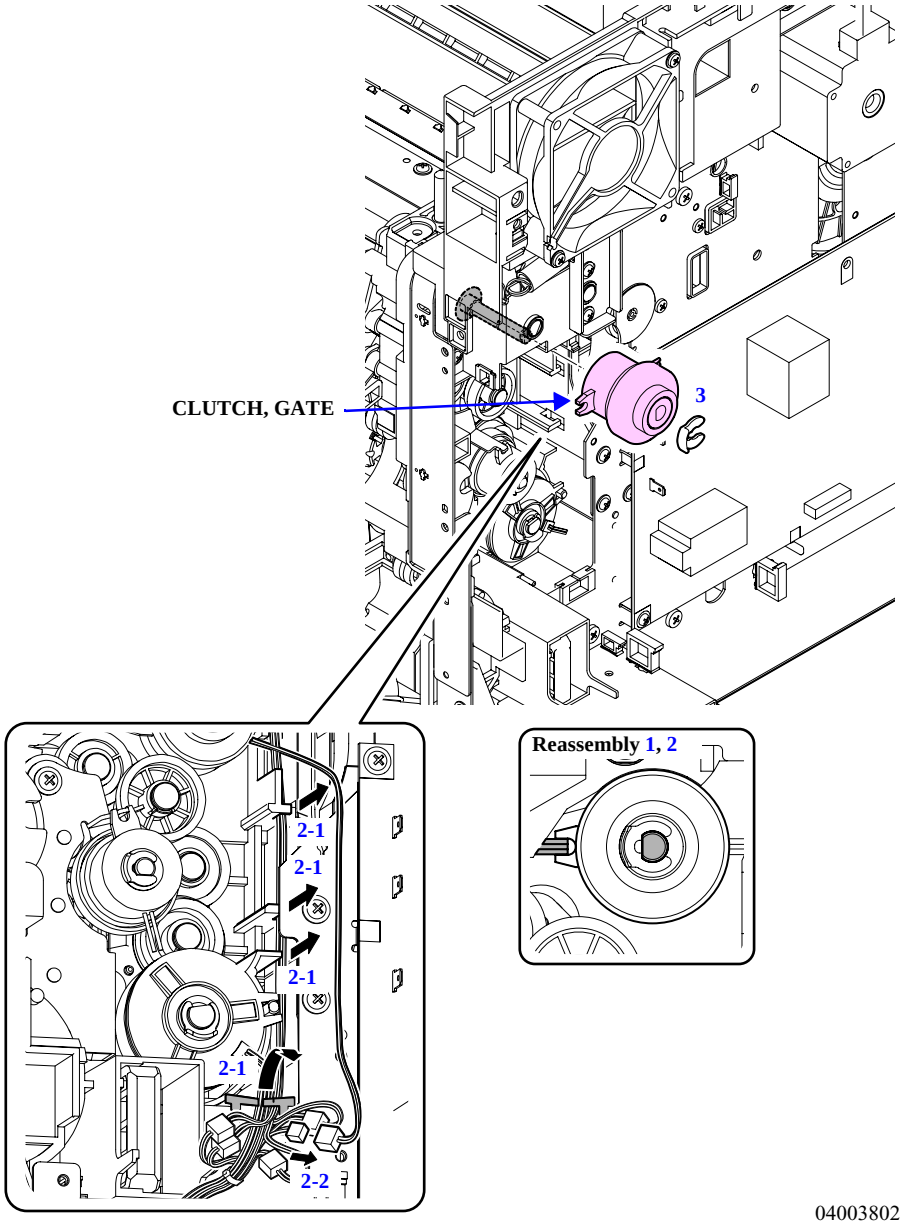

Figure 4-50. Removal of CLUTCH, GATE

4.5.3.6 ROLLER, GATE

1. Remove the CLUTCH, GATE. *(p.259)*
2. Remove the 2ND TRANSFER Assy., ASP. *(p.291)*

CAUTION

When handling the ROLLER, GATE, beware of the following instructions.

- **Extra caution is required not to touch the surface of the ROLLER, GATE with bare hands, or paper feeding trouble may occur due to oil of the hand left on the roller.**
- **Do not scratch or contaminate the surface of the ROLLER GATE.**

3. Remove the 2 E-RING, 7, L/NAs from both ends of the ROLLER, GATE, and slide the 2 BEARING, 688ZNRs toward the inside of the ROLLER, GATE.
4. Slide the ROLLER GATE toward rear to draw out the front end of the shaft along the groove of the frame, and pull the rear end of the shaft out of the shaft hole to remove the ROLLER GATE.

REASSEMBLY

Insert the chipped end of the ROLLER, GATE to the rear shaft hole.

5. Draw out the 2 BEARING, 688ZZNRs from both ends of the ROLLER, GATE.

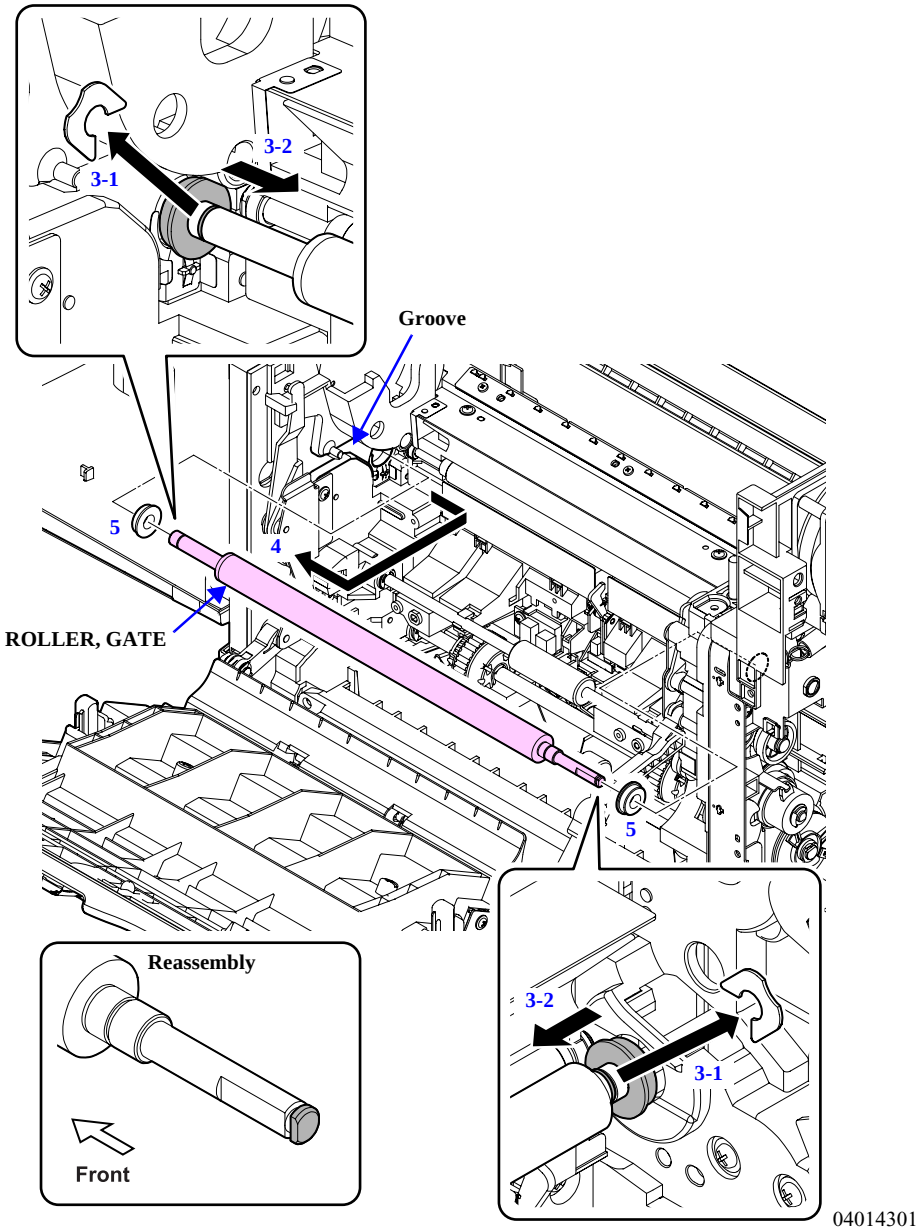

Figure 4-51. Removal of ROLLER, GATE

4.5.3.7 ROLLER, FEED/ROLLER, FEED; B

☐ **ROLLER, FEED**

1. Remove the DRIVE ASSY., MPT. *(p.302)*
2. Remove the SPUR GEAR, 18, DRIVE from the ROLLER, FEED.
3. Remove the GUIDE ASSY., FEED, LEFT. *(p.254)*
4. Remove the 2 E-RING, 5, F/Ucs that secure the BUSHING, 8s (front and rear) from both ends of the ROLLER, FEED, and slide the BUSHING, 8s (front and rear) inward.
5. Slide the ROLLER GATE toward rear, draw out the front shaft first and the rear shaft to remove the ROLLER GATE.
6. Draw out the 2 BUSHING, 8s from both ends of the ROLLER, FEED.

REASSEMBLY

1. Insert the chipped end of the ROLLER GATE to the rear shaft hole.

☐ **ROLLER, FEED; B**

1). Remove the DRIVE ASSY., MPT. *(p.302)*

2). Remove the RETAINING RING, 4 that secures the SPUR GEAR, 18, DRIVE to remove the SPUR GEAR, 18, DRIVE from the ROLLER, FEED; B.

REASSEMBLY

1). Attach the RETAINING RING, 4 with its rib facing inward.

3). Remove the GUIDE ASSY., FEED, LEFT. *(p.254)*

4). Remove the 2 E-RING, 5, F/Ucs from both ends of the ROLLER, FEED; B, and slide the BUSHING, 8s (front and rear) inward.

5). Slide the ROLLER, FEED; B toward rear, draw out the front shaft first and the rear shaft to remove the ROLLER FEED; B.

6). Draw out the 2 BUSHING, 8s from both ends of the ROLLER, FEED; B.

7). Remove the 2 BUSHING, 6, FEEDs from the ROLLER, FEED; B.

REASSEMBLY

2). Insert the chipped end of the ROLLER, FEED; B to the rear attachment shaft.

3). Match the 2 salient portions of the BUSHING, 6, FEED with the groove.

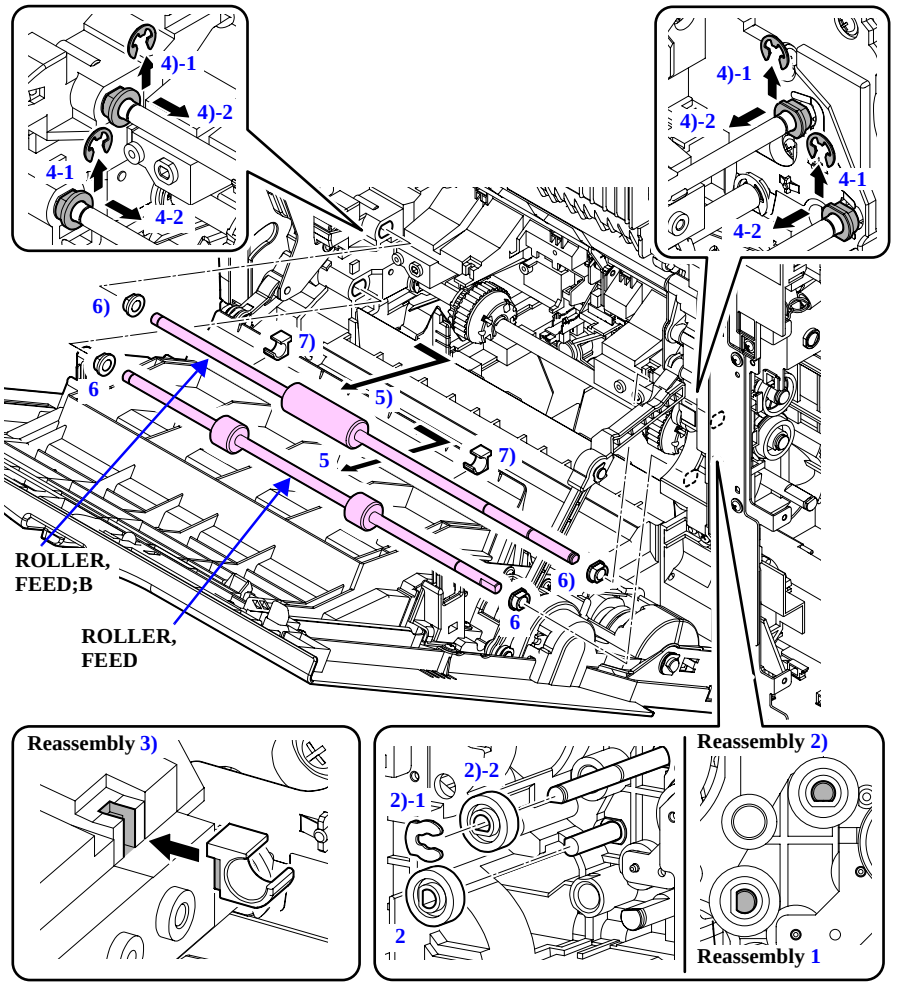

Figure 4-52. Removal of ROLLER, FEED/ROLLER, FEED; B

4.5.3.8 BRACKET ASSY., PE, ASP

REMOVAL

D1. Remove the DETECTOR, HUMIDITY. *(p.315)*

D2. Remove the screw that secures the BRACKET ASSY., PE, ASP.

- C.C.P-TITE SCREW,3x8,F/Zn: 1

D3. Disconnect the connector from the BRACKET ASSY., PE, ASP.

D4. Pull the BRACKET ASSY., PE, ASP, fell the upper side of the BRACKET ASSY., PE, ASP toward you, rotate it to release from the tab, and remove the BRACKET ASSY., PE, ASP.

REINSTALLATION

A1. Insert the BRACKET ASSY., PE, ASP from the bottom of the main unit with its connector side facing front.

A2. Rotate the BRACKET ASSY., PE, ASP, push it behind the tab, and match the positioning hole of the BRACKET ASSY., PE, ASP with the dowel.

A3. Connect the connector to the BRACKET ASSY., PE, ASP.

REASSEMBLY

A1. Route the harness as shown in the figure.

A4. Secure the BRACKET ASSY., PE, ASP with a screw.

- C.C.P-TITE SCREW,3x8,F/Zn: 1

A5. Attach the DETECTOR, HUMIDITY. *(p.315)*

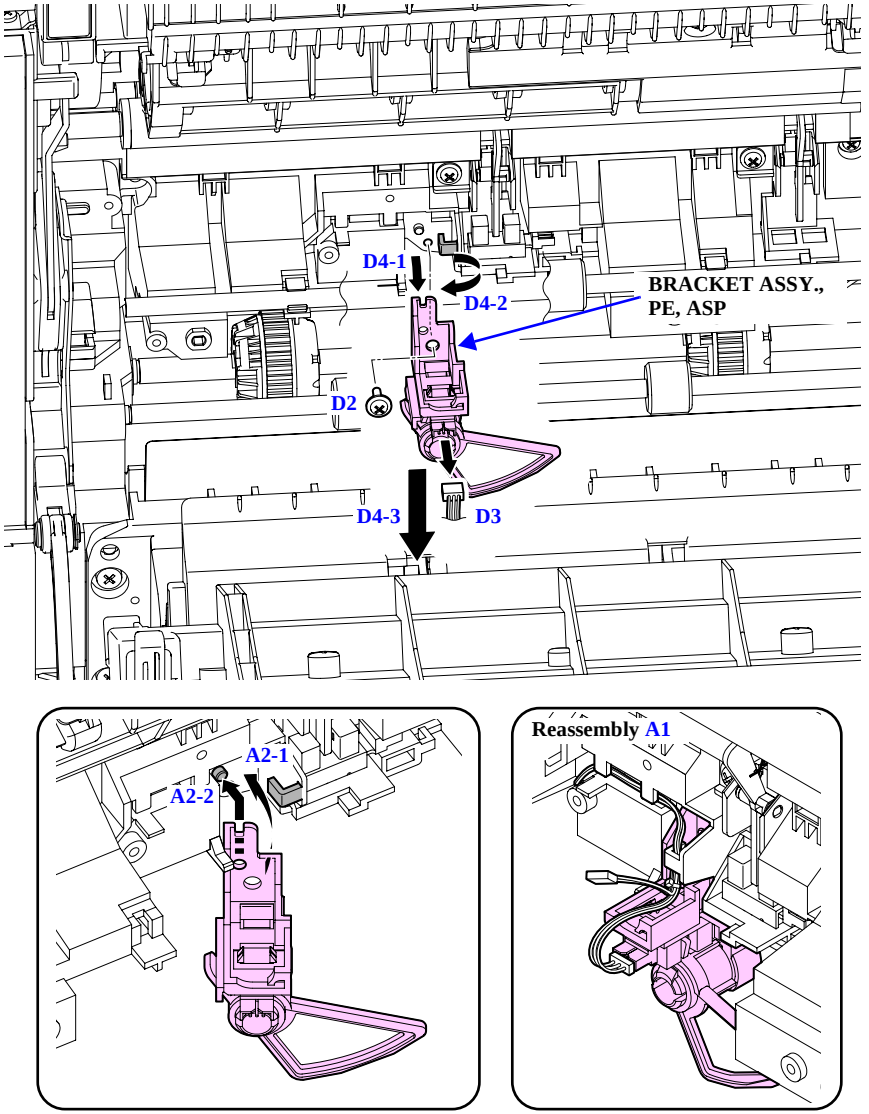

Figure 4-53. Removal of BRACKET ASSY., PE, ASP

4.5.4 Xerographic

4.5.4.1 ERASER, PA0003A/ERL

1. Remove the TRANSFER UNIT, Assy., ASP. *(p.284)*
2. Remove the three screws that secure the ERASER, PA0003A/ERL.
   - C.B.S-TITE SCREW,2.5x4,F/Zn: 3
3. Disconnect the connector (White 2 Pin) from the ERASER, PA0003A/ERL and remove the ERASER, PA0003A/ERL.

REASSEMBLY

Match the 3 positioning holes of the ERASER, PA0003A/ERL with the dowels.

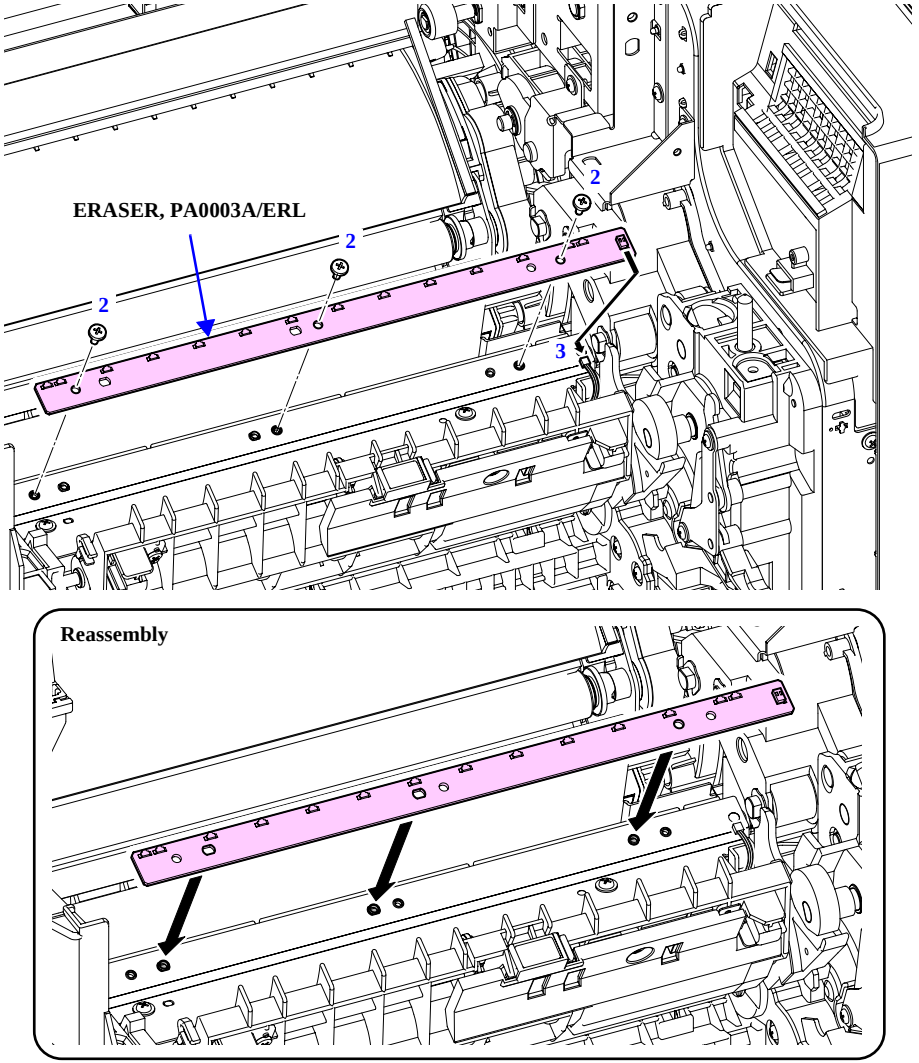

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Figure 4-54. Removal of ERASER, PA0003A/ERL

4.5.4.2 FILTER, OZONE/FILTER, OZONE; B/ FAN, DUST CHAMBER

1. Remove the HOUSING, LEFT. *(p.245)*
2. Remove the HANDLE ASSY., LEFT, UNIT. *(p.316)*
3. Remove the 3 screws that secure the DUCT ASSY., DUST CHAMBER.
   - C.P.POLYWAVEA,3x6,F/Zn: 3

CAUTION

When performing the following procedure, never to pull the DUCT ASSY., DUST CHAMBER forcibly as it is connected to the main unit with a harness.

4. Draw out the DUCT ASSY., DUST CHAMBER, and disconnect the connector (three white pins) from the relay connector to remove the DUCT ASSY., DUST CHAMBER.
5. Remove the 2 screws that secure the DUCT, BOTTOM; B to remove the DUCT, BOTTOM; B.
   - C.P.POLYWAVEA,3x6,F/Zn: 2
6. Remove the FILTER, OZONE, FILTER, OZONE; B and FAN, DUST CHAMBER from the DUCT ASSY., DUST CHAMBER.

REASSEMBLY

1. **Match the 2 positioning holes of the FAN, DUST CHAMBER with the dowels, and route the harness through the groove.**
2. **Insert the sponge part of the FILTER, OZONE and FILTER, OZONE; B into the side surface of the DUCT ASSY., DUST CHAMBER.**

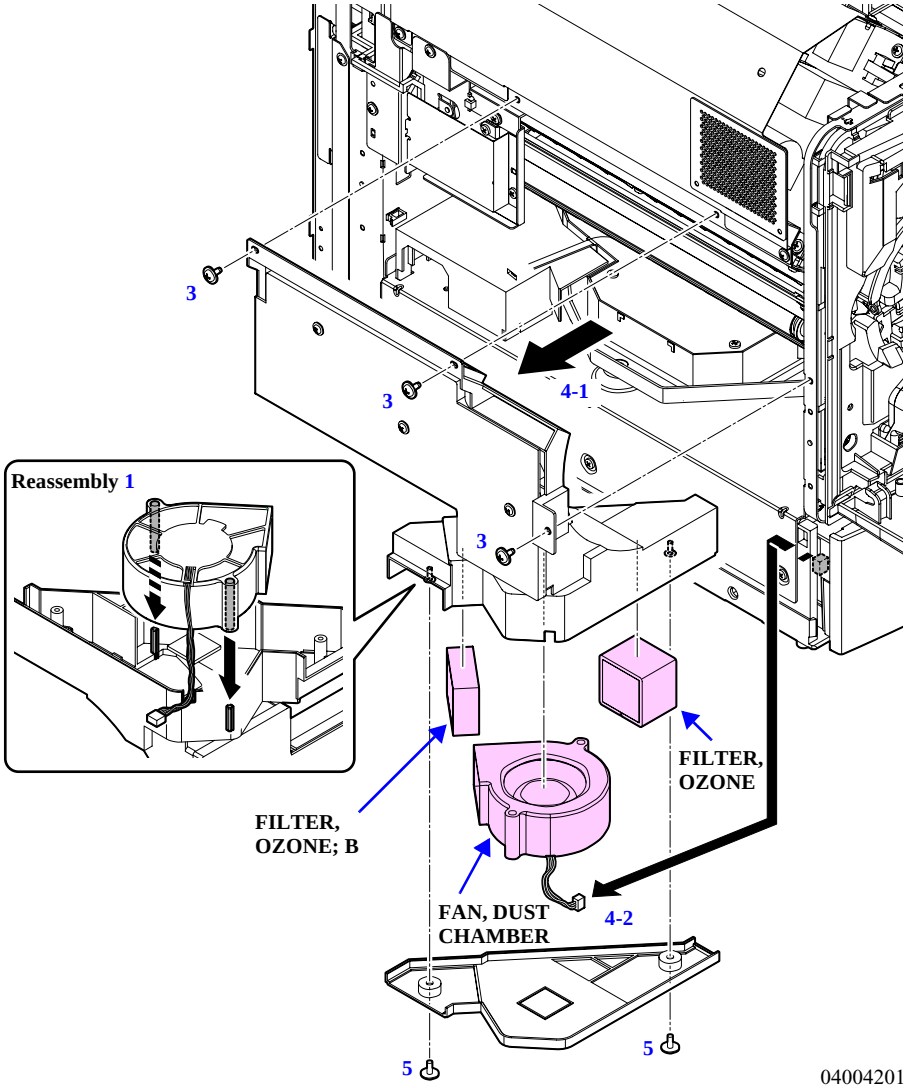

Figure 4-55. Removal of FILTER, OZONE/FILTER, OZONE; B/FAN, DUST CHAMBER

4.5.4.3 FAN, PC/DETECTOR, PC

1. Remove the FRAME ASSY., RT. *(p.274)*
2. Remove the SERVOMOTOR, PC. *(p.299)*
3. Remove the screw that secures the COVER ASSY., LSU to remove the COVER ASSY., LSU.
   - C.P.POLYWAVEA,3x6,F/Zn: 1

REASSEMBLY

1. Insert the 4 flanges of the COVER ASSY., LSU to the grooves.
2. Match the positioning hole of the COVER ASSY., LSU with the dowel.

4. Remove the 2 screws that secure the DUCT ASSY., PC to remove the DUCT ASSY., PC.
   - C.P.POLYWAVEA,3x8,F/Zn: 2

REASSEMBLY

3. Match the 2 dowels of the DUCT ASSY., PC with the positioning holes.

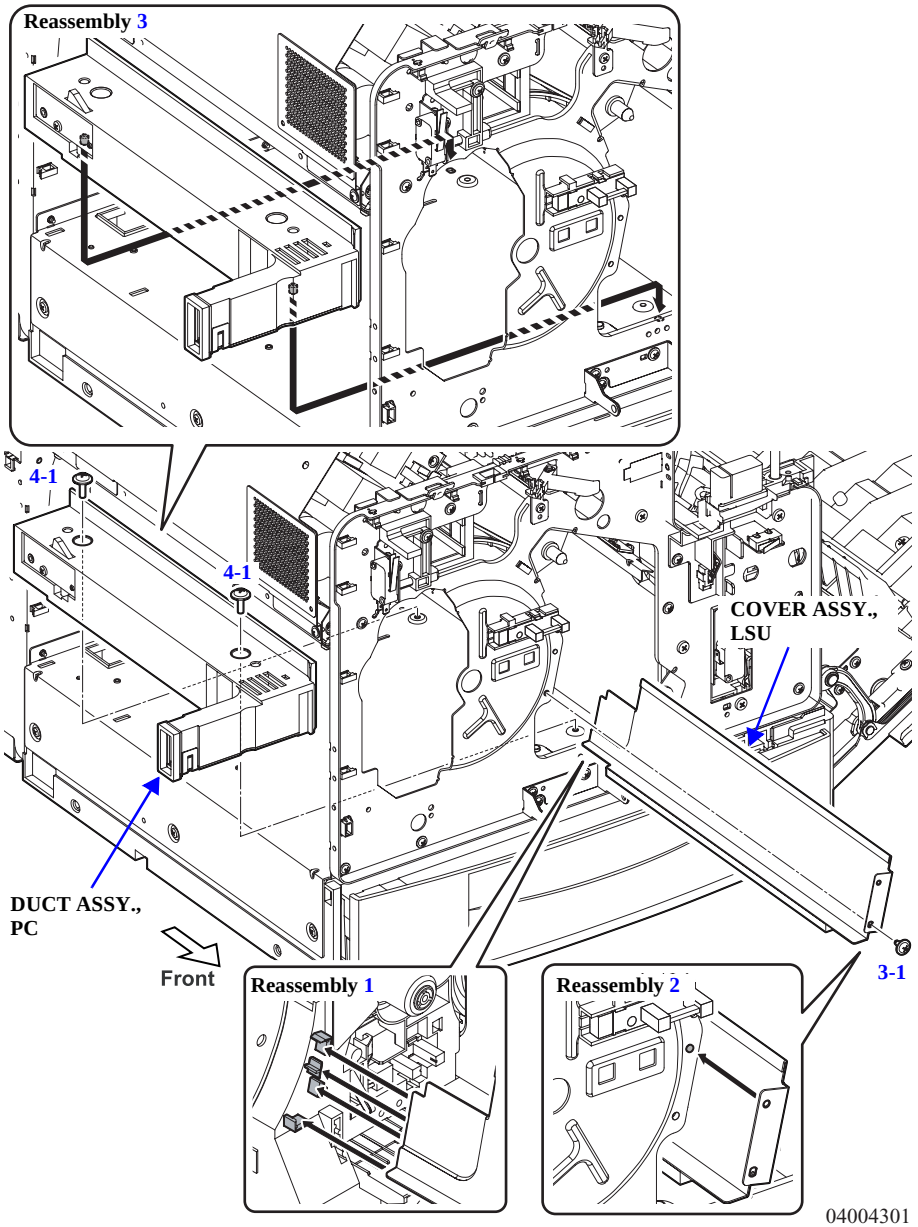

Figure 4-56. Removal of FAN,PC/DETECTOR,PC 1

5. Disconnect the connector (White 3 Pin) of the HARNESS, PAPER FEED from the ELECTRODE Assy., PC.
6. Disconnect the connector (White 6 Pin) of the ELECTRODE Assy., PC from the relay connector.
7. Remove the 3 screws that secure the ELECTRODE Assy., PC.
   - C.C.P-TITE SCREW,3x8,F/Zn: 3
8. Pull and lift up the bottom of the ELECTRODE Assy., PC from inside the printer toward you and tilt the upper side toward front to take out from the hole. Draw out to remove the 2 harnesses of the ELECTRODE Assy., PC through the holes of the frame.

REASSEMBLY

4. Match the dowel of the ELECTRODE Assy., PC with the positioning hole.

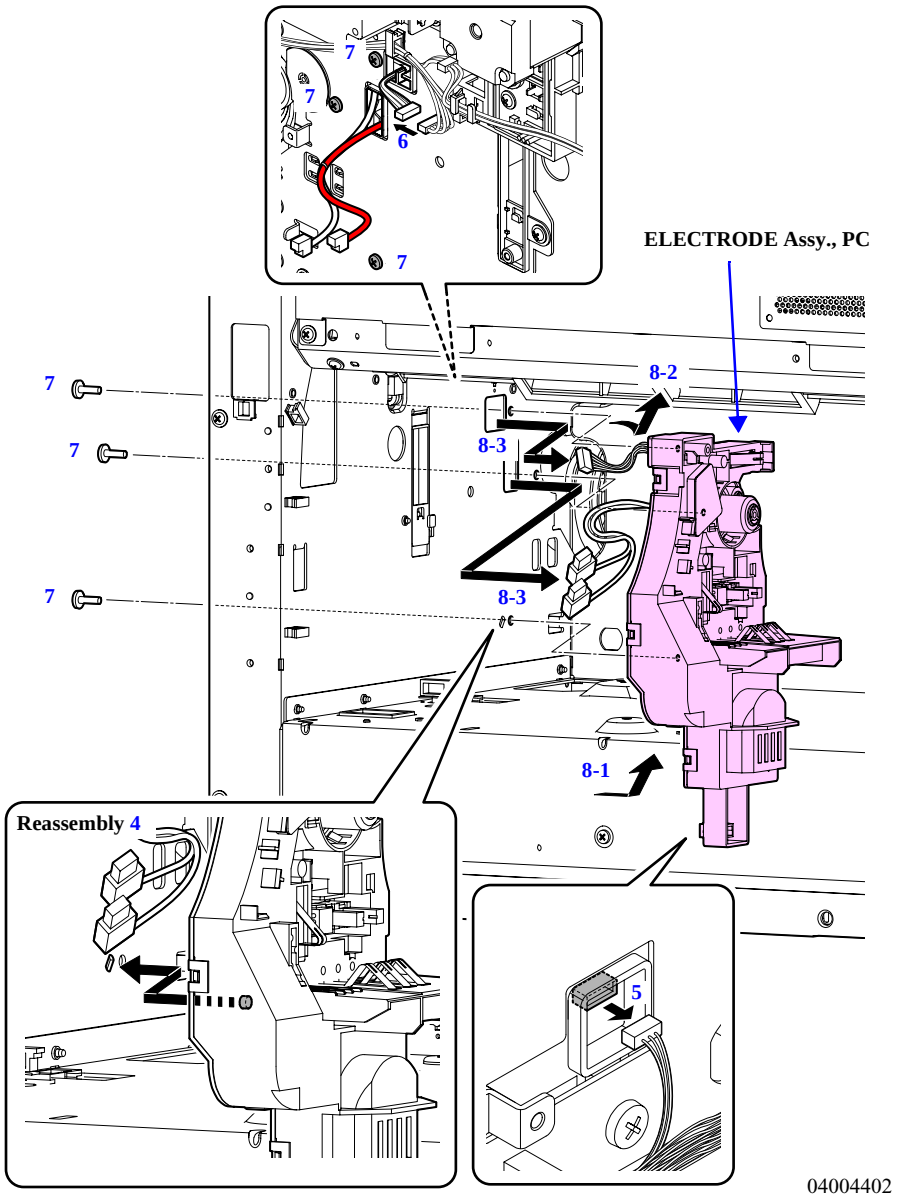

Figure 4-57. Removal of FAN, PC/DETECTOR, PC 2

9. Disconnect the connector of the FAN, PC from the relay connector.
10. Release the 7 tabs that secure the COVER, ELECTRODE, PC, and draw out the harness from the hole of the COVER, ELECTRODE, PC to remove the COVER, ELECTRODE, PC.
11. Pull out the FAN, PC from the ELECTRODE Assy., PC, and draw out the harness through the hole.

REASSEMBLY

5. Match the 2 positioning holes of FAN, PC with the dowels.

12. Release the 4 tabs that secure the DETECTOR, PC, and draw out the DETECTOR, PC from the ELECTRODE Assy., PC.
13. Disconnect the connector (White 3 Pin) from the DETECTOR PC.

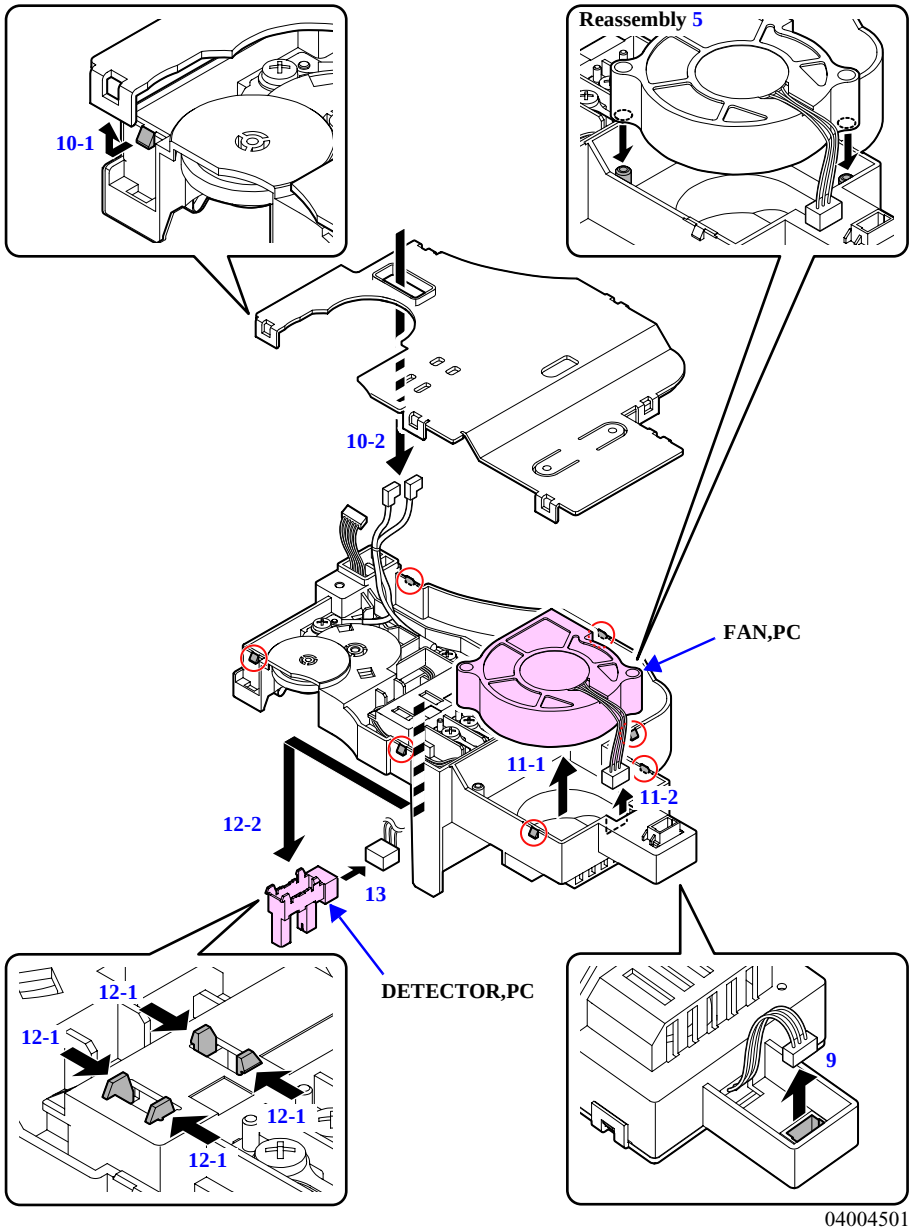

Figure 4-58. Removal of FAN, PC/DETECTOR, PC 3

4.5.5 Exposure

4.5.5.1 CLEANER ASSY.

1. Remove the Photoconductor unit. *(p.235)*
2. Release the tab upward, and draw out the CLEANER ASSY.

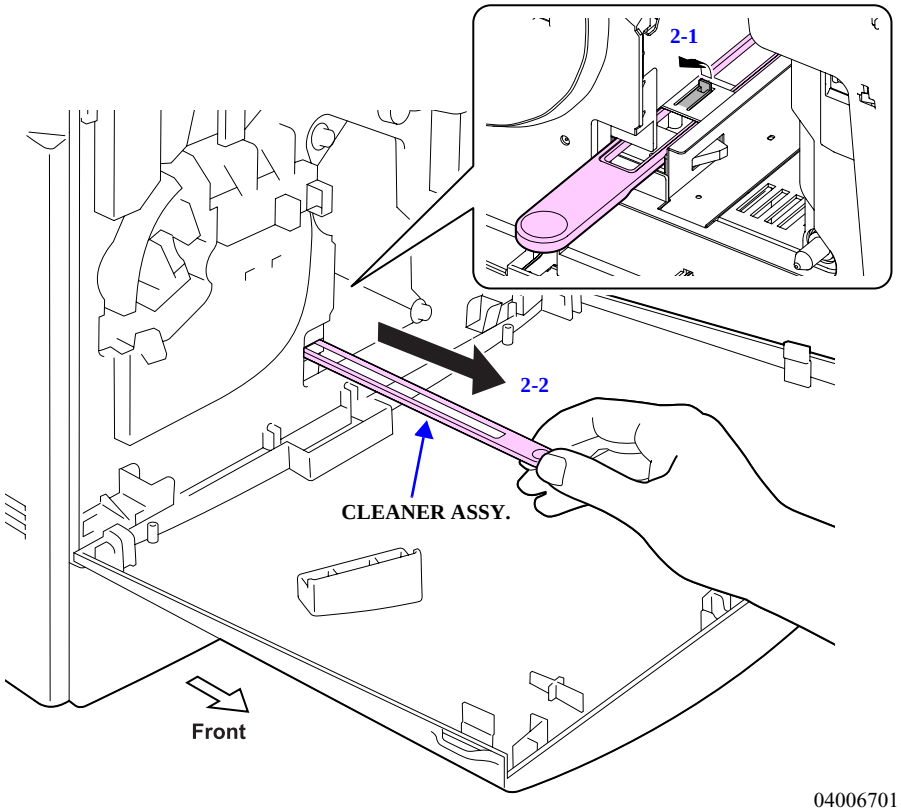

Figure 4-59. Removal of CLEANER ASSY.

4.5.5.2 Laser Scanner

1. Remove the all Toner Cartridges. *(p.238)*
2. Remove the TRANSFER UNIT, Assy., ASP. *(p.284)*
3. Remove the COVER, INNER. *(p.248)*
4. Remove the HOUSING, LEFT. *(p.245)*
5. Remove the CLEANER ASSY. *(p.284)*
6. Remove the DUCT ASSY., DUCT CHAMBER. *(p.264)*
7. Remove the DUCT, EX. *(p.321)*
8. Remove the screw that secures the LOCK ASSY., PC.
   - C.C.P-TITE SCREW,3x8,F/Zn: 1

REASSEMBLY

1. Match the 2 positioning holes of the LOCK ASSY., PC with the dowels.

9. Remove the flange of the LOCK ASSY., PC from the groove, and remove the LOCK ASSY., PC.

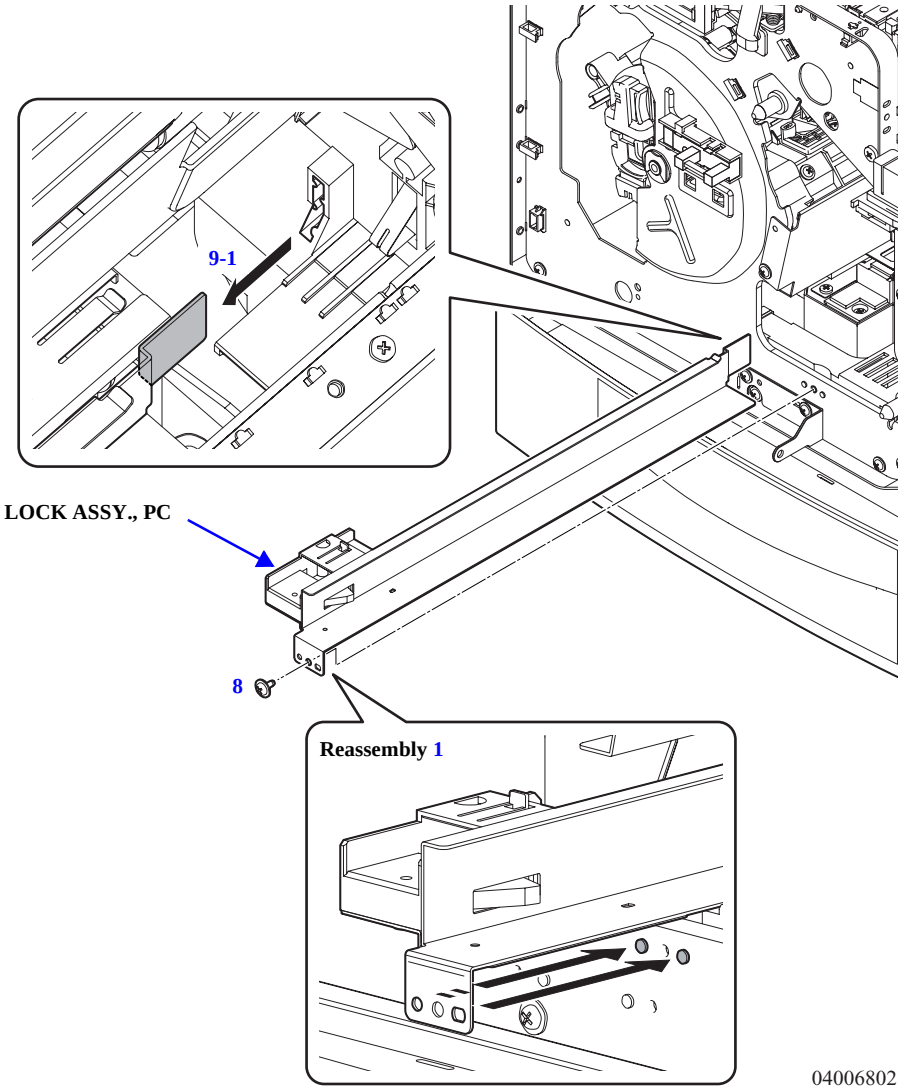

Figure 4-60. Removal of Laser Scanner 1

10. Draw out the HARNESS, LSU from the Laser scanner, and disconnect the connector (White 5 Pin) from the relay connector.
11. Remove the 3 screws that secure the Laser scanner.
    - C.B.S-TITE SCREW,4x8,F/Zn: 3
12. Move the lock lever of the LOCK ASSY., RT up to unlock the FRAME ASSY., RT, and rotate the FRAME ASSY., RT.

CHECK POINT

Rotate the FRAME ASSY., RT so that its side looks the one shown below.

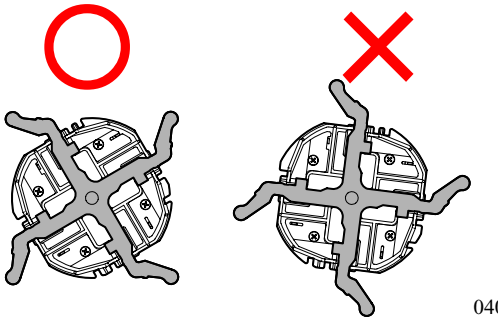

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Figure 4-61. Sectional drawing of the FRAME ASSY., RT

CAUTION

When performing the following work, make sure not to touch the exposure window of the Laser scanner.

13. Lift the front side of the Laser scanner to release its 2 positioning holes from the dowels, and draw out the Laser scanner.
14. Disconnect the connectors (White 15 Pin) of the HARNESS, LSU from the Laser scanner.

ADJUSTMENT REQUIRED

Be sure to refer to "5.1.3 Adjustment Execution Timing" *(p.366)* and perform specified adjustments after replacing Laser scanner.

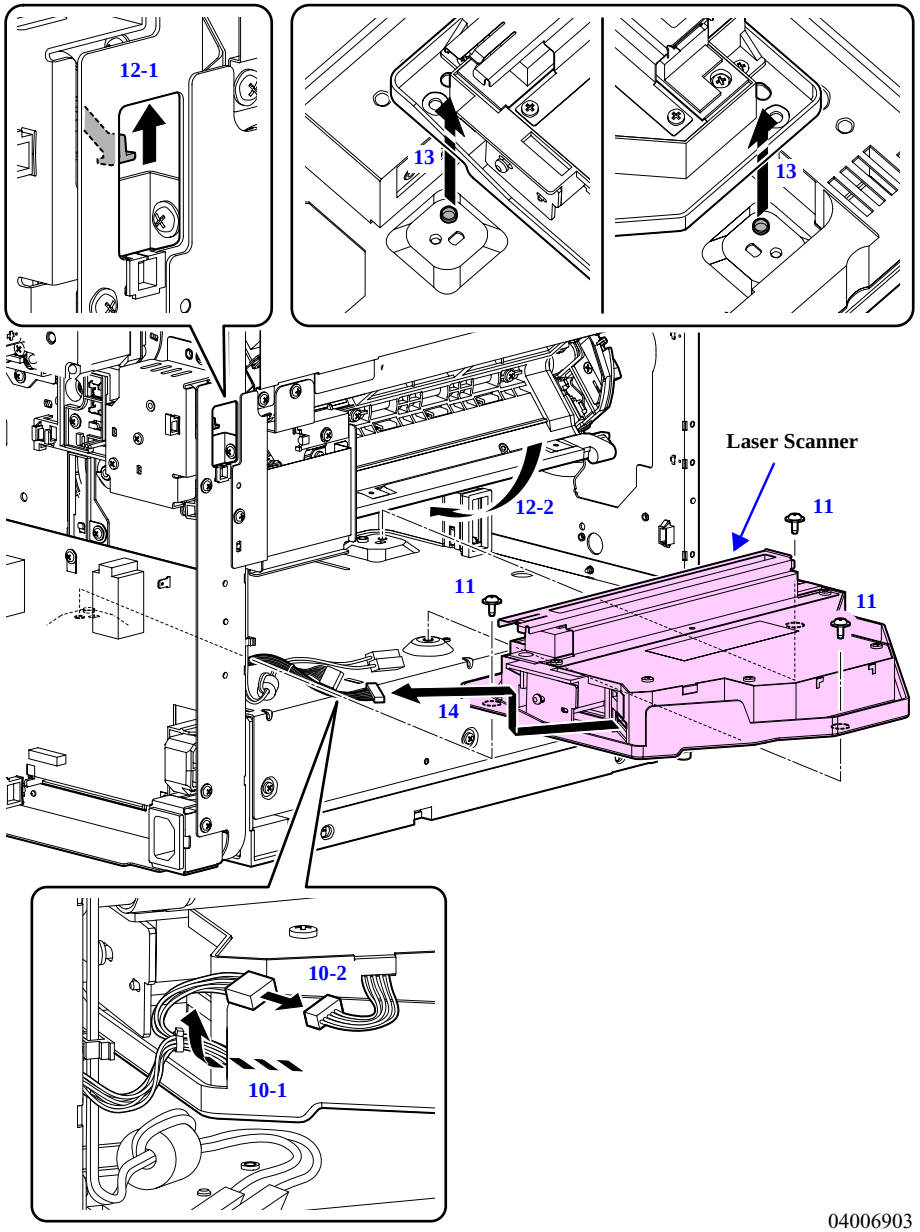

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Figure 4-62. Removal of Laser Scanner 2

4.5.6 Deve

4.5.6.1 COVER ASSY., DV, C (M, Y, K)

CAUTION

When performing the following work, be careful not to remove all COVER ASSY., DV at one time. Each of them has its own attachment position, and it will be difficult to return all COVER ASSY., DV to their original positions once they are removed at a time. Always leave at least one part unremoved.

1. Plug in the power cable and turn the printer on.
2. Execute “Change Toner C (M, Y, K)” from the “Reset Menu”.
3. Turn the printer off and unplug the power cable.
4. Make sure that “Replace Toner C (M, Y, K)” is displayed on the panel, and open the COVER, FRONT.
5. Press the knob to open the COVER ASSY., DV, C.
6. Remove the screw that secures the COVER ASSY., DV, C to remove the COVER ASSY., DV, C.
   - C.B.P-TITE SCREW,3x8,F/Zn: 1

REASSEMBLY

1. **Match the hole under the COVER ASSY., DV, C with the tab.**
2. **Insert the rib of the COVER ASSY., DV, C into the groove.**

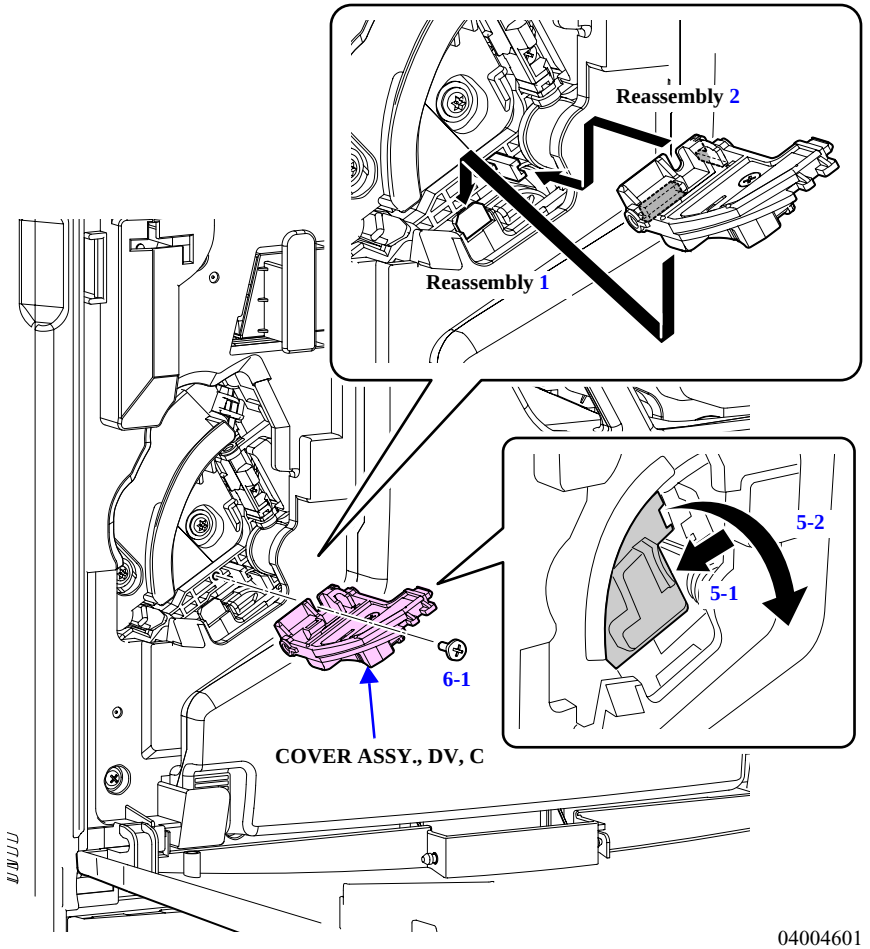

Figure 4-63. Removal of COVER ASSY., DV, C (M, Y, K)

4.5.6.2 LOCK ASSY., RT

1. Remove the MOUNTING PLATE ASSY., CONTROLLER, UNIT. *(p.313)*
2. Remove the one piece of acetate tape that secures the HARNESS, MAIN.
3. Disconnect the connectors (White 2 Pin) from the BOARD ASSY., DRV, C585 DRV.
4. Disconnect the connector (White 4 Pin) from the relay connector.
5. Release the HARNESS, MAIN and LOCK ASSY., RT from the 2 retainers.

REASSEMBLY

1. Move the cable tie that secures the HARNESS, MAIN to the position as shown in Figure 4-64.
2. Bend the harness of the LOCK ASSY., RT at the retainer to secure it as shown in Figure 4-64.

CAUTION

Always sustain the LOCK ASSY., RT or it may fall off when performing the following work.

6. Remove the 3 screws that secures the LOCK ASSY., RT to remove the LOCK ASSY., RT.
   - C.P.POLYWAVEA,3x6,F/Zn: 3

REASSEMBLY

3. Match the positioning hole of the LOCK ASSY., RT with the dowel.

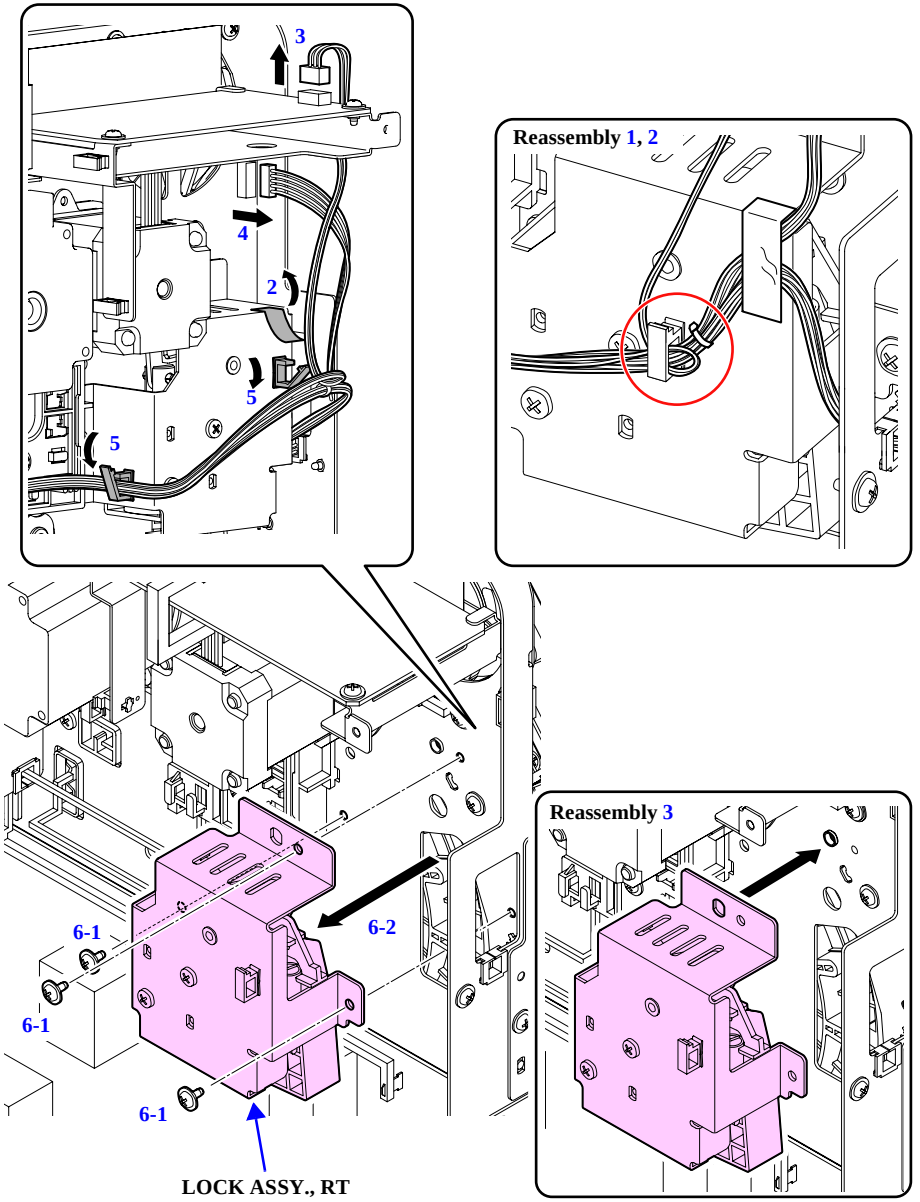

Figure 4-64. Removal of LOCK ASSY., RT

4.5.6.3 LEAF SPRING, ELCTRODE, DV/ Home Position Sensor (DETECTOR, PC)

☐ **LEAF SPRING, ELCTRODE, DV**

1. Release the HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA. *(p.314)*
2. Pull the bottom of the LEAF SPRING, ELECTRODE, DV toward you, slide it upward to release the tab, and remove the LEAF SPRING, ELECTRODE, DV.

☐ **Home Position Sensor (DETECTOR,PC)**

1). Remove the MOUNTING PLATE ASSY., CONTROLLER,UNIT. *(p.314)*

2). Release the HARNESS, HP from the 4 tabs.

3). Remove the screw that secures the MOUNT, SENSOR, HP, and remove the MOUNT, SENSOR, HP avoiding the HARNESS, MAIN.

- C.C.P-TITE SCREW,3x8,F/Zn: 1

4). Release the 4 tabs to remove the Home position sensor.

5). Disconnect the connector from the Home position sensor.

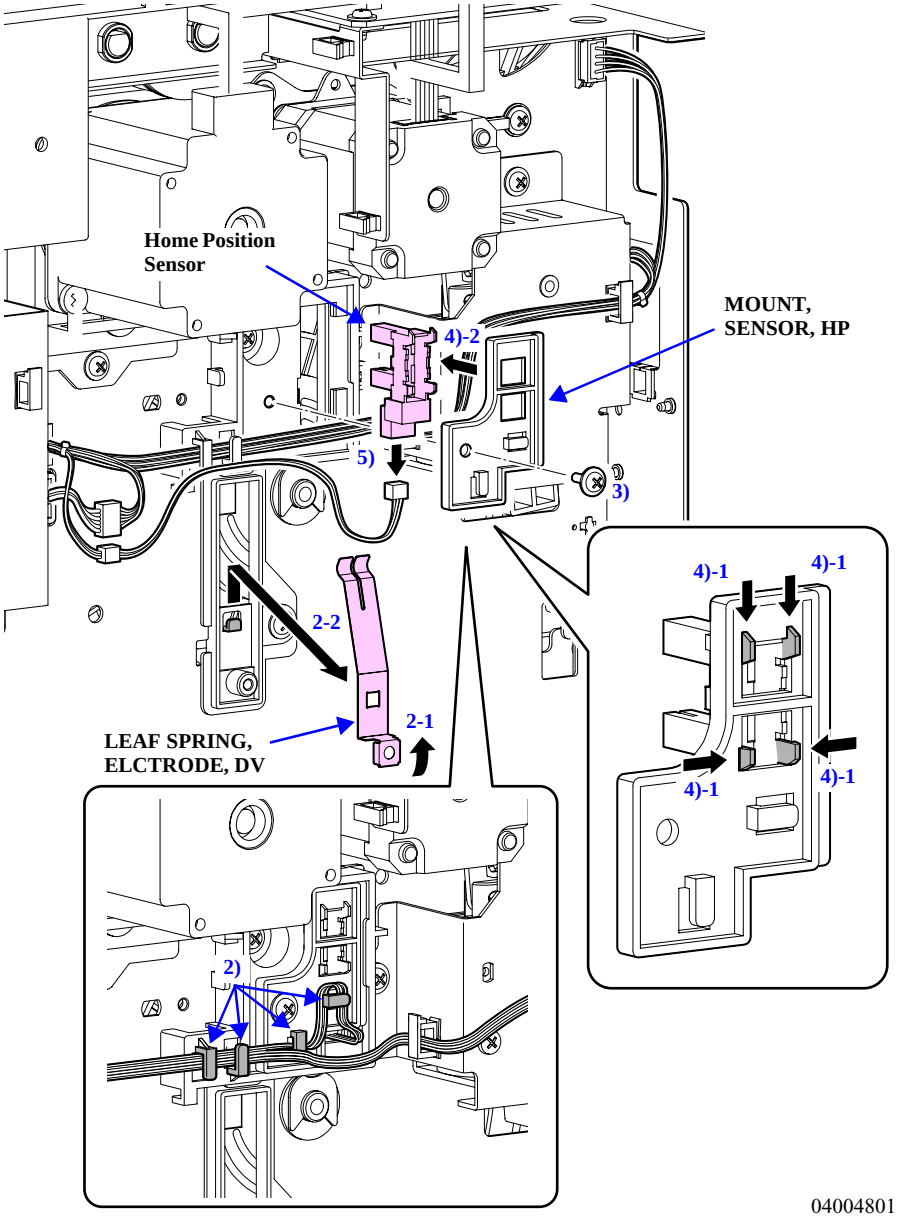

Figure 4-65. Removal of LEAF SPRING, ELCTRODE, DV/Home Position Sensor

4.5.6.4 FRAME ASSY., RT

CAUTION

1. **When replacing the FRAME ASSY., RT, be sure to replace the DRIVE ASSY., RT with a new one. (Refer to "4.5.9.10 DRIVE ASSY., RT(, ASP)" *(p.304)*)**

1. Remove the Laser scanner. *(p.269)*

CAUTION

2. **When performing the following work, be careful not to remove all COVER ASSY., DV at one time. Each of them has its own attachment position, and it will be difficult to return all COVER ASSY., DV to their original positions once they are removed at a time. Always leave at least one part unremoved.**
3. **Looking from the anterior of the printer, rotate the FRAME ASSY., RT in counter clockwise direction. Make sure not to rotate the FRAME ASSY., RT clockwise.**

2. Pull the lock lever of the LOCK ASSY., RT up to unlock the FRAME ASSY., RT. Rotate the FRAME ASSY., RT to move the COVER ASSY., DV to the Toner cartridge replacement position, and remove the COVER ASSY., DV. Remove the other COVER ASSY., DV using the same procedure. *(p.271)*

REASSEMBLY

1. **Attach the COVER ASSY., DVs in the order given in Figure 4-66.**

3. Remove the LOCK ASSY., RT. *(p.272)*
4. Remove the LEAF SRING, ELECTRODE, DV. *(p.273)*

CAUTION

4. **Always sustain the HOLDER ASSY., CS or it may fall off when performing the following work.**

5. Release the HARNESS, MAIN from the retainer, disconnect the connector (Pale orange 7 Pin) from the R/W MODULE, B5J-0111, and draw out the connector from the HOLDER ASSY., CS.
6. Remove the 2 screws that secure the HOLDER ASSY., CS to remove the HOLDER ASSY., CS.
   - C.P.POLYWAVEA,3x6,F/Zn: 2

REASSEMBLY

2. **Match the 2 positioning holes of the HOLDER ASSY., CS with dowels.**

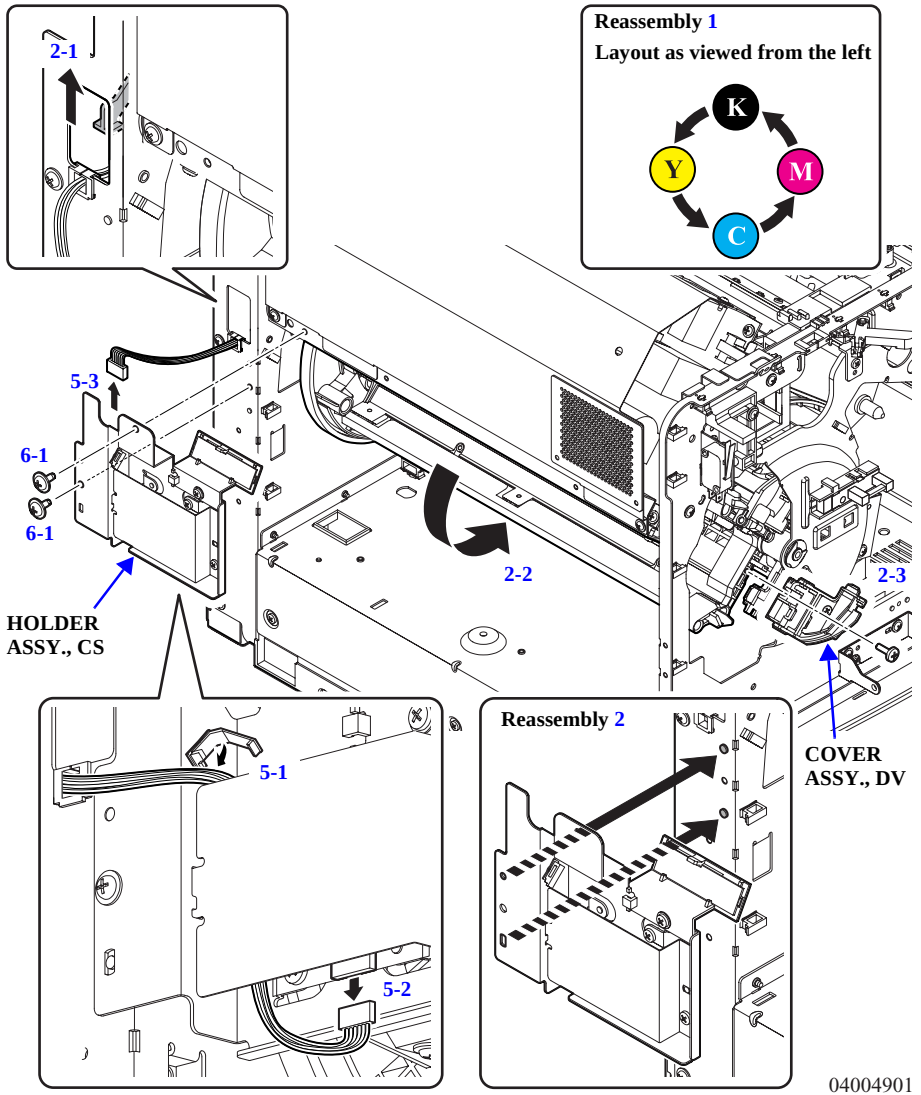

Figure 4-66. Removal of FRAME ASSY., RT 1

7. Remove the 2 E-RING, 7, L/NAs from both ends of the FRAME ASSY., RT, and take out the 2 BEARING, 688ZNRs.
8. Rotate the FRAME ASSY., RT to move the remaining COVER ASSY., DV until it matches with the opening of the frame.

CAUTION

5. When performing the following work, pay attention not to damage the gear of the FRAME ASSY., RT.

9. Slide the FRAME ASSY., RT toward front, draw out the rear shaft first and the front shaft next, and rotate the FRAME ASSY., RT to remove from the rear.
10. Remove the COMPRESSION SPRING, 8.46 and the SPACER, RT from the shaft of the FRAME ASSY., RT.

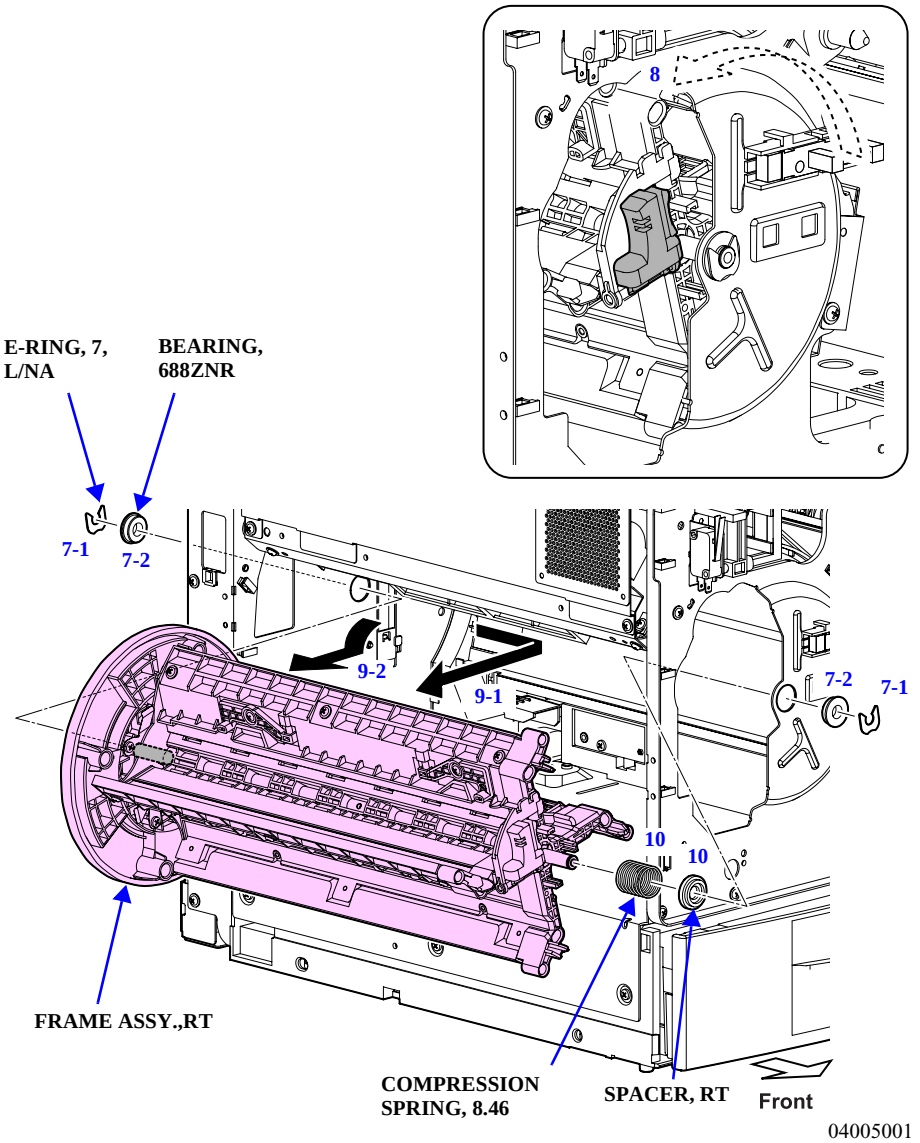

Figure 4-67. Removal of FRAME ASSY., RT 2

4.5.7 Transfer

4.5.7.1 ROLLER, 2ND

1. Open the MP TRAY ASSY.
2. Keep the 2ND TRANSFER ASSY. opened.

CAUTION

When performing the following work, extra caution should be paid not to touch the ROLLER, 2ND with bare hands.

3. Remove the RETAINING RING, 4 that secures the ROLLER, 2ND.

REASSEMBLY

Attach the RETAINING RING, 4 as shown in the figure.

4. Slide the ROLLER, 2ND toward front to remove the rear shaft, and remove the front shaft with the Roller Bearing attached to it.
5. Remove the Roller bearing from the left edge of the ROLLER, 2ND and remove the Roller bearing and the Washer (8.0x5.2x0.6) from the right edge of the ROLLER, 2ND.

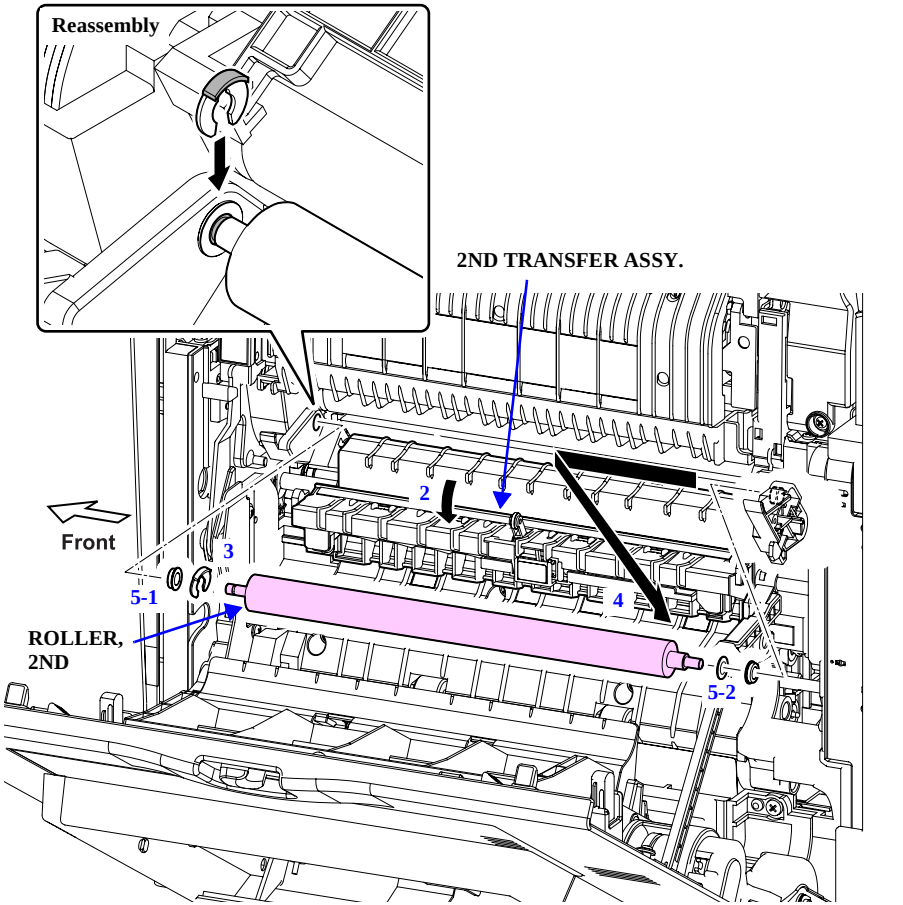

Figure 4-68. Removal of ROLLER, 2ND

4.5.7.2 Cleaning Tape Assy.

REMOVAL

D1. Open the MP TRAY ASSY.

D2. Release the 4 tabs that secure the Cleaning tape assy. from behind the 2ND TRANSFER ASSY., open the 2ND TRANSFER ASSY. to remove the Cleaning tape assy.

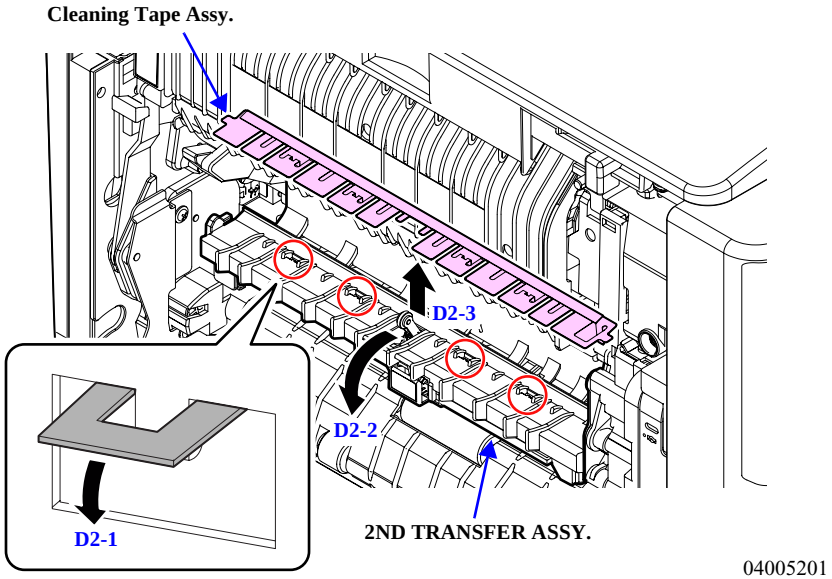

Figure 4-69. Removal of Cleaning Tape Assy.

REINSTALLATION

A1. Open the 2ND TRANSFER ASSY.

A2. Insert the tabs on both ends of the Cleaning tape assy. into the grooves.

A3. Matching the 4 tabs of the Cleaning tape assy. with the tabs of the 2ND TRANSFER ASSY., install the Cleaning tape assy. on 2ND TRANSFER ASSY.

A4. Slightly press the 4 tabs of the Cleaning tape assy. in order to hitch completely.

A5. Close the MP TRAY ASSY.

CAUTION

During and after the installation of the Cleaning tape assy., pay extreme caution to the followings.

A1. Take sufficient care when hitching the 4 tabs as exerting unnecessary force may damage parts or cause deformation.

A2. Hitch the 4 tabs firmly to the 2ND TRANSFER ASSY. so that there are no deformation or clearance. Be careful not to scratch the Cleaning tape assy. (discharging-cloth part) when hitching the tabs.

A3. After the installation, make sure that the Cleaning tape assy. is attached firmly to the 2ND TRANSFER ASSY. without a clearance between them.

A4. After the installation, make sure that the width of the clearance between the edge of the 2ND TRANSFER ASSY. and the longer edge of the Cleaning tape assy. (discharging-cloth part) is constant from end to end.

ADJUSTMENT REQUIRED

Be sure to refer to "5.1.3 Adjustment Execution Timing" *(p.366)* and perform specified adjustments after replacing Cleaning tape assy.

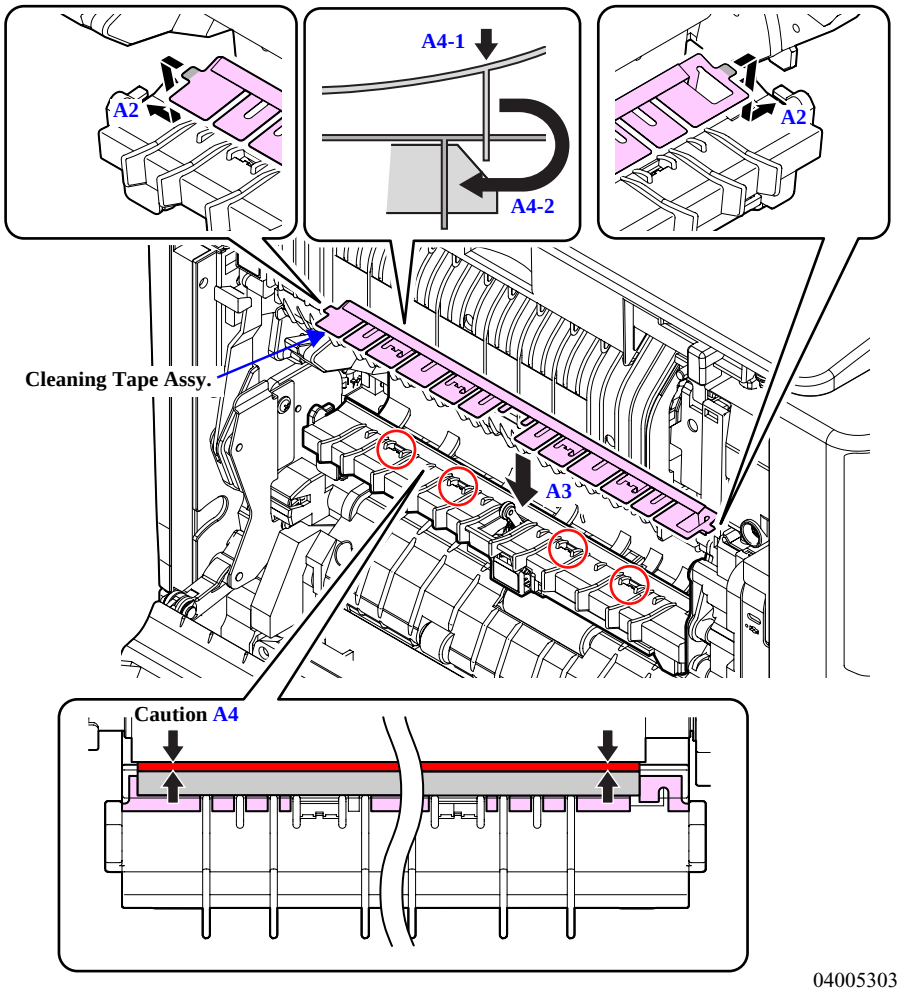

Figure 4-70. Reinstallation of Cleaning Tape Assy.

4.5.7.3 CLUTCH, CLEANER

1. Remove the HOUSING, REAR. *(p.244)*
2. Remove the Fuser unit. *(p.237)*
3. Disconnect the connector (White 6 Pin) from the STEPPING MOTOR ASSY., DV.
4. Disconnect the connector (Blue 2 Pin) from the BOARD ASSY., DRV, C585 DRV.
5. Disconnect the 4 connectors from the relay connectors of the DUCT ASSY., FU.
   - TRANSFER UNIT, Assy., ASP connector (White 8 Pin)
   - HARNESS, MAIN connector (White 3 Pin)
   - HARNESS, MAIN connector (White 8 Pin)
   - COVER ASSY., FU connector (White 3 Pin)
6. Release the HARNESS, MAIN from the 11 tabs and the groove of the DUCT ASSY., FU.

REASSEMBLY

1. Move the cable tie of the HARNESS, MAIN to the position as shown in Figure 4-71.

7. Disconnect the connector (White 3 Pin) of the FAN, FU from the BOARD ASSY., MAIN C585 MCU.

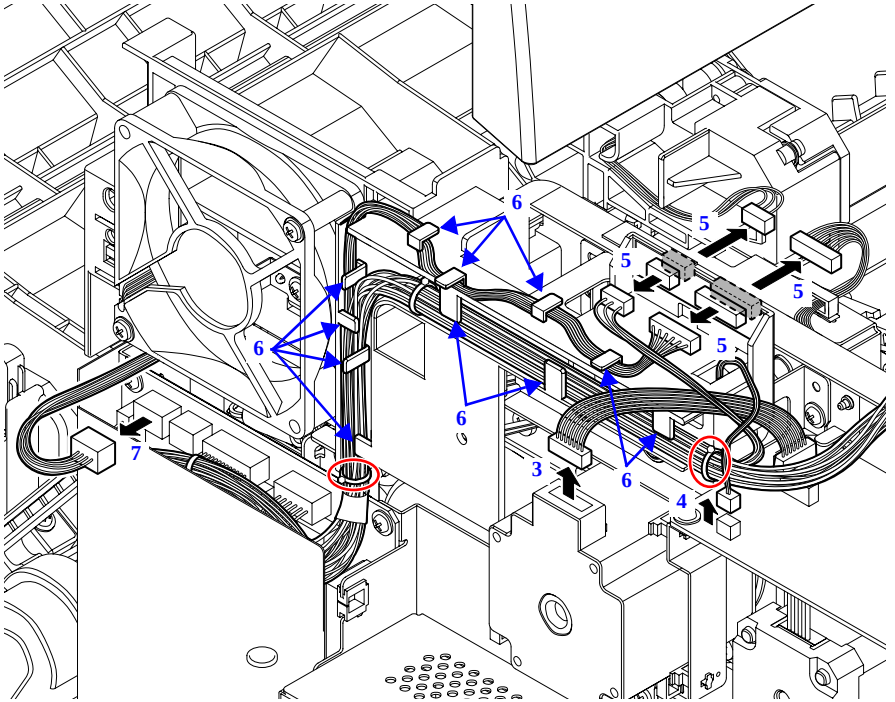

Figure 4-71. Removal of CLUTCH, CLEANER 1

8. Remove the 2 screws that secure the DUCT ASSY., FU, lift up the DUCT ASSY., FU upward, and pull the harness of the CLUTCH, CLEANER out of the hole.
   - C.P.POLYWAVEA,3x6,F/Zn: 2

REASSEMBLY

2. Match the 2 dowels of the DUCT ASSY., FU with the positioning holes.

9. Release the harness of the HARNESS, HV, 2ND TRANSFER from the groove of the DUCT ASSY., FU to disconnect the connectors.

