Service Manual

LBP3250 Series
LBP3250

Canon

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Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

Corrections

This manual may contain technical inaccuracies or typographical errors due to improvements or changes in products. When changes occur in applicable products or in the contents of this manual, Canon will release technical information as the need arises. In the event of major changes in the contents of this manual over a long or short period, Canon will issue a new edition of this manual.

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Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
	Indicates an item requiring care to avoid electric shocks.
	Indicates an item requiring care to avoid combustion (fire).
	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
	Indicates an item requiring disconnection of the power plug from the electric outlet.
 Memo	Indicates an item intended to provide notes assisting the understanding of the topic in question.
 REF.	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
	Provides a description of the nature of an error indication.

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.
   In the diagrams, ▭▮▮▮▭ represents the path of mechanical drive; where a signal name accompanies the symbol , the arrow ⟶ indicates the direction of the electric signal.
   The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.
2. In the digital circuits, '1'is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low".(The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.
   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.
All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

Contents

Chapter 3 DISASSEMBLY AND ASSEMBLY

Chapter 1 PRODUCT DESCRIPTION

Contents

1.1 Features

1.1.1 Features

1. Small-size, high-speed monochrome printer
This equipment has a compact body that realizes high-speed print of 23 ppm.

2. Reduction in standby time and energy consumption
This equipment employs on-demand fixing where the heater activates only during printing, resulting in a reduction in standby time and energy consumption on this mode.
3. Realization of noise reduction and stable image quality
This equipment employs a belt drive method for transmitting the drive of the main motor. This enables lower noise and more stable image quality compared to the conventional gear drive method. (See MEMO)

4.Improved Usability
In this equipment, the power switch is situated at the front of the host machine, and maintenance (jam removal, replacing the cartridge) can be performed by accessing one point of the delivery tray.

MEMO:
Changing the drive method from gear to belt reduces uneven pitch due to varied rotation speed of the photosensitive drum, which realizes stable image quality.

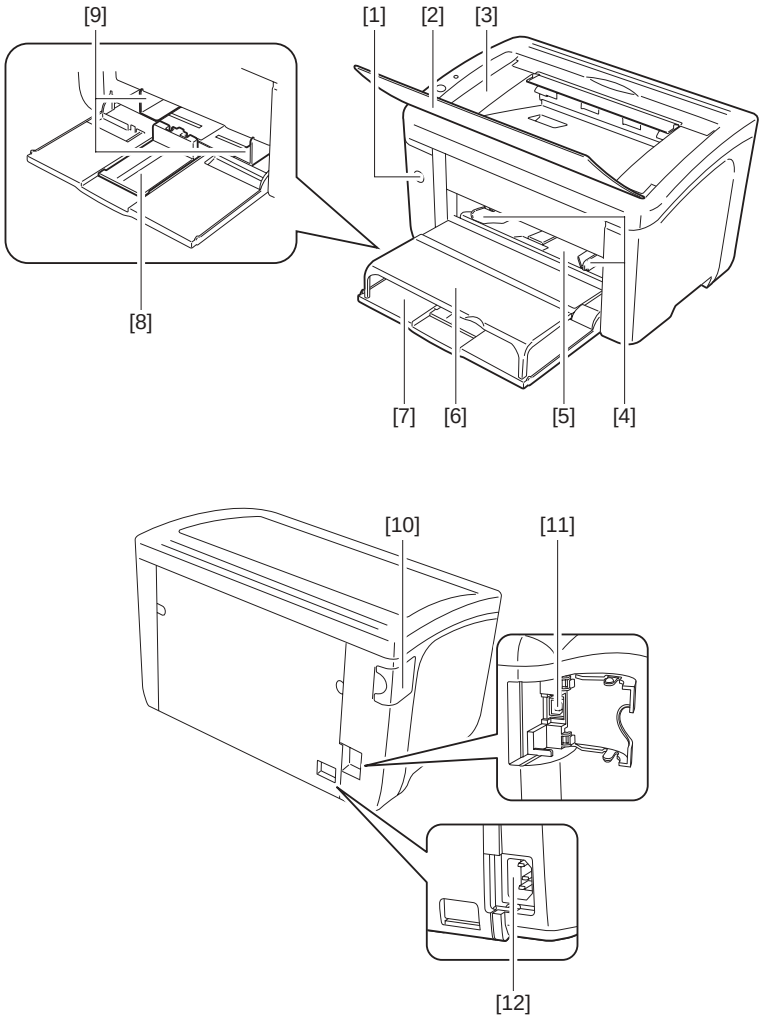
1.2 Product Specifications

1.2.1 Specifications

Body installation method	desktop page printer
Photosensitive medium	OPC drum
Exposure method	semiconductor laser
Development method	Toner projection development
Transfer method	by roller
Separation method	Curvature
Pickup-tray pickup method	by pad
Multifeeder pickup method	by pad
Drum cleaning method	by blade
Fixing method	on-demand
Delivery method	face-down
Toner supply type	By toner cartridge
Warm-up time	in standby: 0 sec (at power-on: 10 sec or less)
Print area	top: 5 mm; bottom: 5 mm; left/right: 5 mm (if envelope, top, bottom, left, right: 10 mm)
Printing resolution	600dpi
First print time	approx. 6 sec or less (A4)
Print speed (A4)	approx. 23ppm
Pickup-tray paper size	A4, B5, A5, LGL, LTR, Executive,16K, Envelope(DL,COM10,C5, Monarch), user-defined paper (76.2 to 215.9 mm in width, 127 to 355.6 mm in length)
Multi-purpose paper size	A4, B5, A5, LGL, LTR, Executive,16K, Envelope(DL,COM10,C5, Monarch), user-defined paper (76.2 to 215.9 mm in width, 127 to 355.6 mm in length)
Pickup-tray paper type	plain paper (60 to 105 g/m2), heavy paper (106 to 163 g/m2), transparency, label sheet, postcard
Pickup-tray paper capacity	Approx. 250 sheets (plain paper 64 g/m2)
Multi-purpose capacity	1 sheet (plain paper 64 g/m2)
Delivery tray stack	Approx. 100 sheets (plain paper 64 g/m2)
Duplex method	None
Hard disk	Standard: none, Option: none
Interface	USB 2.0, Option: none
Memory	Standard: 2MB, Option: none
Operating environment (Temperature range)	7.5 deg C to 32.5 deg C
Operating environment (Humidity range)	10 to 80%RH
Noise	55 dB or less (during printing; based on ISO9296; announced noise emission)
Power supply rating	AC120-127V, +/-10% (50,60Hz +/-2Hz) AC220-240V, +/-10% (50,60Hz +/-2Hz)
Power consumption (Maximum)	AC120-127V: Approx.830W more less (The value of the reference room temperature at 20 deg C) AC220-240V: Approx.990W more less (The value of the reference room temperature at 20 deg C)
Dimensions	384 (W) x 258 (D) x 227 (H) mm
Weight	Printer: Approx. 6.4kg, Toner cartridge: Approx. 0.6kg

1.3 Name of Parts

1.3.1 External View



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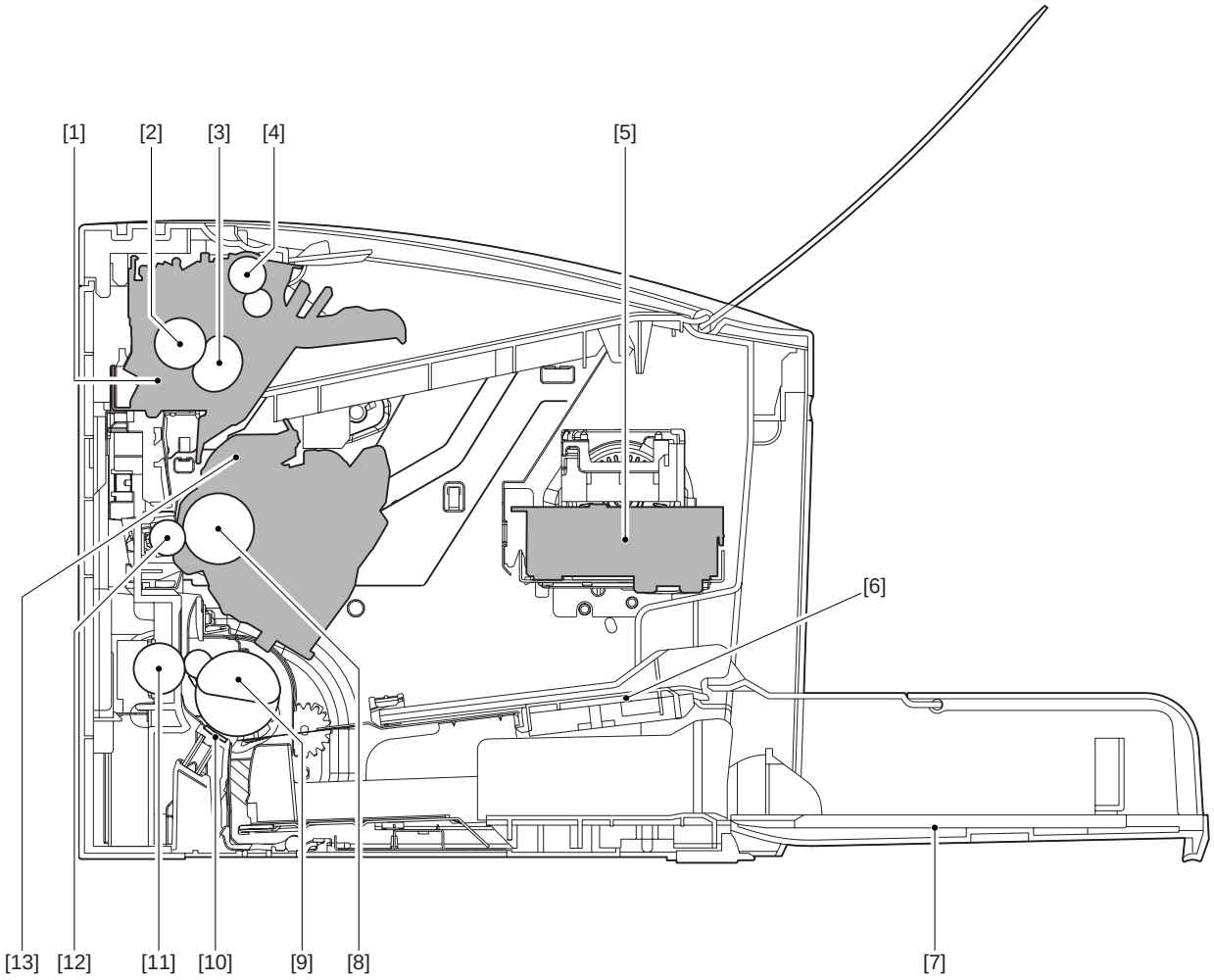
[1] Power switch
[2] Delivery auxiliary tray
[3] Delivery tray
[4] Manual feed tray paper guide
[5] Manual feed tray
[6] Tray cover
[7] Pickup tray
[8] Rear paper guide
[9] Pickup tray Paper guide
[10] USB cover
[11] USB connector
[12] Power receptacle

1.3.2 Cross Section



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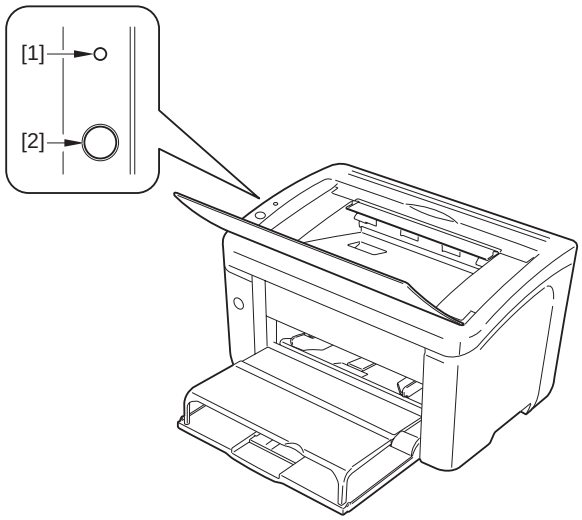
[1] Fixing unit
[2] Pressure roller
[3] Fixing sleeve unit
[4] Delivery roller
[5] Laser scanner unit
[6] Manual feed tray
[7] Pickup tray
[8] Photosensitive drum
[9] Pickup roller
[10] separation pad
[11] Feed roller
[12] Transfer roller
[13] Toner cartridge

1.4 Using the Machine

1.4.1 Control Panel



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[1] Power lamp (green)
Lighting:
Indicates that the power of the host machine is turned on.
Not lighting:
Indicates that the power of the host machine is not turned on.

[2] Paper lamp/paper key (red)
<Lamp>
Flashing:
Indicates that there is no paper in the pickup source and print cannot be executed, or papers cannot be fed correctly.
Not lighting:
Indicates that the machine can make prints.

<Key>
Pressing this key after executing pickup of paper or jam removal restarts printing.

1.5 Safety

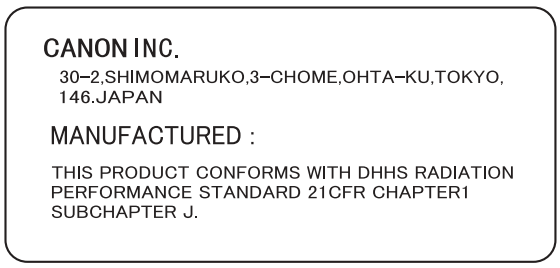
1.5.1 Safety of Laser Light

Laser light can be extremely hazardous to the human body.
The machines laser scanning system is contained in a protective housing and external covers to prevent escape of laser light outside the machine. In other words, the user is free of laser-related hazards as long as the machine is being used for its intended purposes.

The following warnings are given to comply with Safety Principles (EN60950).
Laserstrahlen können für den menschlichen Körper gefährlich sein. Aus diesem Grund ist das optische Lasersystem mit einem Schutzgehäuse und einer Außenabdeckung dicht verschlossen und hat eine Struktur, die keine Laserstrahlen nach außen dringen lässt. Unter der Voraussetzung, dass der Benutzer dieses Gerät normal bedient, ist ein Austritt von Laserstrahlen daher ausgeschlossen.

1.5.2 CDRH Regulations

The Center for Devices and Radiological Health of the US Food and Drug Administration put into effect regulations concerning laser products on August 2, 1976. These regulations apply to products produced on and after August 1, 1976, and prohibit the sale of laser products without certification. The following is a label used to certify compliance with the CDRH regulations, and all laser products to be sold in the US must bear this label.



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1.5.3 Safety of Toner

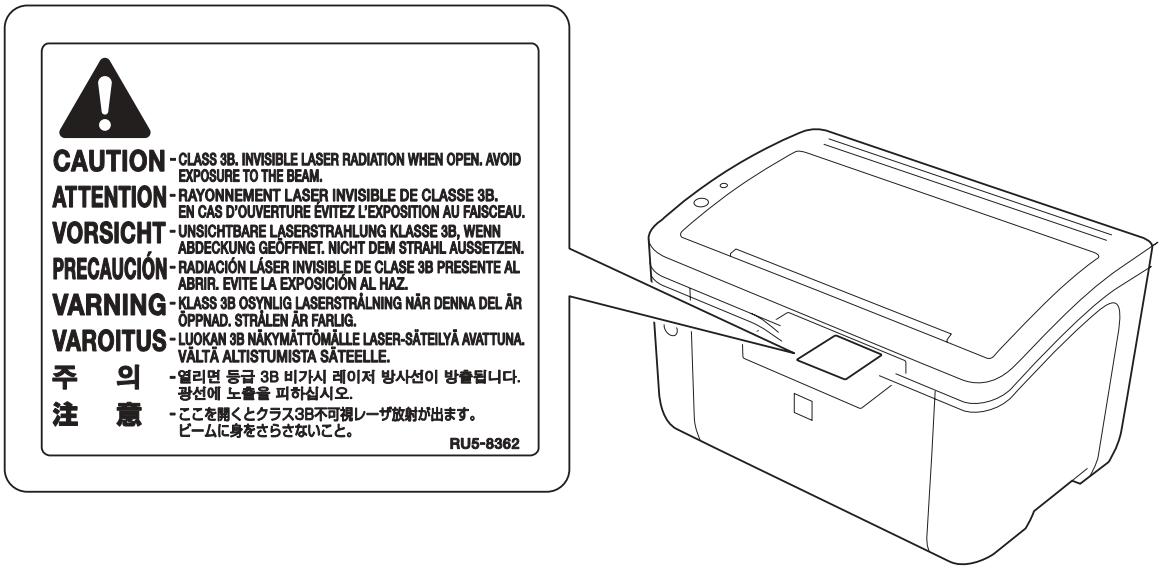
The machines toner is a non-toxic material made up of plastic, iron, and small amounts of dye.

⚠
Do not throw toner into fire. Doing so can lead to explosion.

Toner on Clothing or Skin
1. Remove toner from clothing or skin, and wash with water.
2. Do not use warm or hot water, which will cause the toner to turn jelly-like and fuse permanently with the fibers of clothing.
3. Toner tends to react readily with vinyl. Do not bring it in contact.
4. Storage of copy/print output
   Do not use the polyvinyl case.
   If printed side contacts with the surface of case, toner melts and the paper may be adhered with a case.

1.5.4 Handling the Laser Unit

The laser scanner unit emits invisible laser beam. DO NOT disassemble the unit as the laser beam can possibly damage your eyes. The unit cannot be adjusted in the field. The following label is attached to the cover of the unit:



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1.5.5 Points to Note at Disassembly/Assembly Work

Be sure to ensure the following notes when performing disassembly/assembly work.
1. Be sure to disconnect the power plug for safety when performing disassembly/assembly work.
2. As for assembly procedure, perform the reverse procedure of disassembly unless otherwise instructed.
3. Avoid making mistakes in the type of screws (length/diameter) and usage locations for assembly.
4. Screws w/washer are used as mounting screws for grounding wires and varistors with the aim of checking electric continuity. Be sure to use this screw for assembly.
5. Basically, do not activate the machine with their parts being removed.
6. Do not remove paintlock screws at the time of disassembly.

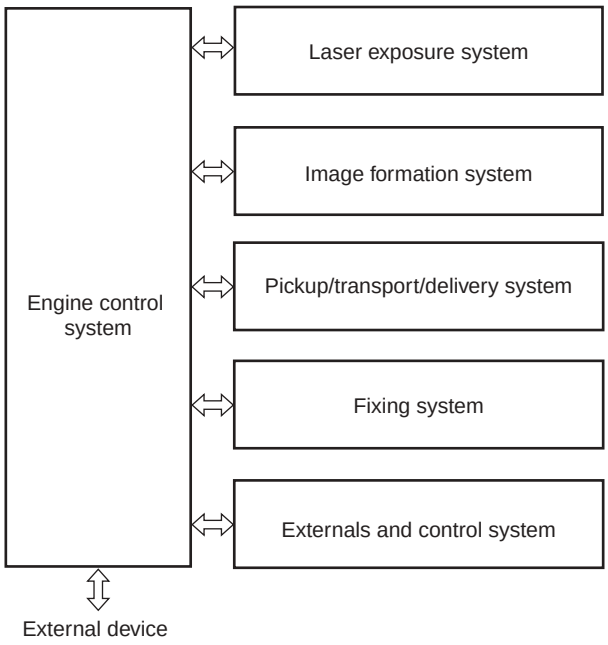
Chapter 2 TECHNICAL REFERENCE

Contents

2.1 Functional Configuration

2.1.1 Outline

The machine may be broadly divided into the following 6 functional blocks: engine control system, laser exposure system, image formation system, pickup/transport/delivery system, fixing system, and externals/auxiliary control system.



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2.2 Basic Sequence

2.2.1 Basic Sequence of Operation

The engine controller controls the operation sequence. The following table provides an outline of machine operation occurring from when the power switch is turned on to when printing ends and motors stop, indicating the purposes of intervals and engine operation. For details of various loads, see the timing chart.

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Interval		Purpose	Remarks
WAIT (Wait)	From power-ON until initial drive for main motor is completed.	To clear potential from the drum surface and to clean the transfer roller. Also to bring the heater temperature up to the targeted temperature.	Detect whether the Toner cartridge is installed or not.
STBY (Standby)	From the end of the WAIT period or the LSTR period until the print command is sent from the main controller. Or, from the end of the LSTR period until power switch is turned OFF.	To keep the printer ready to print.	
INTR (initial rotation)	From the input of the print command from the main controller until the pick-up solenoid is turned ON.	To stabilize the photosensitive drum sensitivity in preparation for printing. Also to clean the transfer roller.	
PRINT (print)	From the end of the INTR period until the top of page sensor detects the trailing edge of paper.	To form image on the photosensitive drum based on the VIDEO (/VD01, /VD02, VD01, VD02) signals input from the main controller, and to transfer the toner image onto paper.	
LSTR (last rotation)	From the end of PRINT period until the Main motor stops.	To deliver the last paper completely out of the printer.	Return to the INTR period as soon as another print command is sent from the main controller.

2.2.2 Power-On Sequence

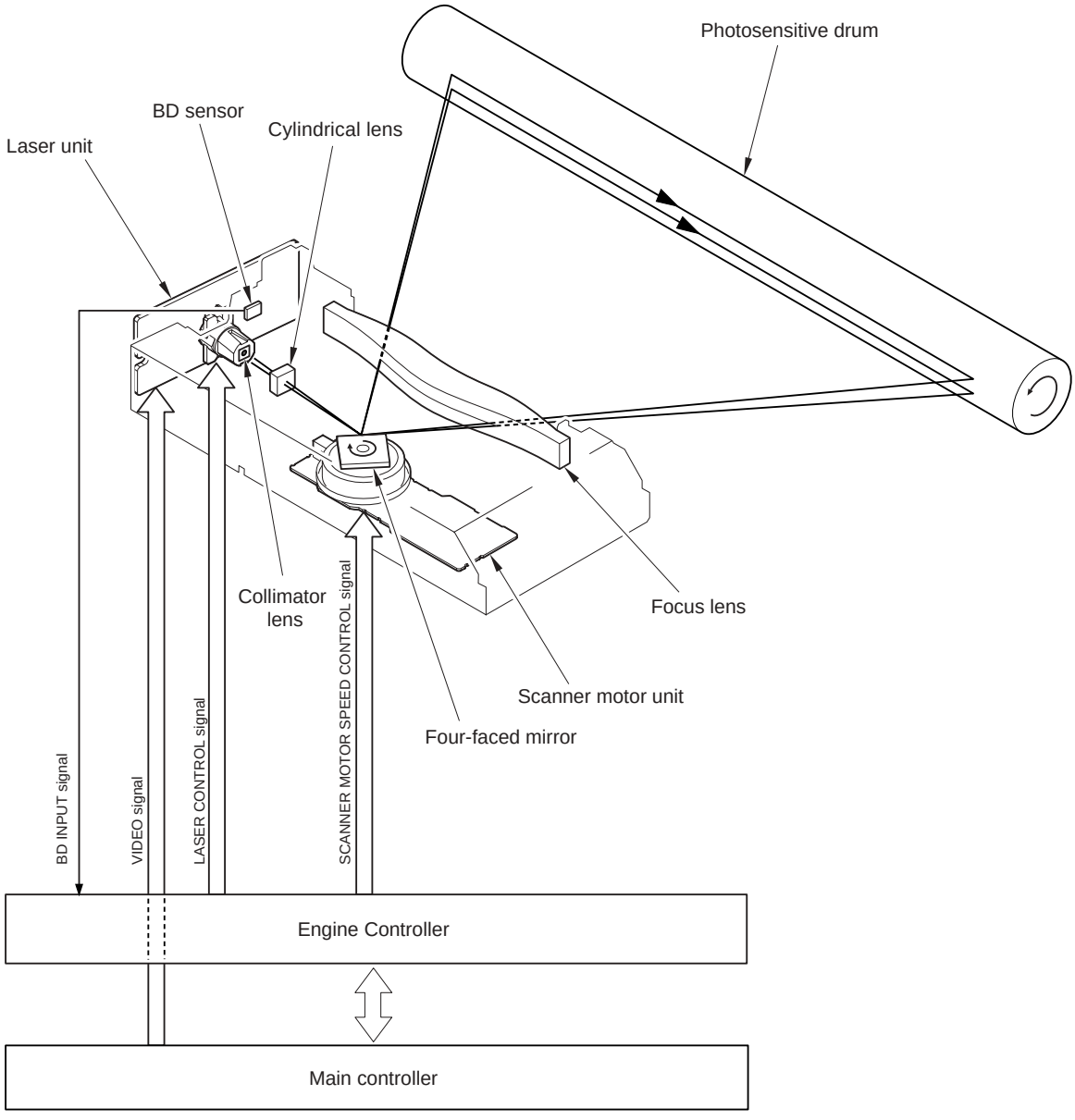
The sequences from the power-ON to the STBY period are described below.
1) Power-ON
2) CPU initialization
3) Video interface communication start
4) Residual paper check
   Detecting paper presence by each sensor signaling.
5) Initial drive for main motor
6) Initial drive for fixing heater
   Controlling fixing temperature targeting for 120 deg C.
7) Initial drive of the scanner motor.
8) High-voltage control
   Detect cartridge presence after primary charging AC bias is applied.
   Cleaning transfer roller.
9) Failure/Abnormality check
   Detecting fixing unit failure and door open during above periods.

2.3 LASER EXPOSURE SYSTEM

2.3.1 Overview/Configuration

2.3.1.1 Overview

The laser exposure system forms static latent images on the photosensitive drum according to the VIDEO signals sent from the main controller, and is comprised of the laser driver and scanner motor, etc. There are controlled by the engine controller. The following is the outline.



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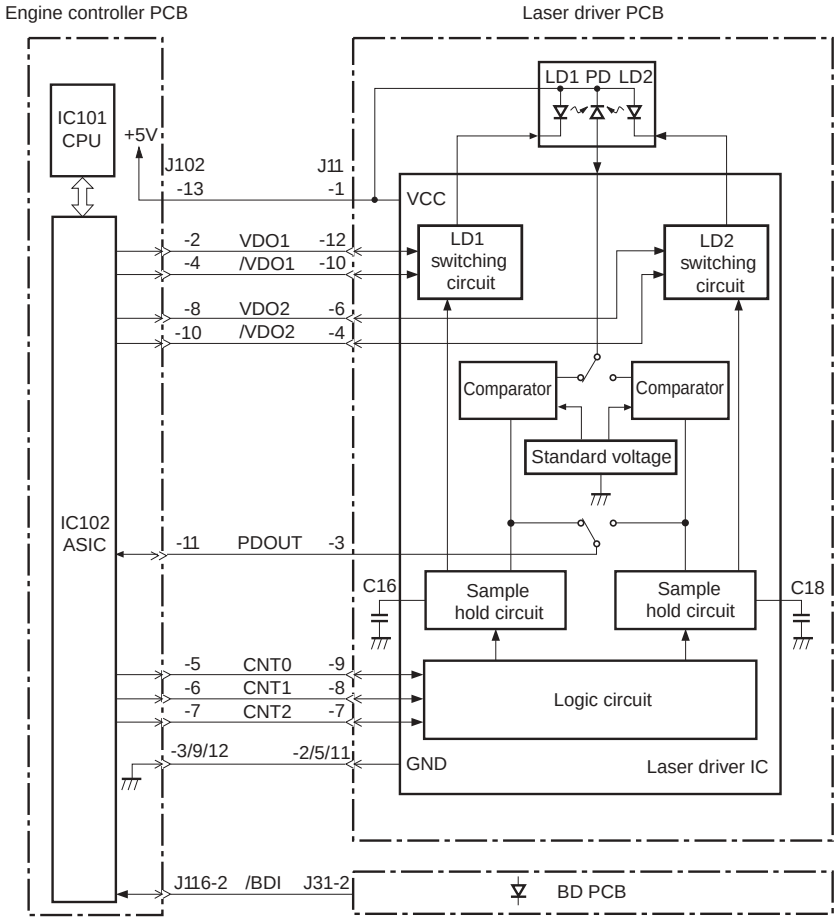
The operational sequence of the laser scanner unit is described below.