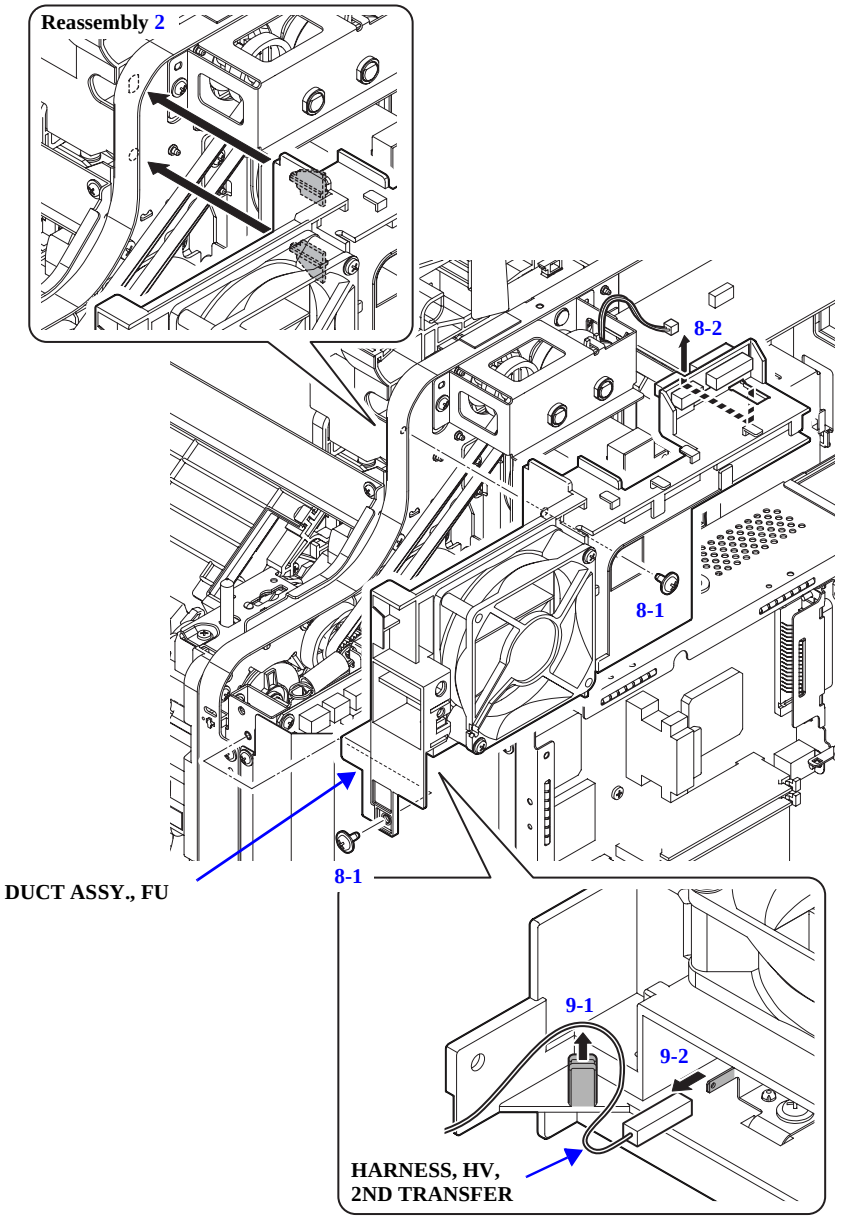

Figure 4-72. Removal of CLUTCH, CLEANER 2

10. Remove the RETAINING RING, 4 that secures the MOUNTING PLATE, CLUTCH.
11. Remove the three screws that secure the MOUNTING PLATE, CLUTCH and remove the MOUNTING PLATE, CLUTCH.
    - C.P.POLYWAVEA,3x6,F/Zn: 3

CAUTION

Pay attention not to lose the SPACER, CLUTCH as it may come off along with the CLUTCH, CLEANER when performing the following work.

REASSEMBLY

3. **Match the antirotation tab of the MOUNTING PLATE, CLUTCH with the antirotation groove of the CLUTCH, CLEANER.**
4. **Match the 2 positioning holes of the MOUNTING PLATE, CLUTCH with the dowels.**

12. Tilt the CLUTCH, CLEANER upward, release it from the connector of the STEPPING MOTOR ASSY., DV, and remove the CLUTCH, CLEANER from the SHAFT, CAM, CLEANER.

REASSEMBLY

5. **Insert the CLUTCH, CLEANER to the SHAFT, CAM, CLEANER with attention to their shape of cross-section.**

ADJUSTMENT REQUIRED

Be sure to refer to "5.1.3 Adjustment Execution Timing" *(p.366)* and perform specified adjustments after replacing CLUTCH, CLEANER.

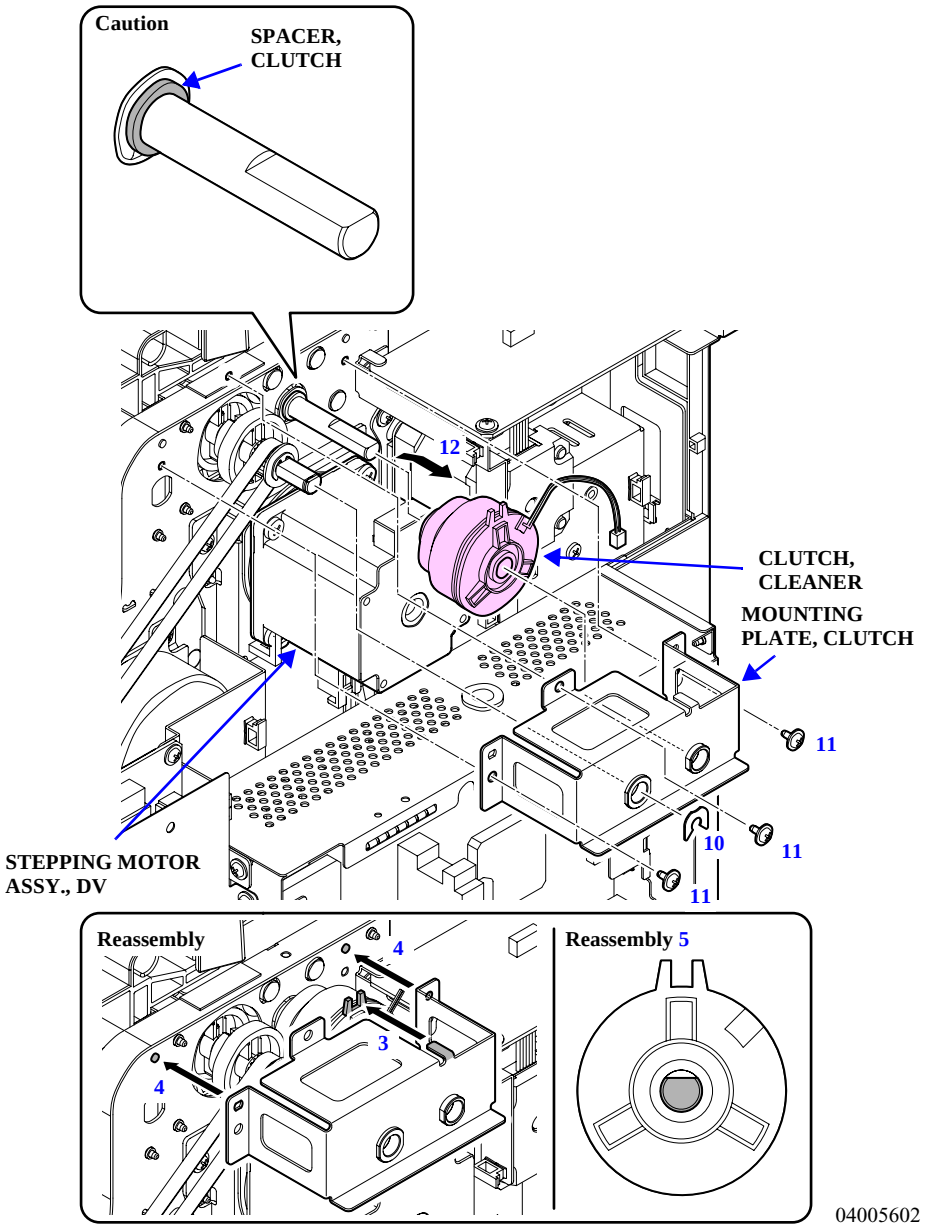

Figure 4-73. Removal of CLUTCH, CLEANER 3

4.5.7.4 CLUTCH, 2ND TRANSFER

1. Remove the PULLEY ASSY., DRIVE. *(p.296)*
2. Release the 3 harnesses of the CLUTCH, 2ND TRANSFER from the retainers, and disconnect the connector (White 2 Pin) from the relay connector.
3. Remove the 2 E-RING, 5, F/UCs from the SHAFT, CAM, 2ND TRANSFER, and draw out the CLUTCH, 2ND, TRANSFER from the SHAFT, CAM, 2ND TRANSFER.

REASSEMBLY

1. Insert the CLUTCH, 2ND TRANSFER to the SHAFT, CAM, 2ND TRANSFER with attention to their shape of cross-section.
2. Match the antirotation tab of the DRIVE ASSY., FU with the antirotation groove of the CLUTCH, 2ND TRANSFER.

ADJUSTMENT REQUIRED

Be sure to refer to "5.1.3 Adjustment Execution Timing" *(p.366)* and perform specified adjustments after replacing CLUTCH, 2ND TRANSFER.

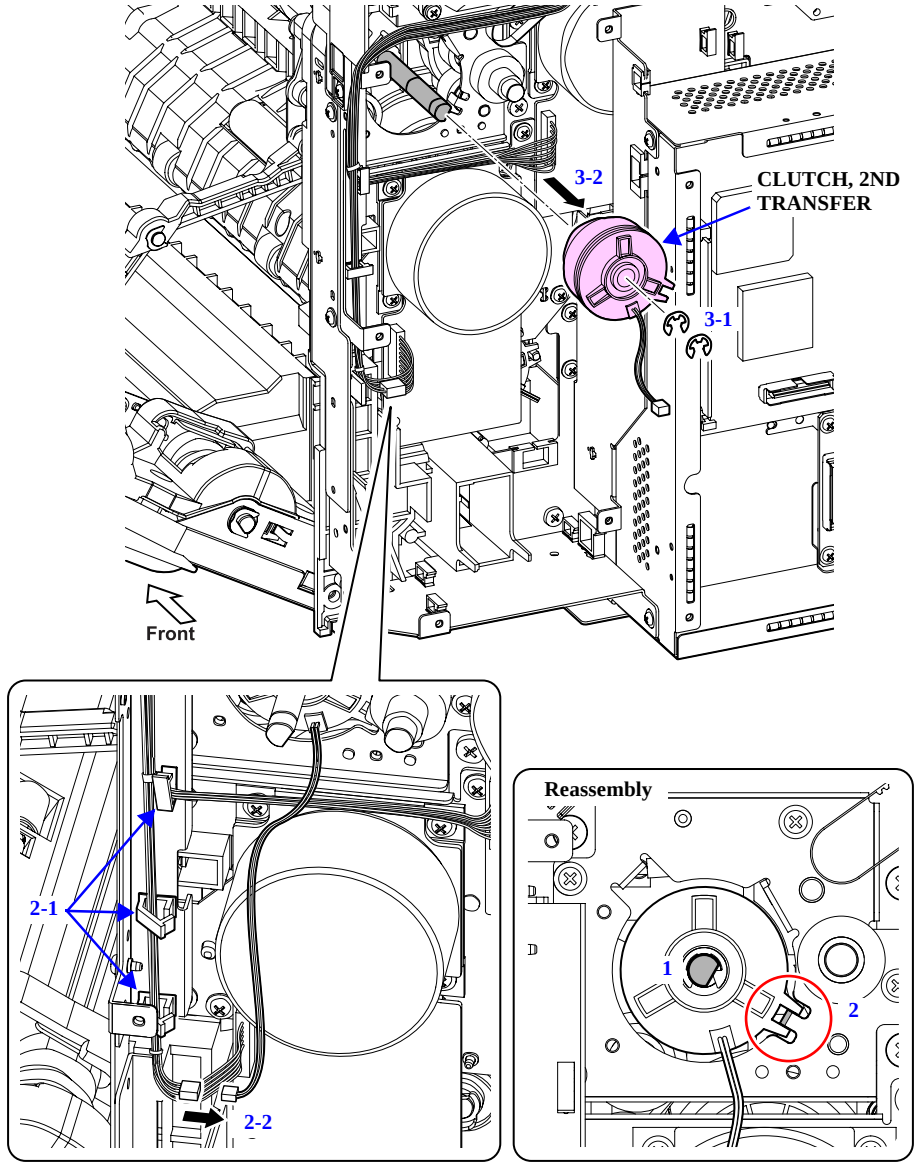

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Figure 4-74. Removal of CLUTCH, 2ND TRANSFER

4.5.7.5 LEVER, PATCH/ Waste Toner Full Sensor (DETECTOR, KI1248AA)/ Waste Toner Collector Sensor (DETECTION, PAPER LOAD)

☐ **LEVER, PATCH**

1. Remove the COVER, INNER. *(p.248)*
2. Press the LEVER, PATCH inward to close the 2 tabs, and remove the WIRE, PATCH from the LEVER, PATCH.
3. Remove the screw that secures the MOUNTING PLATE ASSY., LEVER, PATCH, UNIT to remove the MOUNTING PLATE ASSY., LEVER, PATCH, UNIT.
   - C.P.POLYWAVEA,3x6,F/Zn: 1

REASSEMBLY

1. Match the positioning hole of the MOUNTING PLATE Assy., LEVER, PATCH, UNIT with the dowel.

4. Remove the E-RING, 3, F/Uc that secures LEVER, PATCH, and draw out the LEVER, PATCH from both the shaft of the MOUNTING PLATE ASSY., LEVER, PATCH and the tip of the TORSION SPRING, 0.0209.

REASSEMBLY

2. Match the other tip of the TORSION SPRING, 0.0209 with the MOUNTING PLATE ASSY., LEVER, PATCH.

☐ **Waste Toner Full Sensor**

1). Remove the COVER, INNER. *(p.248)*

2). Release the 2 tabs that secure the Waste toner full sensor to remove the Waste toner full sensor.

3). Disconnect the connectors from the Waste toner full sensor.

☐ **Waste Toner Collector Sensor**

1]. Remove the COVER, INNER. *(p.248)*

2]. Release the 2 tabs that secure the Waste toner collector sensor to remove the Waste toner collector sensor.

3]. Disconnect the connectors from the Waste toner collector sensor.

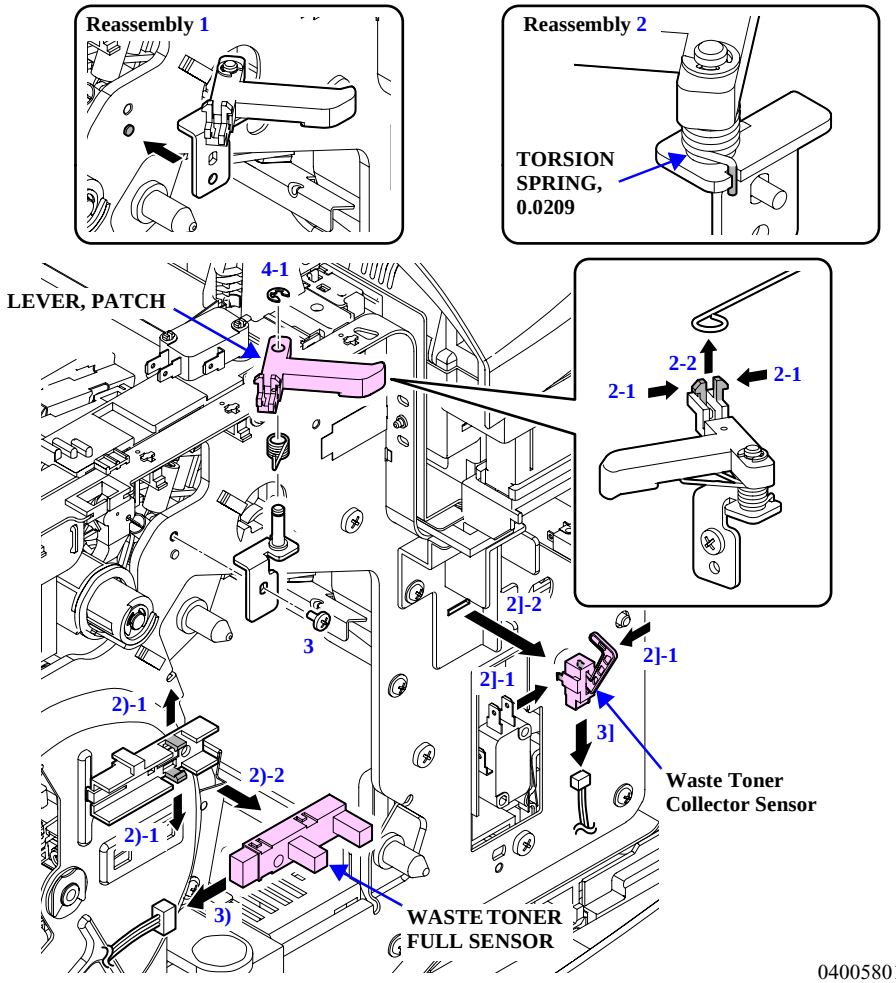

Figure 4-75. Removal of LEVER, PATCH/Waste Toner Full Sensor/ Waste Toner Collector Sensor

4.5.7.6 TRANSFER UNIT, Assy., ASP

REMOVAL

D1. Remove the Photoconductor unit. *(p.235)*

D2. Remove the Fuser unit. *(p.237)*

D3. Remove the COVER ASSY., FU. *(p.242)*

CAUTION

When performing the following work, set the LEVER, TENSION to transfer position, or Transfer belt release button may fall off when removing the TRANSFER UNIT, Assy., ASP.
If the button mistakenly falls of, follow the procedure below to assemble the parts.

D1. Attach the compression spring and the Transfer belt release button to the shaft.

D2. Insert the LEVER, TENSION to the shaft.

D3. With the Transfer belt release button pressed against inside the TRANSFER UNIT, Assy., ASP, rotate the LEVER TENSION to the transfer position.

D4. Pull out the LEVER, TENSION from the shaft.

D4. Tuck the button and set the LEVER, TENSION to transfer position.

D5. Remove the LEVER, TENSION. *(p.248)*

D6. Remove the 4 screws that secure the FRAME ASSY., FU to remove the FRAME ASSY., FU.

- C.P.POLYWAVEA,3x6,F/Zn: 2
- C.B.S-TITE SCREW,3x8,F/Zn: 2

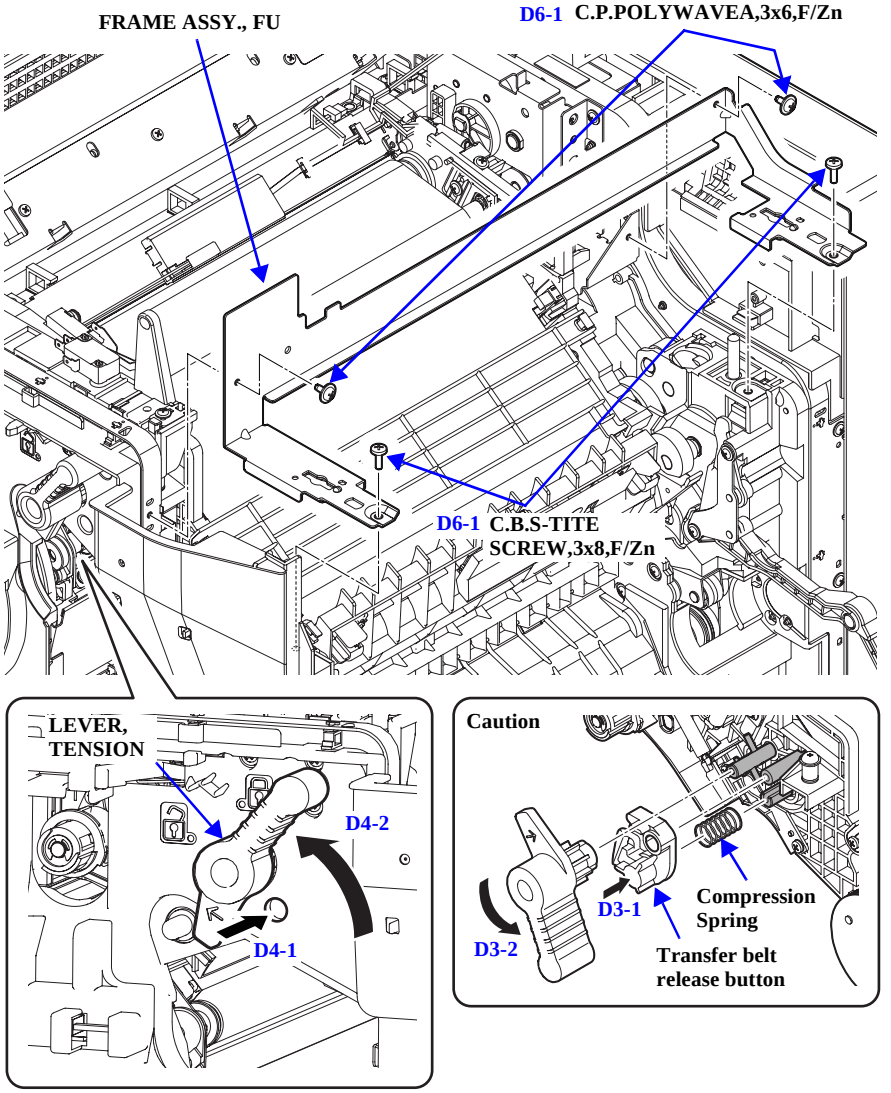

Figure 4-76. Removal of TRANSFER UNIT, Assy., ASP 1

D7. Disconnect the 2 connectors from the Fuser cover open sensor.

D8. Disconnect the connector of the HARNESS, AC, FU from the POWER SUPPLY.

D9. Remove the 2 screws that secure the HOLDER, COVER, TOP, FRONT.

D10.C.C.S-TITE SCREW,3x8,F/Zn: 2

D11.Release the HARNESS, MAIN and the HARNESS PANEL from the tab of the HOLDER, COVER, TOP, FRONT.

D12.Press down the HARNESS, AC, FU underneath the HARNESS, MAIN to remove, and dangle the HOLDER, COVER, TOP, FRONT in front.

D13.As pressing the LEVER, PATCH inward to close the 2 tabs, and remove the WIRE, PATCH from the LEVER, PATCH.

D14.Disconnect the connector of the HARNESS, HV, 1ST TRANSFER from the electrode of the TRANSFER UNIT, Assy., ASP.

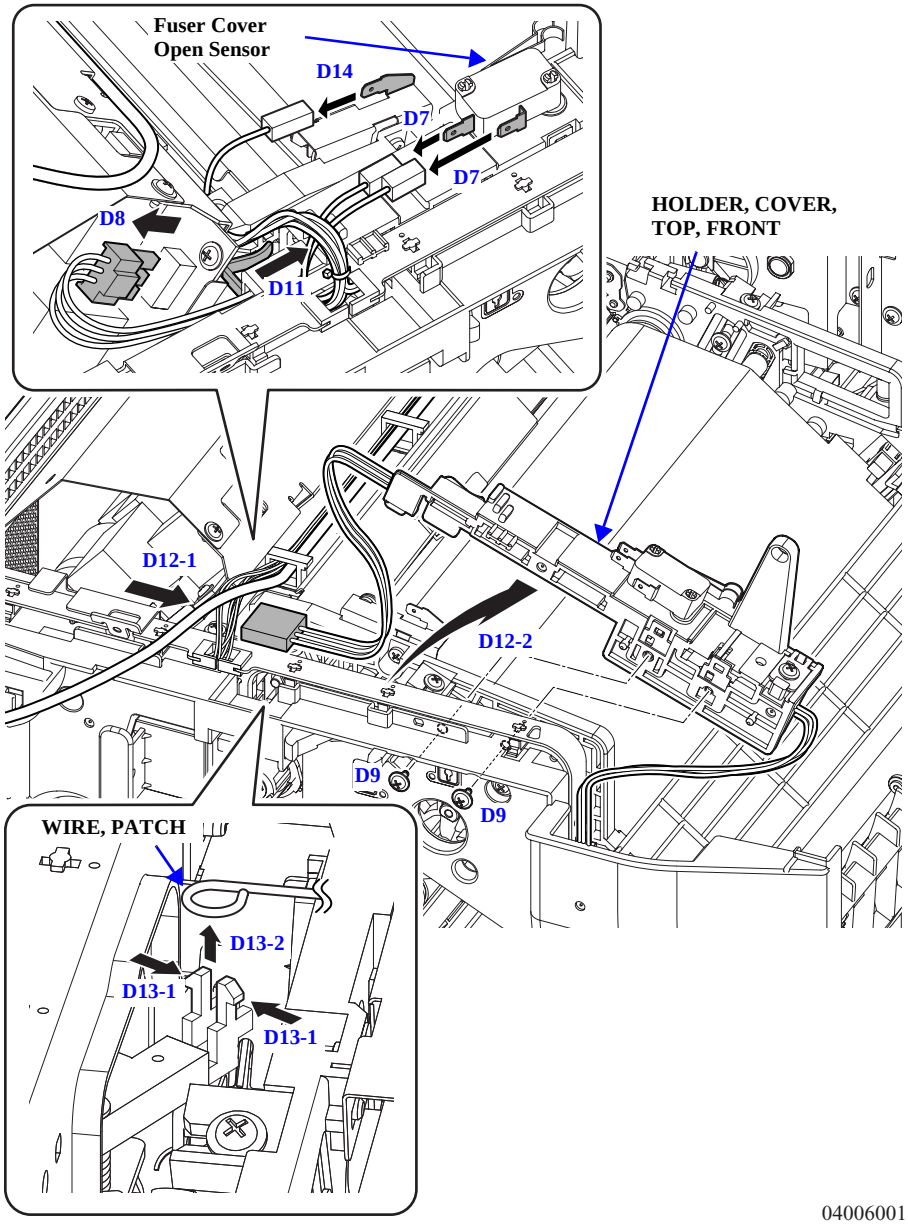

Figure 4-77. Removal of TRANSFER UNIT, Assy., ASP 2

D15.Release the 2 harnesses of the TRANSFER UNIT, Assy., ASP from the retainers, and disconnect the connector (eight white pins) from the relay connector.

D16.Remove the 2 screws that secure the TRANSFER UNIT, Assy., ASP and the grounding wire.

- C.P.(O)SCREW,4x14,F/Zn: 2

D17.Loosen the 2 screws that secure the TRANSFER UNIT, Assy., ASP.

- Fixing screw: 2

CAUTION

When handling the TRANSFER UNIT, Assy., ASP, beware of the following instructions.

- **Do not hold a part other than the handles. (Especially, never touch the transfer belt surface and the grounding plate that is attached on the left side of the unit. Avoid the use of the unit once the transfer belt is damaged.)**
- **Be sure to underlay some papers or like while at work since waste toner may spill out of the TRANSFER UNIT, Assy., ASP.**
- **Be careful not to tilt the TRANSFER UNIT, Assy., ASP as the waste toner may spill out.**
- **Extra caution is required not to touch the surface of the TRANSFER BELT with bare hands, as it has adverse effect on image quality.**
- **Give precautions not to damage or contaminate the surface of the Transfer belt.**
- **Prevent the Flywheel and the Transfer belt release button from coming in contact with the frame.**

D18.Press the Cleaning blade lever, hold handles on both sides of the TRANSFER UNIT, Assy., ASP and first lift the rear side of the unit releasing it from the cam, and then pull out the CARRIAGE, CL from the hole to remove the TRANSFER UNIT, Assy., ASP.

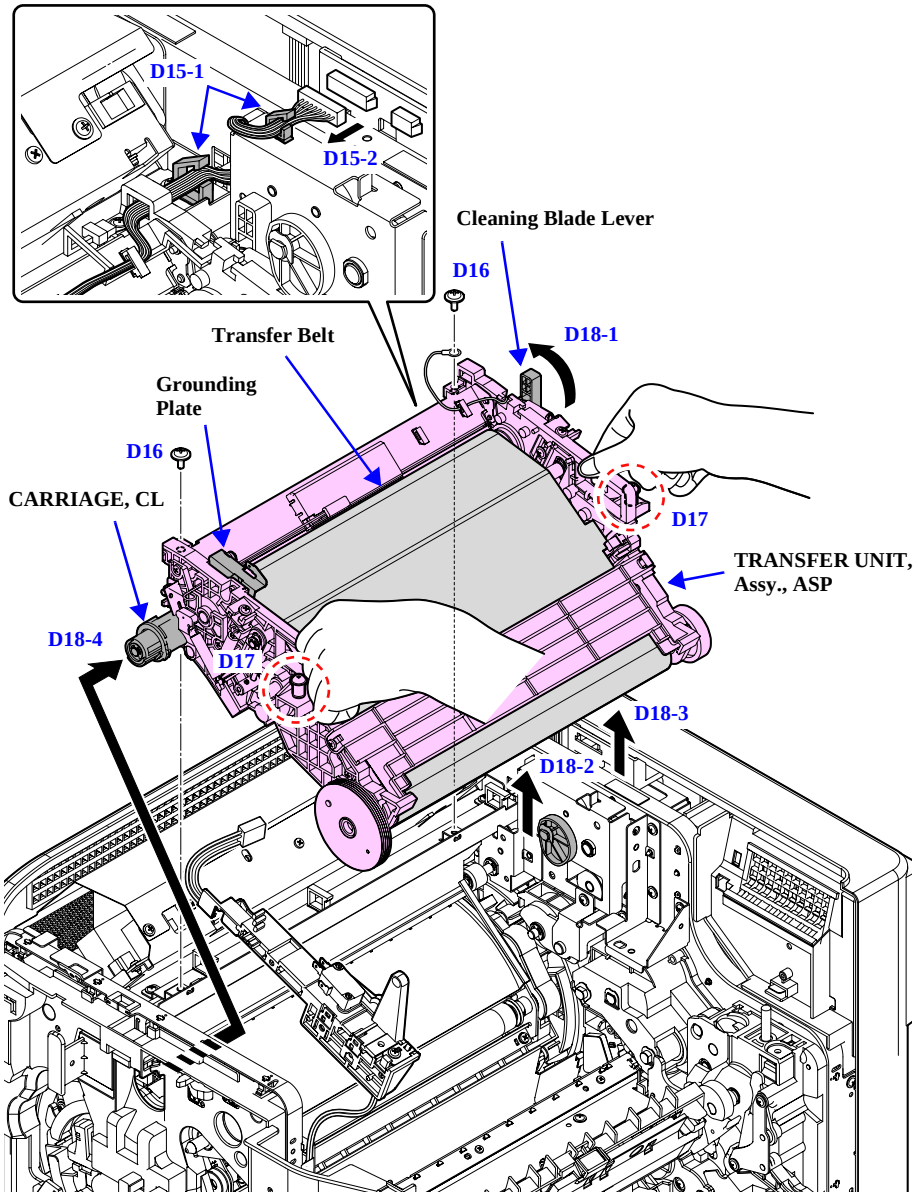

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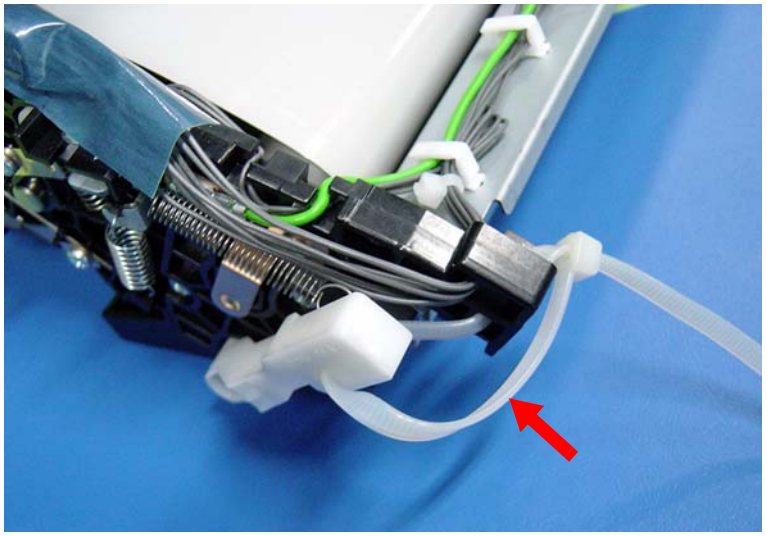
Figure 4-78. Removal of TRANSFER UNIT, Assy., ASP 3

REINSTALLATION

CAUTION

A1. Before installing the TRANSFER UNIT, Assy., ASP to the printer, be sure to cut off and remove the cable tie which secures the cleaner lever of the assy.



A2. When handling the TRANSFER UNIT, Assy., ASP, beware of the following instructions.

- Do not hold a part other than the handles. (Especially, never touch the transfer belt surface and the grounding plate that is attached on the left side of the unit. Avoid the use of the unit once the transfer belt is damaged.)
- Extra caution is required not to touch the surface of the Transfer belt with bare hands, as it has adverse effect on image quality. In case you touch the belt with bare hands, print out a couple of documents in A4 size, and confirm that image quality is not affected.
- Give precautions not to damage or contaminate the surface of the Transfer belt.
- Prevent the Flywheel and the Transfer belt release button from coming in contact with the frame.

A3. After replacing the TRANSFER UNIT, Assy., ASP, be sure to secure the ground wire with the retainer as shown in the figure.

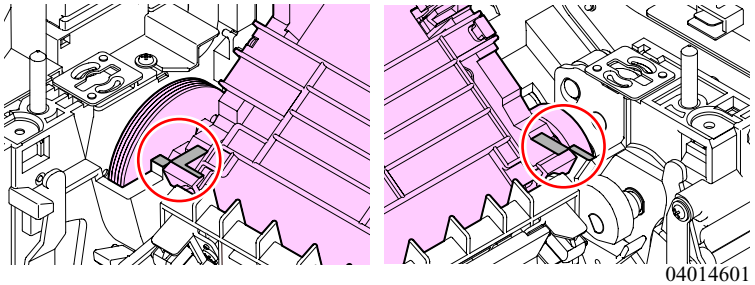
A1. While holding the handles on both sides of the TRANSFER UNIT, Assy., ASP, insert the CARRIAGE, CL into the hole, press the Cleaning blade lever, and install the TRANSFER UNIT, Assy., ASP firmly with attention not to hit the cam.

A2. Secure the TRANSFER UNIT, Assy., ASP and the grounding wire with 4 screws.

- Fixing screw: 2
- C.P.(O)SCREW,4x14,F/Zn: 2

REASSEMBLY

After installing the TRANSFER UNIT, Assy., ASP, make sure that the sections on right-and-left side of the unit indicated below are on the same level.



A3. Connect the connector (White 8 Pin) of the TRANSFER UNIT, Assy., ASP to the relay connector, and secure the harness with the 2 retainers.

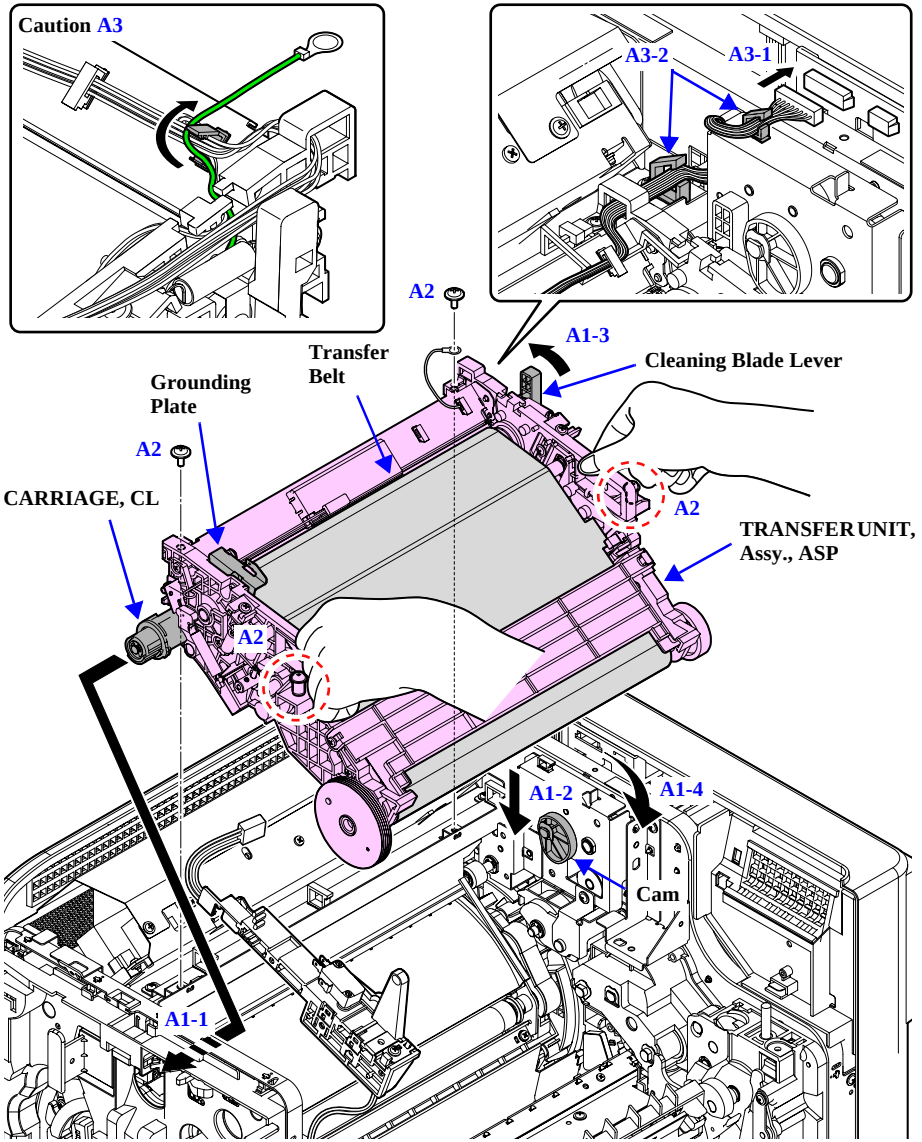


Figure 4-79. Reinstallation of TRANSFER UNIT, Assy., ASP 1

A4. Connect the connectors of the HARNESS, HV, 1ST TRANSFER to the electrode of the TRANSFER UNIT, Assy., ASP.

A5. While pressing the LEVER, PATCH, insert the WIRE, PATCH to the 2 tabs of the LEVER, PATCH.

A6. Put the HARNESS, AC, FU underneath the HARNESS, MAIN, and hook the HARNESS, MAIN and the HARNESS PANEL on the tab of the HOLDER, COVER, TOP, FRONT.

A7. Match the 2 dowels of the HOLDER, COVER, TOP, FRONT with the positioning holes, and secure them with 2 screws.

- C.C.S-TITE SCREW,3x8,F/Zn: 2

CAUTION

A4. The tab of the SHEET, HARNESS, FU occasionally come off from the notch after removing the HOLDER COVER, TOP, FRONT. Be sure to confirm that the tab is securely inserted.

A8. Connect the connector of the HARNESS, AC, FU to the Power Supply.

A9. Connect the 2 connectors to the Fuser cover open sensor.

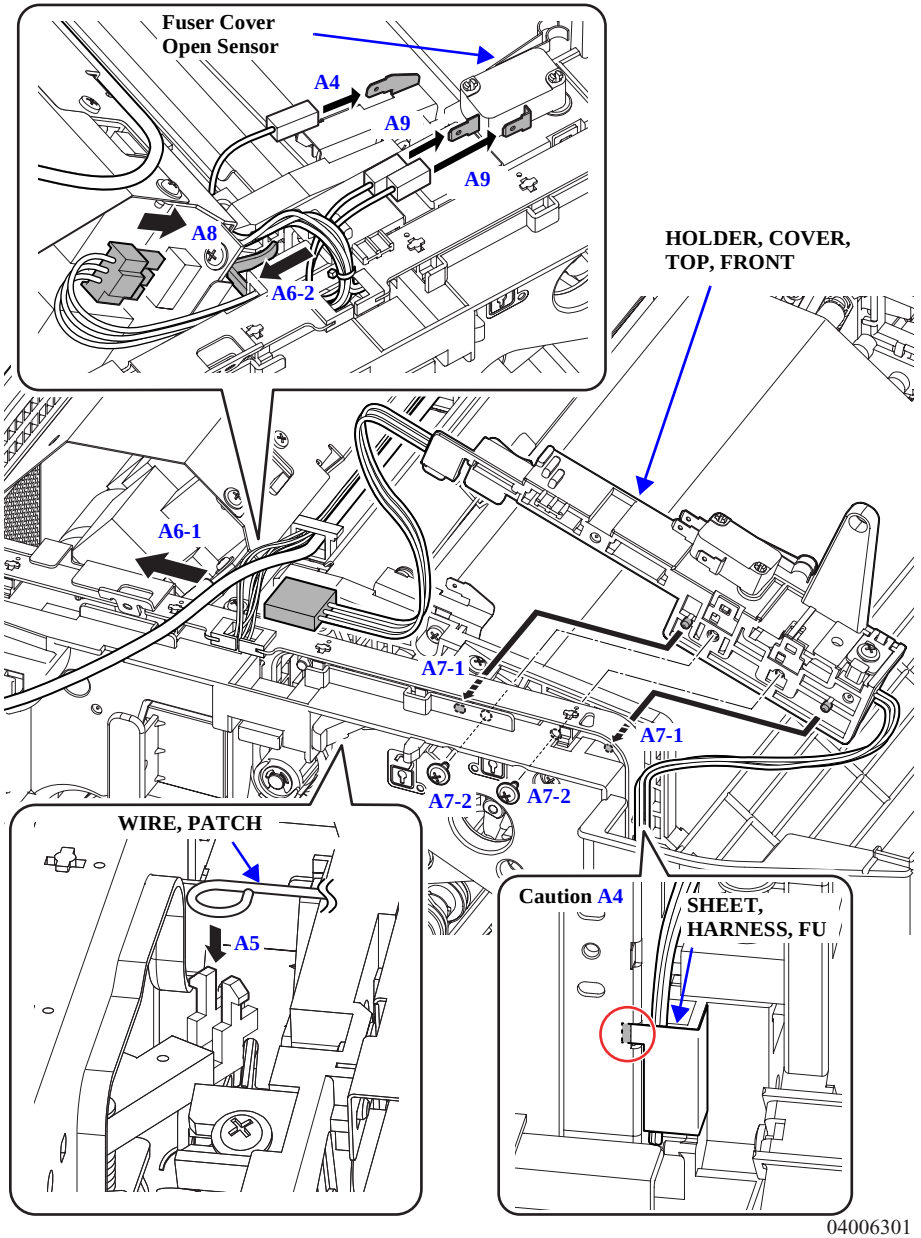


Figure 4-80. Reinstallation of TRANSFER UNIT, Assy., ASP 2

A10. Place the FRAME ASSY., FU so that the two positioning pins are inserted into the positioning holes.

A11. Pressing down the places indicated with red circles, secure the four screws in the order shown in the figure.

- C.P.POLYWAVEA,3x6,F/Zn: 2
- C.B.S-TITE SCREW,3x8,F/Zn: 2

A12. Attach the LEVER, TENSION. *(p.248)*

A13. Turn the LEVER, TENSION to unlock position.

A14. Attach the COVER ASSY., FU. *(p.242)*

A15. Attach the Fuser unit. *(p.237)*

A16. Attach the Photoconductor unit. *(p.235)*

ADJUSTMENT REQUIRED

Be sure to refer to "5.1.3 Adjustment Execution Timing" *(p.366)* and perform specified adjustments after replacing TRANSFER UNIT, Assy., ASP.

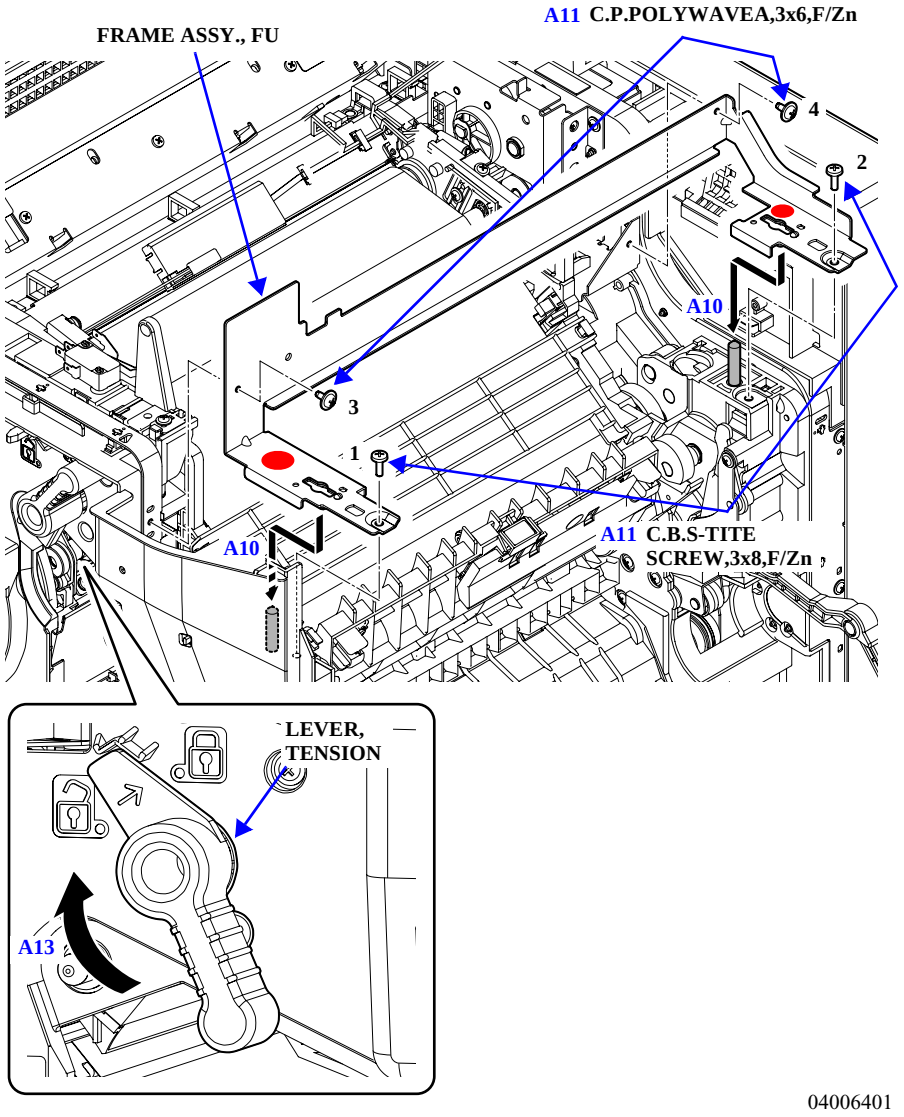


Figure 4-81. Reinstallation of TRANSFER UNIT, Assy., ASP 3

4.5.7.7 2ND TRANSFER Assy., ASP

1. Remove the TRANSFER UNIT, Assy., ASP. *(p.284)*
2. Remove the 2 screws that secure the COVER, DETECTOR ASSY. to remove the COVER, DETECTOR ASSY.
   - C.C.P-TITE SCREW,3x8,F/Zn: 1

REASSEMBLY

1. Insert the detection lever of the COVER, DETECTOR ASSY. to the hole.
2. Match the rib of the COVER, DETECTOR ASSY. with the notch.

3. Disconnect the connector (Blue 3 Pin) from the Post-transferring sensor, and release the harness from the 3 tabs and the 2 grooves.
4. Disconnect the connector of the HARNESS, HV, 2ND TRANSFER from the electrode, and release the connector from the 2 grooves.

REASSEMBLY

3. Route both the harness of the Post-transferring sensor and the HARNESS, HV, 2ND TRANSFER as shown in Figure 4-82.

5. Remove the E-RING, 7, L/NA that secures the BUSHING, 8 (rear).

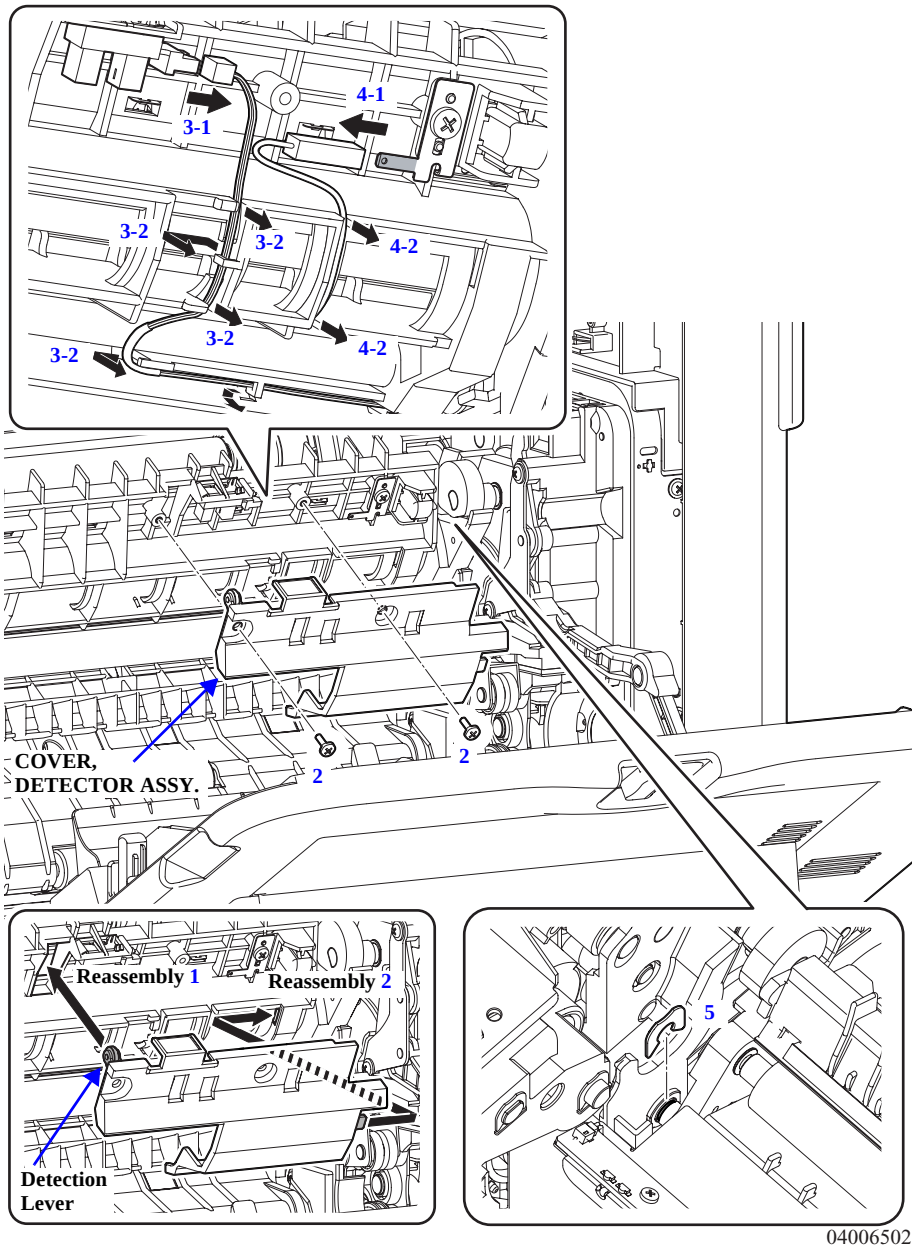


Figure 4-82. Removal of 2ND TRANSFER Assy., ASP 1

CAUTION

When performing the following work, pay attention to the instructions below.

- **Do not touch the ROLLER, 2ND with bare hands.**
- **The ROLLER, 2ND and the ROLLER, GATE should not be damaged.**
- **Do not pull the 2ND TRANSFER Assy., ASP, forcedly, as the HARNESS HV, 2ND TRANSFER is connected to it.**

6. Slide the 2ND TRANSFER Assy., ASP toward rear, draw out the front shaft first and the rear shaft next to remove it.

REASSEMBLY

4. Put the front side of the 2ND TRANSFER Assy., ASP on the rib of the frame.

7. Disconnect the connector of the HARNESS, HV, 2ND TRANSFER from the electrode.
8. Matching the HARNESS, HV, 2ND TRANSFER with the 2 holes of the 2ND TRANSFER Assy., ASP and pull out the HARNESS, HV, 2ND TRANSFER.
9. Release the harness of the Post-transferring sensor from the tab of the 2ND TRANSFER Assy., ASP.
10. Remove the BUSHING, 8 (rear) from the 2ND TRANSFER Assy., ASP.

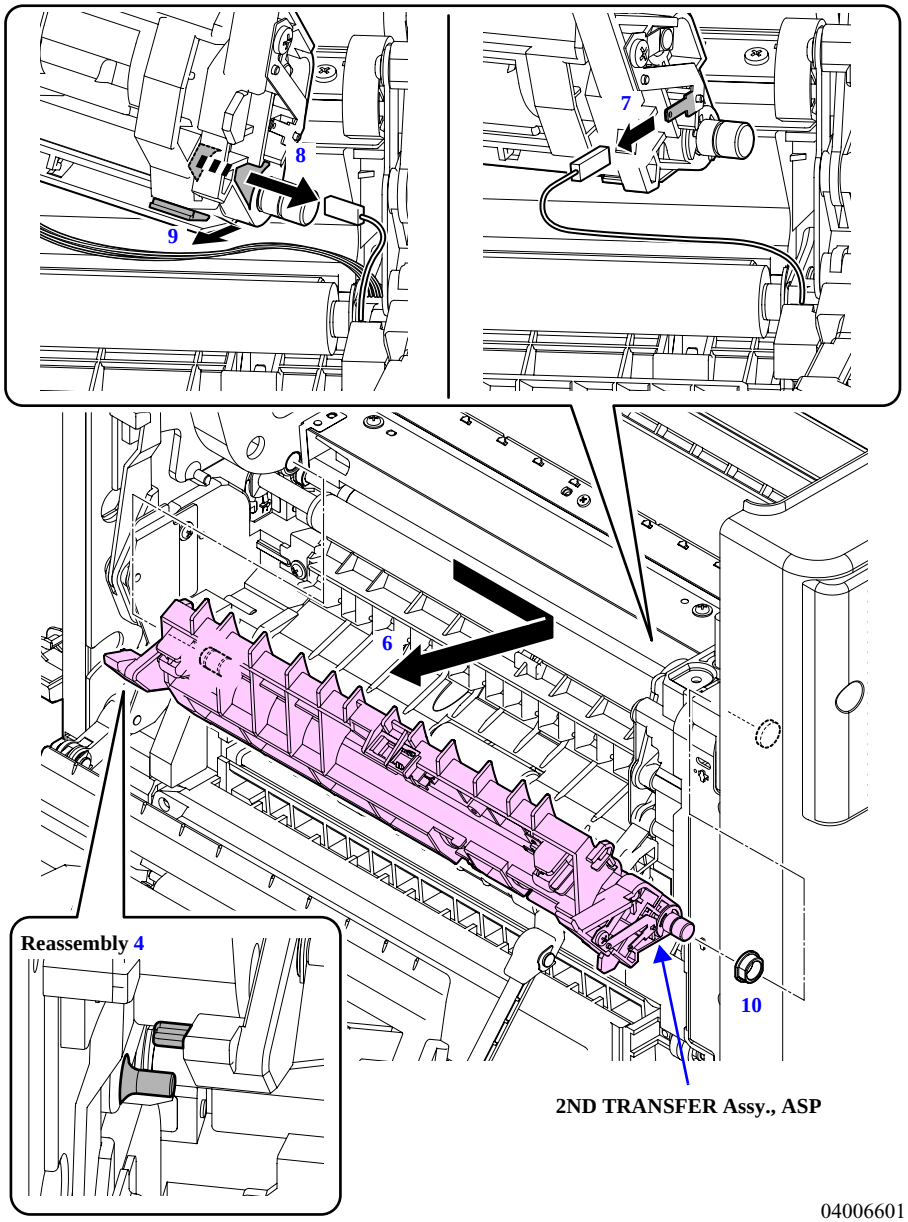


Figure 4-83. Removal of 2ND TRANSFER Assy., ASP 2

4.5.8 Fusing

4.5.8.1 FAN, FU

1. Remove the HOUSING, REAR. *(p.244)*
2. Disconnect the connectors (White 4 Pin) of the FAN, FU from the BOARD ASSY., MAIN C585 MCU, and release the harness from the tab.
3. Remove the 2 screws (with washer) that secure the FAN, FU to remove the FAN, FU.
   - C.B.P-TITE SCREW,3x30,F/Zn: 2
   - Plane washer,3.3x0.5x8,F/Zn: 2

Match the 2 positioning holes of the FAN, FU with the dowels.

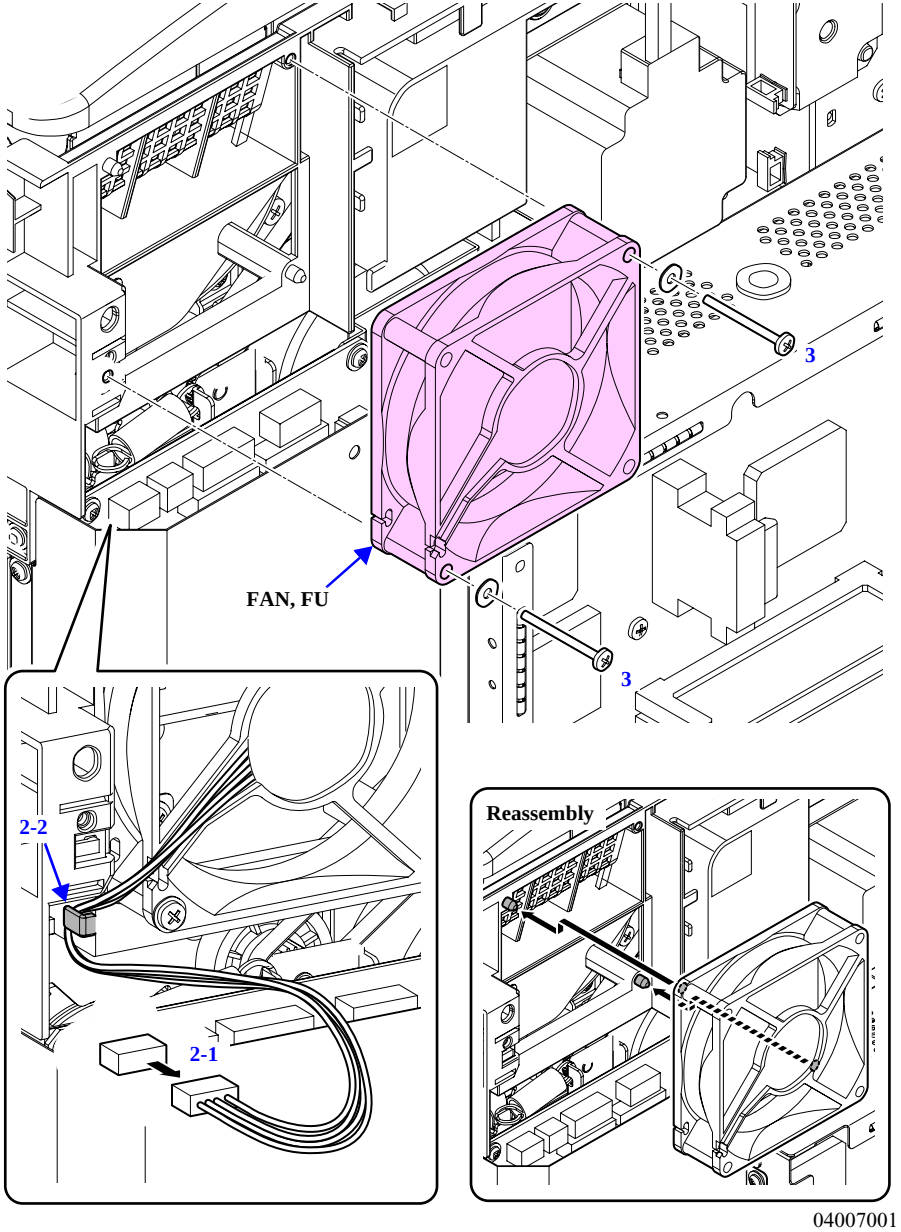


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Figure 4-84. Removal of FAN, FU

4.5.9 Drive

4.5.9.1 STEPPING MOTOR ASSY., DV

1. Remove the HOUSING, REAR. *(p.244)*
2. Disconnect the connector from the STEPPING MOTOR ASSY., DV.

CAUTION

Always sustain the STEPPING MOTOR ASSY., DV or it may fall off when performing the following work.

3. Remove the 4 screws that secure the STEPPING MOTOR ASSY., DV to remove the STEPPING MOTOR ASSY., DV.
   - C.B.S-TITE SCREW,4x8,F/Zn: 4

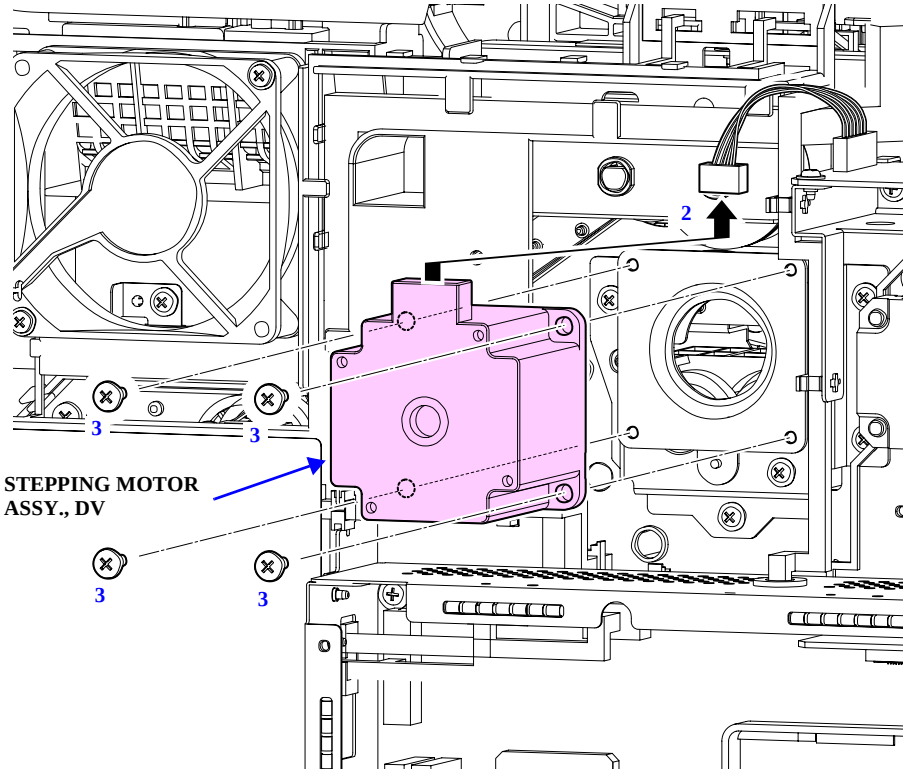

Figure 4-85. Removal of STEPPING MOTOR ASSY., DV

4.5.9.2 PULLEY ASSY., DRIVE

REMOVAL

D1. Remove the BOARD ASSY., MAIN C585 MCU. *(p.310)*

D2. Release the harness from both the retainer of the PULLEY ASSY., DRIVE and the edge saddle.

D3. Remove the 3 screws that secure the PULLEY ASSY., DRIVE.

- C.P.POLYWAVEA,3x6,F/Zn: 3

D4. Disengage the gear of the PULLEY ASSY., DRIVE from the TIMING BELT, and remove the PULLEY ASSY., DRIVE.

REINSTALLATION

A1. Loosen the two screws that secure the BRACKET, IDLE.

- C.P.POLYWAVEA,3x6,F/Zn: 2

A2. Engage the gear of the PULLEY ASSY., DRIVE with the TIMING BELT.

A3. Insert the 2 BUSHING, 8 of the PULLEY ASSY., DRIVE to the shaft, and match the 2 positioning holes of it with the dowels.

A4. Secure the PULLEY ASSY., DRIVE with the three screws.

- C.P.POLYWAVEA,3x6,F/Zn: 3

A5. Secure the BRACKET, IDLE with the two screws.

- C.P.POLYWAVEA,3x6,F/Zn: 2

A6. Route the harness through the retainer of the PULLEY ASSY., DRIVE and the edge saddle.

A7. Attach the BOARD ASSY., MAIN C585 MCU. *(p.310)*

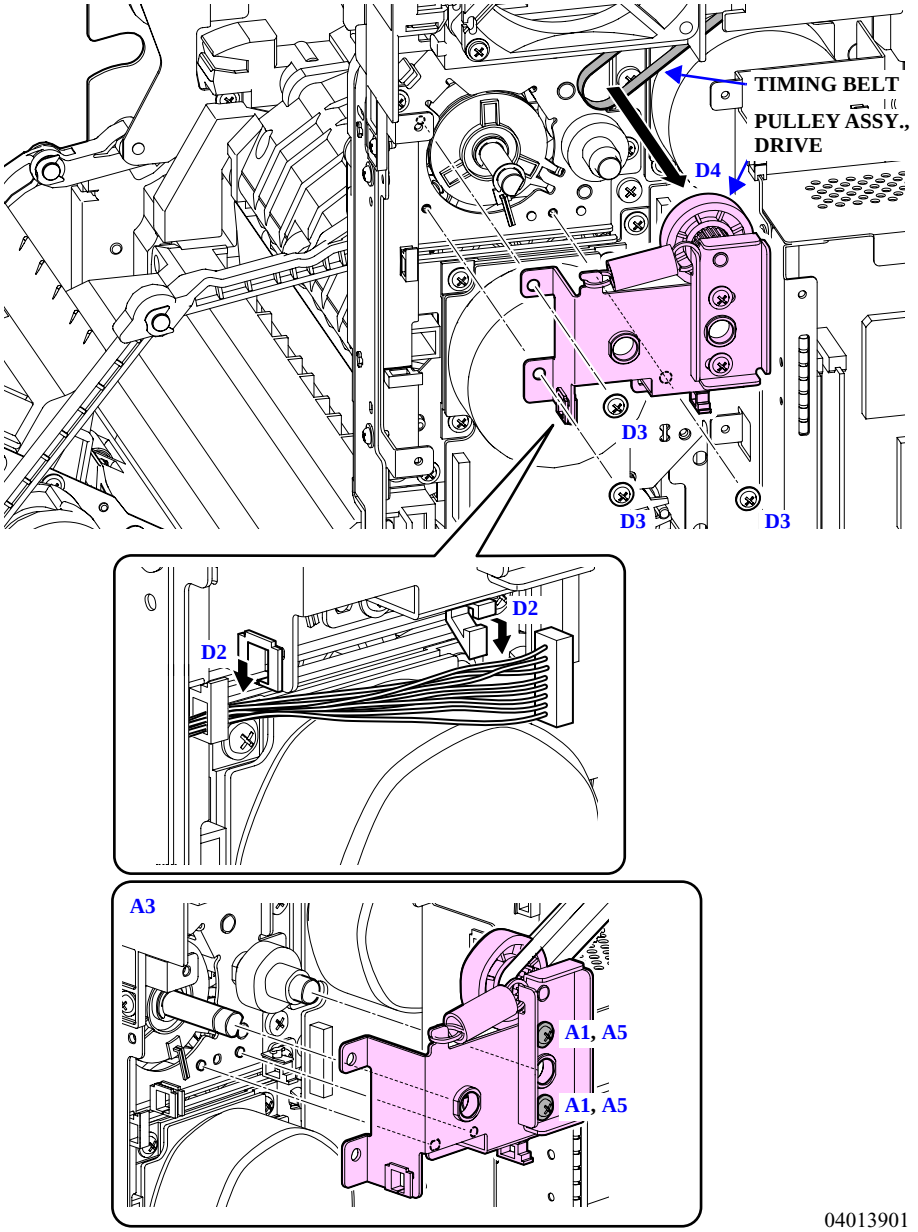

Figure 4-86. Removal of PULLEY ASSY., DRIVE

4.5.9.3 TIMING BELT

1. Remove the PULLEY ASSY., DRIVE. *(p.295)*
2. Remove the MOUNTING PLATE, CLUTCH. *(p.279)*
3. Remove the TIMING BELT from the gear of the PULLEY ASSY., CLEANER.

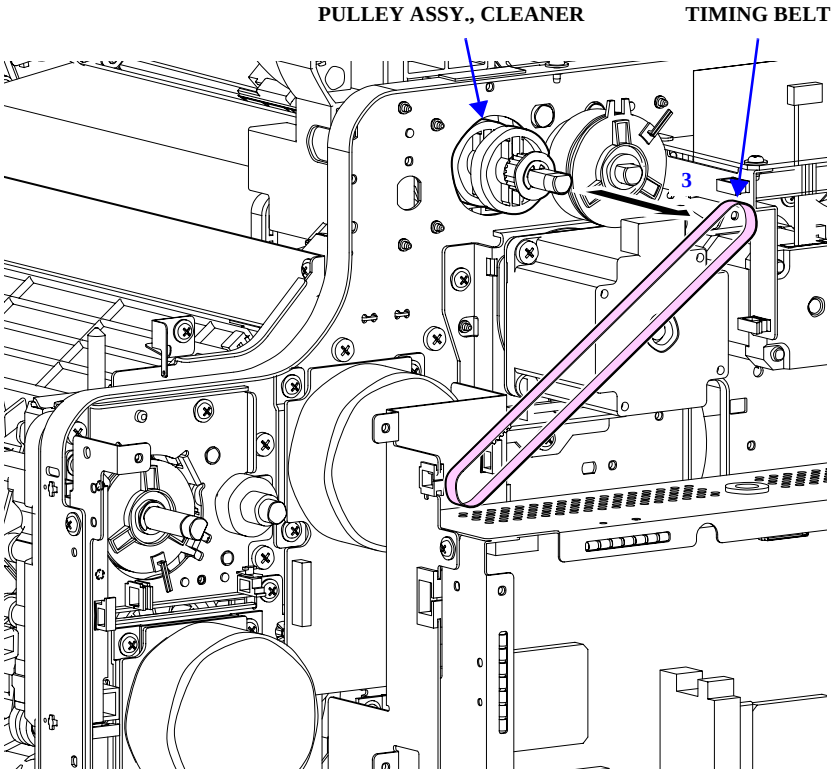

Figure 4-87. Removal of TIMING BELT

4.5.9.4 DRIVE ASSY., FU

1. Remove the CLUTCH, 2ND TRANSFER. *(p.282)*
2. Release the HARNESS, MAIN from the 3 retainers.

REASSEMBLY

1. Move the 2 cable ties to the position as shown in the Figure 4-88.

3. Remove the 3 screws that secure the MOUNTING PLAETE ASSY., MC and remove the MOUNTING PLATE ASSY., MC.
   - C.P.POLYWAVEA,3x6,F/Zn: 3

REASSEMBLY

2. Match the 2 dowels of the MOUNTING PLATE ASSY., MC with the positioning holes.

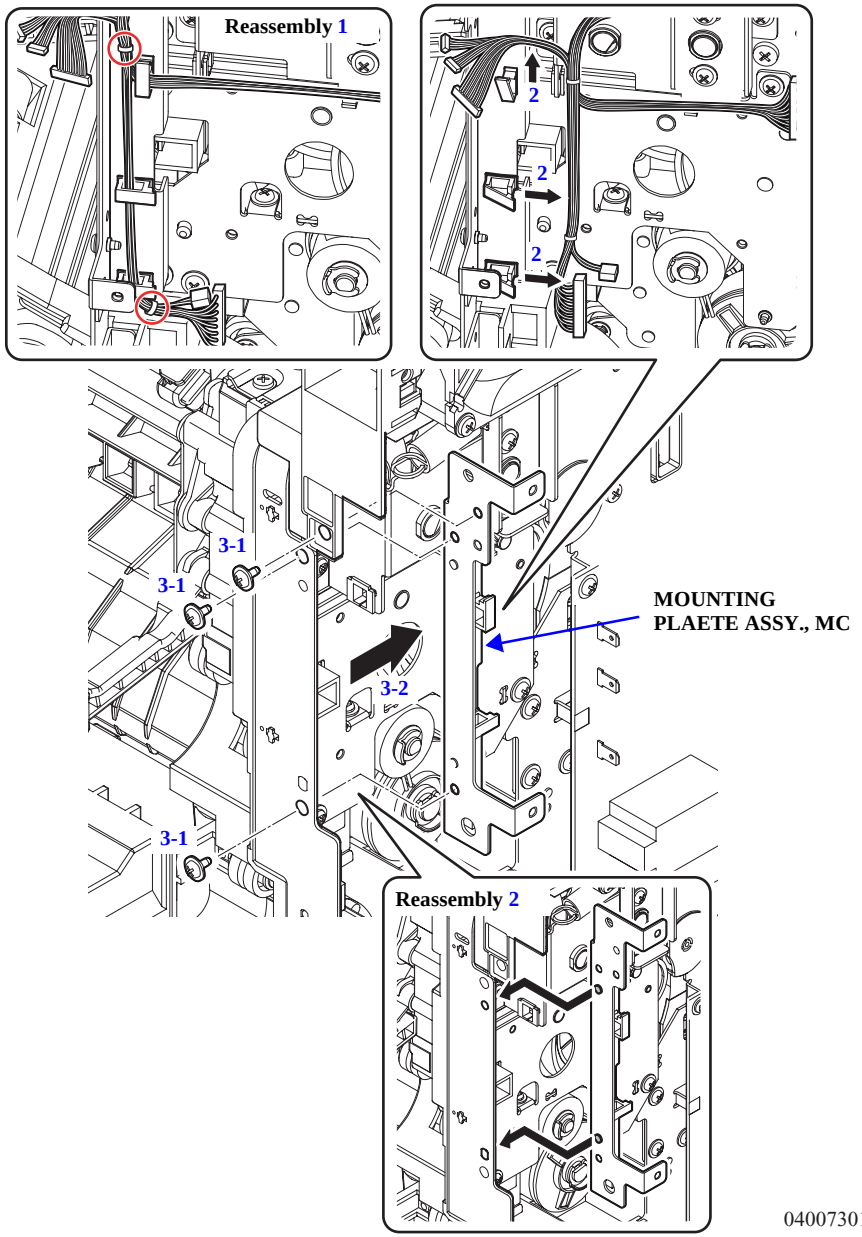

Figure 4-88. Removal of DRIVE ASSY., FU 1

4. Remove the SPUR GEAR, 21 from the shaft of the DRIVE ASSY., FU.

REASSEMBLY

3. Match the 2 grooves behind the SPUR GEAR, 21 with the guide pins of the shaft.

5. Remove the 4 screws that secure the DRIVE ASSY., FU.
   - C.P.POLYWAVEA,3x6,F/Zn: 4
6. Move the left side of the DRIVE ASSY., FU toward you, and remove the DRIVEASSY., FU while taking its planetary gear attached on its backside out of the hole on the frame.

REASSEMBLY

4. Match the 2 positioning holes of the DRIVE ASSY., FU with the dowels.

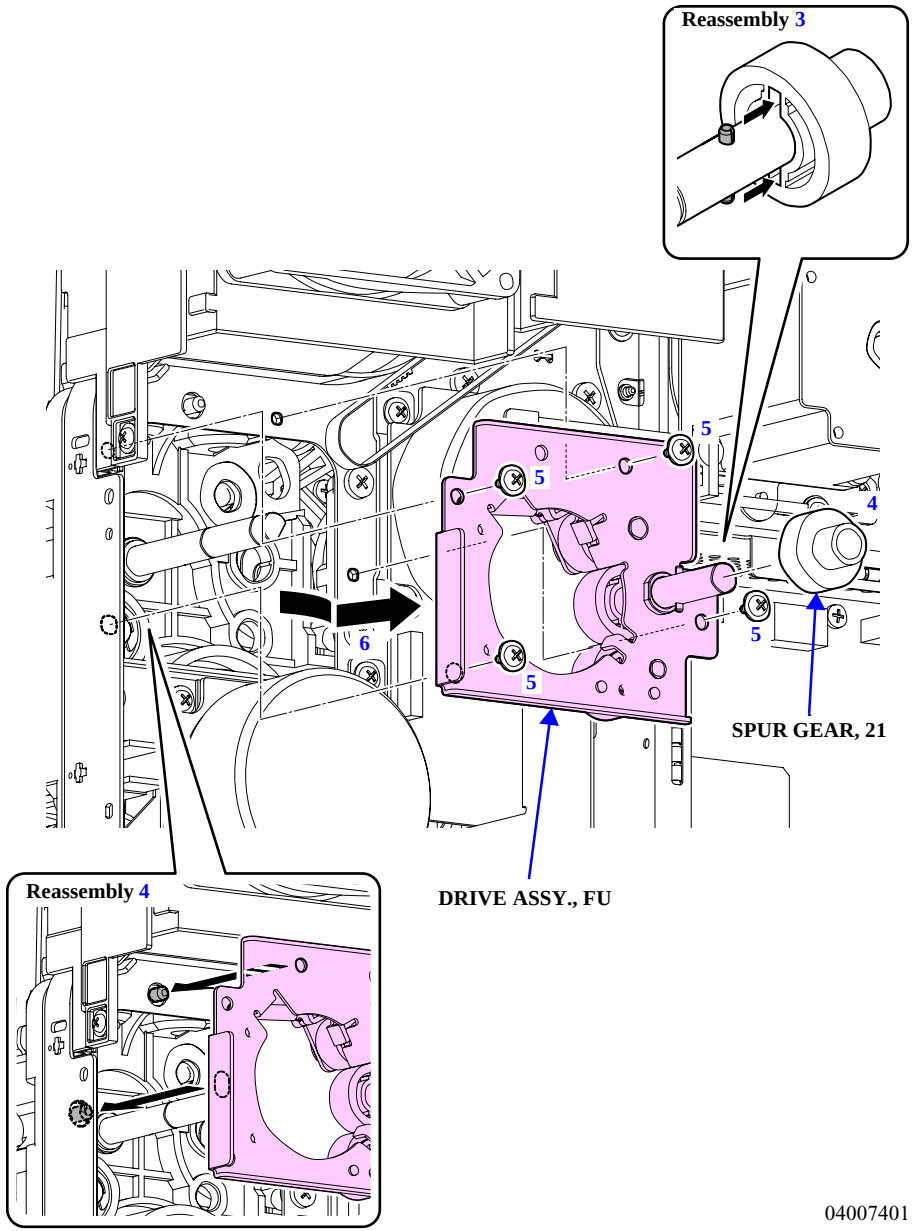

Figure 4-89. Removal of DRIVE ASSY., FU 2

4.5.9.5 SERVOMOTOR, PC

1. Remove the BOARD ASSY., MAIN, 585 MCU. *(p.310)*
2. Remove the MOUNTING PLATE ASSY., CONTROLLER, UNIT. *(p.314)*
3. Release the HARNESS, MAIN from both the 2 retainers and the edge saddle.
4. Release the HARNESS, MAIN BOARD, POWER and the HARNESS, MAIN BOARD, SIGNAL from the edge saddle.

REASSEMBLY

1. Move the cable ties of the HARNESS, MAIN BOARD, POWER and the HARNESS, MAIN BOARD, SIGNAL to the position shown in Figure 4-90.

5. Release the HARENSS, HV, 1ST TRANSFER from the edge saddle.
6. Remove the 3 screws that secure the MOUNTING PLATE, HVPS; C, ASSY. and remove the MOUNTING PLATE, HVPS; C, ASSY.
   - C.P.POLYWAVEA,3x6,F/Zn: 3

REASSEMBLY

2. Match the positioning hole of the MOUNTING PLATE, HVPS; C, ASSY. with the dowel, and insert the rib of the MOUNTING PLATE, HVPS; C, ASSY. to the notch.

7. Disconnect the connector from the SERVOMOTOR, PC.

CAUTION

Always sustain the SERVOMOTOR, PC or it may fall off when performing the following work.

8. Remove the 4 screws that secure the SERVOMOTOR, PC to remove the SERVOMOTOR, PC.
   - C.P.POLYWAVEA,3x6,F/Zn: 4

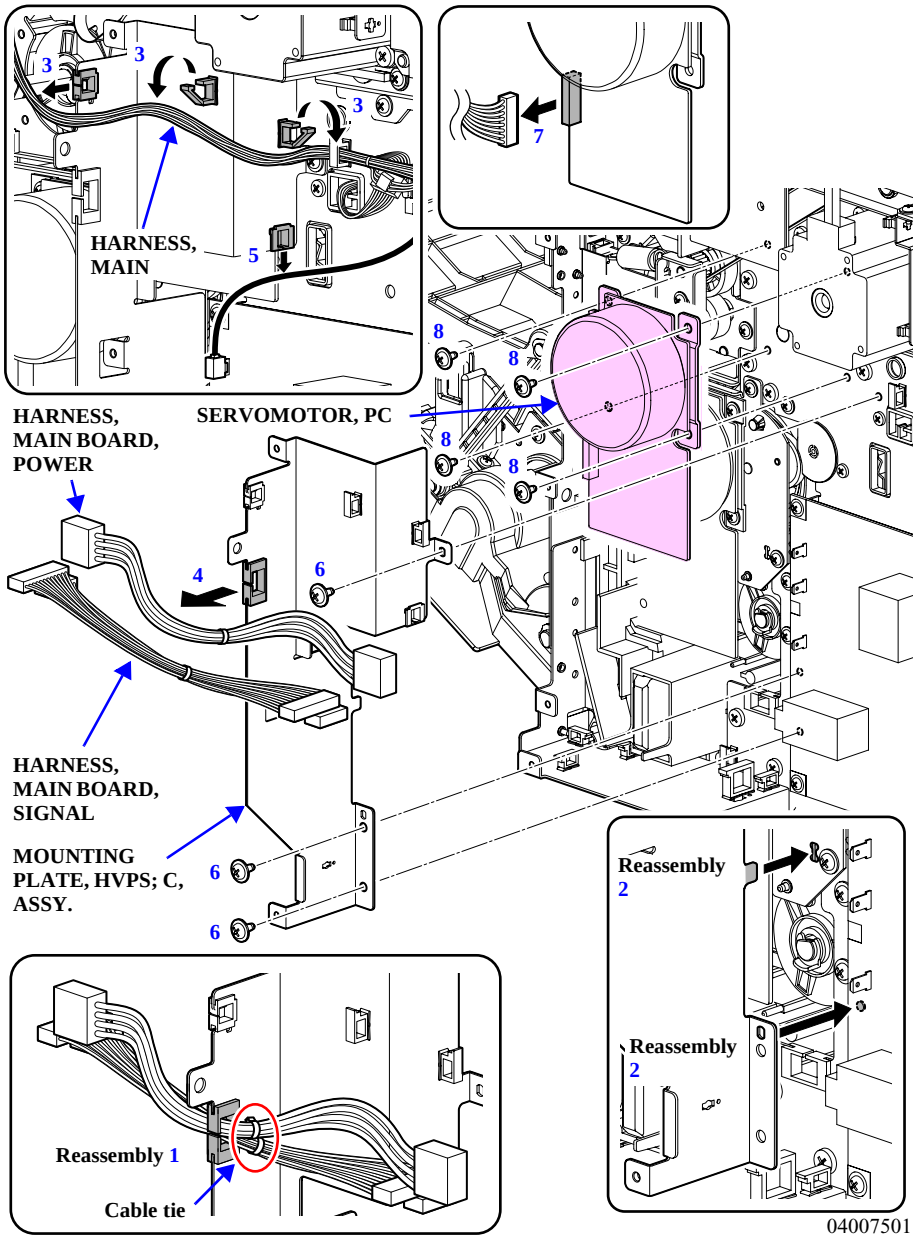

Figure 4-90. Removal of SERVOMOTOR, PC

4.5.9.6 SERVOMOTOR, DRIVE

1. Remove the BOARD ASSY., MAIN C585 MCU. *(p.310)*
2. Disconnect the connector from the SERVOMOTOR, DRIVE.

CAUTION

Always sustain the SERVOMOTOR, DRIVE or it may fall off when performing the following work.

3. Remove the 4 screws that secure the SERVOMOTOR, DRIVE to remove the SERVOMOTOR, DRIVE.
   - C.P.POLYWAVEA,3x6,F/Zn: 4

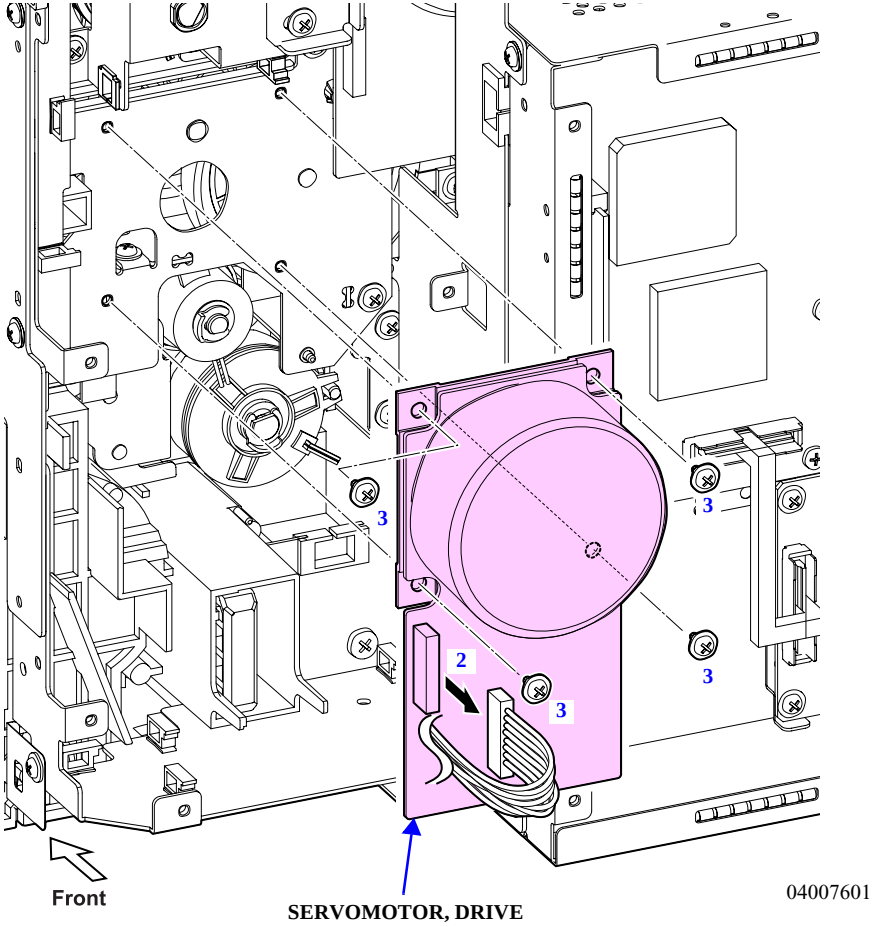

Figure 4-91. Removal of SERVOMOTOR, DRIVE

4.5.9.7 DRIVE ASSY., MAIN

1. Remove the SERVOMOTOR, DRIVE. *(p.300)*
2. Remove the SERVOMOTOR, PC. *(p.299)*
3. Remove the MOUNTING PLATE ASSY., MC. *(p.297)*
4. Remove the 5 screws that secure the DRIVE ASSY., MAIN, pull the bottom of the DRIVE ASSY., MAIN toward you, and remove it avoiding contact between its gears and the frame.
   - C.P.POLYWAVEA,3x6,F/Zn: 5

Match the 2 positioning holes of the DRIVE ASSY., MAIN with the dowels.

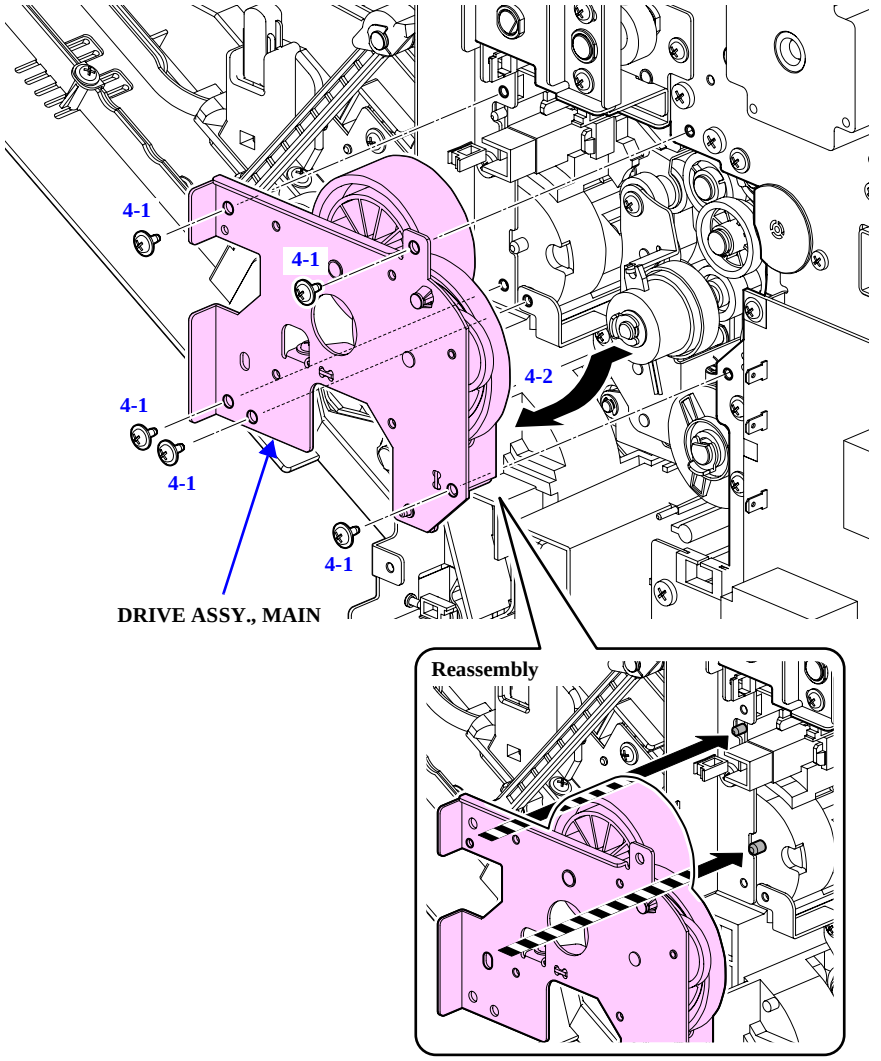

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Figure 4-92. Removal of DRIVE ASSY., MAIN

4.5.9.8 DRIVE ASSY., MPT

1. Remove the CLUTCH, FEED and the CLUTCH, PICK UP. *(p.258)*
2. Remove the 3 screws that secure the DRIVE ASSY.,MPT.
   - C.P.POLYWAVEA,3x6,F/Zn: 1
   - C.C.P-TITE SCREW,3x8,F/Zn: 2
3. Pull the DRIVE ASSY., MPT toward you, and remove the planetary gear paying attention not to hit the main unit.

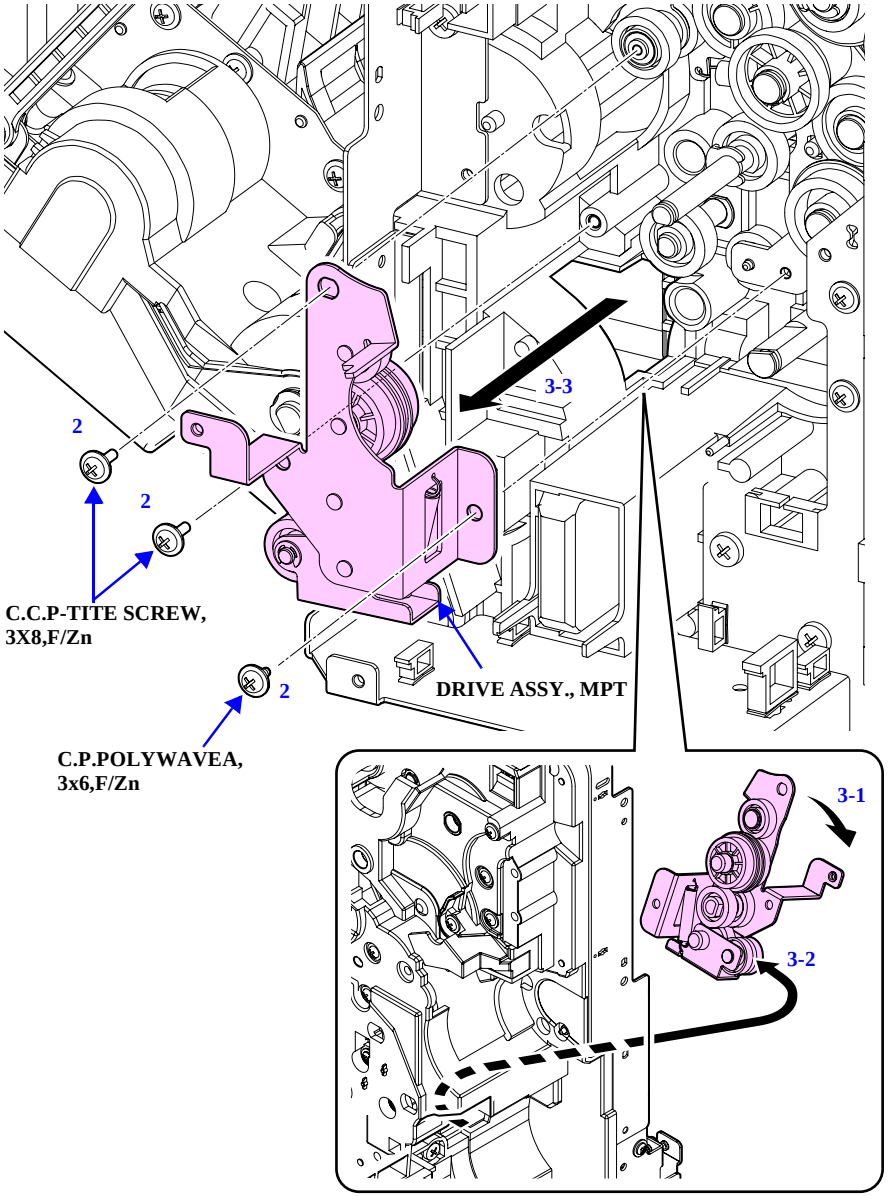

Figure 4-93. Removal of DRIVE ASSY., MPT

4.5.9.9 DRIVE ASSY., MPC

1. Remove the ROLLER, FEED and the ROLLER, FEED; B. *(p.261)*
2. Remove the 5 screws that secure the DRIVE ASSY., MPC.
   - C.P.POLYWAVEA,3x6,F/Zn: 5
3. Move the right side of the DRIVE ASSY., MPT toward you, and remove the DRIVE ASSY., MPT avoiding the frame so as not to hit the frame with the planetary gear of the assy.

REASSEMBLY

Match the 2 positioning holes of the DRIVE ASSY., MPC with the dowels.

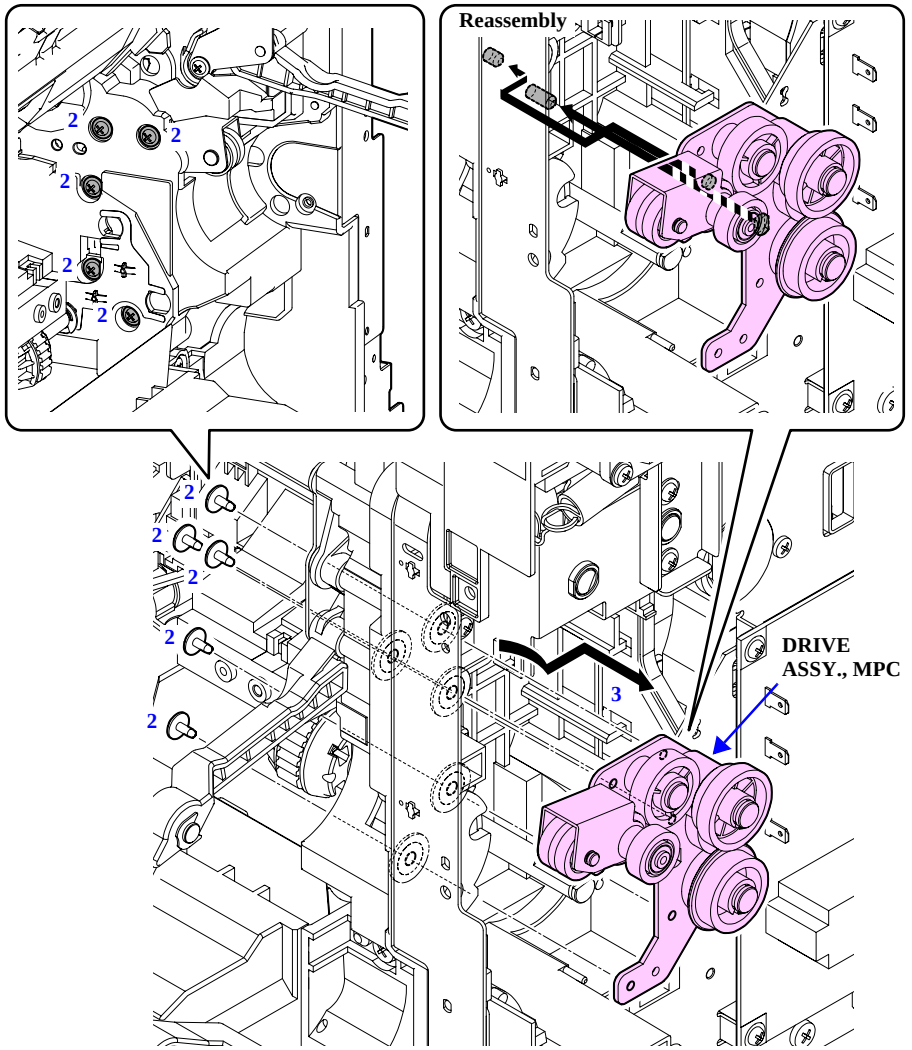

Figure 4-94. Removal of DRIVE ASSY., MPC

4.5.9.10 DRIVE ASSY., RT(, ASP)

REMOVAL

CAUTION

Parts composition of the DRIVE ASSY., RT, ASP provided as a service part is slightly different from the one that is installed at the shipment.
Never remove the DRIVE ASSY., RT, ASP at times other than replacing it with a service part.
Reinstalling the DRIVE ASSY RT (or DRIVE ASSY., RT, ASP) that is removed during disassembly will cause malfunction of the printer.

D1. Remove the HOUSING, REAR. *(p.244)*

D2. Disconnect the connector of the DRIVE ASSY., RT, ASP from the BOARD ASSY., DRV, C585 DRV.

D3. Remove the four screws that secure the DRIVE ASSY., RT, ASP and remove the DRIVE ASSY., RT, ASP.

- C.P.POLYWAVEA,3x6,F/Zn: 4

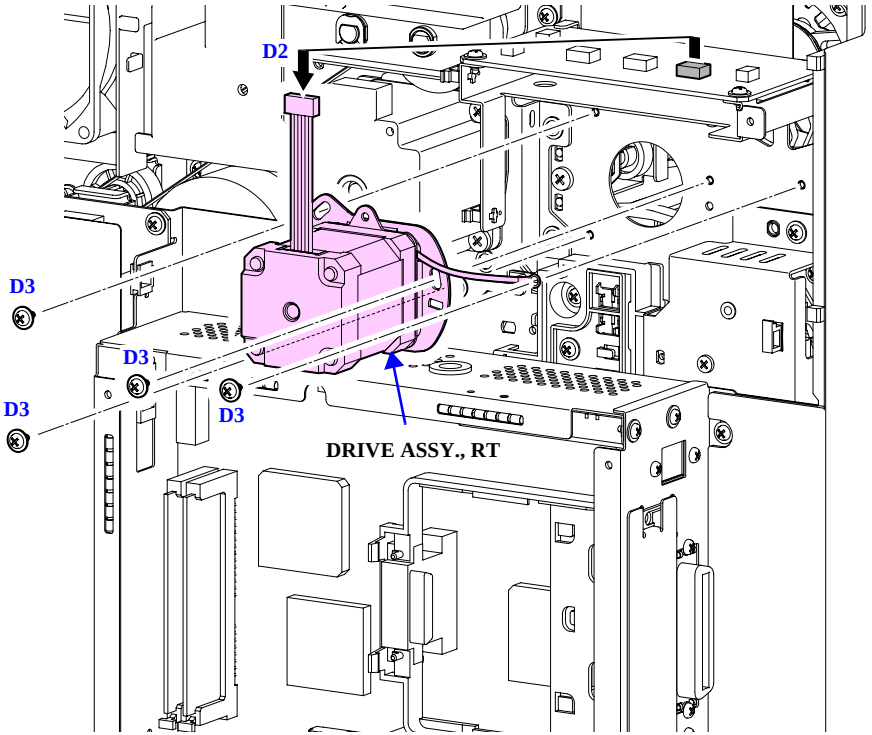

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Figure 4-95. Removal of DRIVE ASSY., RT

REINSTALLATION

CAUTION

- **Always replace the DRIVE ASSY., RT, with a new DRIVE ASSY., RT, ASP.**
- **Never to remove the parts attached to the DRIVE ASSY., RT, ASP until you are told to do so. Removing those parts before installing the DRIVE ASSY., RT, ASP to the main unit leads to a malfunction of the printer.**

A1. Remove the BOARD ASSY., DRV, C585 DRV. *(p.312)*

A2. Remove the R/W MODULE, B5J-0111. *(p.316)*

CAUTION

When performing the following work, pay attention to the items described below.

- **Once a toner cartridge is removed, the FRAME ASSY., RT becomes unstable and rotates violently. So as not to hurt your fingers, rotate the FRAME ASSY., RT by turning the section where the R/W MODULE, B5J-0111 was attached.**
- **Make sure to rotate the FRAME ASSY., RT in the direction of the arrow (counter clockwise direction).**
- **Make sure to turn the power off before removing/installing toner cartridges.**
- **Never touch the Developer roller.**

A3. Push up the lock lever of the LOCK ASSY., RT to release the lock of the FRAME ASSY., RT, rotate the FRAME ASSY., RT until it comes to the toner cartridge replace position, and remove all the toner cartridges.

A4. Rotate the FRAME ASSY., RT to the Magenta replace position, and again rotate the FRAME ASSY., RT for one step in the counter clockwise direction.

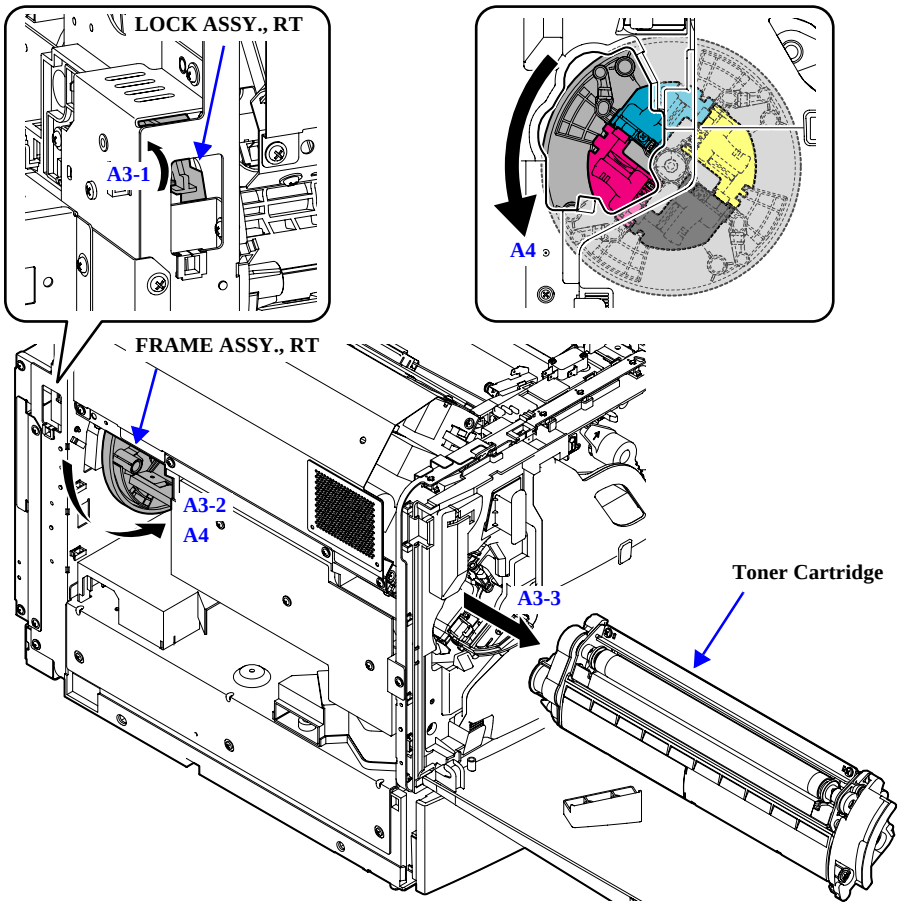

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Figure 4-96. Reinstallation of DRIVE ASSY., RT, ASP 1

A5. Tilt the DRIVE ASSY., RT, ASP to the right and secure with four screws.

- C.P.POLYWAVEA,3x6,F/Zn: 4

A6. Loosen the three screws that secure the DRIVE ASSY., RT, ASP.

- C.P.POLYWAVEA,3x6,F/Zn: 3

A7. Hitch the EXTENSION SPRING, 14.59 to the attaching hole shown in the figure.

A8. Fasten the two screws loosened in step 6.

- C.P.POLYWAVEA,3x6,F/Zn: 2

A9. Remove the EXTENSION SPRING, 14.59.

A10. Fasten the screw loosened in step 6.

- C.P.POLYWAVEA,3x6,F/Zn: 1

A11. Remove the three screws that secure the Fixing metal in the order shown in the figure, and remove the Fixing metal.

- C.P.SCREW,3x5,F/Zn: 3

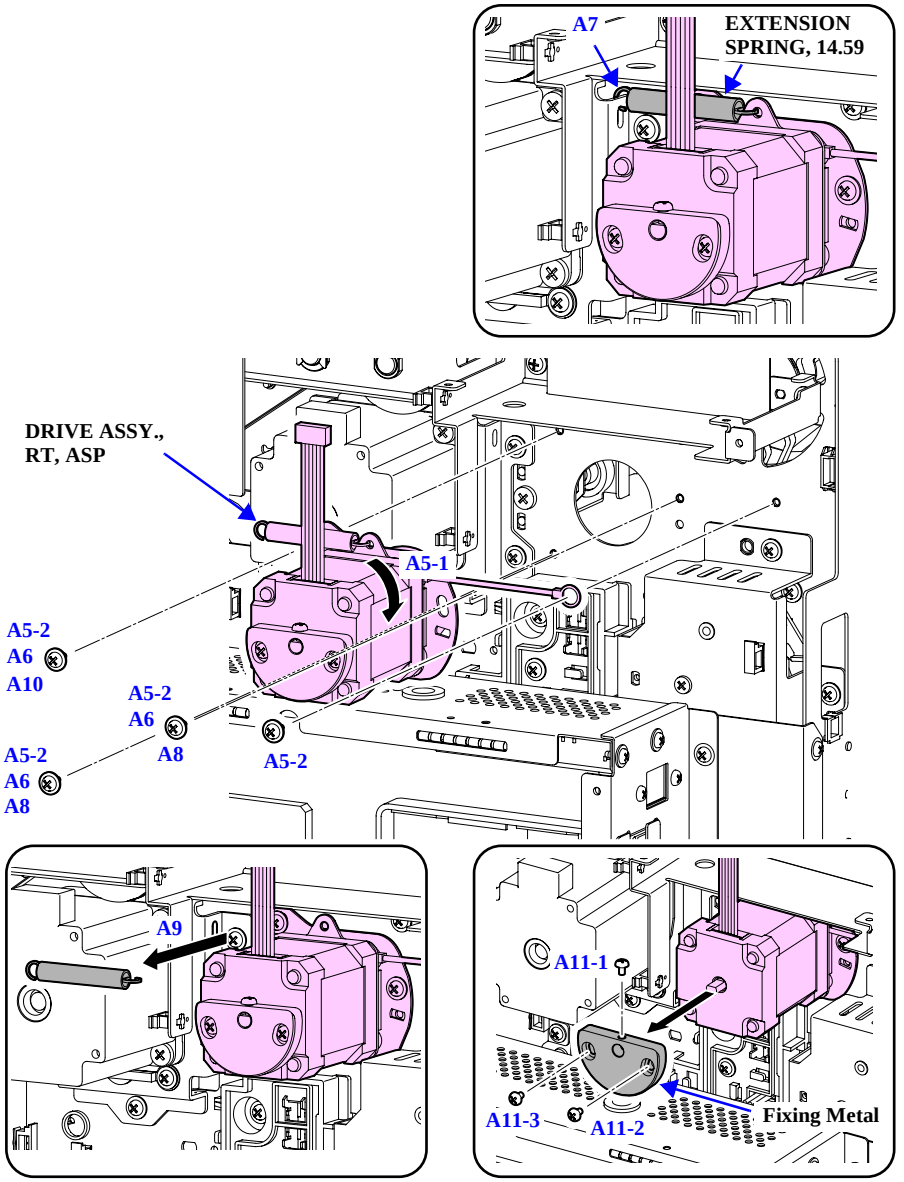

Figure 4-97. Reinstallation of DRIVE ASSY., RT, ASP 2

4.5.10 Electrical

4.5.10.1 NETWORK BOARD, SE-NIC-B82/ GROUNDING PLATE, TYPE-B

☐ **NETWORK BOARD, SE-NIC-B82**

1. Remove the COVER HOUSING, CONTROLLER, UNIT. *(p.247)*
2. Remove the 2 screws that secure the NETWORK BOARD, SE-NIC-B82, and disconnect the NETWORK BOARD, SE-NIC-B82 from CN407 connector on the BOARD ASSY., MAIN C585 MAIN.
   - ■ C.P.SCREW,3x6,F/Ni: 2

REASSEMBLY

1. When securing the NETWORK BOARD, SE-NIC-B82 with screws, make sure to insert the NETWORK BOARD, SE-NIC-B82 vertically into the BOARD ASSY., MAIN C585 MAIN.
2. Confirm that the NETWORK BOARD, SE-NIC-B82 is securely connected to the board.

☐ **GROUNDING PLATE, TYPE-B**

1). Remove the COVER HOUSING, CONTROLLER, UNIT. *(p.247)*

2). Remove the 2 screws that secure the COVER, TYPE-B to remove the COVER, TYPE-B.
   - ■ C.P.SCREW,3x6,F/Ni: 2

3). Release the 2 tabs of the GROUNDING PLATE, TYPE-B that secure the BRACKET ASSY., I/F, and remove the GROUNDING PLATE, TYPE-B.

REASSEMBLY

1). Insert the central tab of the GROUNDING PLATE, TYPE-B to the notch of the BRACKET ASSY., I/F.

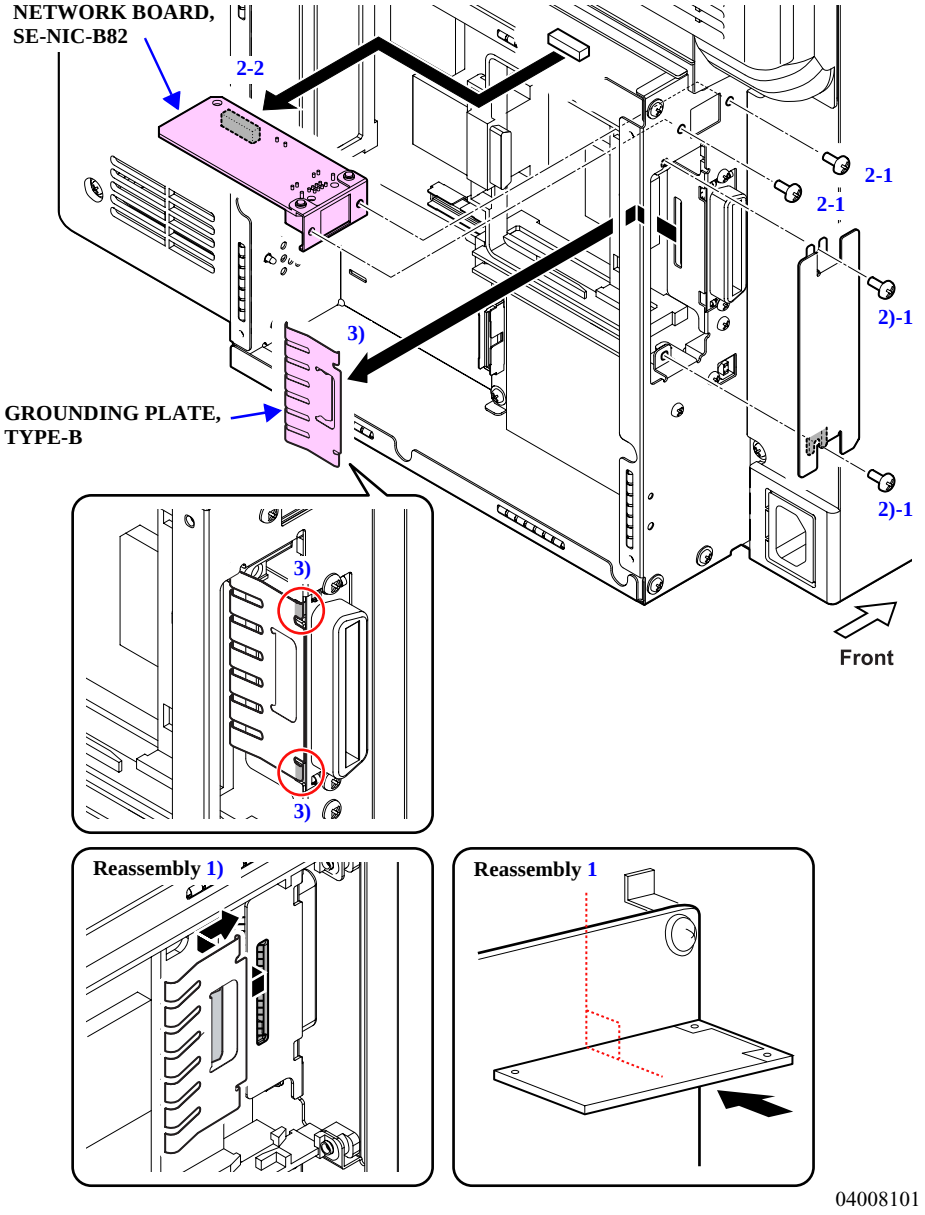

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Figure 4-98. Removal of NETWORK BOARD, SE-NIC-B82/ GROUNDING PLATE, TYPE-B/

4.5.10.2 GUIDE RAIL, TYPE-B

1. Remove the COVER, TYPE-B. *(p.307)*
2. Release the 2 tabs of the GROUNDING PLATE, TYPE-B from CN406 connector on the BOARD ASSY., MAIN C585 MAIN, bow the 2 tabs of the I/F side inward from the BRACKET ASSY., I/F to release, and remove the GUIDE RAIL, TYPE-B.

Insert the 2 shafts of the GUIDE RAIL, TYPE-B to the notches of CN406 connector.

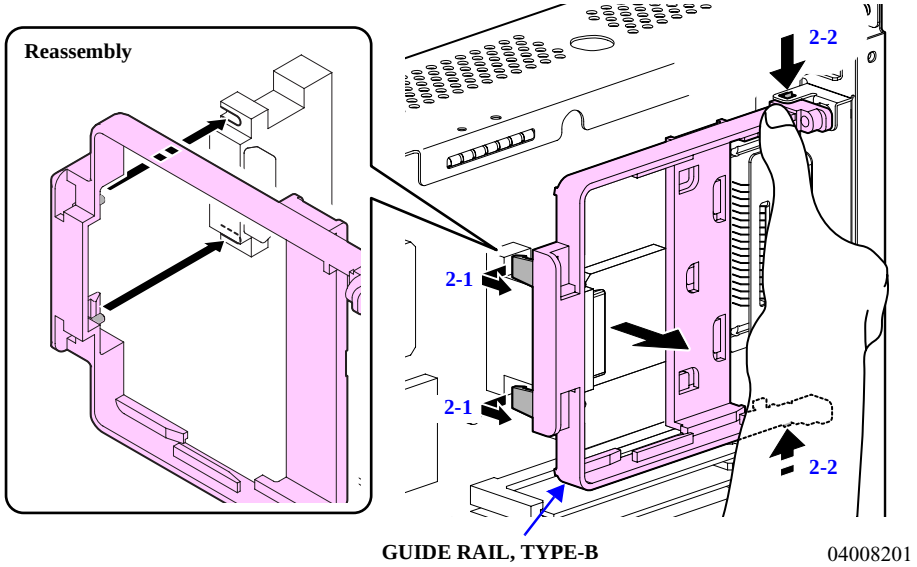

Figure 4-99. Removal of GUIDE RAIL, TYPE-B

4.5.10.3 BOARD ASSY., MAIN C585 MAIN

1. Remove the HOUSING, LEFT. *(p.245)*
2. Remove the GROUNDING PLATE, TYPE-B. *(p.307)*
3. Remove the GUIDE RAIL, TYPE-B. *(p.308)*
4. Remove the NETWORK BOARD, SE-NIC-B82. *(p.307)*
5. Disconnect the all 4 connectors (White 18 Pin, White 4 Pin, White 7 Pin, White 14 Pin) on the BOARD ASSY., MAIN C585 MAIN.
6. Remove the 7 screws that secure the BOARD ASSY., MAIN C585 MAIN.
   - C.P.POLYWAVEA,3x6,F/Zn: 7

Secure the grounding wire and the BOARD ASSY., MAIN C585 MAIN together with the screw, and route the wire above the connector.

7. Remove the 6 screws that secure the BRACKET ASSY., I/F, and remove it together with the BOARD ASSY., MAIN C585 MAIN.
   - C.P.POLYWAVEA,3x6,F/Zn: 6
8. Remove the 3 screws that secure the interface.
   - C.P.SCREW,3x6,F/Ni: 3

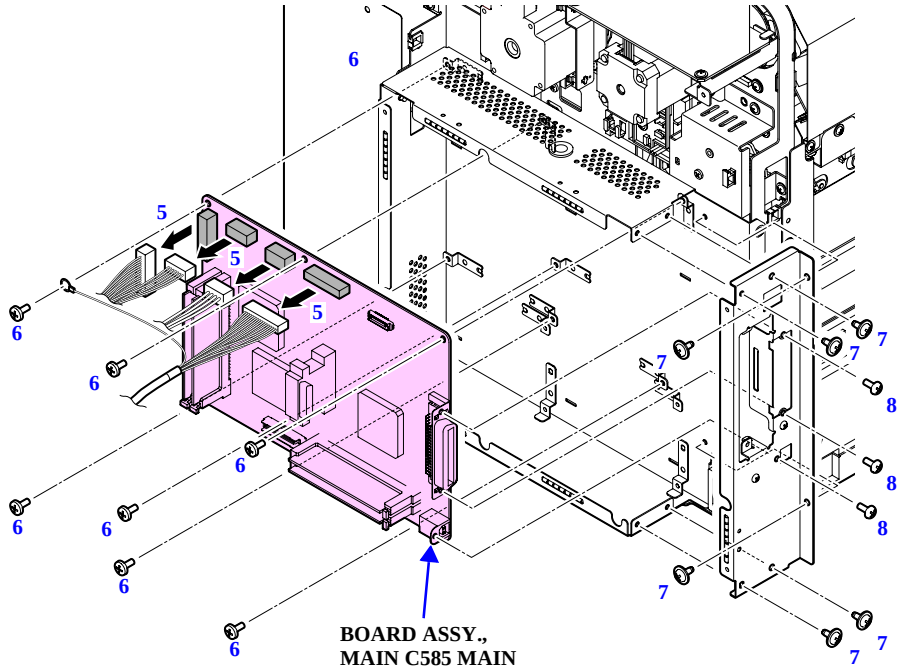

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Figure 4-100. Removal of BOARD ASSY., MAIN C585 MAIN

4.5.10.4 BOARD ASSY., MAIN C585 MCU

CAUTION

After replacing the BOARD ASSY., MAIN C585 MCU, be sure to replace the FRAM BOARD with a new one. *(p.311)*

1. Remove the HOUSING, REAR. *(p.244)*
2. Remove the 4 screws that secure the COVER, ASSY, CONTROLLER, MC to remove the COVER, ASSY, CONTROLLER, MC.
   - C.P.POLYWAVEA,3x6,F/Zn: 4
3. Disconnect the all connectors (25 places) from the BOARD ASSY., MAIN C585 MCU.

REASSEMBLY

Connect the yellow and brown harness after connecting all the other connectors and route the harness on the board to prevent it from getting caught between or under other parts.

4. Remove the 6 screws that secure the BOARD ASSY., MAIN C585 MCU to remove the BOARD ASSY., MAIN C585 MCU and the SHEET, INSULATION, CONTROLLER, MC.
   - C.P.POLYWAVEA,3x6,F/Zn: 6

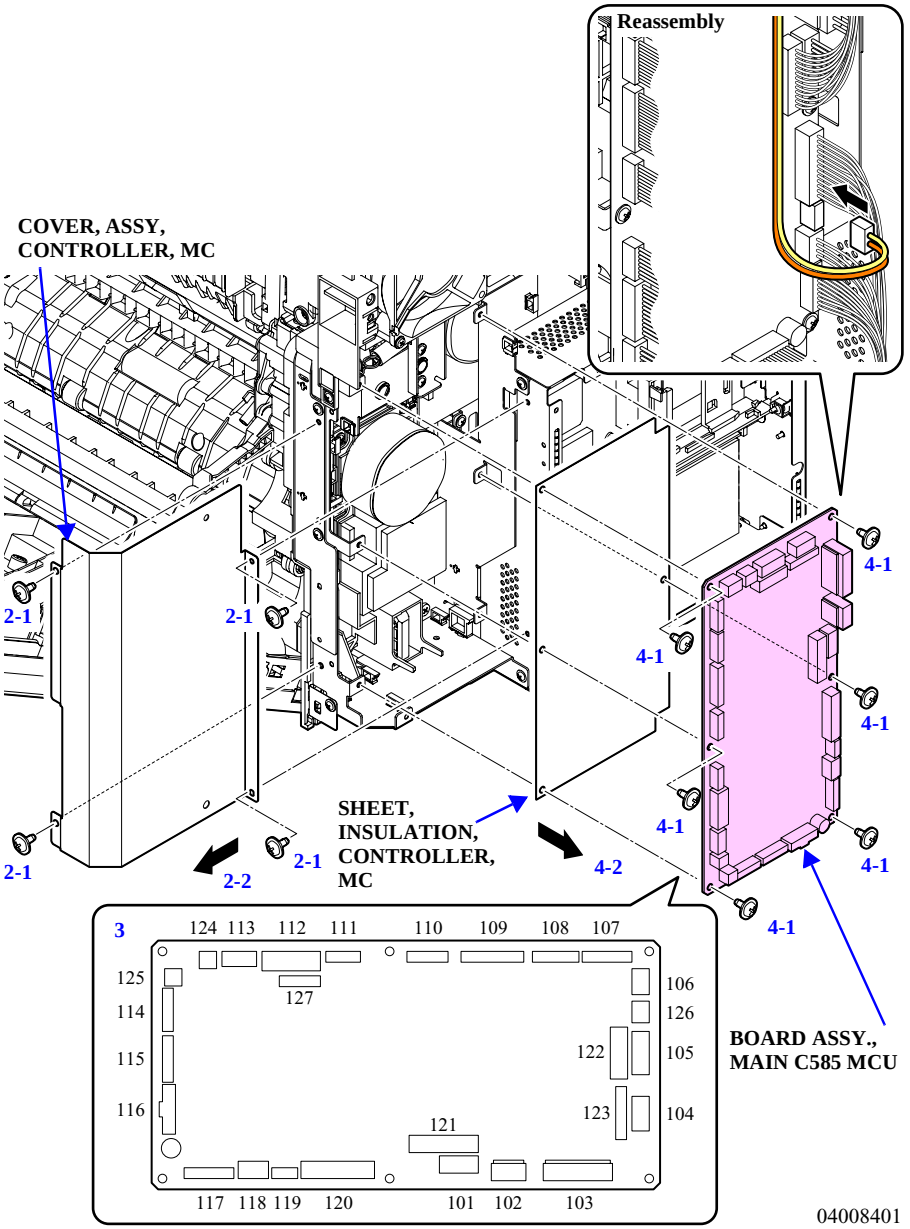

Figure 4-101. Removal of BOARD ASSY., MAIN C585 MCU

4.5.10.4.1 Removing and installing the FRAM BOARD

1. Close the 2 tabs of the attachment shaft that secure the FRAM BOARD and remove the FRAM BOARD while disconnecting the connector from the attachment shaft.
2. Connect the FRAM BOARD that is removed in the step 1 to the connector on a new BOARD ASSY., MAIN C585 MCU, and insert the FRAM BOARD to the attachment shaft.

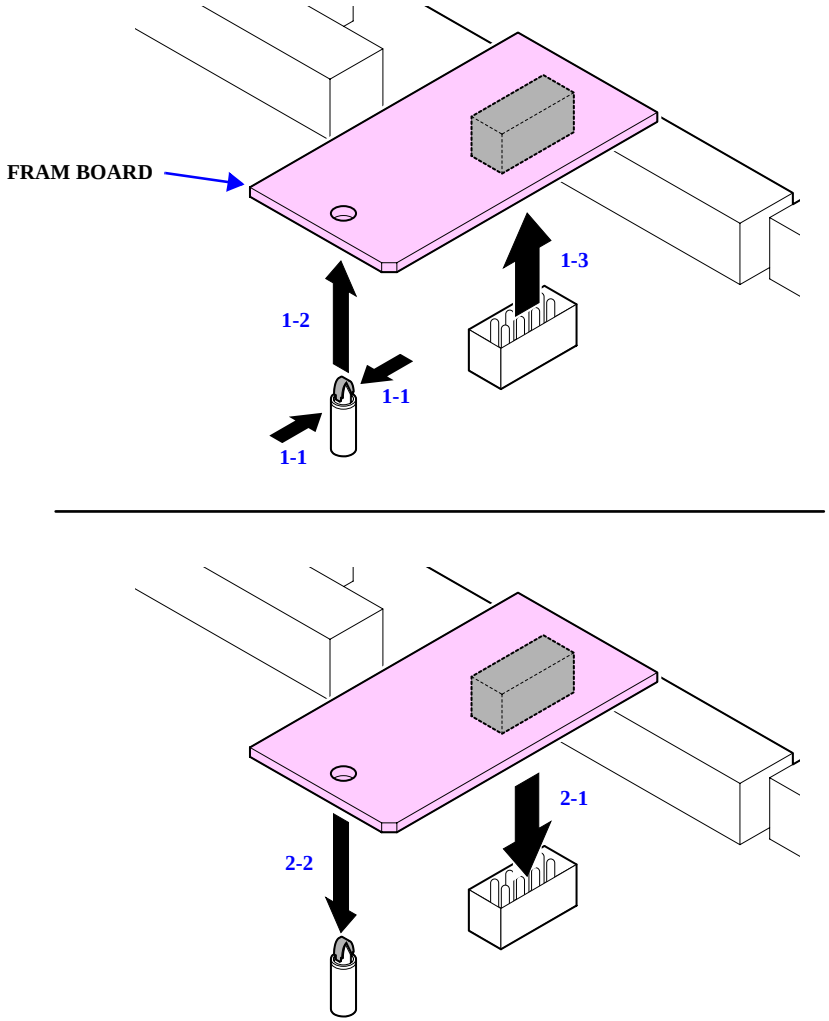

Figure 4-102. FRAM Board Replacement

4.5.10.5 BOARD ASSY., DRV, C585 DRV

1. Remove the HOUSING, REAR. *(p.244)*
2. Disconnect the all 6 connectors (White 6 Pin (x 3), White 2 Pin, Blue 2 Pin, Pale orange 14 Pin) on the BOARD ASSY., DRV, C585 DRV.
3. Remove the 2 screws that secure the BOARD ASSY., DRV, C585 DRV to remove the BOARD ASSY., DRV, C585 DRV.
   - C.P.POLYWAVEA,3x6,F/Zn: 2

REASSEMBLY

Insert the BOARD ASSY., DRV, C585 DRV into the 2 tabs of the frame.

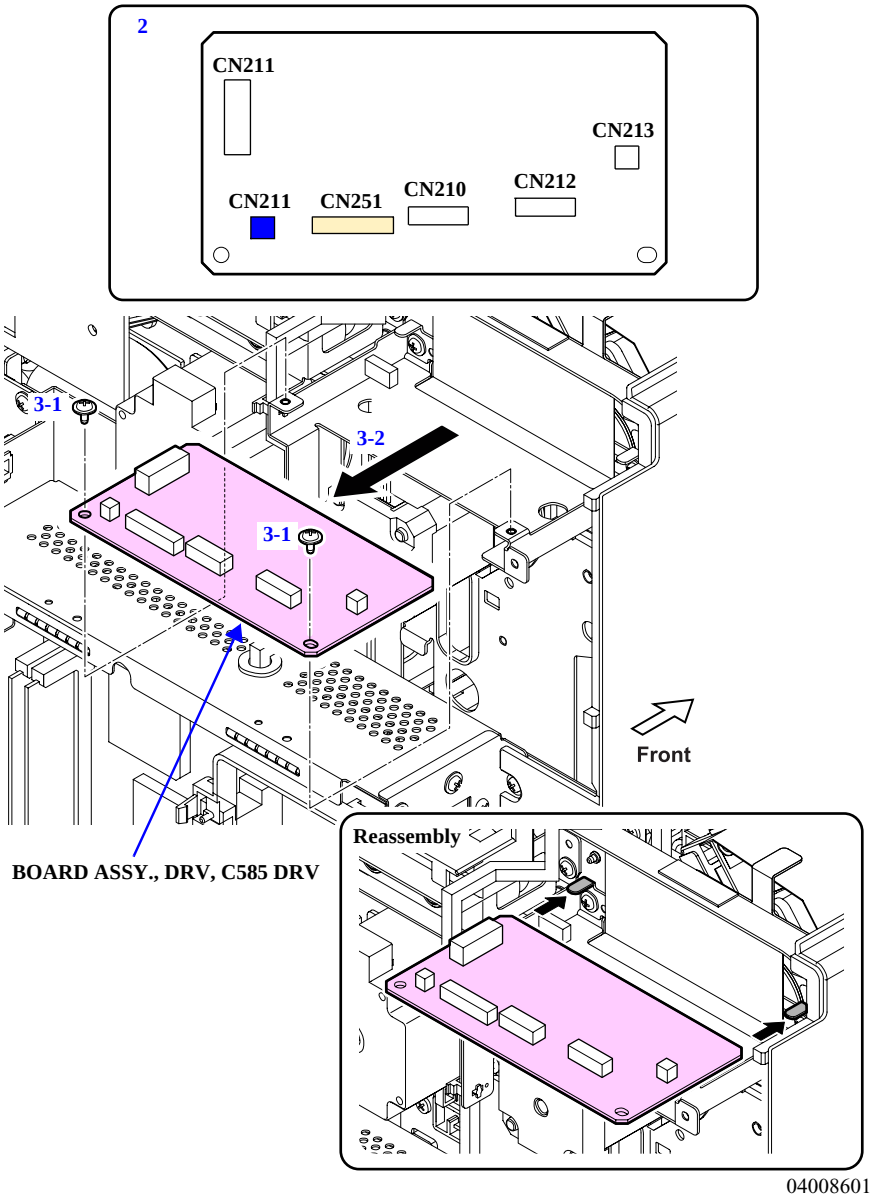

Figure 4-103. Removal of BOARD ASSY., DRV, C585 DRV

4.5.10.6 MOUNTING PLATE ASSY., CONTROLLER

1. Remove the BOARD ASSY., MAIN C585 MAIN. *(p.309)*
2. Remove the 6 screws that secure the MOUNTING PLATE ASSY., CONTROLLER.
   - C.P.POLYWAVEA,3x6,F/Zn: 6
3. Remove the BUSHING, 0CB-500 from the MOUNTING PLATE ASSY., CONTROLLER, UNIT. Then remove the HARNESS,PANEL from the gaps of both the BUSHING, 0CB-500 and the MOUNTING PLATE ASSY., CONTROLLER, UNIT.
4. Release the all harnesses from the notch of the MOUNTING PLATE ASSY., CONTROLLER, and remove the MOUNTING PLATE ASSY., CONTROLLER.

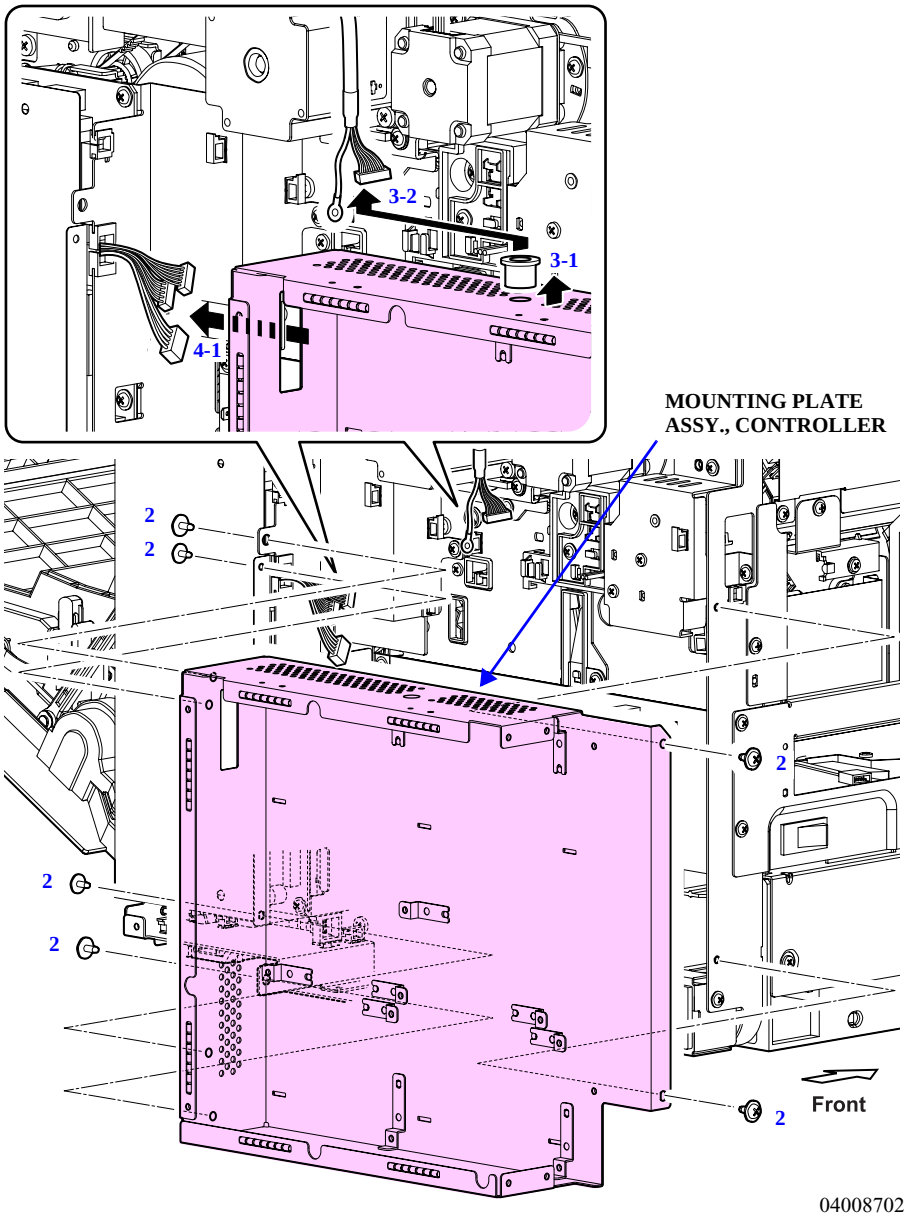

Figure 4-104. Removal of MOUNTING PLATE ASSY., CONTROLLER

4.5.10.7 HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA

1. Remove the HOUSING, LEFT. *(p.245)*
2. Disconnect the all 4 connectors (White 18 Pin, White 4 Pin, White 7 Pin, White 14 Pin) on the BOARD ASSY., MAIN C585 MAIN.
3. Remove the screw that secures the grounding wire.
   - C.P.POLYWAVEA,3x6,F/Zn: 1

REASSEMBLY

1. Route the grounding wire above the connectors on the BOARD ASSY., MAIN C585 MAIN.

4. Remove the BUSHING, 0CB-500 from the MOUNTING PLATE ASSY., CONTROLLER, UNIT. Then remove the HARNESS,PANEL from the gaps of both the BUSHING, 0CB-500 and the MOUNTING PLATE ASSY., CONTROLLER, UNIT.
5. Remove the 6 screws that secure the MOUNTING PLATE ASSY., CONTROLLER UNIT.
   - C.P.POLYWAVEA,3x6,F/Zn: 4
6. Remove the all harnesses from the notch of the MOUNTING PLATE ASSY., CONTROLLER UNIT, and remove the MOUNTING PLATE ASSY., CONTROLLER UNIT, together with the BOARD ASSY., MAIN C585 MAIN.
7. Disconnect the all 7 connectors (White 12 Pin, Harness, HV, 2ND TRANSFER (x 3), Harness, HV, 1ST TRANSFER (x 1), ELECTRODE Assy., PC (x 2)) on the HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA.

CAUTION

Always sustain the HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA or it may fall off when performing the following work.

8. Remove the 5 screws that secure the HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA, and remove the HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA and the SHEET, INSULATION, HIGH VOLTAGE.
   - C.P.POLYWAVEA,3x6,F/Zn: 4
   - C.C.P-TITE SCREW,3x8,F/Zn: 1

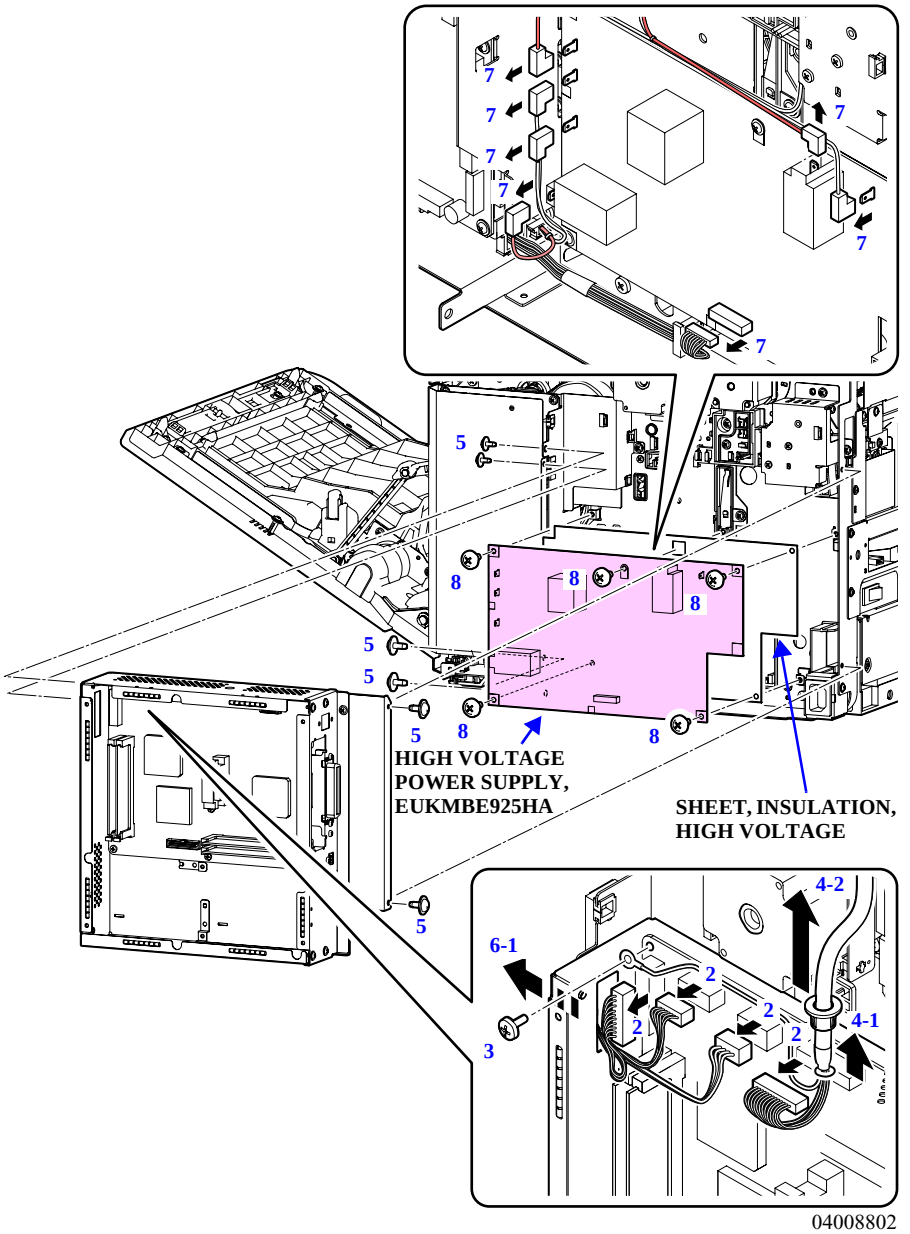

Figure 4-105. Removal of HIGH VOLTAGE POWER SUPPLY, EUKMBE925HA

4.5.10.8 DETECTOR, HUMIDITY

1. Draw out the Standard lower paper cassette.
2. Remove the GUIDE ASSY., FEED, LEFT. *(p.254)*
3. Remove the screw that secures DETECTOR, HUMIDITY, and remove both the COVER, DETECTOR, HUMIDITY and the DETECTOR, HUMIDITY.
   - C.C.P-TITE SCREW,3x8,F/Zn: 1
4. Disconnect the connector (White 4 Pin) from the DETECTOR, HUMIDITY.

REASSEMBLY

1. **Place the COVER, DETECTOR, HUMIDITY on the rib shown in the figure.**
2. **Make sure that the harness is routed as shown in the figure.**

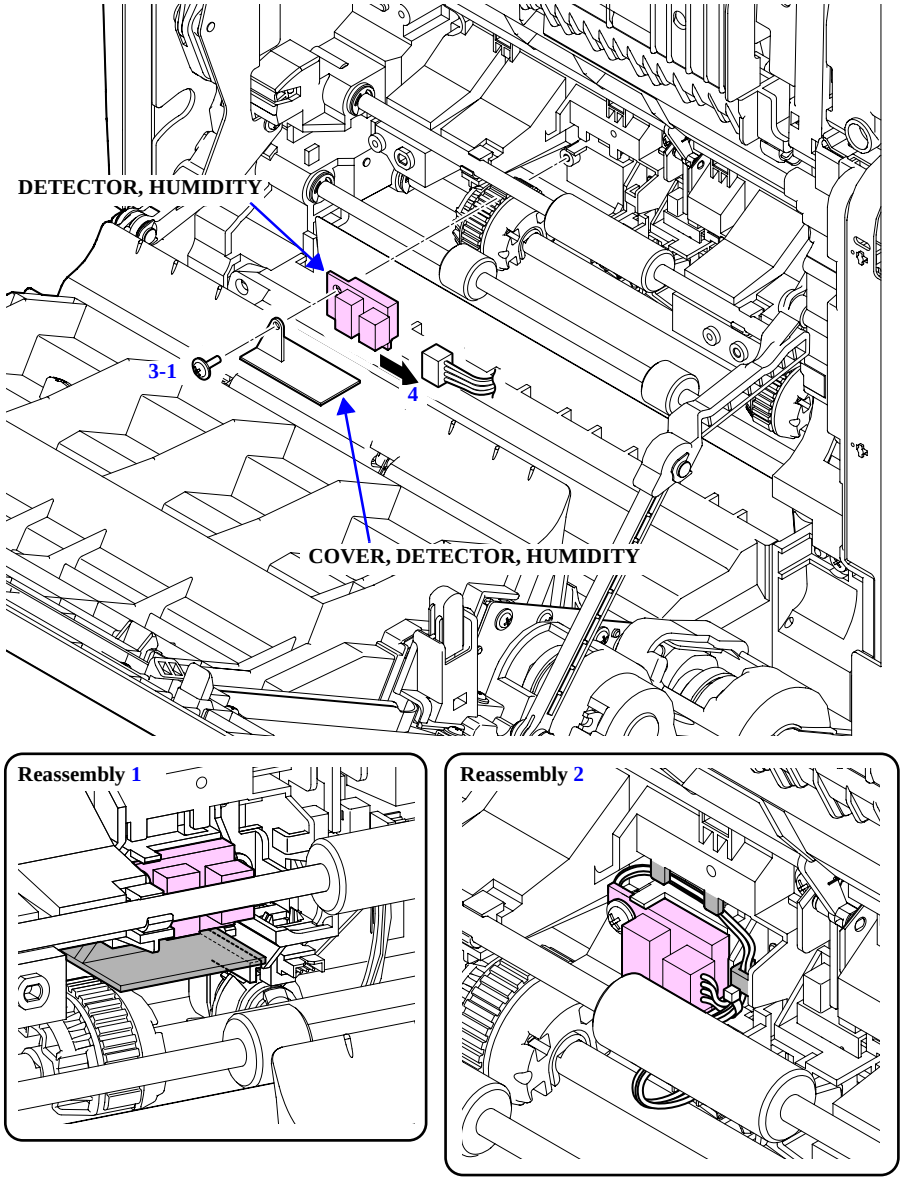

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Figure 4-106. Removal of DETECTOR, HUMIDITY

4.5.10.9 POWER SWITCH, SDDJF30200/ R/W MODULE, B5J-0111

REMOVAL

☐ **POWER SWITCH, SDDJF30200**

D1. Remove the HOUSING, LEFT. *(p.245)*

D2. Remove the 4 screws that secure the HANDLE ASSY., LEFT, UNIT and remove the HANDLE ASSY., LEFT, UNIT.

- C.P.POLYWAVEA,3x6,F/Zn: 4

D3. Disconnect the 4 connectors from the POWER SWITCH, SDDJF30200.

D4. Remove a piece of acetate tape from the red connectors.

D5. Close and release the 4 tabs of the POWER SWITCH, SDDJF30200 to remove the POWER SWITCH, SDDJF30200.

☐ **R/W MODULE, B5J-0111**

D1). Remove the HOUSING, LEFT. *(p.245)*

D2). Remove the screw that secure the COVER, CS to remove the COVER, CS.

- C.C.S-TITE SCREW,3x5,F/Zn: 1

D3). Disconnect the 2 connectors (White 2 Pin, Pale orange 7 Pin) on the R/W MODULE, E5J-0111.

D4). Remove the 2 screws that secure the R/W MODULE, E5J-0111 to remove the R/W MODULE, E5J-0111.

- C.C.S-TITE SCREW,3x5,F/Zn: 2

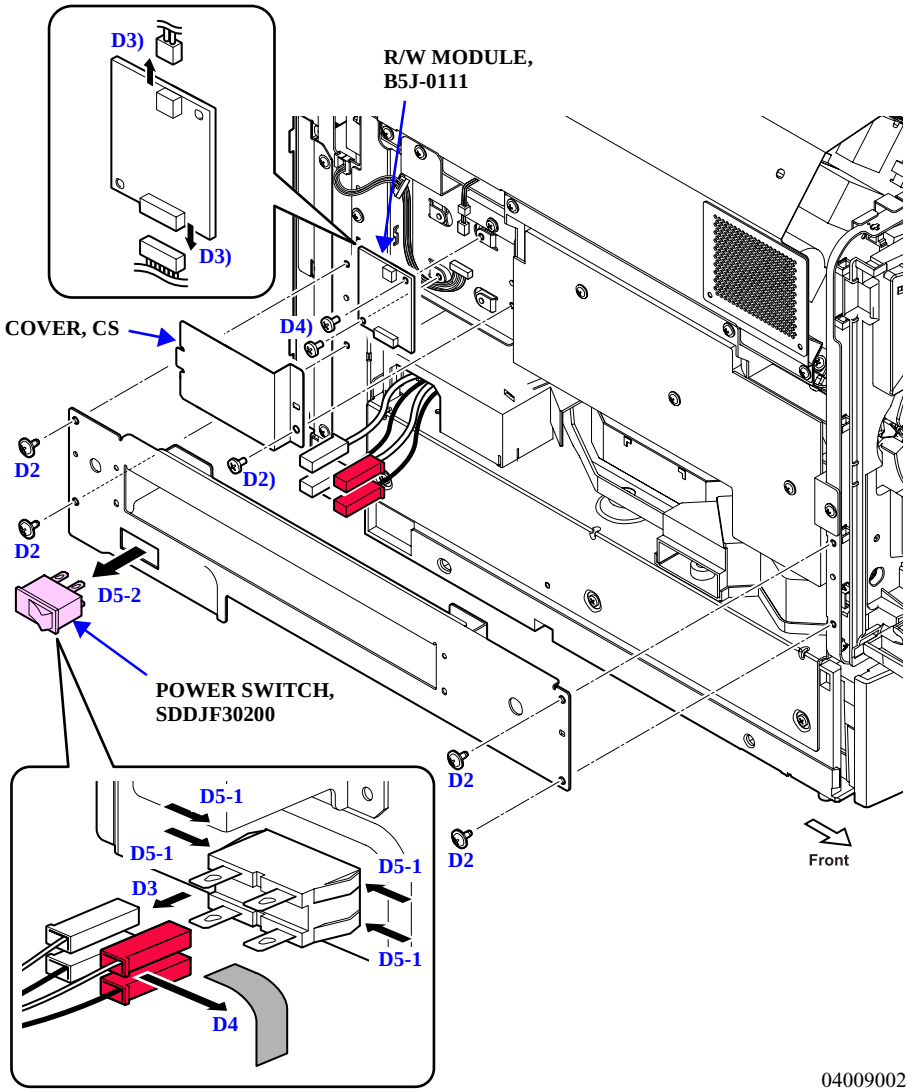

Figure 4-107. Removal of POWER SWITCH,SDDJF30200/ R/W MODULE,B5J-0111

REINSTALLATION

☐ POWER SWITCH, SDDJF30200

CAUTION

A1. When performing the following work, do not mistake the ON/OFF direction of the POWER SWITCH, SDDJF30200.

A1. Insert the POWER SWITCH, SDDJF30200 into the HARNESS, ASSY., INLET and secure them with the 4 tabs.

CAUTION

A2. When performing the following work, pay attention to the instructions below.
- **Turn the ribs of each connector toward outside of the POWER SWITCH, SDDJF30200.**
- **The black harness should be at the bottom.**
- **The red connector and the white connector should be connected to the red port and the white port respectively.**

A2. Connect the connector to the POWER SWITCH, SDDJF30200.

A3. Secure the two red connectors with a piece of acetate tape.

CAUTION

A3. A HARNESS, INLET provided as an After Service part does not include the acetate tape. Be careful not to forget to secure the red connectors with the piece of acetate tape used for the previous part or with new one.

A4. Press the connector into the notch of the DUCT, EX, match the 2 positioning holes of the HANDLE ASSY., LEFT, UNIT with the dowels, and secure them with 4 screws.
- C.P.POLYWAVEA,3x6,F/Zn: 4

A5. Attach the HOUSING, LEFT. *(p.245)*

☐ R/W MODULE, B5J-0111

A1). Match the 2 positioning holes of the R/W MODULE, B5J-0111 with the dowels, and secure them with 2 screws.
- C.C.S-TITE SCREW,3x5,F/Zn: 2

A2). Connect the connectors (White 2 Pin, Pale Orange 7 Pin) to the R/W MODULE, B5J-0111.

A3). Insert the rib of the COVER, CS to the frame, match the positioning hole with the dowel, and secure the COVER, CS with a screw.
- C.C.S-TITE SCREW,3x5,F/Zn: 1

A4). Attach the HOUSING, LEFT. *(p.245)*

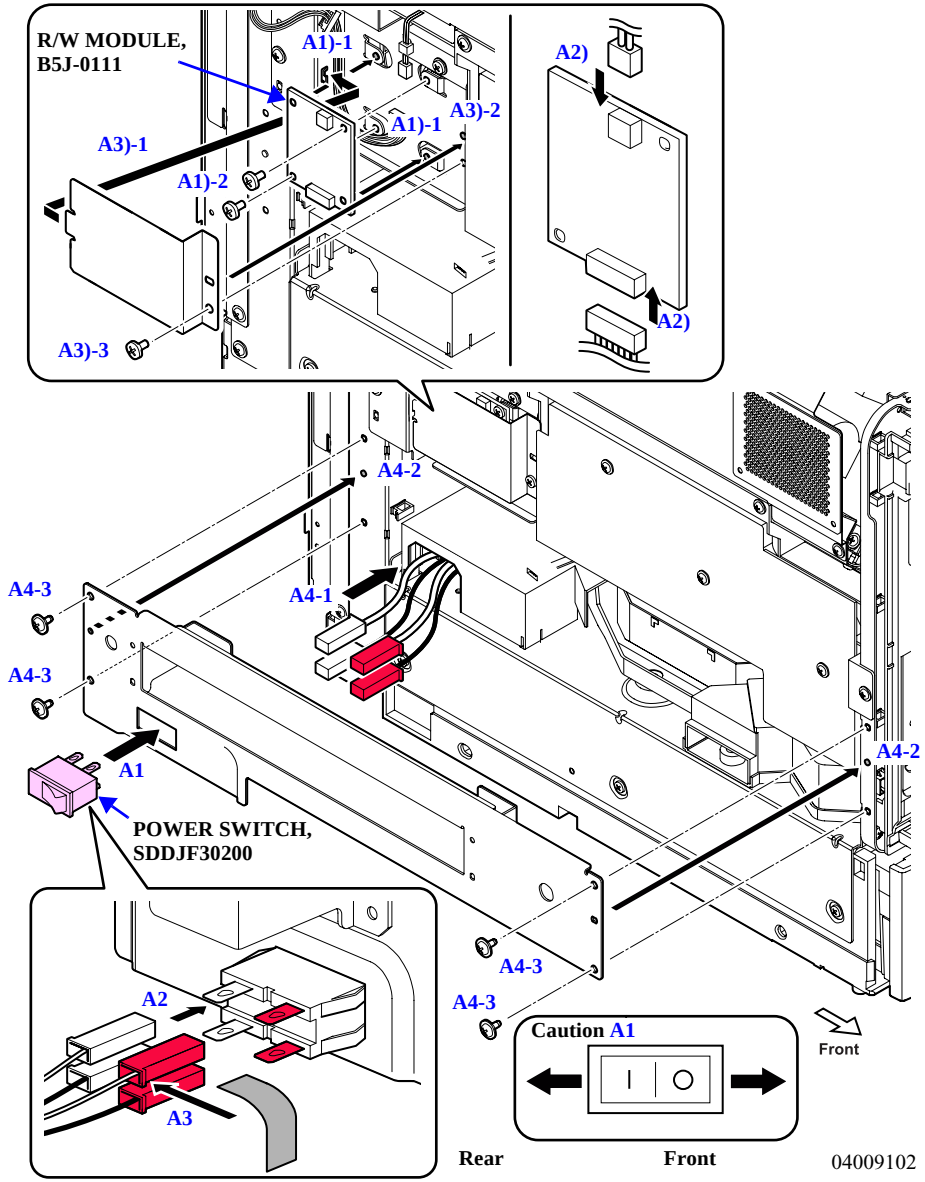

Figure 4-108. Reinstallation of POWER SWITCH, SDDJF30200/ R/W MODULE, B5J-0111

4.5.10.10 FAN, LVPS

1. Remove the HOUSING, LEFT. *(p.245)*
2. Remove the 4 screws that secure the COVER ASSY., LVPS to remove the COVER ASSY., LVPS.
   - C.P.POLYWAVEA,3x6,F/Zn: 4
3. Remove the 2 screws that secure the FAN ASSY., LVPS to remove the FAN ASSY., LVPS.
   - C.P.POLYWAVEA,3x6,F/Zn: 2
4. Disconnect the connector of the FAN ASSY., LVPS from the relay connector.
5. Remove the 2 screws that secure the FAN, LPS to remove the FAN, LPS.
   - C.B.S-TITE SCREW,3x30,F/Zn: 2

CAUTION

When installing the FAN, LPS, attach the GUIDE, HARNESS in the correct direction as shown in Figure 4-109.

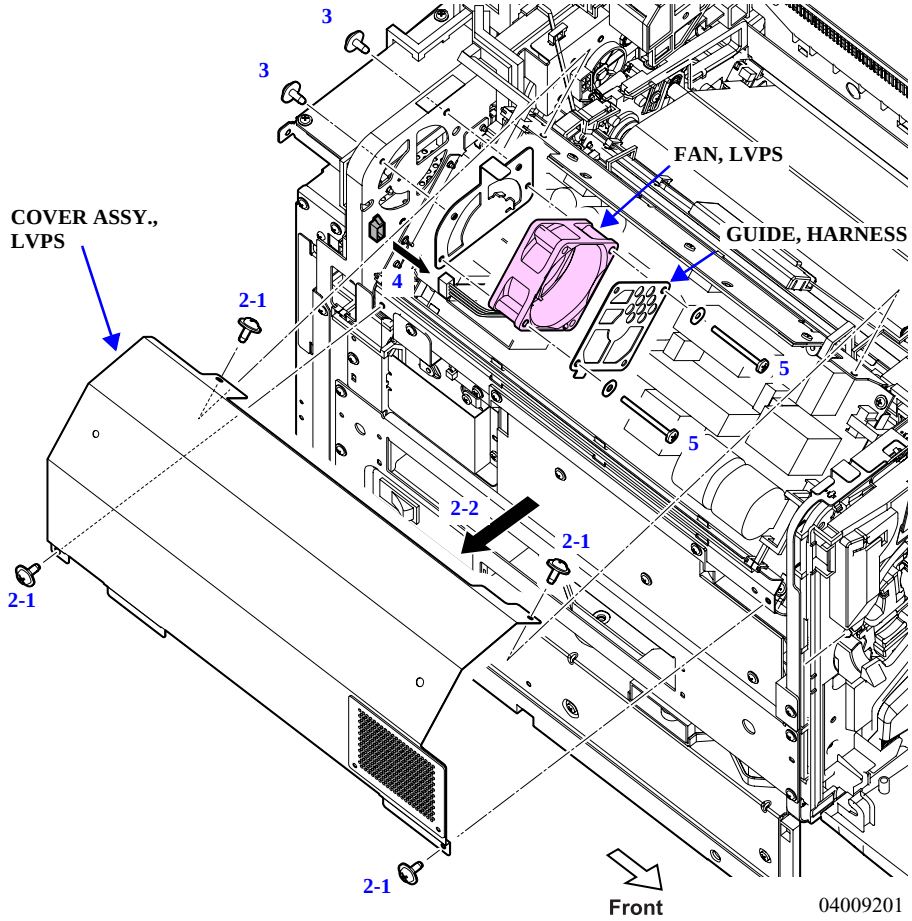

Figure 4-109. Removal of FAN, LVPS

4.5.10.11 POWER SUPPLY

1. Remove the FAN ASSY., LVPS. *(p.318)*
2. Disconnect the all 4 connectors (Black 2 Pin, Pale orange 4 Pin, Gray 5 Pin, White 8 Pin) on the POWER SUPPLY.
3. Release the HARNESS, MAIN from the edge saddle.
4. Remove the 4 screws that secure the MOUNTING PLATE Assy., LVPS, Unit to remove the MOUNTING PLATE Assy., LVPS, Unit.
   - C.P.POLYWAVEA,3x6,F/Zn: 4

REASSEMBLY

1. Match the 2 positioning holes of the MOUNTING PLATE ASSY., LVPS, Unit with the dowels.

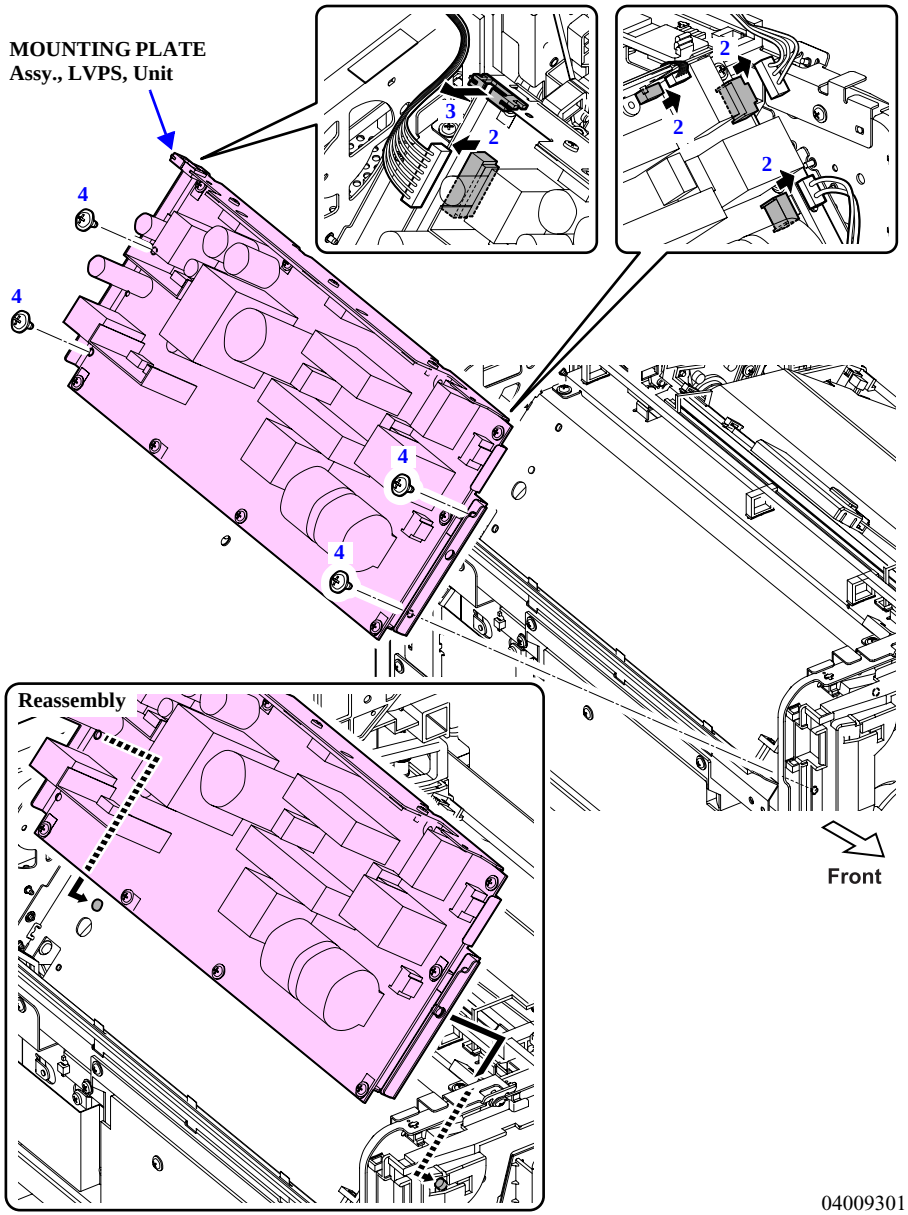

Figure 4-110. Removal of POWER SUPPLY 1

5. Remove the 11 screws that secure the POWER SUPPLY to remove the POWER SUPPLY.
   - C.B.Aluminum tite,3x6,F/Zn: 3
   - C.P.POLYWAVEA,3x6,F/Zn: 8

REASSEMBLY

2. Screw the heat sink part of the POWER SUPPLY with the 3 screws first, and then secure the POWER SUPPLY to the MOUNTING PLATE, LVPS with the other 8 screws.

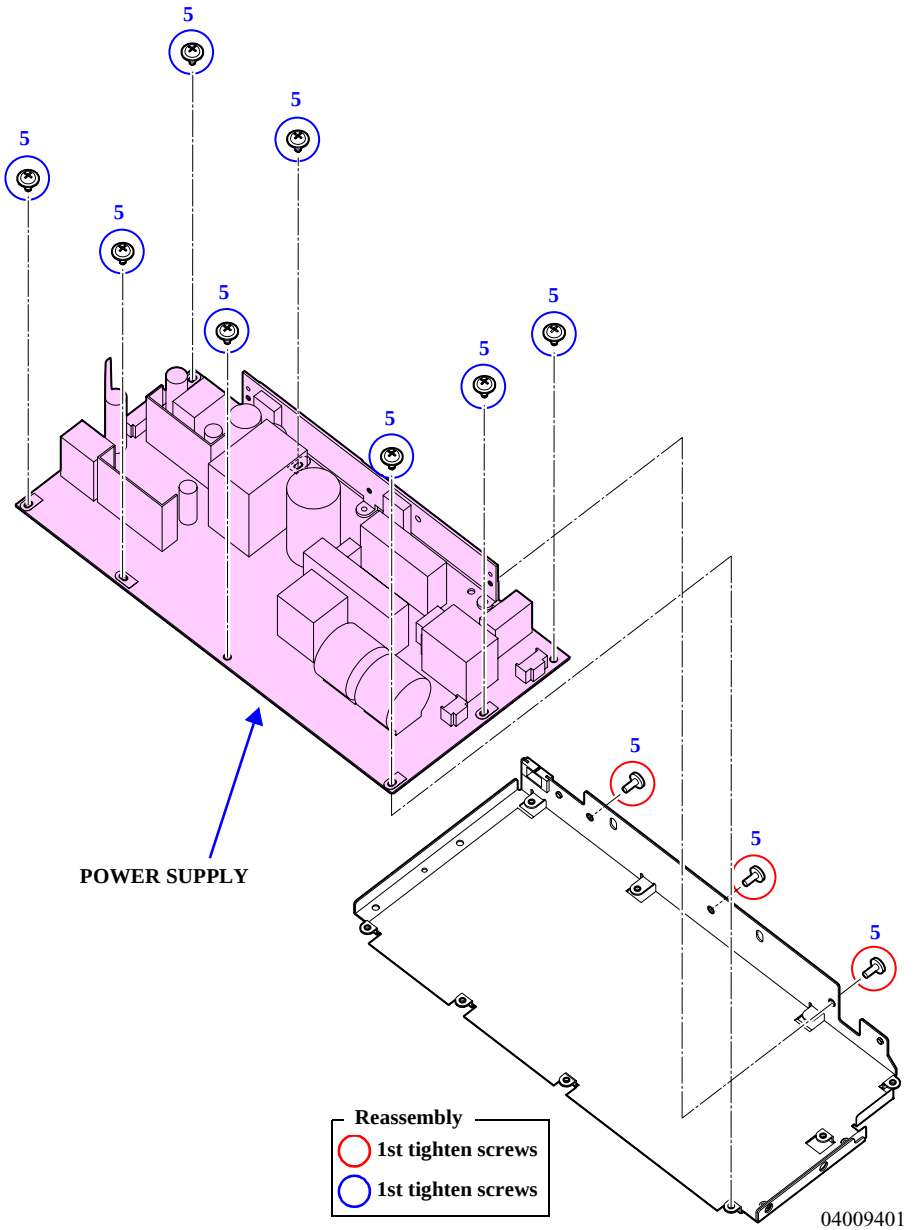

Figure 4-111. Removal of POWER SUPPLY 2

4.5.10.12 HARNESS, INLET

1. Remove the MOUNTING PLATE ASSY., CONTROLLER, UNIT. *(p.314)*
2. Remove the R/W MODULE, B5J-0111. *(p.316)*

CAUTION

When performing the following work, pay attention to the items described below.

- **Once a toner cartridge is removed, the FRAME ASSY., RT becomes unstable and rotates violently. So as not to hurt your fingers, rotate the FRAME ASSY., RT by turning the section where the R/W MODULE, B5J-0111 was attached.**
- **Make sure to rotate the FRAME ASSY., RT in the direction of the arrow (counter clockwise direction).**
- **Make sure to turn the power off before removing/installing toner cartridges.**
- **Never touch the Developer roller.**

3. Press up the lock lever of the LOCK ASSY., RT to unlock the lock of the FRAME ASSY., RT, remove one toner cartridge by rotating the FRAME ASSY., RT to the toner cartridge replace position, and turn the FRAME ASSY., RT so the part with no cartridge faces downward.

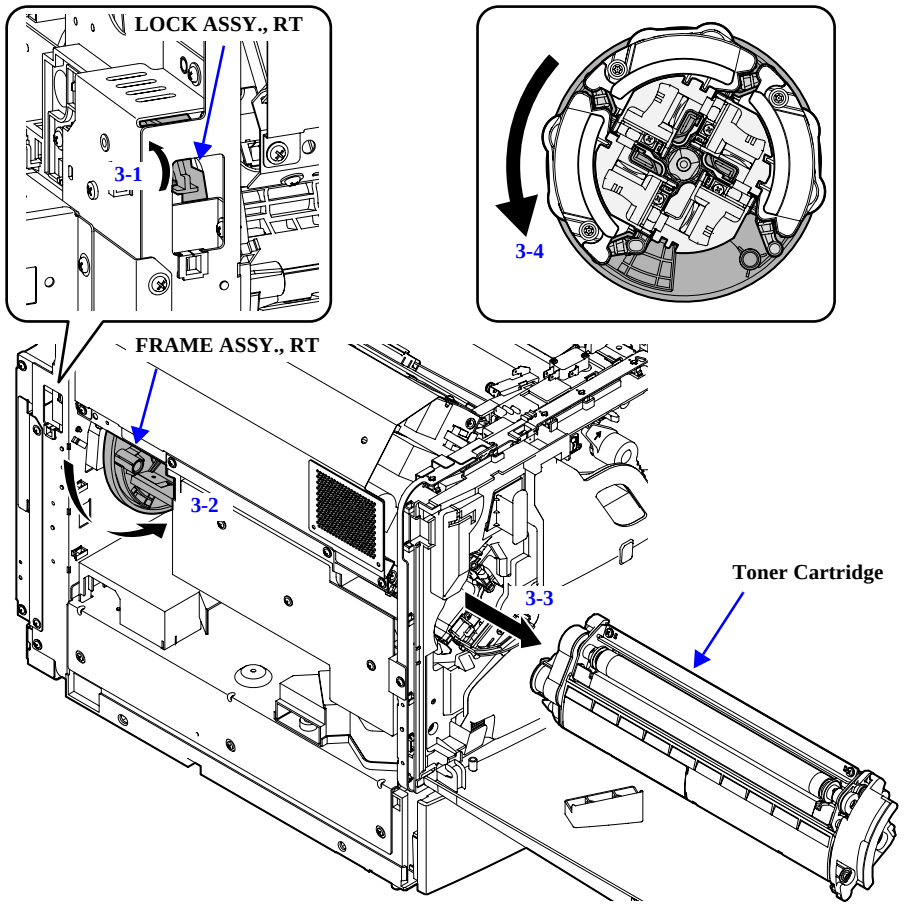

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Figure 4-112. Removal of HARNESS, INLET 1

4. 4. Release the three tabs that secure the DUCT, EX, and remove the DUCT, EX paying attention not to hit against the harness.

REASSEMBLY

1. Store the ferrite core of the HARNESS, AC inside the DUCT, EX.

5. Remove the 3 screws that secure the HARNESS, INLET, draw out the harness of the HARNESS, INLET from the hole, and remove the HARNESS, INLET.

- C.B.(O)SCREW,4x8,F/Zg: 1 (Green)
- C.P.POLYWAVEA,3x6,F/Zn: 2

REASSEMBLY

2. After straightening the harness, insert it in the direction shown in Figure 4-113.

3. Route the grounding wire of the HARNESS, INLET as shown in Figure 4-113, and secure it with the screw.

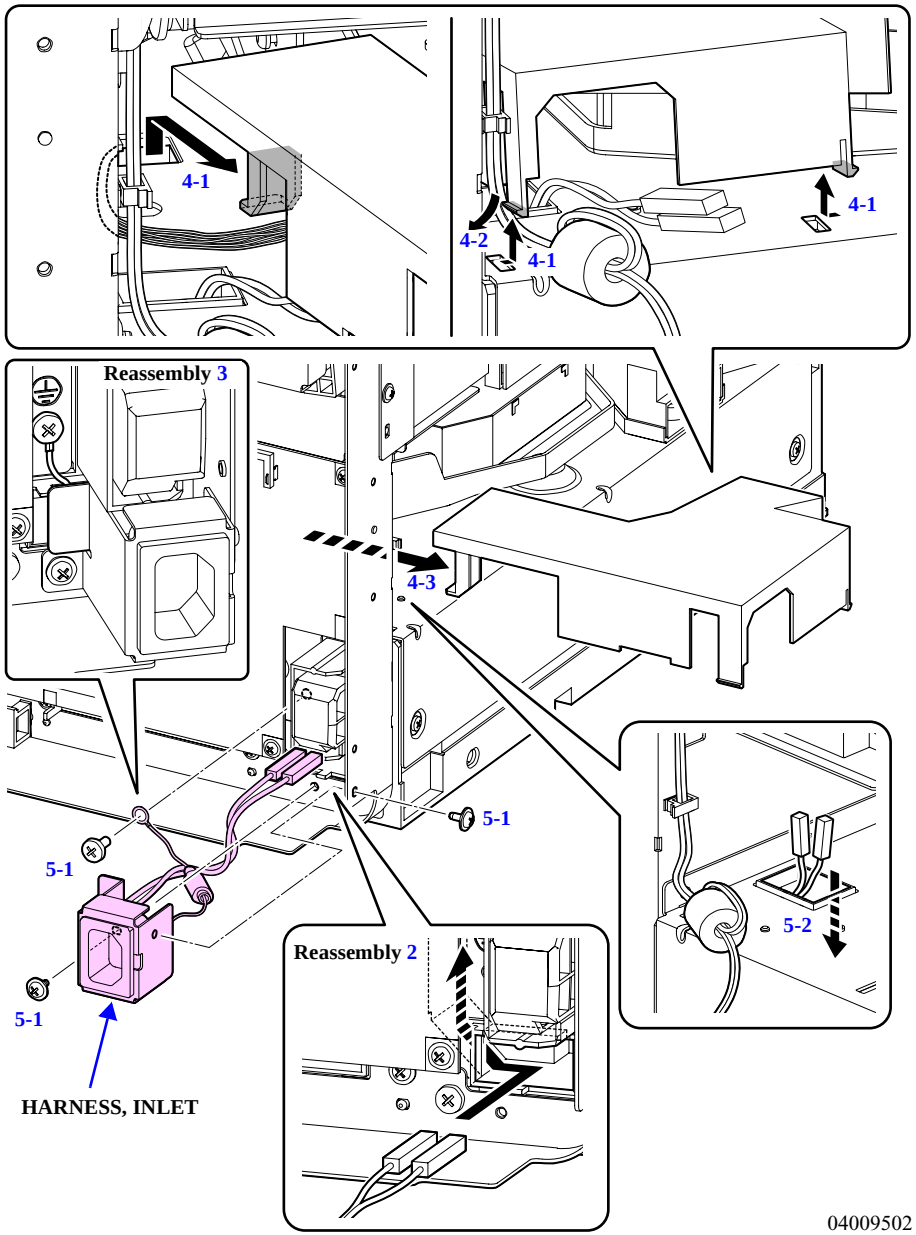


Figure 4-113. Removal of HARNESS, INLET 2

4.5.11 MP Tray

4.5.11.1 Pick Up Sensor (DETECTOR, HP; E)/LEVER, PE; B

☐ **Pick Up Sensor (DETECTOR, HP; E)**

1. Open the MP TRAY.
2. Remove the screw that secures the COVER, PICK UP, MP to remove the COVER, PICK UP, MP.
3. C.P.POLYWAVEA,3x6,F/Zn: 1
4. Lift the LEVER, PE; B to move the LEVER, PE, SUB out of the slit of the Pick up sensor, and remove the Pick up sensor releasing the 3 tabs.
5. Disconnect the connector from the Pick up sensor.