1) When the Main controller sends print instruction command, the Engine controller rotates the Four-faced mirror, causing the Scanner motor to rotate.
2) When the Scanner motor starts to rotate, the Engine controller emits the laser forcibly using the Laser control signal, causing the Engine controller to start rotation control for the Scanner motor.
3) The Engine controller controls to keep a constant speed of rotation of the Scanner motor using the Scanner motor speed control signal.
4) After the rotation speed of the Scanner motor reaches its target, the Main controller sends VIDEO signals to the Laser driver PCB.
5) The Laser driver emits laser diode according to these signals.
6) The laser beam passes through the collimator lens and the cylindrical lens and enters the Four-faced mirror rotating at a constant speed.
7) The laser beam reflected by the Four-faced mirror is focused on the Photosensitive drum via the image-forming lens at the front of the Four-faced mirror.
8) When the Four-faced mirror rotates at a constant speed, the laser beam on the Photosensitive drum is scanned on the Photosensitive drum at a constant speed.
9) When the Photosensitive drum rotates at a constant speed and the laser beam is scanned on the Photosensitive drum at a constant speed, latent images are formed on the Photosensitive drum.

2.3.2 Controlling the Laser Activation Timing

2.3.2.1 Laser ON/OFF Control

In this control, the laser driver turns on/off the 2 laser diodes (LD1, LD2) according to the laser control signal sent from the engine controller.
The following is the circuit diagram of the laser control.



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The engine controller sends the laser control signals (CNT0, CNT1, CNT2) for changing the operation mode of the laser to the logic circuit in the laser driver IC, as well as the video signals (VDO1, /VDO1, VDO2, /VDO2) for image formation.
The laser driver IC executes laser control according to the combination of the CNT0, CNT1, CNT2 signals.
The following is the combination of the laser control signal (CNT0, CNT1, CNT2).

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Operation mode	CNT0	CNT1	CNT2	Details
Standby	L	L	L	Laser control OFF
Print	H	H	H	Can emit the laser according to the video signal
LD1 forced ON	L	H	L	LD1 forcibly turned ON
LD2 forced ON	H	L	L	LD2 forcibly turned ON
LD forced OFF	H	H	L	LD1, LD2 forcibly turned OFF

2.3.2.2 Horizontal Sync Control

This is the control to adjust the writing position in the image horizontal direction.
The following is the details of control procedure.
1) The engine controller controls the laser control signal during unblanking (*) to emit the laser diode (LD) forcibly.
2) The BD PCB exists on the scanning route of the laser beam, which is sent to the BD PCB.
3) The BD PCB detects this laser beam, creates BD input signal (/BDI) and sends it to the engine controller.
4) The engine controller creates horizontal sync signals (/BD) based on /BDI signal and sends the /BD signal to the main controller.
5) When /BD signal is input, the main controller outputs the video signal (VD0, /VD0) to the engine controller to adjust the writing position in image horizontal direction.

***: Unblanking period**
The period during which the laser diode is emitted in non-image area.

2.3.3 Laser Control

2.3.3.1 Auto Power Control (APC)

This is the control to emit a constant level of laser diode.
There are two types of APC; initial APC (note 1), and line space APC (note 2). The laser driver executes the same procedure for both controls. The following is the details of the control procedure.

1) When the laser control signal enters LD1 forced ON mode (CNT0, CNT1, CNT2), the laser driver emits LD1 forcibly.
2) The emission level of LD1 is detected with photo diode (PD), converted from current output to voltage, and compared with the standard voltage (voltage equivalent to the target laser level) with the comparator.
3) The laser driver controls the laser current to achieve the voltage of LD1 target level.
4) When the laser control signal enters LD forced OFF mode, the LD1 is forcibly turned off. The laser driver saves the adjusted laser intensity of the capacitor (C16).
5) When the adjustment of LD1 laser intensity is completed, the laser control signal enters LD2 forced ON mode; the laser driver emits LD2 forcibly.
The laser driver adjusts the LD2 laser intensity as in the case of LD1 and saves the adjusted laser intensity to the capacitor (C18).

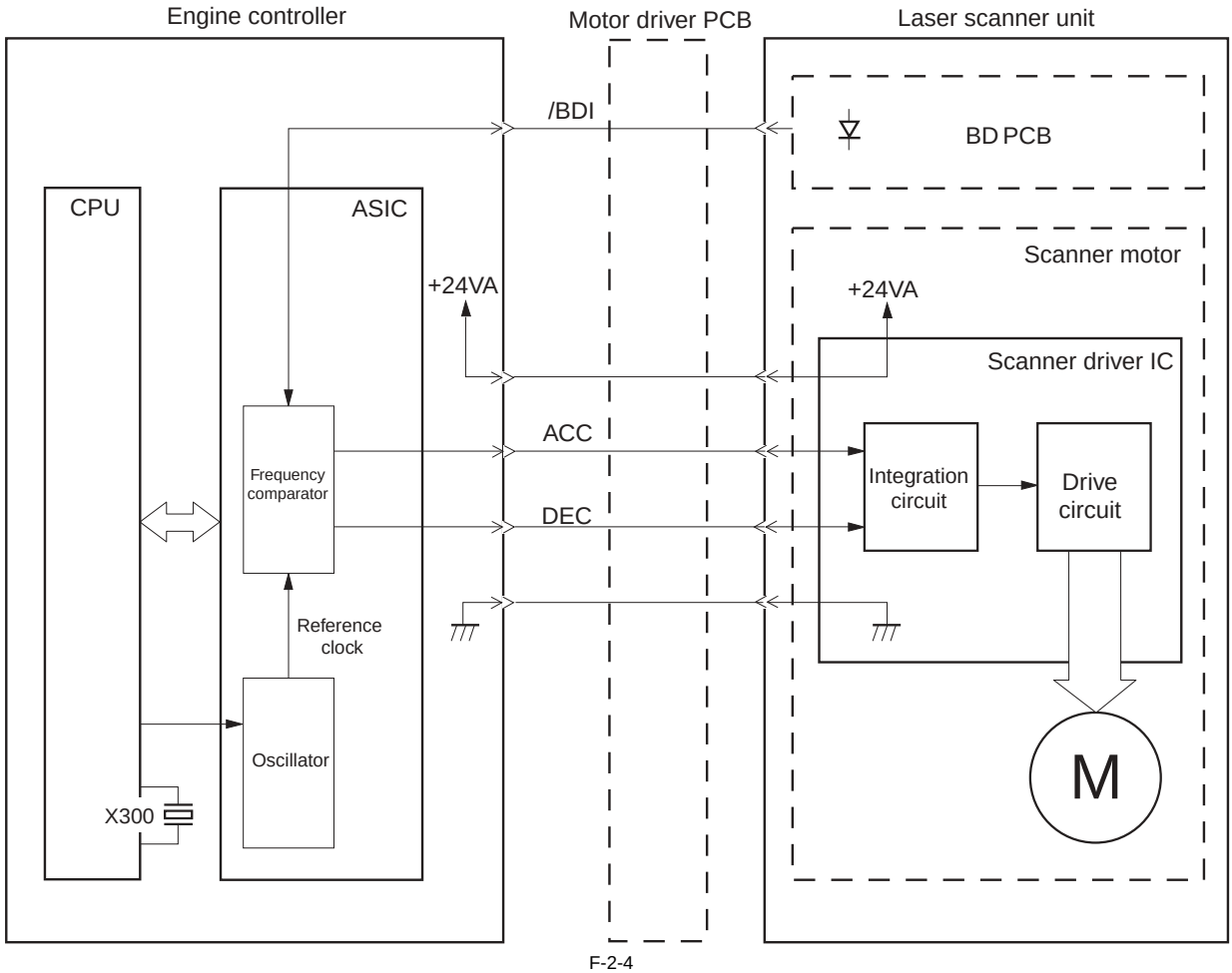
1. Initial APC
APC that is executed during initial rotation. APC adjusts laser intensity and detects faults in the laser.

2. Line space APC
APC that is executed during printing. Laser intensity for one line is adjusted before writing one line.

2.3.4 Laser Scanner Motor Control

2.3.4.1 Overview

This is the control to rotate the scanner motor at a constant speed to emit the laser beam on the correct position on the photosensitive drum.
The following is the control circuit of the scanner motor.



F-2-4

The engine controller creates standard clock based on oscillation frequency of the oscillator (X300); the cycles of the standard clock is compared with that of BD input signal (/BDI) with a frequency comparator and the rotations of the scanner motor is monitored.
The engine controller sends the scanner motor acceleration signal (ACC) and scanner motor deceleration signal (DEC) to the scanner motor driver according to the detected rotation speed to control the rotation speed.

2.3.4.2 Scanner Motor Fault Detection

This is the detection of faults in the laser scanner unit.
When the laser unit scanner unit falls into either of the following status, the engine controller judges it as a fault in the laser scanner unit system and notices the status of fault to the main controller.
The operations of the host machine are stopped.

1. Fault in BD input
At startup of the scanner, /BDI signal cannot be detected within 0.1 sec from the completion of forced acceleration of the scanner motor.

2. Fault in startup
During activating the scanner motor at startup of the scanner, the motor rotation exceeds the specified range (98.3 to 102.1%).

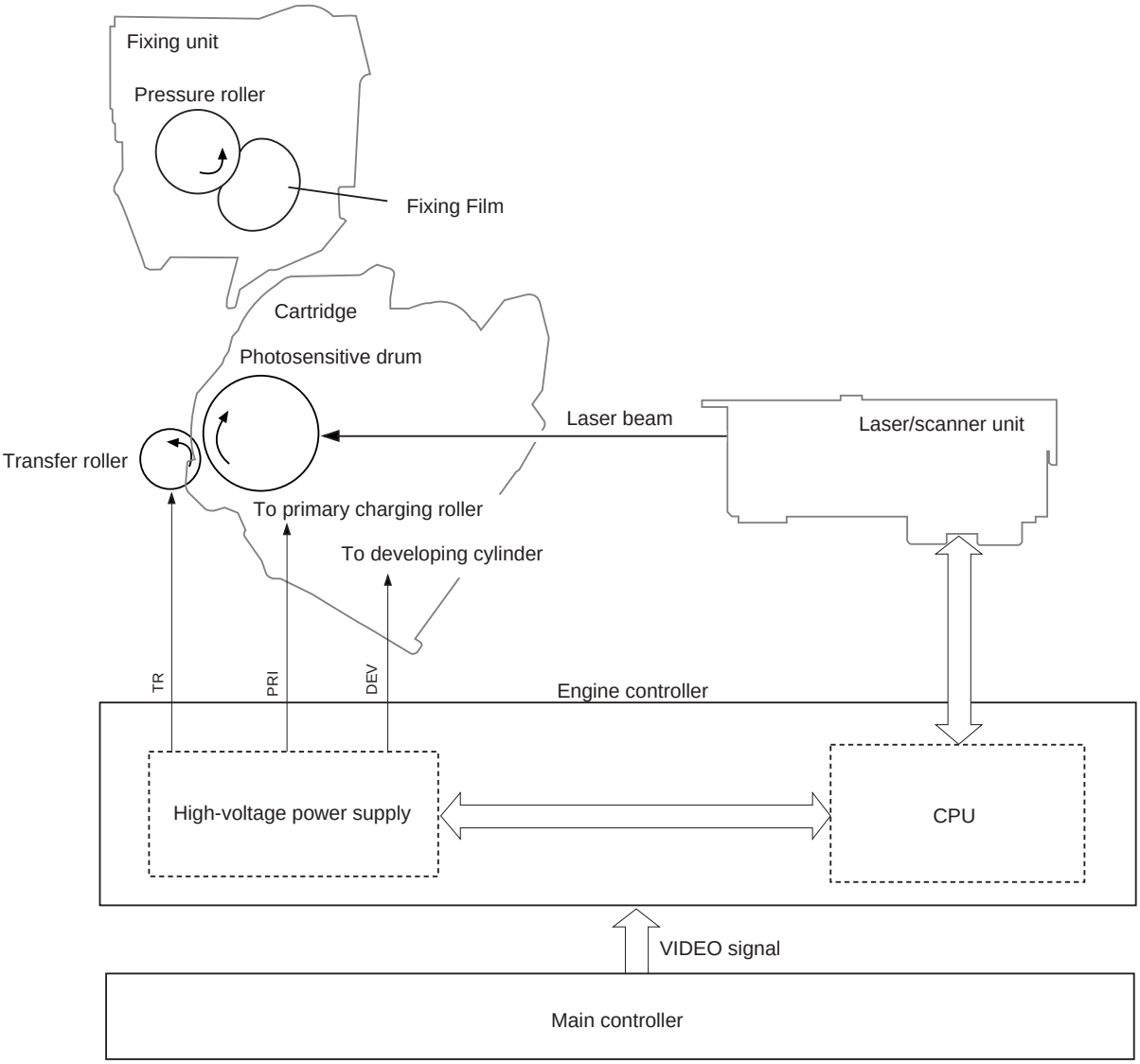
3. Fault in control
After startup of the scanner completes correctly, /BDI signal exceeds the specified value of cycle 10 consecutive times.

2.4 IMAGE FORMATION SYSTEM

2.4.1 Overview/Configuration

2.4.1.1 Overview

The image formation system is the core of this equipment; it forms toner images on papers.
The image formation system is comprised of the following components.
The engine controller controls the laser scanner unit and high-voltage power supply circuit and forms images based on the video signals on papers.
The following are the details of print process for this equipment and the functions of image formation.



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2.4.1.2 Print Process

This explains the basic process of the operations that a printer executes for image formation.
The print process of this equipment is divided largely into 5 blocks, 7 steps.
Toner images are formed on papers by executing the steps of each block in order.
The following are the blocks of print process and the steps.

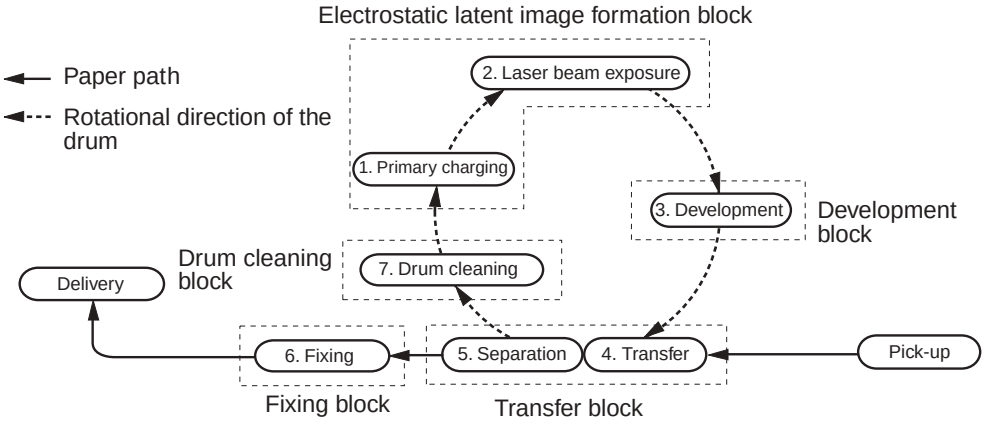
1. Static latent image formation block
   Step 1: Primary charging
   Step2: Laser beam exposure

2. Development block
   Step 3: Development

3. Transfer block
   Step 4: Transfer
   Step 5: Separation

4. Fixing block
   Step 6: Fixing

5. Drum cleaning block
   Step 7: Drum cleaning



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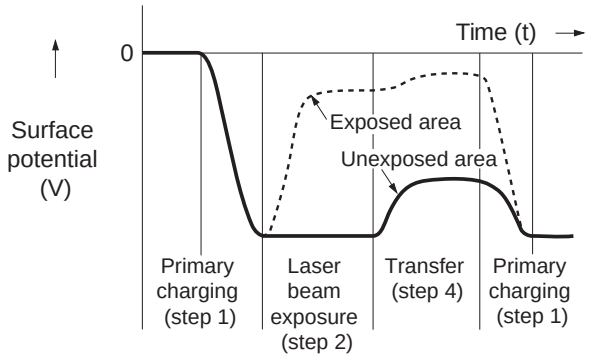
2.4.1.3 Static Latent Image Formation Block

This block is comprised of two steps and forms static latent images on the photosensitive drum.
When the final step of this block completes, negative charge remains at dark areas on the drum surface where laser beam has not been exposed, and negative charge is eliminated from bright areas on the drum surface with laser beam exposed. The images on the drum with negative charge are called static latent images because human eyes cannot detect them.



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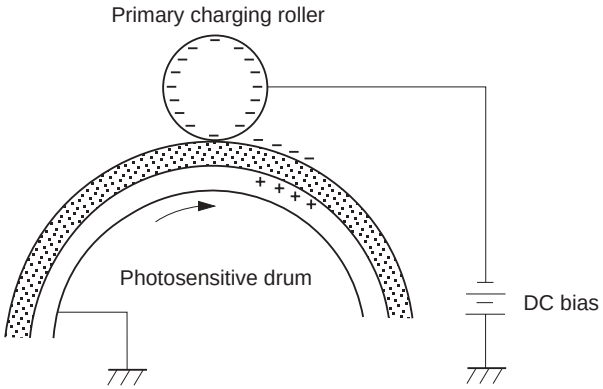
Step 1: Primary charging
For preparation of latent image formation, the surface of photosensitive drum is charged with even negative potential. In this primary charging, the charge is applied from the primary charging roller directly to the photosensitive drum.
DC bias is applied to the primary charging roller to maintain an even potential on the surface of the photosensitive drum.



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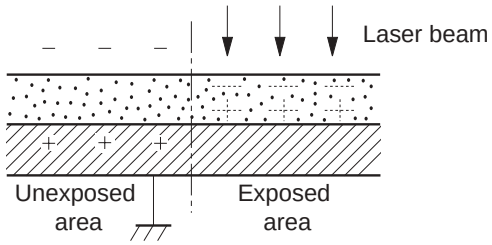
Step 2: Laser beam exposure
In this step, static latent images are formed on the photosensitive drum with laser beam.
When laser beams are scanned on the photosensitive drum negatively charged, bright areas lose their charges, eliminating negative potential on the surface of the photosensitive drum; on those portions, static latent images are formed.



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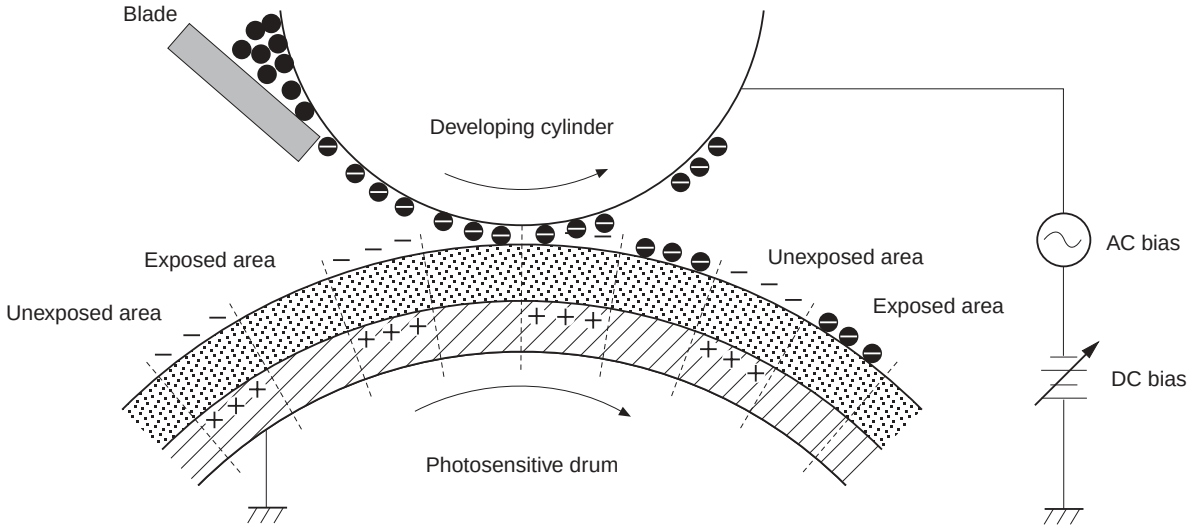
2.4.1.4 Development Block

This block is comprised of one step; it puts toners to the static latent images on the surface of the photosensitive drum and visualizes the images using toner projection development. The toner projection development makes the toner jump on the surface of the photosensitive drum and develops the images.
The toner (developer) used for this equipment is a one-component toner that comprises magnetic body and resin, etc.

Step 3: Development
Toner is affixed to static latent images on the surface of the photosensitive drum.
The toner is charged negatively by friction between the developing cylinder and the surface of the developing blade.
An area on the photosensitive drum exposed with laser beam has higher potential than the developing cylinder; the potential difference between the drum surface and the cylinder enables the toner to jump on the drum surface and makes them visible images.
AC bias superimposed with the development DC negative bias is applied to the developing cylinder.



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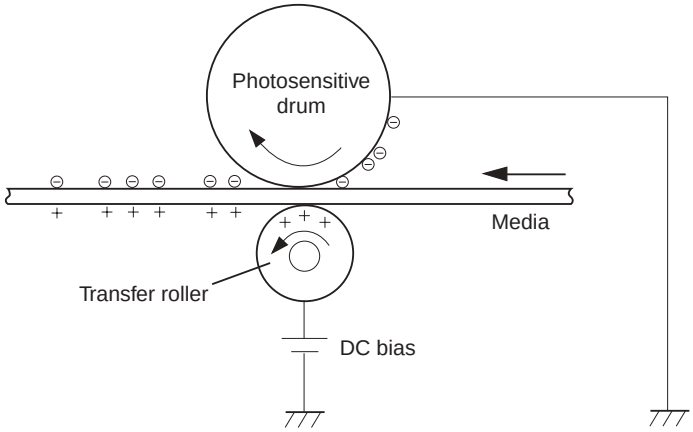
2.4.1.5 Transfer Block

This block is comprised of two steps; it transfers toner images on the surface of the photosensitive drum to papers.

Step 4: Transfer
In this step, toner images on the photosensitive drum are transferred to papers.
This equipment applies DC positive bias to the transfer roller facing the photosensitive drum and charges papers positively. This enables toner negatively charged on the surface of the photosensitive drum to be transferred to papers.



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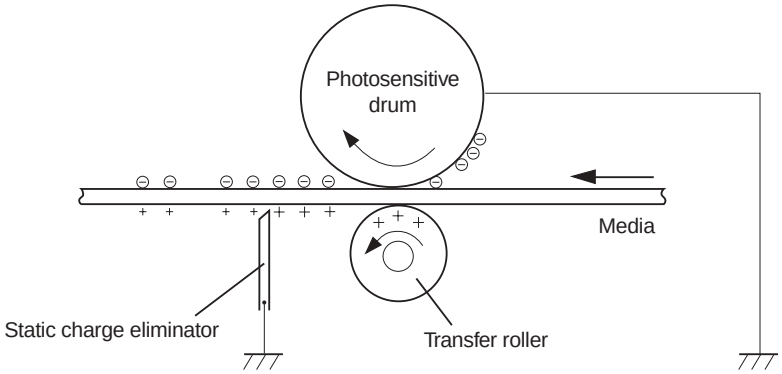
Step 5: Separation
In this step, DC negative bias is applied to the static eliminator according to the elasticity of papers to separate the papers from the photosensitive drum. The static eliminator is used to stabilize the paper feed system (prevention of toner stray that appears as polka-dots on print images in a low-temperature, low-humidity environment), and neutralizes the electric charge at the back of papers.

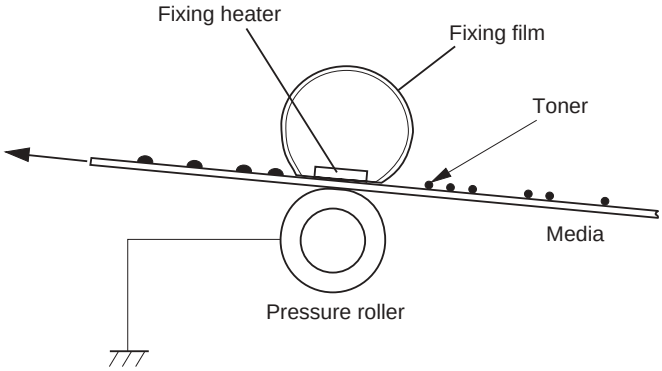


F-2-12

2.4.1.6 Fixing Block

This block applies pressure and heat to papers and the toner on them to fix toner images to the papers.

Step 6: Fixing
This step employs on-demand fixing that fixes toner images transferred to papers on the papers.

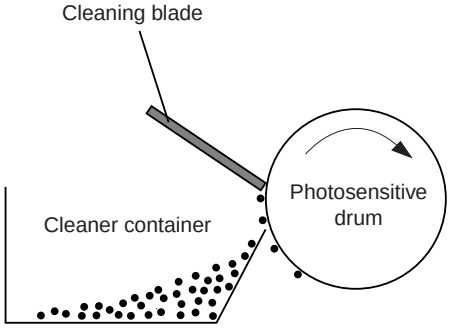


F-2-13

2.4.1.7 Drum Cleaning Block

The drum cleaning block removes the toner remained on the photosensitive drum.

Step 7: Drum cleaning
In this step, toner remained on the photosensitive drum is removed.
The cleaning blade scrapes the leftover toner on the surface of the photosensitive drum; the toner is collected into the cleaner container.
By implementing the above step, the surface of the photosensitive drum is cleaned.

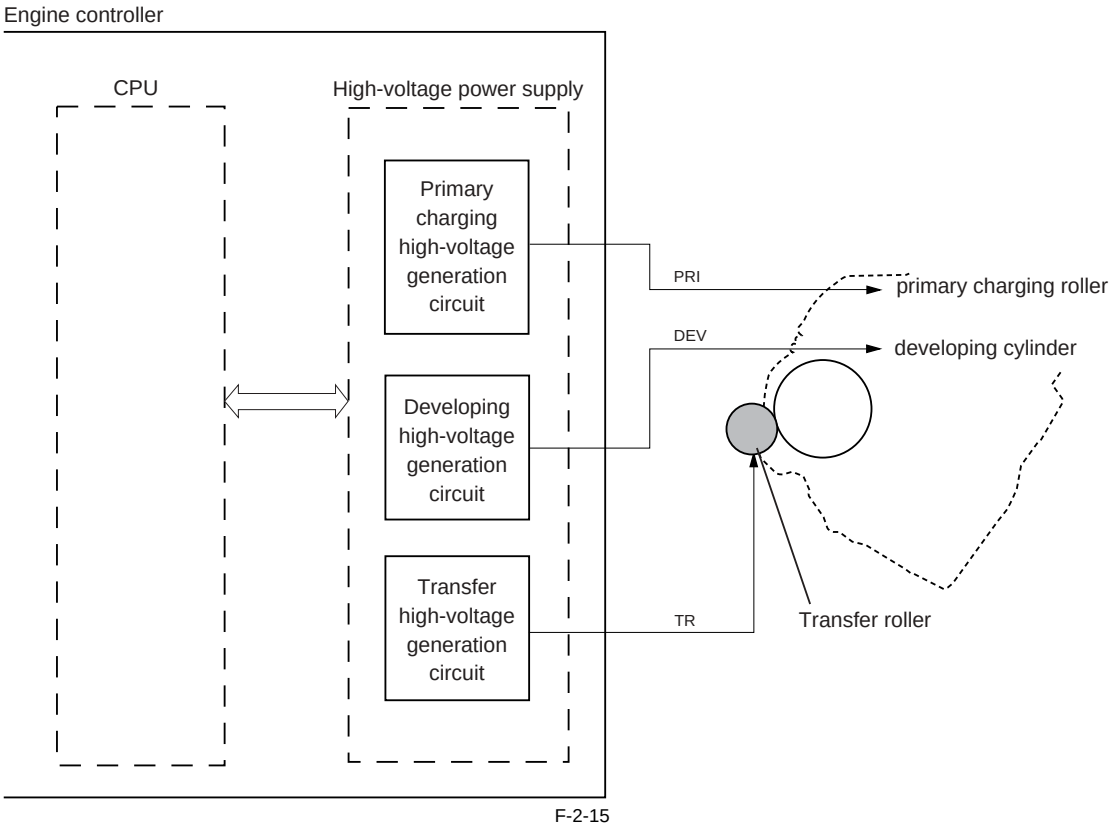


F-2-14

2.4.2 High-Voltage Control

2.4.2.1 Overview

This circuit is comprised of the circuits that apply biases to the primary charging roller, developing cylinder, transfer roller, and the fixing control circuit. The CPU of the engine controller controls the high-voltage power supply circuit to generate these biases. The fixing control circuit executes heater control of the fixing assembly according to the instruction by the CPU of the engine controller.
The following is the block diagram of this circuit.



F-2-15

2.4.2.2 Generating Primary Charging Bias

The primary charging bias (PRI) is a DC negative bias that is output to apply an even negative potential to the surface of the photosensitive drum. The primary charging high-voltage generating circuit in the high-voltage power supply circuit generates this bias.
The high-voltage power supply circuit applies the generated primary charging bias to the primary charging roller at a specified timing.
The primary charging bias varies in conjunction with the developing bias according to the information of image density sent from the main controller.

2.4.2.3 Generating Developing Bias

The developing bias is a DC negative bias that is output to affix toner to the static latent images formed on the photosensitive drum. This bias is a development DC and AC superimposed bias and generated by the development high-voltage generating circuit in the high-voltage power supply circuit.
The high-voltage power supply circuit applies the generated developing bias to the developing cylinder at a specified timing.
The developing bias varies in conjunction with the primary charging bias according to the information of image density sent from the main controller.

2.4.2.4 Generating Transfer Bias

Transfer bias (TR) is a bias that is output to transfer toner to papers. There are two types of bias; DC positive bias and DC negative bias, and generated by the transfer high-voltage generating circuit in the high-voltage power supply circuit. The DC positive bias is output at the time of toner transfer, and the DC negative bias at the time of cleaning the photosensitive drum.
The high-voltage power supply circuit applies the generated transfer bias to the transfer roller according to each print sequence.
Each print sequence is described below.
- Cleaning bias:
  The bias to move (clean) the toner attached to the transfer roller to the photosensitive drum at the time of warming up or last rotation sequence.
  The transfer negative bias is applied to the transfer roller.

- Paper intervals bias:
  The bias to prevent the toner remained on the photosensitive drum from attaching to the transfer roller at paper intervals during continuous printing. A minor transfer positive bias is applied to the transfer roller.

- Print bias:
  The bias to transfer the toner on the surface of the photosensitive drum to papers at the time of print sequence. The transfer positive bias is applied to the transfer roller.

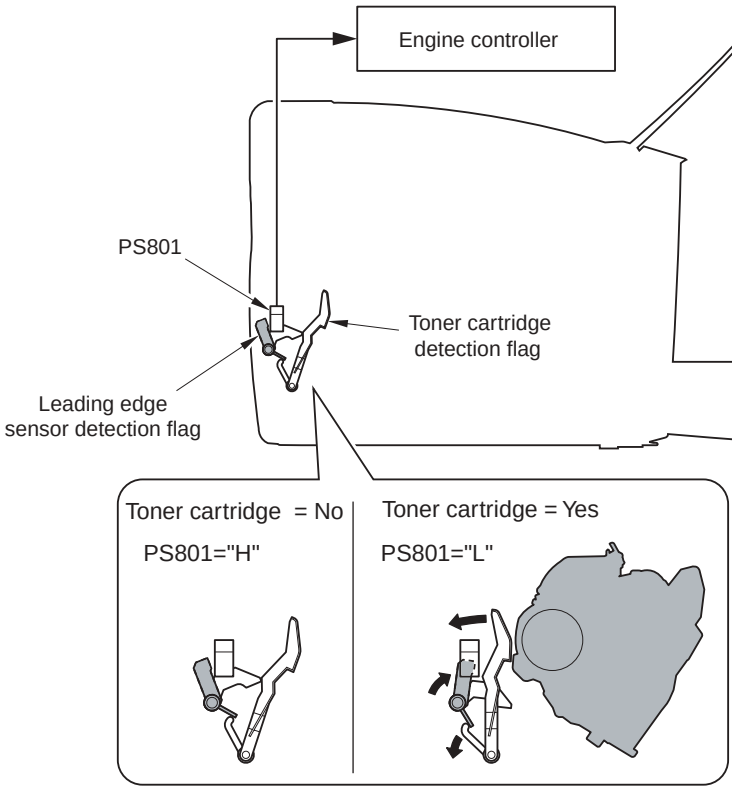
2.4.3 Toner Cartridge

2.4.3.1 Toner Level Detection

This equipment has no function of toner level detection.

2.4.3.2 Toner Cartridge Absence/Presence Detection

The engine controller detects the position of the Toner cartridge detection flag to judge the absence/presence of the Toner cartridge.
At the time of turning on the power or closing the upper cover, the engine controller judges the position of the Toner cartridge flag based on the output result of the leading edge sensor (PS801).
When the output result of the leading edge sensor (PS801) is L, it is judged that the Toner cartridge is absent; If being H, it is judged that the Toner cartridge is present.



F-2-16

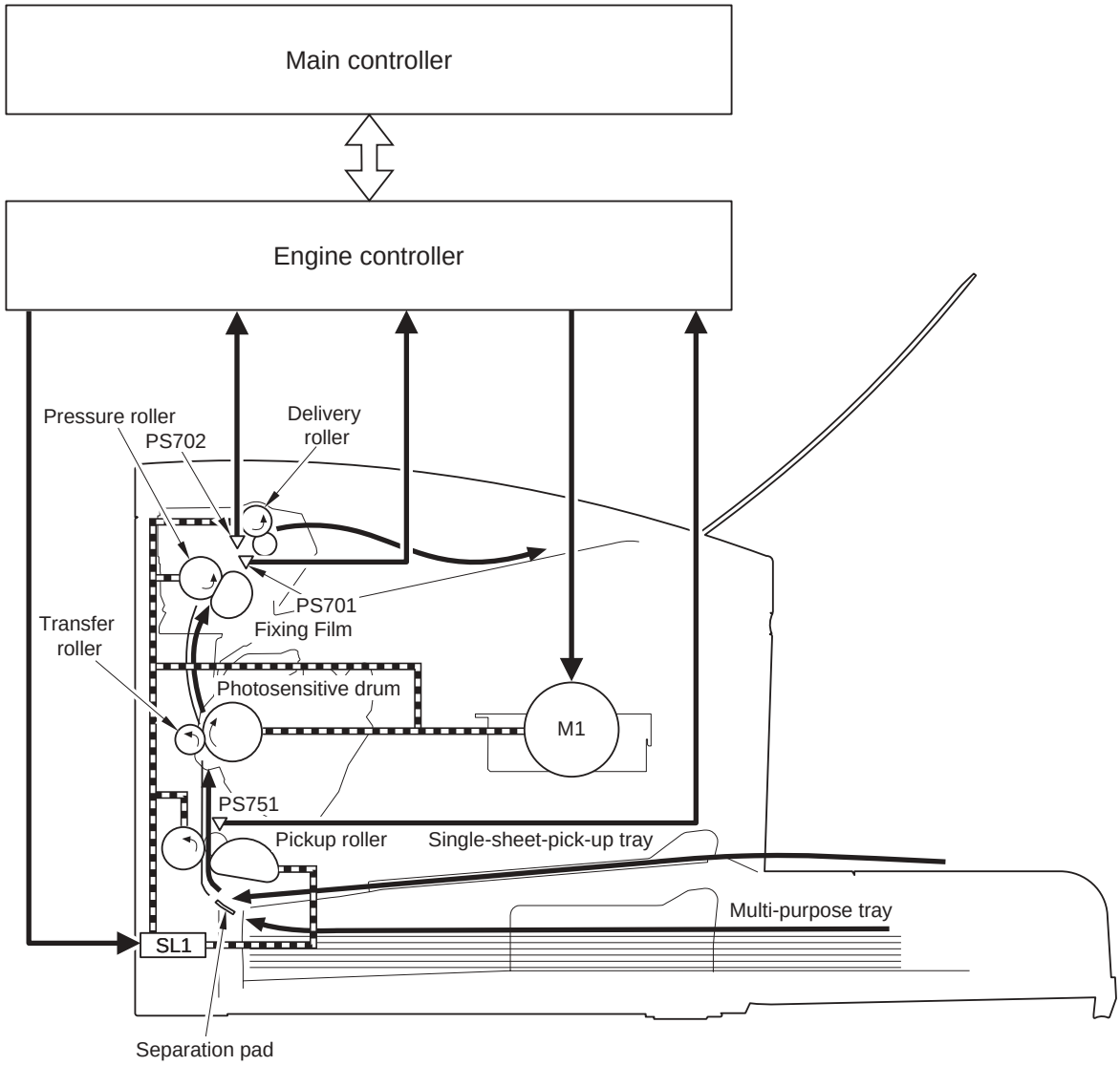
The leading edge sensor performs both this detection and paper feed detection. Therefore, the engine controller cannot make a judgment of ‘Toner cartridge absent’ or ‘jam occurrence’ when jam occurs.
The engine controller judges this case as ‘Toner cartridge absent’ and notices it to the main controller.
If jam occurs when ‘Toner cartridge absent’ is detected, check if there is a fault in the leading edge sensor and the detection flag.

2.5 PICKUP AND FEEDING SYSTEM

2.5.1 Overview/Configuration

2.5.1.1 Overview

The pickup and feeding system executes pickup and feeding of papers and is composed of the main motor, solenoid, and rollers.
In this equipment, pickup from the pickup tray and manual feed tray is available. There is only a face-down delivery.
Papers set on the pickup tray and manual feed tray are fed by the same pickup roller. The papers are fed to the photosensitive drum, the transfer charging roller, the fixing sleeve unit, the pressure roller and then to delivery roller in this order; and then they are delivered to the delivery tray.
The feeding route of papers has three photointerrupters; the leading edge sensor (PS801), the fixing delivery sensor (PS701), the paper width sensor (PS702). They detect arrival and passing of papers.
If a paper does not reach or pass through each sensor within a specified time, the engine controller judges this status as jam and notices the jam occurrence to the main controller.



F-2-17

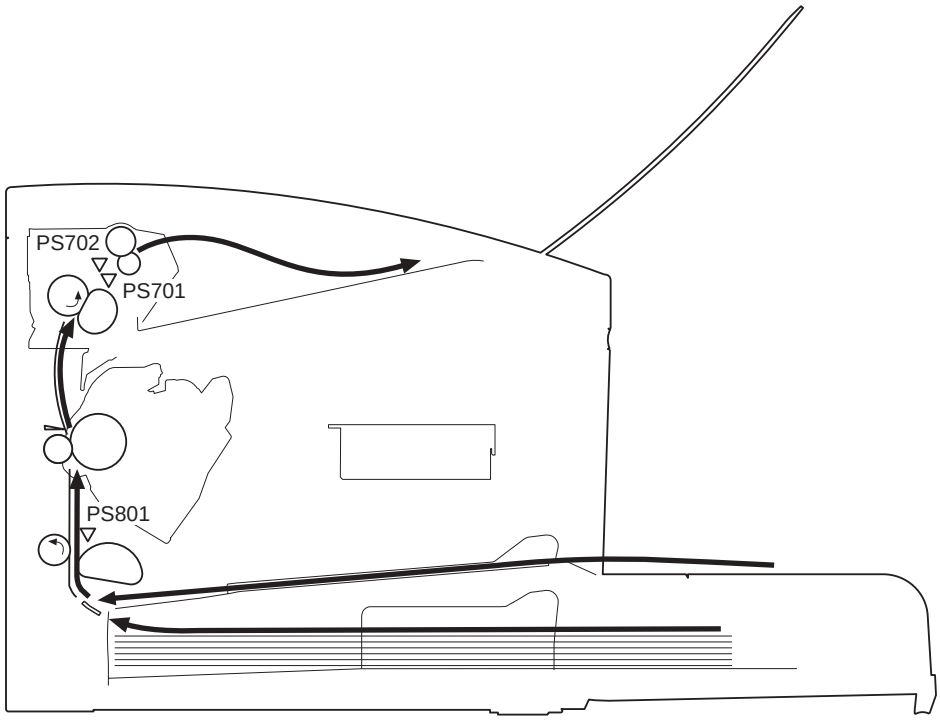
PS701: Fixing delivery sensor
PS702: Paper width sensor
PS801: Leading edge sensor
M1: Main motor
SL1: Pickup solenoid

2.5.2 Detecting Jams

2.5.2.1 Jam Detection Outline

2.5.2.1.1 Overview

The following sensors are installed to detect absence/presence of papers and whether papers are correctly fed.
- Fixing delivery sensor (PS701)
- Paper width sensor (PS702)
- Leading edge sensor (PS801)



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Whether jam occurs or not is judged according to whether a paper is absent/present on the sensor at the check timing that has been stored in the CPU of the engine controller.
When the engine controller judged that jam has occurred, print operation is stopped and jam occurrence is noticed to the main controller.

2.5.2.2 Delay Jams

2.5.2.2.1 Delivery Delay Jam

- If there is no paper ahead on paper path:
CPU detects delivery delay jam in the case that the sheet (to print) does not reach the fixing delivery sensor (PS701) within 1.5 sec (approximately) after it reaches the leading edge sensor (PS801).
- If there is paper ahead on paper path:
CPU detects delivery delay jam in the case that 1st sheet (to print) is detected by the fixing delivery sensor (PS701) 1.5 sec (approximately) after the 2nd sheet (to print) reaches the leading edge sensor (PS801).

2.5.2.3 Stationary Jams

2.5.2.3.1 Pickup Stationary Jam

CPU detects pickup stationary jam in the case that the sheet (to print) is detected 5.6 sec (approximately) after it reaches the leading edge sensor (PS801).

2.5.2.3.2 Delivery Stationary Jam

If 0.9 sec passes after the leading edge sensor (PS801) detects the paper absent and, in addition, the fixing delivery sensor (PS701) cannot detect the paper within approx 0.4 sec after that, CPU determines the delivery stationary JAM.

2.5.2.4 Other Jams

2.5.2.4.1 Fixing Take-up Jam

CPU detects fixing take-up jam in the case that the fixing delivery sensor (PS701) detects absence of paper (no paper) for 0.9 sec (approximately) after the sheet (to print) reaches the fixing delivery sensor (PS701) and the leading edge sensor (PS801) detects absence of paper (no sheet).

2.5.2.4.2 Remaining Jam at Start-up

CPU detects residual jam when meeting the following conditions:
- If either of the fixing delivery sensor (PS701), the paper width sensor (PS702) or the leading edge sensor (PS801) detects a sheet (to print) when the power is turned ON or the door is open.
- If either of the fixing delivery sensor (PS701), the paper width sensor (PS702) or the leading edge sensor (PS801) detects a sheet (to print) after Auto Delivery* is completed.

***Auto Delivery function**
This function is to deliver the residual paper automatically when the delivery tray is opened at power-on or at a start of print operation.
During initial operation, if the leading edge sensor (PS801) detects the paper, CPU determines that there is the residual paper at startup and informs it to the main controller, then stops a printer. After that, when the auto delivery is instructed by the main controller, CPU drives the motor and delivers the residual paper to the outside of the machine.

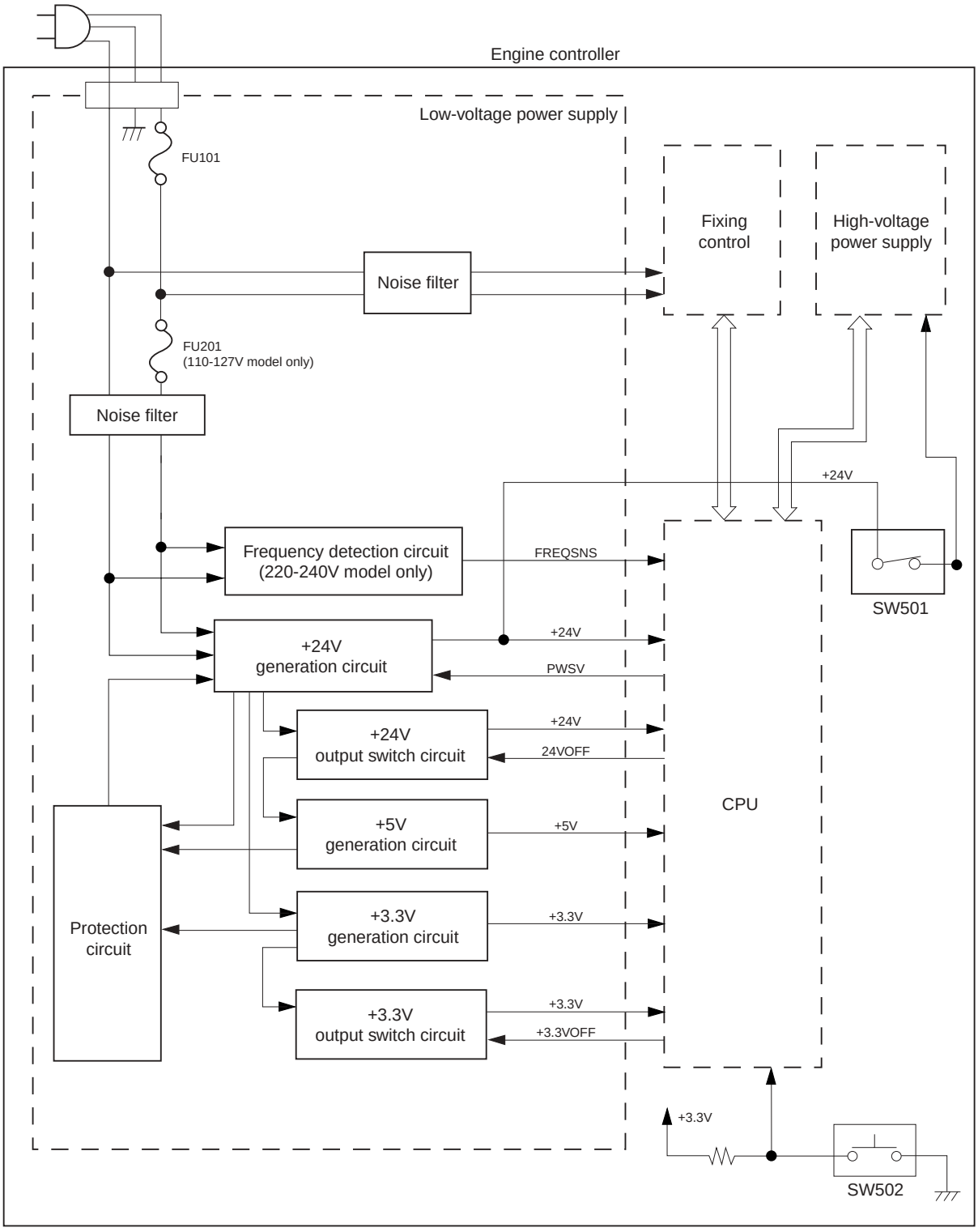
2.6 EXTERNAL AND CONTROLS SYSTEM

2.6.1 Power Supply

2.6.1.1 Power Supply

2.6.1.1.1 Low voltage power circuit

This circuit is to convert the AC power that is input by the power receptacle to the DC power and supply it to each load.
AC power is supplied to the low voltage circuit when the power switch (SW1) is turned ON. Then, AC power is converted to the DC power; +24V, +5V or +3.3V that is required for printer in this circuit.
The following is the block diagram of low voltage circuit and the DC power supply route.



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2.6.1.2 Protective Functions

2.6.1.2.1 Power protective function

Low voltage power circuit carries the overcurrent preventive function against and overvoltage preventive function that block the voltage output automatically to prevent the power circuit brokerage when the overcurrent or overvoltage occur due to load errors such as short circuit etc.
Thus, when the DC power cannot be output from the low voltage circuit, the protective function against overcurrent or overvoltage may be working. Turn OFF the power switch (SW1) to fix load errors and turn ON the switch again (see note 1).
Also the circuit carries the 2 fuses (FU101, FU102) as a preventive function (see note 2). The fuses blow to block the power supply when overcurrent occurs in AC line.

1. When restoring the low voltage power after protective function is activated, leave it for 2 minutes or more from turning off the switch or plugging out before turning ON.

2. 200V series products carry FU101 fuse only.

2.6.1.2.2 Safety function

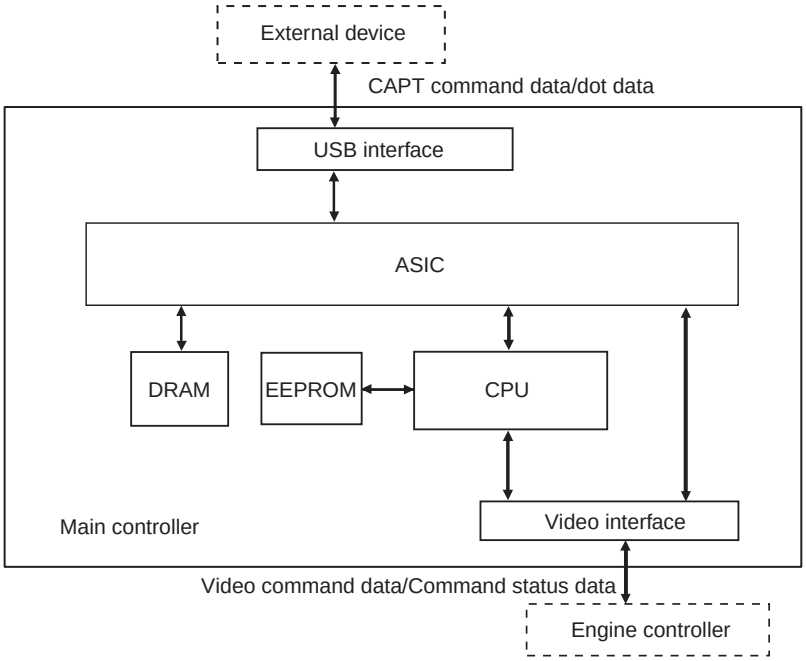
The host machine equips the function of stopping 24V of fixing assembly and the high voltage power unit to avoid users and engineers from getting burned or electric shock.
When the cartridge door is opened, the interlock switch (SW501) is turned off and 24V supplied to fixing assembly and the high voltage power unit is shut.
Engine controller CPU determines the door open when each interlock switch is turned OFF.

2.7 ENGINE CONTROL SYSTEM

2.7.1 Main Controller

2.7.1.1 General description

Main controller receives the print information from the external devices (computer etc.) through the interface cable.
Print information is divided into 2 types such as CAPT command data to handle the printer status or specific data and the dot data to printout.
After the main controller receives the dot data, it creates the video data and send it to the engine controller.
CAPT command data is the data to monitor the printer status from the external device using interface.
When this data arrives, the main controller communicates with the engine controller and sends the printer status to the external devices.



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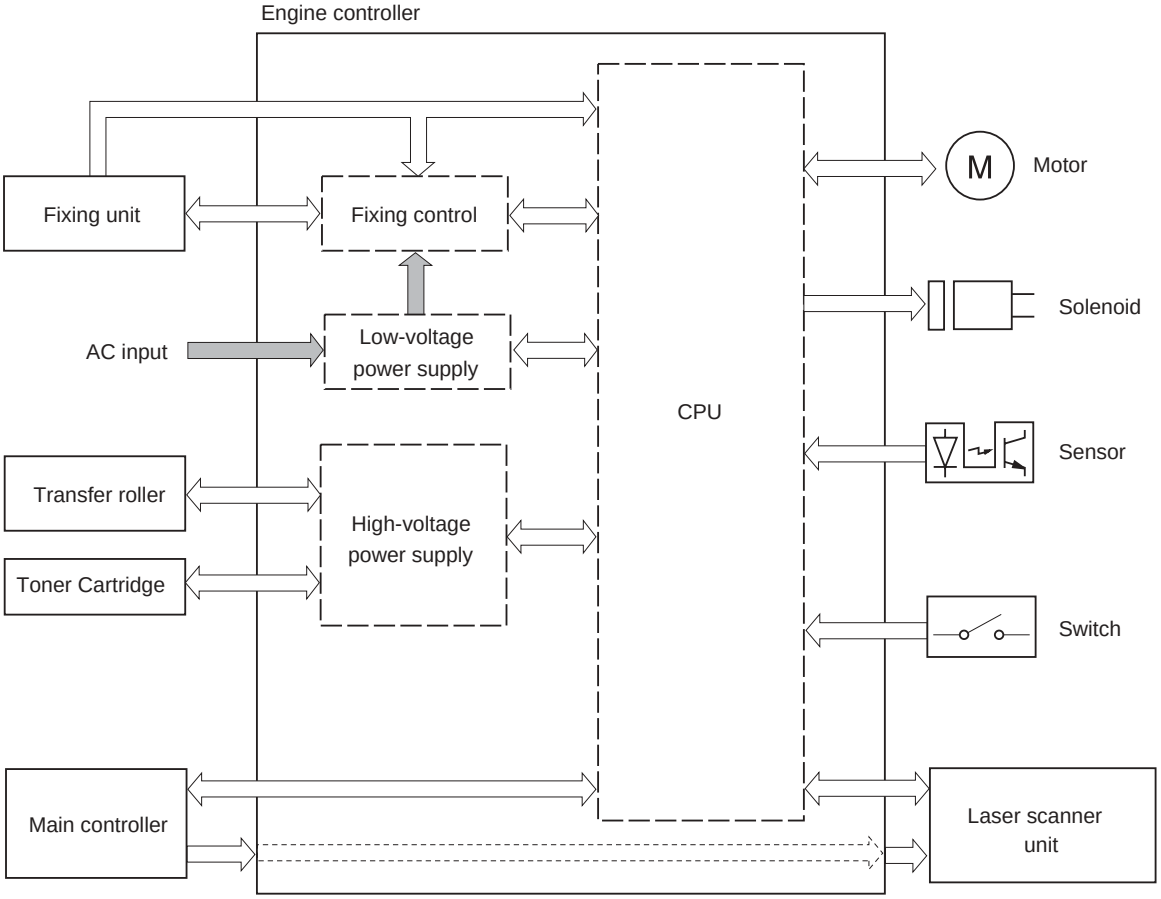
2.7.2 Engine Controller

2.7.2.1 General description

Engine controller is the circuit to control the operation sequence of the host machine and it is controlled by the CPU inside the engine controller.
When the power is turned ON and DC power is supplied through the low voltage power inside engine controller, CPU starts the printer operation control.
Then, CPU drives the loads such as laser diode, motors and solenoids etc. according to the image data that is input by the main controller when status becomes stand-by mode.
The following is the block diagram of this circuit.