☐ **LEVER, PE; B**

1). Remove the COVER, PICK UP, MP. *(p.323)*

2). Remove the LEVER, PE; B from the 2 roller bearings of the MP Tray.

REASSEMBLY

Pick up the LEVER, PE; SUB, insert the LEVER, PE; B to the notch of the MP TRAY, and attach the LEVER, PE; B.

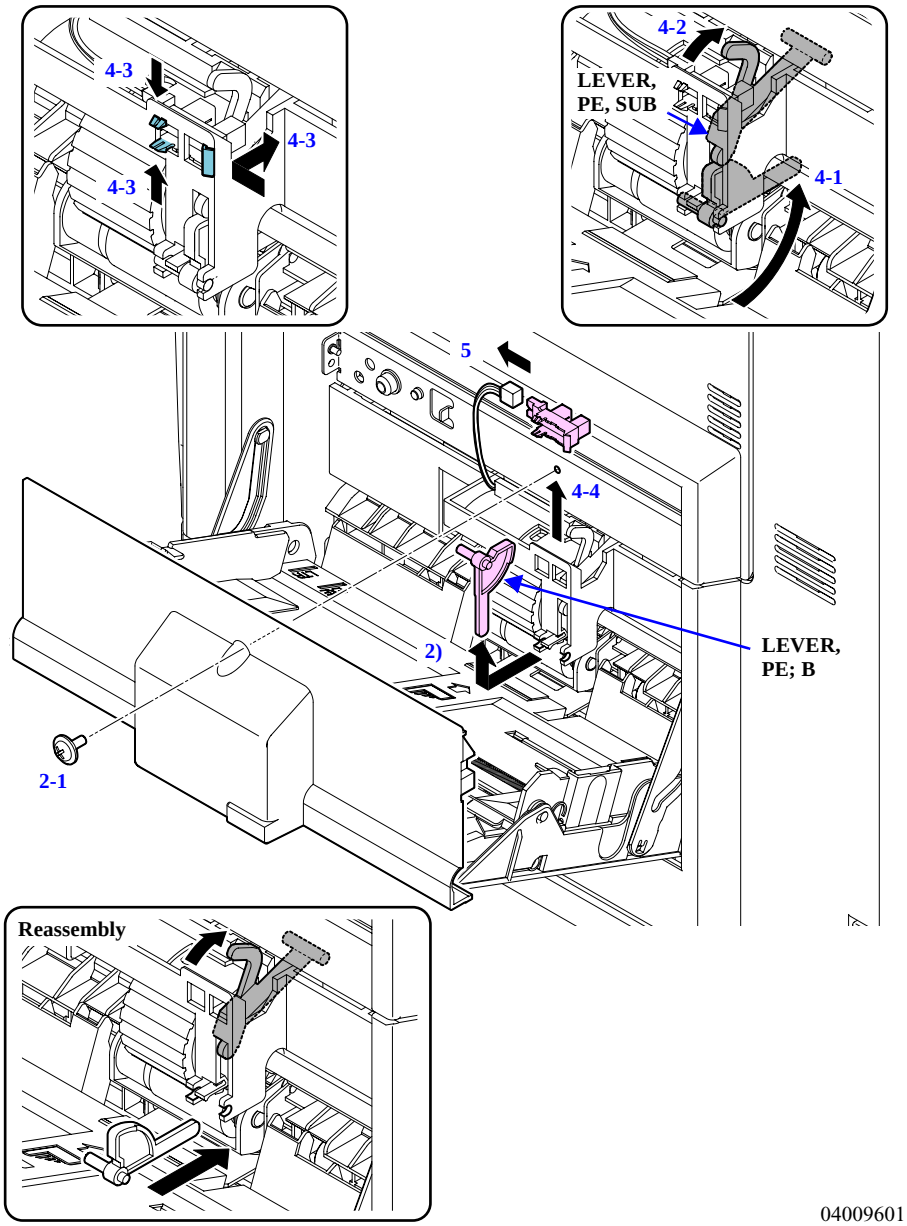


Figure 4-114. Removal of Pick Up Sensor/LEVER, PE; B

4.5.11.2 ROLLER, PAPER LOAD/LEVER, FRONT, MP/ LEVER, REAR, MP

☐ ROLLER, PAPER LOAD

1. Remove the COVER, PICKUP, MP. *(p.323)*
2. Remove the STOPPER, 4 that secures the ROLLER, PAPER LOAD.
3. Holding down the ROLLER, SEPARATION, MPT ASSY., draw out the ROLLER, PAPER LOAD toward front.

REASSEMBLY

1. Match the cross-sectional shape of the ROLLER, PAPER LOAD with that of the SHAFT, PICK UP, MP.

☐ LEVER, FRONT, MP

1). Open the MP TRAY.

2). Insert a small screw driver or similar tool to the attachment hole that is located at the front of the HOUSING, MP, and release the tab to remove the attachment shaft.

3). Rotate the LEVER, FRONT, MP upward, match the notch of the LEVER, FRONT, MP with the tab of the MP TRAY, and then remove the LEVER, FRONT, MP.

☐ LEVER, REAR, MP

1]. Refer to the LEVER, FRONT, MP, and remove the LEVER, REAR, MP using the same procedure.

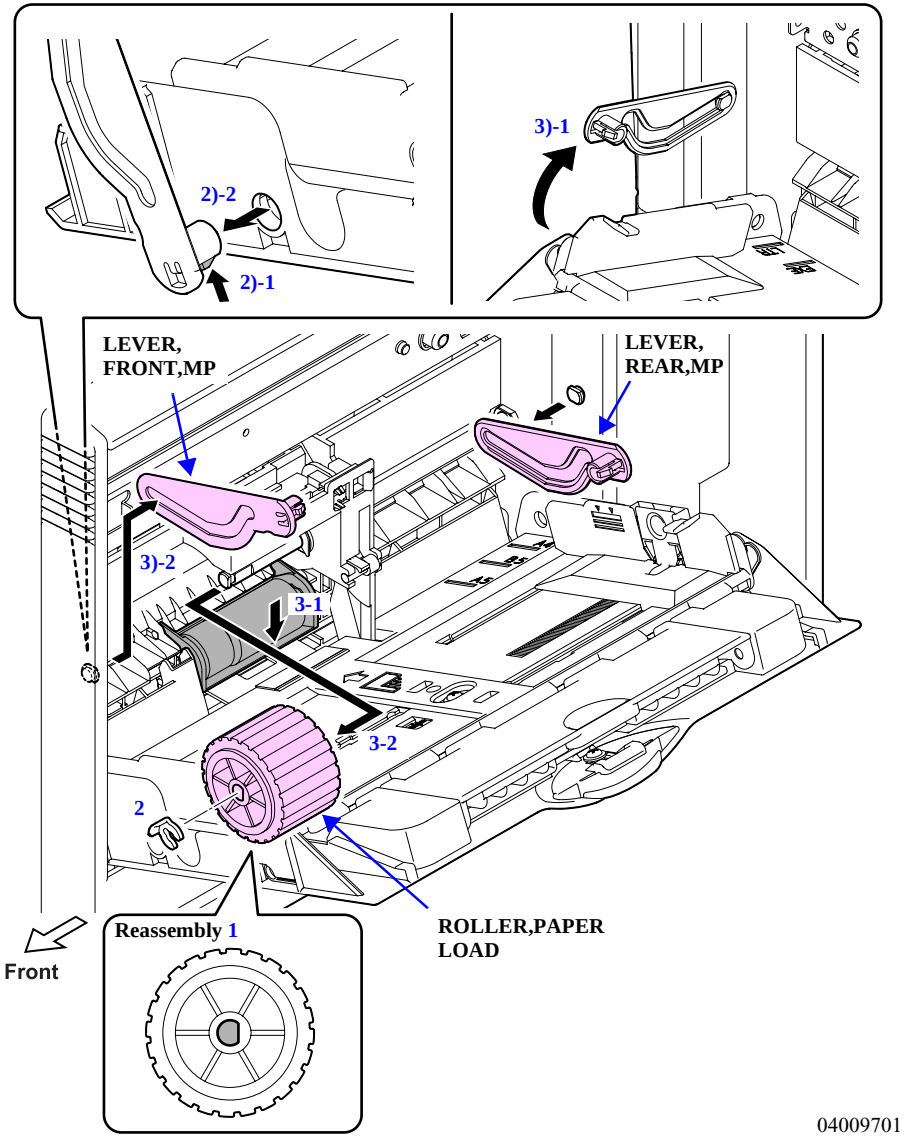


Figure 4-115. Removal of ROLLER, PAPER LOAD/LEVER, FRONT, MP/ LEVER, REAR, MP

4.5.11.3 PAPER, SUPPORT, SUB, MP/PAPER, SUPPORT, MP/ LEVER, UPPER, MP

1. Open the MP TRAY.
2. Draw out the PAPER, SUPPORT, MP and open the PAPER, SUPPORT, SUB, MP.
3. With the center of the PAPER, SUPPORT, SUB, MP bowed downward, pull out the 2 holes (front and rear) from the PAPER, SUPPORT, SUB, MP from the 2 dowels to remove the PAPER, SUPPORT, SUB, MP.
4. With the center side of the PAPER, SUPPORT, MP bowed downward, draw out the tab on one side of it from the HOUSING, MP to remove the PAPER, SUPPORT, MP.

CAUTION

Look out for the COMPRESSION SPRING, 2.52 as it may pop up when performing the following work.

5. Remove the screw that secures LEVER, UPPER, MP to remove the LEVER, UPPER, MP and the COMPRESSION SPRING, 2.52.
   - C.C.P-TITE SCREW,3x6,F/Zn: 1

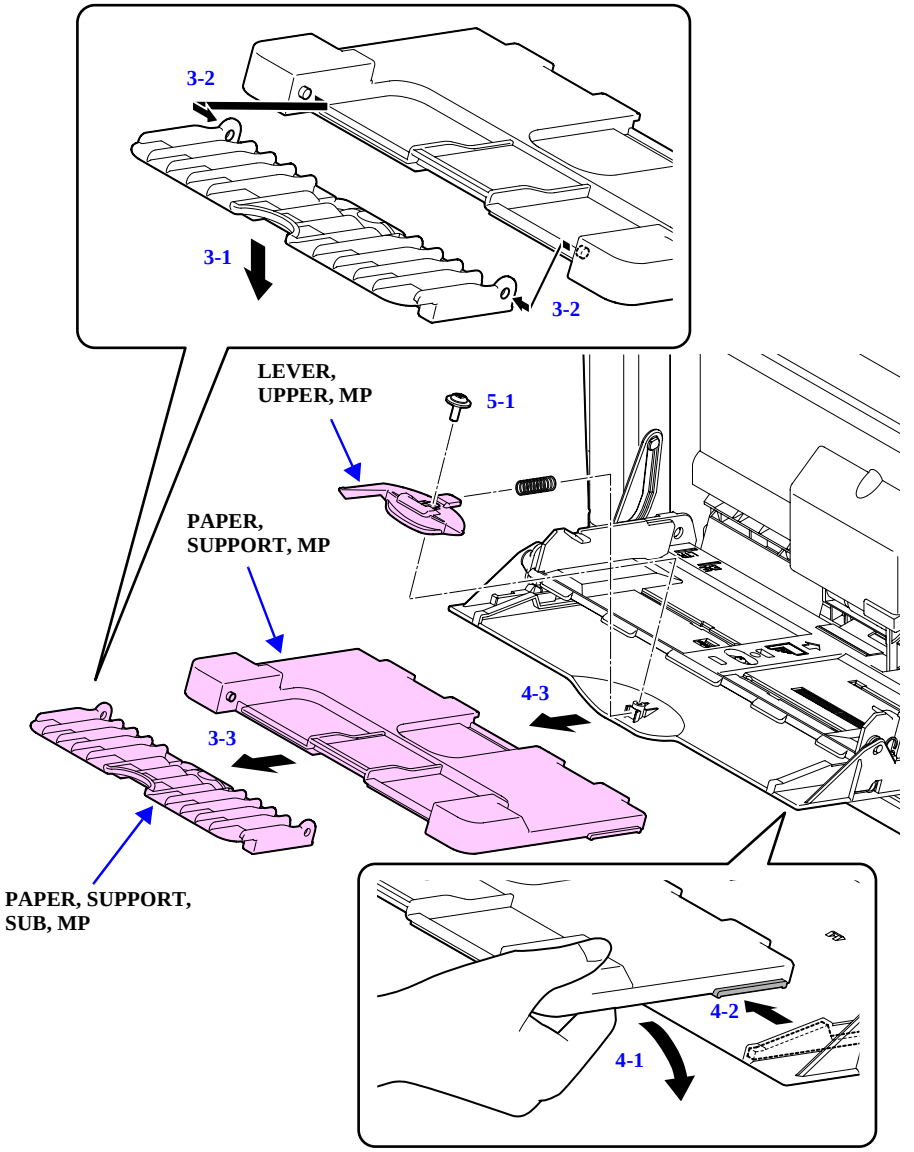


Figure 4-116. Removal of PAPER, SUPPORT, SUB, MP/ PAPER, SUPPORT, MP/LEVER, UPPER, MP

4.5.11.4 ROLLER ASSY., SEPARATION, ASP

1. Remove the ROLLER, PAPER LOAD. *(p.324)*
2. Remove the LEVER, FRONT, MP and the LEVER, REAR, MP. *(p.324)*
3. With the HOUSING, MP ASSY. slightly closed, bow front and rear of the HOUSING ASSY. inward to release the 2 positioning holes from the dowels, and remove the HOUSING, MP ASSY.

REASSEMBLY

1. Insert the LEVER, LIFT PLATE underneath the LIFT PLATE, MP ASSY.

CAUTION

When performing the following work, take care not to drop or lose the COMPRESSION SPRING, 2.52.

4. Bow both sides of the ROLLER ASSY., SEPARATION, ASP inward to release the 2 dowels, and slowly remove the ROLLER ASSY., SEPARATION, ASP.

REASSEMBLY

2. Insert the dowel that is located at the bottom of the ROLLER ASSY., SEPARATION, ASP to the COMPRESSION SPRING, 2.52.

3. After the installation, press the ROLLER ASSY., SEPARATION, ASP to confirm that it returns to its original position by spring force of the COMPRESSION SPRING, 2.52.

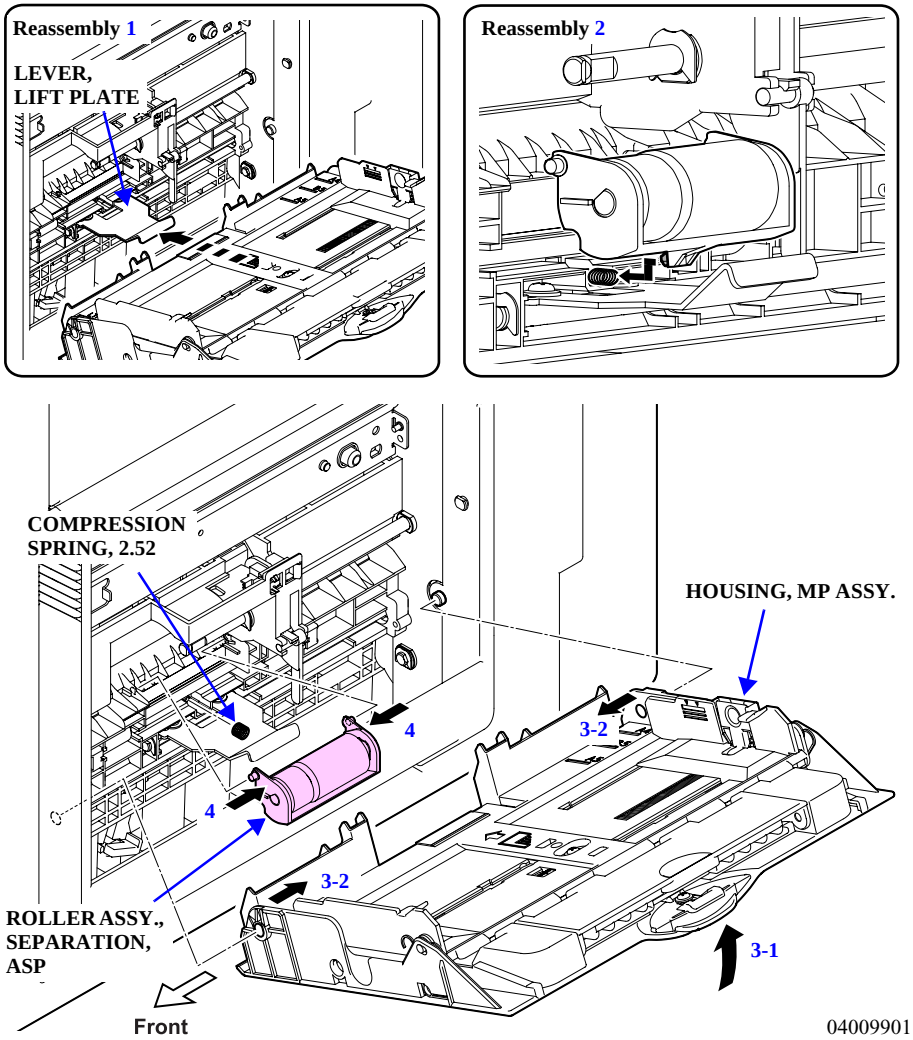


Figure 4-117. Removal of ROLLER ASSY., SEPARATION, ASP

4.5.11.5 HOUSING, MP

1. Remove the LEVER, FRONT, MP and the LEVER, REAR, MP. *(p.324)*
2. Remove the HOUSING, MP ASSY. *(p.326)*
3. Remove the LEVER, UPPER, MP. *(p.325)*
4. While pulling the both ends of the HOUSING, MP outward, release the 2 dowels on the LIFT PLATE ASSY. from the positioning hole and TORSION SPRING, 55.09 to remove the LIFT PLATE ASSY.

REASSEMBLY

1. **Attach the TORSION SPRING, 55.09 so that it can be seen through the notch of the HOUSING, MP.**
2. **After the installation, move the LIFT PLATE ASSY. up and down to make sure that U-shaped tab of the TORSION SPRING, 55.09 is not detached from the dowel of the LIFT PLATE ASSY.**

5. Remove the 2 TORSION SPRING, 55.09s from the holes of the HOUSING, MP.

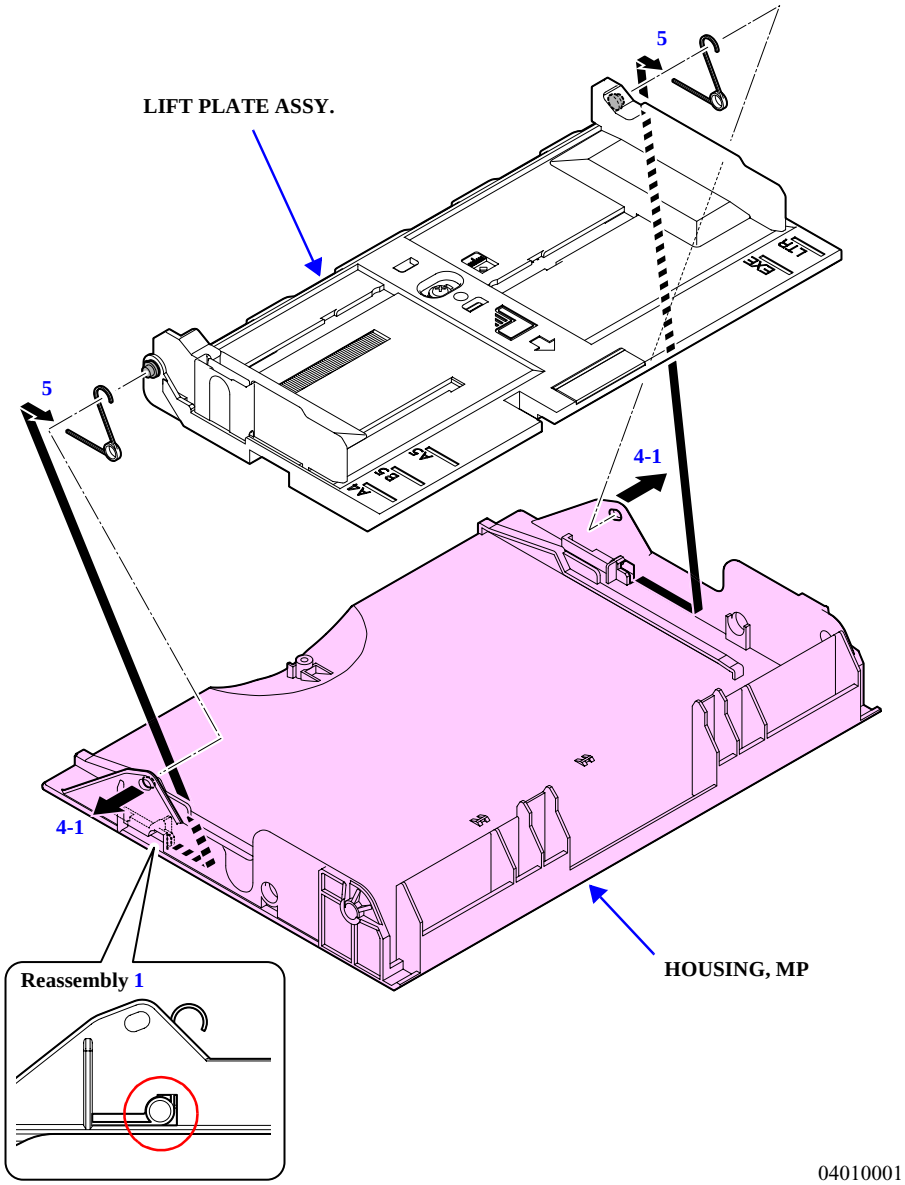


Figure 4-118. Removal of HOUSING, MP

4.5.11.6 PAPER GUIDE, FRONT, MP/LIFT PLATE, MP/ PAPER GUIDE, REAR, MP

REMOVAL

D1. Remove the LIFT PLATE ASSY. *(p.327)*

D2. Slide the PAPER GUIDE, FRONT, MP and the PAPER GUIDE, REAR, MP, ASSY. outward and then check the cursor position. Memorize the position as it is required during assembly.

D3. Slide the PAPER GUIDE, FRONT, MP and the PAPER GUIDE, REAR, MP, ASSY. to the minimum paper width location.

CAUTION

When removing the screws in order described bellow, MOUNTING PLATE ASSY., PINION and the SPUR GEAR 16, MPT falls off from behind the LIFT PLATE, MP. Place the LIFT PLATE, MP on a desk or work table before doing the work.

D4. Remove the screw that secures the MOUNTING PLATE ASSY., PINION to remove the MOUNTING PLATE ASSY., PINION and the SPUR GEAR, 16, MPT.

- C.C.SCREW,3x6,F/Uc: 1

D5. Lift the tip of the PAPER GUIDE, FRONT, MP in the direction of the arrow, and unloose the salient of the PAPER GUIDE, FRONT, MP from the LIFT PLATE, MP.

D6. Uprear the PAPER GUIDE, FRONT, MP vertically at the concave position of the slit, and remove the LIFT PLATE, MP by rotating in the direction of the arrow.

D7. Remove the PAPER GUIDE, REAR, MP ASSY. using the same procedure for the PAPER GUIDE, FRONT, MP (step D5 and D6).

CAUTION

When performing the following work, take care not to lose the COMPRESSION SPRING, 8.51.

D8. Press the LEVER, GUIDE, MP from backside of the PAPER GUIDE, REAR, MP to release the two dowels, and remove both the LEVER, GUIDE, MP and the COMPRESSION SPRING, 8.51.

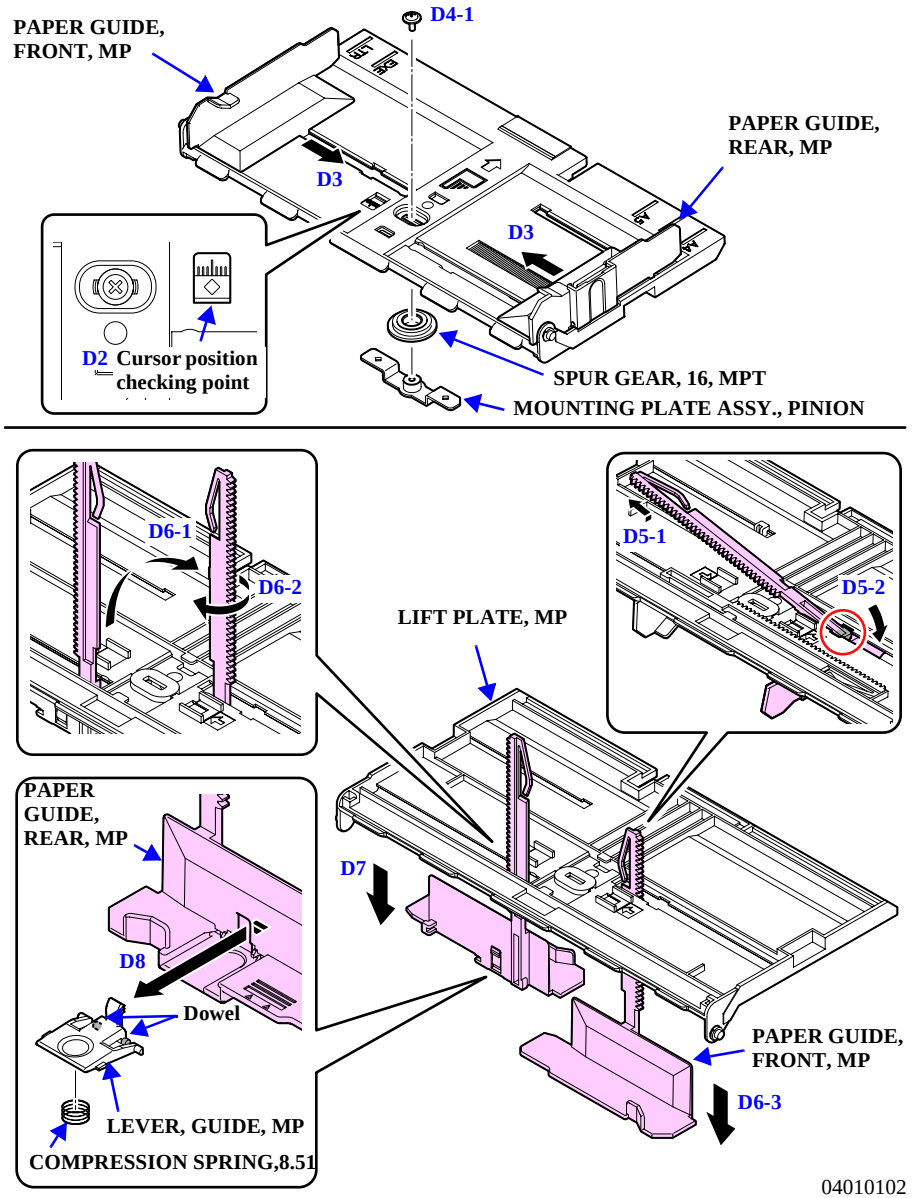


Figure 4-119. Removal of PAPER GUIDE, FRONT, MP/LIFT PLATE, MP/ PAPER GUIDE, REAR, MP

REINSTALLATION

A1. Install the COMPRESSION SPRING, 8.51 to the dent behind the LEVER, GUIDE, MP.

A2. Attach the LEVER, GUIDE, MP to the PAPER GUIDE, REAR, MP while pressing COMPRESSION SPRING, 8.51 against the LEVER, GUIDE, MP, and insert the two tabs of the LEVER, GUIDE, MP into the holes on the PAPER GUIDE, REAR, MP.

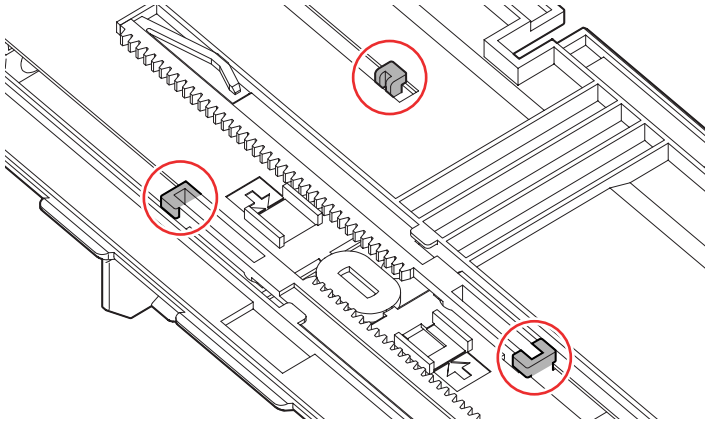
A3. Attach the PAPER GUIDE, FRONT, MP and the PAPER GUIDE, REAR, MP ASSY. to the LIFT PLATE, MP reversing the disassembly procedure; D5 through D7.

A4. With the PAPER GUIDE, FRONT, MP and the PAPER GUIDE, REAR, MP ASSY. moved to the minimum paper width location, attach the SPUR GEAR, 16, MPT and the MOUNTING PLATE ASSY., PINION.

A5. Slide both the PAPER GUIDE, FRONT, MP and the PAPER GUIDE, REAR, MP ASSY. to the minimum paper width position, attach the SPUR GEAR, 16, MPT to the MOUNTING PLATE ASSY., PINION, and install them to the place on the LIFT PLATE MP enclosed with the arrows.

CAUTION

■ **Confirm that the tabs of the PAPER GUIDE, FRONT, MP and the PAPER GUIDE, REAR, MP ASSY. are hooked behind the LIFT PLATE, MP.**



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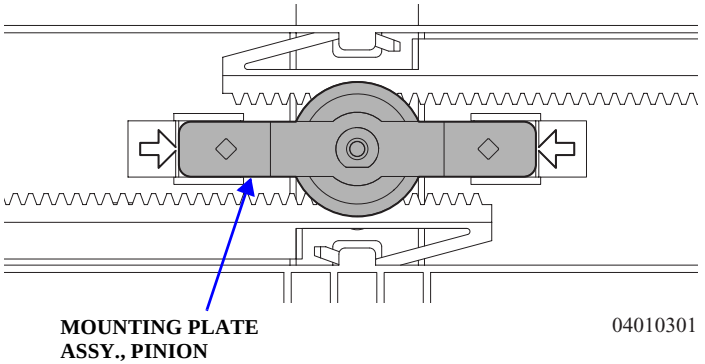

Figure 4-120. Reinstallation of MOUNTING PLATE ASSY., PINION

A6. While holding down the MOUNTING PLATE ASSY., PINION so as not to shift its position, screw the MOUNTING PLATE ASSY., PINION together with the SPUR GEAR,16, MPT.

- C.C.SCREW,3x6,F/Uc: 1

A7. Slide the PAPER GUIDE, FRONT, MP and the PAPER GUIDE, REAR, MP, ASSY. outward and then check the cursor position.

A8. Confirm that the position corresponds with the one checked in the “Removal” procedure D2.

- Matched → End of the work.
- Unmatched → Go to procedure A9.

A9. Loosen the screw that secure the MOUNTING PLATE ASSY., PINION to slide it from behind the LIFT PLATE, MP, and adjust the cursor position.

A10. Tighten the screw while holding down the MOUNTING PLATE ASSY., PINION so as not to shift the cursor position.

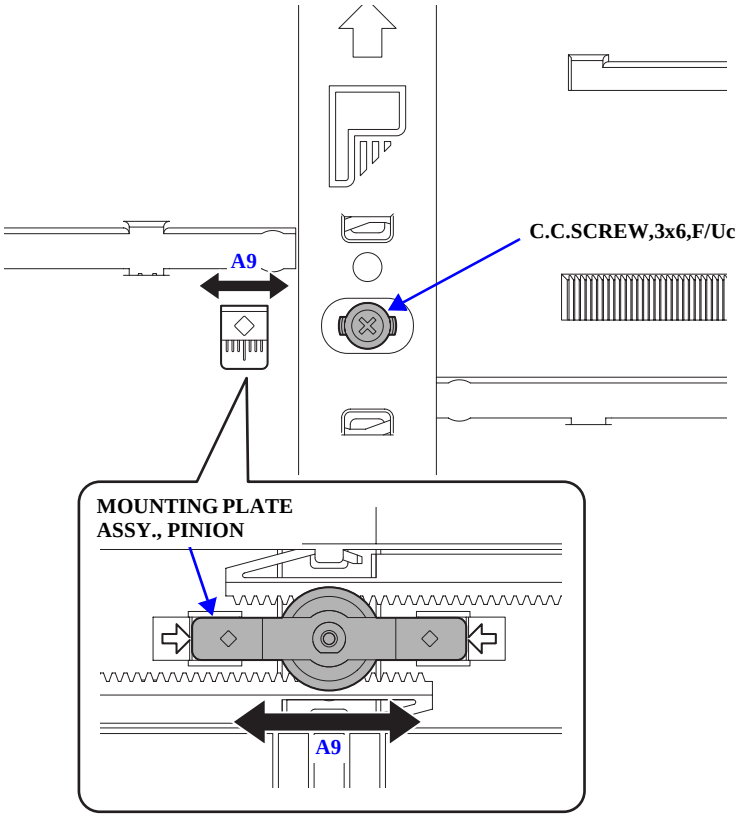

Figure 4-121. Positioning of the PAPER GUIDE, FRONT, MP and the PAPER GUIDE, REAR, MP ASSY.

4.5.11.7 COVER, UPPER, MP

REMOVAL

D1. Open the MP TRAY.

D2. Open the MP TRAY ASSY.

D3. Remove the 2 screws that secure the COVER, UPPER, MP.

- PIN,DUPLEX: 2

D4. Lift up the COVER, UPPER, MP and release the 2 tabs on the right side of the MP TRAY ASSY. to remove the COVER, UPPER, MP.

REINSTALLATION

A1. Hitch the COVER, UPPER, MP to the 2 tabs on the right side of the MP TRAY ASSY.

A2. Secure the COVER, UPPER, MP with the 2 screws.

- PIN,DUPLEX: 2

A3. Close the MP TRAY ASSY.

A4. Close the MP TRAY.

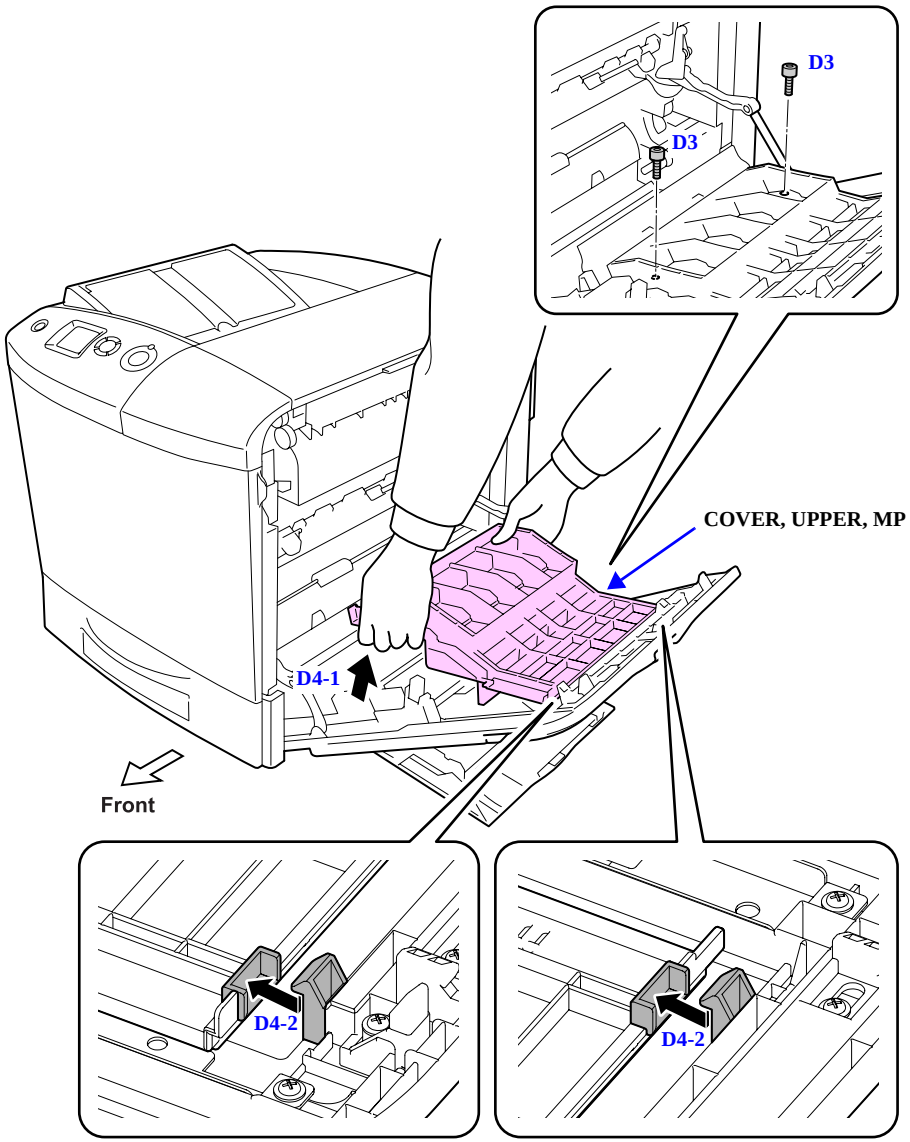

Figure 4-122. Removal of COVER, UPPER, MP

4.5.11.8 LEVER ASSY., GUIDE, ASP

REMOVAL

D1. Open the MP TRAY ASSY.

D2. Remove the 2 screws that secure the LEVER ASSY., GUIDE, ASP.

- C.C.P-TITE SCREW,3x8,F/Zn: 2

CAUTION

When performing the following work, take care not to lose the COMPRESSION SPRING, 5.92.

D3. Twist and lift the LEVER ASSY., GUIDE, ASP slowly, pull its knob out of the notch on the MP TRAY ASSY., and remove the LEVER, GUIDE, ASSY. and the COMPRESSION SPRING, 5.92.

REINSTALLATION

A1. Secure the LEVER ASSY., GUIDE, ASP with two screws.

- C.C.P-TITE SCREW,3x8,F/Zn: 2

A2. Slide the LEVER ASSY., GUIDE, ASP forward, and insert the COMPRESSION SPRING, 5.92 to the notch of the LEVER ASSY., GUIDE, ASP.

A3. Close the MP TRAY ASSY.

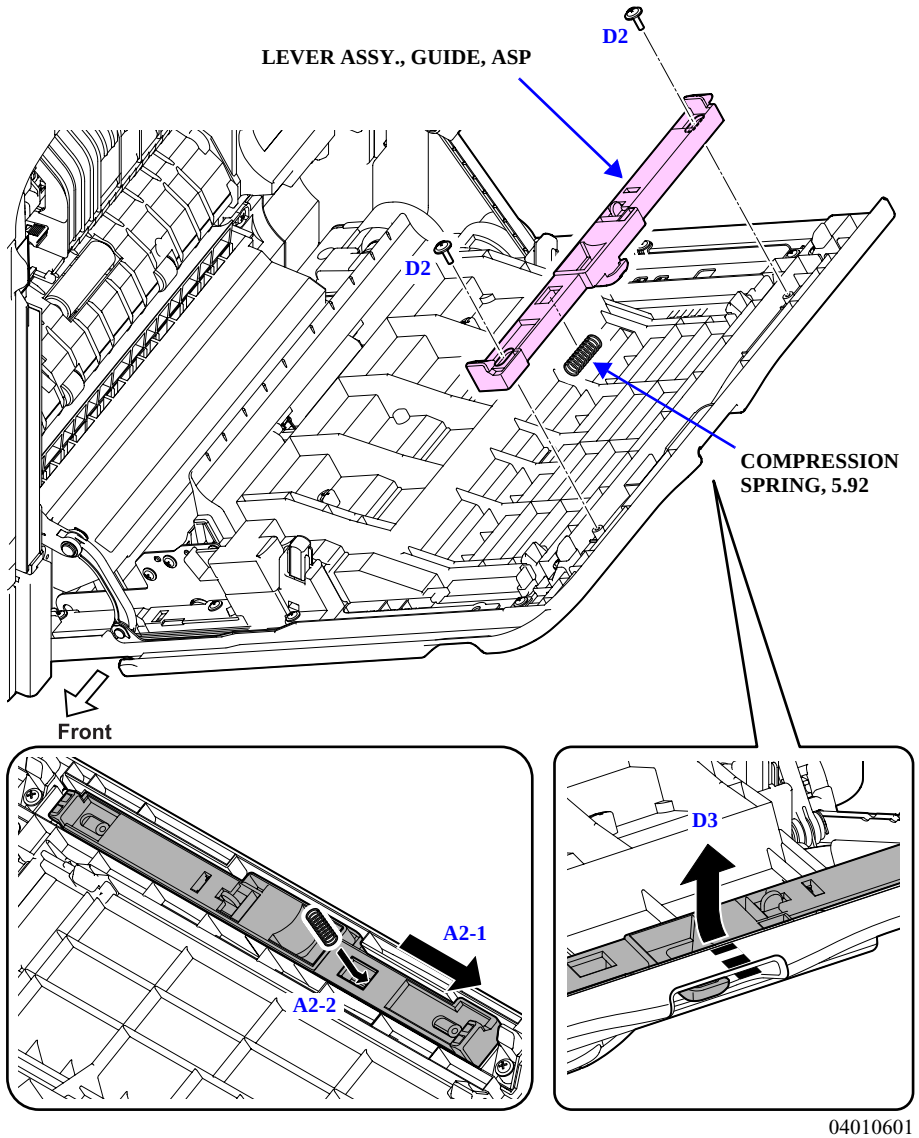

Figure 4-123. Removal of LEVER ASSY., GUIDE, ASP

4.5.11.9 MP TRAY ASSY.

1. Remove the HOUSING, REAR. *(p.244)*
2. Remove the HOUSING, RIGHT. *(p.244)*
3. Remove the COVER, ASSY., CONTROLLER, MC. *(p.310)*
4. Unlock the 2 lock levers of the Fuser.
5. Disconnect the 2 connectors (Black 2 Pin, White 2 Pin) on the BOARD ASSY., MAIN C585 MCU, and loosen the retainer to release the harness.

CAUTION

When performing the following work, pay attention to the items below.

- **Always sustain the MP TRAY ASSY. while at work especially when the Optional paper cassette unit is installed, to prevent the MP TRAY ASSY. from falling off.**

6. Remove the E-RING, 4, L/NA and the PIN, RELEASE from each of the two joint parts that joint the MP TRAY ASSY to the RELEASE ASSY., FRONT.
7. Remove the screw that secures the LEAF SPRING, GROUNDIGN, FRAME.
   - C.P.POLYWAVEA,3x6,F/Zn: 1
8. Pull out both the LEAF SPRING, GROUNDIGN, FRAME and the SHAFT, FULCRUM, COVER, RIGHT, REAR until they hit the frame, and rotate them by 90 degrees to remove them toward you.
9. Disconnect the 2 connectors (White 12 Pin, White 3 Pin) from the relay connector.
10. Remove the screw that secures SHAFT, FULCRUM, COVER, RIGHT, FRONT to remove the SHAFT, FULCRUM, COVER, RIGHT, FRONT.
    - C.C.P-TITE SCREW,3x8,F/Zn: 1
11. Remove the MP TRAY ASSY. toward right side of the printer while taking out the harnesses through the hole of the frame.

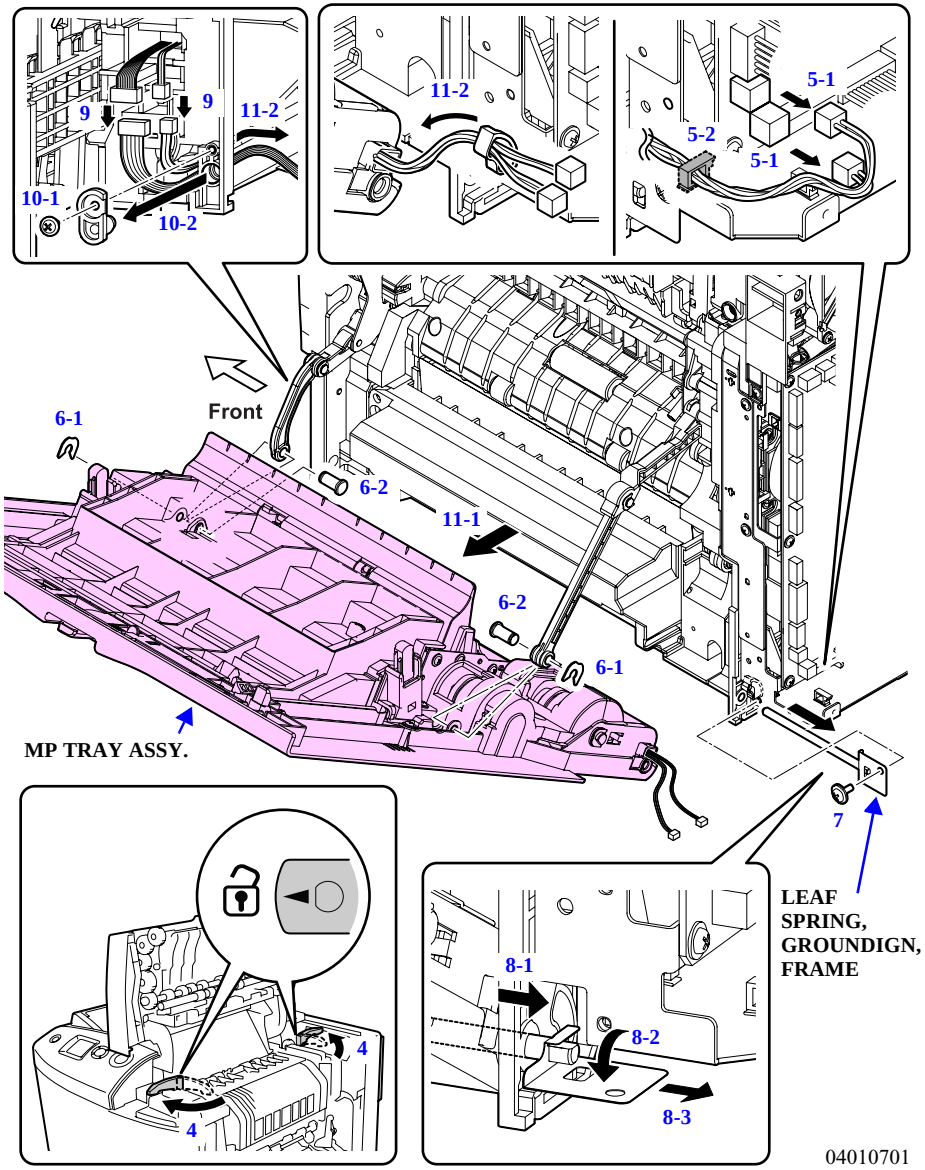

Figure 4-124. Removal of MP TRAY ASSY.

4.5.11.10 CLUTCH, 2ND TRANSFER

1. Remove the MP TRAY ASSY. *(p.333)*
2. Remove the 2 screws that secure the COVER, REAR, MP, and lift the right side of the COVER, REAR, MP to remove the COVER, REAR, MP.
   - C.C.P-TITE SCREW,3x8,F/Zn: 2

REASSEMBLY

1. Insert the notch of the COVER, REAR, MP to the antirotation groove of the CLUTCH, PICK UP, MP.

3. Release the EXTENSION SPRING, 7.29 from the tab of the FRAME ASSY., REAR, MP.
4. Remove the screw that secures the LEVER, LIFT CAM to slide the LEVER, LIFT CAM inward.
   - C.C.SCREW,3x6,F/Uc: 1

REASSEMBLY

2. Make the flat side of the SHAFT, LIFT PLATE face to the LEVER, LIFT CAM to screw them.

5. Draw out the connector (White 2 Pin) of the CLUTCH, 2ND TRANSFER through the shaft hole of the PIN, FULCRUM, COVER, RIGHT, REAR, and release the harness from the groove, tab, and the rib.

REASSEMBLY

3. Route the harness of the CLUTCH, 2ND TRANSFER between the rib and the frame.

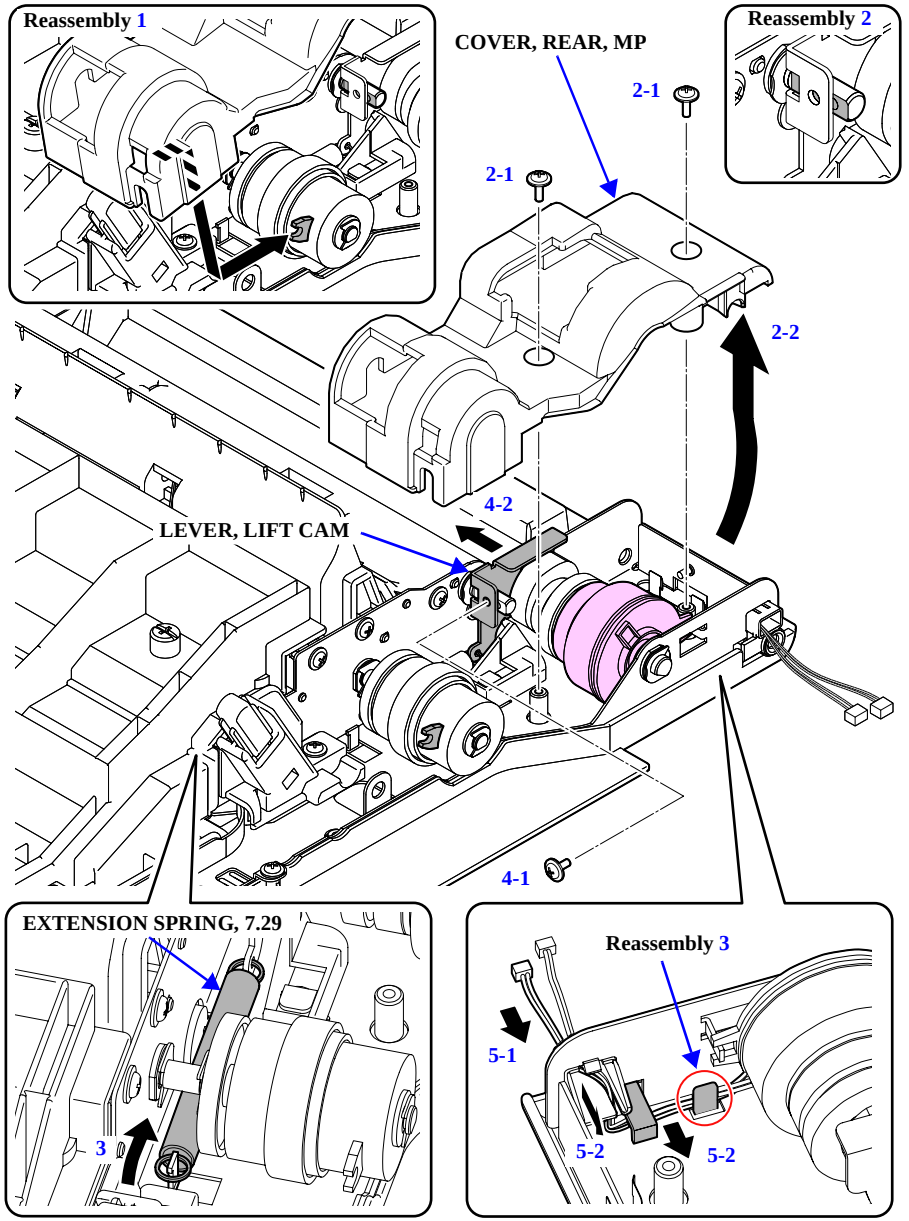

Figure 4-125. Removal of CLUTCH, 2ND TRANSFER 1

6. Remove the E-RING, 5, L/NA that secures the SHAFT, CAM from the inside, and remove the BUSHING, 8.
7. Remove the E-RING, 4, L/NA that secures the SHAFT, CAM from the outside, and remove the BUSHING, 6.
8. To remove CLUTCH, 2ND TRANSFER and the SHAFT, CAM, slide them inward to pull the shaft of the SHAFT CAM out of the hole on the outside FRAME ASSY., REAR, MP, and lift them to draw the shaft out of the hole on the inside frame.
9. Remove both the SHAFT, CAM and the SPACER, 30; B from the CLUTCH, 2ND TRANSFER.

REASSEMBLY

4. **Attach the SPACER, 30; B to the CLUTCH, 2ND TRANSFER with the concave side of the spacer facing to the clutch. And then insert the CLUTCH, 2ND TRANSFER into the SHAFT, CAM paying attention to their shape of cross-section.**
5. **Match the tab of the FRAME ASSY., REAR, MP and the groove of the CLUTCH, 2ND TRANSFER so as not to rotate.**

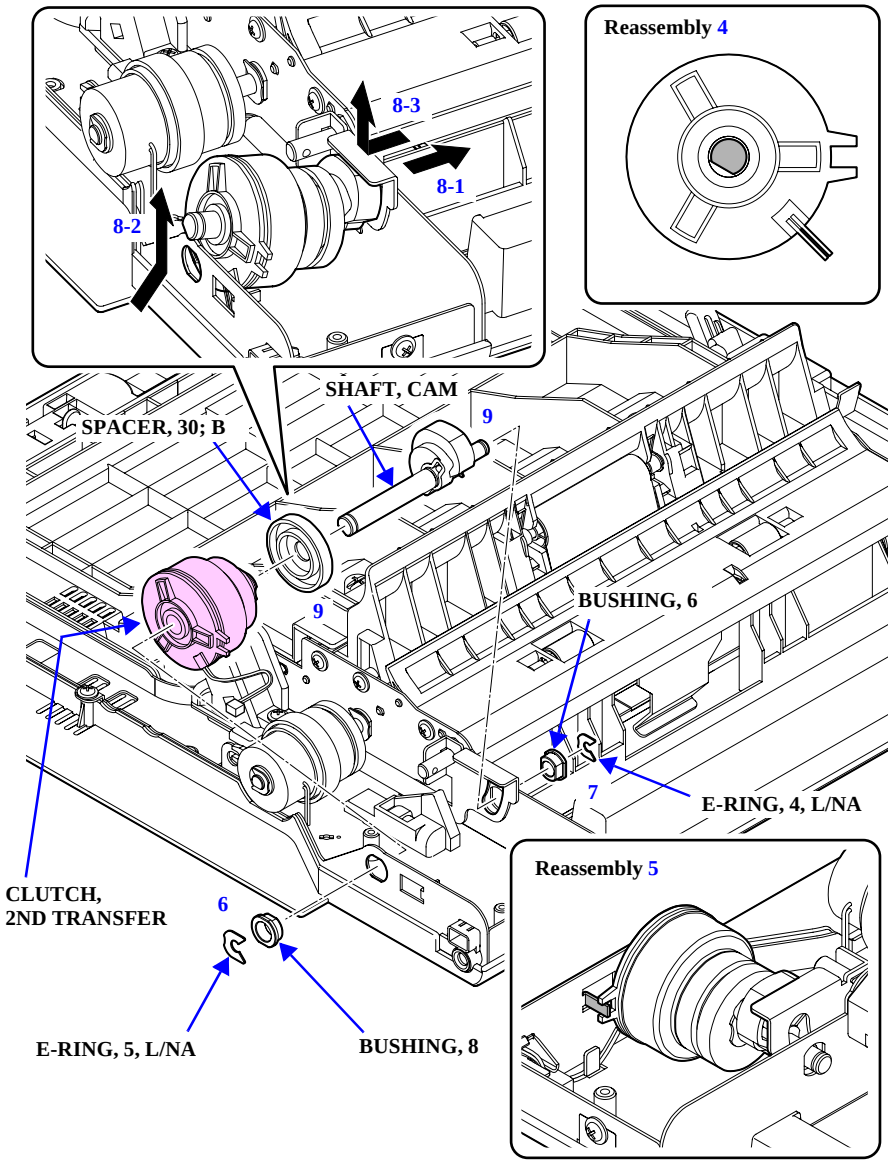

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Figure 4-126. Removal of CLUTCH, 2ND TRANSFER 2

4.5.11.11 CLUTCH, PICK UP, MP

1. Remove the MP TRAY ASSY. *(p.333)*
2. Remove the COVER, REAR, MP. *(p.334)*
3. Remove the E-RING, 5, L/NA that secures the SHAFT, PICK UP, MP to remove the BUSHING, 6.
4. Pull out the connector (Black 2 Pin) of the CLUTCH, PICKUP, MP through the shaft hole of the PIN, FULCRUM, COVER, REAR, and release the harness from both the groove and the tab.

REASSEMBLY

1. Route the harness of the CLUTCH, PICK UP, MP between the 2 ribs and the frame.

5. Release the 2 retainers to release the harness of the CLUTCH, PICK UP, MP.
6. Remove the E-RING, 4, L/NA that secures the CLUTCH, PICK UP, MP, and remove both the CLUTCH, PICKUP, MP and the SHAFT, PICK UP, MP letting them go through over the notch of the FRAME ASSY., REAR, MP.

REASSEMBLY

2. Insert the CLUTCH, PICK UP, MP to the SHAFT, PICK UP, MP with attention to their shape of cross section.

3. Turn the antirotation groove of the CLUTCH, PICK UP, MP to the direction shown in Figure 4-127.

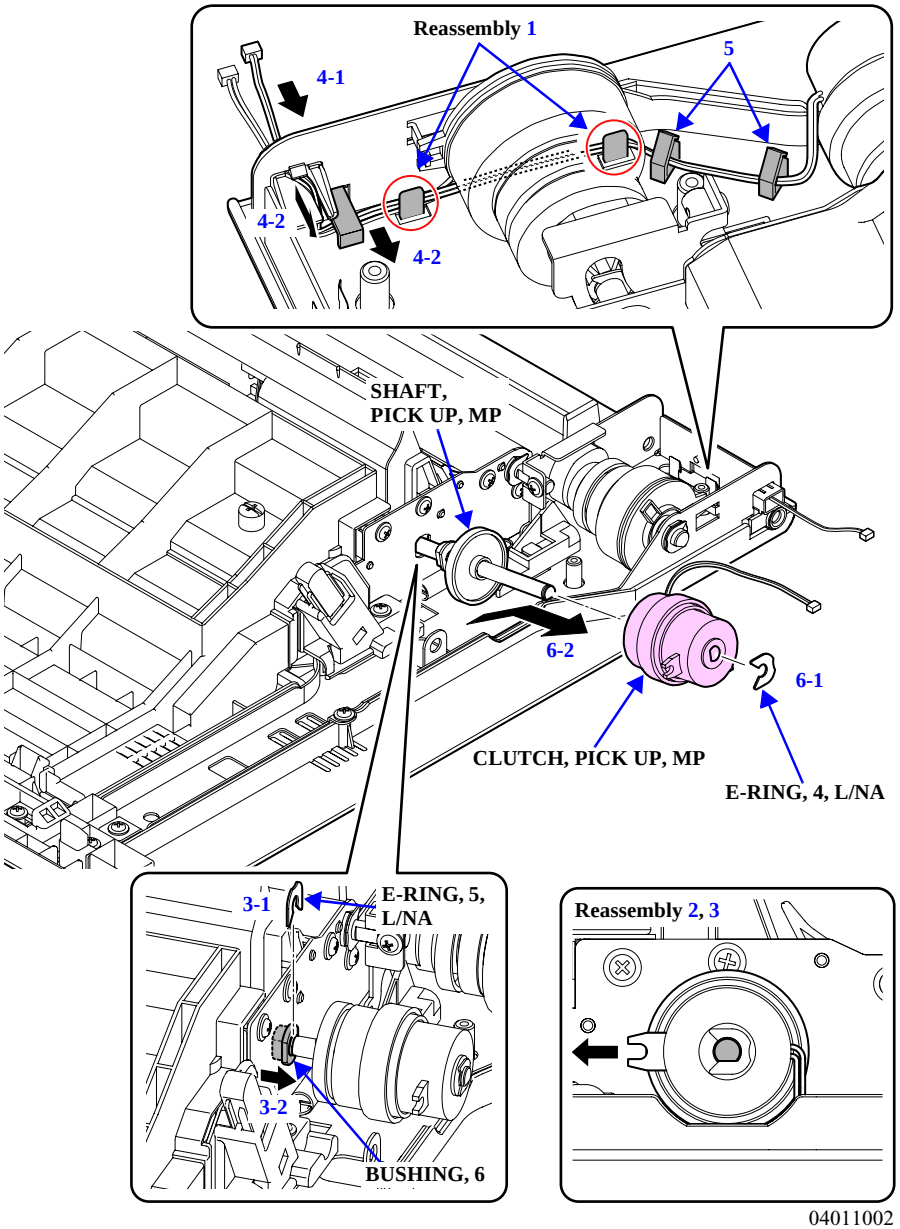

Figure 4-127. Removal of CLUTCH, PICK UP, MP

4.5.11.12 CONNECTOR, DUPLEX

1. Remove the MP TRAY ASSY. *(p.333)*
2. Remove the COVER, UPPER, MP. *(p.331)*
3. Remove the 3 screws that secure the HOLDER, CAP, T2, FRONT ASSY.
   - C.C.P-TITE SCREW,3x8,F/Zn: 3
4. Lift the HOLDER, CAP, T2, FRONT ASSY., release the 2 tabs that secure the CONNECTOR, DUPLEX, and pull out the CONNECTOR, DUPLEX.

CAUTION

Extra caution is needed not to pinch the harness when installing the HOLDER, CAP, T2, FRONT ASSY.

REASSEMBLY

1. **Match the 2 dowels of the HOLDER, CAP, T2, FRONT ASSY. with the positioning holes.**
2. **Route the HARNESS, DUPLEX, RELAY over the rib of the HOLDER, CAP, T2, FRONT ASSY. as shown in Figure 4-128.**

5. Disconnect the CONNECTOR, DUPLEX from the connector.

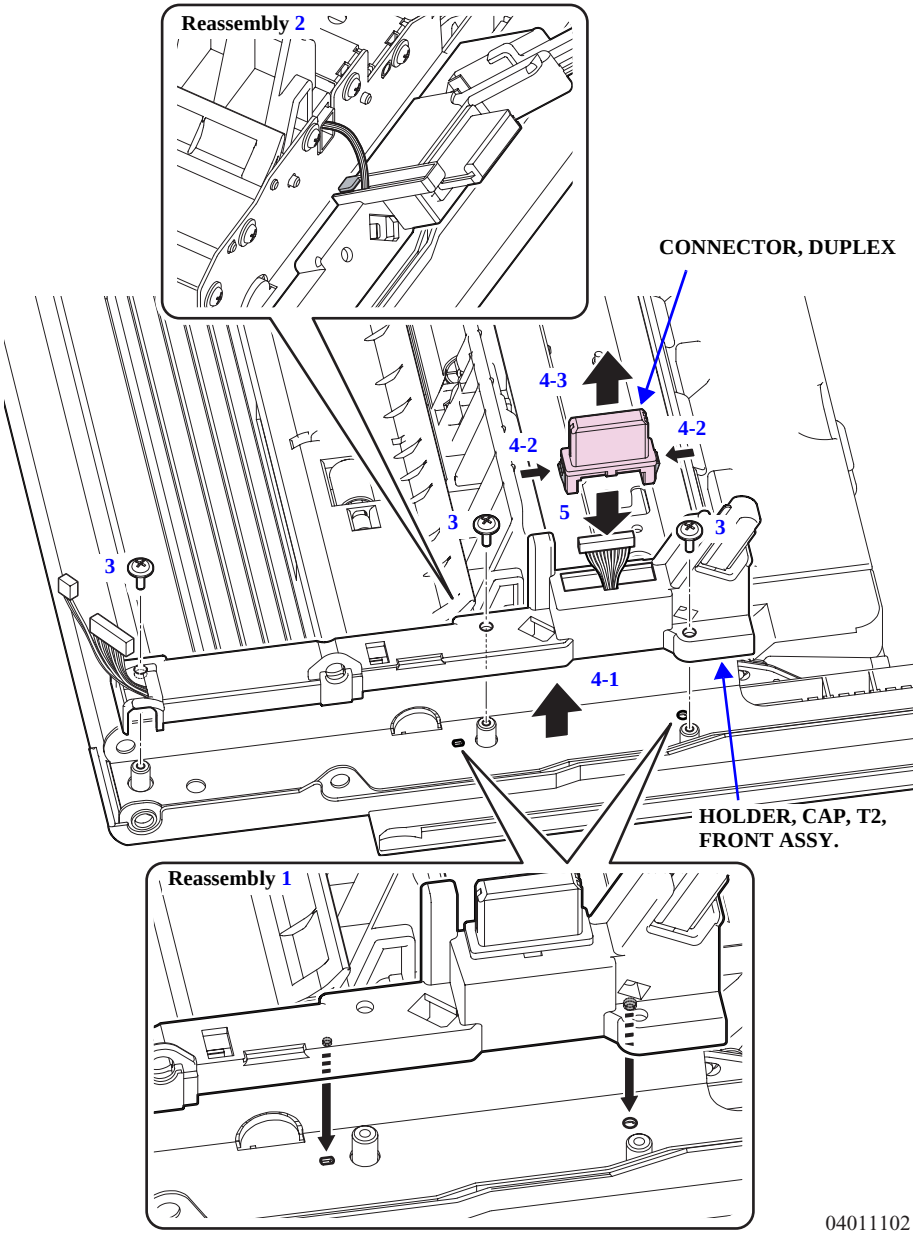

Figure 4-128. Removal of CONNECTOR, DUPLEX

4.5.11.13 COVER, RIGHT

1. Remove the MP TRAY ASSY. *(p.333)*
2. Remove the COVER, UPPER, MP. *(p.331)*
3. Remove the HOLDER, CAP, T2, FRONT ASSY. *(p.337)*
4. Remove the COVER, REAR, MP. *(p.334)*
5. Remove the LEVER ASSY., GUIDE, ASP. *(p.332)*
6. Remove the HOUSING, MP ASSY. *(p.326)*
7. Remove the screw that secure the LEVER, COVER, RIGHT, and remove the LEVER, COVER, RIGHT and the COMPRESSION SPRING, 1.0 (2 places).
   - C.C.P-TITE SCREW,3x8,F/Zn: 1 each
8. Remove the screw that secures the CAP, 2ND ASSY. to remove the CAP, 2ND ASSY.
   - C.C.P-TITE SCREW,3x8,F/Zn: 1

REASSEMBLY

1. Match the dowel of the CAP, 2ND ASSY. with the positioning hole.

9. Remove the 3 screws that secure the FRAME ASSY., MP to remove the FRAME ASSY., MP.
   - C.C.P-TITE SCREW,3x8,F/Zn: 3

REASSEMBLY

2. Match the positioning hole of the FRAME ASSY., MP with the dowel.

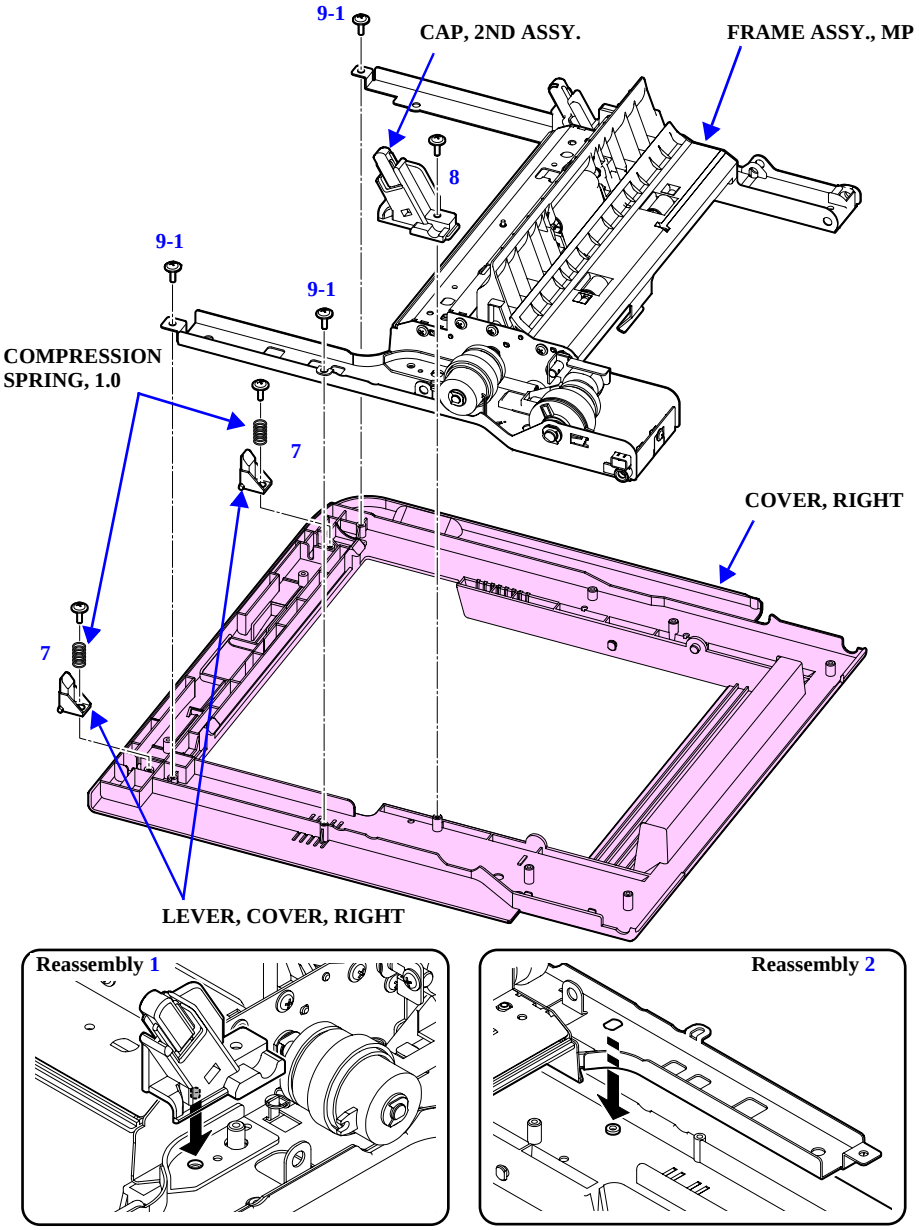

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Figure 4-129. Removal of COVER, RIGHT

4.5.12 Paper Cassette

4.5.12.1 HOLDER, CASSETTE/LATCH, CASSETTE

☐ **HOLDER, CASSETTE**

1. Draw the Standard lower paper cassette out of the printer.
2. Remove the 2 screws that secure the HOLDER, CASSETTE.
   - C.C.P-TITE SCREW,4X10,F/Zn: 2
3. Release the 5 tabs that secure the HOLDER, CASSETTE to remove the HOLDER, CASSETTE.

REASSEMBLY

1. Match the 6 notches at the bottom of the HOLDER, CASSETTE with the ribs of the TRAY, CASSETTE.

☐ **LATCH, CASSETTE**

1). Draw the Standard lower paper cassette out of the printer.

2). Press down the LIFT PLATE, MPC, and secure it with the LATCH, CASSETTE.

CAUTION

Perform the following work holding the LIFT PLATE, MPC with your hand as it pops up.

3). Remove the EXTENSION, SPRING, 0.39 from the attachment hole of the LATCH, CASSETTE.

4). Release the 2 tabs that secure the LATCH, CASSETTE by moving them inward to remove the LATCH, CASSETTE.

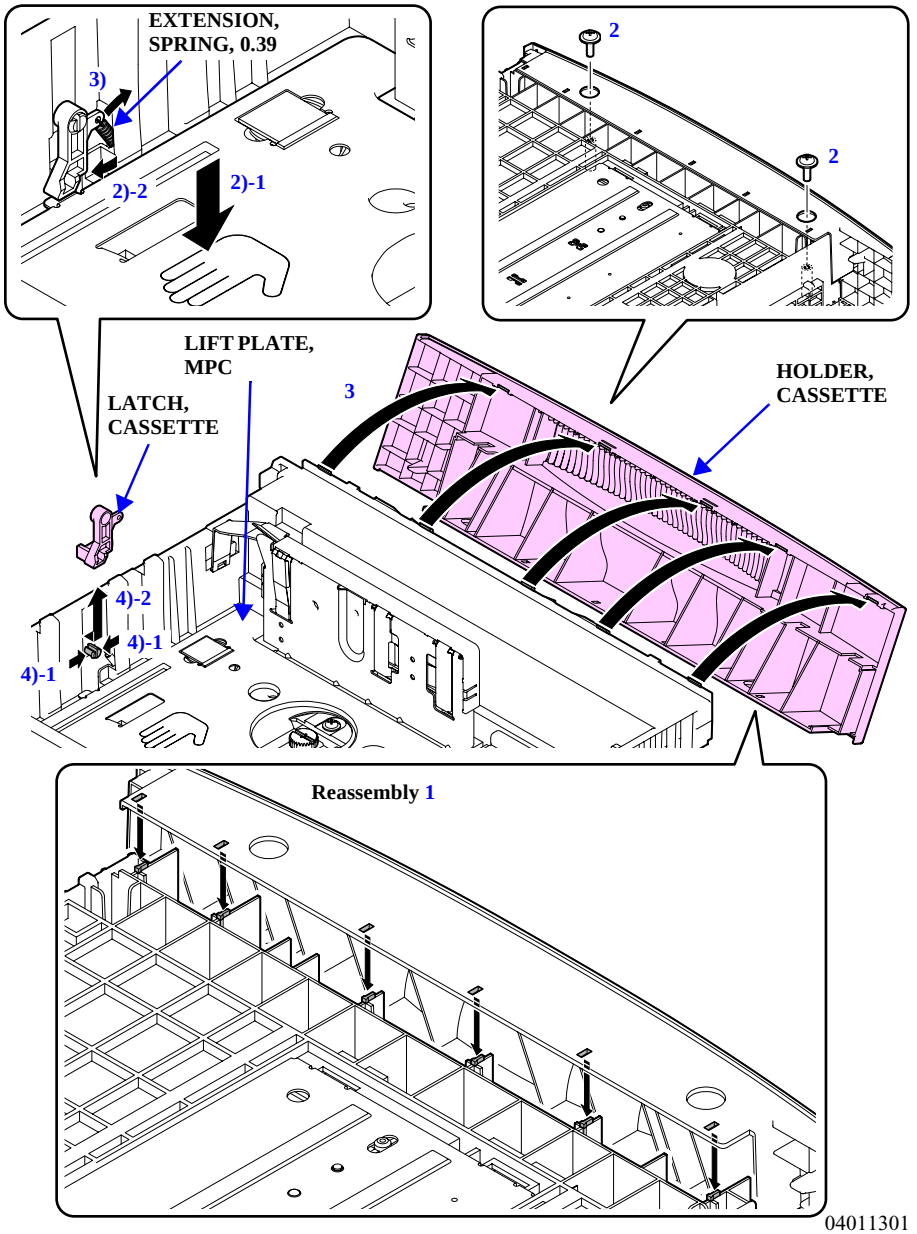


Figure 4-130. Removal of HOLDER, CASSETTE/LATCH, CASSETTE

4.5.12.2 COMPRESSION SPRING, 10.58

1. Pull the Standard lower paper cassette out of the printer.
2. Press the tab on the right side of the TRAY, CASSETTE outward to pull the dowel that secures the LIFT PLATE, MPC out of the hole, and lift up the right side of the LIFT PLATE, MPC to release the dowel located at the left side of the LIFT PLATE, MPC.
3. Rotate the LIFT PLATE, MPC by 90 degrees upward, release the left tab of the LIFT PLATE, MPC by sliding it toward right and then release its right tab to remove the plate.
4. Release the 2 COMPRESSION SPRNIG, 10.58s from the 2 tabs of the LIFT PLATE, MPC, and remove the 2 COMPRESSION SPRING, 10.58s.

REASSEMBLY

When attaching the COMPRESSION SPRING, 10.58, be careful to follow the instructions below.

1. **Hitch one end with a smaller coil diameter to the 2 tabs of the LIFT PLATE, MPC.**
2. **Match the other end that has a larger diameter with a circularly-pitted area of the TRAY, CASSETTE.**

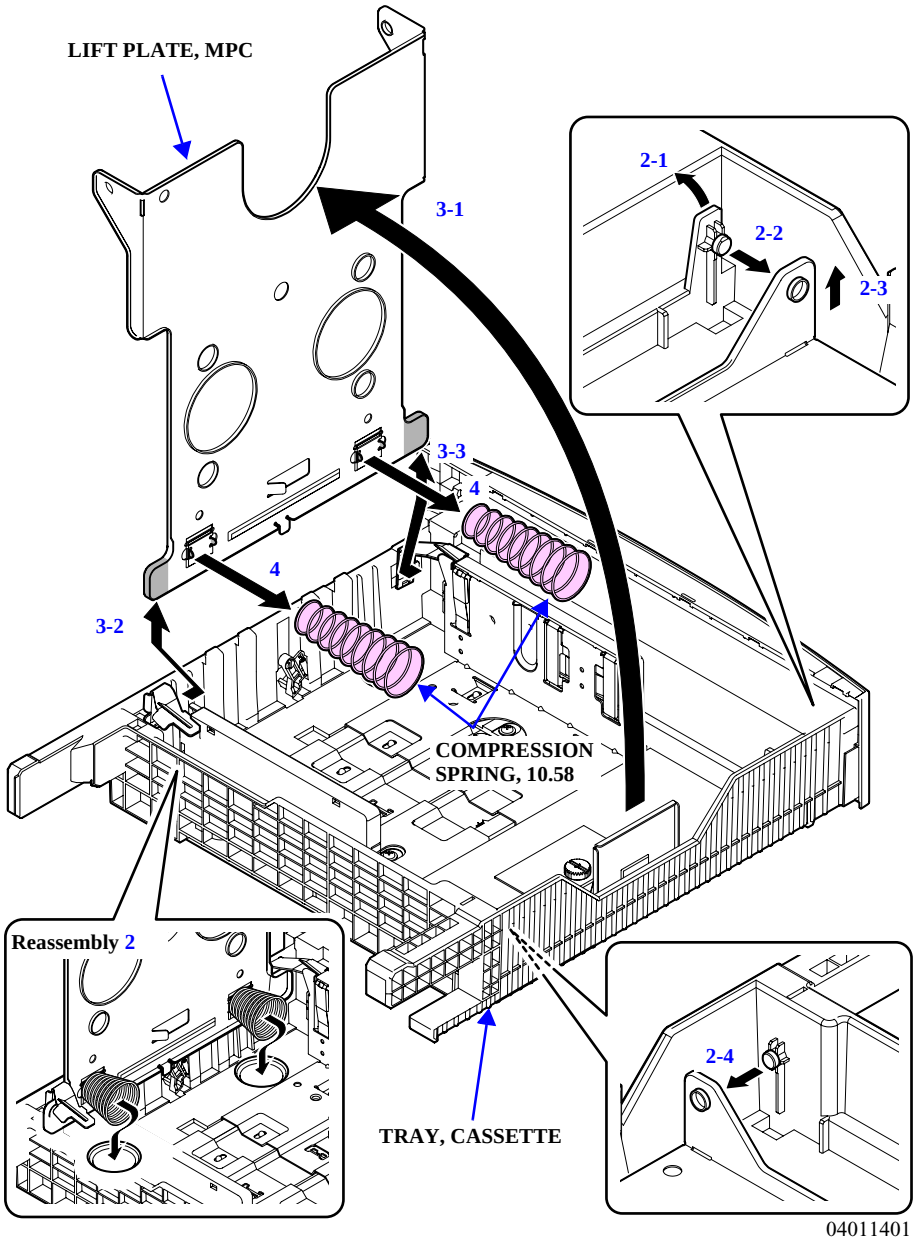


Figure 4-131. Removal of COMPRESSION SPRING, 10.58

4.5.12.3 DETECTION, PAPER LOAD

1. Remove the HOUSING, RIGHT. *(p.246)*
2. Release the tab on the right side of the DETECTION, PAPER LOAD, pull out the tab on the left, and remove the DETECTION, PAPER LOAD.

REASSEMBLY

Insert the harness between the 2 dowels of the FRAME, FRONT, RIGHT.

3. Disconnect the DETECTION, PAPER LOAD from the connector.

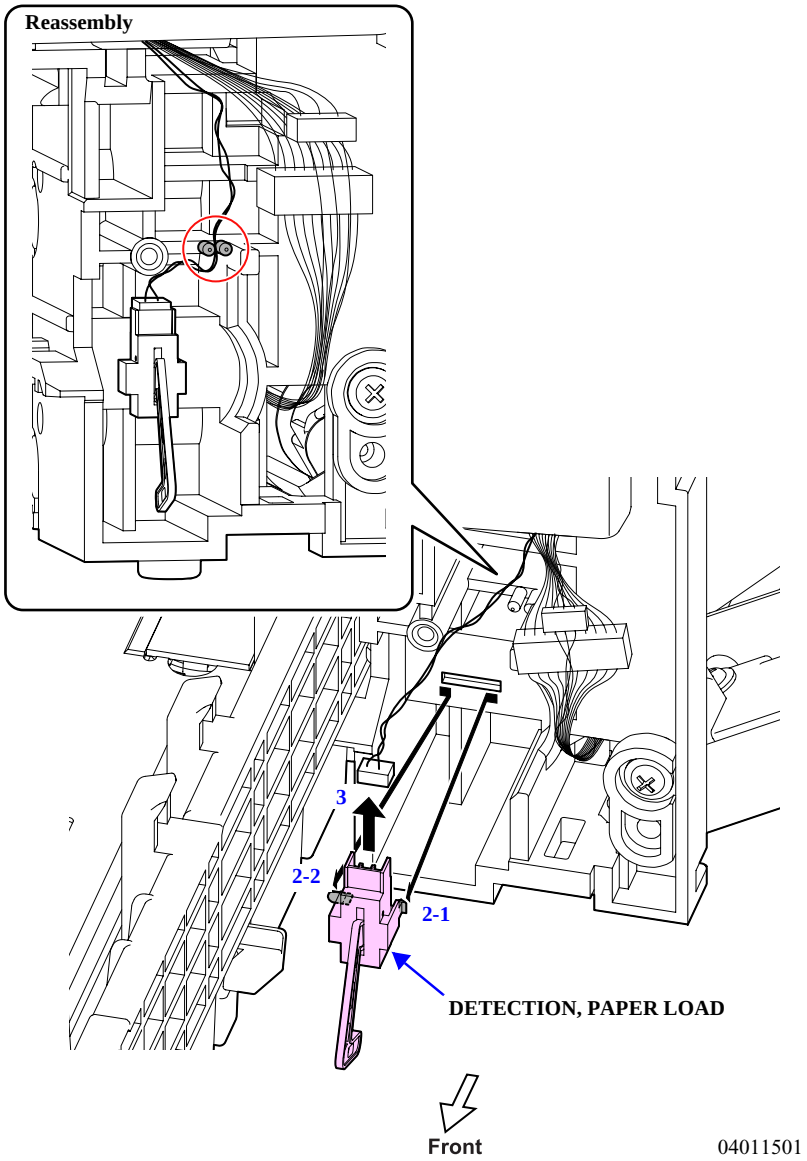


Figure 4-132. Removal of DETECTION, PAPER LOAD

4.6 Disassembling/Assembling the Options

4.6.1 Opt. Feeder

4.6.1.1 Optional Paper Cassette Unit

REMOVAL

D1. Remove the PIN, DUPLEX screw on the left side of the printer that secures the attachment plate, and remove the attachment plate from the Optional paper cassette unit.

- PIN,DUPLEX: 1

D2. Open the 500-Sheet Paper Cassette, ASP (Cover E), remove the 2 PIN, DUPLEX screws on the right side of the printer that secure the 2 attachment plates, and remove the 2 attachment plates from the Optional paper cassette unit.

- PIN,DUPLEX: 2

D3. Close the 500-Sheet Paper Cassette, ASP (Cover E).

WARNING

- **As this printer weighs 37 kg (82 lbs), following work must be done by two or more personnel.**
- **When transferring the printer, always hold the places shown in Figure 4-133.**

D4. Lift the printer as shown in Figure 4-133, and separate the printer from the Optional paper cassette unit.

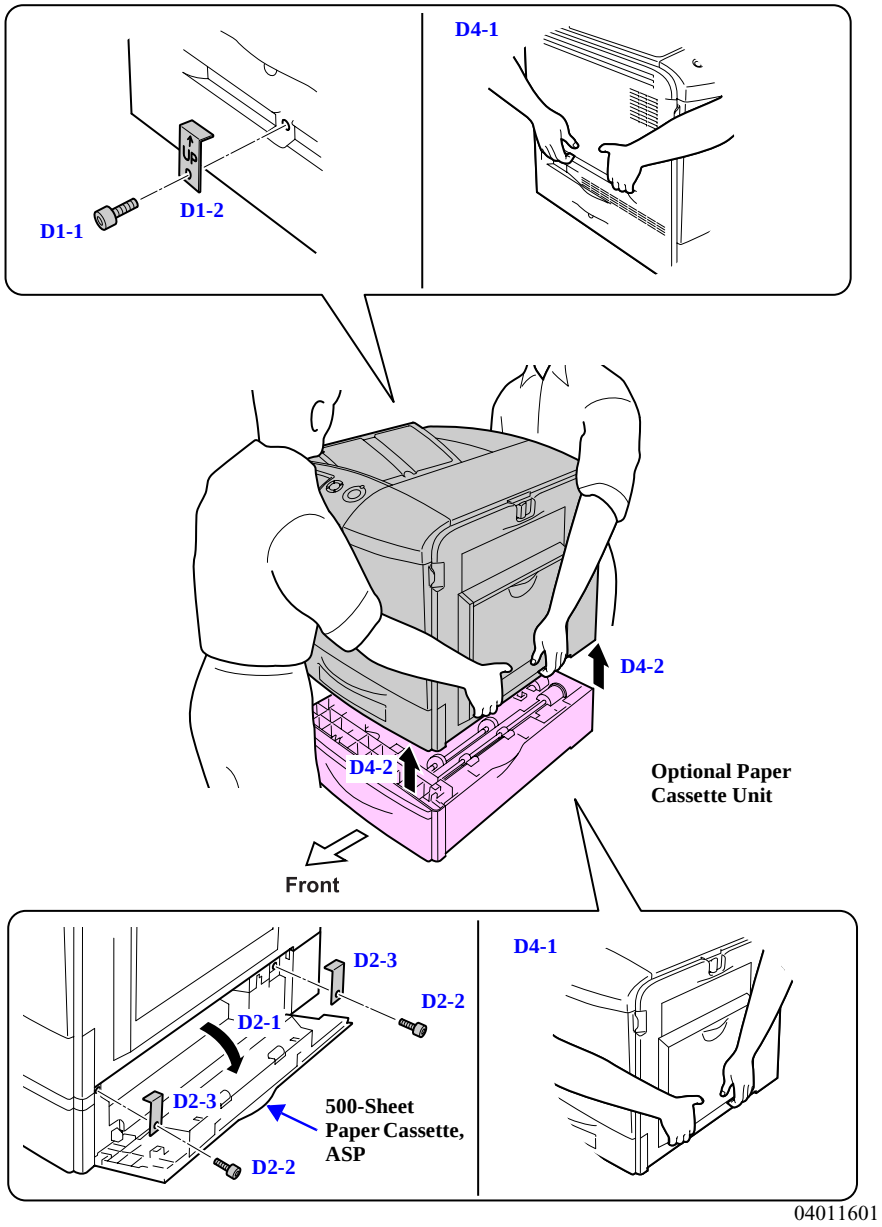


Figure 4-133. Removal of Optional Paper Cassette Unit

REINSTALLATION

WARNING

- **As this printer weighs 37 kg (82 lbs), following work must be done by two or more personnel.**
- **When transferring the printer, always hold the places shown in Figure 4-134.**

A1. Lift the printer as shown in Figure 4-134, and attach the printer onto the Optional paper cassette unit.