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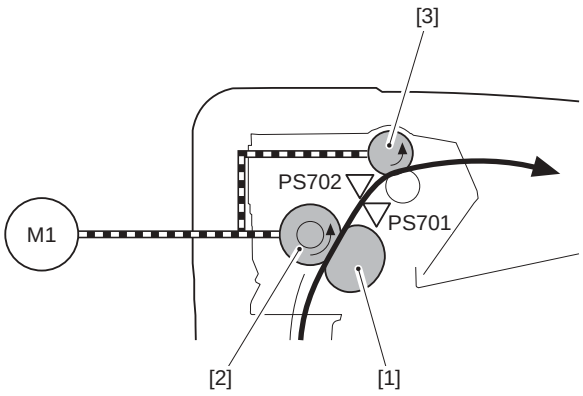
2.8 FIXING UNIT/DELIVERY SYSTEM

2.8.1 Overview/Configuration

2.8.1.1 Overview

Fixing/delivery system consists of the fixing film unit, pressure roller and delivery roller etc.
These rollers are driven by the main motor (M1).
The paper that toner is transferred to are heated by the fixing heater of the fixing film unit and pressured by the pressure roller.
The paper that toner is fused on is delivered from the fixing assembly, detected by the fixing delivery sensor (PS701) and the paper width sensor (PS702), and then delivered to the delivery tray by the delivery roller.



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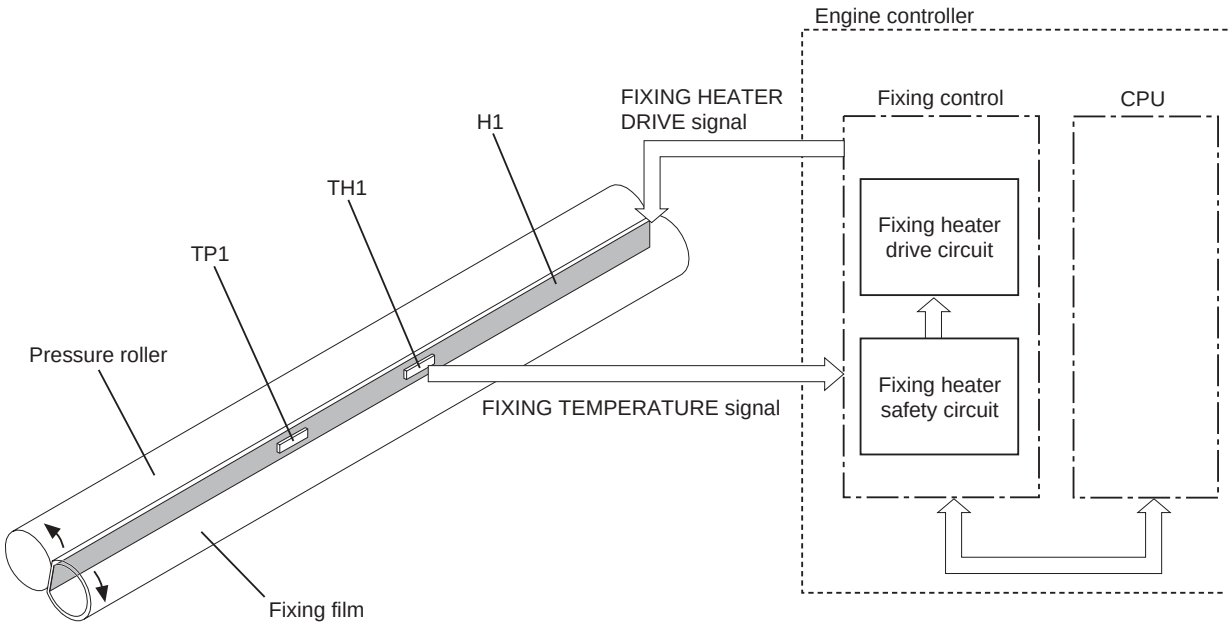
[1]	Fixing film unit
[2]	Pressure roller
[3]	Delivery roller
PS701	Fixing delivery sensor
PS702	Paper width sensor
M1	Main motor

2.8.1.2 Main Parts of Fixing Unit



F-2-23

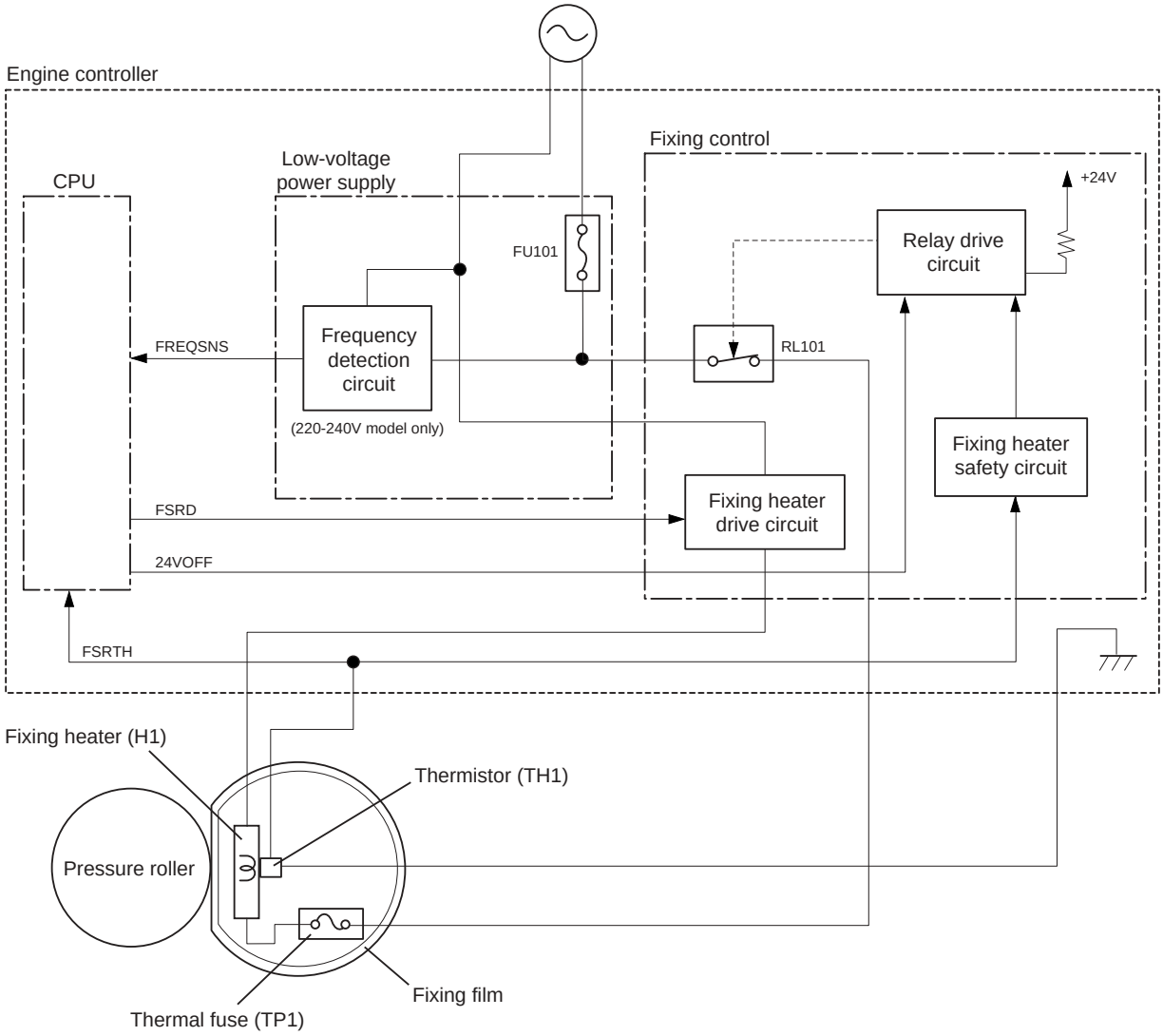
H1	: Fixing heater	For heating the fixing film (ceramic heater)	1 pc
TH1	: Main thermistor	For controlling the fixing heater temperature (contact type thermistor)	1 pc
TP1	: Temperature fuse	For detecting the fixing heater overheat (non-contact type fuse) When the heater overheats, the fuse melts to cut the power supply to the heater.	1 pc

2.8.2 Various Control Mechanisms

2.8.2.1 Fixing Temperature Control

2.8.2.1.1 Fixing Temperature Control

The fixing temperature control is to keep the fixing heater in the fixing film unit to the specified temperature.
The engine controller monitors the fixing heater temperature detection signal (FSRTH) and outputs the fixing heater drive signal (FSRD) according to the detected temperature.
The fixing heater drive PCB controls the fixing heater according to this signal to keep the fixing heater temperature within the target values.



F-2-24

There are 8 types of target fixing temperature depending on the fixing mode.
These types are according to the paper type settings and resolution settings on a driver.

T-2-3

Settings on Printer Driver		Target fixing temperature
Paper type settings	**Resolution settings (sub scanning)**	
Plain paper	600 dpi	175 to 170 deg C
Plain paper L	600 dpi	160 to 165 deg C
Thick paper	600 dpi	185 to 195 deg C
Thick paper H	600 dpi	190 to 195 deg C
Transparency	600 dpi	160 to 165 deg C
Postcard/postcard H	600 dpi	193 to 198 deg C
Envelope	600 dpi	175 to 180 deg C
Labels	600 dpi	185 to 195 deg C

2.8.2.2 Protective Functions

2.8.2.2.1 Protective Function of Fixing Unit

Host machine carries the following 3 functions to prevent the fixing heater from overheating.

1) Protective function by CPU
CPU of engine controller monitors the thermistor (TH1) temperature consistently.
When TH1 reaches approx 220 deg C, CPU determines that the fixing heater is overheating and stops the fixing heater drive signal (FSRD) output and also turns OFF relays to shut the power supply to fixing heater.

2) Protection function by fixing heater safety circuit
Fixing heater safety circuit monitors the thermistor (TH1) temperature consistently.
When TH1 reaches approx 235 deg C, it determines that the fixing heater is overheating and the fixing heater safety circuit turns OFF the relay drive circuit to shut the power supply to the fixing heater.

3) Protection function by temperature fuse (TP1)
When the fixing heater temperature rises abnormally and temperature fuse (TP1) temperature reaches approx 226 deg C, TP1 opens to shut the power supply to the fixing heater.

2.8.2.2.2 Error detection

CPU of engine controller determines the fixing assembly error and shuts the fixing heater drive signal (FSRD) and also turns OFF relays to shut the power supply to the fixing heater in the following cases. Also, it notifies the error status to the main controller simultaneously.

1) Startup error detection
When thermistor temperature does not reach 55 deg C within 1.5 sec from heater ON.

2) Abnormal low temperature error
- After heater ON, when the thermistor detects the temperature of 100 deg C or below at printing after the thermistor temperature reaches 50 deg C.
- After heater ON, when the thermistor detects the temperature of 55 deg C or below at sheet interval or in cleaning mode after thermistor temperature reaches 50 deg C.

3) Overheat error
When the thermistor detects the temperature of 220 deg C or over 30 times consecutively.

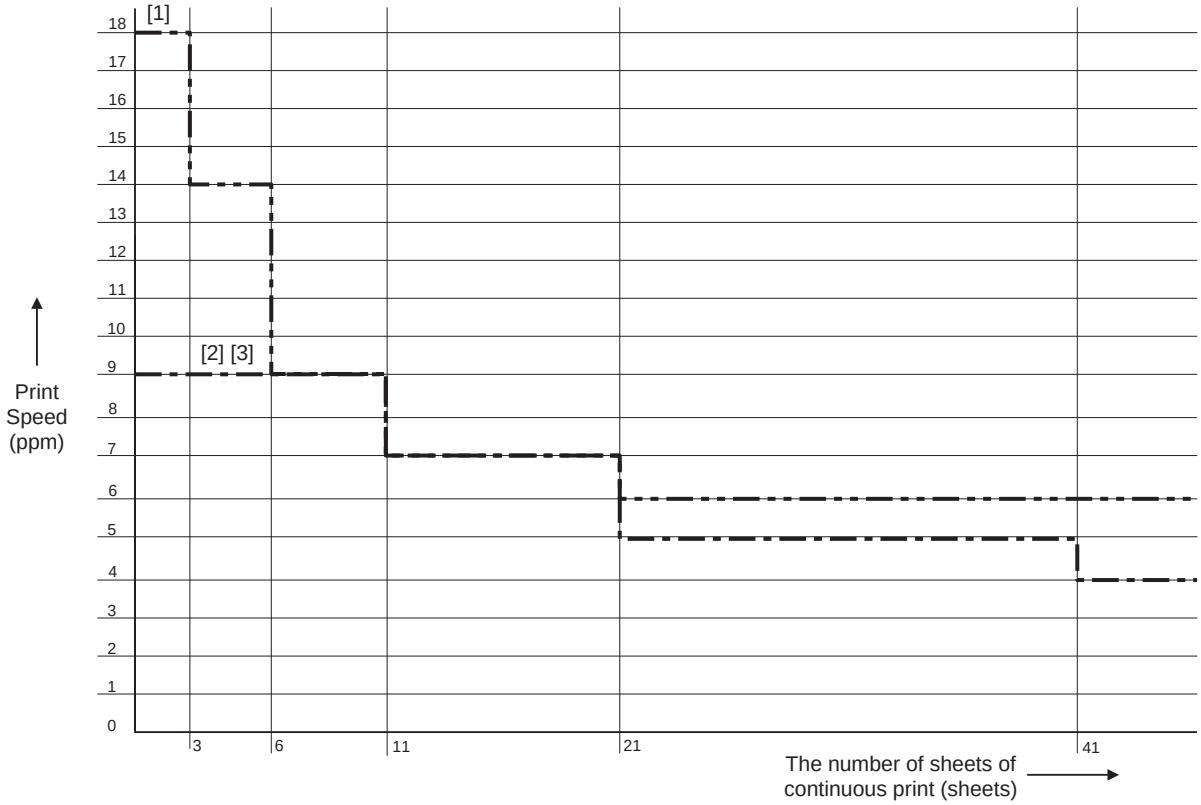
4) Frequency detection circuit error (200-240V series only)
When it cannot detect the frequency detection signal during operating the fixing assembly even once for approx. 3.0 consecutive sec.

2.8.3 Other Functions

2.8.3.1 Throughput Down Control

This machine performs the throughput down control that extends the paper interval and lower the printing speed to prevent the edge of the fixing heater from overheating at continuous printing of small paper (the paper with narrow width) and to prevent the fixing heater unit from overheating at high-volume continuous printing.
An extended paper interval lowers the fixing heater temperature between the papers, preventing the edge of the roller of fixing assembly and the delivery unit from overheating.
This control has the following 3 modes and the operation sequence differs depending on each modes.

Mode 1: sequence (For prevention of temperature increase in the edge)
Condition: paper length is 264 mm or shorter
Operation: print speed drops according to the setting item (paper type) on the printer driver



F-2-25

T-2-4

No.	Paper type	Target fixing temperature
[1]	Plain paper	175 to 170 deg C
[2]	Rough 1/Rough 2	185 to 195 deg C
[3]	Envelope	155 to 180 deg C

Mode 2: sequence (For prevention of temperature increase in the edge)
Condition: paper length is 264 mm or longer while paper width is 190 mm or shorter
Operation: print speed drops to 3 ppm from the 2nd sheet of continuous print

Mode 3: sequence (For prevention of temperature increase in the delivery unit)
Condition: paper width is 190 mm or longer
Operation: print speed drops to 6 ppm from the 251st sheet of continuous

Chapter 3 DISASSEMBLY AND ASSEMBLY

Contents

3.1 EXTERNAL AND CONTROLS SYSTEM

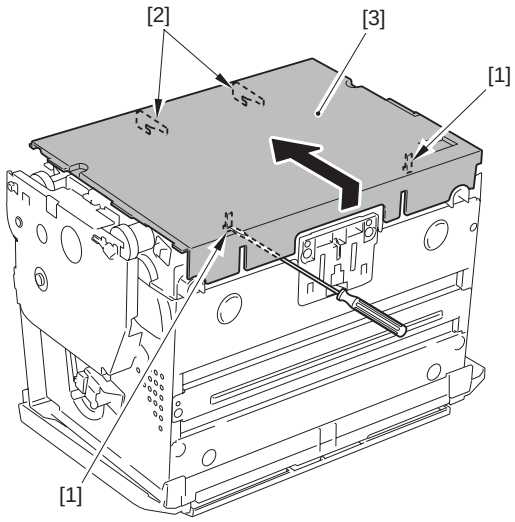
3.1.1 Rear Cover

3.1.1.1 Before Removing the Rear Cover

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]

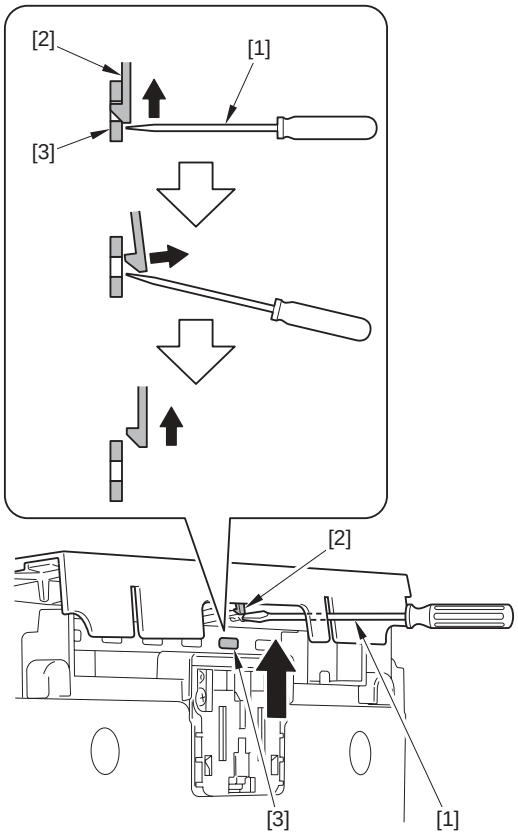
3.1.1.2 Removing the Rear Cover

1) Remove the 2 claws [1].
2) While removing the 2 hooks [2], remove the rear cover [3].



F-3-1

MEMO:
When removing the claws at both sides (left and right), use a flat-blade screwdriver [1] to lift the claw [2] as shown in the figure to release from the hole[3].



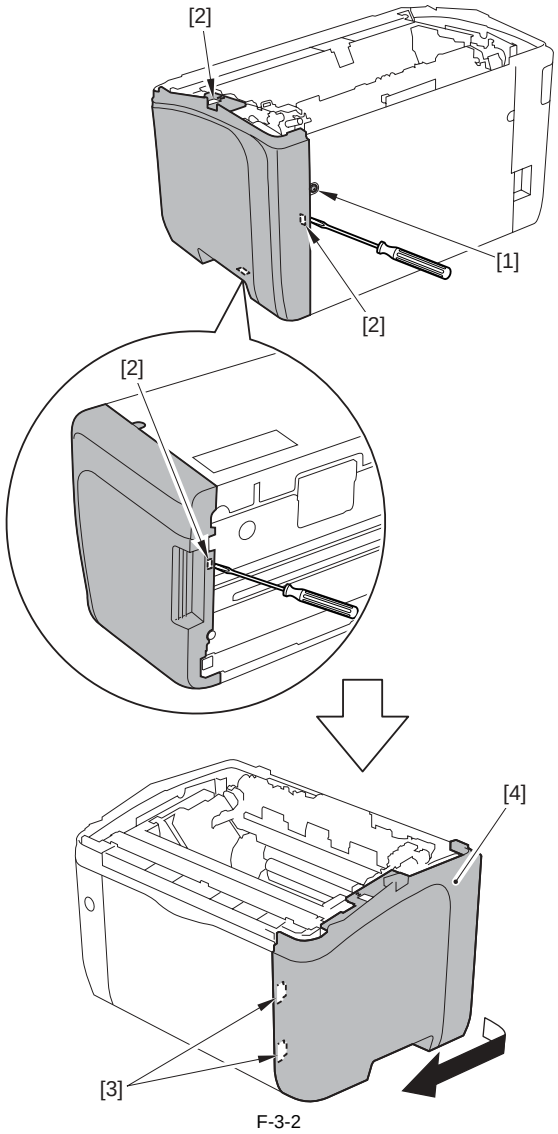
3.1.2 Right Cover

3.1.2.1 Before Removing the Right Cover

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]

3.1.2.2 Removing the Right Cover

1) Remove the screw [1] to remove the 3 claws [2].
2) While removing the 2 hooks [3], remove the right cover [4] in the direction of the arrow.



F-3-2

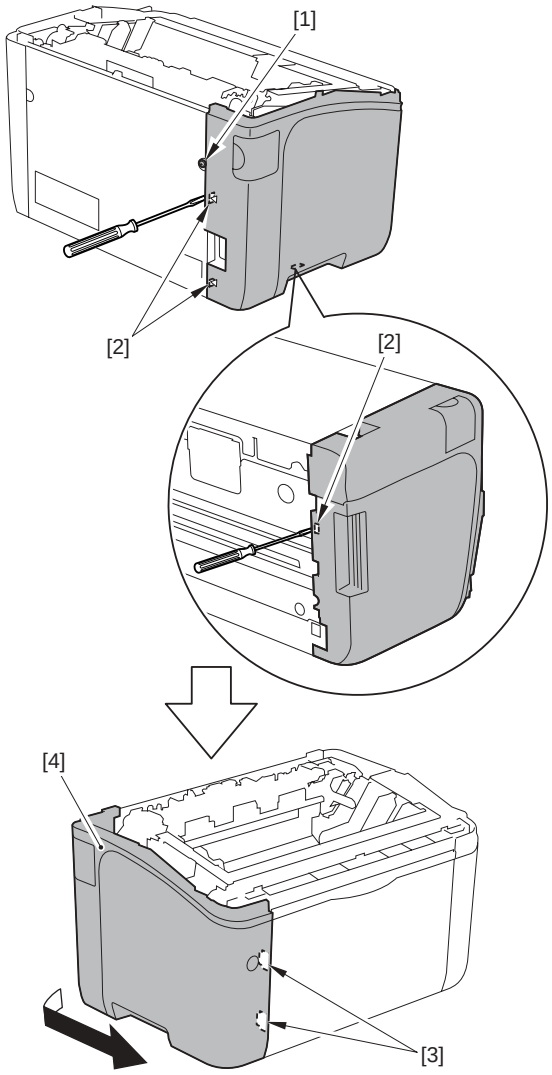
3.1.3 Left Cover

3.1.3.1 Before Removing the Left Cover

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]

3.1.3.2 Removing the Left Cover

1) Remove the screw [1] to remove the 3 claws [2].
2) While removing the 2 hooks [3], remove the left cover [4] in the direction of the arrow.

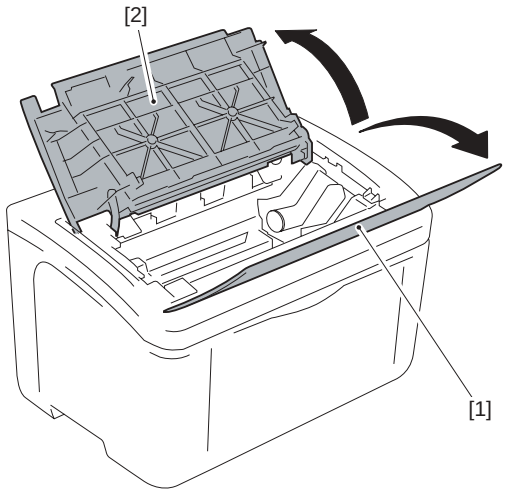


F-3-3

3.1.4 Upper Cover

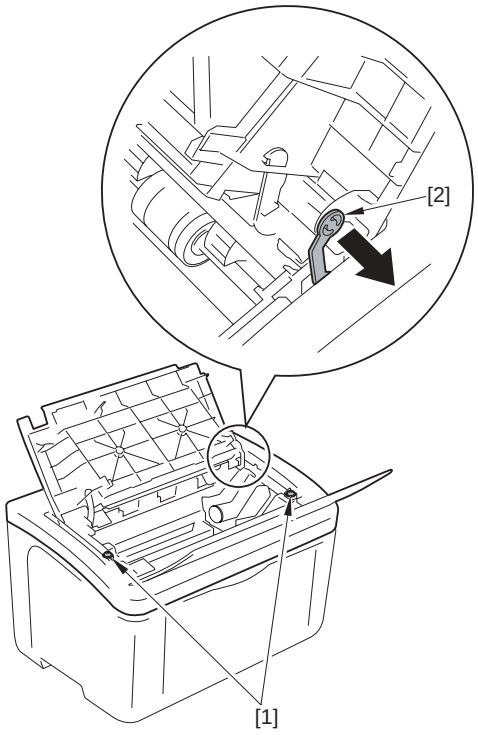
3.1.4.1 Removing the Upper Cover

1) Open the delivery auxiliary tray [1] and the delivery tray [2].



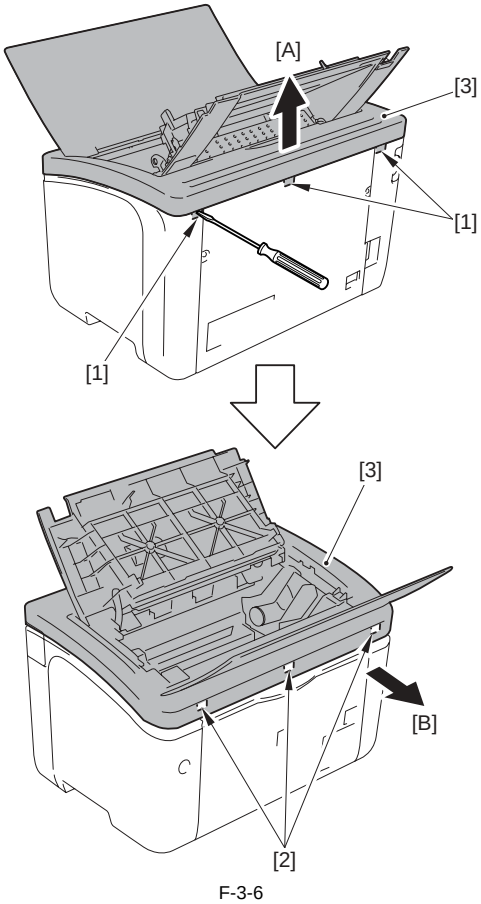
F-3-4

2) Remove the 2 screws [1] to remove the cartridge arm [2].



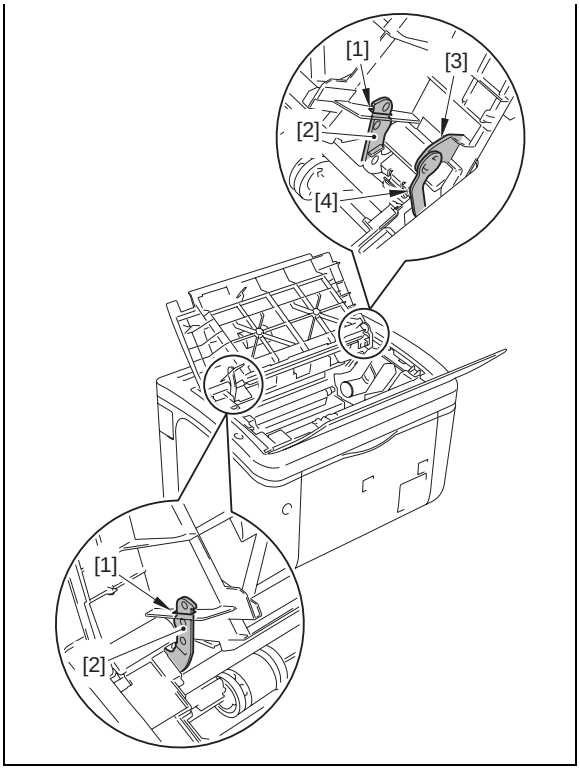
F-3-5

3) Remove the 3 claws [1] of the upper cover in the direction of arrow [A].
4) While removing the 3 hooks [2], remove the upper cover [3] in the direction of arrow [B].



F-3-6

Points to Note at Installation
- Be sure to install the 2 fixing pressure arms [2] located at both sides (left and right) into the 2 holes [1] located at both sides of the delivery tray.
- Be sure to install the cartridge lock arm [4] into the arm attaching hole [3] of the delivery tray.



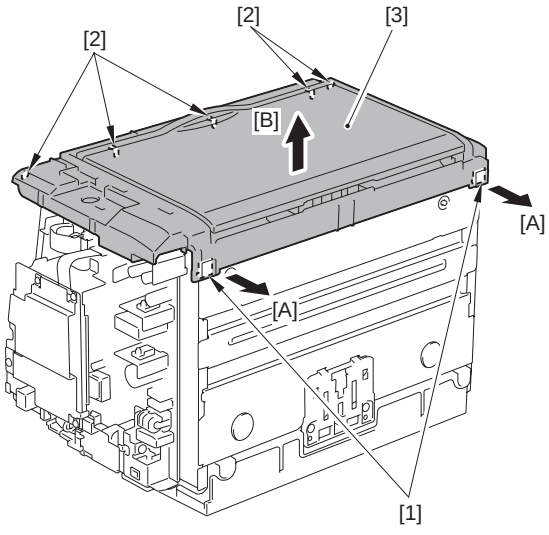
3.1.5 Front Cover

3.1.5.1 Before Removing the Front Cover

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]

3.1.5.2 Removing the Front Cover

1) Remove the 2 claws [1] in the direction of arrow [A].
2) While removing the 5 hooks [2] in the direction of arrow [B], remove the front cover [3].



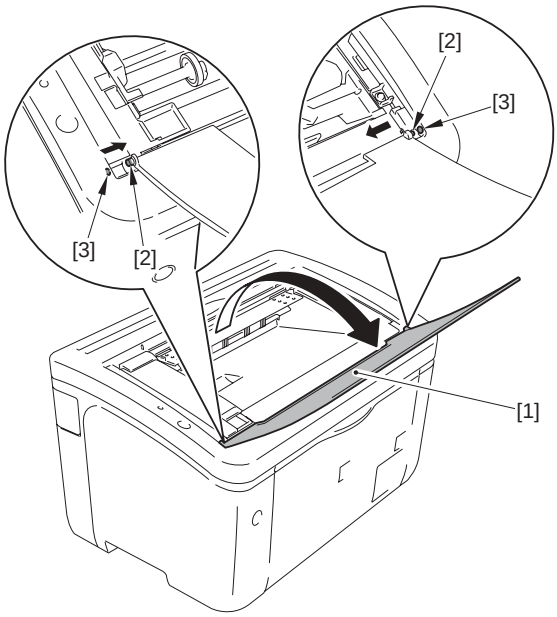
F-3-7

MEMO:
- When installing the front cover, be sure to fit the 5 hooks into the holes first, and then install the front cover.

3.1.6 Delivery Tray

3.1.6.1 Removing the Delivery Auxiliary Tray

1) Remove the delivery auxiliary tray [1].
   - 2 shafts [2]
   - 2 shaft supports [3]



F-3-8

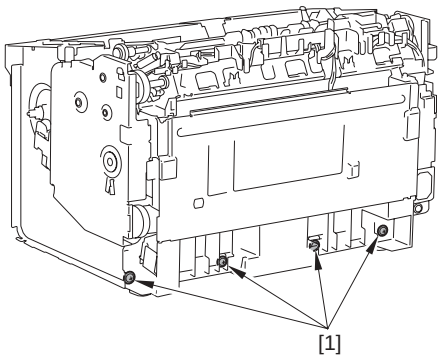
3.1.7 Pickup Tray

3.1.7.1 Before Removing the Pickup Tray

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the front cover. (page 3-3)Reference[Removing the Front Cover]
5) Remove the rear cover. (page 3-1)Reference[Removing the Rear Cover]
6) Remove the separation pad. (page 3-16)Reference[Removing the Separation Pad]

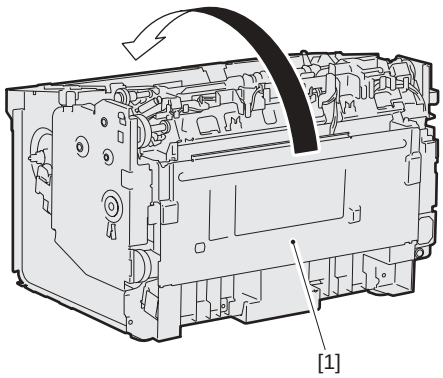
3.1.7.2 Removing the Pickup Tray Unit

1) Remove the 4 screws [1].



F-3-9

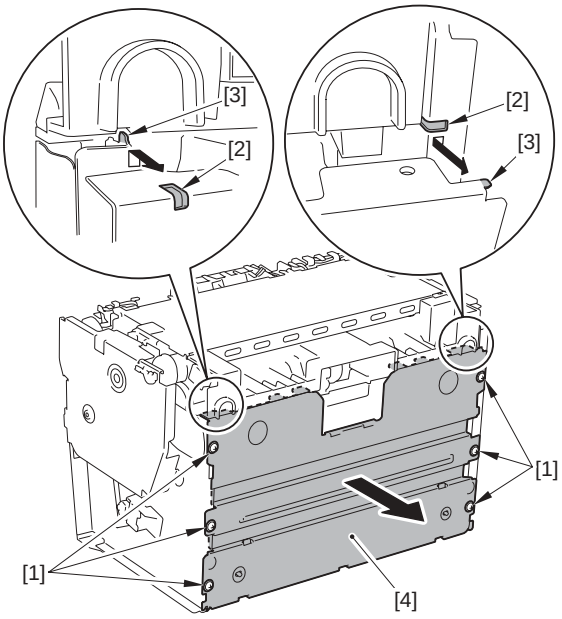
2) Change the orientation of host machine [1] in the direction of the arrow.



F-3-10

3) Remove the 6 screws [1].

4) Remove the 2 projections [3] from the 2 boss holes [2] at both sides (left and right) to remove the pickup tray unit [4].



F-3-11

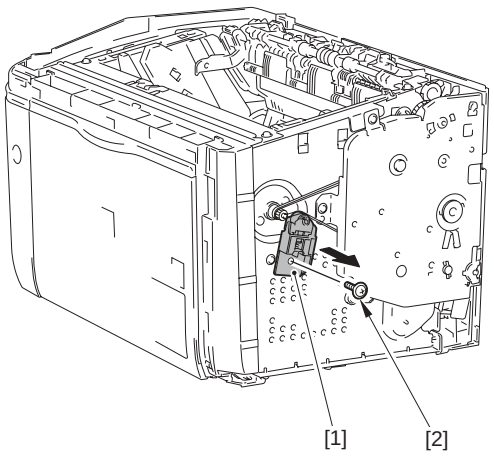
3.1.8 Drive Unit

3.1.8.1 Before Removing the Drive Belt

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]

3.1.8.2 Removing the Drive Belt

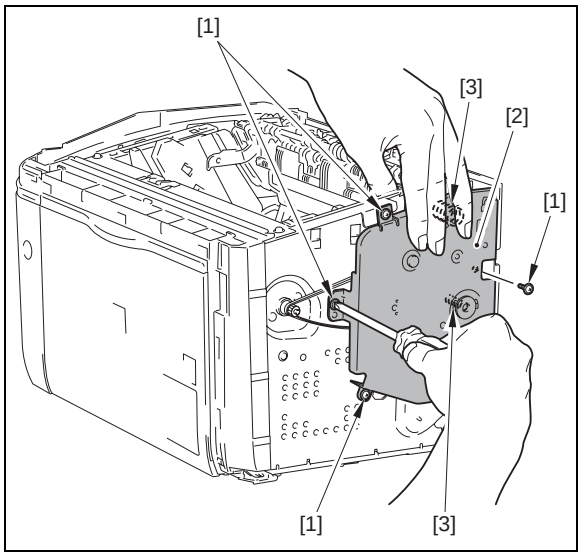
1) Remove the tension unit [1].
- 1 screw [2]

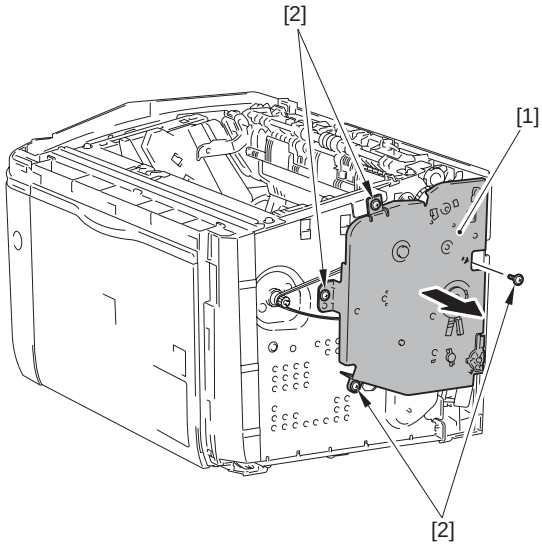


F-3-12

2) Remove the drive cover [1].
- 4 screws [2]

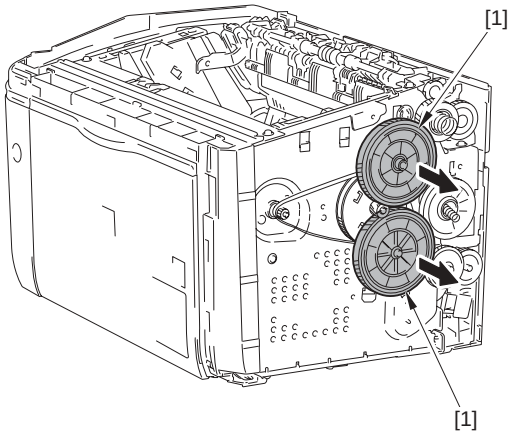
> **Point to Note at Installation**
> When removing the 4 screws [1], be sure to hold the drive cover [2] with your hand to remove (because the spring [3] in the drive cover can be lost).





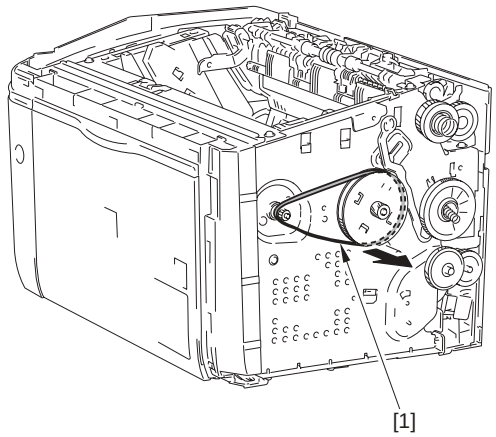
F-3-13

3) Remove the 2 gears [1].



F-3-14

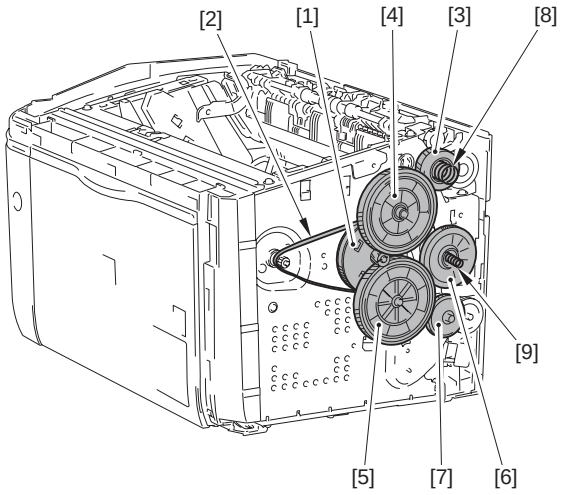
4) Remove the drive belt [1].



F-3-15

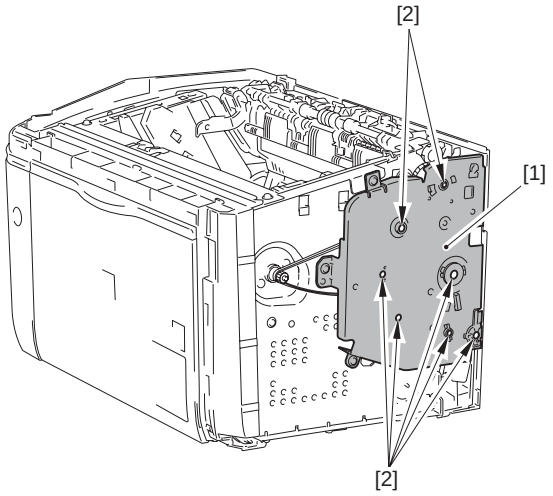
Point to Note at Installation

- When installing the drive gear, be sure to follow the number order described below.



[1] Primary decelerating pulley
[2] Timing belt
[3] Fixing latchet gear
[4] Fixing transmission gear
[5] Cartridge transmission gear
[6] Coupling gear
[7] Feed decelerating gear
[8] Pressure spring
[9] Pressure spring

- When installing the drive cover [1], be sure to fit the shafts into the 7 shaft holes [2] to install.



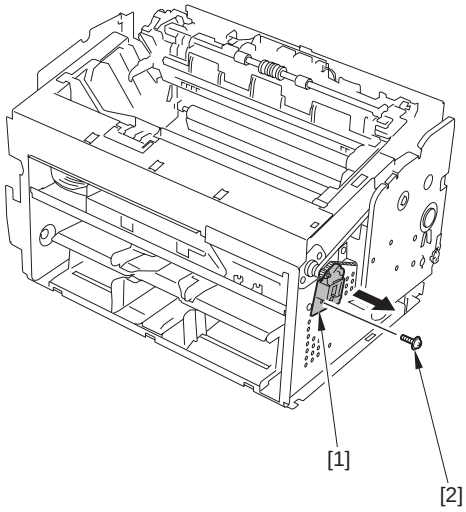
3.1.9 Main Drive Unit

3.1.9.1 Before Removing the Main Motor

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the front cover. (page 3-3)Reference[Removing the Front Cover]

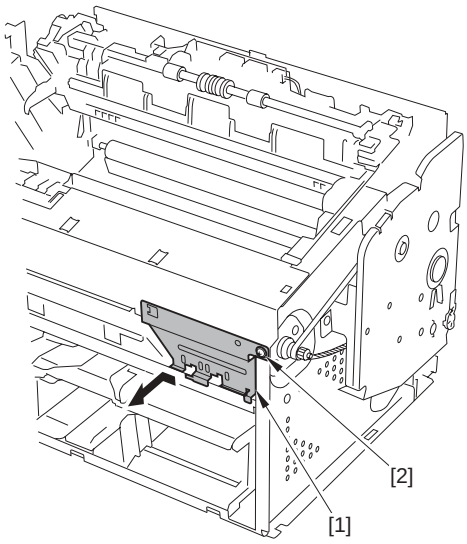
3.1.9.2 Removing the Main Motor

1) Remove the tension unit [1].
- 1 screw [2]



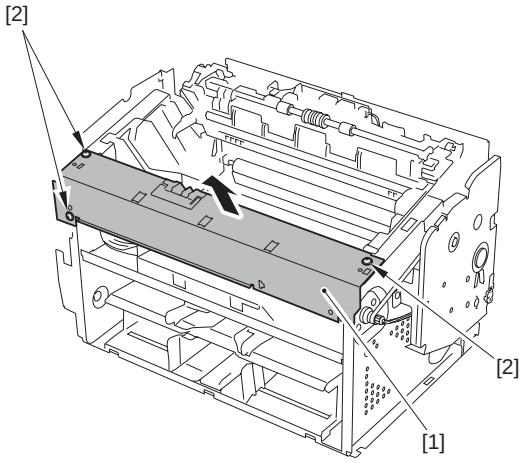
F-3-16

2) Remove the scanner sub cover [1].
- 1 screw [2]



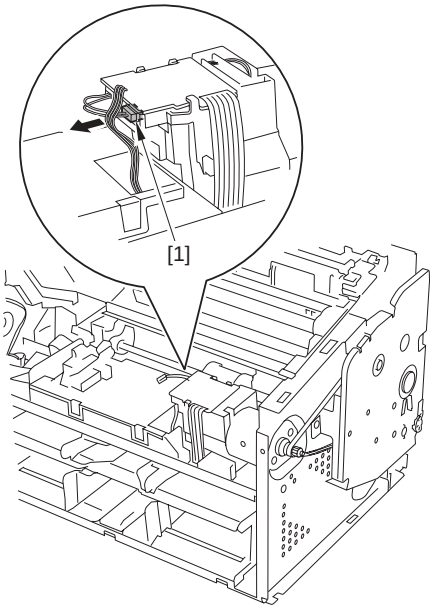
F-3-17

3) Remove the scanner cover [1].
- 3 screws [2]



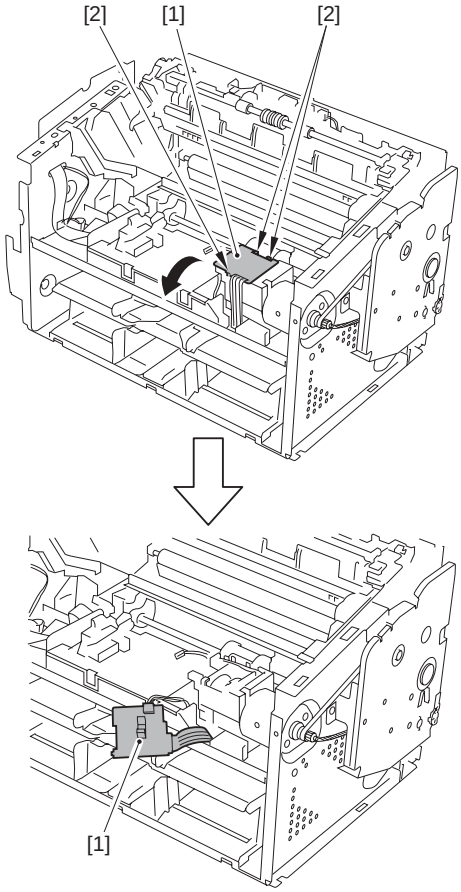
F-3-18

4) Disconnect the connector [1].



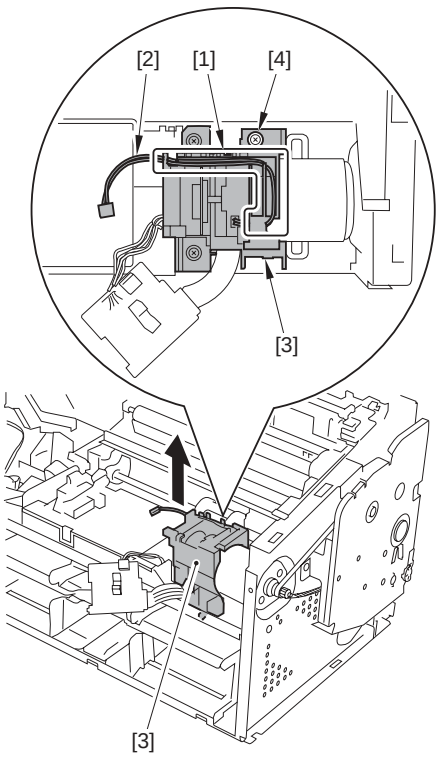
F-3-19

5) Remove the motor driver PCB [1].
- 3 claws [2]



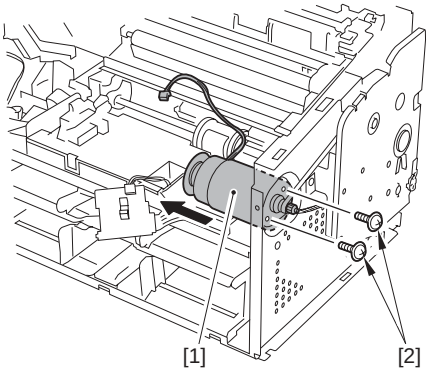
F-3-20

6) Free the motor harness [2] from the harness guide [1].
7) Remove the motor guide [3].
- 1 screw [4]



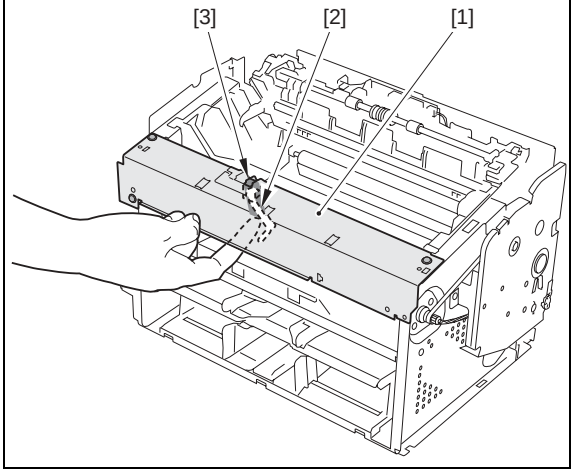
F-3-21

8) Remove the main motor [1].
- 2 screws [2]



F-3-22

Point to Note at Installation
- When installing the laser scanner cover [1], be sure to put the shutter lever [2] through the scanner cover's hole [3].



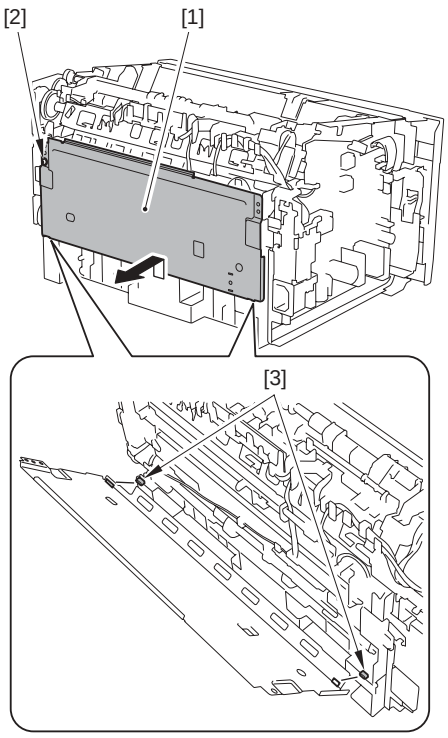
3.1.10 Engine controller board

3.1.10.1 Before Removing the Engine Controller PCB

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the rear cover. (page 3-1)Reference[Removing the Rear Cover]
5) Remove the main controller PCB. (page 3-8)Reference[Removing the Main Controller PCB]

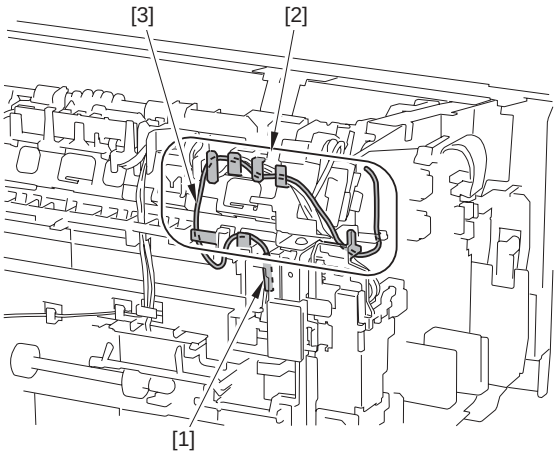
3.1.10.2 Removing the Engine Controller PCB

1) Remove the rear inner cover [1].
   - 1 screw [2]
   - 2 claws [3]



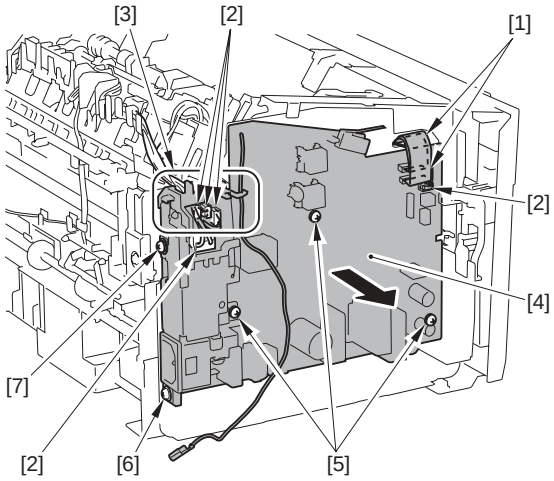
F-3-23

2) Remove the terminal [1] to free the harness [3] from the harness guide [2].