A2. Open the 500-Sheet Paper Cassette, ASP (Cover E), secure the 2 attachment plates to the right side of the Optional paper cassette unit with the PIN, DUPLEX screws, and close the 500-Sheet Paper Cassette, ASP (Cover E).

- PIN, DUPLEX: 2

A3. Secure the attachment plate to the left side of the Optional paper cassette unit with the PIN, DUPLEX screw.

- PIN, DUPLEX: 1

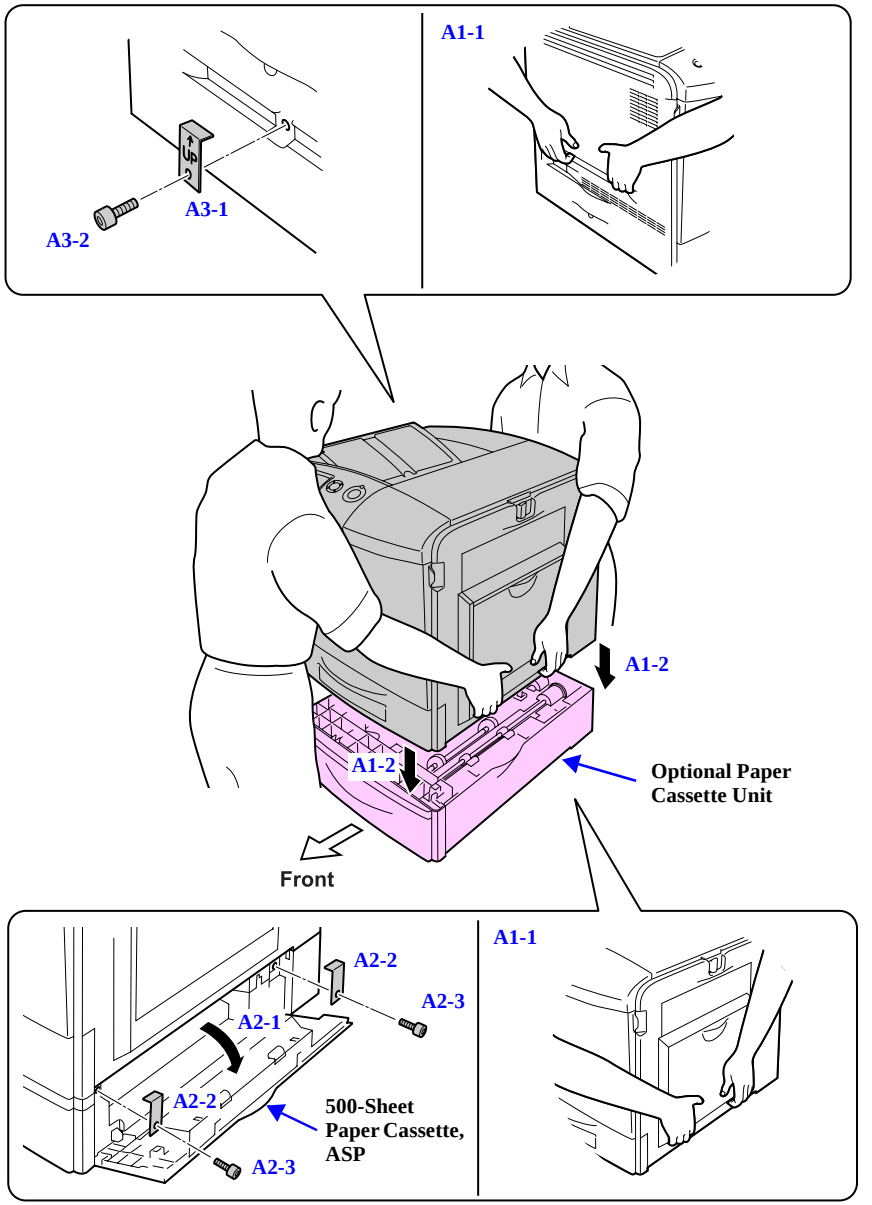


Figure 4-134. Reinstallation of Optional Paper Cassette Unit

4.6.1.2 COVER, FRONT, OP

1. Remove the Optional paper cassette unit from the printer. *(p.342)*
2. Remove the 2 screws that secure the COVER, FRONT, OP, and remove the COVER, FRONT, OP upward.
   - C.C.P-TITE SCREW,3x8,F/Zn: 2

REASSEMBLY

1. **Insert the 3 tabs of the COVER, FRONT, OP to the notches of the HOUSING, OP.**
2. **Screw the COVER, FRONT, OP on the HOUSING, OP while pressing the COVER, FRONT OP against the plate.**

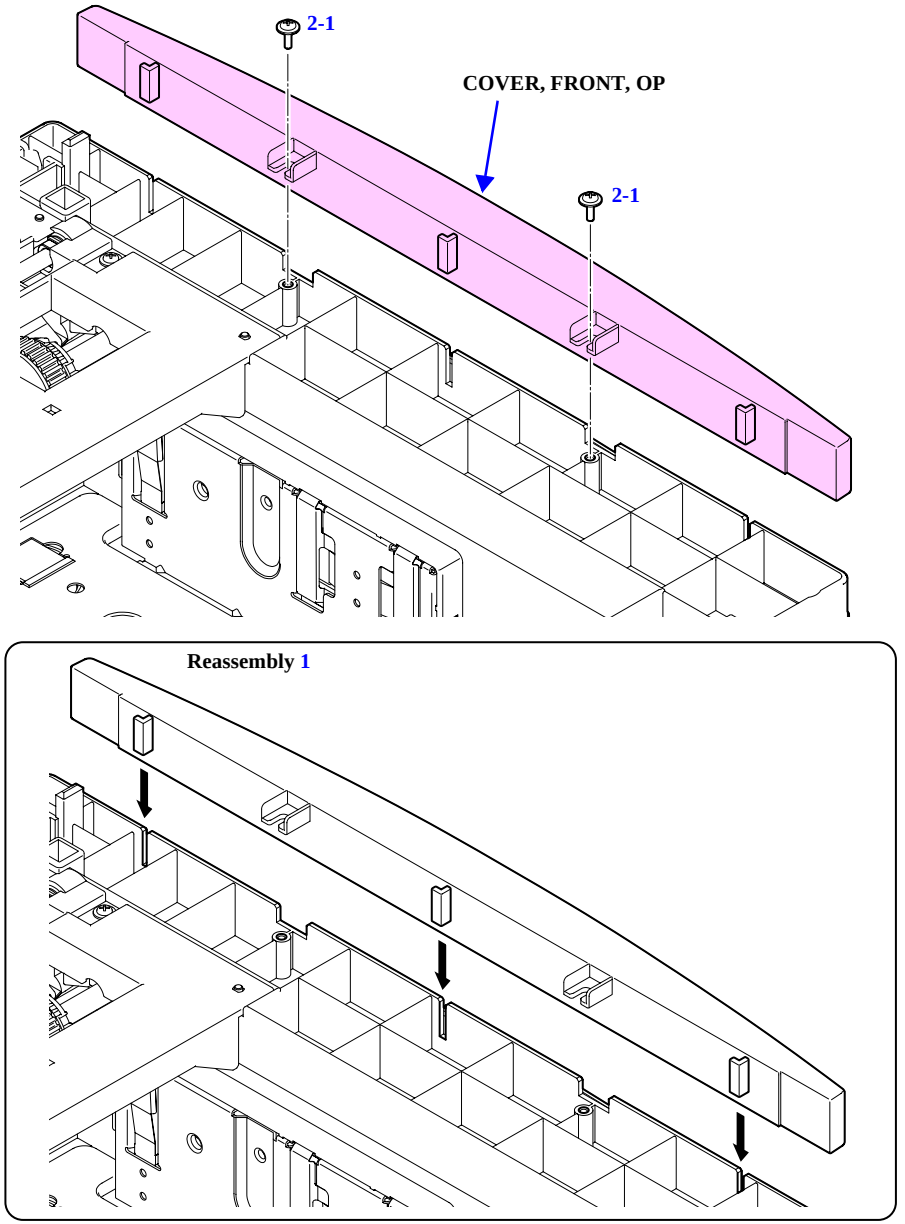


Figure 4-135. Removal of COVER, FRONT, OP

4.6.1.3 500-Sheet Paper Cassette, ASP (Cover E)

1. Open the 500-Sheet Paper Cassette, ASP.
2. As closing the 500-Sheet Paper Cassette, ASP, release the dowel and tab at the front of the 500-Sheet Paper Cassette, ASP from the HOUSING, OP.
3. Open the 500-Sheet Paper Cassette, ASP toward right, release the dowel and tab at the rear of the 500-Sheet Paper Cassette, ASP from the SHOUSING, OP, and remove the 500-Sheet Paper Cassette, ASP.

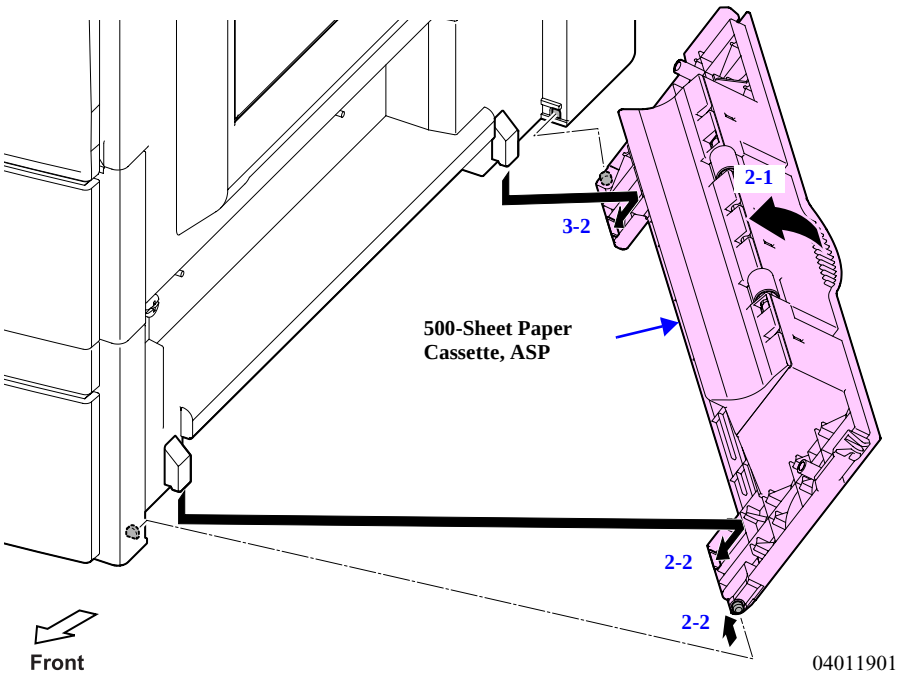


Figure 4-136. Removal of 500-Sheet Paper Cassette, ASP (Cover E)

4.6.1.4 ROLLER ASSY., PICK UP/ Pick Up Sensor (DETECTOR, HP; E)

☐ **ROLLER ASSY., PICK UP**

1. Pull the Optional paper cassette out of the Optional paper cassette unit.

CAUTION

Do not remove the two ROLLER ASSY., PICK UPs all at once when performing the following procedure, otherwise the SHAFT, ROLLER, PICK UP does not rotate when installing them. Make sure to replace the ROLLER ASSY., PICK UP one by one.

2. Rotate the SHAFT, ROLLER, PICK UP, stretch the ROLLER ASSY., PICK UP, and remove the ROLLER ASSY., PICK UP.

REASSEMBLY

1. Rotate the ROLLER, PICK UP, OP so that its cut surface faces downward, turn the roller (small) of the ROLLER ASSY., PICK UP toward right, and insert the dowel of the ROLLER ASSY., PICK UP to the attachment hole of the ROLLER, PICK UP, OP.

☐ **Pick Up Sensor**

1). Pull the Optional paper cassette out of the Optional paper cassette unit.

2). Release the 3 tabs to remove the Pick up sensor.

3). Disconnect the connector from the Pick up sensor.

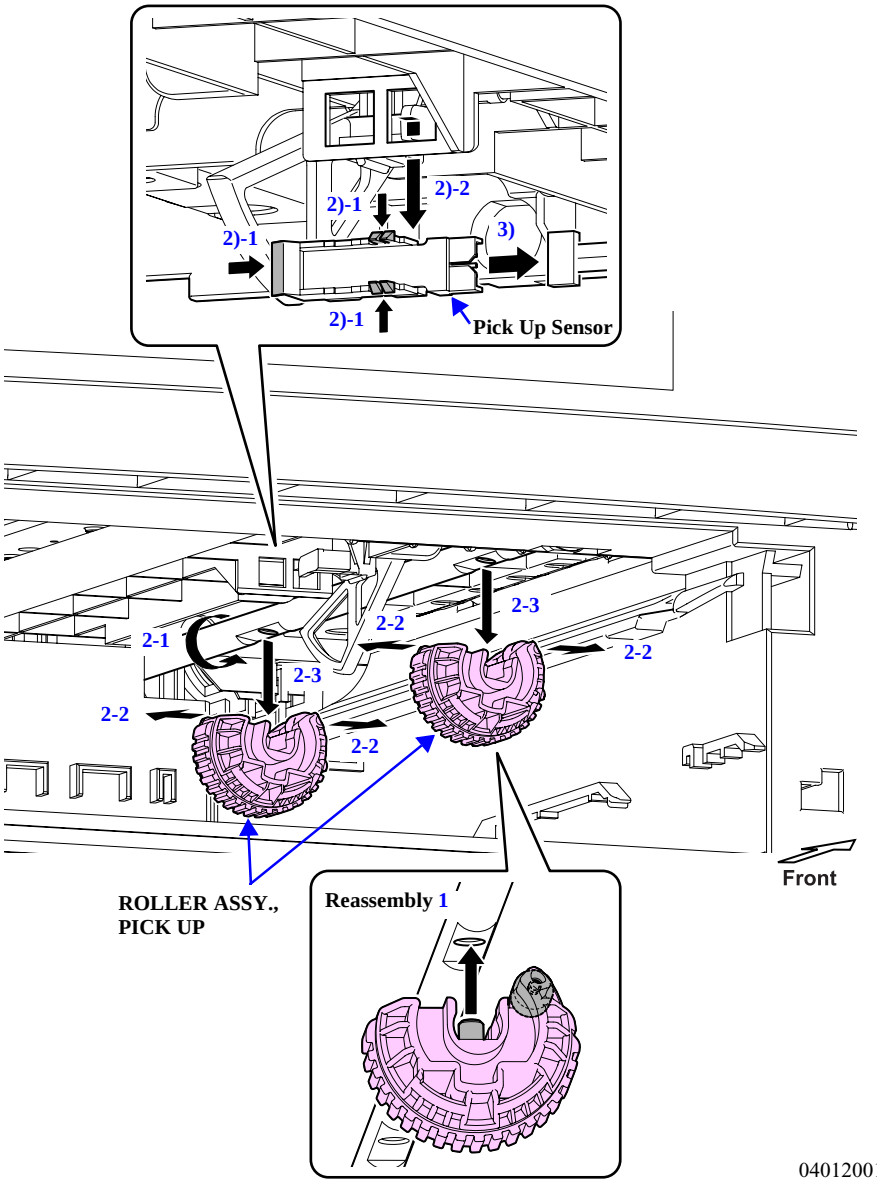


Figure 4-137. Removal of ROLLER ASSY., PICK UP/Pick Up Sensor

4.6.1.5 CONNECTOR, OP

1. Remove the Optional paper cassette unit from the printer. *(p.342)*
2. Remove the screw that secures the COVER, CLUTCH to remove the COVER, CLUTCH.
   - C.C.P-TITE SCREW,3x8,F/Zn: 1

REASSEMBLY

1. Insert the rib of the COVER, CLUTCH beneath the GUIDE, FEED, OP, ASSY.

3. Remove the 4 screws that secure the GUIDE, FEED, OP, ASSY. to remove the GUIDE, FEED, OP, ASSY.
   - C.C.P-TITE SCREW,3x6,F/Zn: 1
   - C.C.P-TITE SCREW,3x8,F/Zn: 3

REASSEMBLY

2. Match the 5 positioning holes of the GUIDE, FEED, OP, ASSY. with the dowels.

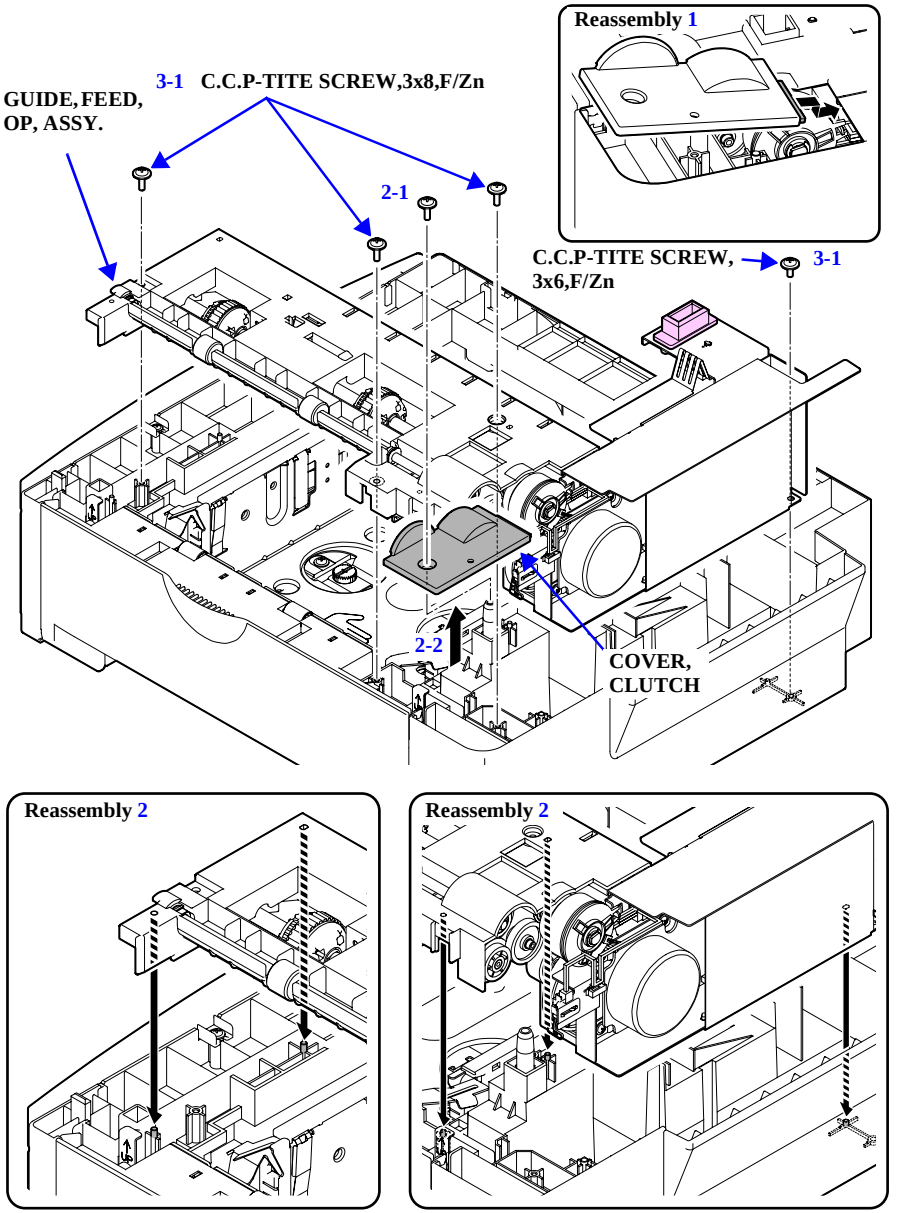


Figure 4-138. Removal of CONNECTOR, OP 1

4. Disconnect the 2 connectors from the CONNECTOR, OP.
5. Press the 2 tabs on the CONNECTOR, OP downward while nipping them with your hands to let them go through the 2 holes to remove the CONNECTOR, OP.

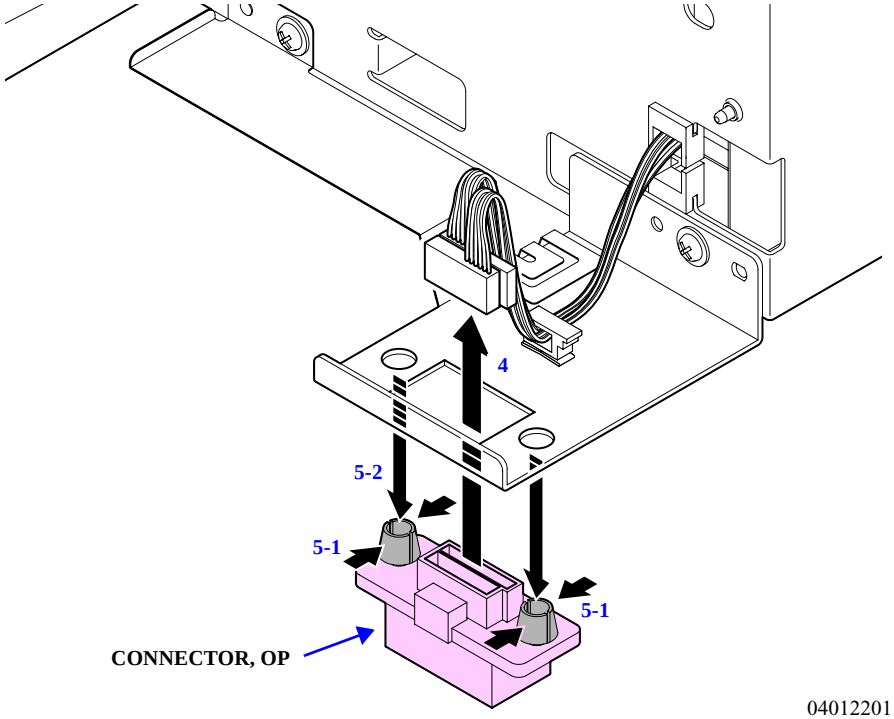


Figure 4-139. Removal of CONNECTOR, OP 2

4.6.1.6 CST. SENSOR/COVER, OPEN, SENSOR

☐ CST. SENSOR

1. Remove the GUIDE, FEED, OP ASSY. *(p.347)*
2. Release the tab, and pull out the tab to remove the CST. SENSOR.
3. Disconnect the connector from the CST. SENSOR.

☐ COVER, OPEN, SENSOR

1). Remove the GUIDE, FEED, OP ASSY. *(p.347)*
2). Release the tab, and pull out the tab to remove the COVER, OPEN, SENSOR.
3). Disconnect the connector from the COVER, OPEN, SENSOR.

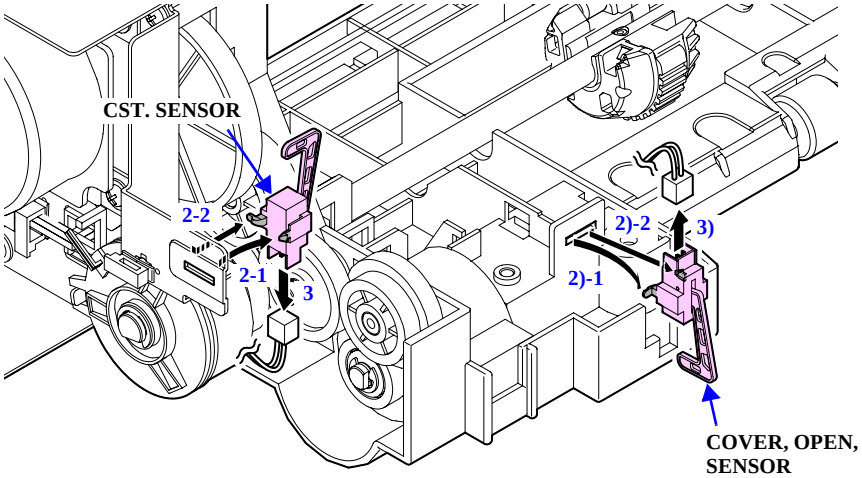


Figure 4-140. Removal of CST. SENSOR/COVER, OPEN, SENSOR

4.6.1.7 BOARD ASSY., SUB C585 SUB/DC MOTOR, OP

☐ BOARD ASSY., SUB C585 SUB

1. Remove the GUIDE, FEED, OP ASSY. *(p.347)*
2. Remove the 3 screws that secure the COVER, BOARD to remove the COVER, BOARD.
   - ■ C.P.POLYWAVEA,3x6,F/Zn: 3
3. Disconnect the all 6 connectors (White 8 Pin, White 6 Pin, White 7 Pin, Blue 2 Pin, Yellow 2 Pin and White 6 Pin) on the BOARD ASSY., SUB C585 SUB.
4. Remove the 4 screws that secure the BOARD ASSY., SUB C585 SUB to remove the BOARD ASSY., SUB C585 SUB.
   - ■ C.P.POLYWAVEA,3x6,F/Zn: 4

☐ DC MOTOR, OP

1). Remove the COVER, BOARD. *(p.350)*

2). Disconnect the connector of the HARNESS, CASSETTE MOTOR from the connector of the DC MOTOR, OP.

3). Remove the 4 screws that secure the DC MOTOR, OP to remove the DC MOTOR, OP.
   - ■ C.P.POLYWAVEA,3x6,F/Zn: 4

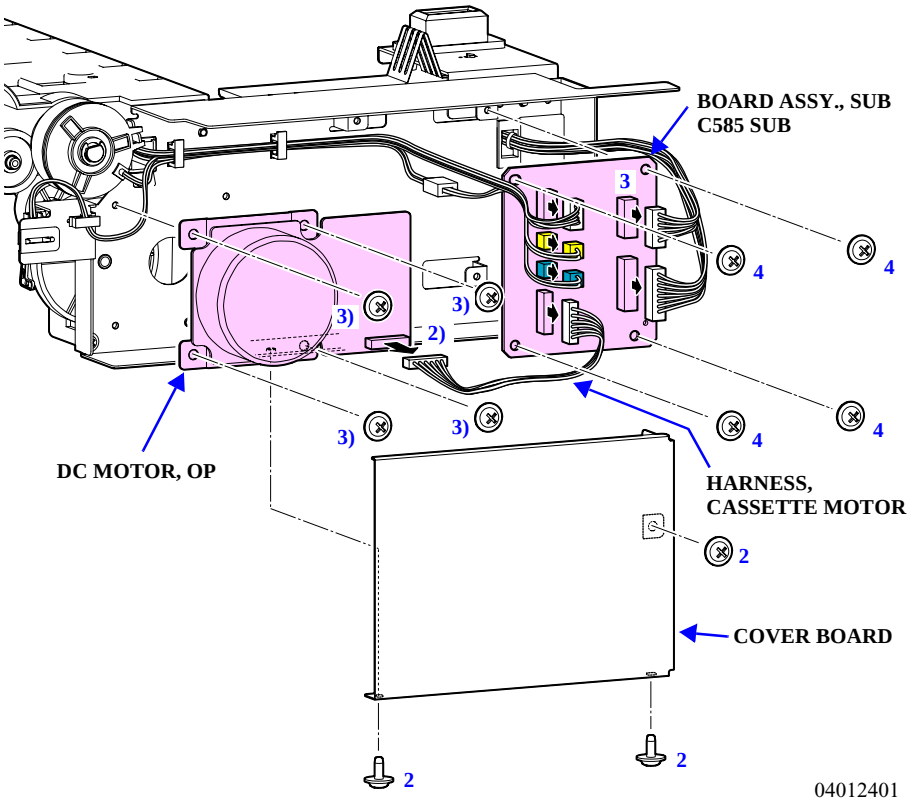


Figure 4-141. Removal of BOARD ASSY., SUB C585 SUB/DC MOTOR, OP

4.6.1.8 CLUTCH, PICK UP/CLUTCH, FEED

☐ CLUTCH, PICK UP

1. Remove the COVER, BOARD. *(p.350)*
2. Release the harness of the CLUTCH, PICK UP from the 2 retainers.
3. Disconnect the connector (Blue 2 Pin) of the CLUTCH, PICK UP from the relay connector.
4. Remove the E-RING, 5, F/Uc that secures CLUTCH, PICK UP to remove the CLUTCH, PICK UP.

REASSEMBLY

1. Insert the CLUTCH, PICK UP to the ROLLER, PAPER FEED, OP with attention to their shape of cross section.
2. Match the tab of the MOUNTING PLATE, BOARD, OP and the groove of the CLUTCH, PICK UP so as not to rotate.

☐ CLUTCH, FEED

1). Remove the CLUTCH, PICK UP. *(p.351)*
2). Remove the G-RING; 5 that secures SPUR GEAR, 27 to remove the SPUR GEAR, 27.
3). Remove the COMBINATION GEAR, 28.22.
4). Release the harness of the CLUTCH, FEED from the retainer.
5). Disconnect the connector (Yellow 2 Pin) from the relay connector, and draw out the harness of the CLUTCH, FEED through the 3 notches of the CLUTCH, FEED, OP.
6). Remove the E-RING, 4, F/Uc that secures CLUTCH, FEED to remove the CLUTCH, FEED.

REASSEMBLY

1). Insert the harness of the CLUTCH, FEED to the notch of the GUIDE, FEED, OP.
2). Insert the CLUTCH, FEED to the ROLLER, PAPER FEED, OP with attention to their shape of cross section.
3). Match the antirotation tab of the GUIDE, FEED, OP and the antirotation groove of the CLUTCH, FEED.

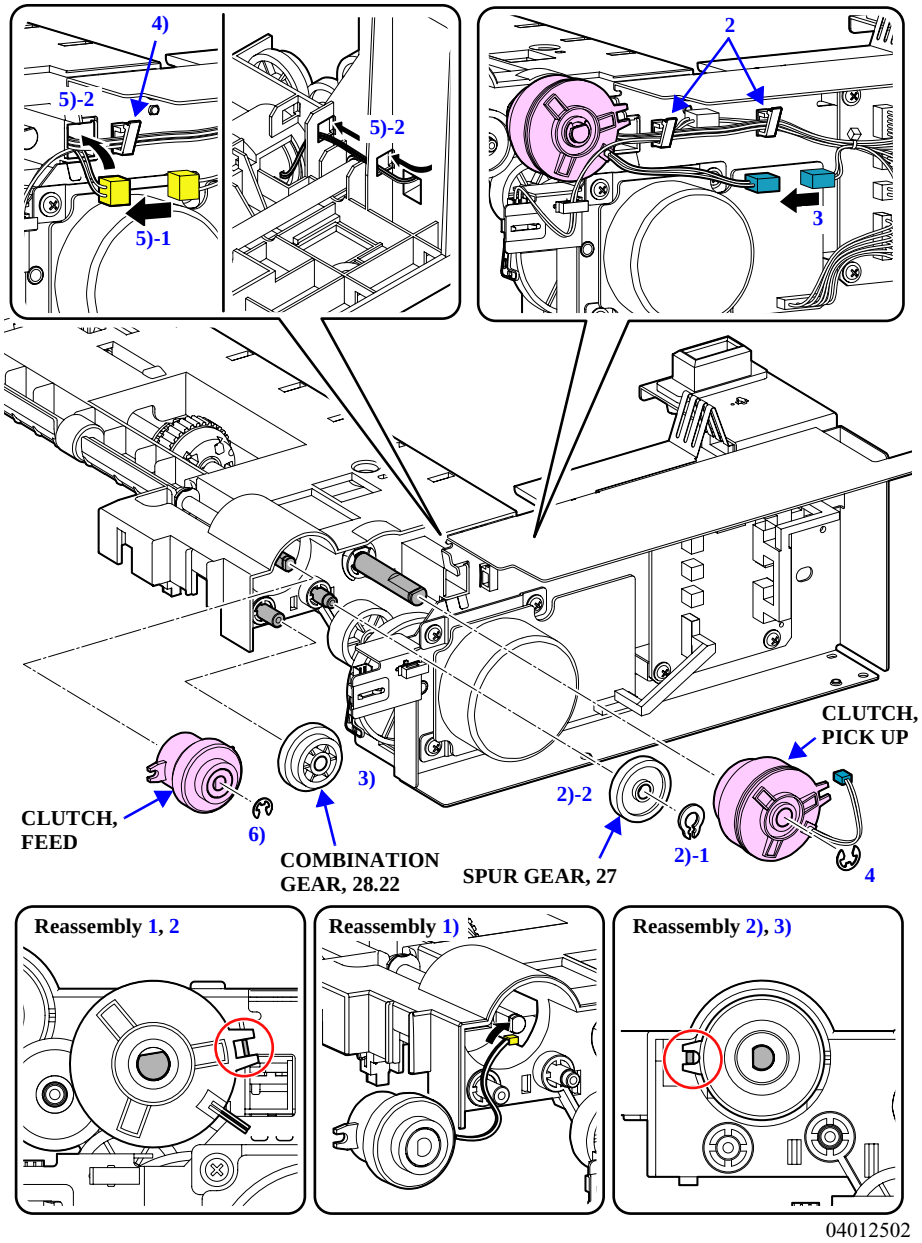


Figure 4-142. Removal of CLUTCH, PICK UP/CLUTCH, FEED

4.6.1.9 ROLLER, PAPER FEED, OP

1. Remove the CLUTCH, FEED. *(p.351)*
2. Remove the E-RING, 5, F/Uc that secures BUSHING, 6 on the left end of the ROLLER, PAPER, FEED, OP. And remove the BUSHING, 6 from the ROLLER, PAPER, FEED, OP.

REASSEMBLY

First match up the circular arc notch of the GROUNDING PLATE, FEED with the positioning hole on the GUIDE, FEED, OP, and then attach the BUSHING, 6 to the ROLLER, PAPER FEED, OP through the hole.

3. Remove the E-RING, 5, L/NA that secures the BUSHING, 6 located at the center of the ROLLER, PAPER, FEED, OP and slide the BUSHING, 6 backward.
4. Slide the ROLLER, PAPER, FEED, OP toward right, pull out the left shaft, and slide toward right again.
5. Remove the E-RING, 5, F/UC that secures the BUSHING, 6 on the right end of the ROLLER, PAPER, FEED, OP, and pull out the BUSHING, 6 from the ROLLER, PAPER, FEED, OP.
6. Pull out the ROLLER, PAPER FEED, OP toward upper left, and remove the center BUSHING, 6 from the ROLLER, PAPER FEED, OP.

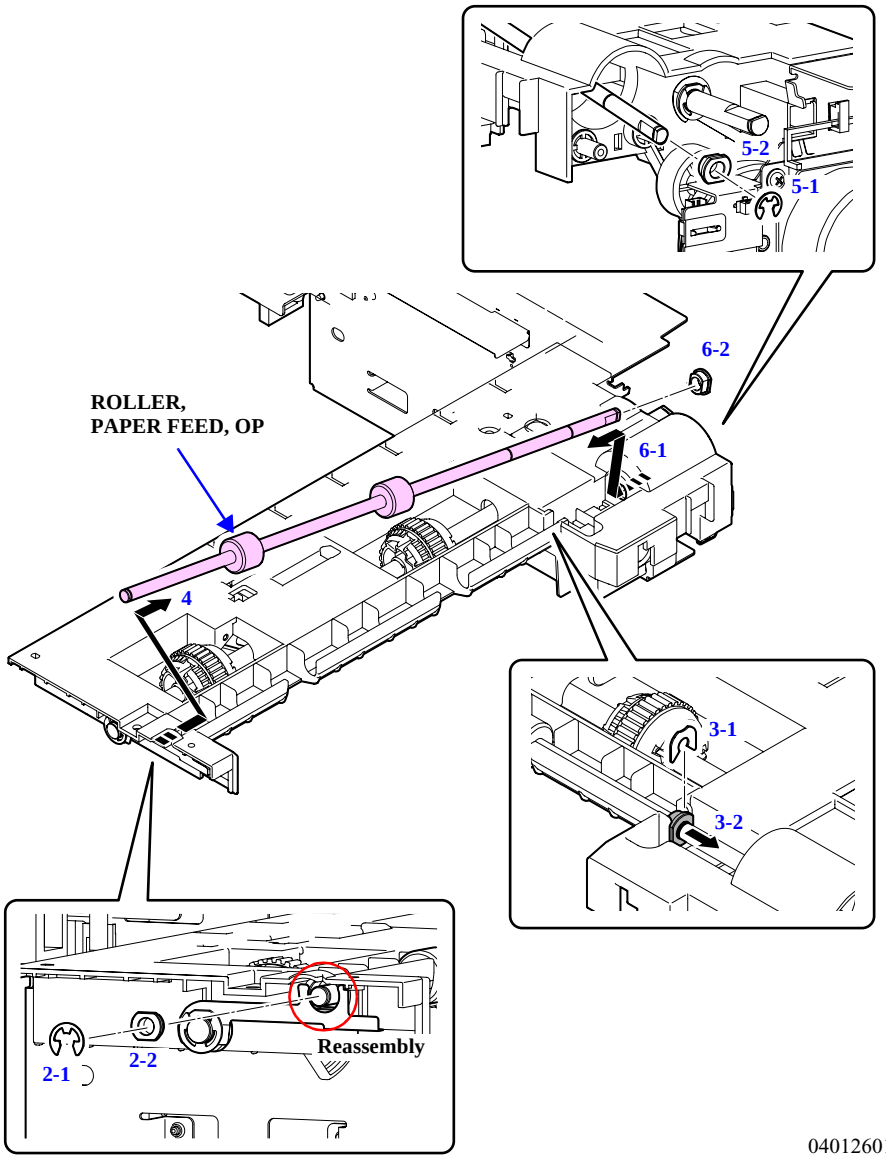


Figure 4-143. Removal of ROLLER, PAPER FEED, OP

4.6.1.10 HOUSING, OP

1. Remove the Optional paper cassette unit. *(p.342)*
2. Pull the Optional paper cassette out of the Optional paper cassette unit.
3. Remove the COVER, FRONT, OP. *(p.344)*
4. Remove the 500-Sheet Paper Cassette, ASP. *(p.345)*
5. Remove the GUIDE, FEED, OP, ASSY. *(p.347)*
6. Remove the 3 screws that secure the 3 FASTEN PLATE, SUB, LEFT, and remove the 3 FASTEN PLATE, SUB, LEFT.
   - C.C.P-TITE SCREW,3x8,F/Zn: 1 each

REASSEMBLY

1. Match the positioning holes of the 3 FASTEN PLATE, SUB, LEFT with the respective dowels.

7. Remove the GROUNDING PLATE, STRENGTHEN PLATE from the notch of the HOUSING, OP.

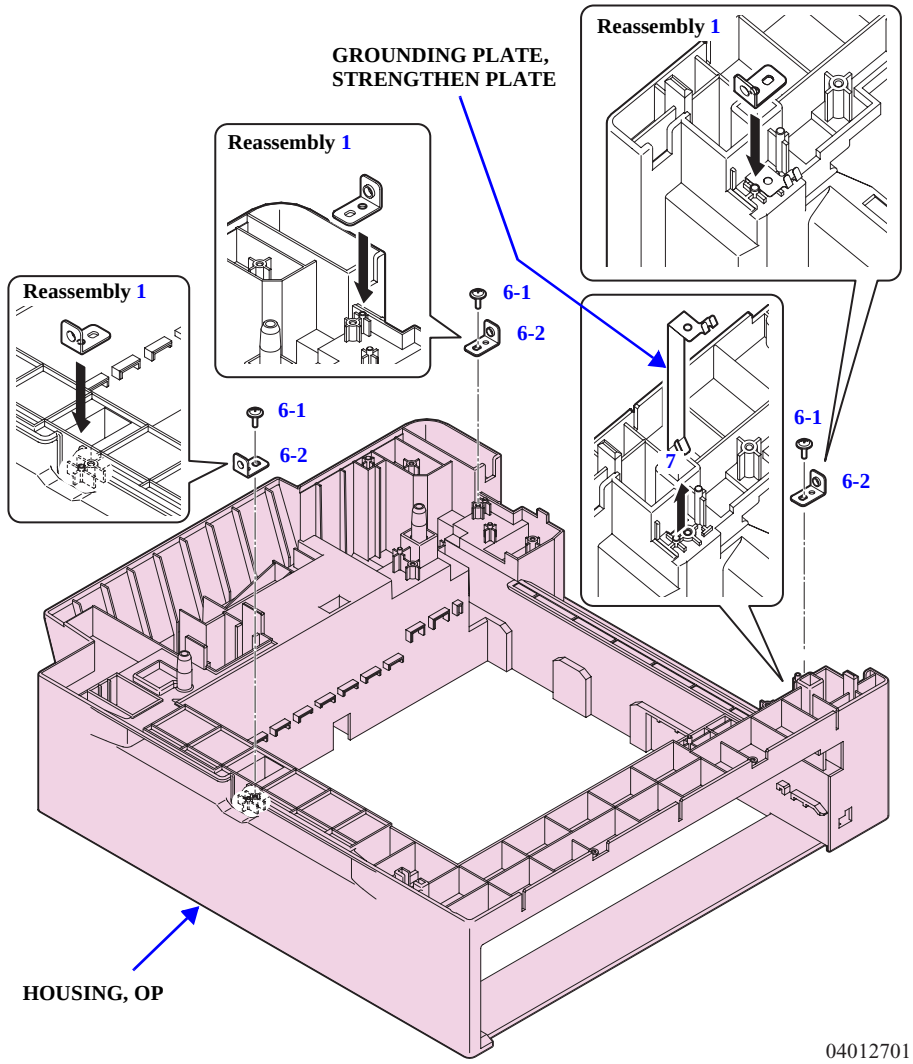


Figure 4-144. Removal of HOUSING,OP 1

8. Remove the 2 screws that secure the STRENGTHEN PLATE, OP to remove the STRENGTHEN PLATE, OP.
   - C.C.P-TITE SCREW,3x8,F/Zn: 2

REASSEMBLY

2. Match the 4 positioning holes of the STRENGTHEN PLATE, OP with the dowels.

9. Remove the screw that secures the GROUNDING PLATE, CSASETTE.
   - C.C.P-TITE SCREW,3x8,F/Zn: 1
10. Release the GROUNDING PLATE, CASSETTE from the 2 dowels, tilt it back, and remove the GROUNDING PLATE, CASSETTE from the notch of the HOUSING, OP.

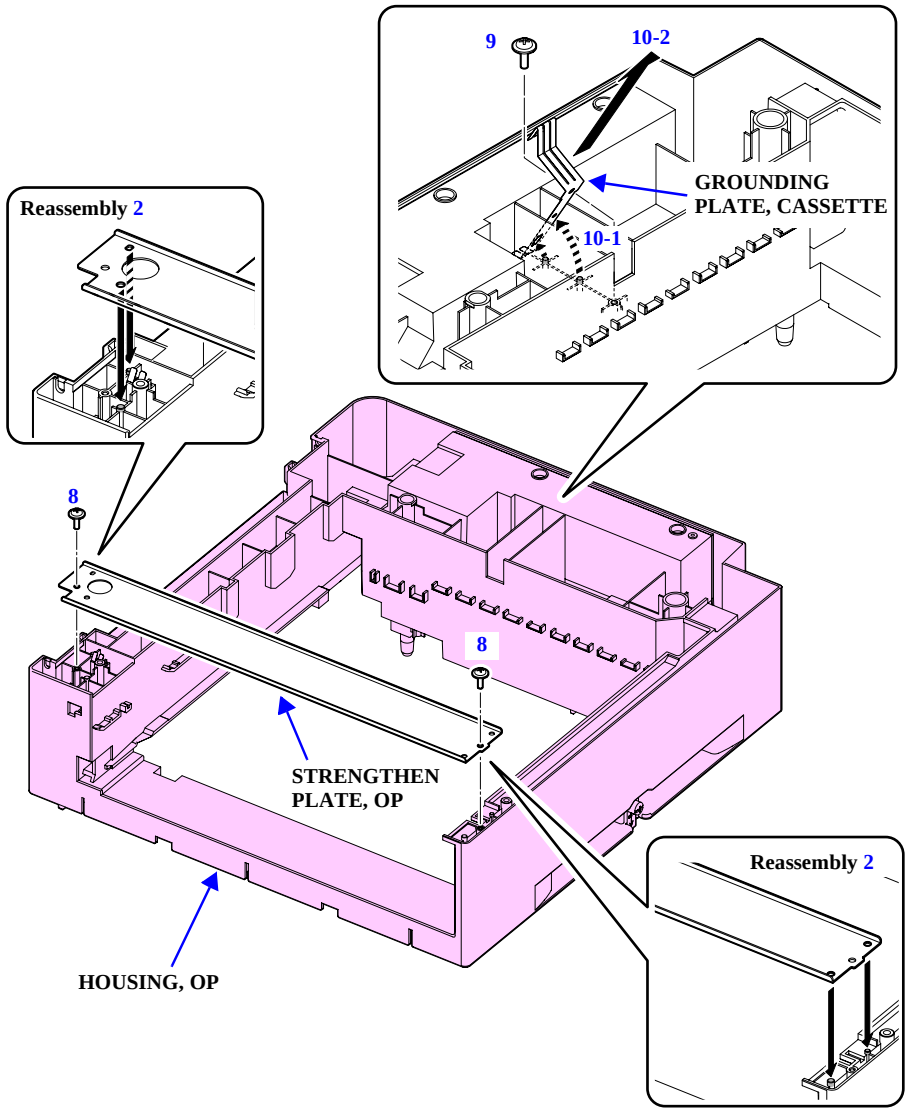


Figure 4-145. Removal of HOUSING,OP 2

4.6.2 Duplex Unit

4.6.2.1 Duplex Unit

REMOVAL

D1. Open the MP TRAY.

D2. Open the MP TRAY ASSY.

D3. Open the GUIDE, DUPLEX, INNER, and remove the 2 screws that secure the Duplex unit.

- PIN, DUPLEX: 2

D4. Lift the left side of the Duplex unit to release the 2 tabs at the right side of the MP TRAY ASSY., and remove the Duplex unit.

REINSTALLATION

A1. Hitch the Duplex unit to the 2 tabs at the right side of the MP TRAY ASSY, and connect the connector of the Duplex unit to the one of the MP TRAY.

A2. Secure the Duplex unit with 2 screws.

- PIN, DUPLEX: 2

A3. Close the MP TRAY ASSY.

A4. Close the MP TRAY.

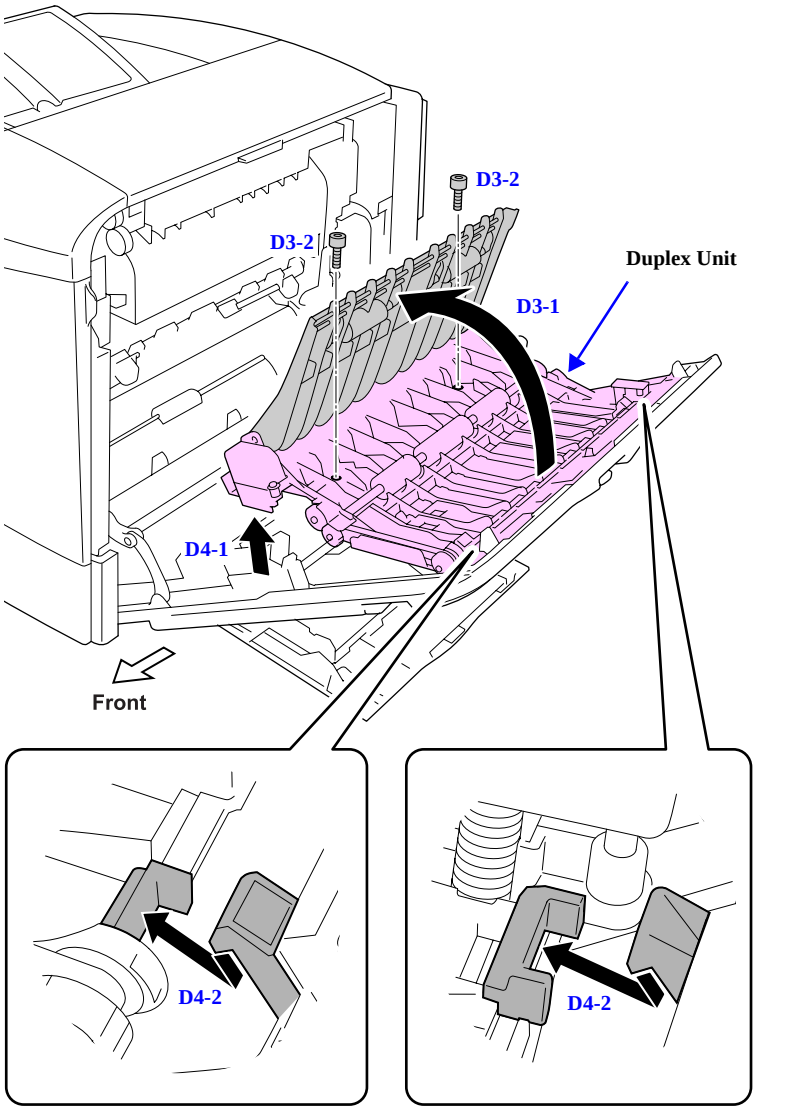


Figure 4-146. Removal of Duplex Unit

4.6.2.2 ROLLER, DUPLEX

REMOVAL

D1. Open the MP TRAY ASSY.

D2. Release the tab of the SPUR GEAR, 19, PAPER EJECT on the rear end of the ROLLER, DUPLEX, open the GUIDE, DUPLEX, INNER, slide the ROLLER, DUPLEX forward, and remove the SPUR GEAR, 19, PAPER EJECT and the BUSHING, 6.

D3. Release the tab of the SPUR GEAR, 19, PAPER EJECT on the front end of the ROLLER, DUPLEX, to remove the SPUR GEAR, 19, PAPER EJECT from the ROLLER, DUPLEX.

D4. Remove the E-RING, 4, F/Uc from the front end of the ROLLER, DUPLEX, and remove the BUSHING, 6.

D5. Lift the rear of the ROLLER, DUPLEX, and pull out the GUIDE, DUPLEX, OUTER obliquely upward toward rear.

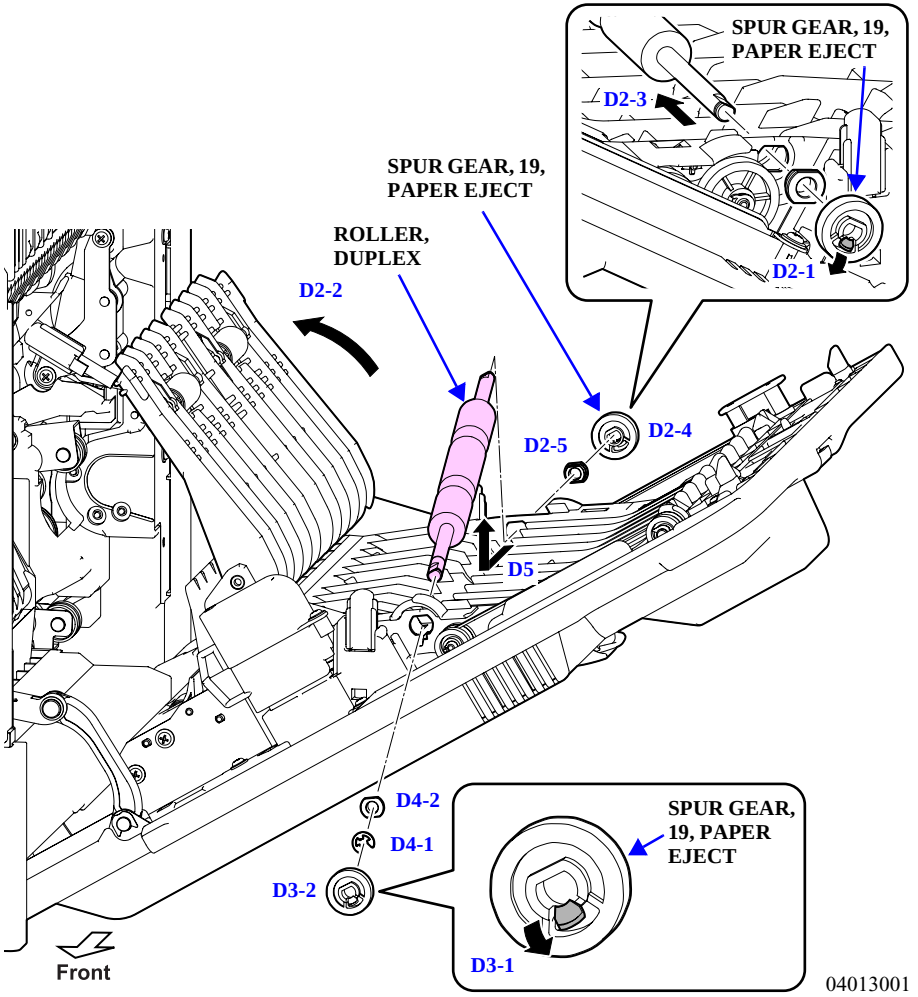


Figure 4-147. Removal of ROLLER, DUPLEX

REINSTALLATION

A1. Insert the one end of the ROLLER, DUPLEX into the attachment hole on the GUIDE, DUPLEX, OUTER at the front side. Make sure that the inserting shaft has a groove for the E-Ring on its surface (There is no groove on the other side).

A2. Match the BUSHING, 6 with the shaft hole, and attach them to the front side of the ROLLER, DUPLEX shaft.

A3. Attach the E-RING, 4, F/UC to the E-Ring groove on the ROLLER, DUPLEX.

A4. Attach the SPUR GEAR, 19, PAPER EJECT to the ROLLER, DUPLEX matching up the shape between the hole and the cross section of the shaft.

A5. Fit the BUSHING, 6 (for rear) into the attachment hole of the rear GUIDE, DUPLEX, OUTER, and insert the rear of the ROLLER DUPLEX to the BUSHING,6.

A6. Attach the SPUR GEAR, 19, PAPER EJECT (for rear) to the rear shaft of the ROLLER, DUPLEX matching the shape between the hole and the cross section of the shaft.

A7. Close the MP TRAY ASSY.

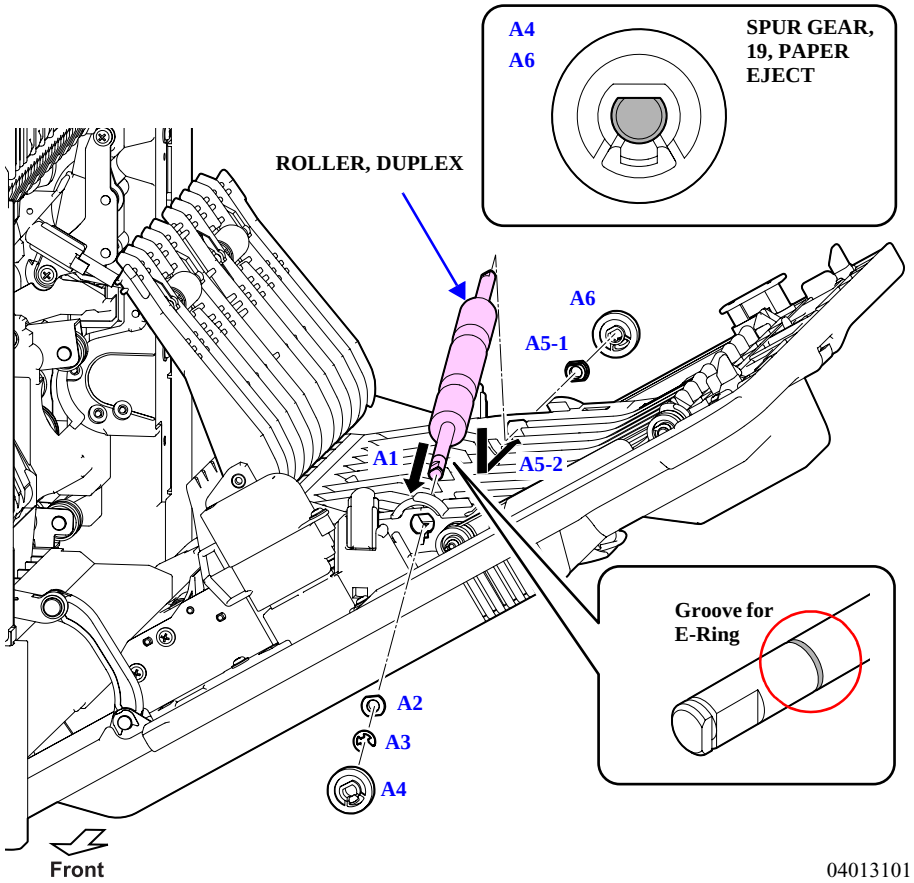


Figure 4-148. Reinstallation of ROLLER, DUPLEX

4.6.2.3 BELT, DUPLEX, FRONT

1. Open the MP TRAY ASSY.
2. Remove the G-RING; 3 that secures the left PULLEY, DUPLEX, FRONT, and pull out the PULLEY, DUPLEX, FRONT (left) from the GUIDE, DUPLEX, OUTER.

REASSEMBLY

Hitch the BELT, DUPLEX, FRONT to the left PULLEY, DUPLEX, FRONT before attaching the left PULLEY, DUPLEX, FRONT to the shaft of the GUIDE, DUPLEX, OUTER.

3. Remove the E-RING, 3, L/Na that secures the right PULLEY, DUPLEX, FRONT, pull the right PULLEY, DUPLEX, FRONT out of the GUIDE, DUPLEX, OUTER, and remove the BELT, DUPLEX, FRONT.

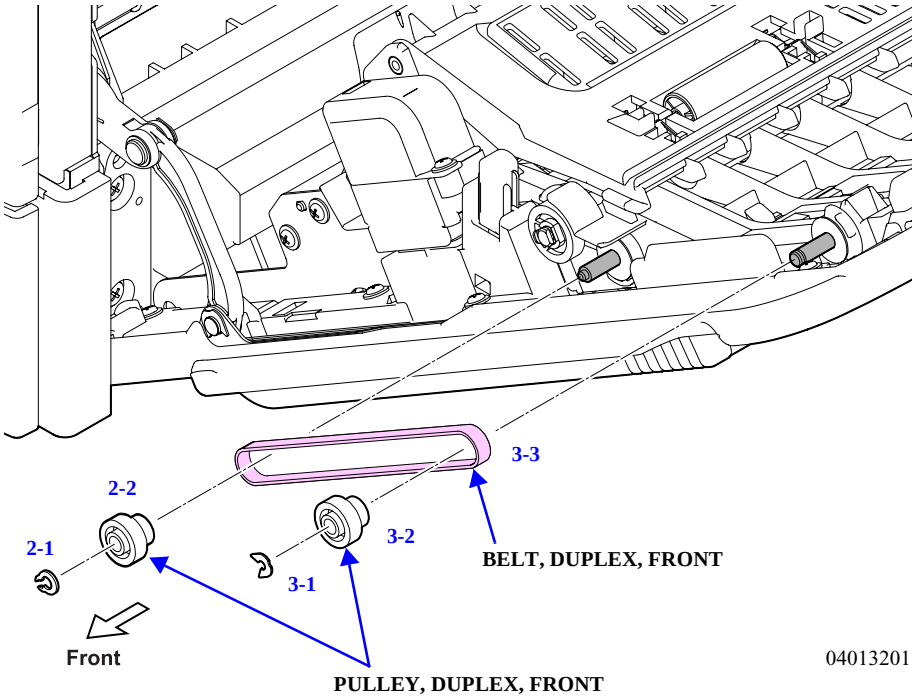


Figure 4-149. Removal of BELT,DUPLEX, FRONT

4.6.2.4 CONNECTOR, DUPLEX; B

1. Remove the Duplex unit. *(p.355)*
2. Remove the screw that secures the COVER, CONNECTOR, slide it toward left to release the tab, and remove the COVER, CONNECTOR.
   - C.C.P-TITE SCREW,3x8,F/Zn: 1

REASSEMBLY

1. Pass the HARNESS, DUPLEX through the place shown in Figure 4-150 so as not to be pinched by the COVER, CONNECTOR.

3. Disconnect the connector of the HARNESS, DUPLEX from the CONNECTOR, DUPLEX; B.

REASSEMBLY

2. When connecting the connector of the HARNESS, DUPLEX to the CONNECTOR, DUPLEX; B, make sure to push in the connector all the way seated as it may stop halfway.

4. Release one tab of the CONNECTOR, DUPLEX; B at a time (2 places in total) to remove the CONNECTOR, DUPLEX; B.

CAUTION

When installing the CONNECTOR, DUPLEX; B, make sure to insert one tab at a time. Inserting the two tabs at once may damage the component.

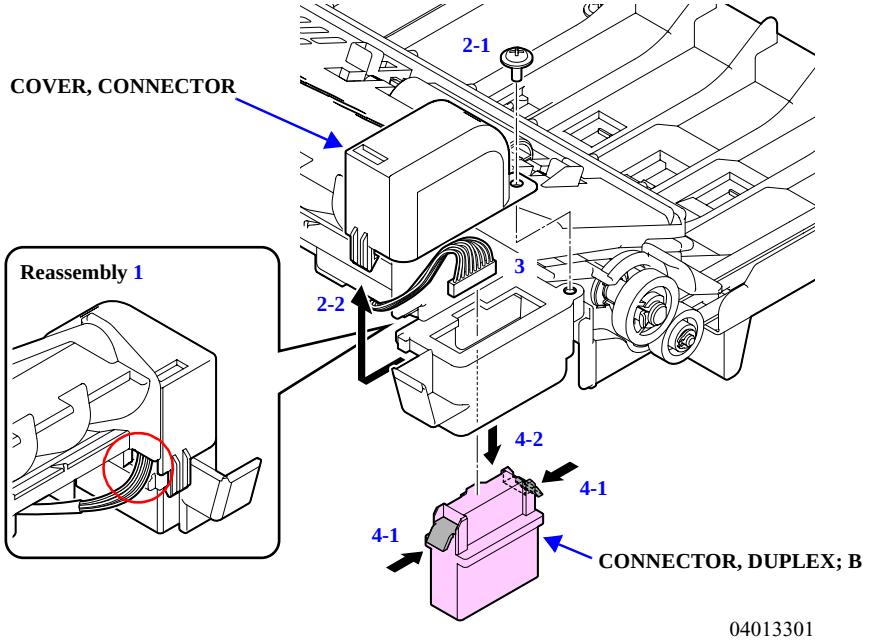


Figure 4-150. Removal of CONNECTOR, DUPLEX; B

4.6.2.5 GUIDE, DUPLEX, INNER

1. Open the MP TRAY ASSY.
2. Release the 2 dowels of the GUIDE, DUPLEX, INNER ASSY. from the GUIDE, DUPLEX, OUTER while pressing the two joint parts of the GUIDE, DUPLEX, OUTER outward, and remove the GUIDE DUPLEX, INNER ASSY.
3. Release both ends of the TORSION SPRING, 6.14 from the 4 tabs of the GUIDE, DUPLEX, INNER, and remove the spring together with the SHAFT, WHEEL, DUPLEX, WHEEL, DUPLPEX from the GUIDE, DUPLEX, INNER. (Same procedure for front and rear)
4. Remove the WHEEL, DUPLEX and the TORSION SPRING, 6.14 from the SHAFT, WHEEL, DUPLEX.

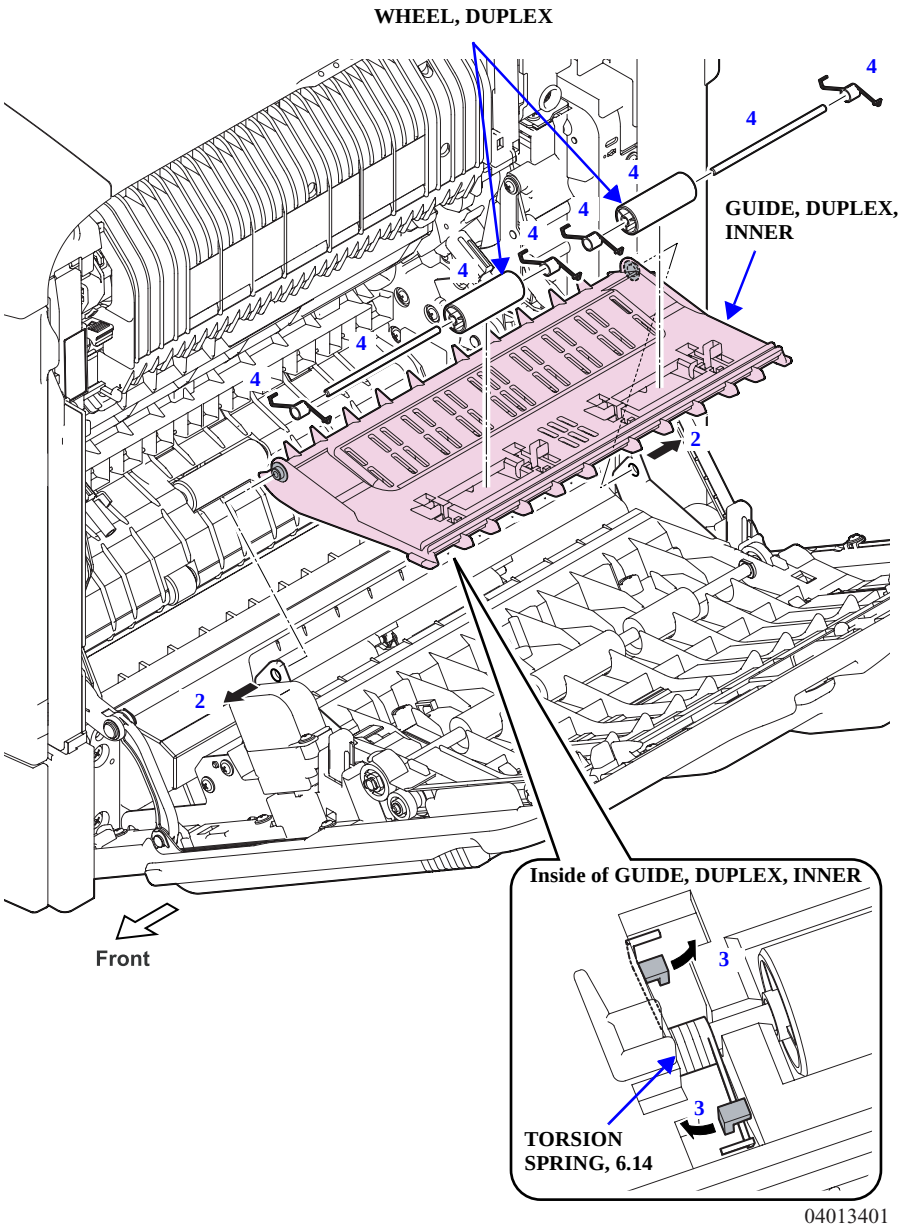


Figure 4-151. Removal of GUIDE, DUPLEX, INNER

4.6.2.6 COVER, DUPLEX/BRACKET, DRIVE, CHANGE/ BELT, DUPLEX, REAR

☐ COVER, DUPLEX

1. Remove the Duplex unit. *(p.355)*
2. Remove the 2 screws that secure the COVER, DUPLEX to remove the COVER, DUPLEX.
   - ■ C.C.P-TITE SCREW,3x8,F/Zn: 2

REASSEMBLY

1. Insert the 2 tabs of the COVER, DUPLEX to the notches of the GUIDE, DUPLEX, OUTER.
2. When installing the COVER, DUPLEX, pay attention not to let the HARNESS, DUPLEX stick out from the tab.

☐ BRACKET, DRIVE, CHANGE

1). Remove the COVER, DUPLEX. *(p.361)*
2). Slide the 2 tabs of the BRACKET, DRIVE, CHANGE inward to release them, and remove the BRACKET, DRIVE, CHANGE together with the COMPRESSION SPRING, 8.25 from the GUIDE, DUPLEX, OUTER.

REASSEMBLY

1). After installation, press down the BRACKET, DRIVE, CHANGE to confirm that it can be returned to its original position by spring force of the COMPRESSION SPRING, 8.25.

3). Remove the BRACKET, DRIVE, CHANGE from the COMPRESSION SPRING, 8.25.

☐ BELT,DUPLEX,REAR

1]. Remove the COVER, DUPLEX. *(p.361)*
2]. Pull out the PULLEY, DUPLEX, REAR from the rear of the GUIDE, DUPLEX, OUTER, and remove the PULLEY, DUPLEX, REAR.

REASSEMBLY

1]. Hitch the BELT, DUPLEX, REAR to both the STEPPING MOTOR ASSY., DUPLEX and the PULLEY, DUPLEX, REAR, and run the BELT, DUPLEX, REAR through the shaft of the GUIDE, DUPLEX, OUTER.

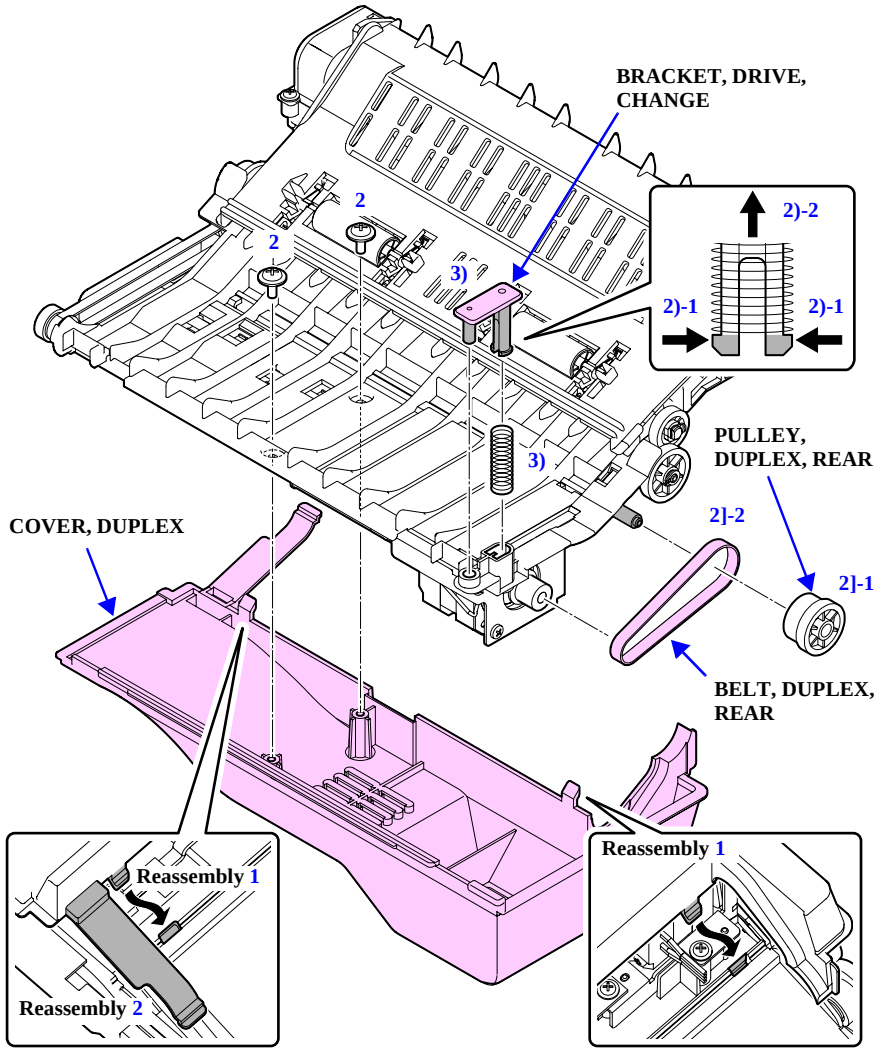


Figure 4-152. Removal of COVER, DUPLEX/BRACKET, DRIVE, CHANGE

4.6.2.7 STEPPING MOTOR ASSY., DUPLEX/ BOARD ASSY., DRV

☐ STEPPING MOTOR ASSY., DUPLEX

1. Remove the COVER, DUPLEX. *(p.361)*
2. Disconnect the connector of the STEPPING MOTOR ASSY., DUPLEX from CN423 connector on the BOARD ASSY., DRV.
3. Remove the 2 screws that secure the STEPPING MOTOR ASSY. DUPLEX.
   - ■ C.B.SCREW,3x5,F/Zn: 2
4. Draw out the gear of the STEPPING MOTOR ASSY., DUPLEX through the BELT, DUPLEX, REAR and the holes of the MOUNTING PLATE, MOTOR, DUPLEX, and remove the screw that secures the HARNESS, MOTOR, DUPLEX to remove the STEPPING MOTOR ASSY., DUPLEX.
   - ■ C.B.SCREW,3x5,F/Zn: 1

REASSEMBLY

1. Route the grounding wire as shown in the Figure 4-153.

☐ BOARD ASSY.,DRV

1). Remove the COVER, DUPLEX. *(p.361)*

2). Disconnect the 2 connectors (White 4 Pin, Pale Orange 12 Pin) that are connected to the BOARD ASSY., DRV.

3). Remove the 2 screws that secure the BOARD ASSY., DRV to remove the BOARD ASSY., DRV.
   - ■ C.C.P-TITE SCREW,3x8,F/Zn: 2

REASSEMBLY

1). When securing the BOARD ASSY., DRV, secure the grounding wire together with the assy. with one of the two screws.

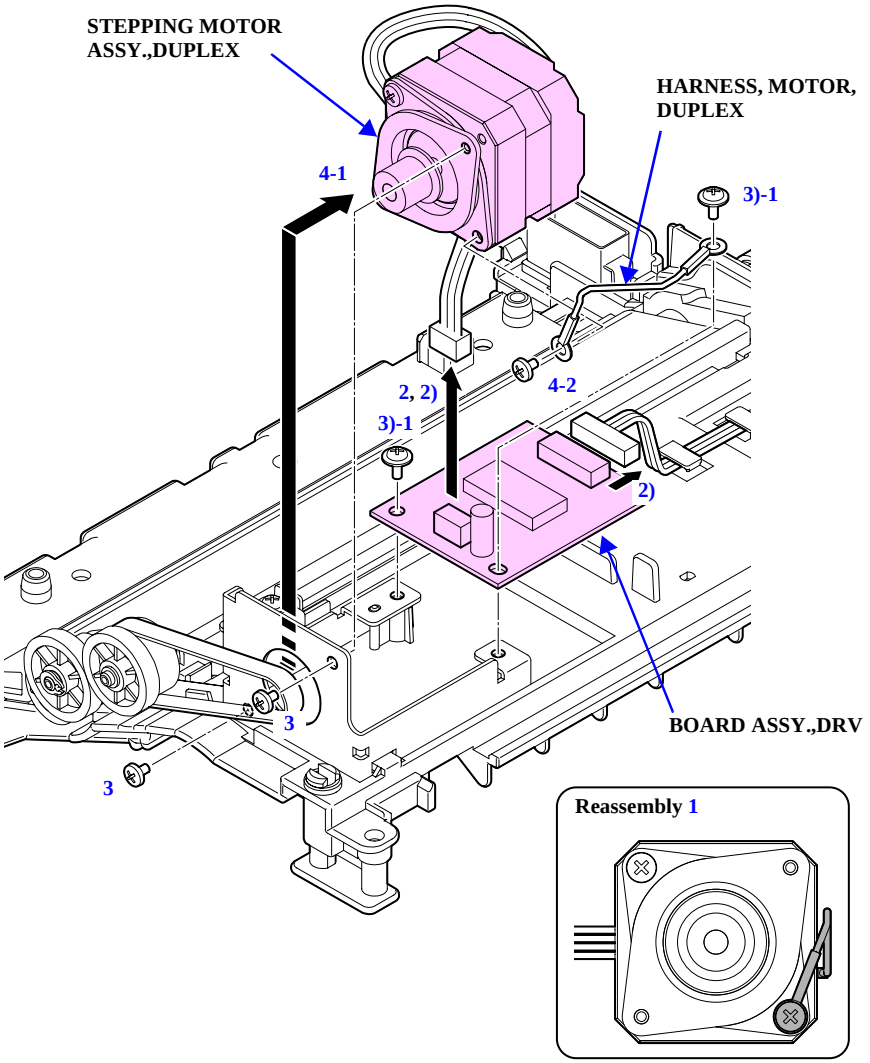


Figure 4-153. Removal of STEPPING MOTOR ASSY., DUPLEX/ BOARD ASSY., DRV

4.6.2.8 GUIDE, DUPLEX, OUTER

1. Remove the Duplex unit. *(p.355)*
2. Remove the ROLLER, DUPLEX. *(p.356)*
3. Remove the BELT, DUPLEX, FRONT. *(p.358)*
4. Remove the CONNECTOR, DUPLEX; B. *(p.359)*
5. Remove the GUIDE, DUPLEX, INNER, ASSY. *(p.360)*
6. Remove the COVER, DUPLEX, BRACKET, DRIVE, CHANGE and BELT, DUPLEX, REAR. *(p.361)*
7. Remove the BOARD, ASSY., DRV. *(p.362)*
8. Draw out the 2 SHEET, PULLEYs from the GUIDE, DUPLEX, OUTER.
9. Remove the G-RING; 4 that secures the COMBINATION GEAR, 25, 15, and remove the COMBINATION GEAR, 25, 15 from the GUIDE, DUPLEX, OUTER.
10. Release the HARNESS, DUPLEX from the 6 tabs of the GUIDE, DUPLEX, OUTER.
11. Remove the screw that secures the MOUNTING PLATE, MOTOR, DUPLEX to remove the MOUNTING PLATE, MOTOR, DUPLEX.
    - C.C.P-TITE SCREW,3x8,F/Zn: 1

REASSEMBLY

1. Insert the notch of the MOUNTING PLATE, MOTOR, DUPLEX to the rib, and match the positioning holes with the dowels.

12. Remove the GROUNDING PLATE, MOTOR, DUPLEX from the dowel of the GUIDE, DUPLEX, OUTER.

REASSEMBLY

2. Insert the GROUNDING PLATE, MOTOR, DUPLEX to the groove of the GUIDE, DUPLEX, OUTER, and match the semicircular notch of the GROUNDING PLATE, MOTOR, DUPLEX with the protrusion.

13. Remove the GROUNDING PLATE, ROLLER, DUPLEX from the dowel of the GUIDE, DUPLEX, OUTER.

REASSEMBLY

3. Insert the L-shaped part of the GROUNDING PLATE, ROLLER, DUPLEX to the shaft hole of the GUIDE, DUPLEX, OUTER, and insert the U-shaped part to the notch.

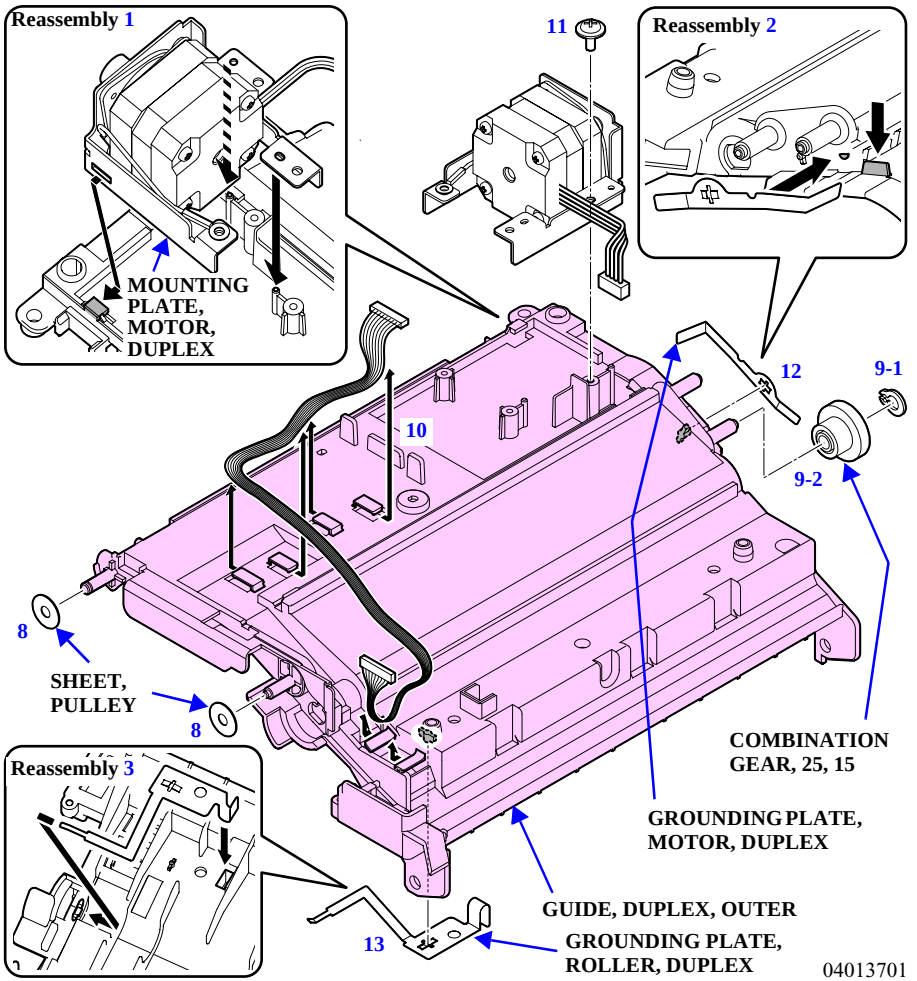


Figure 4-154. Removal of GUIDE, DUPLEX, OUTER

CHAPTER

5

ADJUSTMENT

5.1 Overview

This chapter describes the adjustment procedures required after repairing or replacing certain parts in the AcuLaser C2600/2600.

5.1.1 Precautions

Be sure to observe the following precautions before starting adjustments.

CAUTION

- **Refer to "5.1.3 Adjustment Execution Timing (p.366)", always confirm the adjustment items and the orders for the replaced/removed parts and units in advance.**
- **Start adjustment after fully checking the Caution given in the explanation area of each adjustment item. Incorrect work may interfere with the product operations and/or functions.**

5.1.2 Reference Chapter

Refer to Chapter 4 " *Disassembly and Assembly (p.210)"* for the disassembly/assembly procedures required to perform the adjustment.

5.1.3 Adjustment Execution Timing

The following table shows when the adjustment or resetting the counter is required.

Table 5-1. Adjustment Item List

Repaired Part or Situation	Adjustment Item	Adjustment Method and Tool*	Reference
After replacing the TRANSFER UNIT, Assy.,ASP with a new one.	Timing Adjustment	Use LPssp	*See Page 373*
		Execute using the [Maintenance Menu].	*See Page 390*
	Life counter reset	Use LPssp	*See Page 390*
		Execute using the [Maintenance Menu].	*See Page 390*
After replacing the CLUTCH,CLEANER/CLUTCH,2ND TRANSFER with a new one.	Timing Adjustment	Use LPssp	*See Page 374*
		Execute using the [Maintenance Menu].	*See Page 390*
	Life counter reset	Use LPssp	*See Page 372*
		Execute using the [Maintenance Menu].	*See Page 390*
After replacing the ROLLER,GATE with a new one.	Registration Adjustment (Top)	Use LPssp	*See Page 374*
After replacing the CLUTCH,GATE with a new one.	Registration Adjustment (Top)	Use LPssp	*See Page 374*
After replacing the Cleaning tape with a new one.	Life counter reset	Use LPssp	*See Page 390*
		Execute using the [Maintenance Menu].	*See Page 390*
After replacing the Laser Scanner with a new one.	Registration Adjustment (Side)	Use LPssp	*See Page 375*
	Registration Adjustment (Top)	Use LPssp	*See Page 374*
After replacing the main controller board with a new one.	Writing USB ID	Use LPssp	*See Page 371*
	Setting the model name	Use LPssp	*See Page 370*
Controller Firmware Update	Controller Firmware Update	Use the Firmware Update Tool.	*See Page 379*
Engine Controller Firmware Update	Engine Controller Firmware Update	Use the Firmware Update Tool.	*See Page 381*
When 2nd transfer failure occurs.	2nd Transfer Bias Adjustment	Use LPssp	*See Page 376*
		Execute using the [Printer Adjust Menu].	*See Page 54*
When print quality troubles occur while using the printer in a highland area.	Vpp Setting	Use LPssp	*See Page 377*
		Execute using the [Printer Adjust Menu].	*See Page 54*

Note : This chapter does not provide the adjustment procedures using the control panel of the printer.

5.2 Adjustment Program (LPssp)

5.2.1 Overview

This section explains the adjustment procedures using the dedicated program tool (LPssp). The basic operation instructions of the tool are also provided.

- Name of the adjustment program
  - LPssp (Laser Printer Service Support Program)
- Operating Environment
  - OS Requirements

    Windows 98, Windows 2000, Windows XP
  - Supported Port

    LPT/USB

CAUTION

This program may not work properly depending on the OS installed on the computer. Make sure to read the precautions in the release note provided with the program before installing and executing the program.

5.2.2 Setup before Adjustment

This section describes the necessary preparations which should be made for adjustments with the program.

5.2.2.1 Installing the Adjustment Program

CAUTION

In case you need to reinstall the program, make sure to first uninstall the pre-installed one using the [Add/Remove Programs] in the [Control Panel].