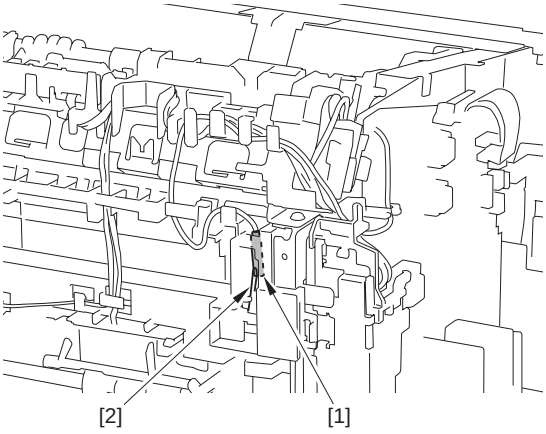
F-3-24

3) Disconnect the 2 flat cables [1] and the 5 connectors [2] to free the harness from the guide [3].
4) Remove the engine controller PCB [4].
   - 3 screws (with spring washer, binding) [5]
   - 1 screw (TP) [6]
   - 1 screw (with toothed washer, binding) [7]



F-3-25

Point to Note at Installation
When installing the terminal [1], be sure to make it in contact with the contact spring [2] as shown in the figure below.



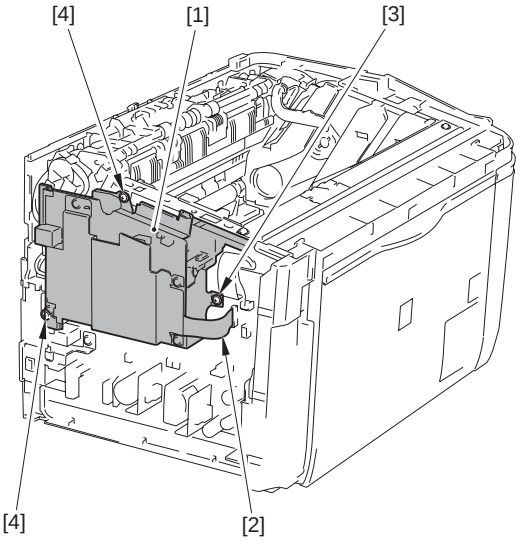
3.1.11 Main Controller PCB

3.1.11.1 Before Removing the Main Controller PCB

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]

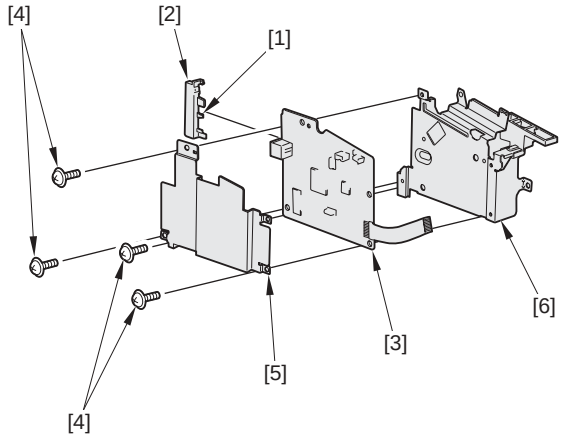
3.1.11.2 Removing the Main Controller PCB

1) Remove the main controller unit [1].
   - 1 flat cable [2]
   - 1 screw (with washer) [3]
   - 2 screws (TP) [4]



F-3-26

2) Remove the claw [1] to remove the guide [2].
3) Remove the main controller PCB [3].
   - 4 screws [4]
   - 1 cover [5]
   - 1 fixing plate [6]



F-3-27

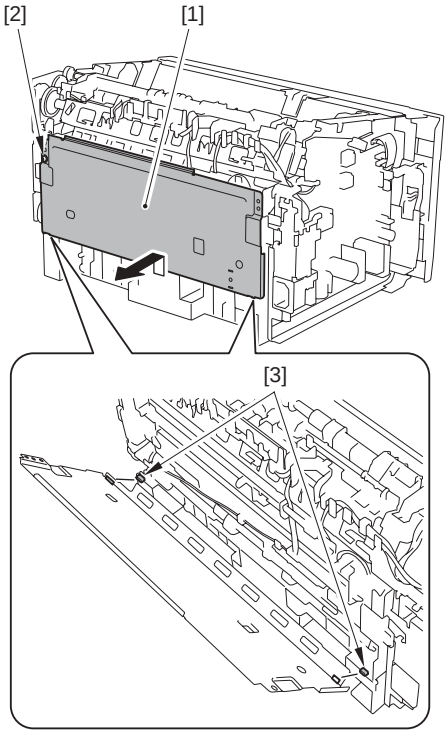
3.1.12 Top sensor

3.1.12.1 Before Removing the Paper Lead Edge Sensor

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the rear cover. (page 3-1)Reference[Removing the Rear Cover]
5) Remove the main controller PCB. (page 3-8)Reference[Removing the Main Controller PCB]

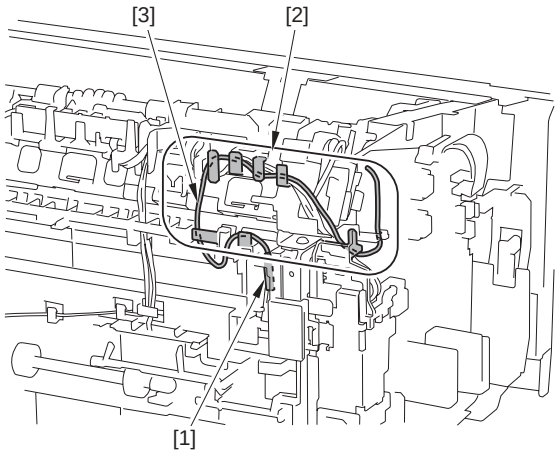
3.1.12.2 Removing the Paper Lead Edge Sensor

1) Remove the rear inner cover [1].
   - 1 screw [2]
   - 2 claws [3]



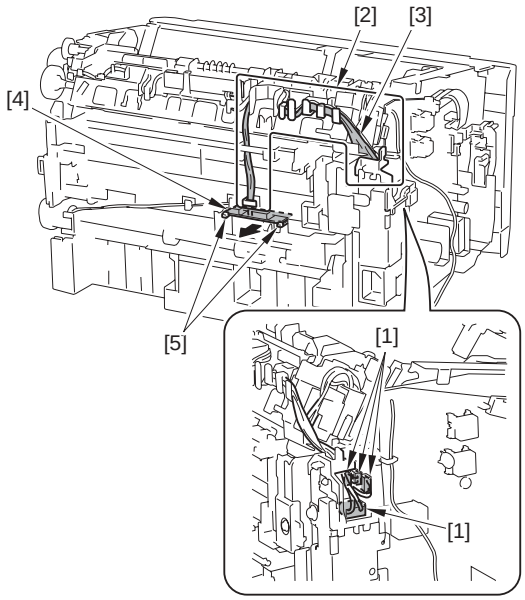
F-3-28

2) Remove the terminal [1] and free the harness [3] from the harness guide [2].



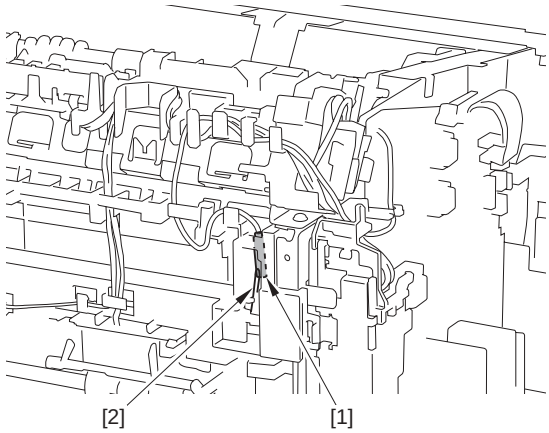
F-3-29

3) Disconnect the 4 connectors [1] and free the harness [3] from the harness guide [2].
4) Remove the paper lead edge sensor [4].
- 2 claws [5]



F-3-30

Point to Note at Installation
When installing the terminal [1], be sure to make it in contact with the terminal spring [2] as shown in the figure below.



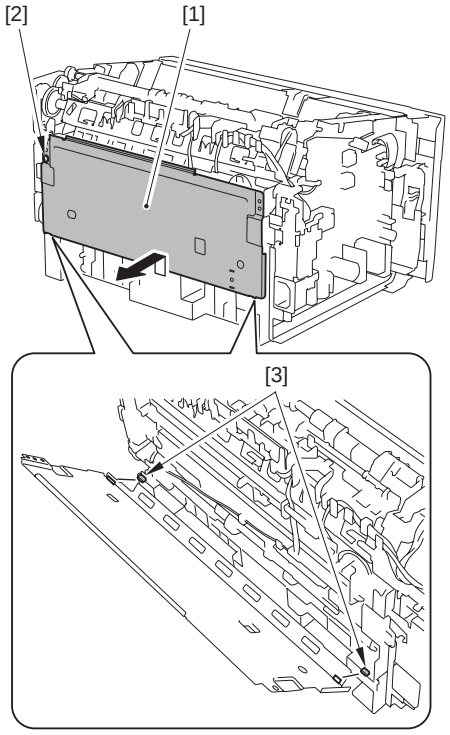
3.1.13 Sensor Boade

3.1.13.1 Before Removing the Sensor PCB

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the rear cover. (page 3-1)Reference[Removing the Rear Cover]
5) Remove the main controller PCB. (page 3-8)Reference[Removing the Main Controller PCB]

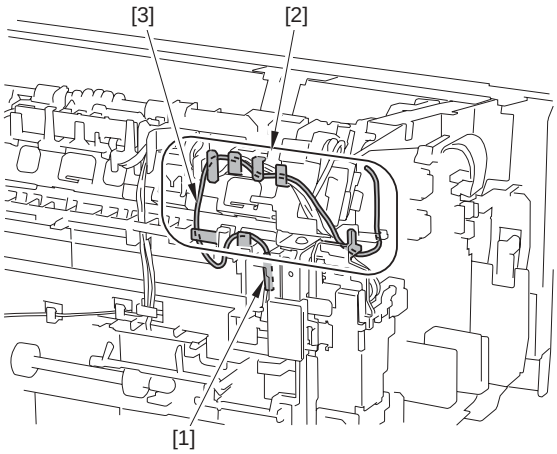
3.1.13.2 Removing the Sensor PCB

1) Remove the rear inner cover [1].
- 1 screw [2]
- 2 claws [3]



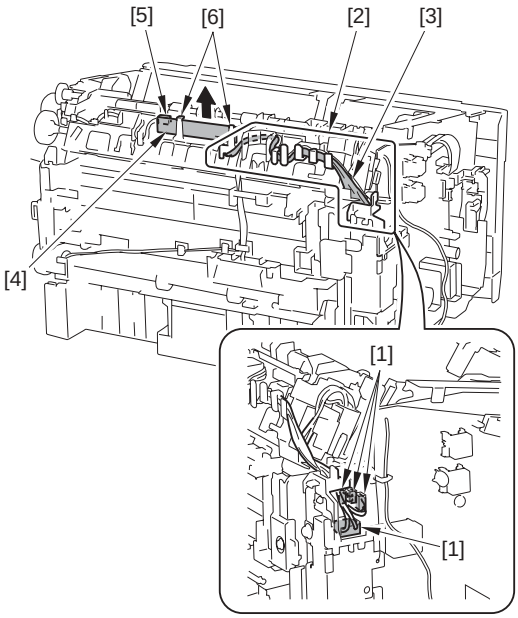
F-3-31

2) Remove the terminal [1] and free the harness [3] from the harness guide [2].



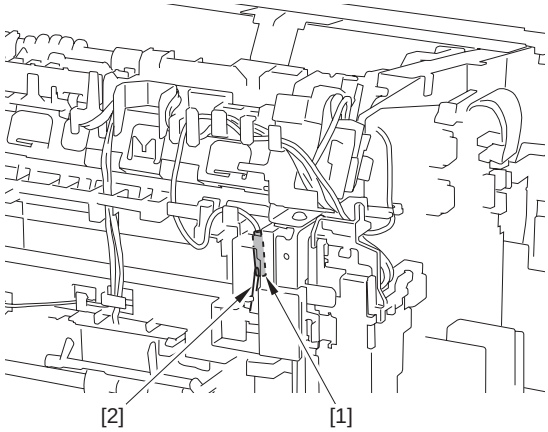
F-3-32

3) Disconnect the 4 connectors [1] and free the harness [3] from the harness guide [2].
4) Remove the sensor PCB [4].
   - 1 connector [5]
   - 2 claws [6]



F-3-33

Point to Note at Installation
When installing the terminal [1], be sure to make it in contact with the contact spring [2] as shown in the figure below.



3.2 LASER EXPOSURE SYSTEM

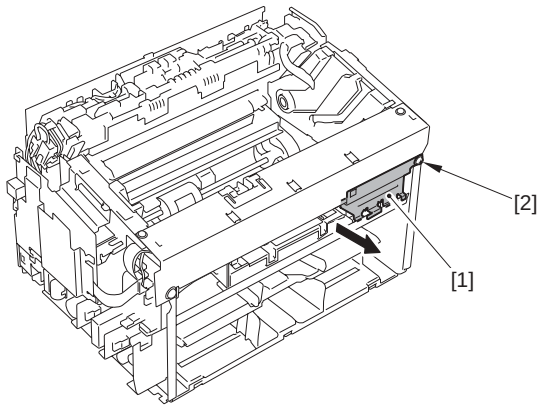
3.2.1 Laser Scanner Unit

3.2.1.1 Before Removing the Laser Scanner Unit

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the front cover. (page 3-3)Reference[Removing the Front Cover]

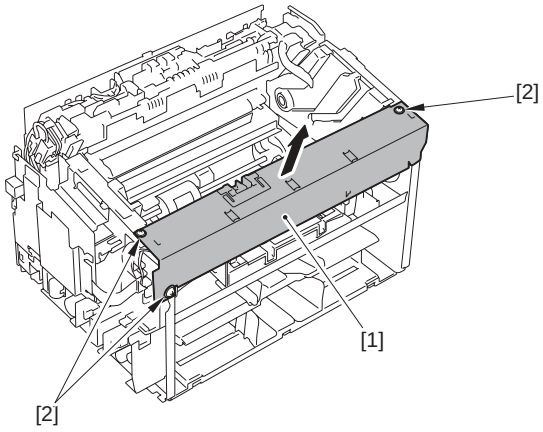
3.2.1.2 Removing the Laser Scanner Unit

1) Remove the scanner sub cover [1].
   - 1 screw [2]



F-3-34

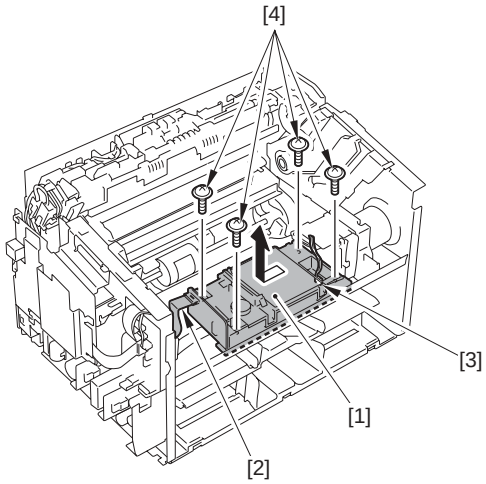
2) Remove the scanner cover [1].
- 3 screws [2]



F-3-35

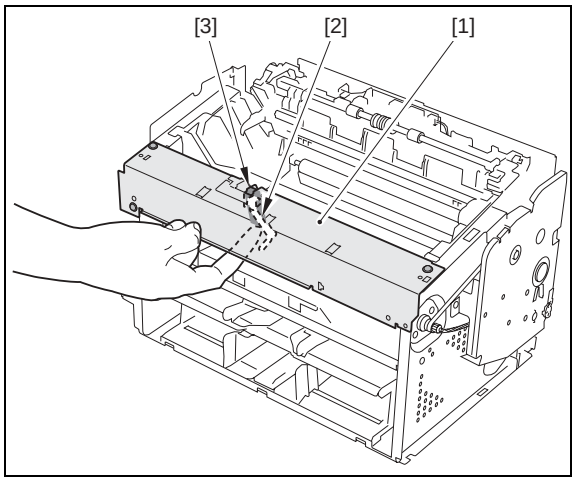
3) Remove the laser scanner unit [1].
- 1 flat cable [2]
- 1 connector [3]
- 4 screws [4]

> ⚠
> - Do not disassemble the laser scanner unit because it needs adjustment.



F-3-36

> ⚠ **Point to Note at Installation**
> - When installing the laser scanner cover [1], be sure to put the shutter lever [2] through the scanner cover's hole [3].



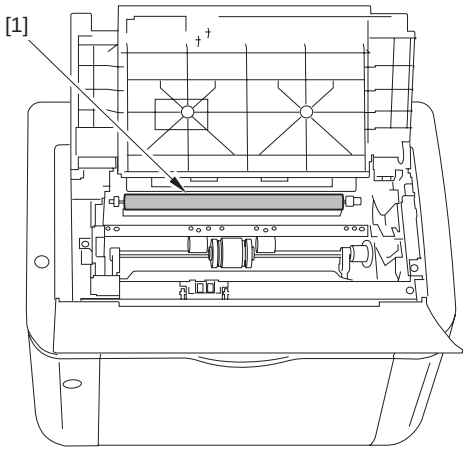
3.3 IMAGE FORMATION SYSTEM

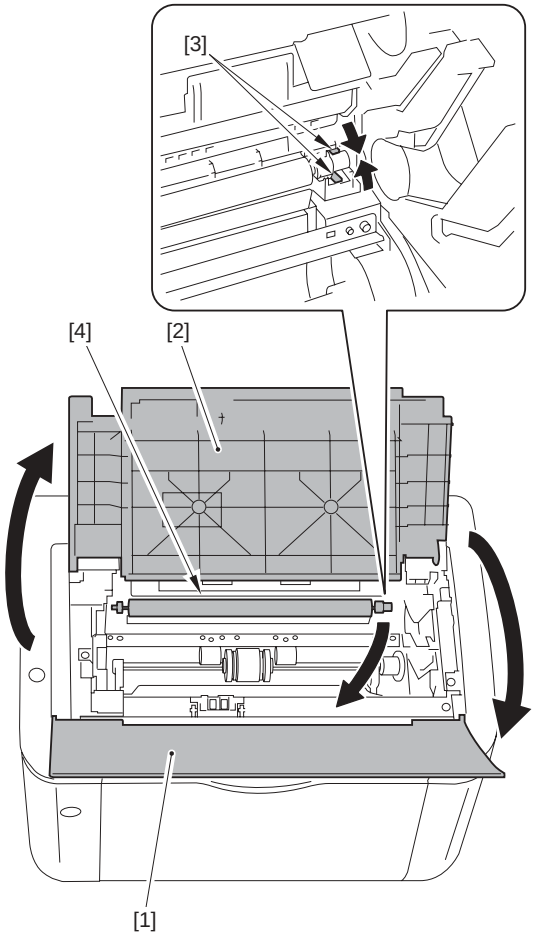
3.3.1 Transfer Charging Roller

3.3.1.1 Removing the Transfer Roller

1) Open the delivery auxiliary tray [1] and the delivery tray [2].
2) While pressing the 2 claws [3], remove the transfer roller [4].

> ⚠
> - Do not touch the transfer roller when removing it.





F-3-37

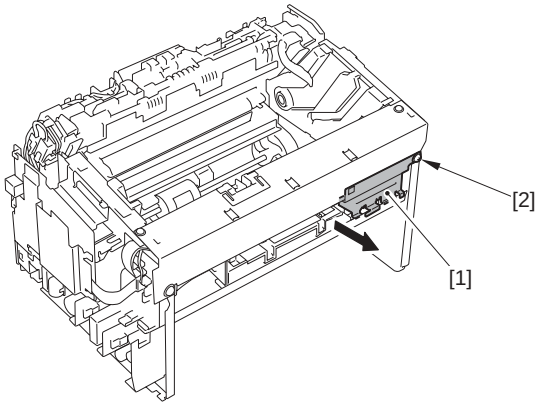
3.3.2 Memory Tag Contact Unit

3.3.2.1 Before Removing the Memory Contact Unit

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the front cover. (page 3-3)Reference[Removing the Front Cover]
5) Remove the rear cover. (page 3-1)Reference[Removing the Rear Cover]
6) Remove the separation pad. (page 3-16)Reference[Removing the Separation Pad]
7) Remove the pickup tray unit. (page 3-3)Reference[Removing the Pick-up Tray Unit]

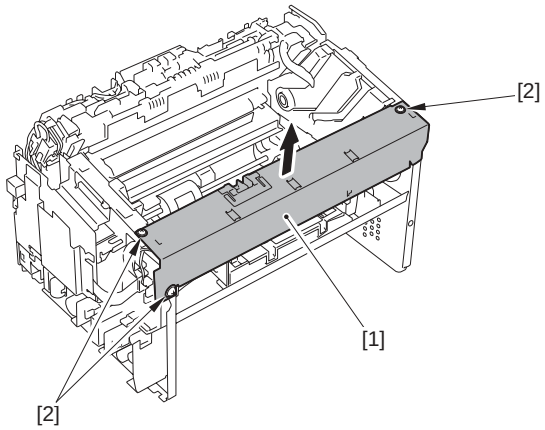
3.3.2.2 Removing the Memory Contact Unit

1) Remove the scanner sub cover [1].
- 1 screw [2]



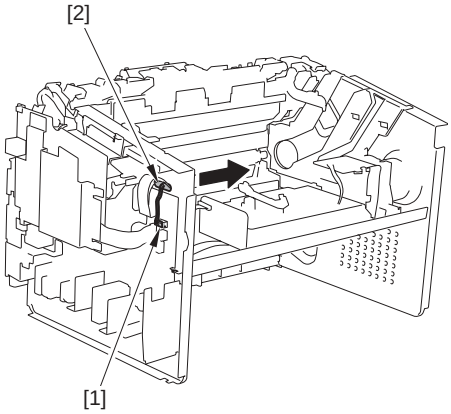
F-3-38

2) Remove the scanner cover [1].
- 3 screws [2]



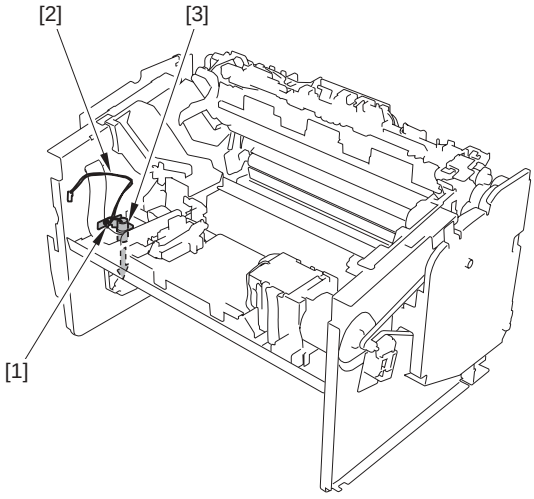
F-3-39

3) Disconnect the connector [1] and take out the connector [1] from the side plate hole [2].



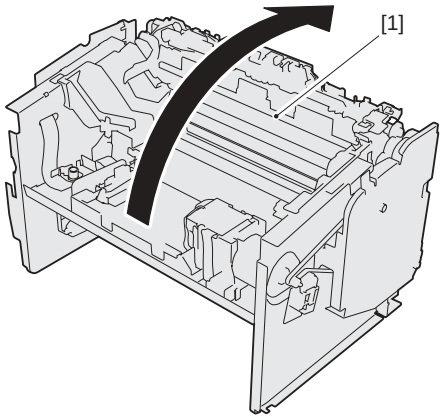
F-3-40

4) Free the harness [2] from the guide [1] and take out the harness [2] from the guide hole [3].



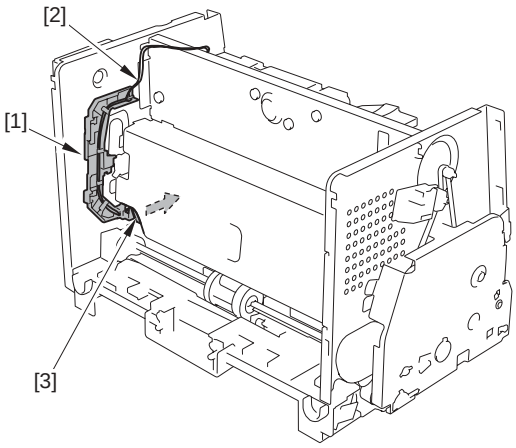
F-3-41

5) Change the orientation of the host machine [1] in the direction of the arrow.



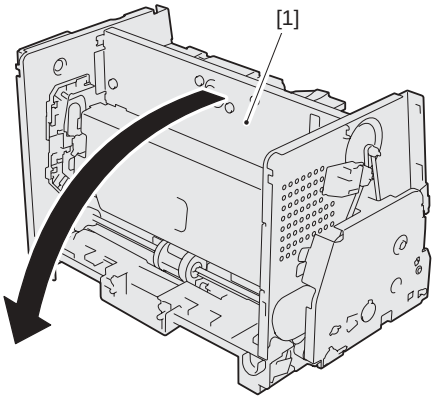
F-3-42

6) Free the harness [2] from the harness guide [1] and take out the harness [2] from the gap [3].



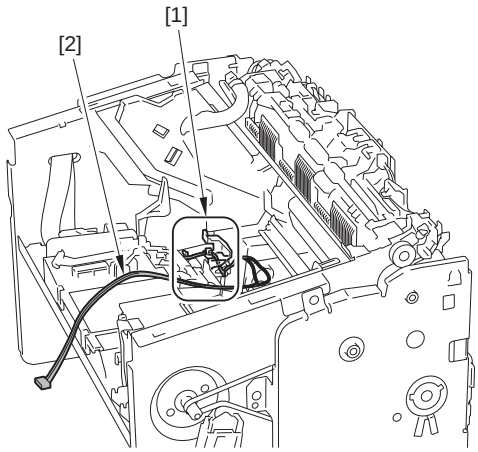
F-3-43

7) Change the orientation of the host machine [1] in the direction of the arrow.



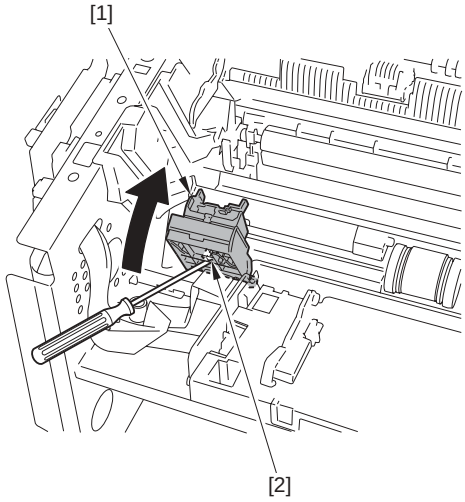
F-3-44

8) Free the harness [2] from the harness guide [1].



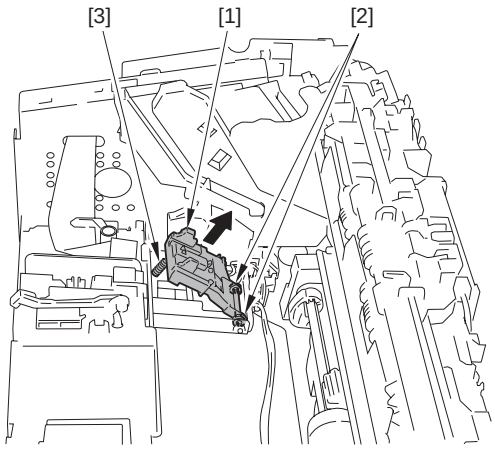
F-3-45

9) Lift the memory contact unit [1] in the direction of the arrow to remove the claw [2] at lower side.



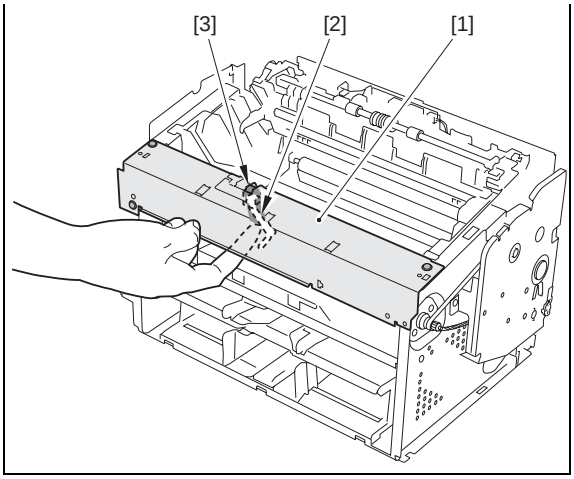
F-3-46

10) Remove the memory contact unit [1].
- 2 hooks [2]
- 1 spring [3]



F-3-47

Point to Note at Installation
- When installing the laser scanner cover [1], be sure to put the shutter lever [2] through the scanner cover's tube [3].
- Be sure to check that the shutter lever [2] moves up and down in the scanner cover's tube [3].



3.4 PICKUP AND FEEDING SYSTEM

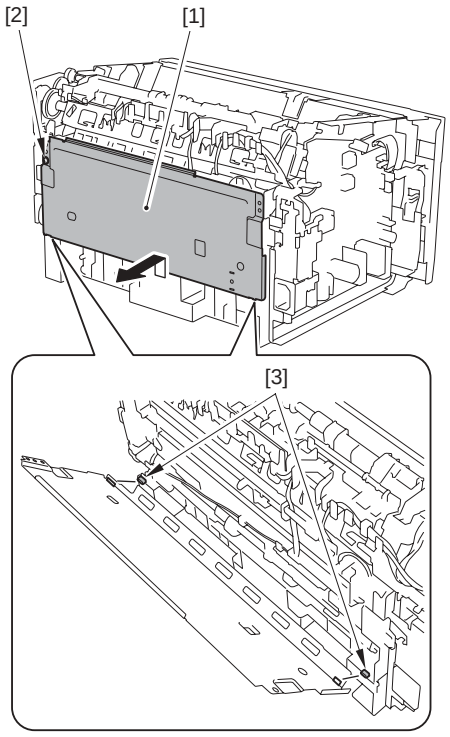
3.4.1 Pickup Unit

3.4.1.1 Before Removing the Pickup Unit

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the rear cover. (page 3-1)Reference[Removing the Rear Cover]
5) Remove the main controller PCB. (page 3-8)Reference[Removing the Main Controller PCB]
6) Remove the separation pad. (page 3-16)Reference[Removing the Separation Pad]

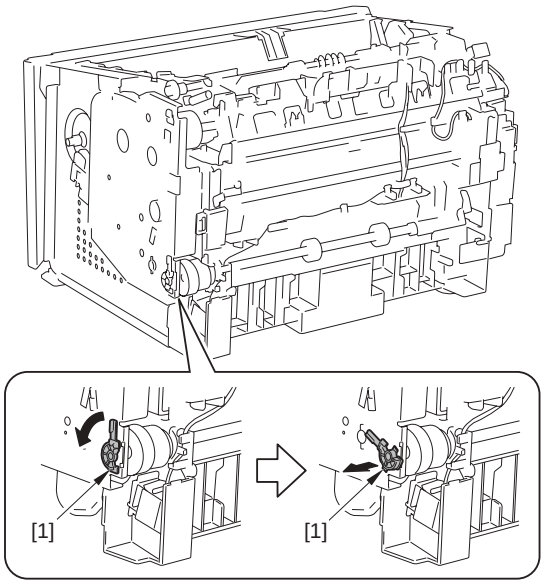
3.4.1.2 Removing the Pickup Unit

1) Remove the rear inner cover [1].
- 1 screw [2]
- 2 claws [3]



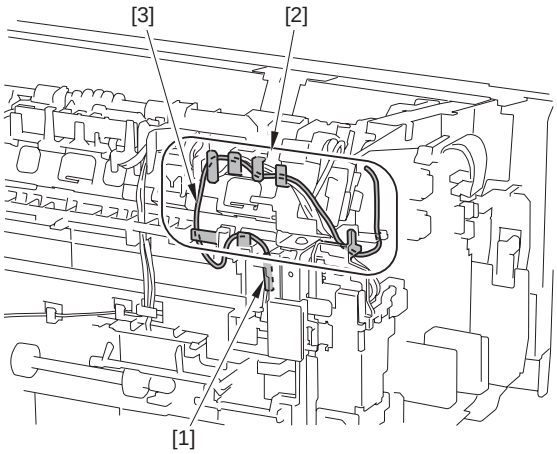
F-3-48

2) Remove the shaft retainer [1].



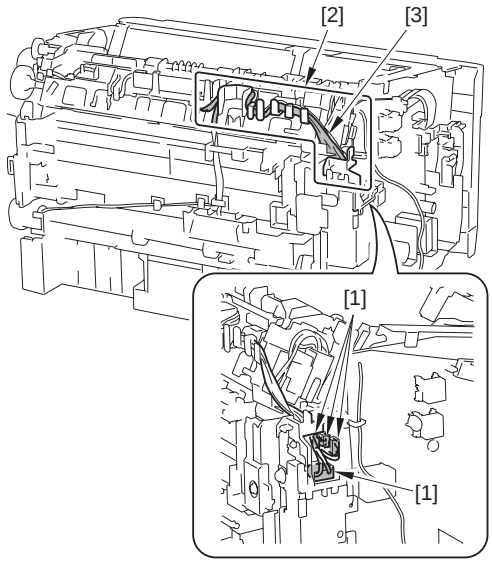
F-3-49

3) Remove the terminal [1] and free the harness [3] from the harness guide [2].



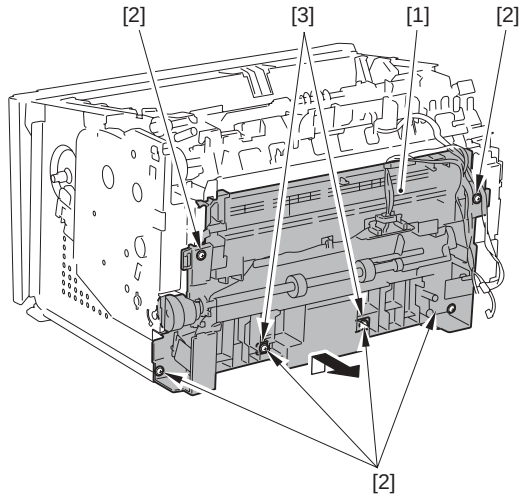
F-3-50

4) Disconnect the 4 connectors [1].
5) Free the harness [3] from the harness guide [2].



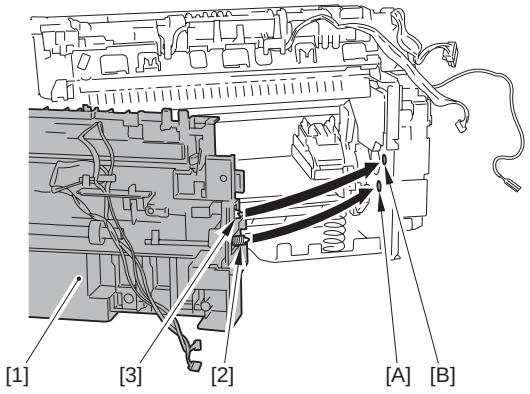
F-3-51

6) Remove the pickup unit [1].
- 6 screws [2]
- 2 hooks [3]

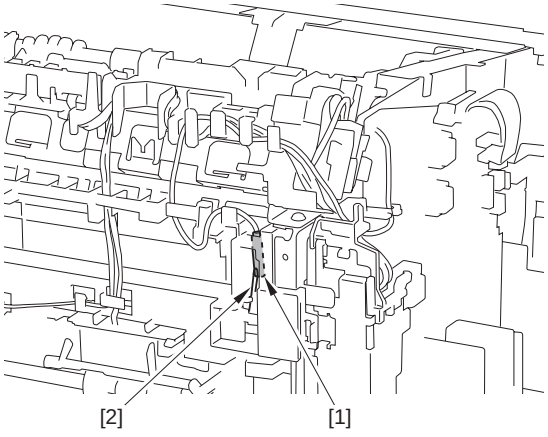


F-3-52

Point to Note at Installation
When installing the pickup unit [1], be sure to make the contact spring [2] in contact with [A] area.
Be sure to make the grounding contact point [3] in contact with [B] area.



Point to Note at Installation
When installing the terminal [1], be sure to make it in contact with the contact spring [2] as shown in the figure below.

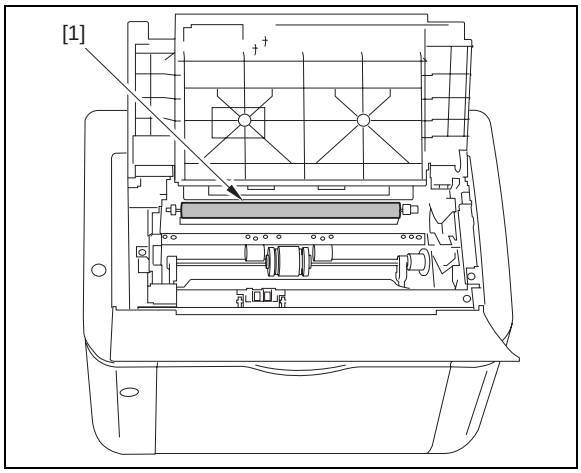


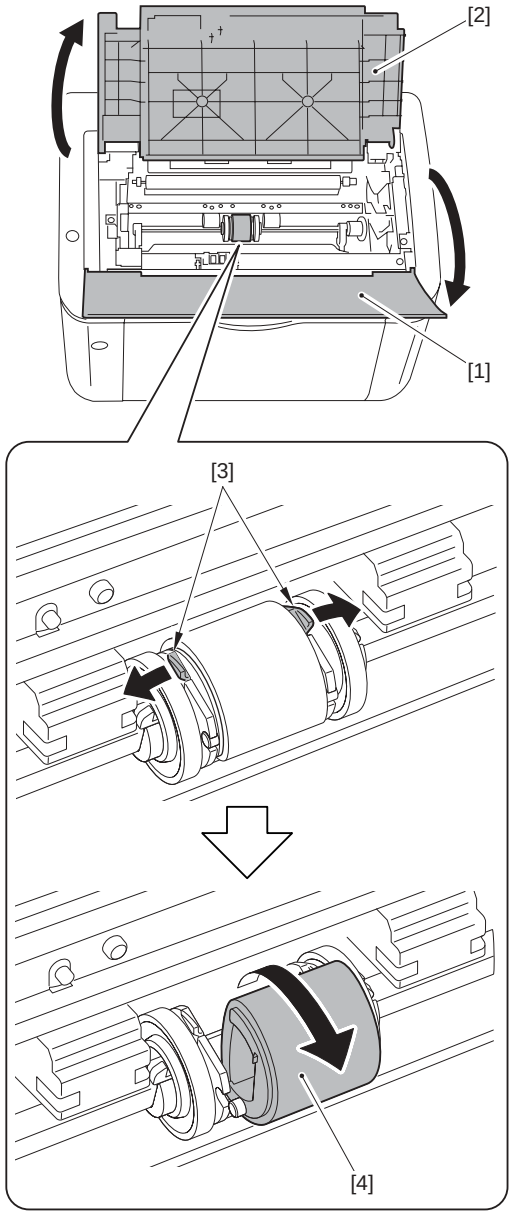
3.4.2 Cassette Pickup Roller

3.4.2.1 Removing the Pickup Roller

1) Open the delivery auxiliary tray [1] and the delivery tray [2].
2) Open the 2 claws at both sides (left and right) to remove the pickup roller [4].

- Do not touch the transfer roller when removing it.





F-3-53

3.4.3 Cassette Pickup solenoid

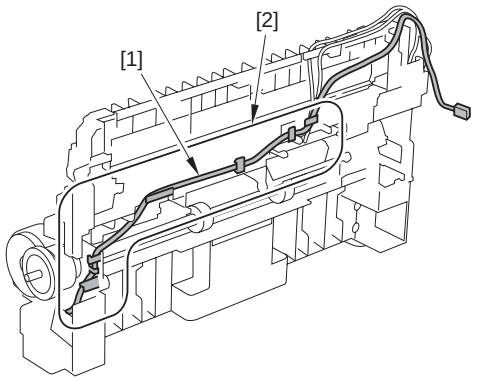
3.4.3.1 Before Removing the Pickup Solenoid

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]

4) Remove the rear cover. (page 3-1)Reference[Removing the Rear Cover]
5) Remove the main controller PCB. (page 3-8)Reference[Removing the Main Controller PCB]
6) Remove the separation pad. (page 3-16)Reference[Removing the Separation Pad]
7) Remove the pickup unit. (page 3-14)Reference[Removing the Pickup Unit]

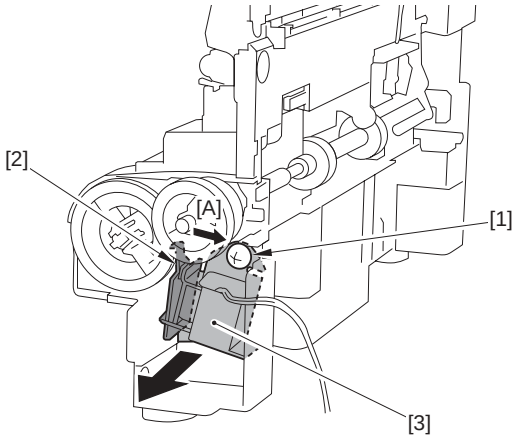
3.4.3.2 Removing the Pickup Solenoid

1) Free the solenoid harness [1] from the harness guide [2].



F-3-54

2) Remove the screw [1] and move the solenoid arm [2] in the direction of arrow [A] to remove the pickup solenoid [3].

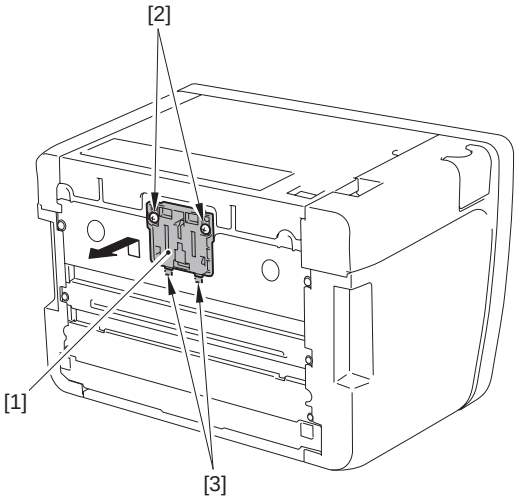


F-3-55

3.4.4 Cassette Separation Pad

3.4.4.1 Removing the Separation Pad

1) Remove the separation pad [1].
- 2 screws [2]
- 2 hooks [3]



F-3-56

3.5 FIXING SYSTEM

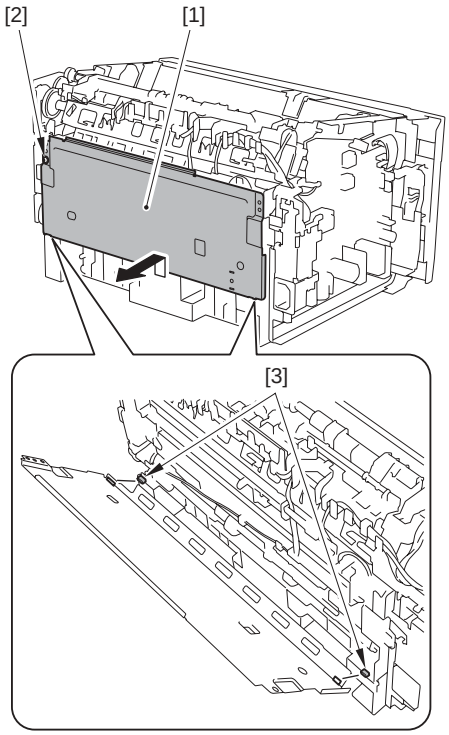
3.5.1 Fixing Unit

3.5.1.1 Before Removing the Fixing Unit

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the rear cover. (page 3-1)Reference[Removing the Rear Cover]
5) Remove the main controller PCB. (page 3-8)Reference[Removing the Main Controller PCB]

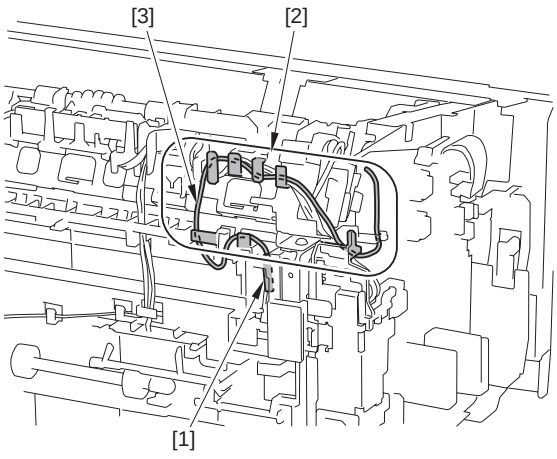
3.5.1.2 Removing the Fixing Unit

1) Remove the rear inner cover [1].
- 1 screw [2]
- 2 claws [3]



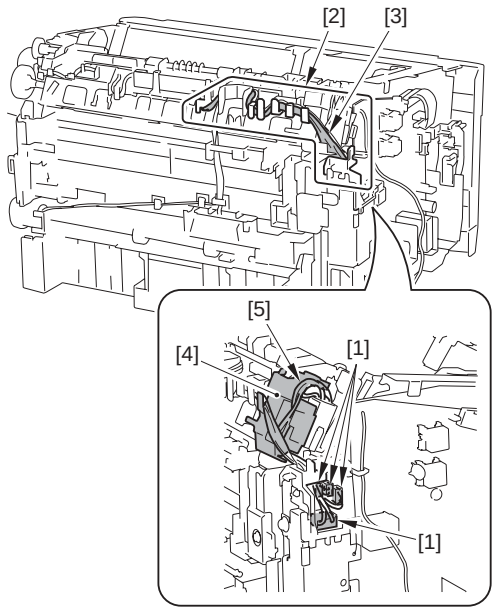
F-3-57

2) Remove the terminal [1] and free the harness [3] from the harness guide [2].



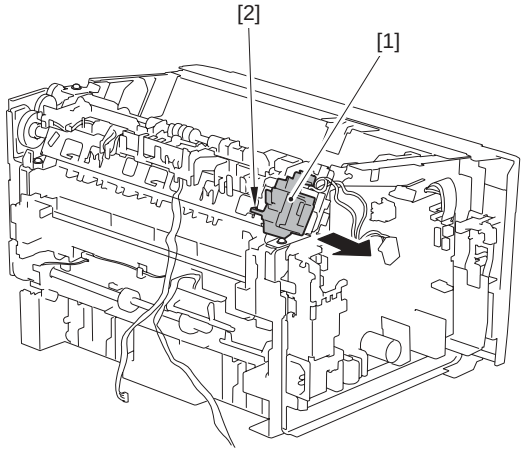
F-3-58

3) Disconnect the 4 connectors [1].
4) Free the harness [3] from the harness guide [2].
5) Free the fixing harness [5] from the harness holder [4].



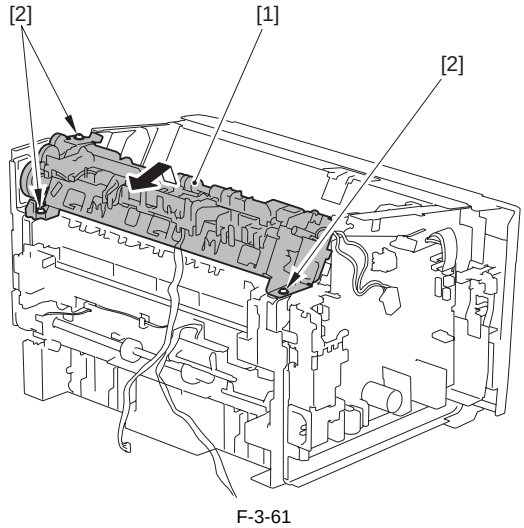
F-3-59

6) Remove the harness holder [1].
- 1 claw [2]



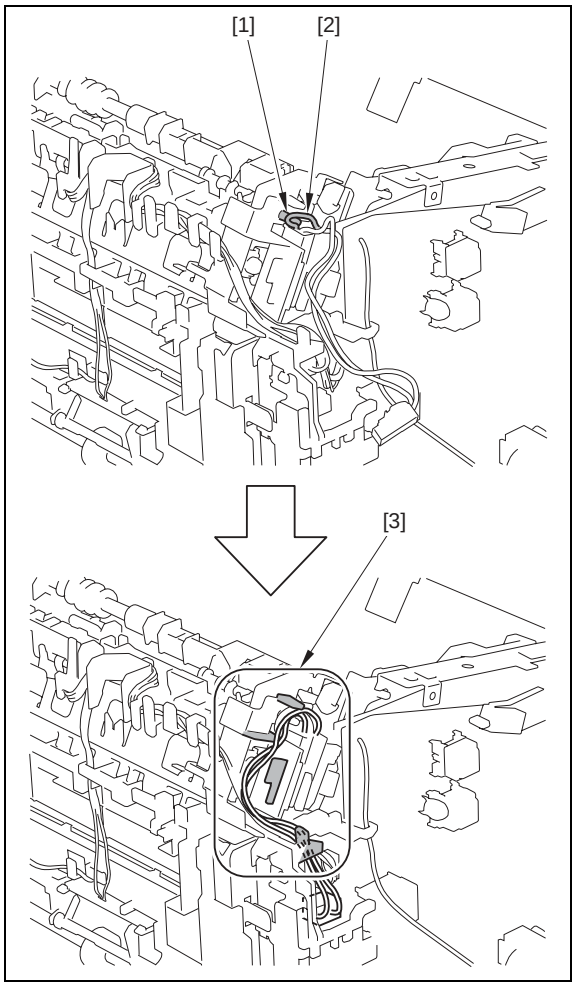
F-3-60

7) Remove the fixing assembly [1].
- 3 screws [2]

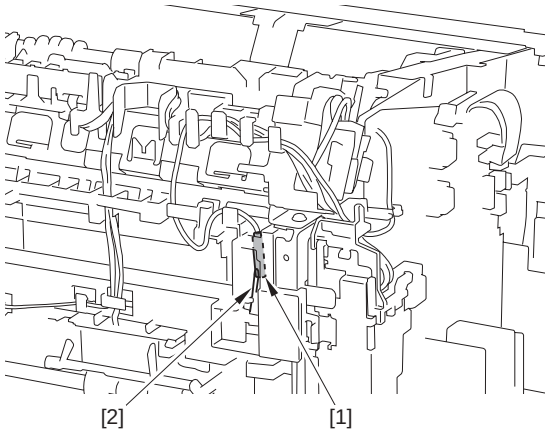


F-3-61

Point to Note at Installation
When installing the fixing harness, be sure to wrap the fixing harness [2] around the projection [1] of the harness holder to secure with the harness guide [3].



Point to Note at Installation
When installing the terminal [1], be sure to make it in contact with the contact spring [2] as shown in the figure below.



3.5.2 Fixing Film Unit

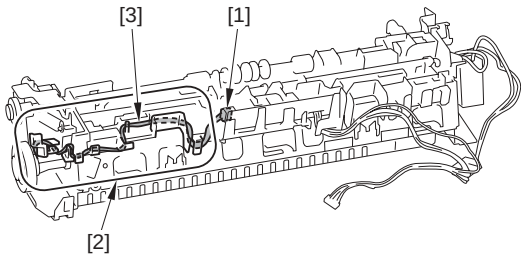
3.5.2.1 Before Removing the Fixing Film Unit

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the rear cover. (page 3-1)Reference[Removing the Rear Cover]
5) Remove the main controller PCB. (page 3-8)Reference[Removing the Main Controller PCB]
6) Remove the fixing unit. (page 3-16)Reference[Removing the Fixing Unit]

3.5.2.2 Removing the Fixing Film Unit

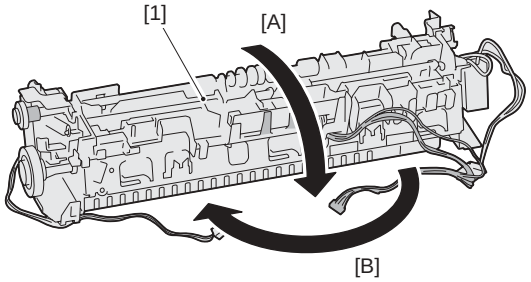
1) Disconnect the connector [1] and free the harness [3] from the harness

guide [2].



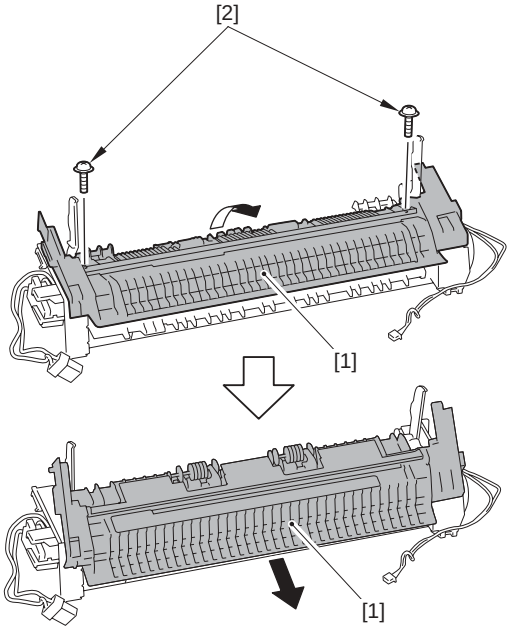
F-3-62

2) Change the orientation of the fixing unit [1] in the direction of arrow [A], and then in the direction of arrow [B].