1. Unzip the file that contains the Adjustment Program, and double-click on the "Setup.exe" file icon.

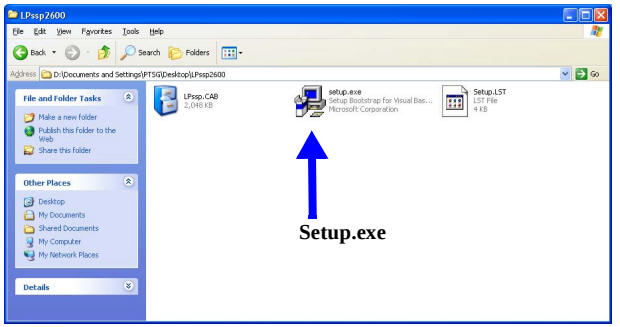


Figure 5-1. Installing the Program (1)

2. The LPssp installer will start up. Install the LPssp following the wizard.

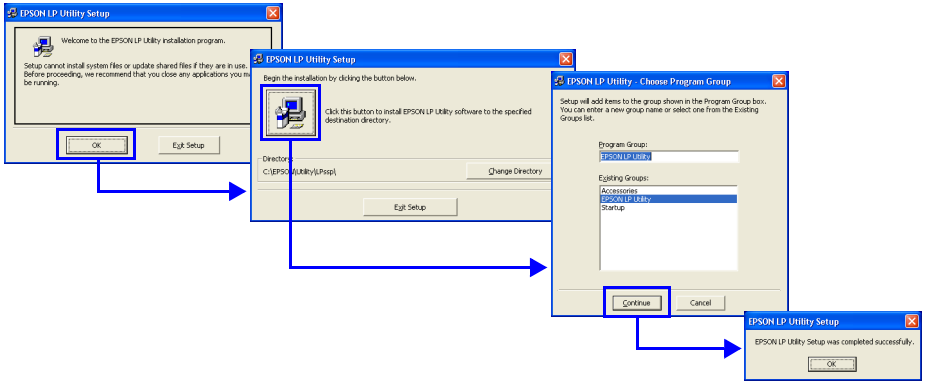


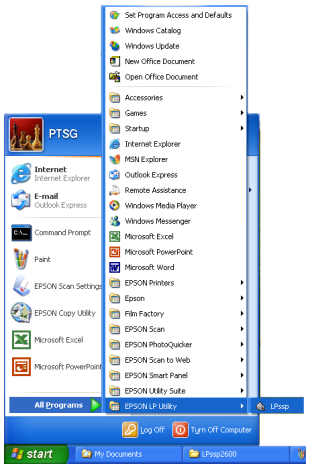
Figure 5-2. Installing the Program (2)

5.2.2.2 Starting Up the Adjustment Program

CAUTION

Make sure that the printer is in ready status before starting up the program.

1. Connect the computer and the printer with a parallel or USB cable, and then turn the printer On.
2. Click [Start] - [Program] - [LPssp] - [LPssp] to start the LPssp.



3. The LPssp reads various parameters set in the printer during the start-up operation. When the reading is finished, the LPssp becomes ready state.

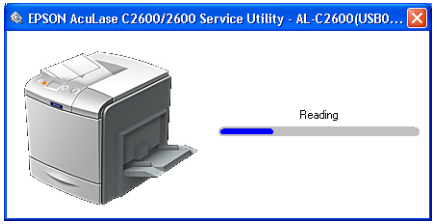


Figure 5-3. Start-Up Screen

5.2.2.3 Adjustment Program Functions

☐ Basic Functions

Class	Items	Description
Column	Machine info.	Displays the basic information on the printer such as the product serial number and the firmware version. Registering a product name can be made using this menu.
	USB-ID	Displays the USB-ID. Making a backup copy of the USB-ID, and writing a USB-ID can be made using this menu.
Button	Status Sheet	Prints the status sheet.
	Engine Status Sheet	Prints the engine status sheet.
	Printing Test	Use this menu to check the printer operation and the print quality. A pop-up window to select the test chart type will appear by clicking the button. Select a test chart and click the [Print] button to print the chart.
	Save Data	Writes out the all information on the printer, which is read by the program during the startup, and saves it as CSV file. The file is stored in the [Data] folder in the [LPssp] folder in which the program is stored.
	Hardcopy	Produces hard copy of screen displays. (It will be printed out from the printer that is set as a default printer on the computer.)

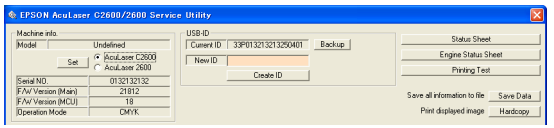


Figure 5-4. LPssp Initial Screen

☐ "Operation Log" tab

Displays the information given in the table below.

Items		Description
Print Page[s]		Displays the print count by print mode, paper type, and paper tray.
Life Status		Displays the remaining life of the components listed below. ■ Toner Cartridge ■ Photoconductor Unit ■ Fuser Unit ■ TR Belt Unit (Transfer Belt Unit)
Environment Info.		Displays the temperature and humidity inside the printer.
Error / Jam Log	Jam Error	Displays past five jam errors.
	SCE Error	Displays past five service request errors.

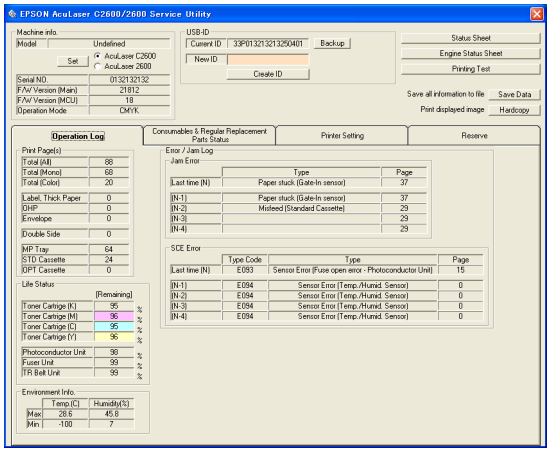


Figure 5-5. "Operation Log" tab

☐ "Consumables&Regular Replacement Parts Status" tab

Displays the information given in the table below.

Items		Description
Consumables	PCU / Waste Toner Box	Displays the information on the life of the Photoconductor Unit and the Waste Toner Box (collector).
	Fuser	Displays the information on the life of the Fuser Unit.
Regular Replacement Parts	Transfer Belt Unit	Displays the information on the life of the Transfer Belt Unit.
	Clutch	Displays the information on the life of the Cleaner Clutch and the TR Roller Clutch.
Toner Cartridge		Displays the information on the life of the Toner Cartridge.

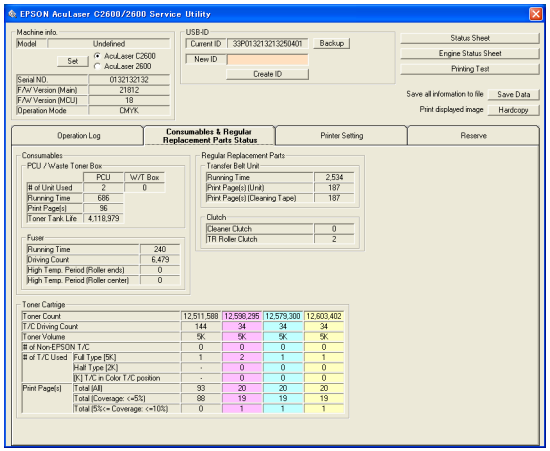


Figure 5-6. "Consumables&Regular Replacement Parts Status" tab

☐ "Printer Setting" tab

Allows you to make adjustments listed below. Details about each adjustment are hereinafter described.

- Counter Reset
- Timing Adjustment
- Registration Adjustment (Top)
- Registration Adjustment (Side)
- Process Control

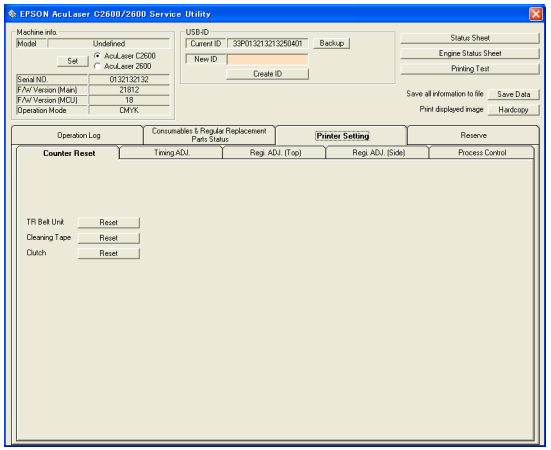


Figure 5-7. "Printer Setting" tab

5.2.3 Writing the model name

The model name information (ALC2600 or AL2600) is written into the EEPROM on the main controller board at the shipment. As the new main board (ASP) does not have the information, it should be written manually upon replacing the main board.

1. Check the model name on the label attached on the backside of the printer, and tick the corresponding model name in the "Machine info." section. ([Set] button then appears.)
2. Click the [Set] button.

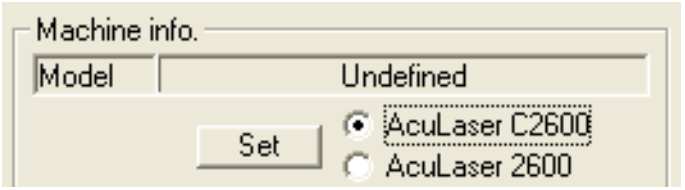


Figure 5-8. Writing the model name

5.2.4 Writing USB ID

AcuLaser C2600/2600 is equipped with a USB interface as a standard feature. The PC connected to the printer via the USB interface identifies the printer by referring to the USB ID information specific to each printer. The printer stores the USB ID on EEPROM on the main controller board. After replacing the main controller board with a new one, the USB ID stored on the previous board should be written on the newly attached board.

When the communication with the failed main controller board is possible, make a backup copy of the USB-ID and write it on the newly attached board. If it is impossible to read the USB-ID stored on the failed board, the USB-ID should be created and written on the newly mounted board.

BASIC OPERATION

In normal circumstances, the USB-ID is read by the program during the startup process and is displayed on the “Current ID” box (Running the program is not possible if it cannot communicate with the printer). If the program cannot establish the communication due to printer's main controller board failure, confirm the USB-ID in another way or create a USB-ID using the program to write the ID on the newly mounted board.

☐ When Possible to Communicate with the Main Controller Board

1. Before removing the failed main controller board, start LPssp and read the USB-ID to backup it with the [Backup] button.
2. Exit the LPssp and replace the main controller board with a new one.
3. Start the LPssp again and click the [Load] button to load the stored USB-ID.
4. Click [Write] button to write the USB-ID on the new main controller board.

☐ When Impossible to Communicate with the Main Controller Board
(When the USB-ID can be obtained by printing the status sheet or any other way)

1. Replace the failed main controller board with a new one.
2. Start the LPssp and enter the 18-digit USB-ID printed on the status sheet, or obtained in some way into the [New ID] edit box.
3. Click the [Write] button to write the USB-ID on the new main board.

☐ When Impossible to Communicate with the Main Controller Board
(When the USB-ID cannot be obtained)

1. Replace the failed main board with a new one.
2. Start the LPssp and enter the 10-digit printer's serial number into the [New ID] edit box.
3. Click the [Create ID] button to create a 18-digit USB-ID automatically and write it on the new main controller board.

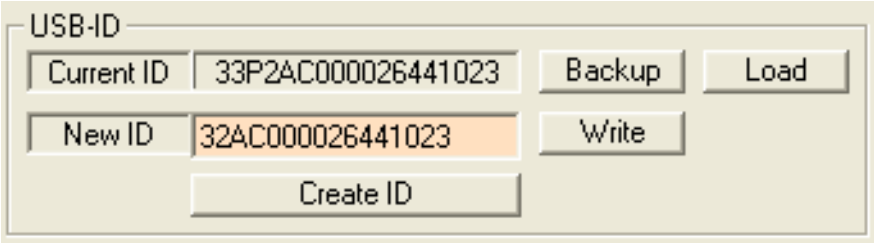


Figure 5-9. Writing USB ID

5.2.5 Counter Reset

Use this function to reset the life counter of the replaced part. Click the [Reset] button located next to the replaced part name to execute resetting.

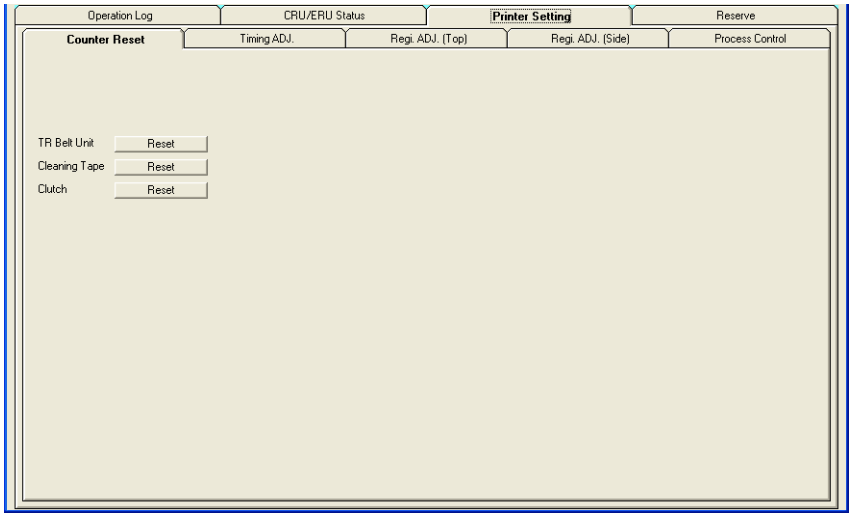


Figure 5-10. Counter Reset

5.2.6 Timing Adjustment

This menu allows you to adjust the coming off timing of the 2nd Transfer Roller and Transfer Cleaner from the Transfer Belt.

CHECK POINT

This adjustment is also available from the Maintenance Menu in the panel setting menu of the printer.

1. Load A4 paper in the printer.
2. Click the [Print Configuration Sheet] button to print a measurement pattern.
3. Measure the areas of the printed pattern specified on the displayed screen.

CHECK POINT

Follow the instructions below to perform the measuring.

- **L1:**
  Measure the distance between the average top edge position of the three vertical bars and the center position in the reference line.
- **L2:**
  Each of the three vertical bars are printed in three density levels. Measure the distance from the center position in the reference line to the boundary line between the highest density and the intermediate density in the left vertical bar.

4. Click the [Reset] button ([Set] button then appears).
5. Enter the measured values.
6. Click the [Set] button.

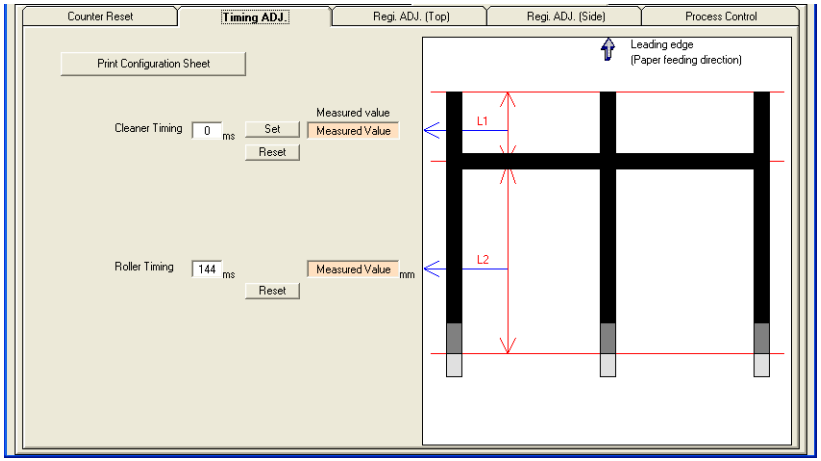


Figure 5-11. Timing Adjustment

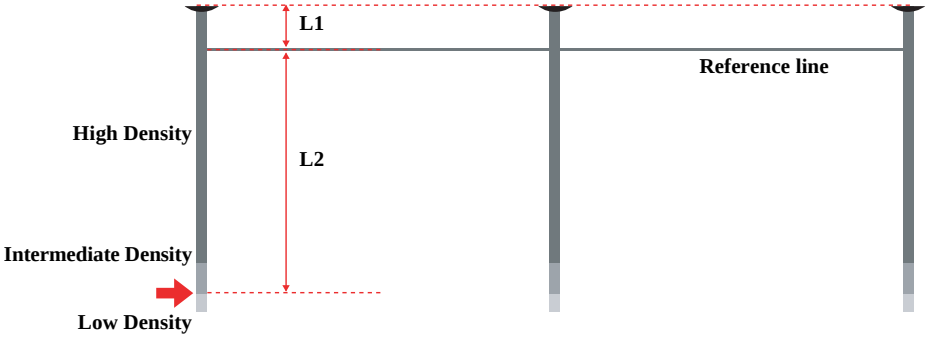


Figure 5-12. Measuring Point

5.2.7 Registration Adjustment (Top)

This menu allows you to adjust the printing starting position in sub scanning direction by adjusting the timing that the gate roller clutch becomes ON.

1. Load A4 paper in the printer.
2. Click the [Print Check Sheet] button to print three measurement pattern sheets.
3. Measure the areas of the printed pattern specified on the displayed screen.

CHECK POINT

- **Measure the distance from the top edge of the paper to the center in the patch.**
- **The same patterns are printed on both the top and bottom side of the paper. Make sure to confirm the paper feed direction and measure from the top edge of the paper (not from the posterior edge).**

4. Click the [Reset] button.
5. The [Set] button appears upon entering the measured values obtained from each of the three sheets.
6. Click the [Set] button.

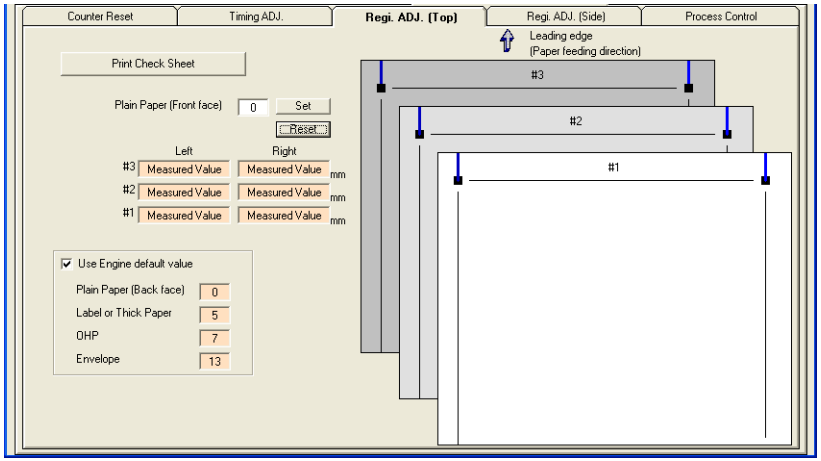


Figure 5-13. Registration Adjustment (Top)

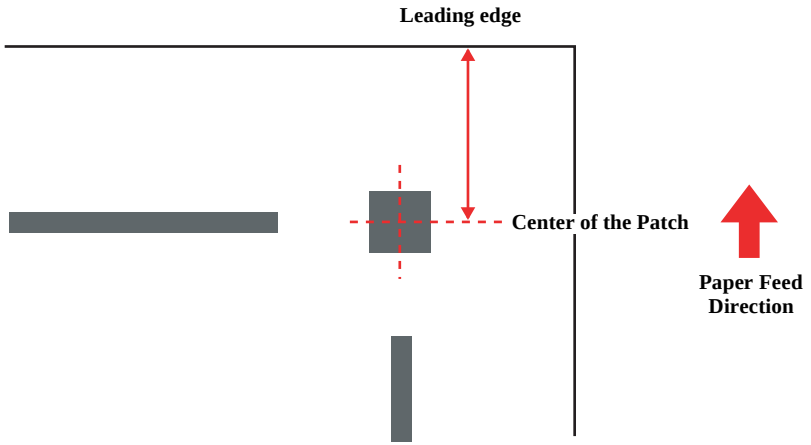


Figure 5-14. Measuring Point

5.2.8 Registration Adjustment (Side)

This menu allows you to adjust laser scanning starting position in main scanning direction.

1. Load A4 paper in the printer.
2. Click the [Print Check Sheet] button to print three measurement pattern sheets.
3. Measure the areas of the printed pattern specified on the displayed screen.

CHECK POINT

- **Measure the distance from the right and left edges of the paper to the center in the patch.**
- **The same patterns are printed on both the top and bottom side of the paper. Make sure to confirm the paper feed direction and perform the measurement on the patch on the top side of the paper (not on the patch on the posterior side).**

4. Click the [Reset] button.
5. The [Set] button appears upon entering the measured values obtained from each of the three sheets.
6. Click the [Set] button.

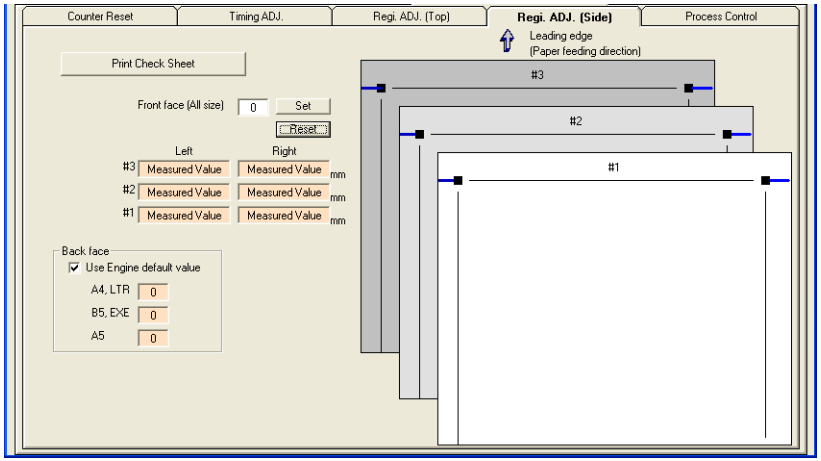


Figure 5-15. Registration Adjustment (Side)

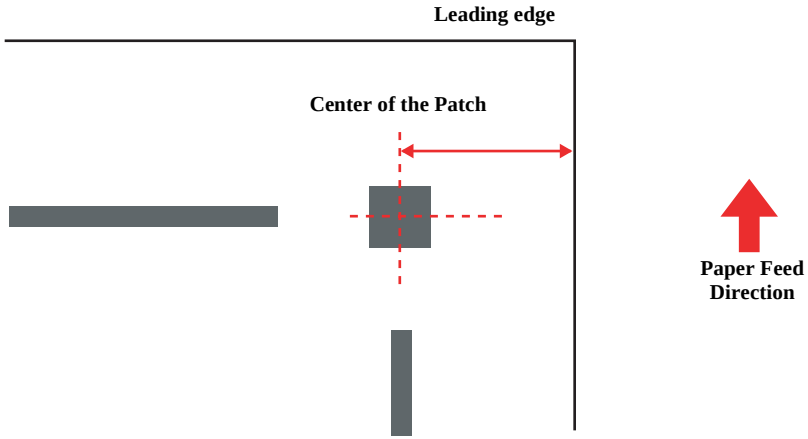


Figure 5-16. Measuring Point

5.2.9 2nd Transfer Bias Adjustment

This menu allows you to change the secondary transfer bias by paper type to improve the transferring quality.

CHECK POINT

This adjustment is also available from the Printer Adjust Menu in the panel setting menu of the printer.

1. Click the [Up] or [Down] button next to the desired paper type to change the values. The [Set] button then appears.
2. Click the [Set] button.

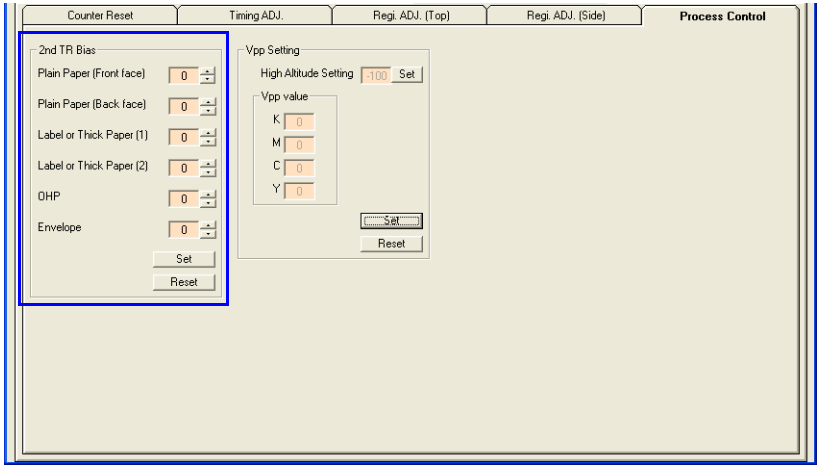


Figure 5-17. 2nd Transfer Bias Adjustment

Adjustment Item	Adjustment Levels	Unit per Level
Plain Paper [Front face]	-4~5	3.08µA
Plain Paper [Back face]		3.08µA
Label or Thick Paper [1]		1.94µA
Label or Thick Paper [2]		1.14µA
Transparency		1.14µA
Envelope		1.48µA

5.2.10 Vpp Setting

Use this menu when the printer causes symptoms described below under the condition of 1,650 meter elevation or higher.

- Patch sensor failure occurs during engine calibration operation.
- Abnormal images are printed due to discharge.

CHECK POINT

This adjustment is also available from the Printer Adjust Menu in the panel setting menu of the printer.

1. Click the [Set] button (1) and click the [Yes] button on the “Warning” screen which is displayed subsequently.
2. Click the [Set] button (2). (To cancel the setting, click the [Reset] button and then click the [Set] button (2).)

CAUTION

You cannot specify values in this adjustment.

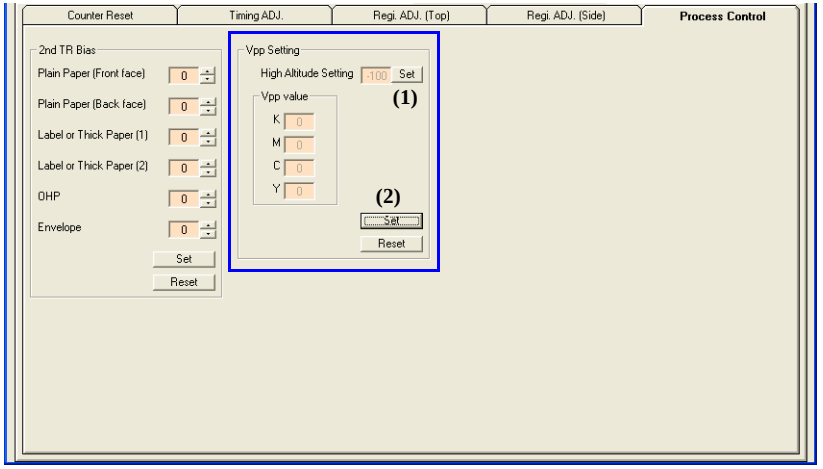


Figure 5-18. Vpp Setting

5.3 Firmware Update

This section explains how to update the firmwares.

- Main Controller Firmware
- Engine Controller Firmware

OUTLINE

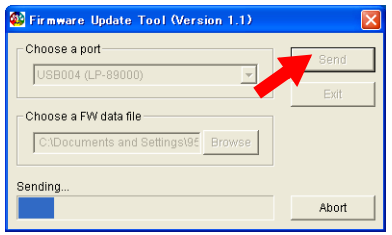
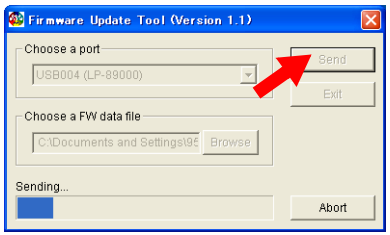
Unit	Data format	Operation	
		Panel operation	Tool
Main Controller	RCC	Not required	Required
	CRB	Required	Required
Engine Controller	BIN	Required	Required

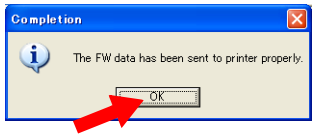
Tool

Firmware update is executed by transmitting data for updating the program from the computer via USB or LPT using the exclusive software tool. Make sure to use the software tool described below.

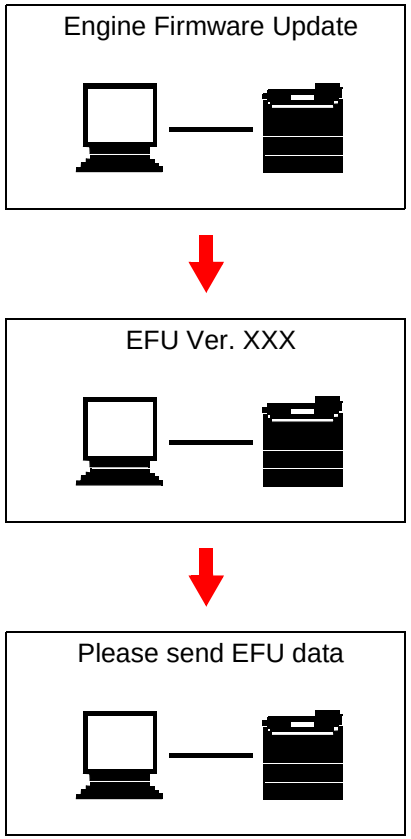
☐ Tool Name: Firmware Update Tool

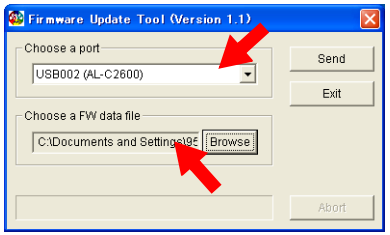
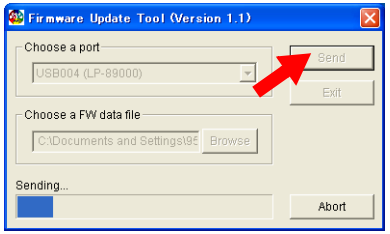
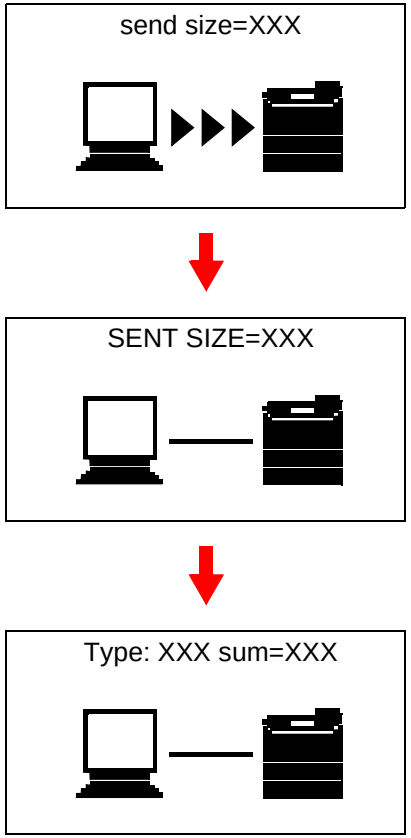
5.3.1 Main Controller Firmware Update

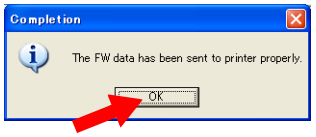
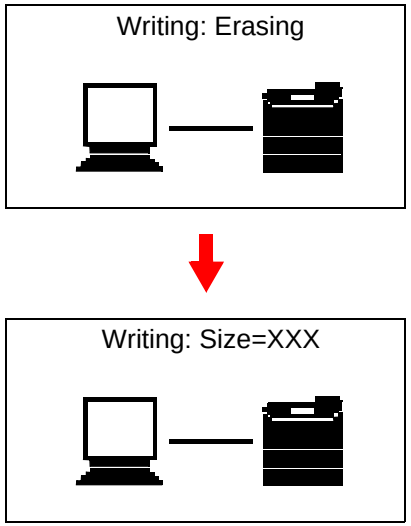
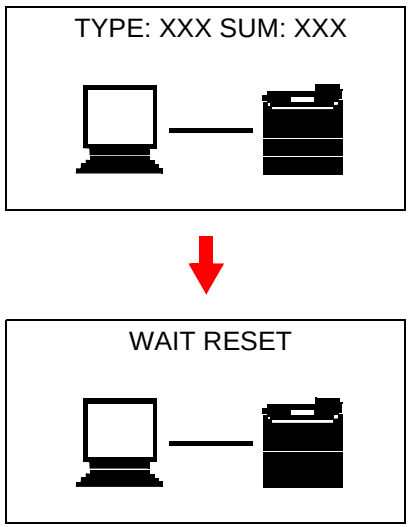
Procedure		Method 1 (RCC)	Method 2 (CRB)	LCD Panel
1	Check the current version.	Print a status sheet, and check the current firmware version.	Print a status sheet, and check the current firmware version.	---
2	Connect the printer with the computer.	Connect the printer to the computer with a USB cable. Confirm that the “Ready” is displayed on the LCD.	After turning the power off for both the printer and computer, connect them with a USB cable. CAUTION **Before connecting the USB cable, make sure to disconnect other interface cables from the product.e.**	---
3	Prepare the update data.	Turn the computer on and copy the program update file (the extension is RCC) onto the computer.	Turn the computer on and copy the program update file (the extension is CRB) onto the computer.	---
4	Start up the Printer.	---	Turn the product ON while holding down the [Color Start], [Reset], and [Down] buttons.The product will start up in “Program ROM update” mode.	Program Device Version XX.XX Please Send Data
5	Prepare to send the data.	Start up the Firmware Update Tool.Specify the port and the program update file on the selection window of the tool.	Start up the Firmware Update Tool.Specify the port and the program update file on the selection window of the tool.	---
6	Transmit the data.	Click [Send] on the Firmware Update Tool screen. 	Click [Send] on the Firmware Update Tool screen. 	Program Device Version XX.XX OLD: XXXX NEW: XXXX

Procedure		Method 1 (RCC)	Method 2 (CRB)	LCD Panel
7	Execute the update.	Once file-receiving or rewriting operation is started on the printer side, the data LED flashes and the message "ROM P Writing" is displayed on the LCD panel. When the transfer is complete, "completed" window pops up. Click [OK]. 	Confirm that both the old and new firmware versions are displayed on the LCD, and press the [Right] button on the control panel. "Completion" pop-up window will be displayed when the data transfer is finished. Click on the [OK]. 	Program Device Version XX.XX Erasing Device  Program Device Version XX.XX PRG XXXXXXXX
8	Confirm the checksum.	---	When the program update is finished, the checksum will be indicated on the LCD panel. Confirm the checksum.	Program Device Version XX.XX Code= XXXX, XXXX, XXXX, XXXX Total= XXXX, XXXX, XXXX, XXXX
9	Reboot the Printer.	After confirming that the data LED of the printer is turned off and the LCD panel displays "Ready", turn the printer power off and turn back on again.	Pressing the [Right] button on the control panel reboots the product.	---
10	Print the status sheet.	Prints the status sheet.	Prints the status sheet.	---
11	Check the version on the status sheet.	Confirm that the program firmware version has been updated correctly by comparing the status sheet with that printed in step 1. Refer to " 1.21 Status Sheet" *(p.74)*	Confirm that the program firmware version has been updated correctly by comparing the status sheet with that printed in step 1. Refer to " 1.21 Status Sheet" *(p.74)*	---

5.3.2 Engine Controller Firmware Update

	Procedure	Method	LCD Panel
1	Check the current version.	Print a status sheet or engine status sheet, and check the current firmware version.	---
2	Connect the printer with the computer.	After turning the power off for both the printer and computer, connect them with a parallel or USB cable. CAUTION **Make sure to disconnect other unnecessary interface cables from the printer in advance.**	---
3	Prepare the update data.	After turning the computer back on, copy the program data for the update (file name.BIN) to any route directory of the computer.	---
4	Start up the Printer.	Turn the printer on while pressing the [Up], [Down], [Job Cancel] and [Start/Stop] buttons.	

	Procedure	Method	LCD Panel
5	Prepare to send the data.	Run the Firmware Update Tool. Select the port and FW data file on the Firmware Update Tool screen. 	---
6	Transmit the data.	Click [Send] on the Firmware Update Tool screen. 	

	Procedure	Method	LCD Panel
7	Execute the update.	Press the [Enter] button on the control panel of the printer. A “Complete” pop-up window will appear when the transmission is finished. Click the [OK]. 	
8	Confirm the checksum.	When updating the program data is finished, the checksum will be indicated on the LCD panel. Confirm the checksum.	
9	Reboot the Printer.	Turn the printer off and back on.	---
10	Print the status sheet.	Prints the status sheet.	---
11	Check the version on the status sheet.	Check the firmware version printed on the status sheet or engine status sheet and confirm that the firmware is updated.	---

CHAPTER

6

MAINTENANCE

6.1 Overview

This section gives information necessary for maintaining the printer in its optimum condition.
While at maintenance work, be sure to observe the following precautions.

- **To prevent an electric shock, burn, injury, etc., always turn the printer off and unplug the power cord before starting maintenance work.**
  When the power supply cable must be connected to measure voltage or for any other task, use extreme caution in working on electronic components.
- **While the printer is operating, never touch the driving parts such as the motor, sprockets and gears.**
- **Weight: Since this printer is heavy (about 37kg, consumables included, options not included), transferring must be done by two or more personnel making sure to knees down so as not to throw out your back.**
- **Safety devices: Special care must be taken to maintain safety devices such as fuse, INTERLOCK S/W, which are provided to prevent the printer from malfunction and accidents, and also carefully check the parts such as panel, covers, which are directly operated by the user.**
- **Immediately after the printer has stopped operating, do not touch the Fuser unit as it is extremely hot.**
- **Pay attention to the following when turning the printer back on after servicing.**
  - **Be careful not to get your hands and clothes caught up in the rotating parts (various rollers and cooling fans) of the printer.**
  - **Never touch the electrical terminals and high-voltage components. (HVPS or LVPS unit, etc.)**
- **To avoid dust explosion or ignition, never bring any consumables close to flame or throw them into fire.**

- **Take extra care not to let the laser beam get into your eye, or it could cause loss of sight.**
- **While servicing the laser printer, never open any cover on which a Warning Label for Laser beam is attached.**
- **Use extreme caution to avoid injury of yourself and anyone around you with a clear understanding of hazardous nature of the laser beam.**
- **When you need to work on the hot part or unit (Fuser unit, for example), make sure to unplug the printer from power outlet in advance. Do not start the work until the part or unit cools down sufficiently to avoid burn injury.**
- **This printer produces a laser beam when the following conditions are all satisfied.**
  - **The printer is turned on.**
  - **The interlock switches are OFF.**
- **Do not use a general vacuum cleaner to clean spilt toner. To do so may cause the sucked toner particles to catch fire by sparks of the electric contacts. If the toner has spilt on the floor, etc., clean it with a broom or wipe it with a cloth moistened with neutral detergent. If it is necessary to clean a lot of spilt toner with a cleaner, use a cleaner exclusively designed for toner.**
- **Do not disassemble the components (Fuser unit, Laser scanning unit, etc.) which do not have disassembly procedures described in this manual.**

CAUTION

- **Always wear gloves for disassembly and reassembly to avoid injury from sharp metal edges.**
- **Do not disassemble the consumables.**
- **Do not expose the Photoconductor unit to direct sunlight.**
- **Do not touch the onboard components with bare hands to prevent the ICs and other electrical components from being damaged by static electricity. (When necessary, wear a wrist strap.)**
- **To ensure safety and workability, use the specified tools.**
- **Do not turn the printer off until all motors stop completely.**
- **Should the printer be transported, use the special packing material, pallet, etc.**
- **Never use chemical solvents, such as thinner, benzine, or alcohol to clean the exterior or case parts of the printer. These chemicals may deform or deteriorate the components of the printer.**

6.2 Cleaning

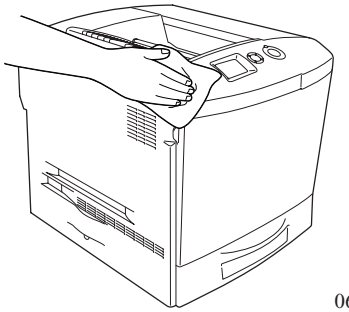
While at maintenance work, perform the following cleaning according to the printer status.

Table 6-1. Cleaning

No.	Cleaning Point	Cleaning Requirements	Reference
1	Printer's outer case	When the exterior is stained (dirty or dusty).	Figure 6-1
2	Output tray	When the tray accumulates paper dust.	Figure 6-2
3	Pickup roller	When malfunctions in paper feeding such as multiple-sheet feed, non-feed, or skew occur frequently.	Figure 6-3
4	Patch sensor	When the error message "Clean Sensor" is displayed.	Figure 6-5
5	Photoconductor wire (Charging wire)	When the warning message "Clean Parts a" is displayed.	Figure 6-6
6	Exposure window	When the warning message "Clean Parts b" is displayed.	Figure 6-7

☐ Outer Case

Turn off the printer and wipe it with a soft, clean cloth moistened with a mild detergent.



06000101

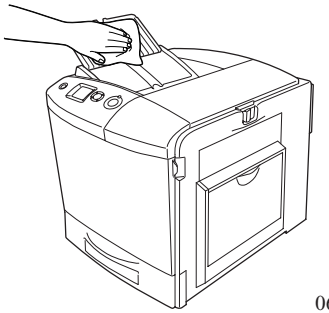
Figure 6-1. Outer Case

CAUTION

Never use chemical solvents, such as thinner, benzine, or alcohol to clean the exterior or case parts of the printer. These chemicals may deform or deteriorate the components of the printer. Be careful to avoid letting the interior of the printer get wet with water.

☐ Output Tray

Gently wipe the exposed paper path area with a well-wrung cloth.

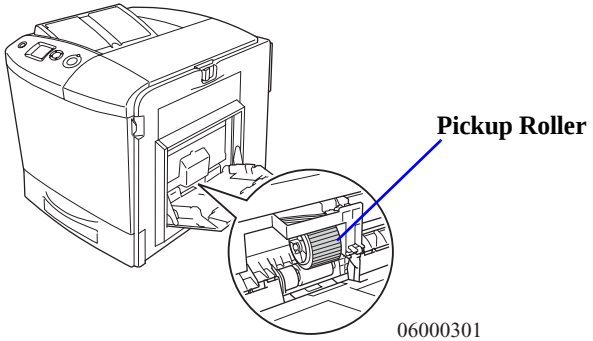


06000201

Figure 6-2. Output Tray

☐ Pickup Roller (MP Tray)

Turn off the printer and open the MP Tray.
Gently wipe the rubber parts of the pickup roller inside the MP tray with a wet, well-wrung cloth.



06000301

Figure 6-3. Pickup Roller

☐ Pickup Roller (Paper Cassette)

Turn off the printer and draw out the paper cassette.
Gently wipe the rubber parts of the pickup roller inside the paper feeder with a wet, well-wrung cloth.

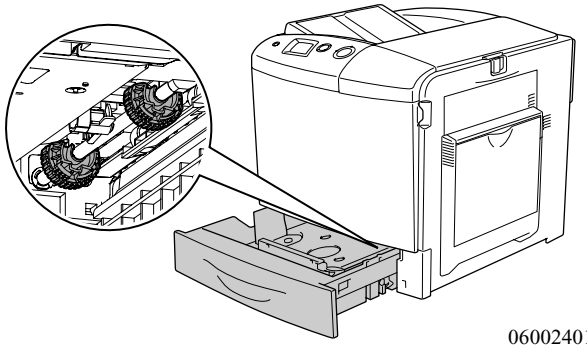


Figure 6-4. Pickup Roller

☐ Patch Sensor

Slowly open and close the Cover D several times to move the Patch Lever with the tab on the cover.

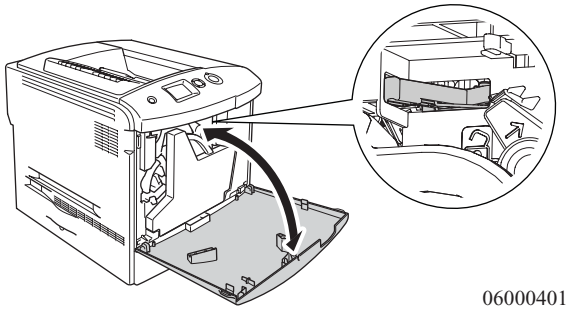


Figure 6-5. Patch Sensor

☐ Photoconductor Wire

Open the Cover D and remove the waste toner collector.

NOTE: *When placing the waste toner collector that is removed, stand it on a flat surface leaning against something stable.*

Hold the cleaning knob [a] and move it slowly in and out several times.

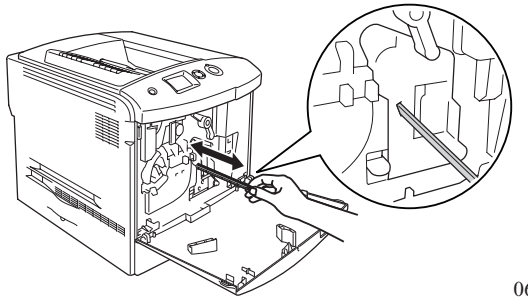


Figure 6-6. Photoconductor Wire

NOTE: *Move the knob in and out completely. Otherwise, the printer may not be cleaned effectively.*

☐ Exposure Window

Open the Cover D and remove the waste toner collector.

NOTE: *When placing the waste toner collector that is removed, stand it on a flat surface leaning against something stable.*

Hold the knob [b] and move it slowly in and out several times.

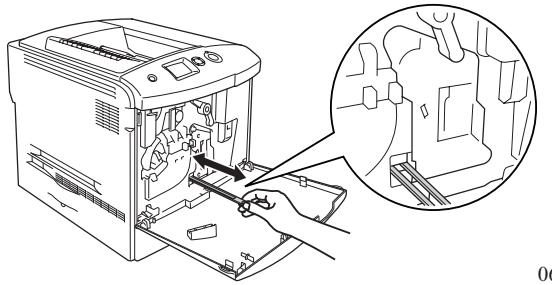


Figure 6-7. Exposure Window

NOTE: *Move the knob in and out completely. Otherwise, the printer may not be cleaned effectively.*

6.3 Maintenance Menu

CAUTION

This menu is provided only for a service personnel to perform maintenance and must not be disclosed to users.

The Maintenance Menu allows service personnel to print various sheets to know the printer's status, reset the life counter when replacing the component, and so on. The printer requires a special operation at power-on in order to enter the maintenance mode to display the menu as the menu should be disclosed to users.

6.3.1 Entry into Maintenance Mode

1. While holding down the [Back (◄)], [Up (▲)], [Down (▼)] and [Enter (►/↵)] buttons, turn the printer on.

   When the printer is turned on, all LEDs and LCD light up and the following message is displayed.
   (When "MAINTENANCE MODE" appears, release your hand from the buttons.)

   RAM CHECK **.*MB → MAINTENANCE MODE → Ready

2. Refer to the Maintenance Menu process flowchart in Figure 6-8, perform each function of the Maintenance Menu by operating the panel buttons.

NOTE 1: *Disconnect all the Interface Cables in advance.*

2: *Engine-related service call errors are ignored when the Maintenance Mode starts. Before starting the printer in the Maintenance Mode and executing printing, make sure that no error has occurred in the normal operating mode.*

3: *To exit from the Maintenance Menu, make sure that the engine is not operating and then turn the printer off.*

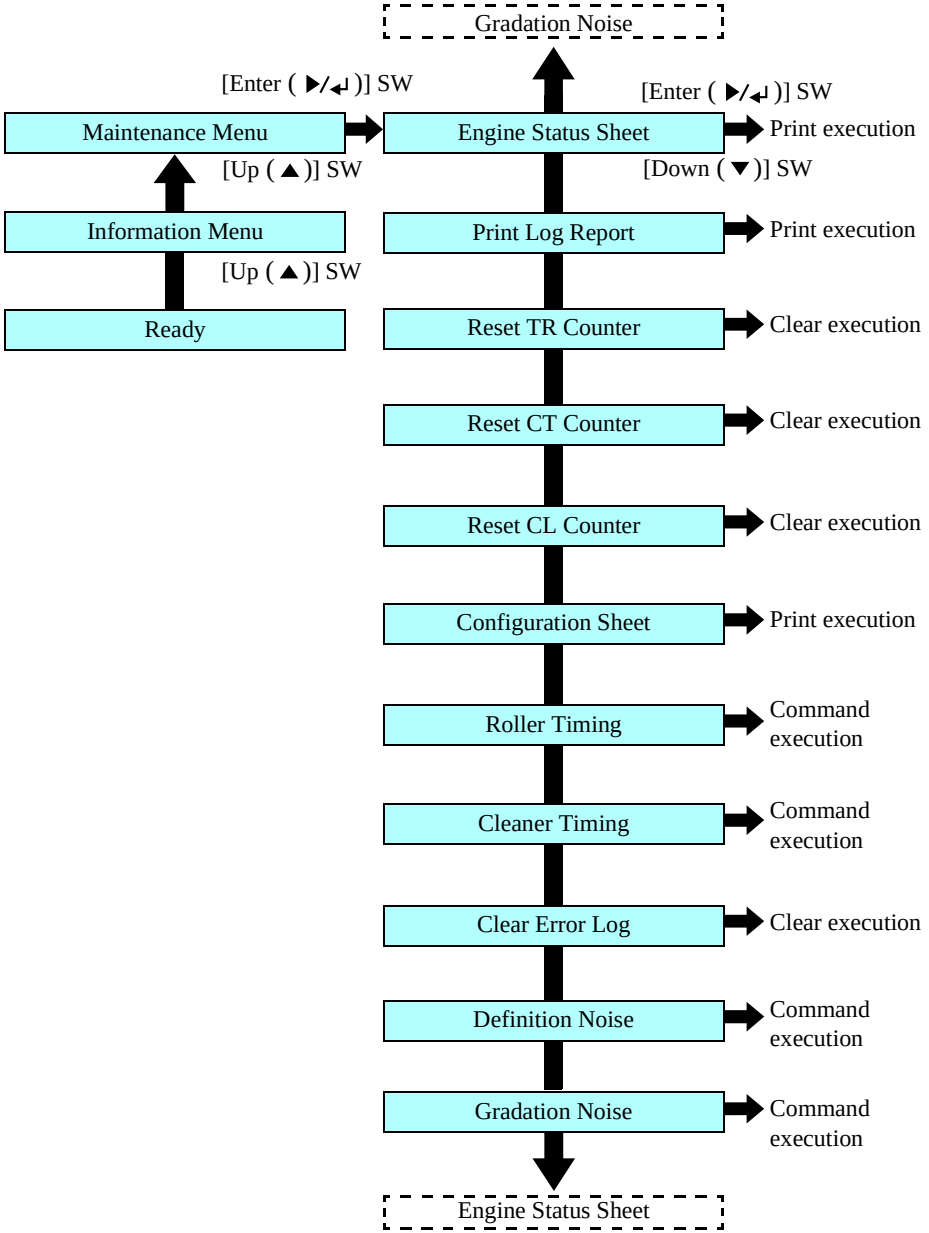


Figure 6-8. Maintenance Menu Process Flowchart

6.3.2 Maintenance Menu Items

CAUTION

This menu is provided only for a service personnel to perform maintenance and must not be disclosed to users.

The printer goes into the maintenance mode to display the Maintenance Menu by being turned on while specified buttons are pressed down. It returns to the normal operating mode when the power is turned off and back on by normal operation.

Table 6-2. Maintenance Menu Items

Item	Explanation
Engine Status Sheet (Refer to Figure 6-9)	Before entering the maintenance mode, make sure that there is no engine-related service call error in the normal operating mode (not maintenance mode). After the printer enters into the maintenance mode, press the Enter [▶/↵] button to print an engine status sheet. The sheet is printed according to the default settings, except RIT, toner save, and resolution settings (current settings are applied for those settings). While the printing is in progress, the LCD keeps flashing. The user default environment (settings) does not change after the printing. The contents of the engine status sheet are the counted values of each unit which makes up the printer engine.
Print Log Report (Refer to Figure 6-10)	Prints a log file of printing status.
Reset TR Counter	Resets the transfer unit's level counter. The counter must be reset after the transfer unit is replaced with a new one (maintenance). Performing this operation reboots the printer. The setting of the Separation roller (FRAM Address 98) and Cleaner timing (FRAM Address 97) will be reset simultaneously. Continuously, print out a Configuration Sheet to set up the Roller and Cleaner Timing.
Reset CT Counter	Resets the cleaning tape's level counter. This operation must be performed whenever the cleaning tape is replaced with a new one, regardless of the reason. Performing this operation reboots the printer.
Reset CL Counter	Resets the counter of the cleaner clutch and the 2nd transfer clutch consumption.

Table 6-2. Maintenance Menu Items

Item	Explanation
Configuration Sheet	Prints a sheet that contains information required to adjust the timing of contact between the transfer roller and the cleaner. The adjustment is required after replacing the transfer unit. The procedures are given below. 1. Make sure that both the Roller Timing and the Cleaner Timing displayed on the panel is 0. 2. Print out the Configuration Sheet. 3. Calculate the Roller Timing and the Cleaner Timing based on the values printed on the sheet. 4. Input the calculation result into the Roller Timing and the Cleaner Timing in the Maintenance Menu. 5. Print out the Configuration Sheet again to confirm that the input data is correctly reflected.
Roller Timing	The input data is stored in FRAM address 98.
Cleaner Timing	The input data is stored in FRAM address 97.
Clear Error Log	Clear error log list stored for display on Engine Status Sheet. Performing this operation reboots the printer.
Definition Noise (For developing engine)	Sets noise level for the resolution priority screen. CAUTION This item is provided for developing the engine. Never use this menu while at maintenance work.
Gradation Noise (For developing engine)	Sets noise level for the gradation priority screen. CAUTION This item is provided for developing the engine. Never use this menu while at maintenance work.

6.4 Sheet for Servicing

6.4.1 Engine Status Sheet

CAUTION

The Engine Status Sheet is provided only for a service personnel to perform maintenance, and must not be disclosed to users.

Engine Status Sheet Items

- ☐ Total Counts
  - ■ Total Pages: Total number of pages printed up to the present.
  - ■ Color Pages: Total number of color pages printed up to the present.
  - ■ Jam Counts: Number of jams.
- ☐ ET Cartridge (Toner Cartridge)
  - ■ C Toner: Remaining toner in the C toner position (%), initial toner quantity (g), total dots, total count, drive time of C toner cartridge (sec).
  - ■ M Toner: Remaining toner in the M toner position (%), initial toner quantity (g), total dots, total count, drive time of M toner cartridge (sec).
  - ■ Y Toner: Remaining toner in the Y toner position (%), initial toner quantity (g), total dots, total count, drive time of Y toner cartridge (sec).
  - ■ K Toner: Remaining toner in the K toner position (%), initial toner quantity (g), total dots, total count, drive time of K toner cartridge (sec).
  - ■ C Toner Change: Number of replacements of 5K C toner, 2K C toner, Number of replacements of K toner in the C toner position.
  - ■ M Toner Change: Number of replacements of 5K M toner, 2K M toner, Number of replacements of K toner in the M toner position.
  - ■ Y Toner Change: Number of replacements of 5K Y toner, 2K Y toner, Number of replacements of K toner in the Y toner position.
  - ■ K Toner Change: Number of replacements of K toner.
- ☐ Photoconductor: Remaining life of photoconductor unit (%).
- ☐ Photoconductor Change: Number of replacements of photoconductor unit.
- ☐ Photoconductor Amount: Number of photoconductor rotations (Vsync x 3)
- ☐ Fuser: Remaining life of fuser unit (%).
- ☐ Fuser Change: Number of replacements of fuser unit.
- ☐ Transfer Unit: Remaining life of transfer unit (%).
- ☐ Transfer Unit Change: Number of replacements of transfer unit.
- ☐ CT Counts: Number of pages passed through the cleaning tape.
- ☐ 2nd BTR Offset
  - ■ Normal: Transfer current setting value for plain paper.
  - ■ Normal Back: Transfer current setting value for reverse printing on plain paper during duplex printing.
  - ■ Thick: Transfer current setting value for thick paper.
  - ■ Extra Thick: Transfer current setting value for special thick paper.
  - ■ Transparency: Transfer current setting value for transparency.
  - ■ Envelope: Transfer current setting value for envelope.
- ☐ Developer DC Bias: Bias value for DC development (In the order of C, M, Y, and K)
- ☐ Exposing Level: Level of exposure
- ☐ Power On: Number of times power is turned on
- ☐ Sleep: Number of times printer returns from sleep mode

- ☐ Temp. 1: Highest temperature inside the printer. Value acquired from the engine
- ☐ Temp. 2: Lowest temperature inside the printer. Value acquired from the engine
- ☐ Serial No.: Serial number of the main unit. 4-digit model code + 6-digit number
- ☐ Engine Version: Firmware version of the mechanical controller
- ☐ Error Log: Information that contains messages displayed on the panel and EJL status code of the error; total of printed copies, JAM code, and size and type of paper at the time of error; and date and time the error occurred (only when time acquisition from SNTP is successful).

- ■ Jam code: The JAM code in the Error Log indicates the location of the jam using an 8-digit hexadecimal character string.

Table 6-3. Jam Code

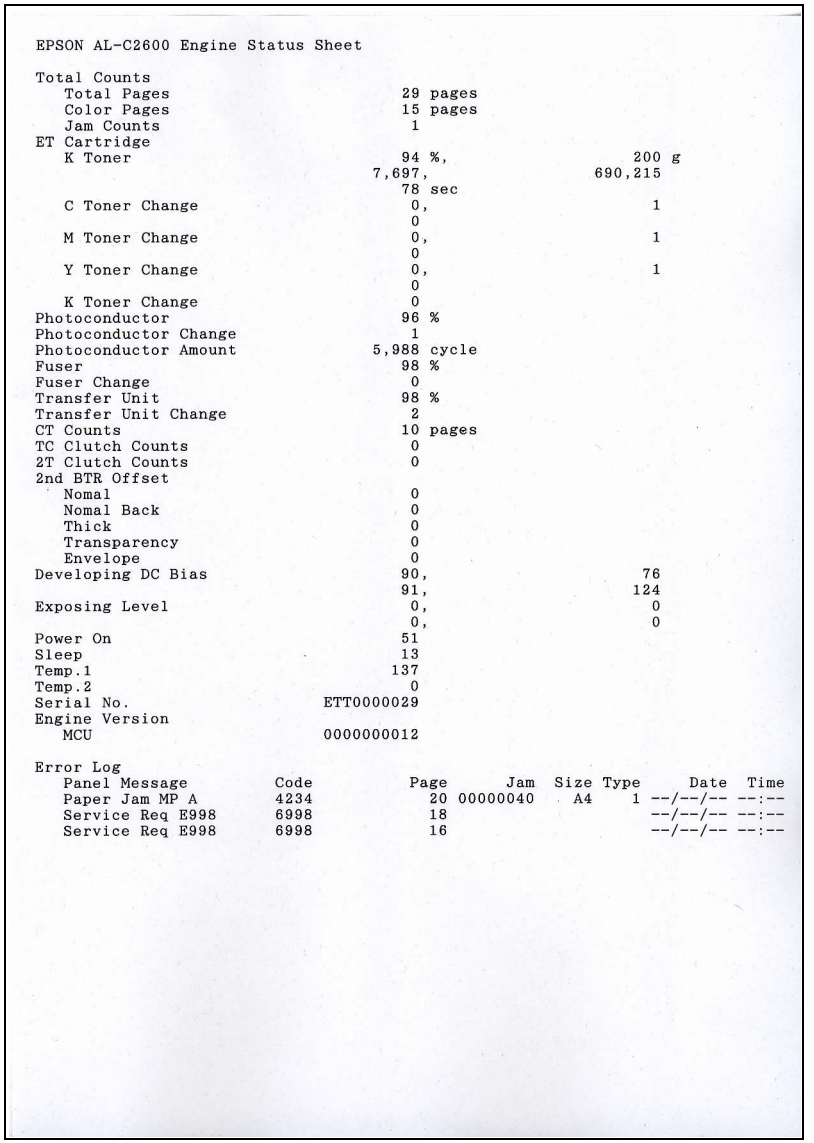
Bit	Location of jam	Video command
31-24	–	–
23-16	–	–
15	–	GS15
14	Not reached to the Pre-Paper Eject Sensor	
13	At the Pre-Gate Sensor	
12	In the output area	
11	In front of the Gate	
10	After transferring process	
9	At the Post-Fixing Sensor	
8	In the output area	
7	–	GS14
6	In the MP tray	
5	In the standard cassette	
4	In the optional cassette	
3	After fixing process	
2	Not reached to the Pre-Gate Sensor	
1	Not reached to the Post-Transferring Sensor	
0	Not reached to the Post-Fusing Sensor	

- Paper type:

  Indicates the media type by number that is specified to the engine controller.

Normal (Fuser Level 1)	1
Label or Thick (Transfer Level 1)	2
Transparency	3
Envelope	4
Normal (Fuser Level 2)	11
Label or Thick (Transfer Level 2)	12

- Drive time of toner cartridge
  CS data: Address 132 to 135 (K), 148 to 151 (M), 164 to 167 (C), 180 to 183 (Y)
- Toner Count
  CS data: Address 129 to 131 (K), 145 to 147 (M), 161 to 163 (C), 177 to 179 (Y)
- Total Count
  Calculation method; (Initial toner amount) x (2 to the 16th power) - (Toner Count)
- Photoconductor Amount
  FRAM data: Address 17 to 19 x 3
- Developer DC Bias
  FRAM data: Address 64, 65, 66, 67
- Exposing Level
  FRAM data: Address 68, 69, 70, 71



EPSON AL-C2600 Engine Status Sheet

Total Counts
- Total Pages: 29 pages
- Color Pages: 15 pages
- Jam Counts: 1

ET Cartridge
- K Toner: 94 %, 200 g
  7,697, 690,215
  78 sec
- C Toner Change: 0, 1
  0
- M Toner Change: 0, 1
  0
- Y Toner Change: 0, 1
  0
- K Toner Change: 0

Photoconductor: 96 %
Photoconductor Change: 1
Photoconductor Amount: 5,988 cycle
Fuser: 98 %
Fuser Change: 0
Transfer Unit: 98 %
Transfer Unit Change: 2
CT Counts: 10 pages
TC Clutch Counts: 0
2T Clutch Counts: 0
2nd BTR Offset
- Nomal: 0
- Nomal Back: 0
- Thick: 0
- Transparency: 0
- Envelope: 0

Developing DC Bias: 90, 76
91, 124
Exposing Level: 0, 0
0, 0
Power On: 51
Sleep: 13
Temp.1: 137
Temp.2: 0
Serial No.: ETT0000029
Engine Version
- MCU: 0000000012

Error Log

Panel Message	Code	Page	Jam	Size	Type	Date	Time
Paper Jam MP A	4234	20	00000040	A4	1	--/--/--	--:--
Service Req E998	6998	18				--/--/--	--:--
Service Req E998	6998	16				--/--/--	--:--

Figure 6-9. Engine Status Sheet

6.4.2 Print Log Report

Print Log Report Items

- ☐ S/N: Main unit serial number.
- ☐ Date: yyyy/mm/dd hh: mm: year/month/day hour: minute displayed in local time.
  Not displayed when out-of-synchronization.
- ☐ Toner Remain
  - ■ C Toner: Amount of remaining C Toner in %.
  - ■ M Toner: Amount of remaining M Toner in %.
  - ■ Y Toner: Amount of remaining Y Toner in %.
  - ■ K Toner: Amount of remaining K Toner in %.
- ☐ Print of papers: Number of pages printed per paper size.
  - ■ Total: Number of pages printed.
  - ■ Mono Simplex: Number of printed monochrome simplex pages.
    Duplex: Number of printed monochrome duplex pages.
  - ■ Color Simplex: Number of printed color simplex pages.
    Duplex: Number of printed color duplex pages.
    Dummy: Number of pages added artificially for duplex printing.
    Paper sizes not supported for duplex printing are displayed as "---".
- ☐ Print of mode: Number of pages printed per printing mode.
- ☐ Coverage Duty[%]: Average print ratio (number of printed dots per page) of each color
- ☐ Dots/1%[dots]: Number of dots printed with 1% of each toner.
  Updated with every reduction of 1%.
- ☐ Estimate [pages]: Number of printable pages with the remaining quantity of each toner.
  Estimation calculated from "Coverage Duty[%]" and "Dots/1%[dots]".

EPSON AL-C2600 Print Log Report
S/N ETT0000029

Toner Remain
K Toner 94 %

Print of papers [pages]

Paper	Total	Mono Simplex	Mono Duplex	Color Simplex	Color Duplex	Color Dummy
A4	19	9	0	10	0	0
A5	0	0	0	0	0	0
B5	0	0	0	0	0	0
LT	0	0	0	0	0	0
HLT	0	0	---	0	---	---
GLT	0	0	---	0	---	---
EXE	0	0	0	0	0	0
MON	0	0	---	0	---	---
C10	0	0	---	0	---	---
DL	0	0	---	0	---	---
C5	0	0	---	0	---	---
C6	0	0	---	0	---	---
IB5	0	0	---	0	---	---
CTM	0	0	---	0	---	---

Print of mode [pages]

Mode	Simplex	Duplex	Total
Mono	9	0	9
Color	10	0	10
Total	19	0	19

	C	M	Y	K
Coverage Duty[%]	---	---	---	2.6
Dots/1%[dots]	---	---	---	21,239
Estimate[pages]	---	---	---	9,038

Figure 6-10. Print Log Report

PRINT LOG REPORT CONTENTS SUMMARY

Table 6-4. Print Log Report Contents Summary

Information name	Count processing and storage location	Range	Unit	Count conditions	Clear conditions
Serial Number	Controller	xxxxxxxxxx	–	–	None
Date, Time	Controller	–	–	–	When the power is turned on
C Toner	Engine	0 to 100	%	During printing	New C toner detected
M Toner	Engine	0 to 100	%	During printing	New M toner detected
Y Toner	Engine	0 to 100	%	During printing	New Y toner detected
K Toner	Engine	0 to 100	%	During printing	New K toner detected
Print [pages]					
Total	Controller	0 to 99,999,999	pages	During printing	(EEPROM initialization)
Mono Simplex	Controller	0 to 99,999,999	pages	During printing	(EEPROM initialization)
Mono Duplex	Controller	0 to 99,999,999	pages	During printing	(EEPROM initialization)
Color Simplex	Controller	0 to 99,999,999	pages	During printing	(EEPROM initialization)
Color Duplex	Controller	0 to 99,999,999	pages	During printing	(EEPROM initialization)
Dummy	Controller	0 to 99,999,999	pages	During printing	(EEPROM initialization)
Coverage Duty[%] C, M, Y, K	Controller	0.0 to 100.0	%	During printing	(EEPROM initialization) or Mode Change
Dots/1%[dots] C, M, Y, K	Controller	00 to 2,147,483,647	dots	During printing	(EEPROM initialization) or Mode Change

Note 1: Values in parentheses in the “Clear conditions” column are cleared as result.

2: Printers whose values (pages) exceed the above range (only for the values controlled by the controller) are not guaranteed.

6.5 Consumables and Components That Need Periodic Replacement

CAUTION

The print page-based service life values of the Consumables and Periodical Replacement Parts are guidelines. The life could become less than a half of the given numbers (printable pages) because there are many factors that decrease it; such as intermittent printing (repeating to print one or several copies for each print job), paper type (especially thick paper), paper size, paper orientation, print data (image or document), frequent power-on/off, and so on.

6.5.1 Consumables

Table 6-5. Information on Consumables

Product Name			Product Code	Life (Pages)	Service life indication	Remedy after Replacement	Remarks
Toner cartridge	Yellow	High capacity	0226	5,000*1	Replace Toner Y	–	☐ There are two types of toner cartridge: standard cartridge with a life of 2,000 pages, and a high-capacity cartridge with a life of 5,000 pages. K toner with a life of 2,000 pages is provided with the printer. It is not provided as a replacement. ☐ Toner cartridges include parts that take charge in developing process.
		Standard capacity	0230	2,000*1			
	Magenta	High capacity	0227	5,000*1	Replace Toner M		
		Standard capacity	0231	2,000*1			
	Cyan	High capacity	0228	5,000*1	Replace Toner C		
		Standard capacity	0232	2,000*1			
	Black	High capacity	0229	5,000*1	Replace Toner K		
Photoconductor unit			1107	40,000*2 10,000*3	Replace Photoconductor	☐ Waste toner collector ☐ Filter unit	A Waste toner collector and a Filter unit are packed together. Be sure to replace them all at once.
Fuser unit 120			3019	80,000	Replace Fuser	–	–
Fuser unit 220			3018	80,000			
Waste toner collector			0233	60,000*2 15,000*3	Replace Waste T Box	☐ Photoconductor unit ☐ Waste toner collector	A Filter unit is packed together. Be sure to replace them all at once.
Filter unit			–	15,000	–	☐ Photoconductor unit ☐ Waste toner collector	A Filter unit is packed together with a Photoconductor unit and a Waste toner collector, and is not supplied as a single item. Replace the Filter unit when replacing the Photoconductor unit and the Waste toner collector.

Note *1: Approximate number of printed pages derived by continuous printing on A4 papers with 5% print ratio.
The cartridge lifetime varies according to the paper size and type of printing (toner save mode etc.).

*2: B&W continuous

*3: Color continuous

6.5.2 Regular Replacement Parts

Table 6-6. Maintenance Information on Regular Replacement Parts

Product Name	Part Code	Life (Pages)	Service life indication	Part to be replaced at the same time	Remedy after Replacement	Remarks
Transfer Unit (TRANSFER UNIT, Assy., ASP)	1302590	☐ B/W/Continuous printing: 100,000 ☐ Color/Continuous printing: 68,300	Service Req E144	• Cleaning Tape • Cleaner Clutch • 2nd Transfer Clutch	☐ Execute “Reset TR Counter” in the maintenance menu to reset the life counter. ☐ Timing Adjustment	–
Cleaning Tape (MOUNTING PLATE, ANTI-STATIC; ASP)	1403709		None	• Transfer Unit • Cleaner Clutch • 2nd Transfer Clutch	Execute “Reset CT Counter” in the maintenance menu to reset the life counter.	Life of a Cleaning tape is same as the one of Transfer unit. Replace the Cleaning tape when replacing the Transfer unit. (When “Service ReqE144” is displayed.)
Cleaner Clutch (CLUTCH, CLEANER)	1293652	150,000 cycles	None	• Transfer Unit • Cleaning Tape • 2nd Transfer Clutch	☐ Execute “Reset CL Counter” in the maintenance menu to reset the life counter. ☐ Timing Adjustment	Life of a Cleaner clutch is same as the one of Transfer unit. Replace the Cleaner clutch when replacing the Transfer unit. (When “Service ReqE144” is displayed.)
2nd Transfer Clutch (CLUTCH, 2ND TRANSFER)	1294637	150,000 cycles	None	• Transfer Unit • Cleaning Tape • Cleaner Clutch	☐ Execute “Reset CL Counter” in the maintenance menu to reset the life counter. ☐ Timing Adjustment	Life of a 2nd transfer clutch is same as the one of Transfer unit. Replace the 2nd transfer clutch when replacing the Transfer unit. (When “Service ReqE144” is displayed.)
COVER ASSY., FU (COVER Assy., FU; ASP)	1302589	300,000	None	–	None	☐ Actually, a paper eject roller of the assy is consumed. ☐ The numeric value of life is considered as a guide. Always clean the roller while at maintenance work. In case of paper jam at the roller, check the total printed pages and the wear conditions of the roller to determine the timing to replace the unit as the timing is not displayed on the LCD panel.
Pickup Roller (ROLLER ASSY, PICK UP/Std. Cassette)	1293802	200,000	None	–	None	The numeric value of life is considered as a guide. Always clean the roller while at maintenance work. In case of paper jam at the roller, check the total printed pages and the wear conditions of the roller to determine the timing to replace the unit as the timing is not displayed on the LCD panel.
Pickup Roller (ROLLER ASSY, PICK UP/Opt. Cassette)	1293802	200,000	None	–	None	

6.6 Gluing/Lubrication

This section explains the parts that require gluing and lubrication when performing the service work, or replacing the unit or parts.

6.6.1 Gluing

There is no part that needs gluing in the printer.

6.6.2 Lubrication

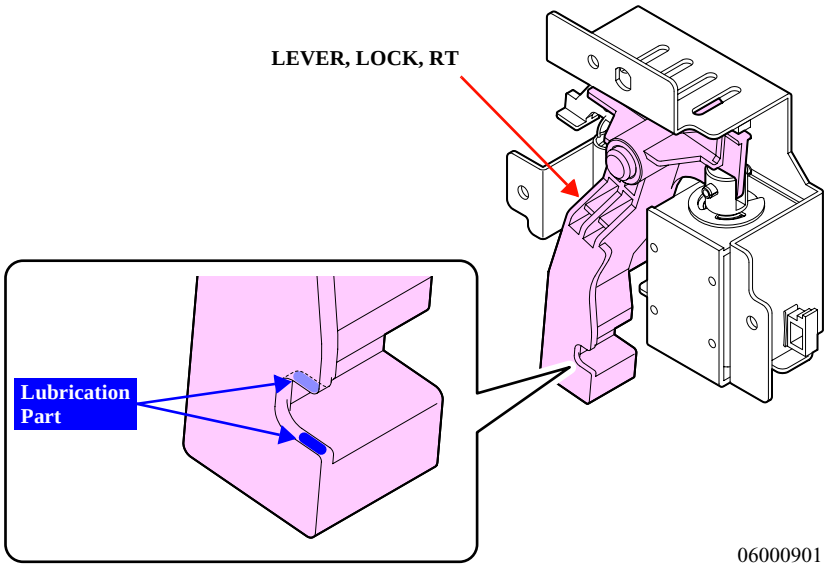
The part that requires lubrication in the printer is shown below.

☐ List of grease required

Type	Name	Parts Number
Grease	G52	1049527
Grease	G73	1407972
Grease	G66	1298593
Grease	G74	1409257

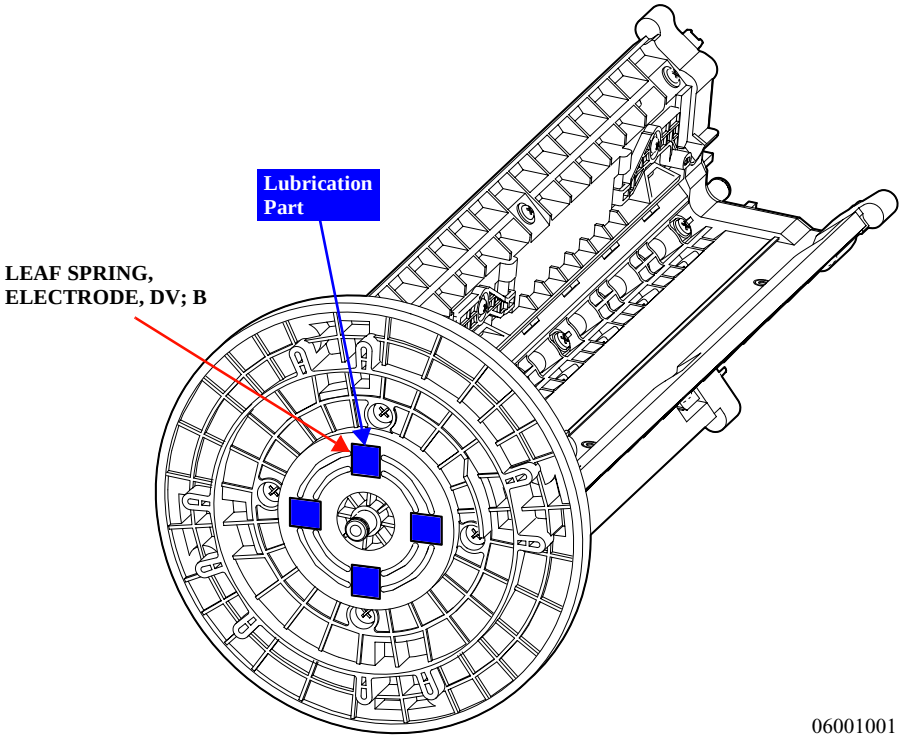
[Lubrication 1]

Parts Name	LOCK ASSY., RT
Lubrication Part	Lock part of the LEVER, LOCK, RT
Types of oil applied	Parts Name: GREASE G52 Parts Number: 1049527
Amount of lubricate	ϕ1 x 2 mm
Method	Lubricate it with an injection syringe.



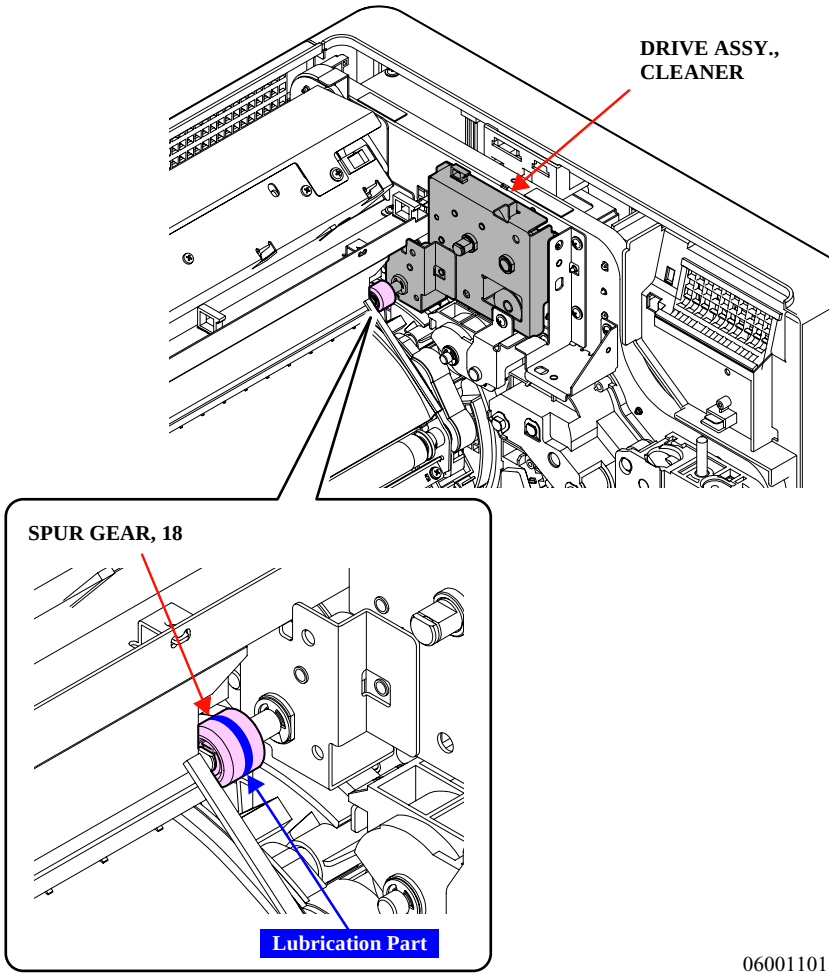
[Lubrication 2]

Parts Name	FRAME ASSY., RT
Lubrication Part	LEAF SPRING, ELECTRODE, DV; B (x 4)
Types of oil applied	Parts Name: GREASE G73 Parts Number: 1407972
Amount of lubricate	ϕ1 x 3 mm: For each part
Method	Use an injection syringe to lubricate and spread the oil all over the LEAF SPRING, ELECTRODE, DV; B.



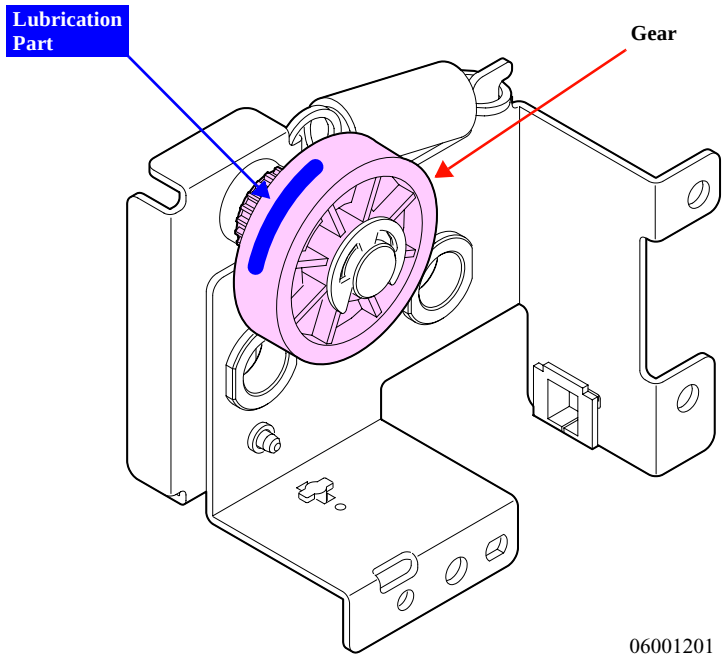
[Lubrication 3]

Parts Name	DRIVE ASSY., CLEANER
Lubrication Part	Teeth of SPUR GEAR, 18
Types of oil applied	Parts Name: GREASE G66 Parts Number: 1298593
Amount of lubricate	ϕ1 x the circumference of the gear
Method	Lubricate it with an injection syringe.



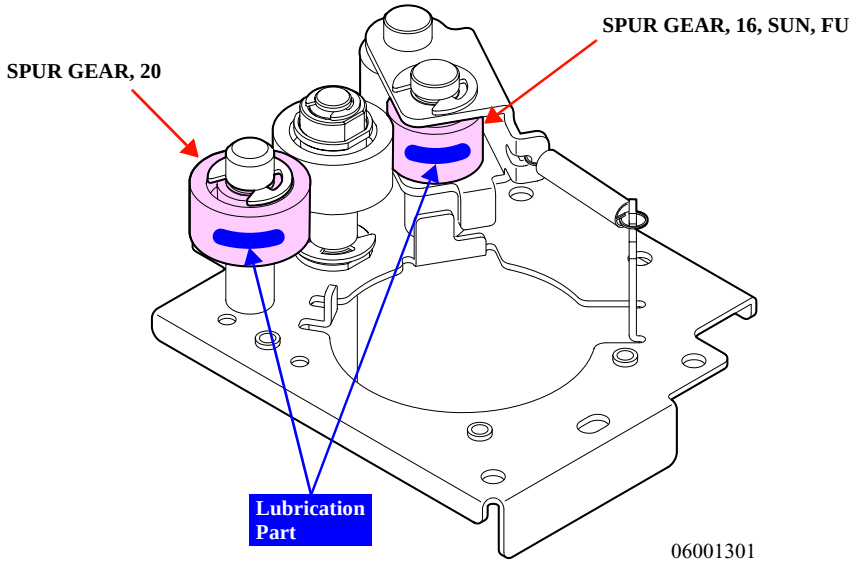
[Lubrication 4]

Parts Name	PULLEY ASSY., DRIVE
Lubrication Part	Teeth of the gear
Types of oil applied	Parts Name: GREASE G52 Parts Number: 1049527
Amount of lubricate	ϕ1 x 20 mm
Method	Lubricate it with an injection syringe.



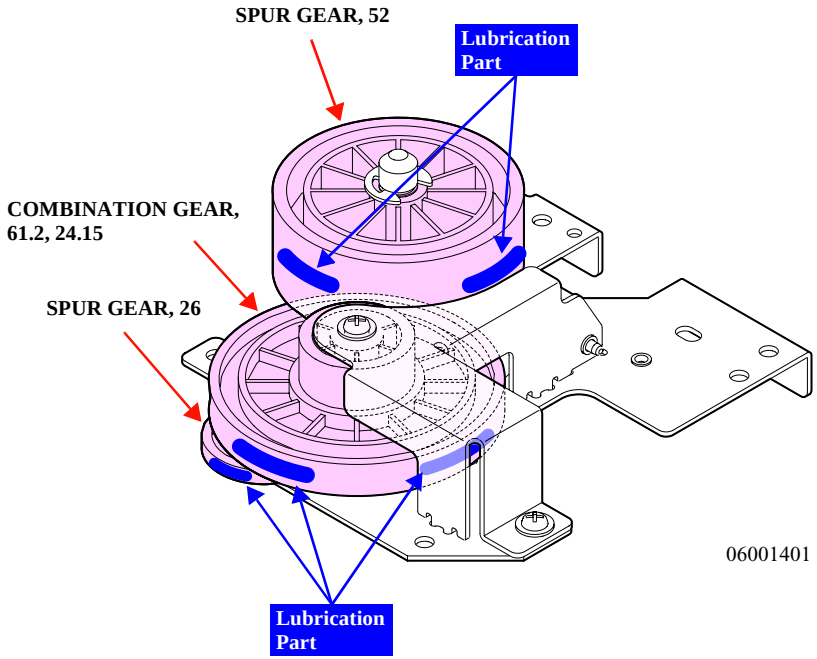
[Lubrication 5]

Parts Name	DRIVE ASSY., FU
Lubrication Part	Teeth of SPUR GEAR, 16, SUN, FU and SPUR GEAR, 20
Types of oil applied	Parts Name: GREASE G52 Parts Number: 1049527
Amount of lubricate	ϕ1 x 10 mm
Method	Lubricate it with an injection syringe.



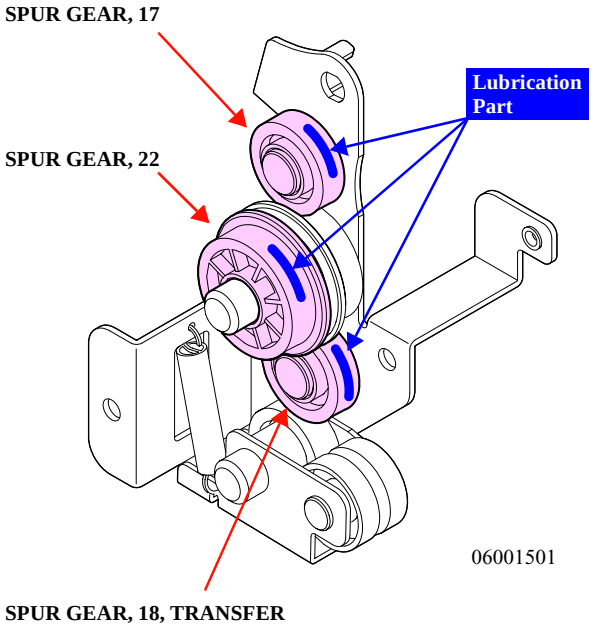
[Lubrication 6]

Parts Name	DRIVE ASSY., MAIN
Lubrication Part	Teeth of [SPUR GEAR, 26], [SPUR GEAR, 52] and [COMBINATION GEAR, 61.2, 24.15]
Types of oil applied	Parts Name: GREASE G66 Parts Number: 1298593
Amount of lubricate	ϕ1 x 20 mm
Method	Lubricate it with an injection syringe.



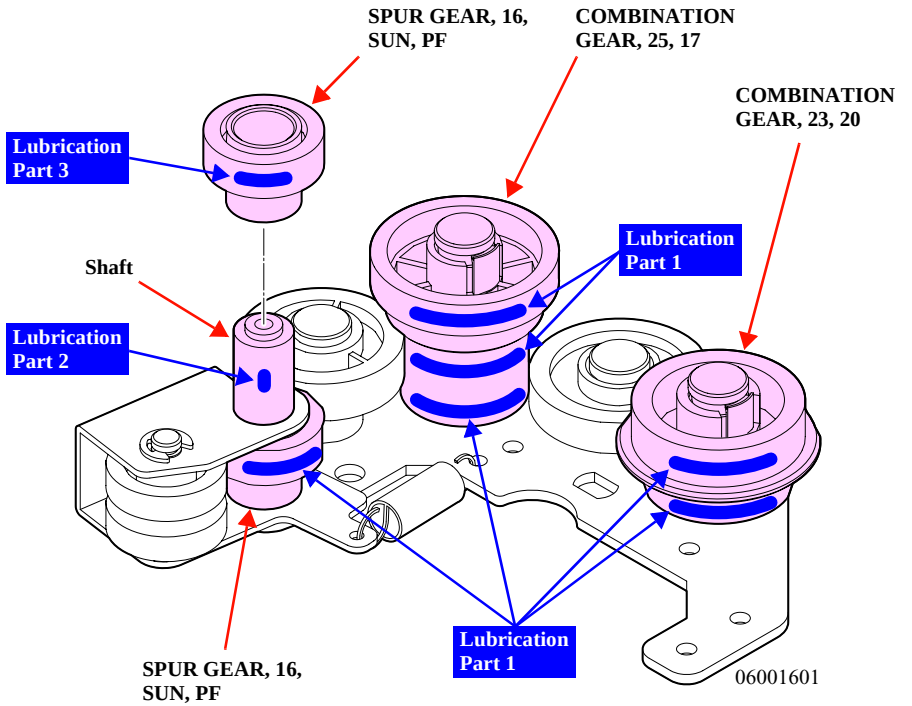
[Lubrication 7]

Parts Name	DRIVE ASSY., MPT
Lubrication Part	Teeth of [SPUR GEAR, 17], [SPUR GEAR, 22] and [SPUR GEAR, 18, TRANSFER]
Types of oil applied	Parts Name: GREASE G66 Parts Number: 1298593
Amount of lubricate	ϕ1 x 20 mm
Method	Lubricate it with an injection syringe.



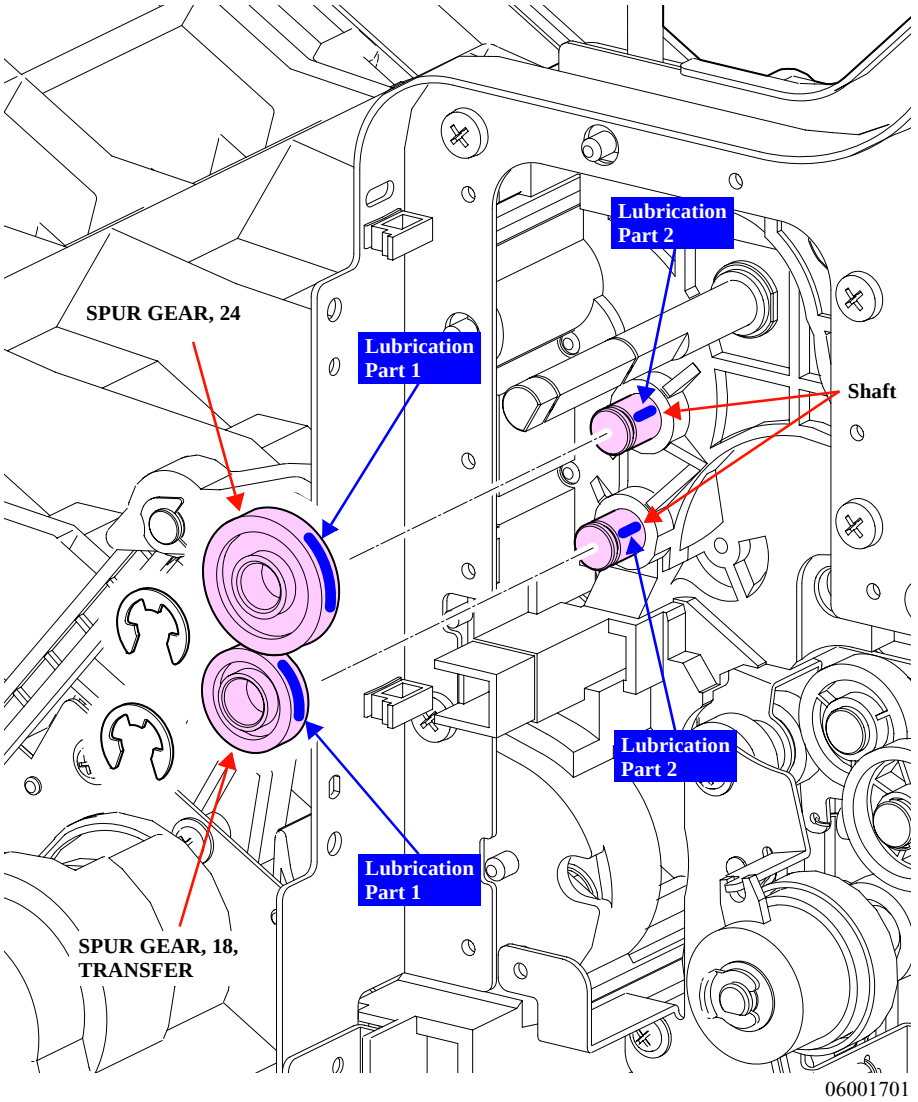
[Lubrication 8]

Parts Name	DRIVE ASSY., MPC
Lubrication Part	1. Teeth of [SPUR GEAR, 16, SUN, PF], [COMBINATION GEAR, 25, 17] and [COMBINATION GEAR, 23, 20] 2. Teeth of SPUR GEAR, 16, SUN, PF 3. Shaft of SPUR GEAR, 16, SUN, PF
Types of oil applied	Parts Name: GREASE G66 Parts Number: 1298593
Amount of lubricate	1. ϕ1 x 20 mm 2. ϕ1 x 10 mm 3. ϕ1 x 2 mm
Method	Lubricate it with an injection syringe.
Caution	When lubricating COMBINATION GEAR, 25, 17, make sure to lubricate on the part where the teeth is engaged with other gears.



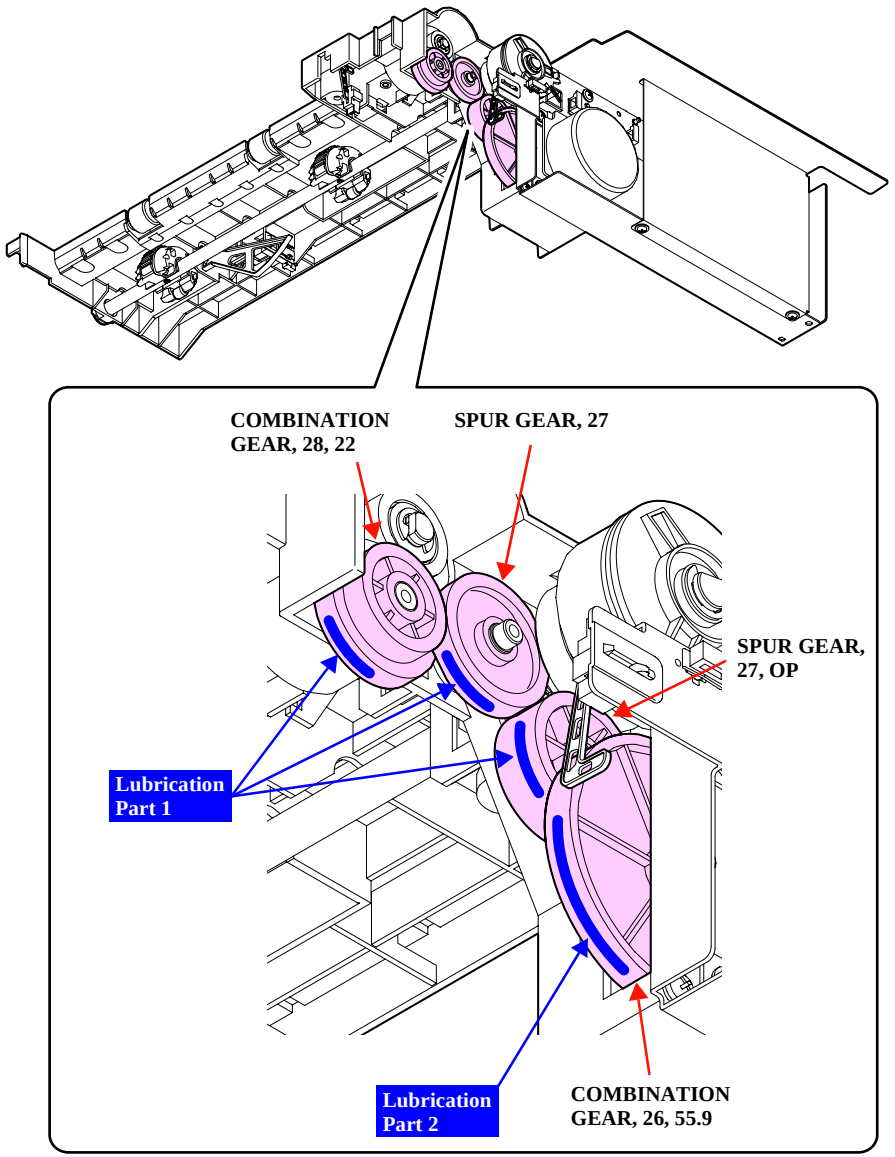
[Lubrication 9]

Parts Name	SPUR GEAR, 24 and SPUR GEAR, 18, TRANSFER
Lubrication Part	1. Teeth of SPUR GEAR, 24 and SPUR GEAR, 18, TRANSFER 2. Shaft of SPUR GEAR, 24 and SPUR GEAR, 18, TRANSFER
Types of oil applied	Parts Name: GREASE G66 Parts Number: 1298593
Amount of lubricate	1. ϕ1 x 20 mm 2. ϕ1 x 2 mm
Method	Lubricate it with an injection syringe.



[Lubrication 10]

Parts Name	GUIDE, FEED, OP ASSY.
Lubrication Part	1. Teeth of [COMBINATION GEAR, 28, 22], [SPUR GEAR, 27] and [SPUR GEAR, 27, OP] 2. Teeth of COMBINATION GEAR, 26, 55.9
Types of oil applied	Parts Name: GREASE G66 Parts Number: 1298593
Amount of lubricate	1. ϕ1 x 20 mm 2. ϕ1 x 40 mm
Method	After lubricating using an injection syringe, rotate the ROLLER, PAPER FEED, OP to spread the oil evenly and check if the shaft rotates smoothly.
Caution	When lubricating SPUR GEAR, 27, OP, make sure to lubricate on the part where the teeth is engaged with other gears.



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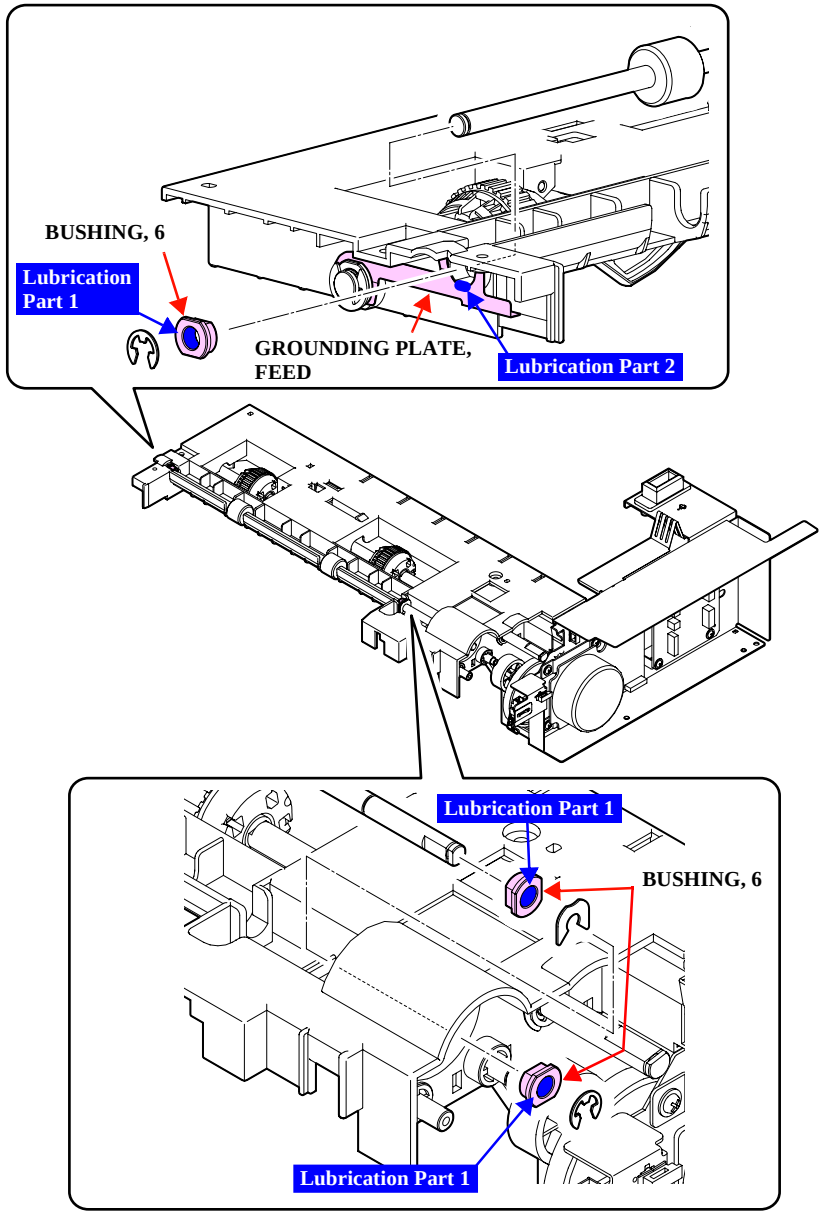
[Lubrication 11]

Parts Name	GUIDE, FEED, OP ASSY.
Lubrication Part	1. All over the inner side of BUSHING, 6 2. Contact point between BUSHING, 6 and GROUNDING PLATE, FEED
Types of oil applied	Parts Name: GREASE G73 Parts Number: 1407972
Amount of lubricate	ϕ1 x 2 mm
Method	After lubricating using an injection syringe, rotate the ROLLER, PAPER FEED, OP to spread the oil evenly and check if the shaft rotates smoothly.



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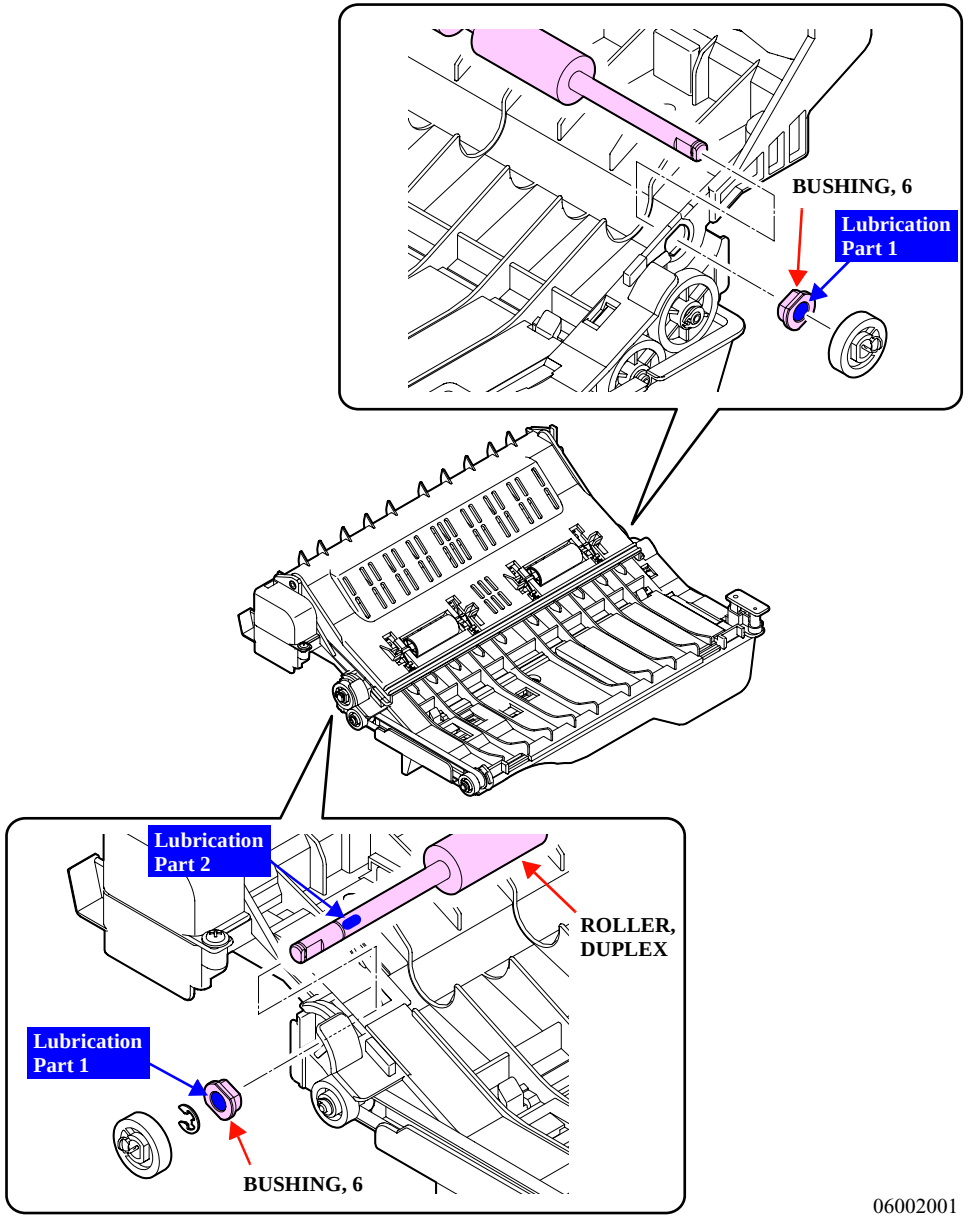
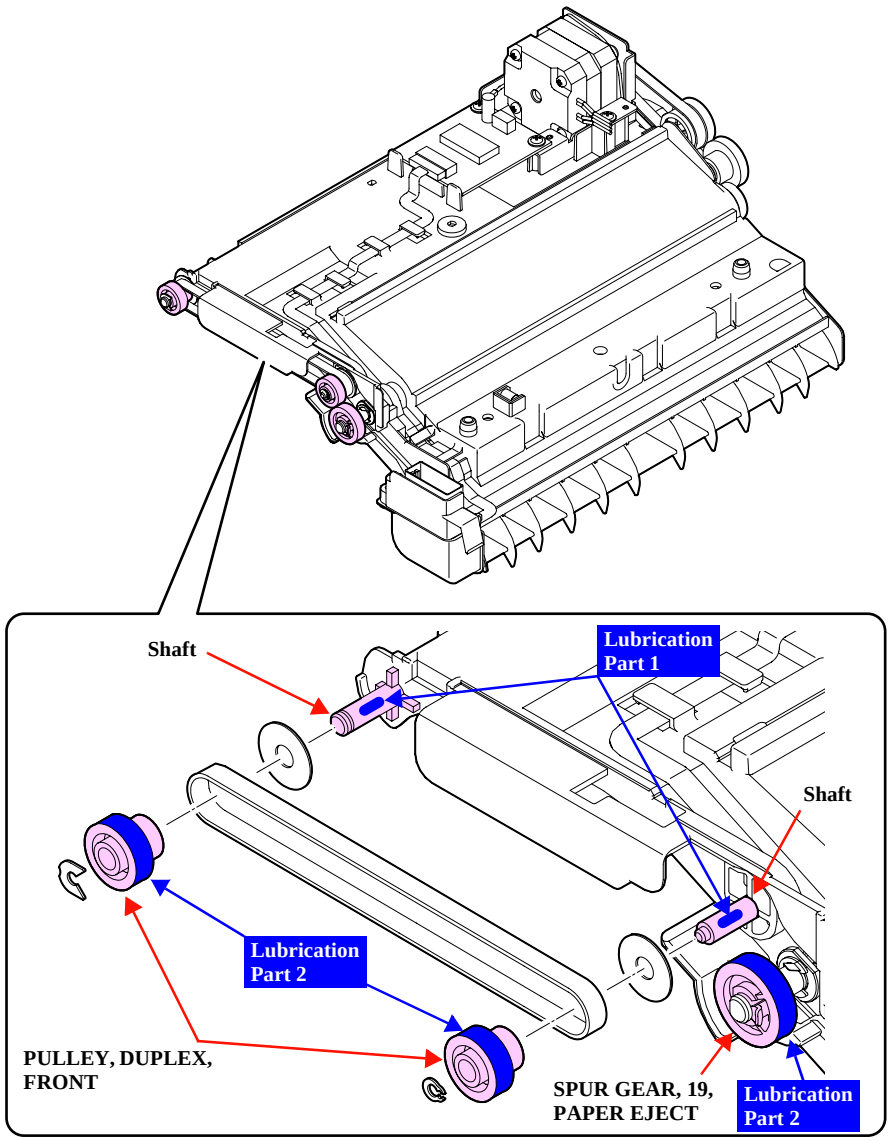
[Lubrication 12]

Parts Name	Duplex Unit
Lubrication Part	1. All over the inner side of BUSHING, 6 2. BUSHING, 6 attaching portion on the ROLLER, DUPLEX
Types of oil applied	Parts Name: GREASE G73 Parts Number: 1407972
Amount of lubricate	ϕ1 x 2 mm
Method	Lubricate it with an injection syringe.



[Lubrication 13]

Parts Name	Duplex Unit
Lubrication Part	1. Shaft of the PULLEY, DUPLEX, FRONT 2. Teeth of SPUR GEAR, 19, PAPER EJECT and PULLEY, DUPLEX, FRONT
Types of oil applied	1. Parts Name: GREASE G66 Parts Number: 1298593 2. Parts Name: GREASE G74 Parts Number: 1409257
Amount of lubricate	1. ϕ1 x 3 mm 2. All over the teeth
Method	1. Lubricate it with an injection syringe. 2. Lubricate it with a brush.
Caution	Do not allow the oil to attach to non-designated part.



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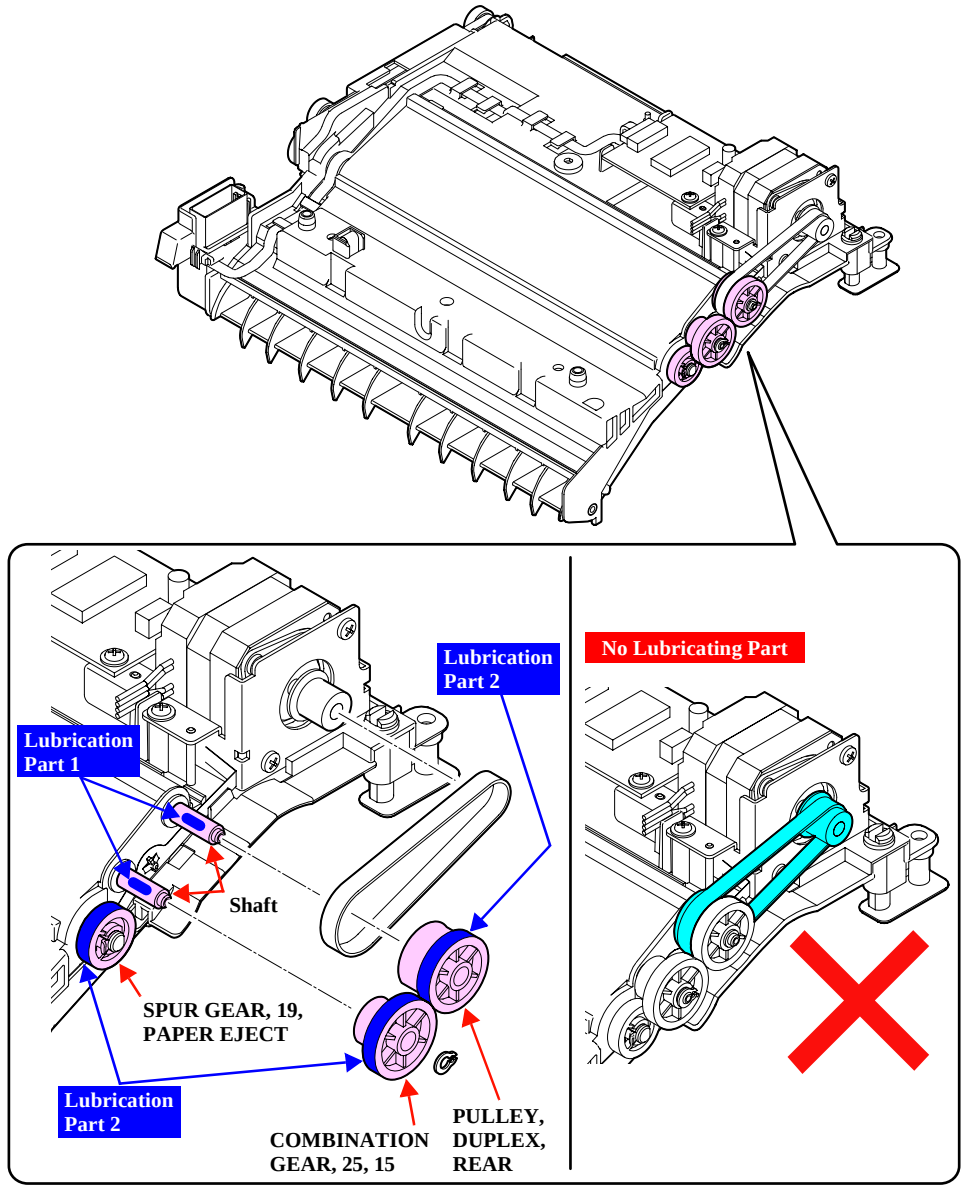
[Lubrication 14]

Parts Name	Duplex Unit
Lubrication Part	1. Shaft of COMBINATION GEAR, 25, 15 and PULLEY, DUPLEX, REAR 2. Teeth of [COMBINATION GEAR, 25, 15], [SPUR GEAR, 19, PAPER EJECT] and [PULLEY, DUPLEX, REAR]
Types of oil applied	1. Parts Name: GREASE G66 Parts Number: 1298593 2. Parts Name: GREASE G74 Parts Number: 1409257
Amount of lubricate	1. ϕ1 x 2 mm 2. All over the teeth
Method	1. Lubricate it with an injection syringe. 2. Lubricate it with a brush.
Caution	Do not allow the oil to attach to non-designated part.



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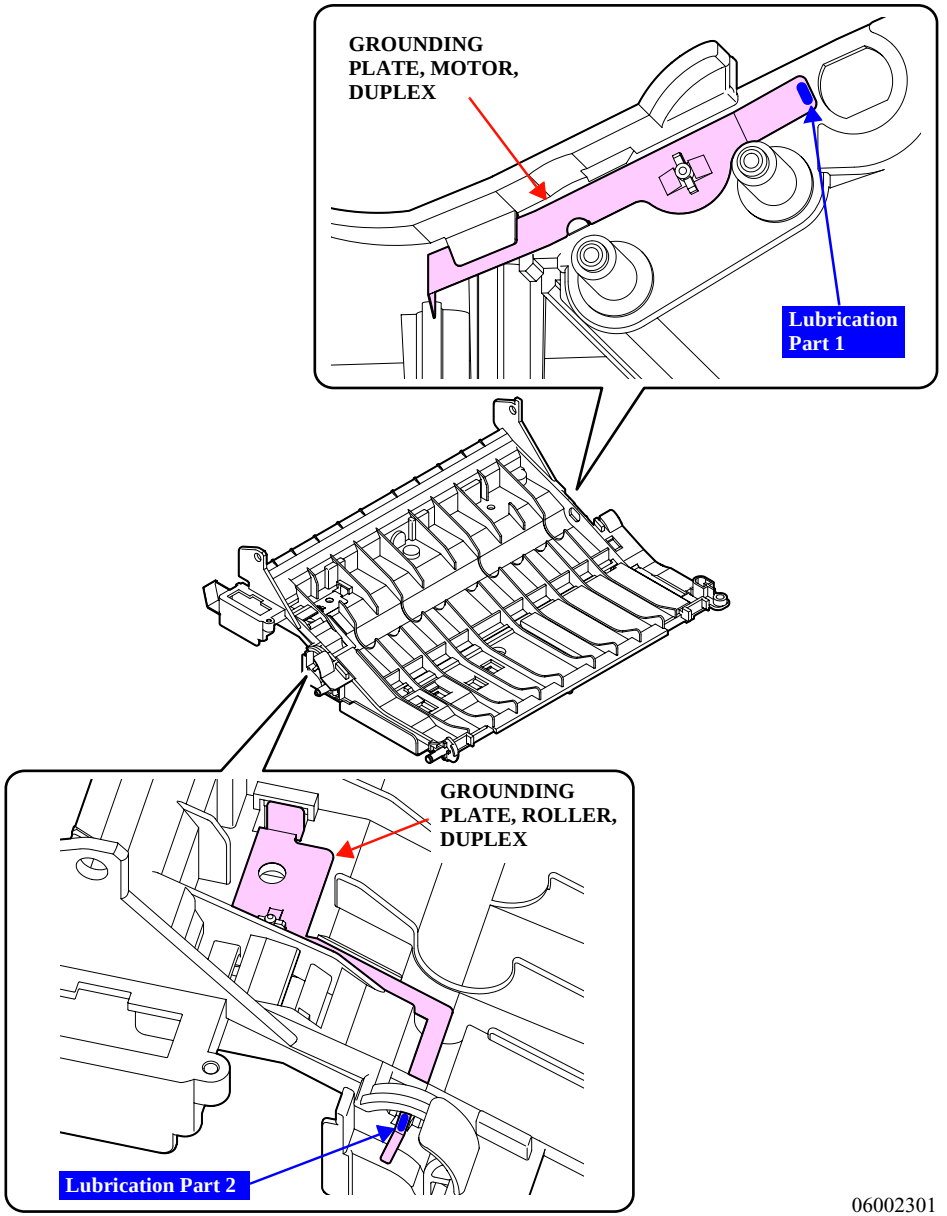
[Lubrication 15]

Parts Name	Duplex Unit
Lubrication Part	1. Contact point between the GROUNDING PLATE, MOTOR, DUPLEX and BUSHING, 6 2. Contact point between the GROUNDING PLATE, ROLLER, DUPLEX and BUSHING, 6
Types of oil applied	Parts Name: GREASE G73 Parts Number: 1407972
Amount of lubricate	ϕ1 x 2 mm
Method	Lubricate it with an injection syringe or a cotton-tipped swab.



CHAPTER

7

APPENDIX

7.1 Connector Summary

7.1.1 Connectors and Plug and Jack Layout

This section shows the connector locations of the EPSON AcuLaser C2600/2600.

MAIN UNIT

P/J/CN No.	Pin Qty.	Connection
101	7	MAIN-B Board and HARNESS, MAIN, SIGNAL
102	4	MAIN-B Board and HARNESS, MAIN, PS
105	8	MAIN-B Board and HARNESS, MAIN
107	13	MAIN-B Board and HARNESS, MAIN
110	10	MAIN-B Board and HARNESS, MAIN
111	8	MAIN-B Board and HARNESS, MAIN
112	12	MAIN-B Board and HARNESS, PAPER LOAD
113	12	Not used
114	11	MAIN-B Board and HARNESS, PAPER LOAD
115	12	MAIN-B Board and HARNESS, PAPER LOAD
116	14	MAIN-B Board and HARNESS, PAPER LOAD
117	13	MAIN-B Board and HARNESS, PAPER LOAD
119	2	MAIN-B Board and HARNESS, MAIN
121	14	MAIN-B Board and HARNESS, MAIN, SIGNAL
123	10	MAIN-B Board and HARNESS, MAIN
126	3	Not used
127	9	MAIN-B Board and HARNESS, PAPER LOAD
130	8	MAIN-B Board and FRAM Board
501	4	HARNESS, MAIN, PS and MAIN Board
502	7	HARNESS, MAIN, SIGNAL and MAIN Board
603	14	HARNESS, MAIN, SIGNAL and MAIN Board

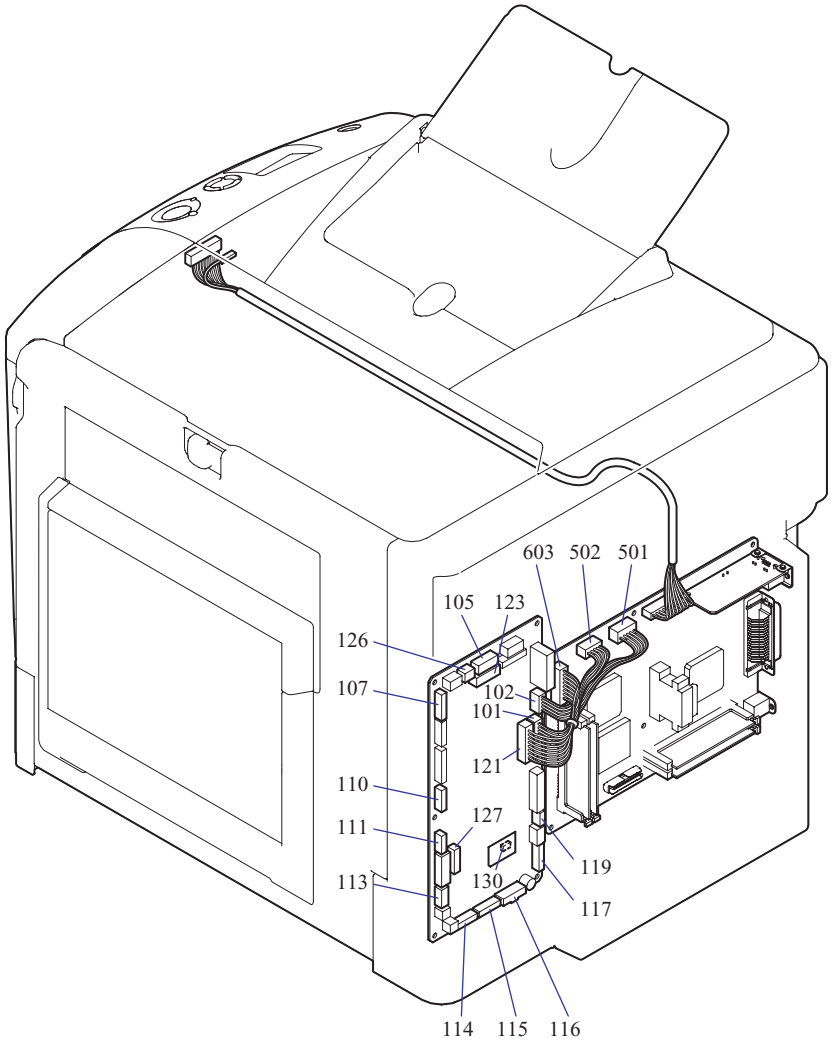


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Figure 7-1. Main Unit P/J Layout Diagram (1)

P/J/CN No.	Pin Qty.	Connection
21	2	HARNESS, MAIN and 24V Interlock SW T
22	2	HARNESS, MAIN and 24V Interlock SW F
23	2	HARNESS, MAIN and 24V Interlock SW R
24 (1)	3	HARNESS ASSY., I/L and 5V Interlock SW
24 (2)	3	MAIN-B Board and HARNESS, MAIN
208X	3	HARNESS, MAIN and HARNESS ASSY., PAPER EJECT
208Y	3	HARNESS, MAIN and HARNESS ASSY., PAPER EJECT
221	3	HARNESS, MAIN and Waste Toner Collector Detection Switch
223X	3	HARNESS, MAIN and HARNESS, RELAY, WASTE TONER
223Y	3	HARNESS, MAIN and HARNESS, RELAY, WASTE TONER
231	3	HARNESS, PAPER LOAD and Standard Paper Sensor
232X	3	HARNESS, PAPER LOAD and HARNESS, PE
232Y	3	HARNESS, PAPER LOAD and HARNESS, PE
233	3	HARNESS, PAPER LOAD and Front Gate Paper Sensor
234	3	HARNESS, PAPER LOAD and Paper Width Sensor
239	4	HARNESS, PAPER LOAD and Temperature and Humidity Sensor
240X	12	HARNESS, PAPER LOAD and HARNESS, DUPLEX, RELAY
240Y	12	HARNESS, PAPER LOAD and HARNESS, DUPLEX, RELAY
304	3	HARNESS, PE and MP Tray Paper Sensor
306	3	HARNESS ASSY., PAPER EJECT and Pre-Ejection Sensor
310	3	HARNESS, MAIN and Waste Tone Collector Full State Sensor
326	2	HARNESS, PAPER LOAD and Standard Cassette Switch
421X	12	HARNESS, DUPLEX, RELAY and Drawer Connector

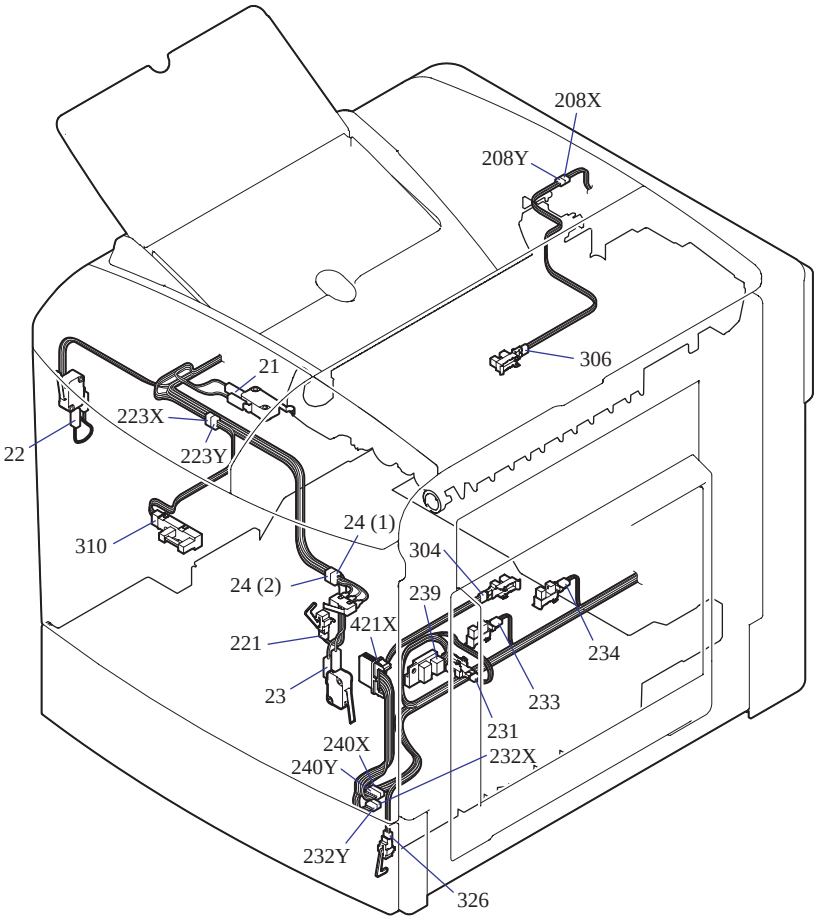

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Figure 7-2. Main Unit P/J Layout Diagram (2)

P/J/CN No.	Pin Qty.	Connection
124	2	MAIN-B Board and MP Tray Pickup Clutch
125	2	MAIN-B Board and Lift Plate Clutch
215	8	HARNESS, MAIN and Photoconductor Drive Motor
216	8	HARNESS, MAIN and Main Drive Motor
217X	2	HARNESS, MAIN and Relay connector (2nd Transfer Roller Clutch)
217Y	2	HARNESS, MAIN and 2nd Transfer Roller Clutch
225X	3	HARNESS, PAPER LOAD and HARNESS, ERASER
225Y	3	HARNESS, PAPER LOAD and HARNESS, ERASER
226X	2	HARNESS, PAPER LOAD and Relay connector (Gate Clutch)
226Y	2	HARNESS, PAPER LOAD and Gate Clutch
227X	2	HARNESS, PAPER LOAD and Relay connector (Feed Clutch)
227Y	2	HARNESS, PAPER LOAD and Standard Feed Clutch
228X	2	HARNESS, PAPER LOAD and Relay connector (Standard Pickup Clutch)
228Y	2	HARNESS, PAPER LOAD and Standard Pickup Clutch
309	2	HARNESS, ERASER and Eraser

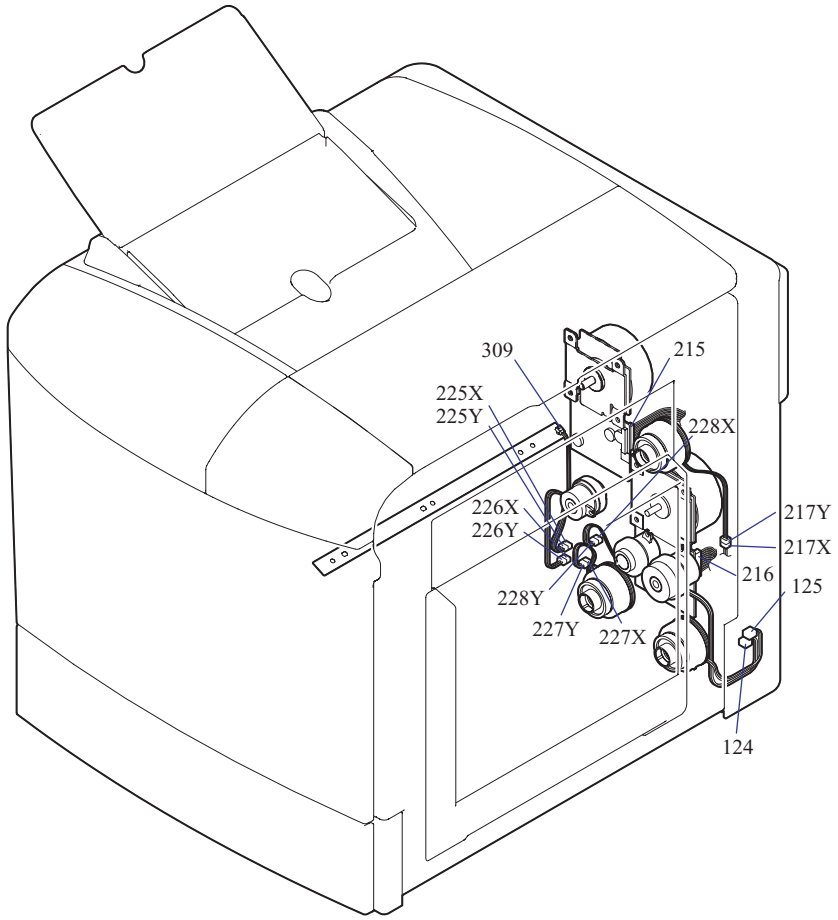

Figure 7-3. Main Unit P/J Layout Diagram (3)

P/J/CN No.	Pin Qty.	Connection
1	12	HARNESS, PAPER LOAD and HVPS Board
104	6	MAIN-B Board and HARNESS, MAIN
106	4	MAIN-B Board and Fuser Fan
122	14	MAIN-B Board and HARNESS, MAIN
210	6	HARNESS, MAIN and DRV Board
211	6	DRV Board and HARNESS, DR, DV
212	6	DRV Board and HARNESS, DR, RT
213	2	DRV Board and Rotary Lock Solenoid
214	2	DRV Board and Cleaning Blade Clutch
235X	3	HARNESS, PAPER LOAD and HARNESS, DETECTION
235Y	3	HARNESS, PAPER LOAD and HARNESS, DETECTION
241X	8	HARNESS, MAIN and HARNESS, PATCH
241Y	8	HARNESS, MAIN and HARNESS, PATCH
251	14	HARNESS, MAIN and DRV Board
302	6	HARNESS, DR, DV and Development Drive Motor
303	6	HARNESS, DR, RT and Rotary Drive Motor
305	3	HARNESS, DETECTION and Post-Transferring Sensor

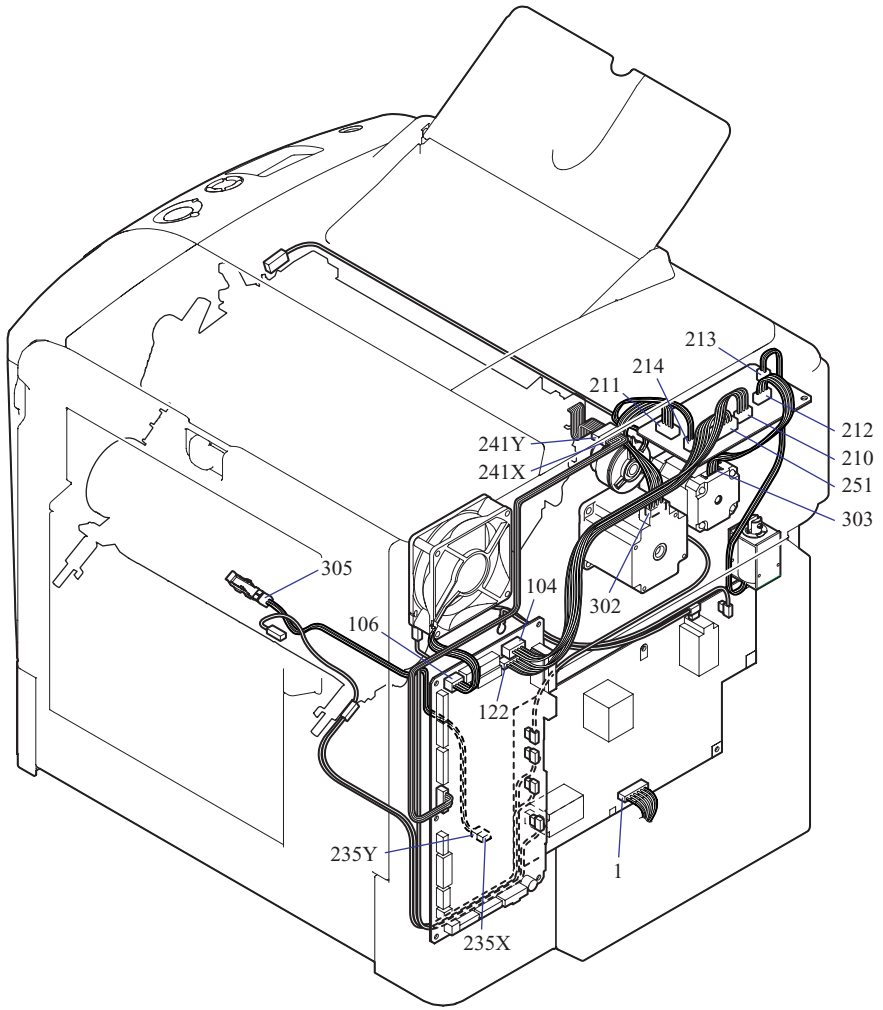

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Figure 7-4. Main Unit P/J Layout Diagram (4)

P/J/CN No.	Pin Qty.	Connection
1	1	HARNESS, INRET and Power Switch
2	1	HARNESS, INRET and Power Switch
3	1	Power Switch and HARNESS, AC, 100 (200)
4	1	Power Switch and HARNESS, AC, 100 (200)
10	2	HARNESS, AC, 100 (200) and LVPS Board
11	4	LVPS Board and HARNESS, AC, FU
12	5	LVPS Board and HARNESS, MAIN
13	8	LVPS Board and HARNESS, MAIN
103	8	HARNESS, MAIN and MAIN-B Board
108	12	MAIN-B Board and HARNESS, MAIN
109	17	HARNESS, MAIN and MAIN-B Board
118	5	MAIN-B Board and HARNESS, LSU
120	15	MAIN-B Board and HARNESS, LSU
203	15	HARNESS, LSU and Laser Scanner Unit
204	5	HARNESS, LSU and Scanner Motor
206X	6	HARNESS, MAIN and HARNESS, ELECTRODE, PC
206Y	6	HARNESS, ELECTRODE, PC and ELECTRODE Assy.,PC (Electrode and Detector, PC)
207X	3	HARNESS, MAIN and HARNESS, HP
207Y	3	HARNESS, MAIN and HARNESS, HP
209	7	HARNESS, MAIN and R/W Module
218X	4	HARNESS, MAIN and Relay connector (Power Supply Fan)
218Y	4	HARNESS, MAIN and Power Supply Fan
220X	3	HARNESS, MAIN and Relay connector (Toner Fan)
220Y	3	HARNESS, MAIN and Toner Fan
224X	3	HARNESS, PAPER LOAD and Relay connector (Ozone Fan)
224Y	3	HARNESS, PAPER LOAD and Ozone Fan
301	3	HARNESS, ELECTRODE, PC and Photoconductor Waste Toner Full State Sensor (Detector, PC)
311	3	HARNESS, HPand Rotary Home Position Sensor
400	27	HARNESS, PAPER LOAD and Drawer Connector
431	4	HARNESS, AC, FU and Drawer Connector

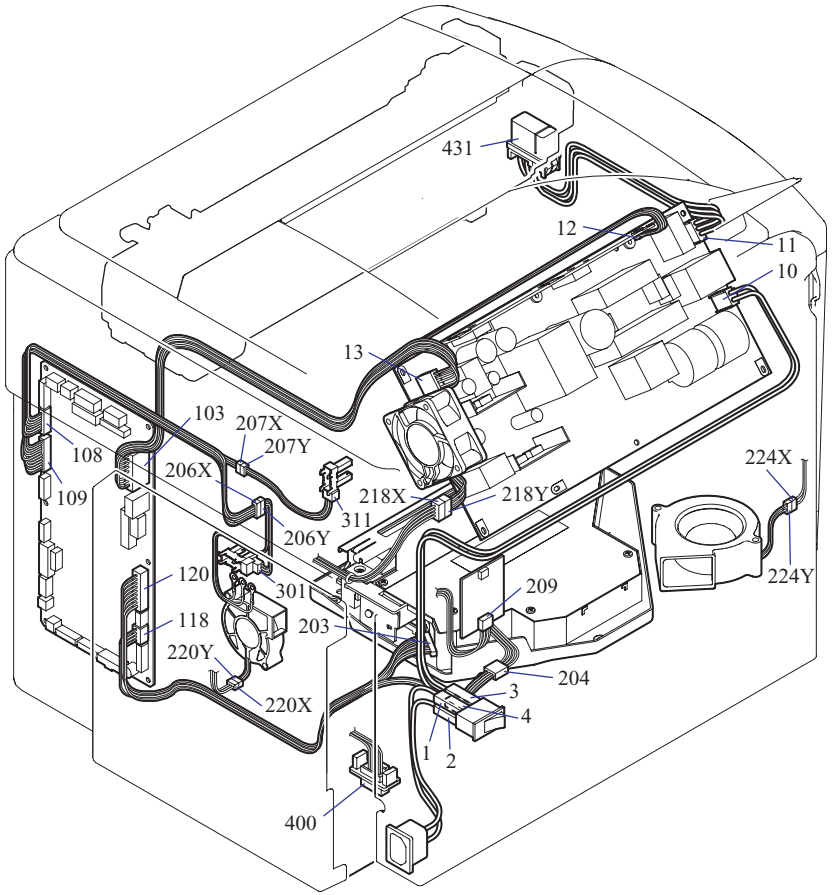


Figure 7-5. Main Unit P/J Layout Diagram (5)

DUPLEX UNIT

P/J/CN No.	Pin Qty.	Connection
421Y	12	Drawer Connector and HARNESS, DUPLEX
422	12	HARNESS, DUPLEX and DRV-B Board
423	4	DRV-B Board and Duplex Motor

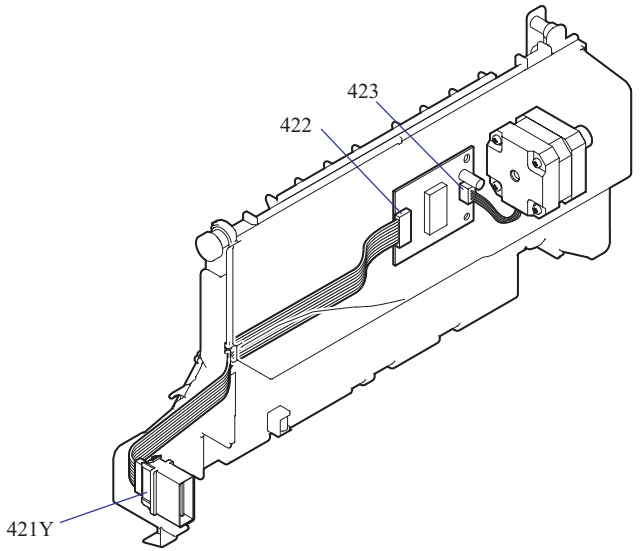


Figure 7-6. Duplex Unit P/J Layout Diagram

OPT. FEEDER

P/J/CN No.	Pin Qty.	Connection
400	27	DRAWER CONNECTOR and HARNESS, CASSETTE
401	8	HARNESS, CASSETTE and SUB Board
403	6	SUB Board and HARNESS, CASSETTE, MOTOR
404	7	SUB Board and HARNESS, CASSETTE, SENSOR
405	2	SUB Board and HARNESS, CASSETTE, SENSOR
406	2	SUB Board and HARNESS, CASSETTE, SENSOR
407	6	HARNESS, CASSETTE and SUB Board
411	3	HARNESS, CASSETTE, SENSOR and Opt. Feeder Paper Sensor
412	2	HARNESS, CASSETTE, SENSOR and Opt. Feeder Cover Switch
413	2	HARNESS, CASSETTE, SENSOR and Opt. Feeder Cassette Switch
416	6	HARNESS, CASSETTE, MOTOR and Opt. Feeder Motor
417X	2	HARNESS, CASSETTE, SENSOR and Relay connector (Opt. Feeder Pickup Clutch)
417Y	2	HARNESS, CASSETTE, SENSOR and Opt. Feeder Pickup Clutch
418X	2	HARNESS, CASSETTE, SENSOR and Relay connector (Opt. Feeder Feed Clutch)
418Y	2	HARNESS, CASSETTE, SENSOR and Opt. Feeder Feed Clutch

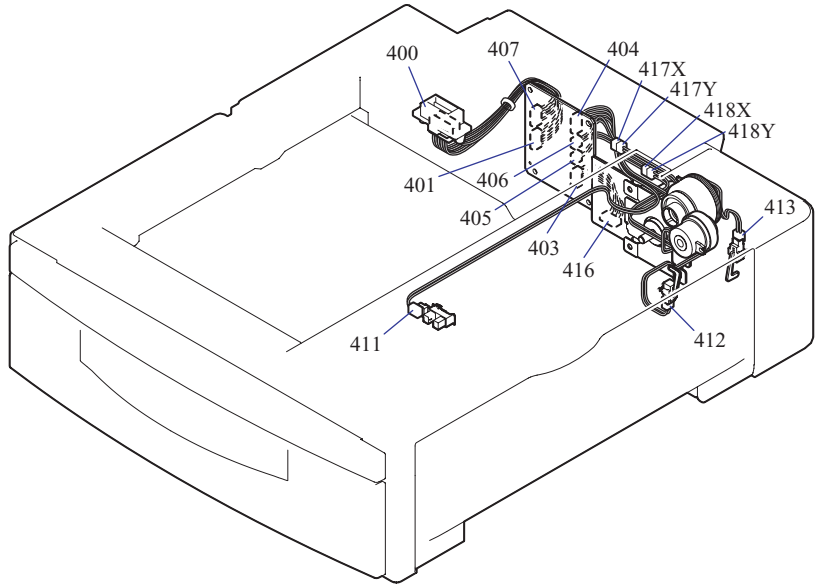


Figure 7-7. Opt. Feeder P/J Layout Diagram

7.2 Wiring Connection Diagrams

☐ Graphical symbols used in the overall wiring connection diagrams.

The table below shows how to interpret the Overall Wiring Connection Diagrams.

Table 7-1. List of the Marks

Graphical Symbol	Description
AC LIVE	Indicates a signal name.
AC INLET	Indicates a part name as an After Service Part.
Laser Drive Board	Indicates a part name that is mounted on the After Service part.
HARNESS,INLET	Indicates a harness.
⚠Service Req E091	Indicates a error message displayed on the LCD panel.
wht red wht red	Shows a color of the connector. The color names are abbreviated as shown below. • wht: White • red: Red • blk: Black • gry: Gray • plo: Pale Orange • blu: Blue • yel: Yellow

Table 7-1. List of the Marks

Graphical Symbol	Description
D10	Indicates that the part enclosed with broken lines is shown in detail on another diagram. The figure left shows, for example, that Diagram 10 includes more information on the part enclosed with a broken lines.
D6	Indicates that the part to the right of the arrow is omitted on another diagram. The figure left, for example, shows that the part indicated by the arrow is omitted in Diagram 6.
CN120 J120 1	Indicates that the connector has more than one line.

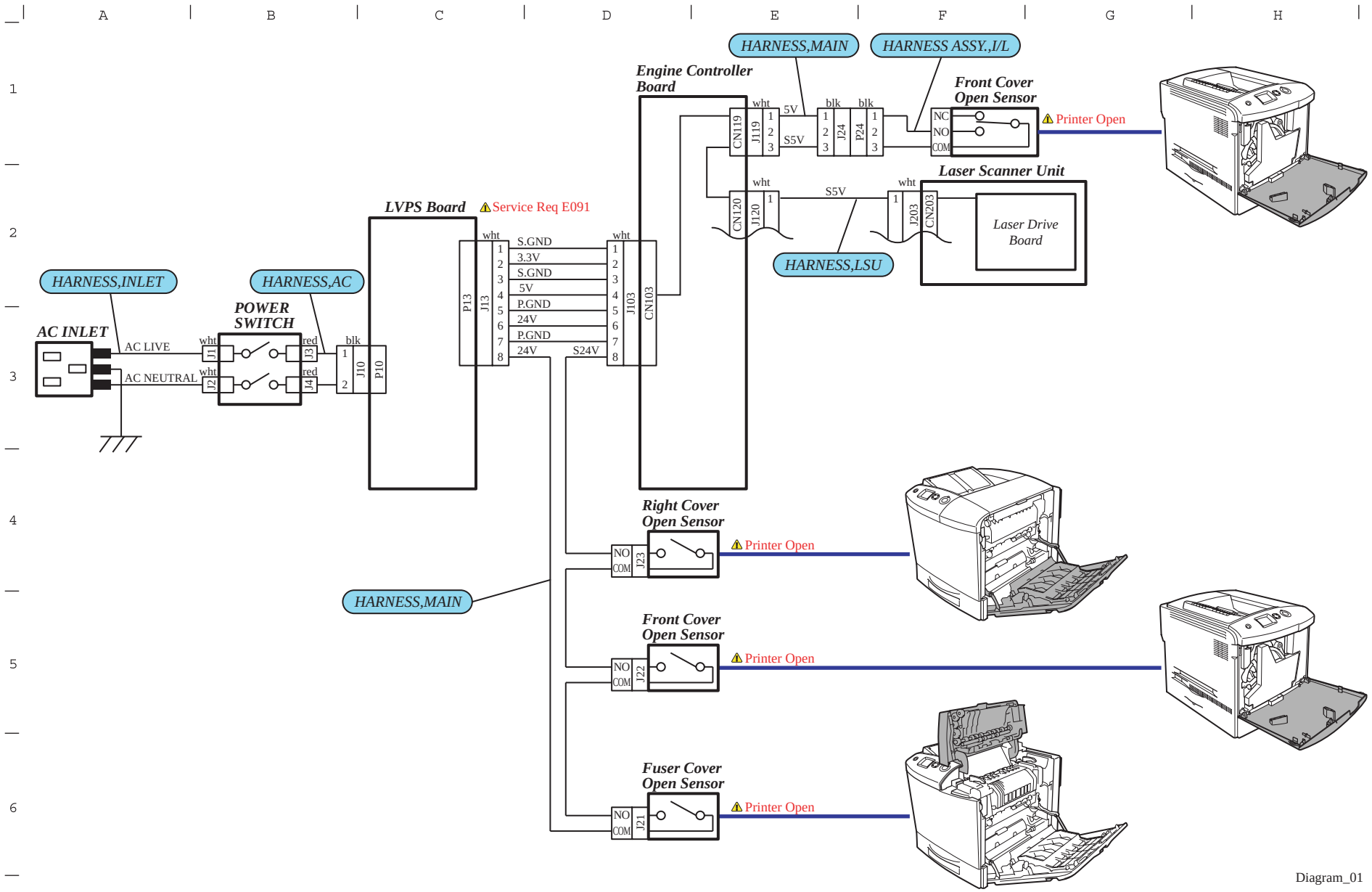


Figure 7-8. Diagram 1

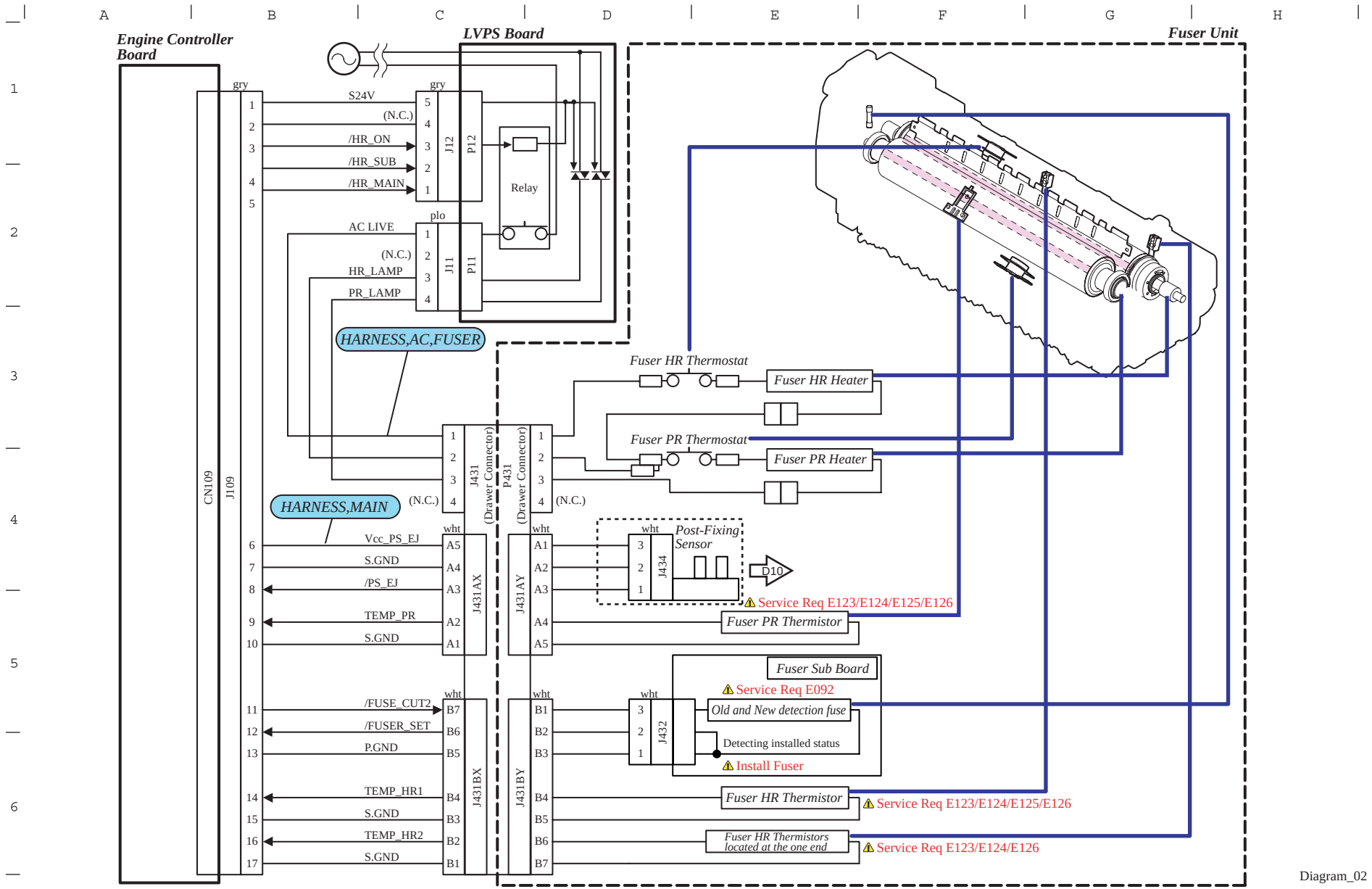


Figure 7-9. Diagram 2

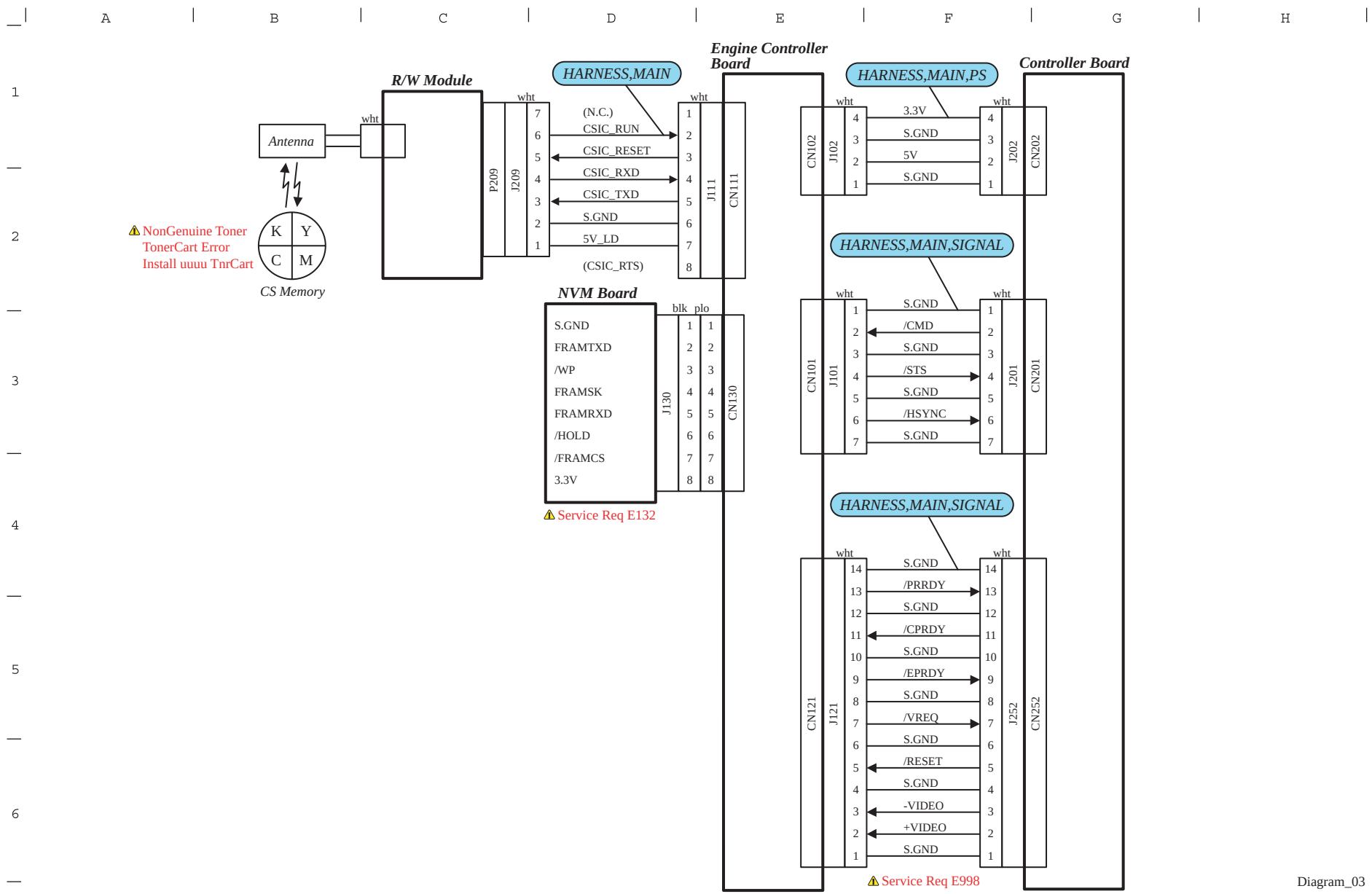


Figure 7-10. Diagram 3

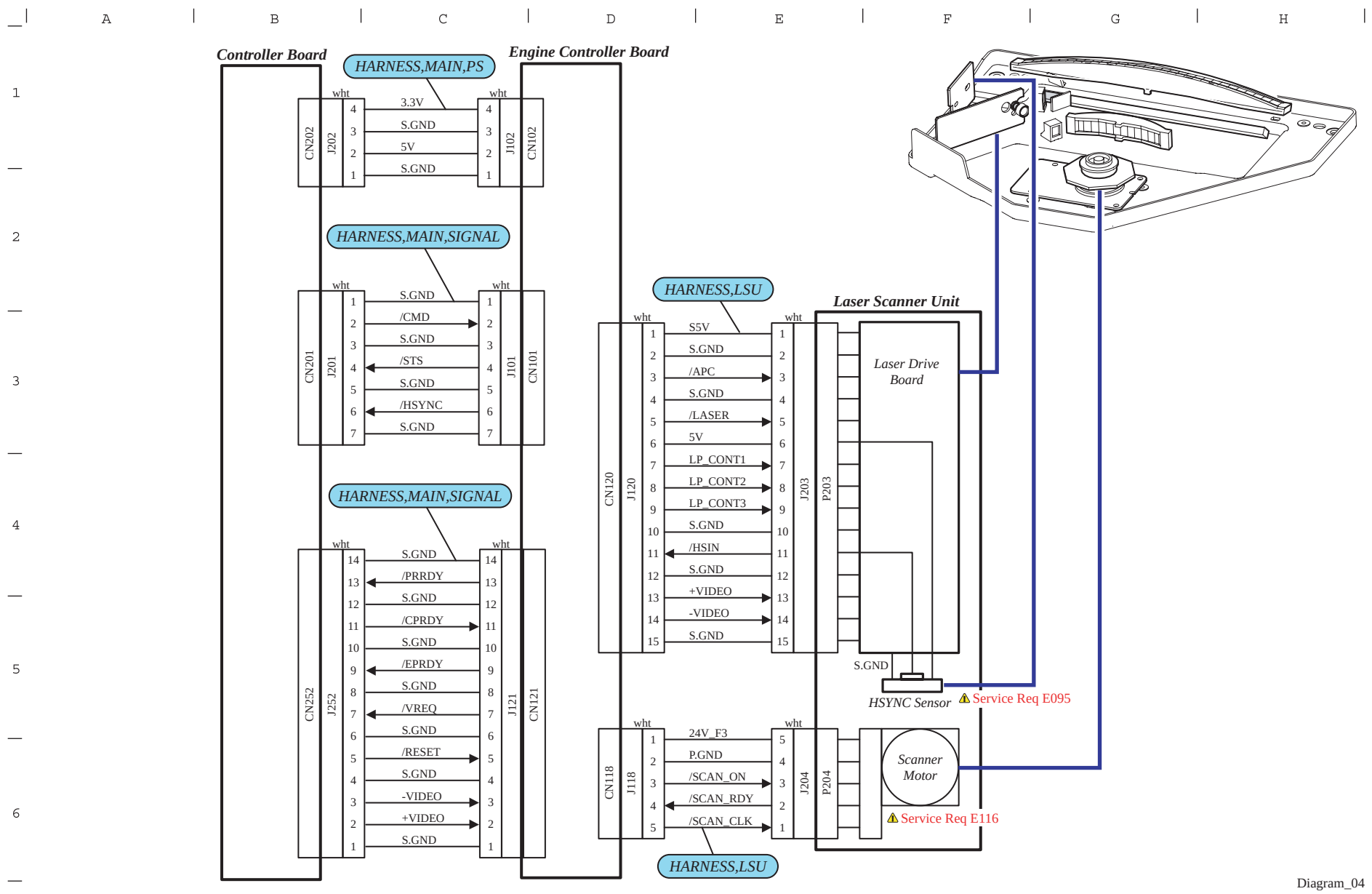


Figure 7-11. Diagram 4

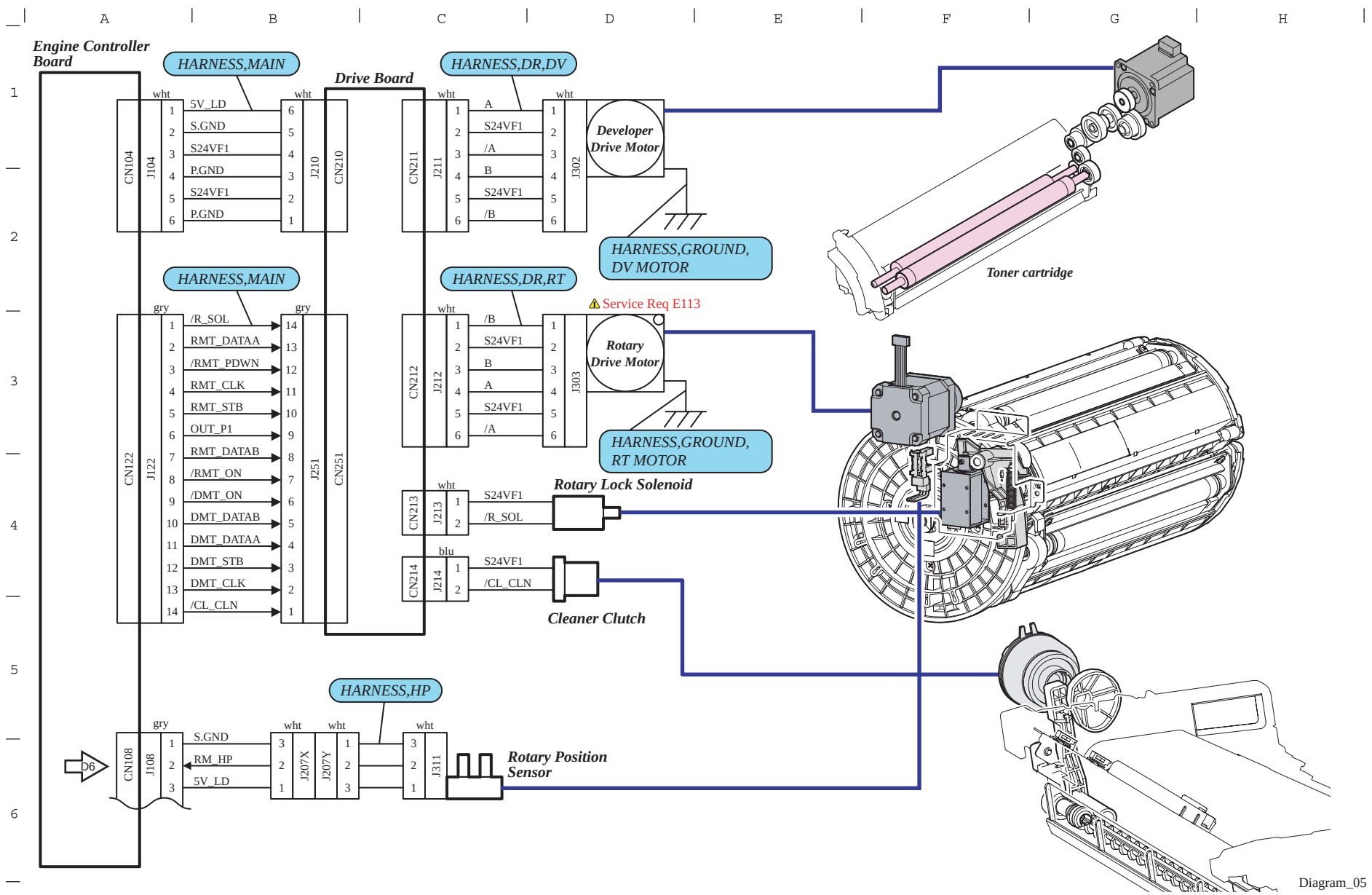


Figure 7-12. Diagram 5

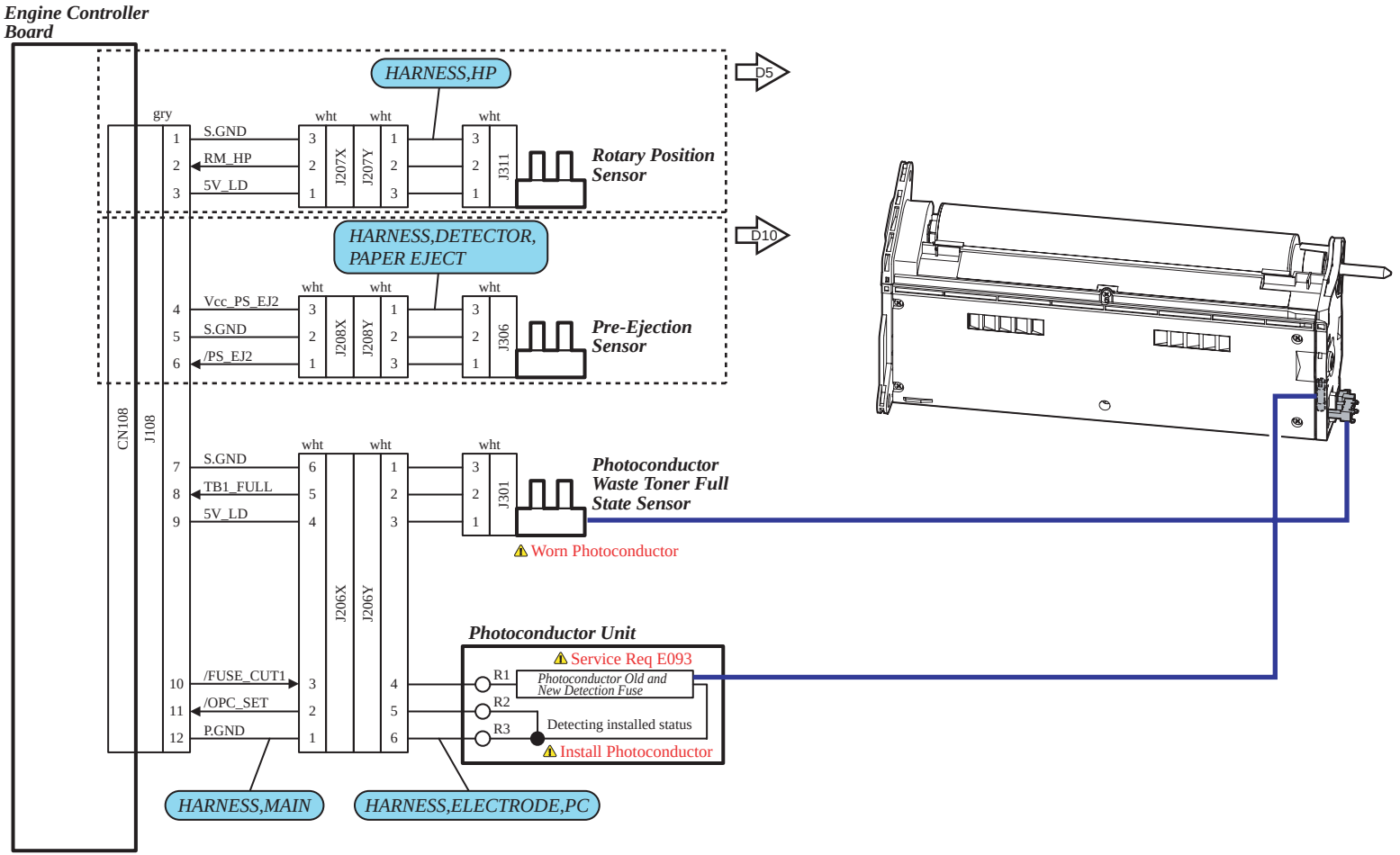


Diagram_06

Figure 7-13. Diagram 6

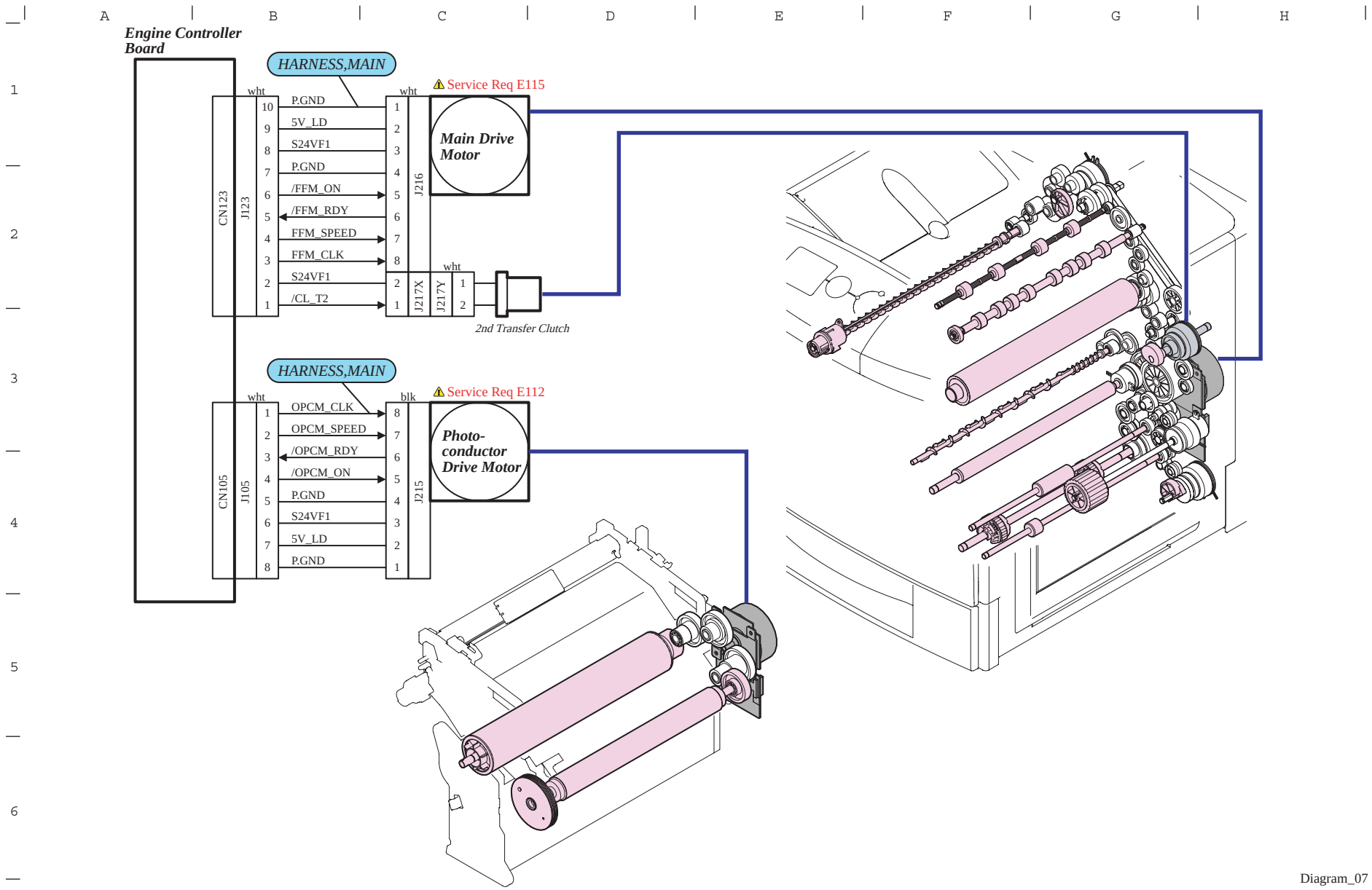


Figure 7-14. Diagram 7

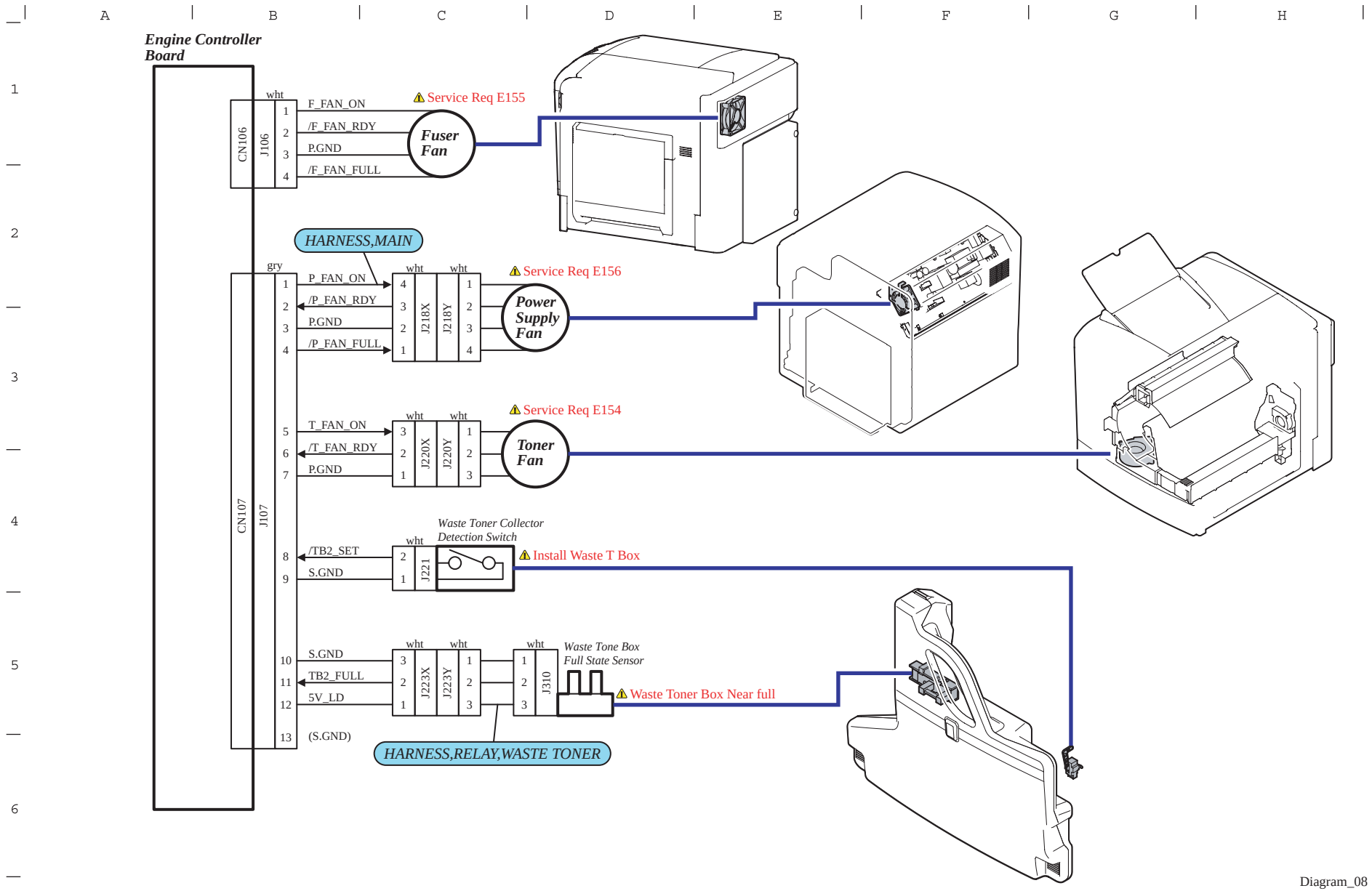


Figure 7-15. Diagram 8

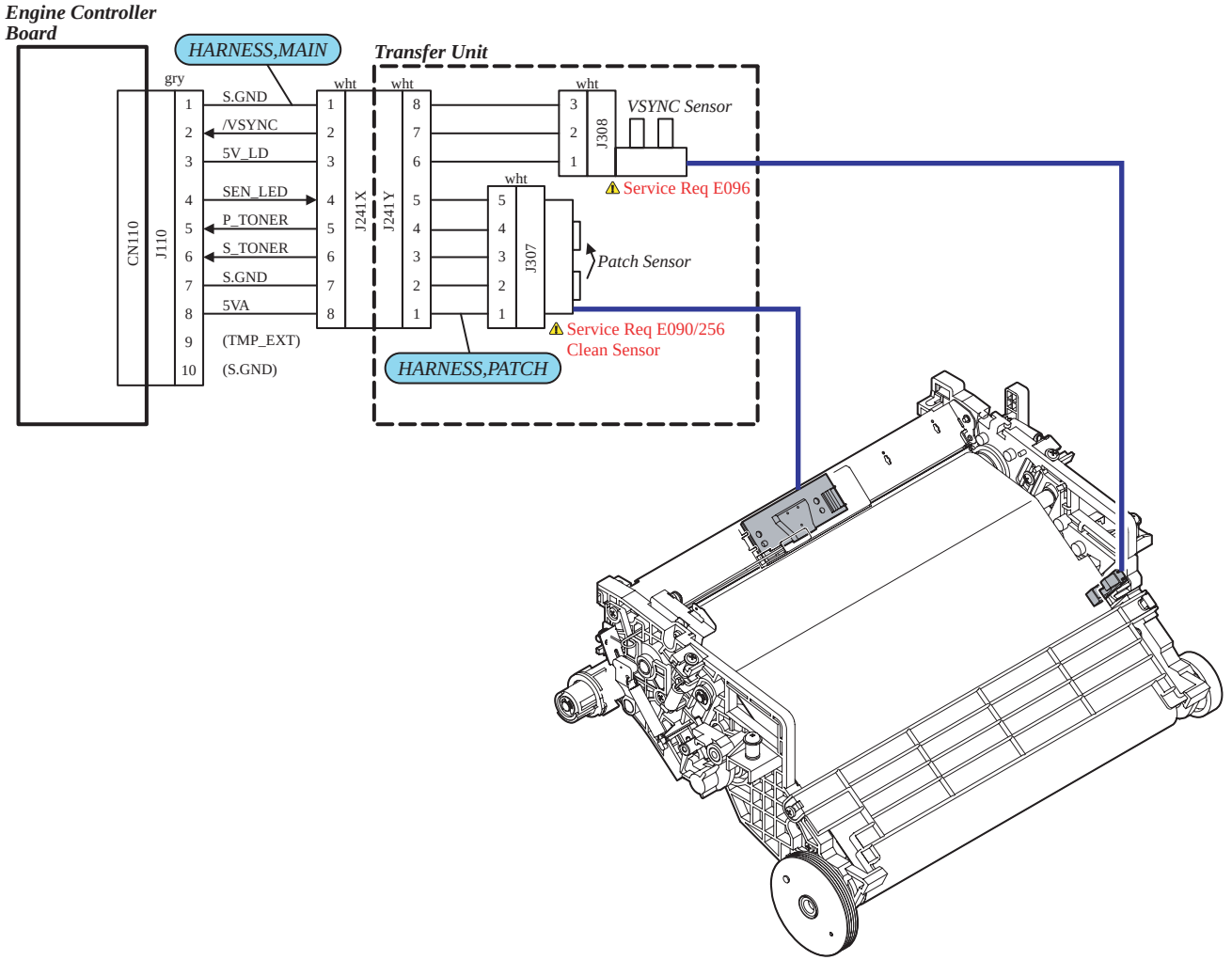


Diagram_09

Figure 7-16. Diagram 9

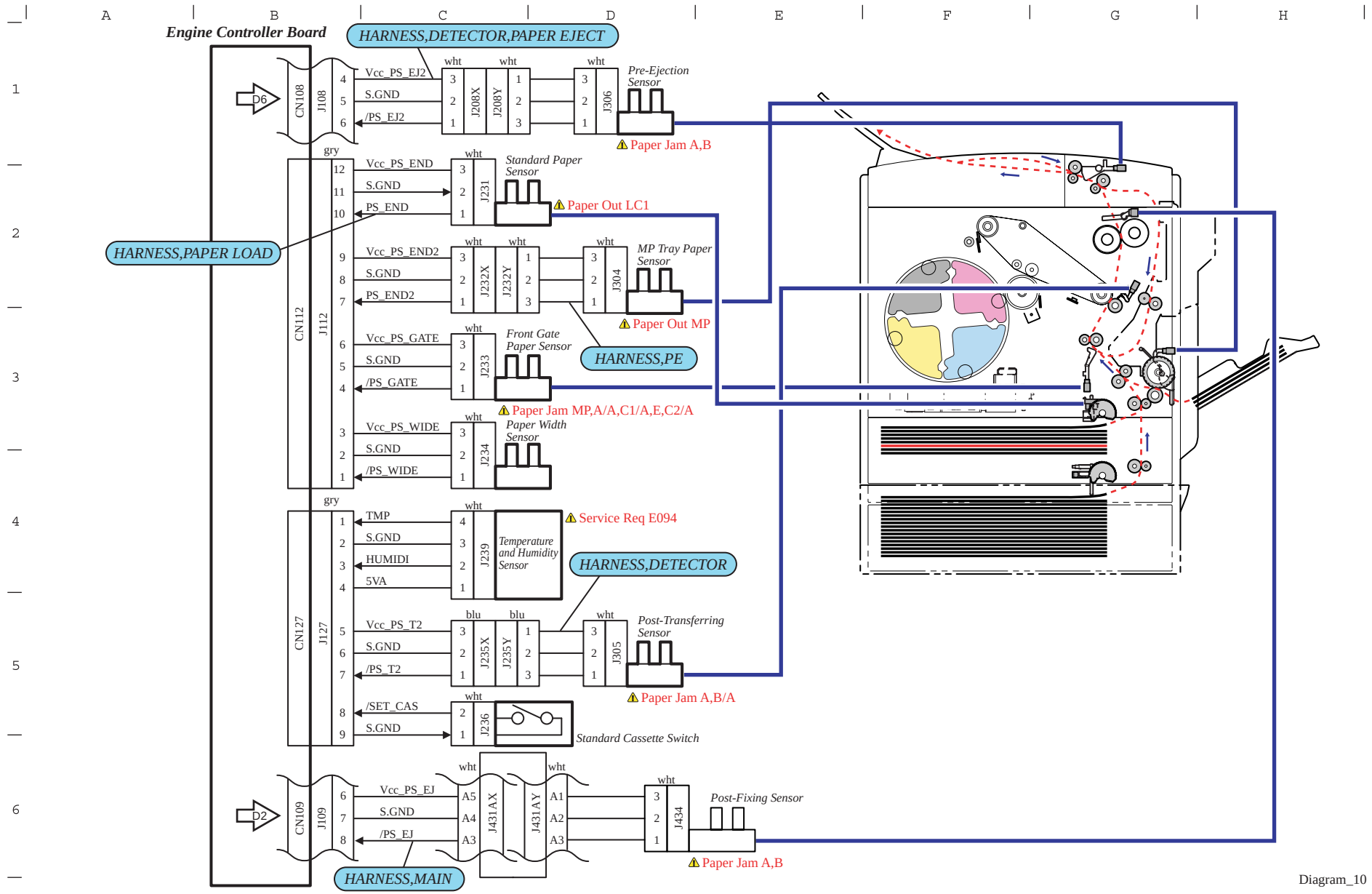


Figure 7-17. Diagram 10

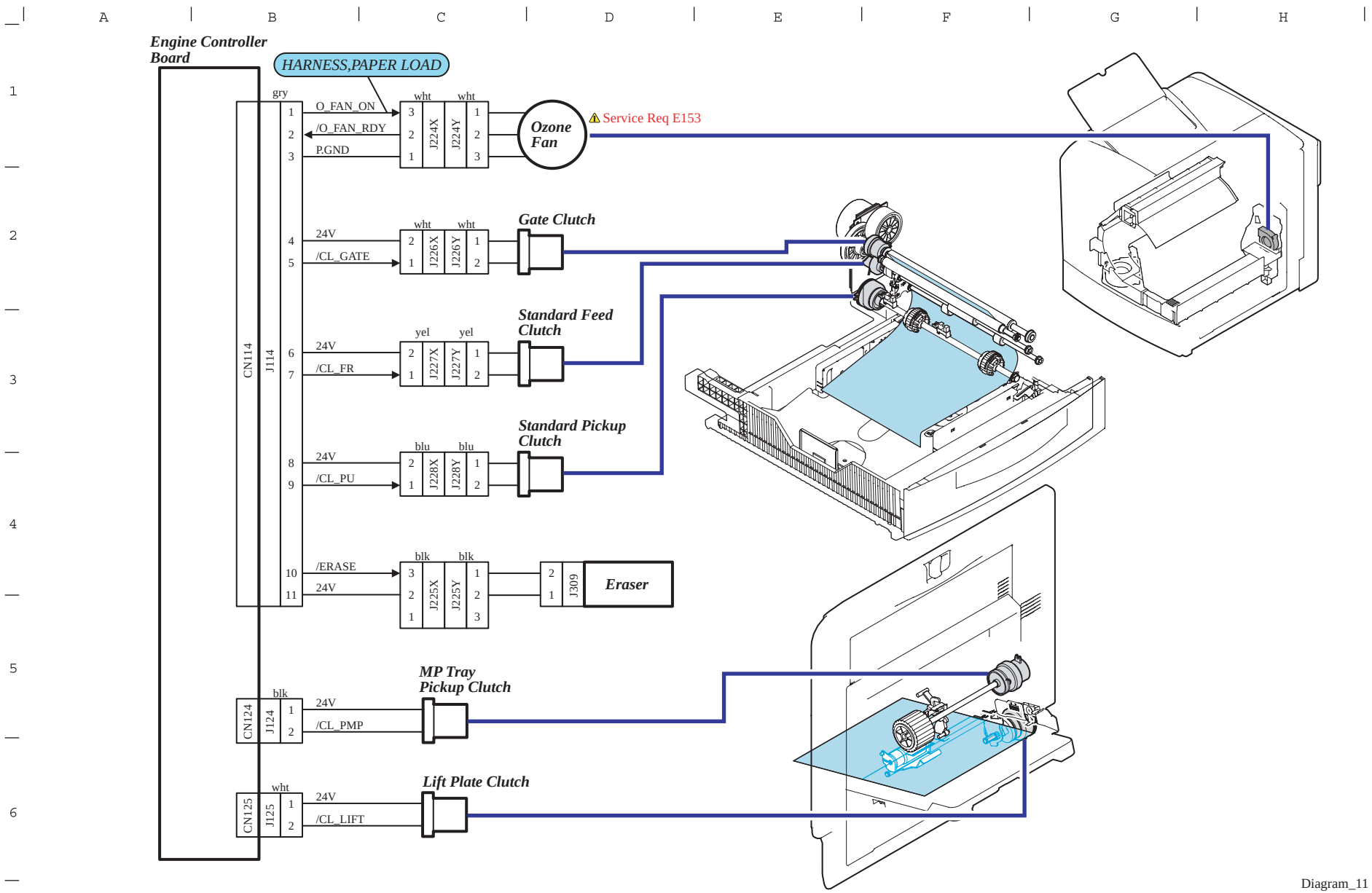


Figure 7-18. Diagram 11

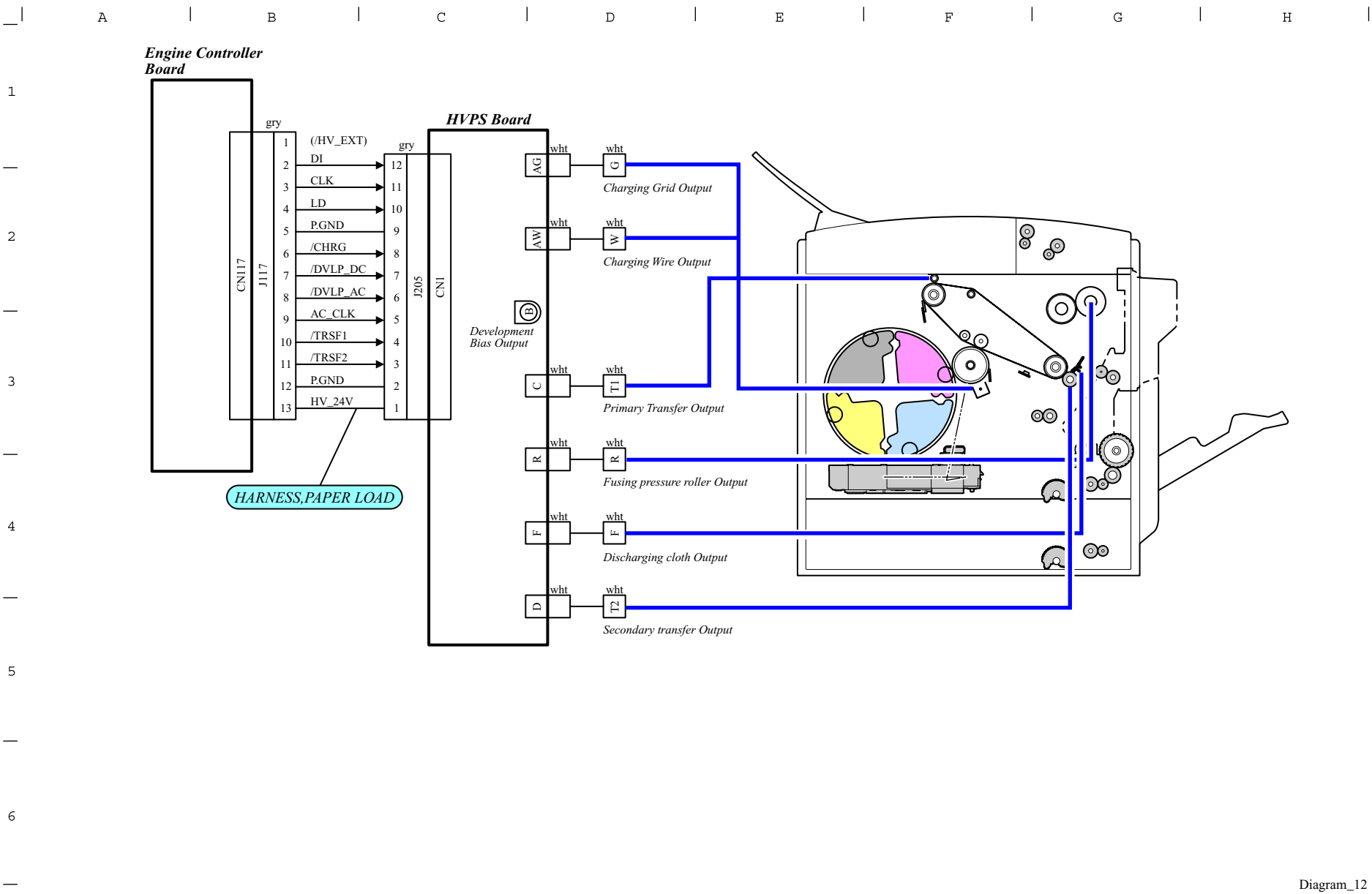


Figure 7-19. Diagram 12

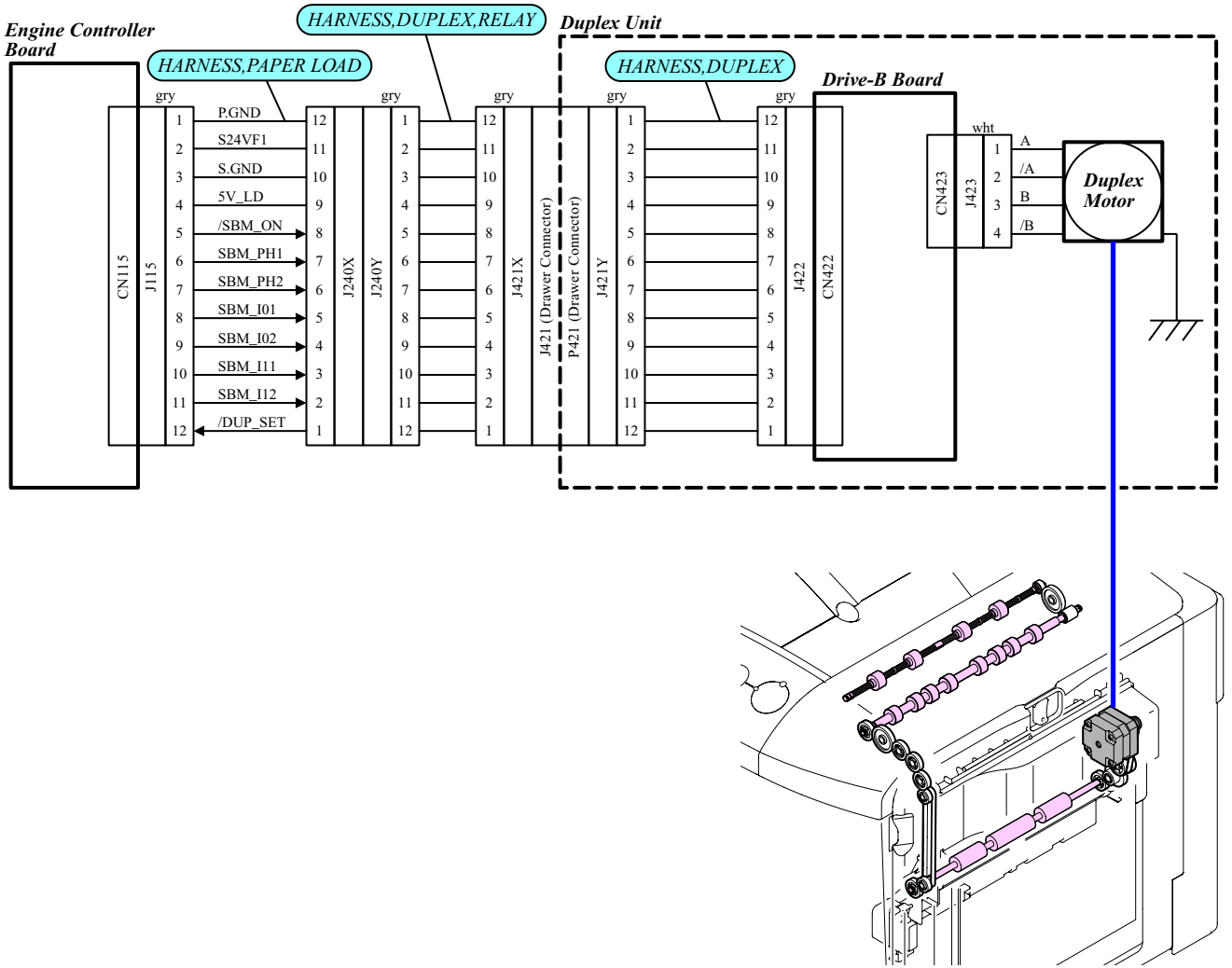


Diagram_13

Figure 7-20. Diagram 13

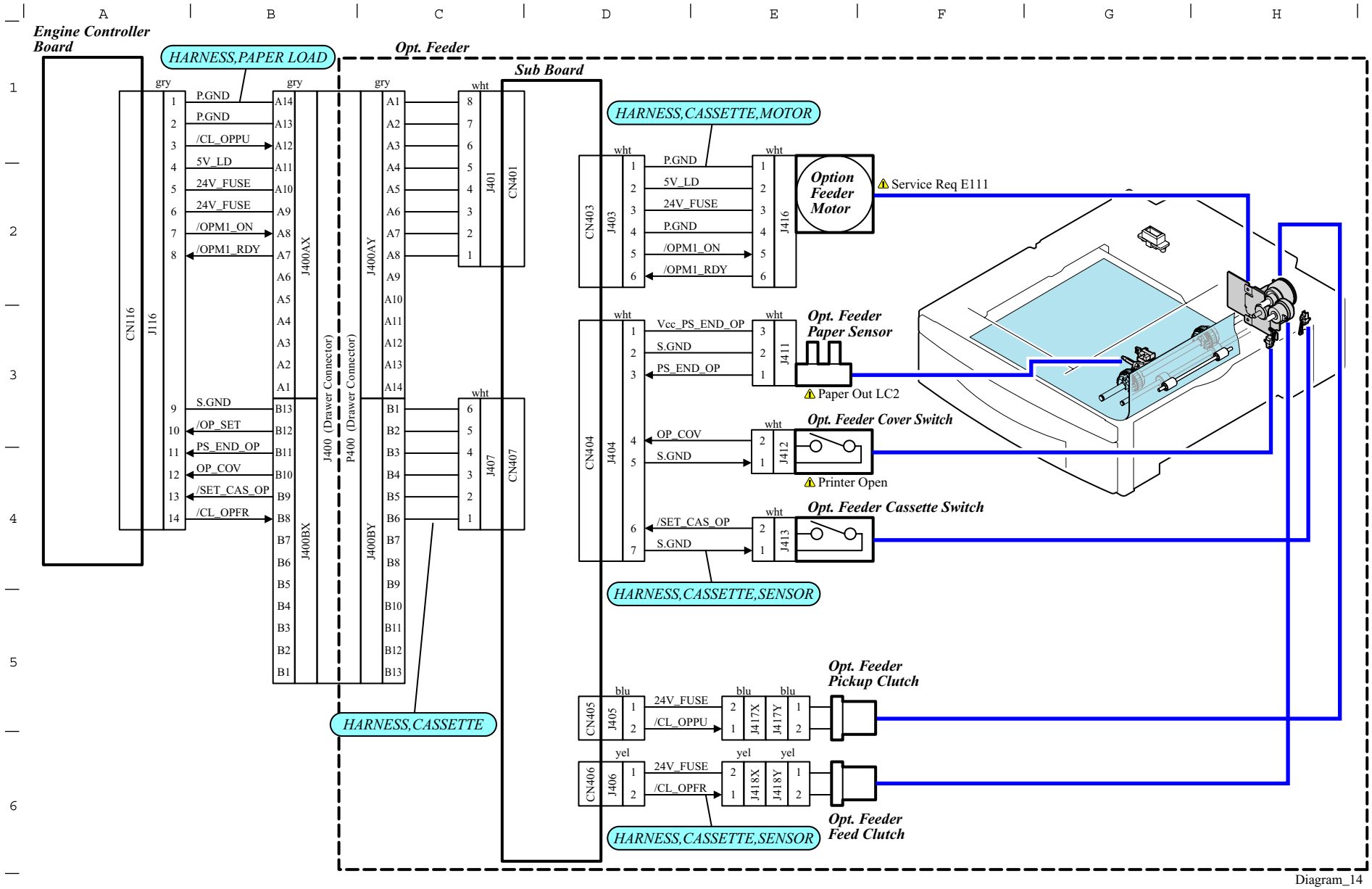


Figure 7-21. Diagram 14

7.3 Parts List

MAIN UNIT

Table 7-2. MAIN UNIT

No.	Part Name
01-01	“HOUSING,TOP”
01-02	“SHEET,INSULATOR”
01-03	“COVER Assy.,FU;ASP”
01-04	“COVER,TOP;B”
01-05	“HOUSING,REAR”
01-06	“HOUSING,CONTROLLER”
01-07	“MP TRAY Assy.,ASP”
01-08	“HOUSING,RIGHT”
01-09	“LABEL,ACCESARY”
01-10	“COVER,FRONT”
01-11	“COVER,INNER”
01-12	“HOUSING,LEFT”
01-13	CONTROL PANEL
01-14	“HARNESS,PANEL”
01-15	“TRAY,PAPER,EJECT”
01-16	“LOGO PLATE,13X54;C”
02-01	“BRACKET ASSY.,I/F”
02-02	“NETWORK BOARD,SE-NIC-B82”
02-03	“GROUNDING PLATE,TYPE-B”
02-04	“GUIDE RAIL,TYPE-B”
02-05	“HARNESS,MAIN,PS”
02-06	“HARNESS,MAIN,SIGNAL”
02-07	“HARNESS,HV,2ST TRANSFER”
02-08	“BOARD ASSY.,MEMORY,C533 PROG(5957I)”
02-09	“BOARD ASSY.,MEMORY,C585 RAM”
02-10	“BOARD ASSY., MAIN,C585 MAIN”

Table 7-2. MAIN UNIT

No.	Part Name
02-11	“BOARD ASSY., MAIN,C585 MCU”
02-12	“BOARD ASSY.,DRV,C585 DRV”
02-13	“HARNESS,MAIN”
02-14	“MOUNTING PLATE Assy.,CONTROLLER”
02-15	“COVER,TYPE-B”
03-01	“HARNESS,HV,1ST TRANSFER”
03-02	“HIGH VOLTAGE POWER SUPPLY,EUKMBE925HA”
03-03	“DETECTOR,PC”
03-04	“HARNESS,HP”
03-05	“LEAF SPRING,ELCTRODE,DV”
03-06	“EDGE SADDLE,EDS-1”
03-07	“HARNESS,INRET”
03-08	“POWER SWITCH,SDDJF30200”
03-09	“HARNESS,AC,200”
03-09	“HARNESS,AC,100”
03-10	FERRITE CORE TFT-081813N
03-11	“POWER SUPPLY(230V),ETXEP511EAC”
03-11	“POWER SUPPLY(120V),ETXEP511AAC”
03-12	“R/W Module,B5J-0111”
04-01	“HARNESS,DR,DV”
04-02	“STEPPING MOTOR ASSY.,DV”
04-03	“CLUTCH,CLEANER”
04-04	“BUSHING,8”
04-05	“SPECSER,CLUTCH”
04-06	TIMING BELT
04-07	“PULLEY ASSY.,DRIVE,ASP”
04-08	“CLUTCH,2ND TRANSFER”
04-09	“DRIVE ASSY.,FU,ASP”
04-10	“SERVOMOTOR,DRIVE”
04-11	“DRIVE ASSY.,MAIN,ASP”

Table 7-2. MAIN UNIT

No.	Part Name
04-12	“DRIVE ASSY.,MPT,ASP”
04-13	“CLUTCH,PICK UP”
04-14	“DRIVE ASSY.,MPC,ASP”
04-15	“CLUTCH,FEED”
04-16	“SERVOMOTOR,PC”
04-17	“CLUTCH,GATE”
04-18	“LOCK ASSY.,RT,ASP”
04-19	“DRIVE ASSY.,RT,ASP”
04-20	“FAN,FU”
05-01	“ERASER,PA0003A/ERL”
05-02	“HARNESS,ERASER”
05-03	“BUSHING,8”
05-04	2ND TRANSFER Assy;ASP
05-05	“ROLLER,2ND”
05-06	“MOUNTING PLATE,ANTI-STATIC;ASP”
05-07	“DETECTOR,HP;E”
05-08	“RETAINING RING,4”
05-09	“DETECTION,PAPER LOAD”
05-10	“DETECTOR,V-162-3A5,V-162-3A5”
05-11	“HARNESS Assy.,I/L”
05-12	“LEVER,TENSION”
05-13	“HARNESS,AC,FU”
05-14	Laser Scanner
05-15	“HARNESS,LSU”
05-16	“DETECTOR,V-164-3A5”
05-17	“TRANSFER UNIT,Assy;ASP”
06-01	“ELECTRODE Assy.,PC,ASP”
06-02	“DETECTOR,PC”
06-03	“FAN,PC”
06-04	“E-RING,4,L/NA”

Table 7-2. MAIN UNIT

No.	Part Name
06-05	“PIN,RELEASE”
06-06	“LINK,RELEASE,FRONT”
06-07	“LEVER,RELEASE,FRONT”
06-08	FOOT
06-09	“LINK,RELEASE,REAR”
06-10	“LEVER,RELEASE,REAR”
06-11	Cleaner Assy
06-12	“SENSOR,TANK”
06-13	“FILTER,OZONE”
06-14	“FILTER,OZONE;B”
06-15	“FAN,DUST CHAMBER”
06-16	“HARNESS,RELAY,WASTE TONER”
06-17	“LEVER,PATCH”
06-18	“DETECTOR,V-162-3A5,V-162-3A5”
06-19	“EDGE SADDLE,EDS-1”
06-20	“FAN,LPS”
07-01	“BEARING,688ZZNR”
07-02	“GUIDE,GATE,LEFT”
07-03	“DETECTOR ASSY.,GUIDE,GATE,INNER,ASP”
07-04	“HARNESS,PAPER LOAD”
07-05	“BRACKET ASSY.,PE,ASP”
07-06	“DETECTOR,HUMIDITY”
07-07	“COVER Assy.,DV,Y,ASP”
07-08	“COVER Assy.,DV,K,ASP”
07-09	“COVER Assy.,DV,M,ASP”
07-10	“COVER Assy.,DV,C,ASP”
07-11	“FRAME ASSY.,RT,ASP”
08-01	“BEARING,688ZZNR”
08-02	“ROLLER,GATE”
08-03	“ROLLER,FEED;B”

Table 7-2. MAIN UNIT

No.	Part Name
08-04	“BUSHING,8”
08-05	“ROLLER ASSY,PICK UP”
08-06	“ROLLER,FEED”
08-07	“GUIDE ASSY.,LEFT,ASP”
08-08	“GUIDE,GATE.,ASSY,ASP”
08-09	STANDARD CASSTTE ASSY;ASP
08-10	“COMPRSSION SPRING,10.58”
08-11	“EXTENSION SPRING,1.93”
08-12	“LATCH,CASSETTE”
08-13	“HOLDER,CASSETTE”
09-01	“COVER,RIGHT”
09-02	“PAPER GUIDE,FRONT,MP”
09-03	“LEVER,GUIDE,MP”
09-04	“COMPRESSION SPRING,8.51”
09-05	“PAPER GUIDE,REAR,MP”
09-06	“LIFT PLATE ASSY.,MP,ASP”
09-07	“TORSION SPRING,55.09”
09-08	“SPUR GEAR,16,MPT”
09-09	“LEVER,REAR,MP”
09-10	“COMPRESS SPRING,2.52”
09-11	“LEVER,UPPER,MP”
09-12	“PAPER SUPPORT,MP”
09-13	“PAPER SUPPORT,SUB,MP”
09-14	“HOUSING,MP”
09-15	“LEVER,FRONT,MP”
09-16	“COVER,PICK UP,MP”
09-17	“ROLLER ASSY.,SEPARATION,ASP”
09-18	“LEVER,PE;B”
09-19	“ROLLER,PAPER LOAD”
09-20	“STOPPER,4”

Table 7-2. MAIN UNIT

No.	Part Name
09-21	“CONNECTOR,DUPLEX”
09-22	“COMPRESSION SPRING,9.99”
09-23	“PIN,DUPLEX”
09-24	“COVER,UPPER,MP”
09-25	“DETECTOR,HP;E”
09-26	“LEVER,PE,SUB”
09-27	“CLUTCH,PICK UP,MP”
09-28	“CLUTCH,2ND TRANSFER”
09-29	“EXTENSION SPRING,7.29”
09-30	“LEVER ASSY.,GUIDE,ASP”
09-31	“COMPRESSION SPRING,8.82”
N/F	“GREASE,G-30”
N/F	GREASE G-52
N/F	Grease G-66
N/F	GREASE G-73
N/F	GREASE G74

DUPLEX UNIT

Table 7-3. DUPLEX UNIT

No.	Part Name
10-01	“BRACKET,DRIVE,CHANGE”
10-02	“COMPRESSION SPRING,2.53”
10-03	“GUIDE,DUPLEX,OUTER”
10-04	“SPUR GEAR,19,PAPER EJECT”
10-05	“BELT,DUPLEX,REAR”
10-06	“PULLEY,DUPLEX,REAR”
10-07	“COMBINATION GEAR,25,15”
10-08	“STEPPING MOTOR ASSY.,DUPLEX”
10-09	“COVER,DUPLEX”
10-10	“HARNESS,DUPLEX”
10-11	“BOARD ASSY.,DRV,C585 DRV-B”
10-12	“CONNECTOR,DUPLEX;B”
10-13	“PULLEY,DUPLEX,FRONT”
10-14	“BELT,DUPLEX,FRONT”
10-15	“TORSION SPRING,6.14”
10-16	“SHAFT,WHEEL,DUPLEX”
10-17	“WHEEL,DUPLEX”
10-18	“GUIDE,DUPLEX,INNER”
10-19	“ROLLER,DUPLEX”

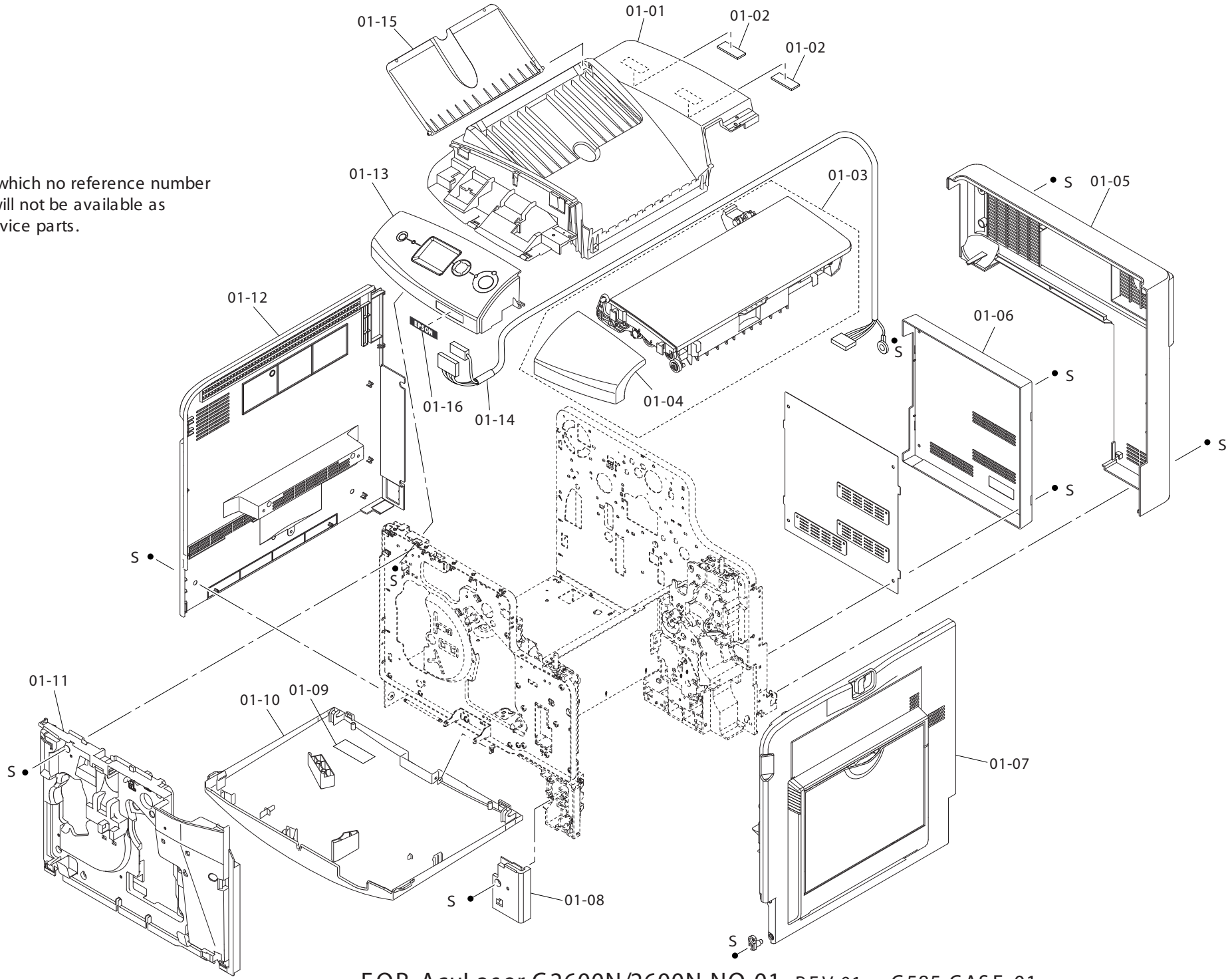
OPT. FEEDER

Table 7-4. OPT. FEEDER

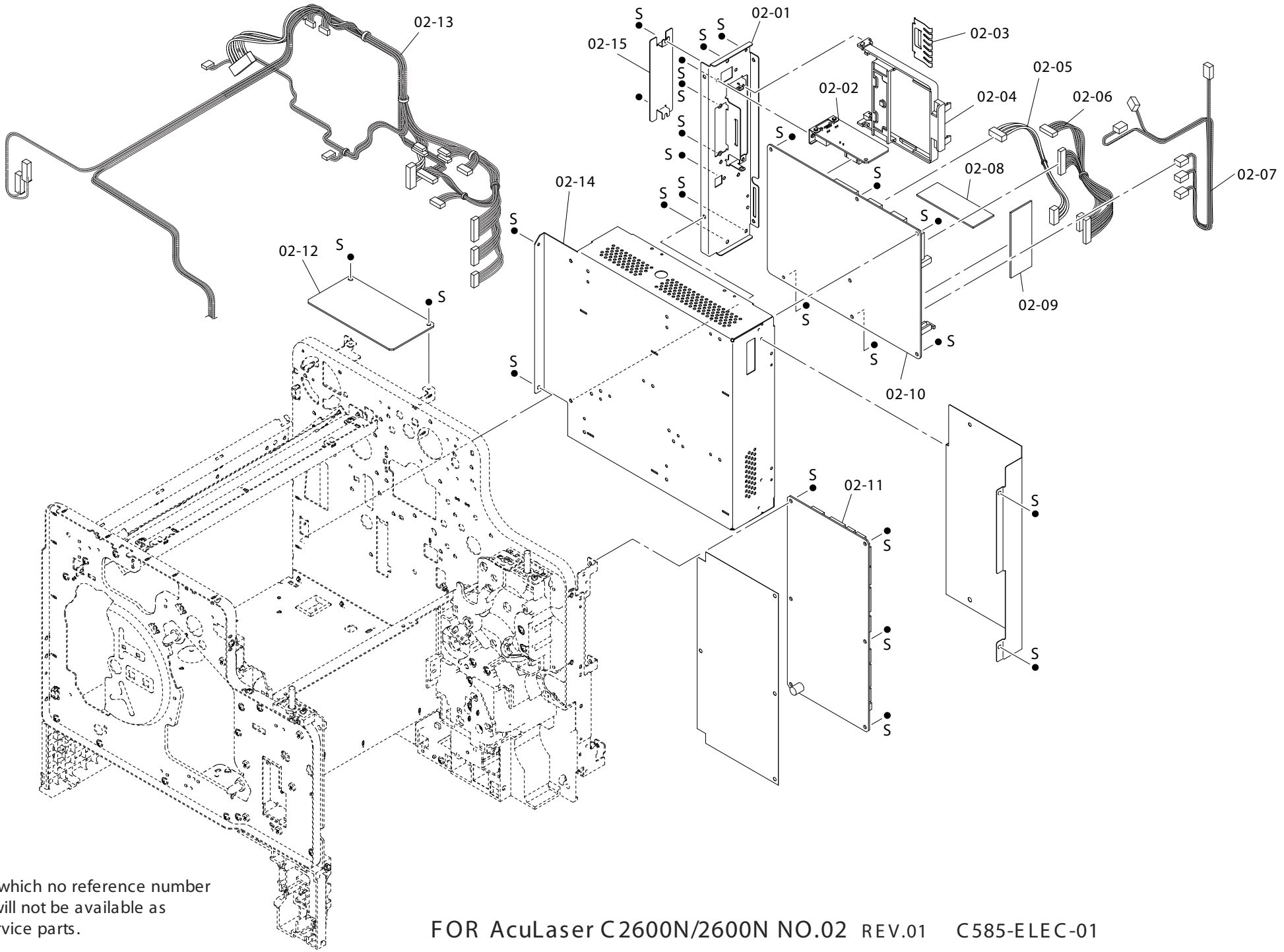
No.	Part Name
11-01	“ROLLER ASSY,PICK UP”
11-02	“POLLER,PAPER FEED,OP”
11-03	“CLUTCH,PICK UP”
11-04	“CONNECTOR,OP”
11-05	“EDGE SADDLE,EDS-1”
11-06	“CLUTCH,FEED”
11-07	“DETECTION,PAPER LOAD”
11-08	“DETECTOR,HP;E”
11-09	“LEVER,PE,OP”
11-10	“BOARD ASSY.,SUB,C585 SUB”
11-11	“DC MOTOR,OP”
11-12	“500-SHEET PAPER CASSETTE,ASP”
11-13	“FASTEN PLATE,OP”
11-14	“PIN,DUPLEX”
11-15	“COVER,FRONT,OP”
11-16	“HOUSING,OP”

7.4 Exploded Diagrams

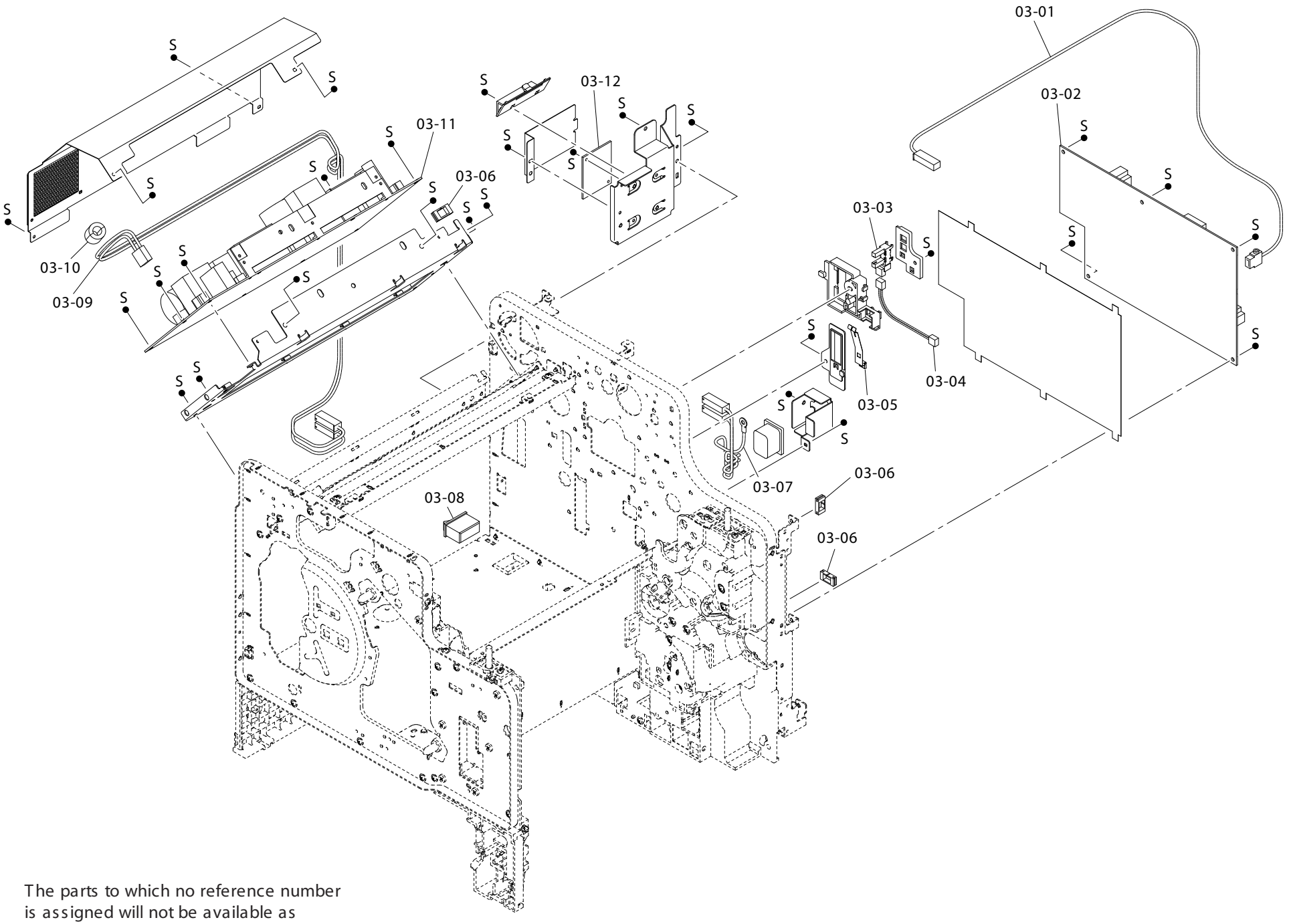
The parts to which no reference number is assigned will not be available as after-sale service parts.



FOR AcuLaser C2600N/2600N NO.01 REV.01 C585-CASE-01



The parts to which no reference number is assigned will not be available as after-sale service parts.



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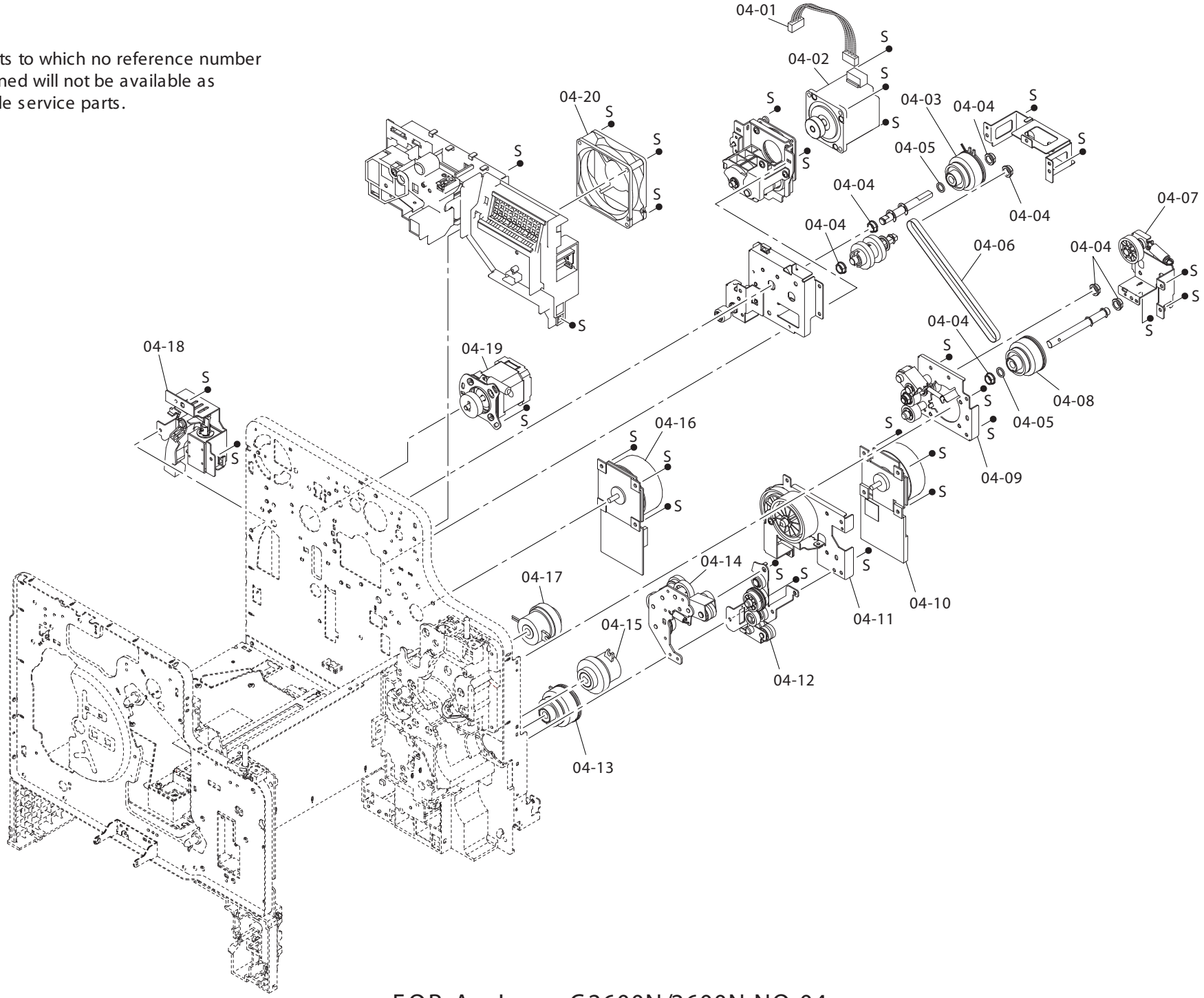

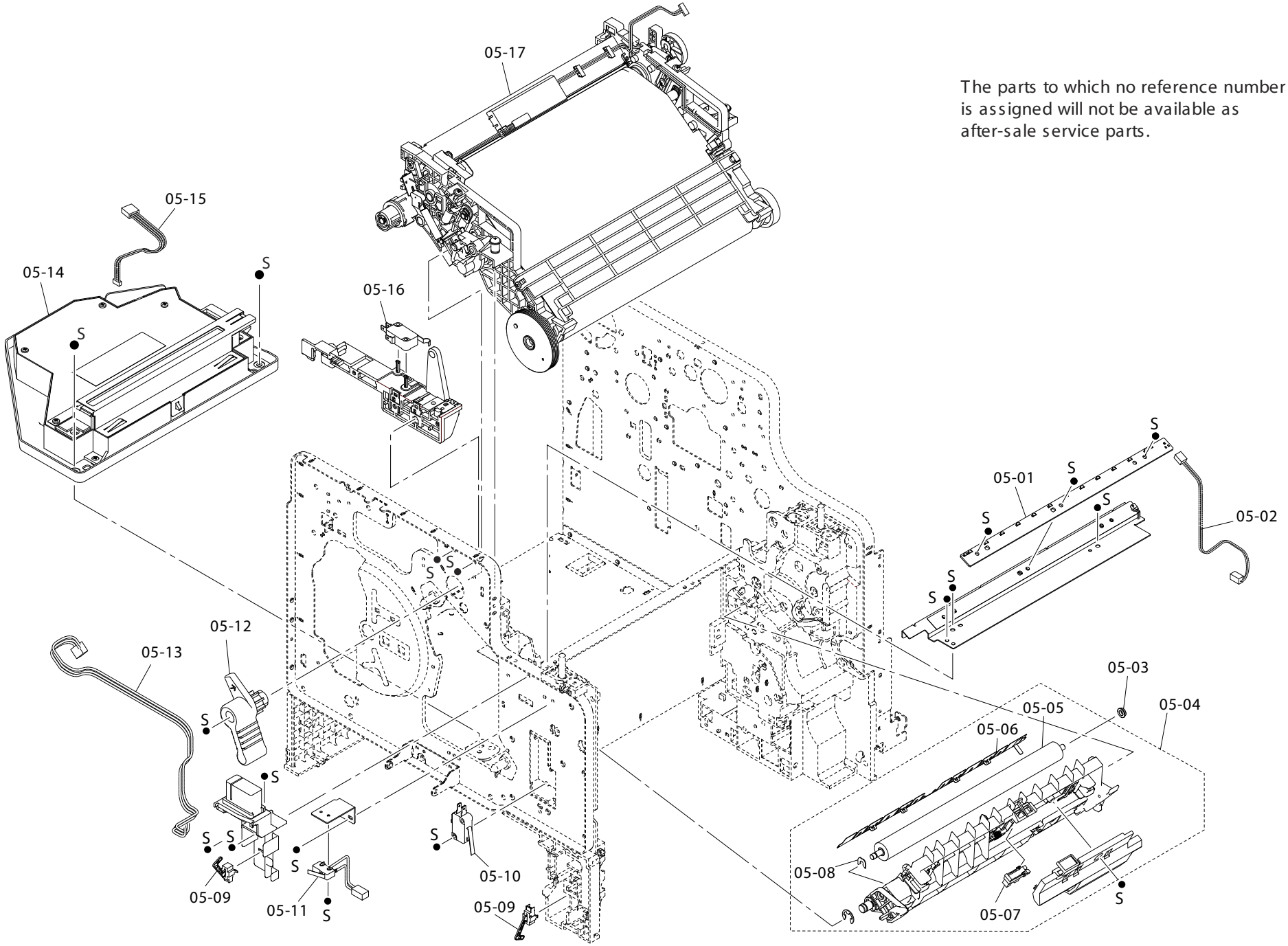

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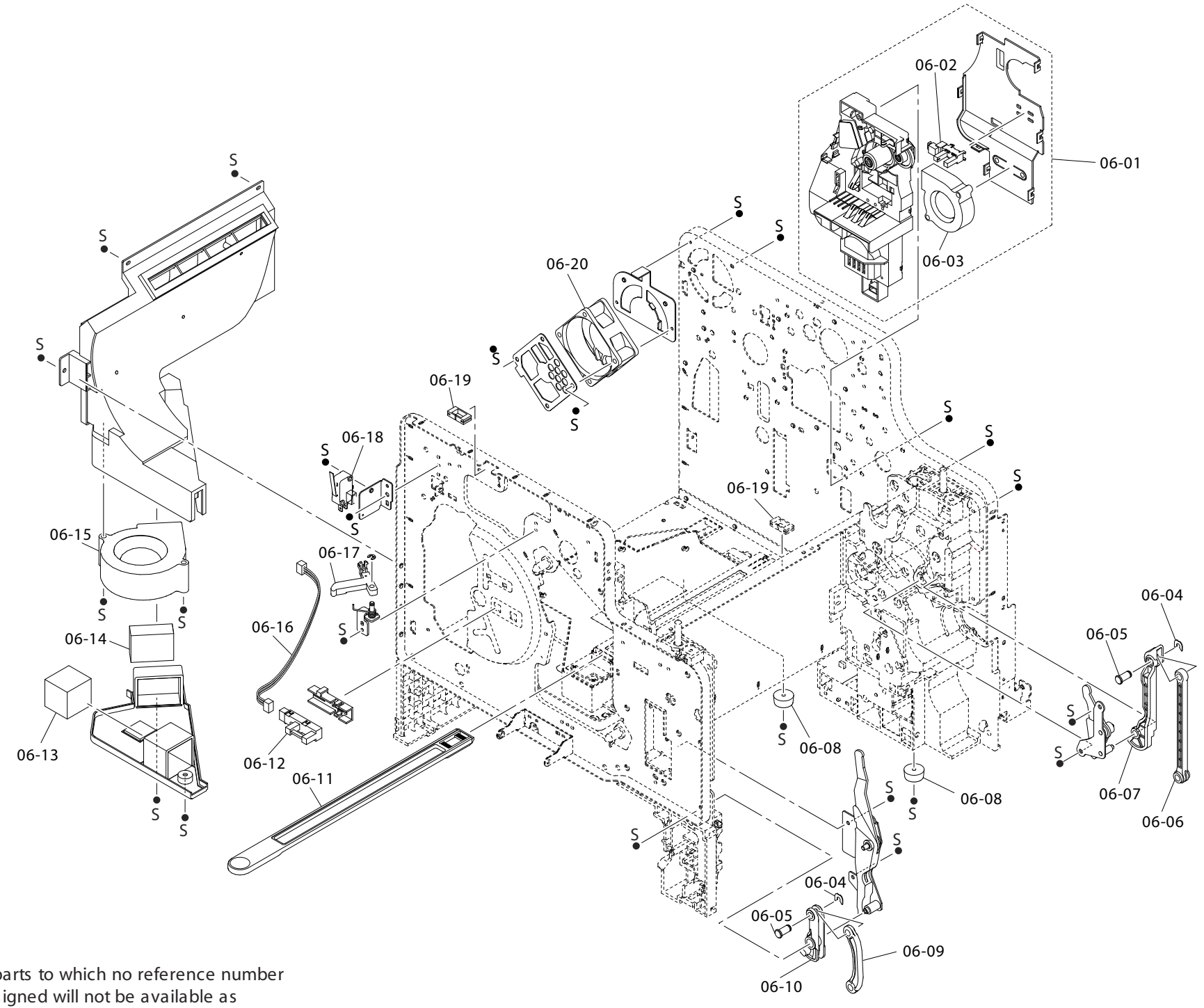

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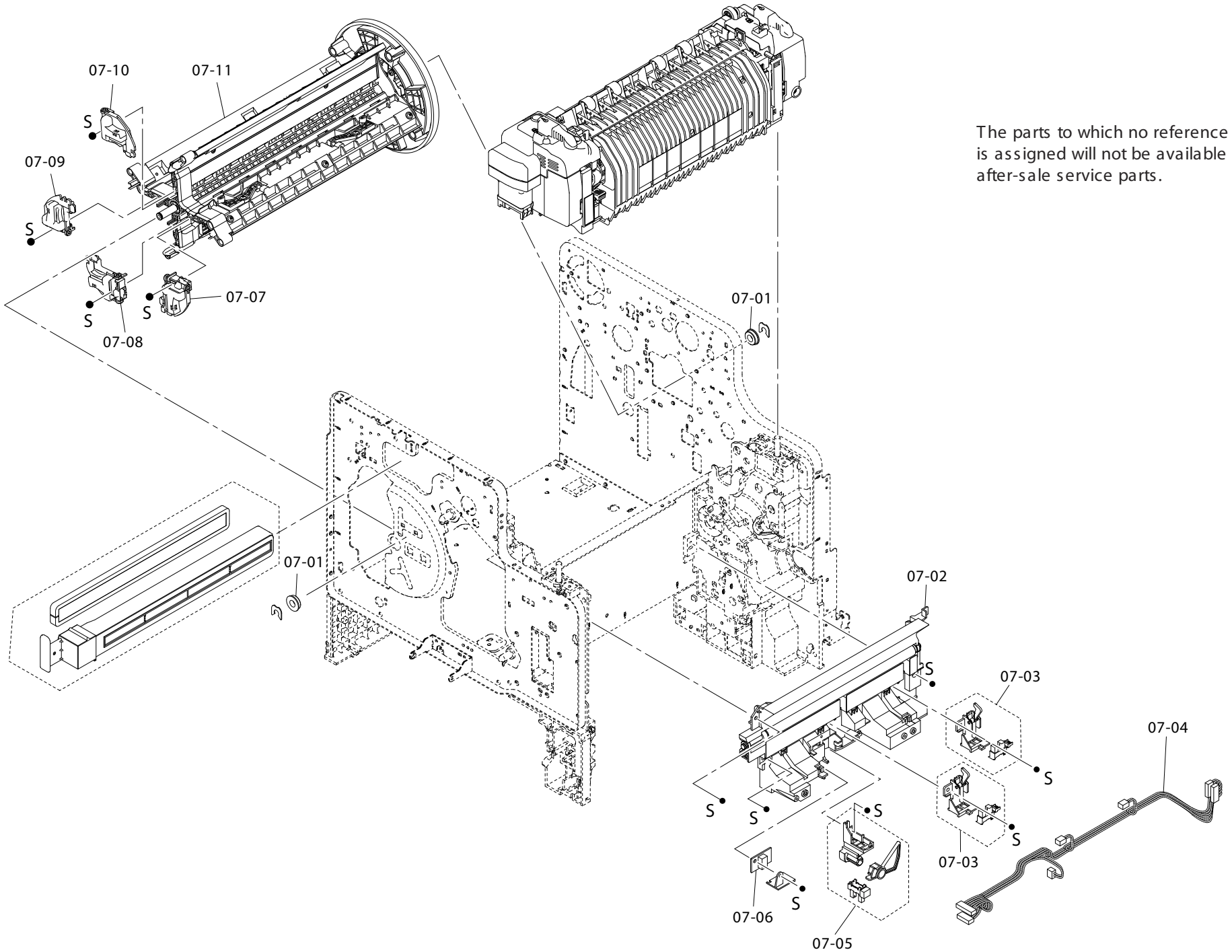

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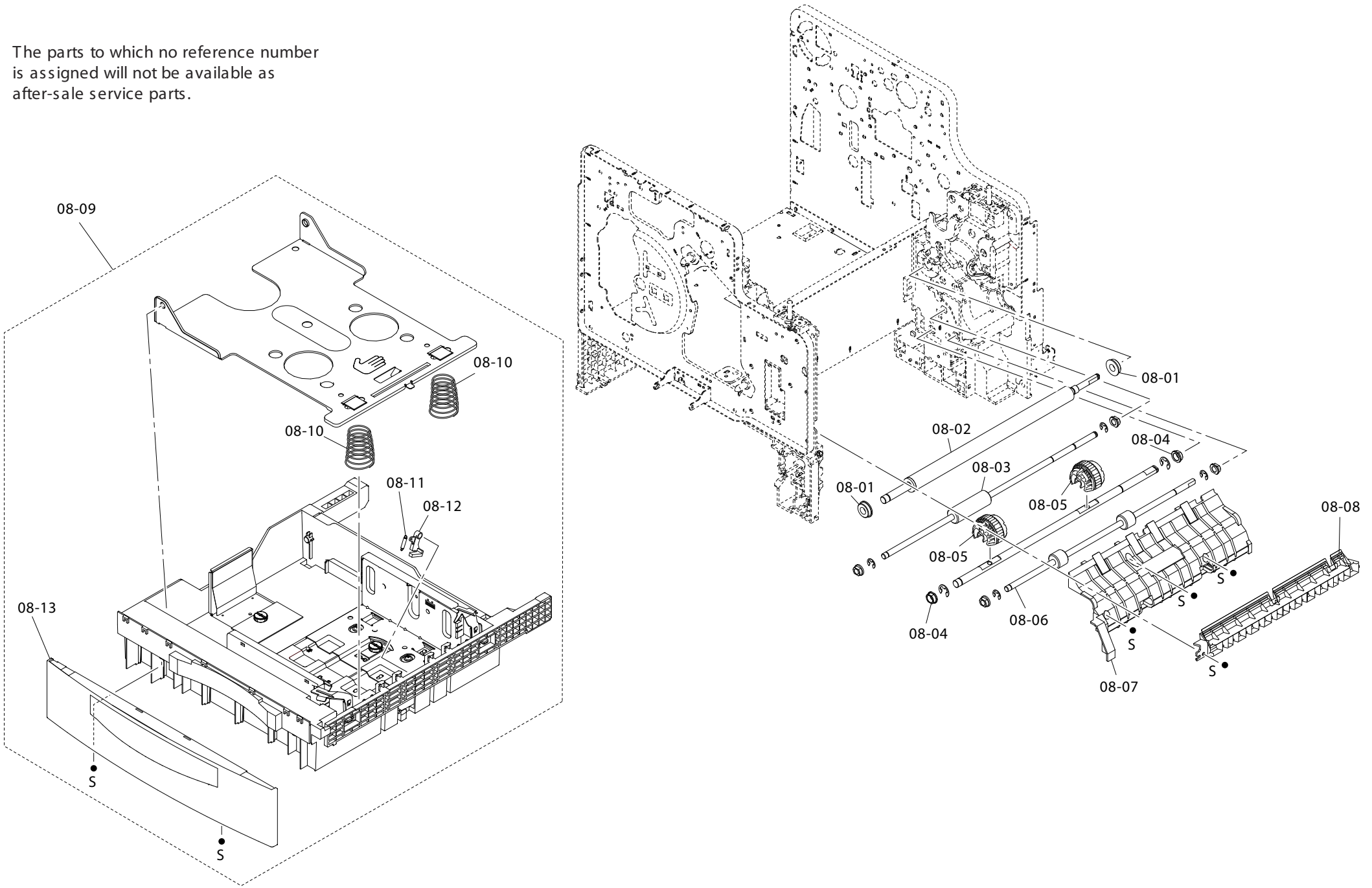

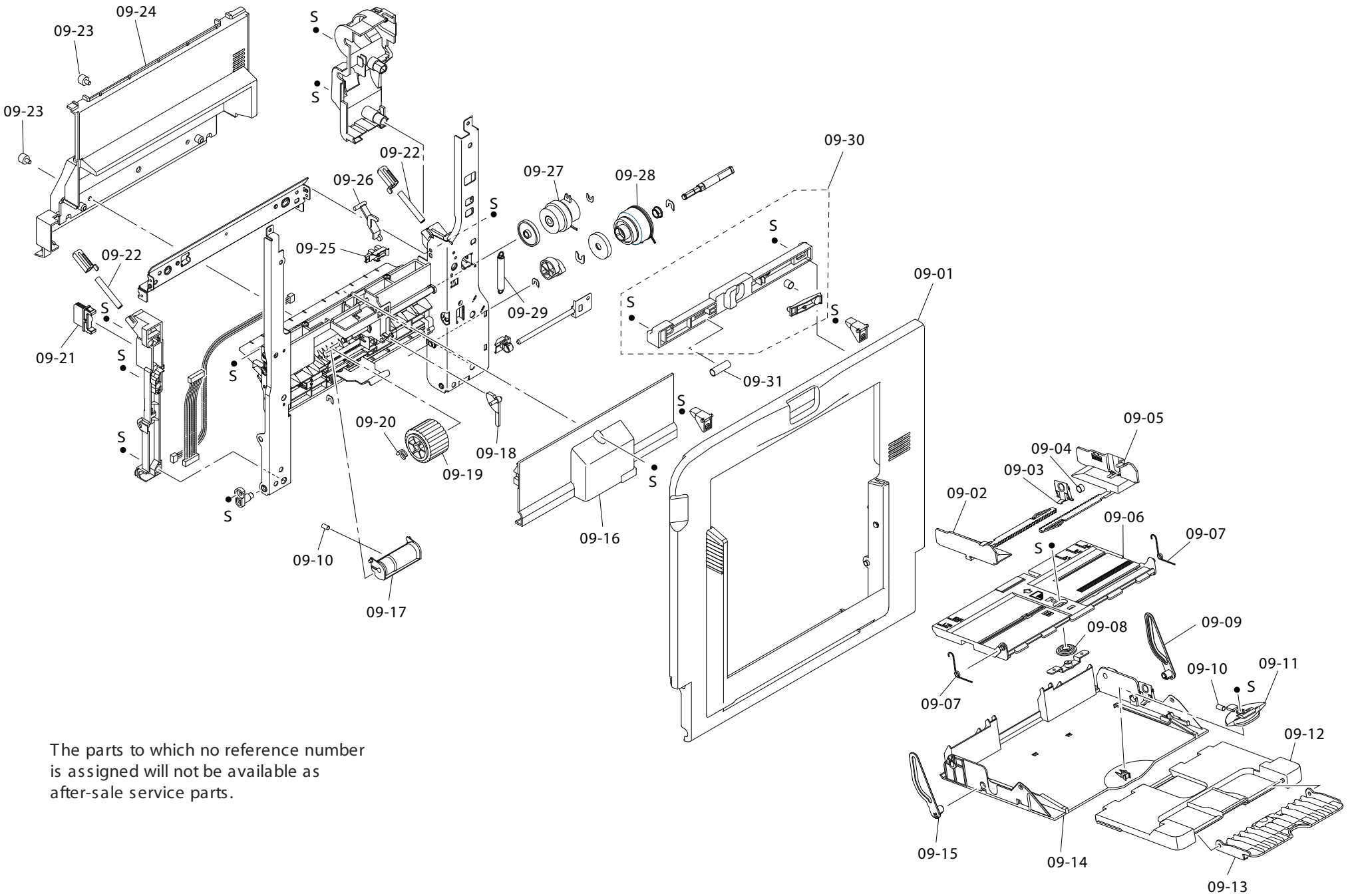

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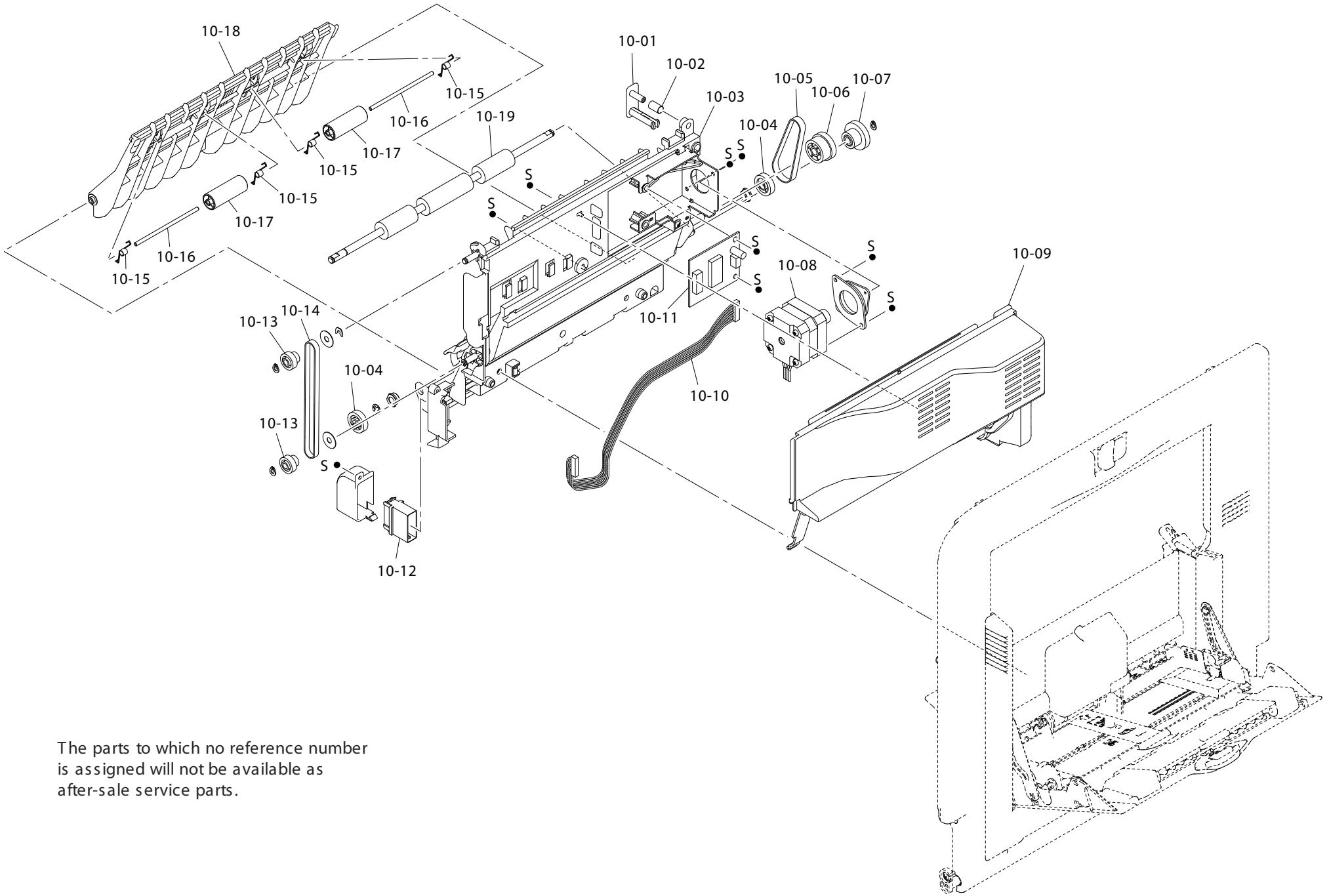

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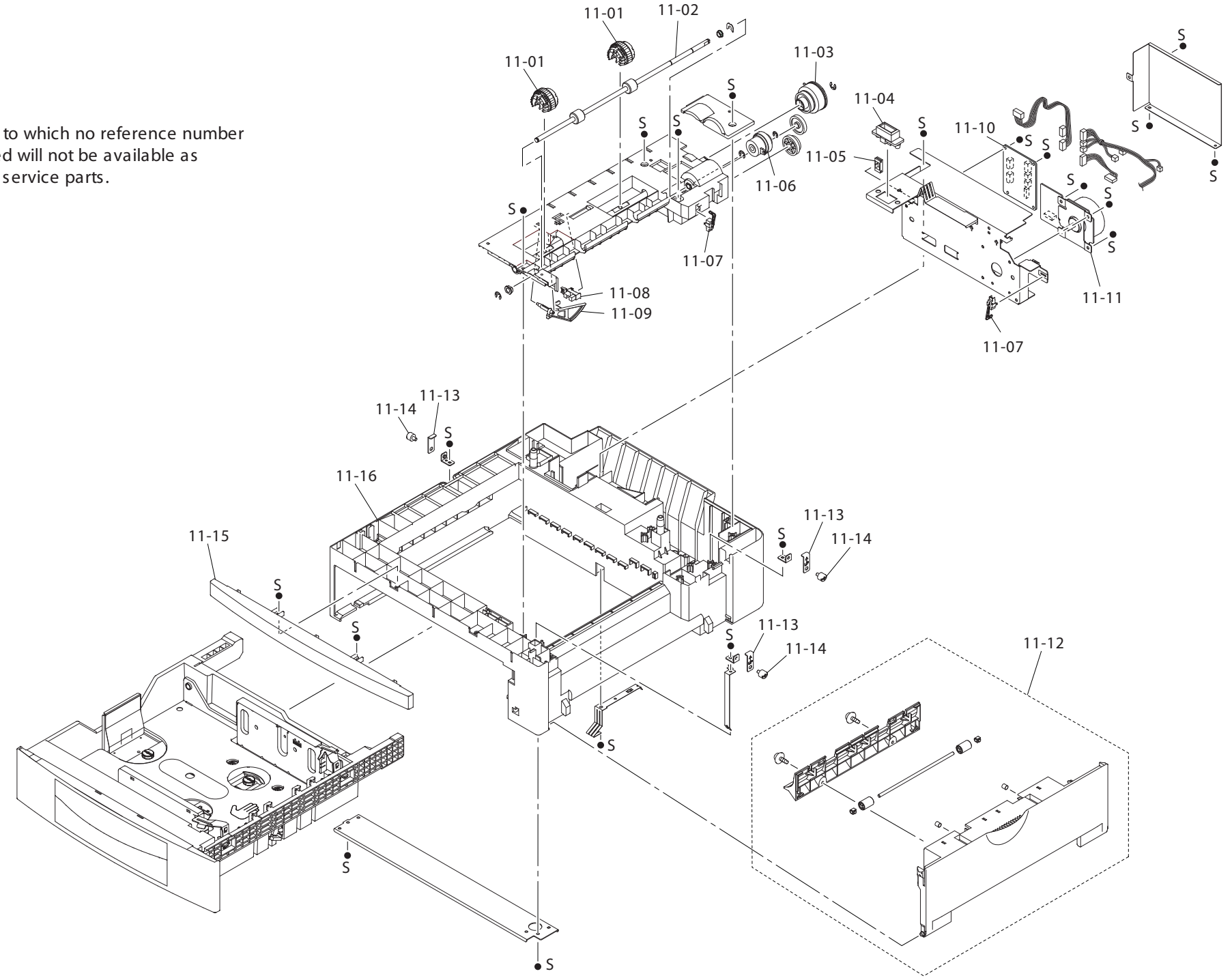
DUPLEX UNIT FOR AcuLaser C2600N/2600N NO.10 REV.01 C802-OPTI-10

The parts to which no reference number is assigned will not be available as after-sale service parts.



500-SHEET PAPER CASSETTE UNIT FOR AcuLaser C2600N/2600N NO.11 REV.01

C802-OPTI-11

7.5 Circuit Diagrams

- C585MAIN

IC100
UPD30550AGD-350-WML-A

IC101
E0C16GNA

B102 BLM41PG102SN1

for IC100 #34 #63

for IC100 #49 #90 #206

P4.FAIO

P6.PCC

P6.PWM

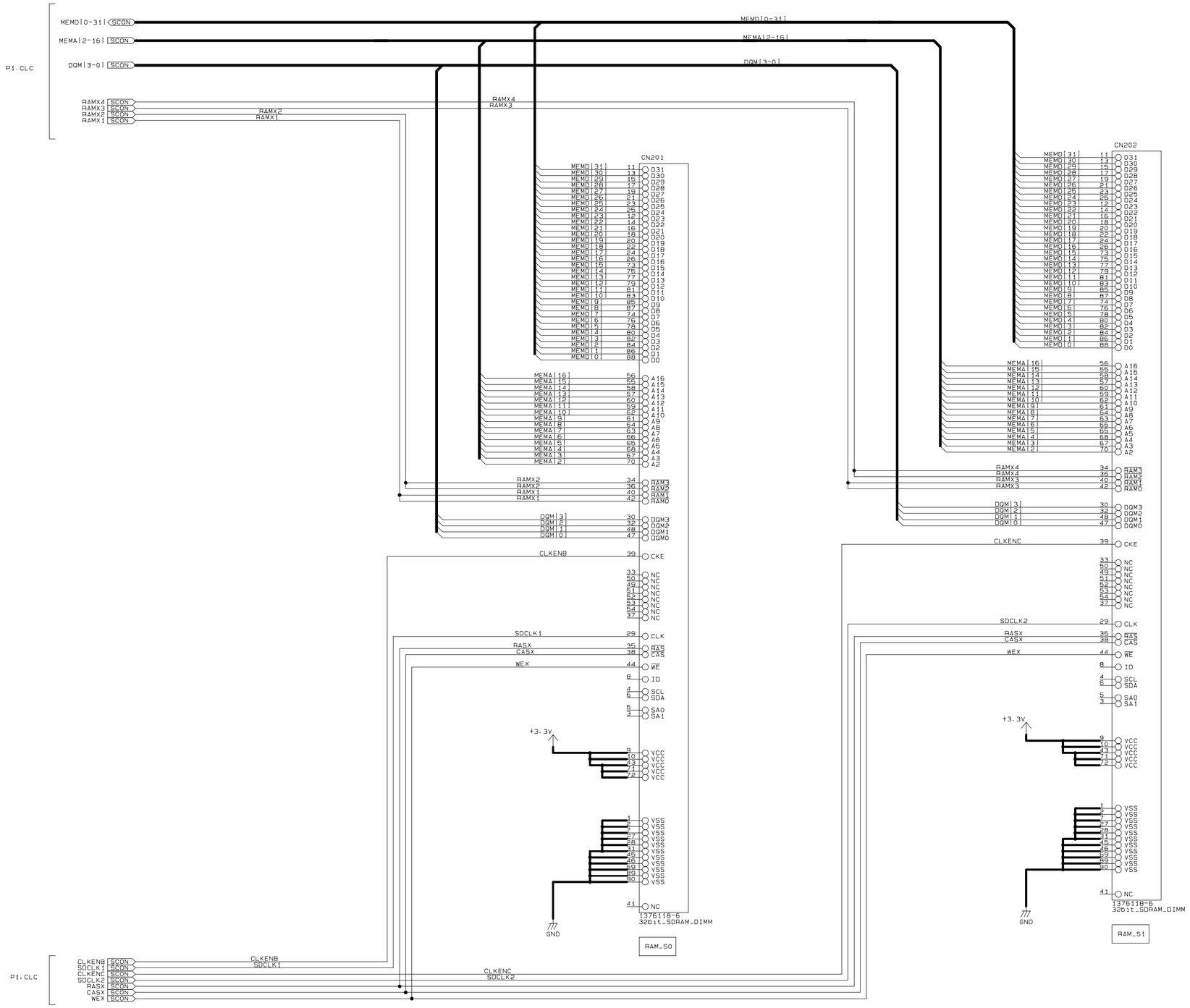
P2.RAM

P5.Clock

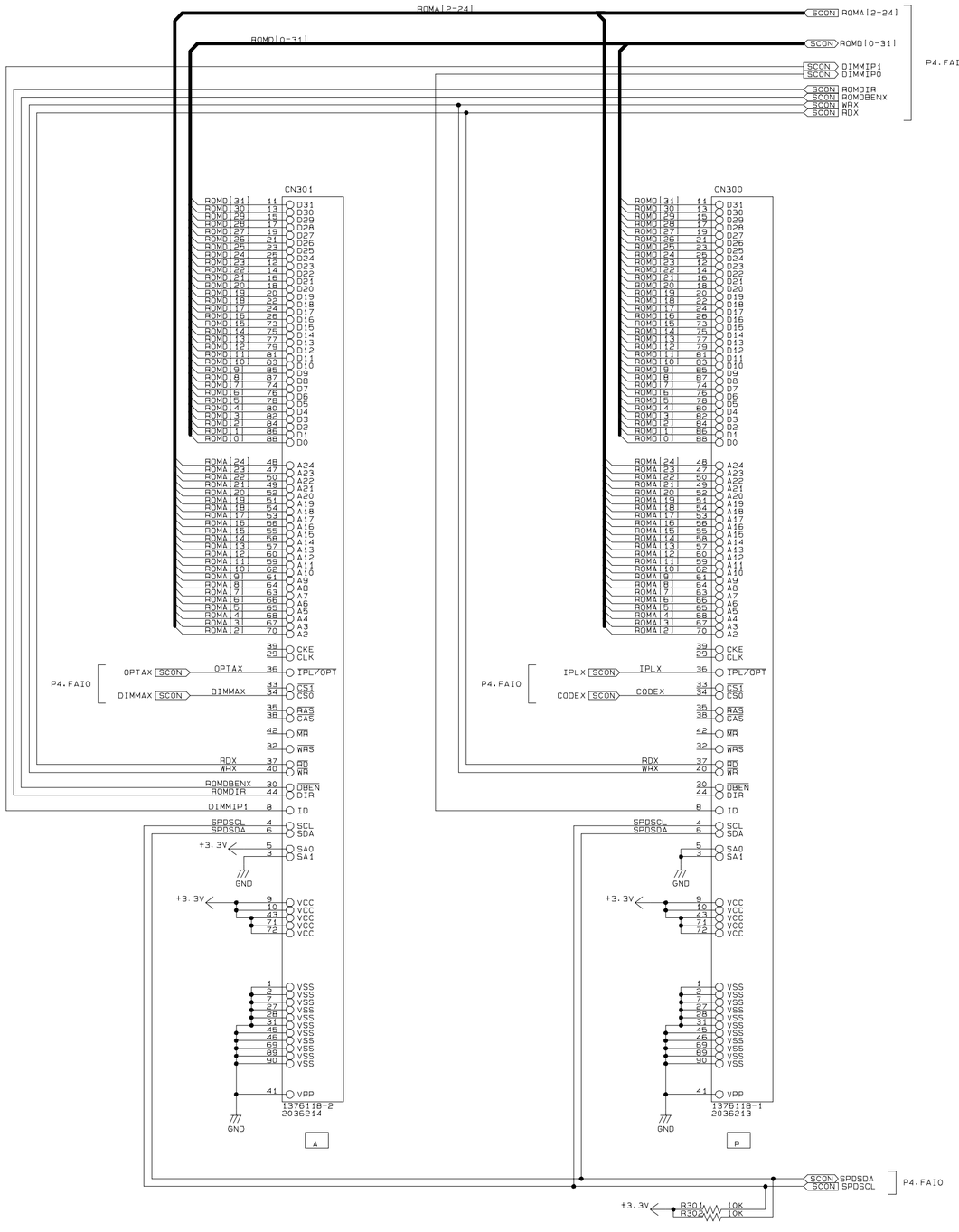
B101 BLM41PG102SN1

BLM18BA220SN1

注1) □内は未実装



Model: AcuLaser C2600/AcuLaser 2600
Board: C585 MAIN
Sheet: 2 of 5
Rev.: A



Model: AcuLaser C2600/AcuLaser 2600
Board: C585 MAIN
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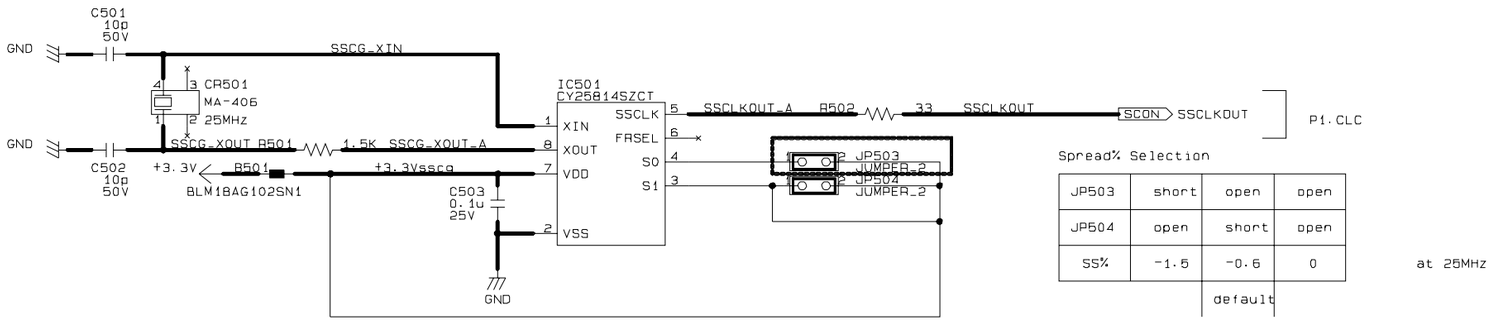
C465はHVWRXの終端用コンデンサである。
CN406の最終端に配置すること。

C412-C413はHWRX・HVRDXの終端用コンデンサである。
CN407・CN901のいずれかの最終端に配置すること。

Debug open

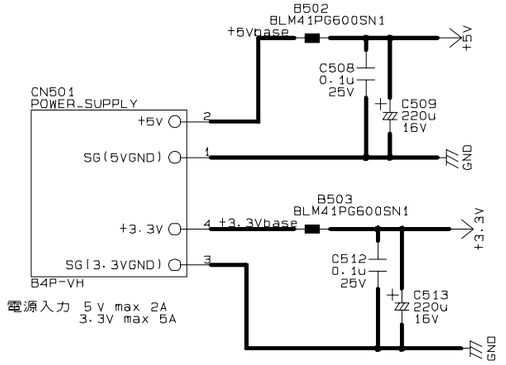
注）1：[ ]内は、未実装

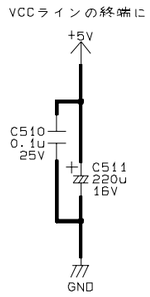


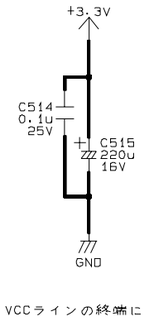
Spread% Selection

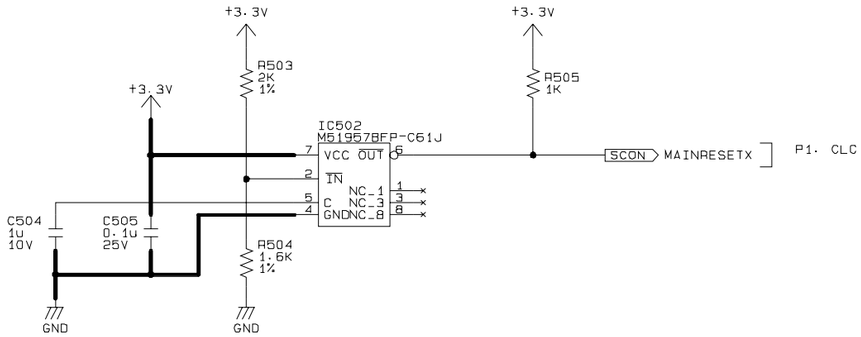
JP503	short	open	open
JP504	open	short	open
SS%	-1.5	-0.6	0
		default	

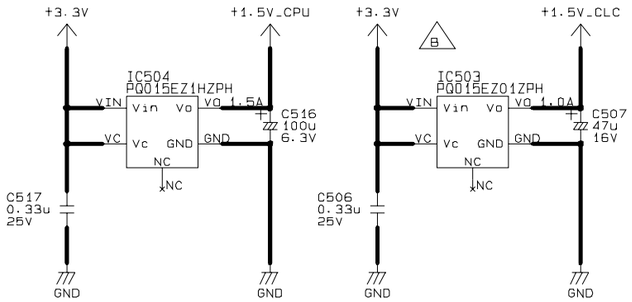
at 25MHz











Model: AcuLaser C2600/AcuLaser 2600
Board: C585 MAIN
Sheet: 5 of 5
Rev.: B