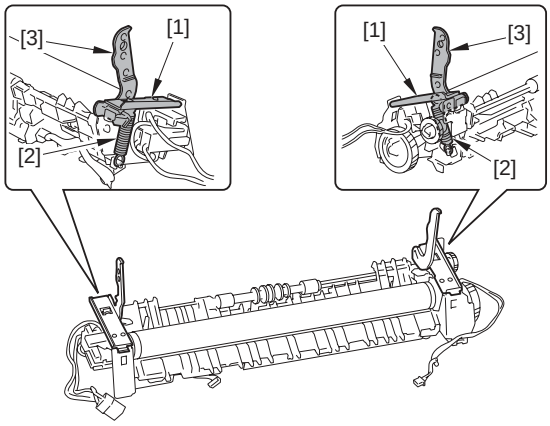
F-3-63

3) Remove the fixing upper guide [1].
- 2 screws [2]



F-3-64

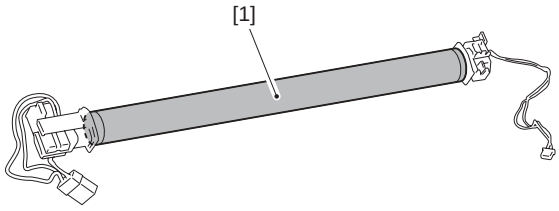
4) Remove the 2 pressure plates [1] at both sides (left and right).
- 2 springs [2]
- 2 pressure arms [3]

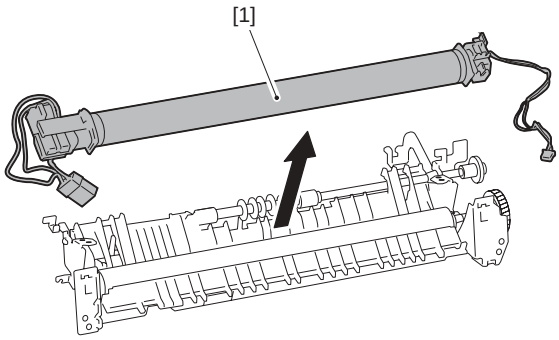


F-3-65

5) Remove the fixing film unit [1].

⚠
- Do not touch the surface [1] of the fixing film unit.
- Do not disassemble fixing film unit because it causes its functionality failure.





F-3-66

3.5.3 Fixing Pressure Roller

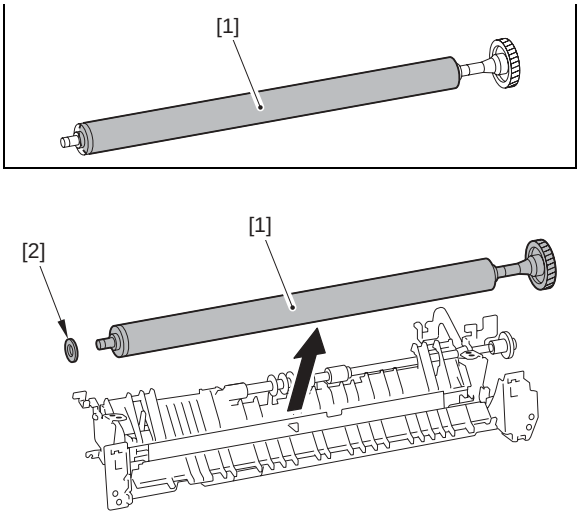
3.5.3.1 Before Removing the Fixing Pressure Roller

1) Remove the upper cover. (page 3-2)Reference[Removing the Upper Cover]
2) Remove the left cover. (page 3-1)Reference[Removing the Left Cover]
3) Remove the right cover. (page 3-1)Reference[Removing the Right Cover]
4) Remove the rear cover. (page 3-1)Reference[Removing the Rear Cover]
5) Remove the main controller PCB. (page 3-8)Reference[Removing the Main Controller PCB]
6) Remove the fixing unit. (page 3-16)Reference[Removing the Fixing Unit]
7) Remove the fixing film unit. (page 3-17)Reference[Removing the Fixing Film Unit]

3.5.3.2 Removing the Fixing Pressure Roller

1) Remove the fixing pressure roller [1].
- 1 washer [2]

⚠
Do not touch the surface [1] of the fixing pressure roller.



F-3-67

Chapter 4 MAINTENANCE AND INSPECTION

Contents

4.1 Periodically Replaced Parts

4.1.1 Periodically Replaced Parts

There is no periodically replaced part with this machine.

4.2 Consumables

4.2.1 Consumables

There is no consumable with this machine.

4.3 Periodical Service

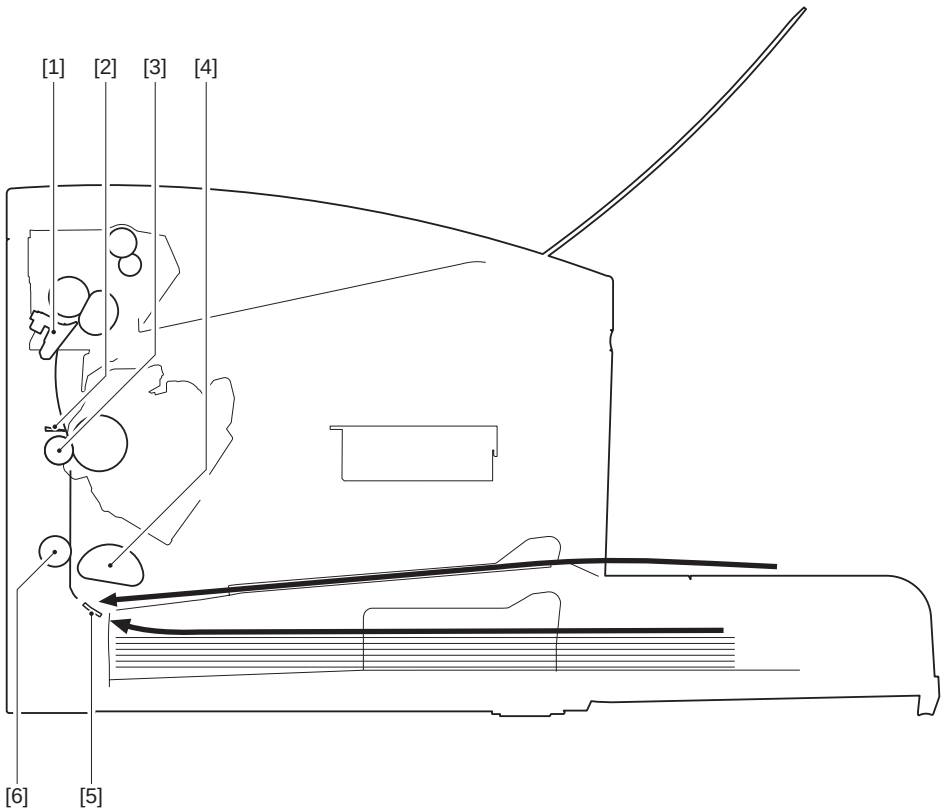
4.3.1 Scheduled Servicing

There is no portion that requires schedule servicing in this equipment.

4.4 Cleaning

4.4.1 Cleaning Method

Cleaning at servicing



F-4-1

[1]	Fixing inlet guide	[2]	Static eliminator
[3]	Transfer roller	[4]	Pickup roller
[5]	Separation pad	[6]	Feeding roller

Follow the procedure below for cleaning during servicing.
- Fixing inlet guide
  Clean it with a dry lint-free paper.
- Static eliminator
  Clean it with a dry lint-free paper.
- Transfer roller
  Basically, do not touch it with your hands or clean it. When cleaning is absolutely necessary, clean with a dry lint-free paper.
  Take care not to touch the roller and let solvents or oils be removed.
- Pickup roller
  Clean it with a dry lint-free paper.
- Separation pad
  Clean the rubber part with a lint-free paper
- Feeding roller
  Clean it with a dry lint-free paper.

Chapter 5 TROUBLESHOOTING

Contents

5.1 MEASUREMENT AND ADJUSTMENT

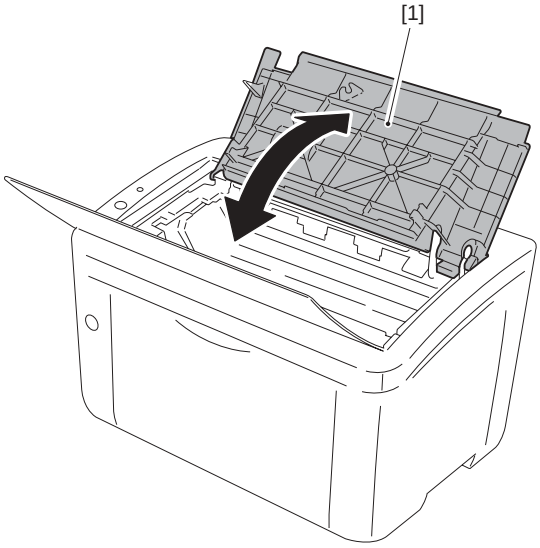
5.1.1 Test Print

5.1.1.1 Test Print Function

This equipment has a test print function to check if the printer engine normally operates.
Test patterns (horizontal lines) are output when executing this test print.

The following is the operation procedure;
1) Set A4/LTR papers on the pickup tray or the manual feed pickup tray.
2ÅjOpen and close the delivery tray [1] five times continuously with the power switch on. (The time of opening and closing the delivery tray is approx. 2 sec or less.)
3) Test print is executed.

In this test print, pickup from the manual feed tray is executed prior to that from the pickup tray.



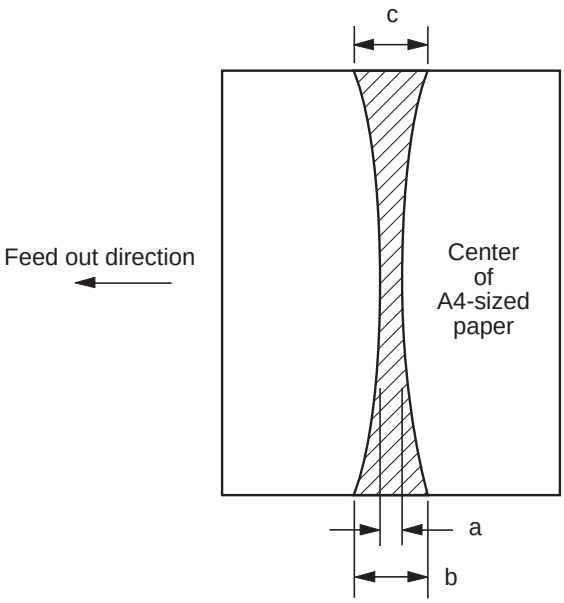
F-5-1

5.1.2 Mechanical Adjustment

5.1.2.1 Checking the Pressure of the Pressure Roller (nip)

The nip width of the fixing unit is not adjustable in this printer, however, the incorrect nip width may cause the faulty fixing.
Follow the procedures below to check the nip width.

1) Prepare an all-black print of A4 size made by the same type of EP Toner cartridge for this printer before visiting the customer site.
2) Place a solid black paper on a manual pickup tray with the printed side facing down.
3) Open the face-up cover to perform the face-up delivery.
4) Press the test print switch.
5) Turn OFF the printer switch as soon as the leading edge of the paper appears in the exit of the paper delivery unit. Wait for 10 seconds after the printer-OFF, and then take the paper out from the printer.
6) Measure the width of the glossy band across the paper and check if it is meeting the requirements below.
   - Center (a): 5.5mm to 8.1mm
   - Right and left (b, c): 5.5mm to 8.1mm



F-5-2

5.2 SERVICE TOOLS

5.2.1 Standard tools

The followings are the required tools to perform the service operation.

T-5-1

No.	Tool name	Tool number	Usage/remarks
1	Tool case	TKN-0001	
2	Jumper wire	TKN-0069	With clip
3	Gap gauge	CK-0057	0.02 to 0.03mm
4	Spring scale	CK-0058	To check cassette spring pressure
5	Philips screwdriver	CK-0101	M4, M5 Length: 363mm
6	Philips screwdriver	CK-0104	M3, M4 Length: 155mm
7	Philips screwdriver	CK-0105	M4, M5 Length: 191mm
8	Philips screwdriver	CK-0106	M4, M5 Length: 85mm
9	Flat-blade screwdriver	CK-0111	
10	Precision slot head screwdriver	CK-0114	6 pieces set
11	Hex-key wrench set	CK-0151	5 pieces set
12	Smooth file	CK-0161	
13	Hex screwdriver	CK-0170	M4, Length: 107mm
14	Nipper	CK-0201	
15	Long-nose pliers	CK-0202	
16	Pliers	CK-0203	
17	Stop-ring pliers	CK-0205	For shaft ring
18	Crimping tool	CK-0218	
19	Tweezers	CK-0302	
20	Scale	CK-0303	150mm For measurement
21	Plastic hummer	CK-0314	
22	Brush	CK-0315	
23	Penlight	CK-0327	
24	Plastic bottle	CK-0328	
25	Lint-free paper	CK-0336	500SH/PKG
26	Oiler	CK-0349	30cc
27	Plastic bottle	CK-0351	30cc
28	Digital multi-meter	FY9-2032	

5.2.2 Special Tool

There is no special tool required.

5.2.3 List of solvent/ lubricant

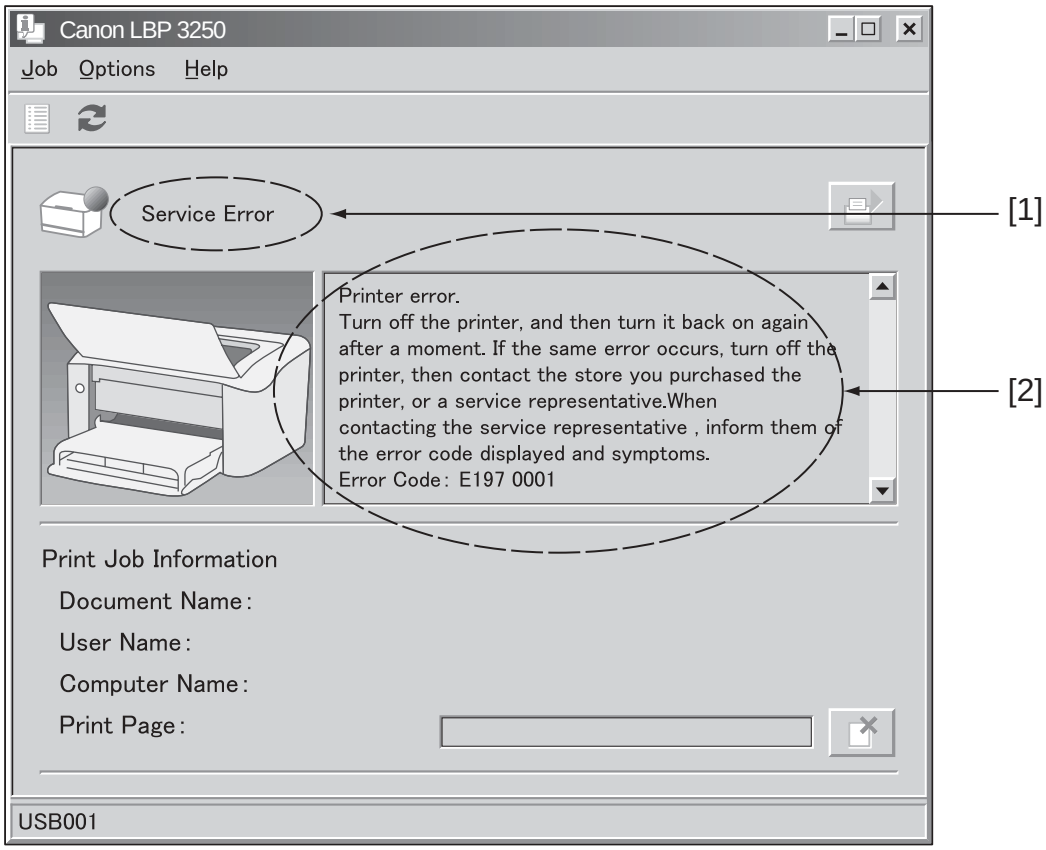
T-5-2

~~Name~~	Usage	Remarks
Ethel alcohol	Cleaning e.g.) Metal parts Grease Toner contamination	- Local procurement - Keep fire away
Lubricant	- Apply it on gears etc. - Apply it on shafts and shaft supports etc.	- tool number: HY9-0007(Dow Corning made Molykote EM-50L)

5.3 ERROR CODE TABLE

5.3.1 Overview

This printer does not have a status panel (LCD panel), and the messages for statuses and errors that would have been displayed on the status panel during a printer's operations are displayed on the computer display. The screen displayed is called Status Window (see the following figure).
The status window informs users of the printer status with messages or animations.
Messages are displayed on the message area [1] and message area (auxiliary) [2]. There are two types of messages; user message and service message. The user message prompts users to take some actions, and the service message prompts service engineers to do so.



F-5-3

The following are the details of the service message. For the user message, please refer to the users guide packaged with the printer.

5.3.2 Service Message

The service message is displayed when a fault in the printer occurs and called error code.
The error code is displayed on the message area of the status window screen, and its details on the message area (auxiliary) with the error code; 'Exxx' (a three-digit number is assigned to XXX).
The following is the list of service messages.

T-5-3

Error Code	Details	Measures
E000	Error in startup	
	- The detected temperature of the thermistor does not reach 35 deg C within approx. 1.5 sec of the heater being turned on. - The detected temperature of the thermistor is 100 deg C or lower in standby mode.	- Check connectors on the fixing film unit. - Replace the fixing film unit. - Replace the engine controller PCB.
E001	Error in abnormally high temperature	
	The detected temperature of the thermistor is 220 deg C or higher 30 times consecutively.	- Check connectors on the fixing film unit. - Replace the fixing film unit. - Replace the engine controller PCB.
E003	Error in abnormally low temperature	
	- After the heater is turned on, the detected temperature of the thermistor is 100 deg C or lower at the time of printing after reaching 50 deg C. - After the heater is turned on, the detected temperature of the thermistor is 55 deg C or lower at paper intervals or in cleaning mode after reaching 50 deg C.	- Check connectors on the fixing film unit. - Replace the fixing film unit. - Replace the engine controller PCB.
E004	Error in fixing heater drive circuitry (For 200V machines only)	
	An abnormal frequency is detected on the fixing drive circuit within approx. 3.3 sec of the power being turned on.	- Check connectors on the fixing film unit. - Replace the fixing film unit. - Replace the engine controller PCB.
E100	Error in Scanner Unit	
	- At startup of the scanner, /BDI signal cannot be detected within 0.1 sec after forced acceleration of the scanner motor. - At startup of the scanner during activation of the scanner motor, the motor rotation exceeds the range of specified value (98.3 to 102.1%). - After startup of the scanner is correctly completed, /BDI signal exceeds the specified cycle 10 times consecutively.	- Check connectors on the scanner unit - Replace the scanner unit - Replace the engine controller PCB
E197	Error in engine communication	
	An error in data communication occurs in the engine controller.	- Replace the engine controller PCB
E747	Error in main controller memory	
	Data of EEPROM on the main controller cannot be read/written.	- Replace the main controller PCB

5.4 Version Up

5.4.1 Upgrade

The host machine does not support SST (Service Support Tool)
Thus, when upgrading the main controller or engine controller, replace the PCB to the one in new version.

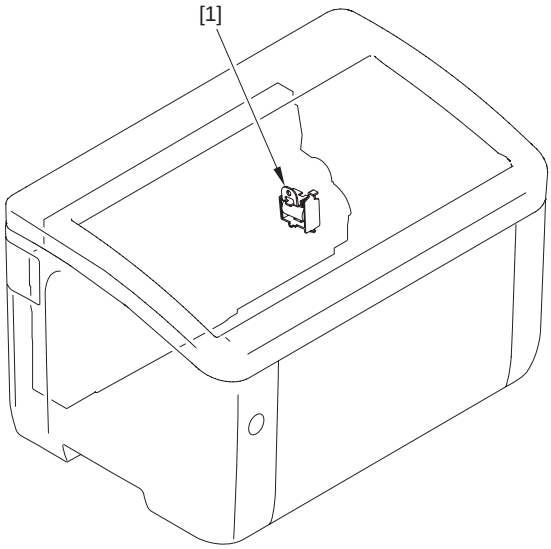
Chapter 6 APPENDIX

Contents

6.1 OUTLINE OF ELECTRICAL COMPONENTS

6.1.1 Clutch/Solenoid

6.1.1.1 Solenoid

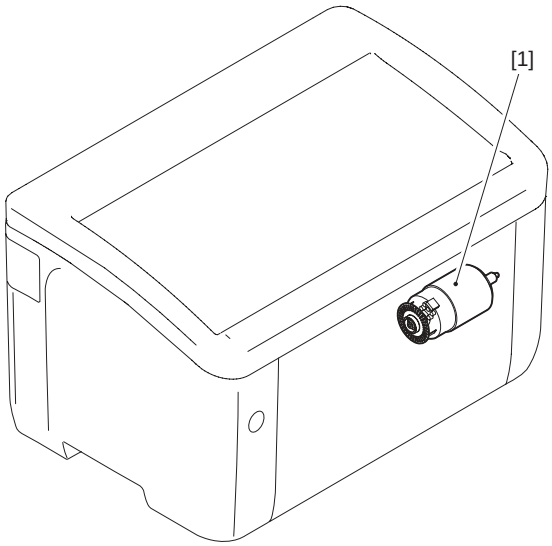


F-6-1

[1] Pickup solenoid

6.1.2 Motor

6.1.2.1 Motor

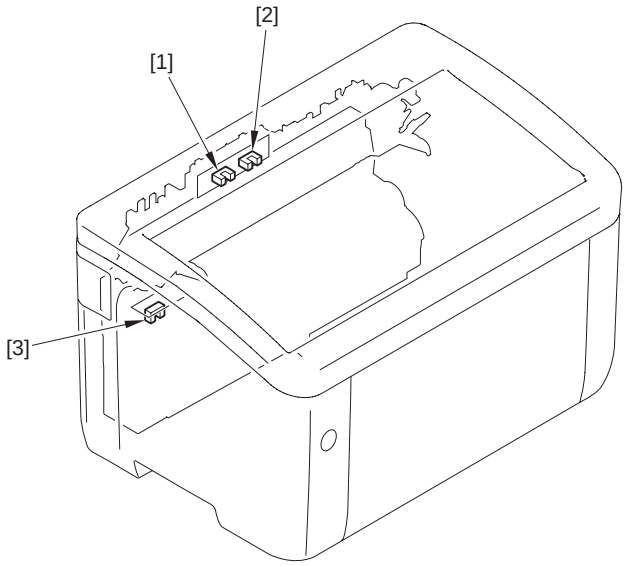


F-6-2

[1] Main motor

6.1.3 Sensor

6.1.3.1 Sensor

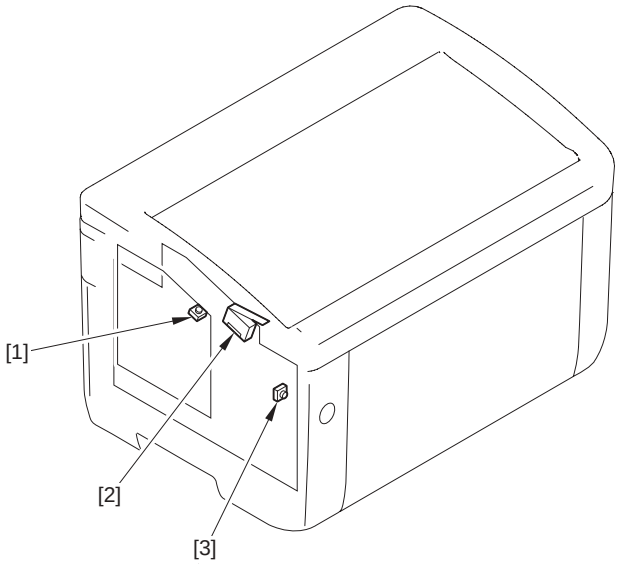


F-6-3

[1] Fixing delivery sensor
[2] Paper width sensor
[3] Paper leading edge sensor

6.1.4 Switch

6.1.4.1 Switch

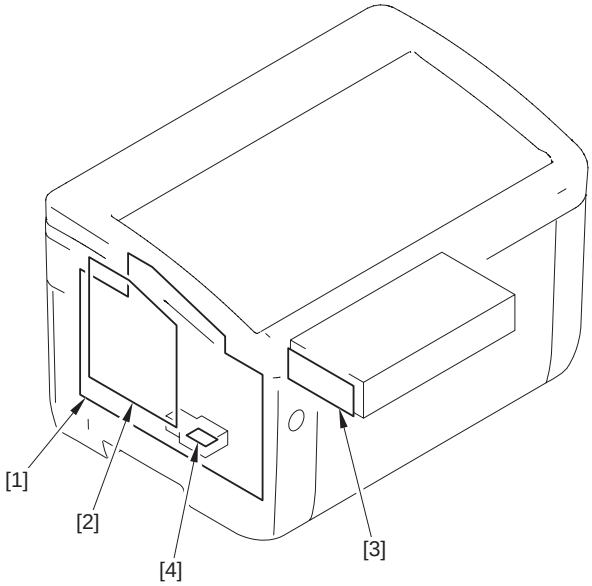


F-6-4

[1] Control key switch
[2] Power switch
[3] Door switch

6.1.5 PCBs

6.1.5.1 PCB



F-6-5

[1] Engine controller PCB
[2] Main controller PCB
[3] Motor drive PCB
[4] Memory PCB

PARTS CATALOG

LBP3250

Canon

Aug 13 2008

Contents

NUMERICAL INDEX

LBP3250(Parts Catalog)

NUMERICAL INDEX
LBP3250(Numerical Index)

PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO
FC8-3667-000	100 - 2				
FC8-3668-000	100 - 3				
FC8-3669-000	102 - 4				
FC8-3685-000	101 - 1				
FC8-3688-000	100 - 6				
FC8-3694-000	100 - 7				
FC8-3705-000	810 - 2				
FM3-5414-000	101 - 2				
FM3-5415-000	101 - 2				
FM3-5418-000	103 - 2				
FM3-5673-000	100 - 9				
FM3-5675-000	100 - 10				
FM3-5677-000	100 - 1				
FM3-5678-000	100 - 4				
FM3-5679-000	100 - 11				
FM3-5684-000	102 - 1				
FM3-5688-000	100 - 8				
FM3-5689-000	810 -				
FM3-5690-000	100 - 8				
FM3-5691-000	810 -				
FM3-5740-000	101 - 3				
FM3-5741-000	101 - 3				
FM4-0365-000	001 - 2				
FM4-0366-000	001 - 2				
FM4-0367-000	001 - 2				
FM4-0368-000	001 - 2				
NPN	001 -				
NPN	100 -				
NPN	101 -				
NPN	102 -				
NPN	103 -				
RC1-6217-000	100 - 5				
RC2-1414-000	810 - 3				
RH9-1164-000	001 - 1				
RH9-1166-000	001 - 1				
RH9-1169-000	001 - 1				
RK2-1302-000	001 - 3				
RK2-1315-000	001 - 1				
RK2-1757-000	103 - 3				
RL1-1497-000	102 - 5				
RM1-4023-000	102 - 2				
RM1-4184-000	103 - 1				
RM1-4196-000	103 - 4				
RM1-4227-000	102 - 3				
RM1-4230-000	810 - 1				
RM1-4231-000	810 - 1				

LBP3250(Parts Catalog)

i-SENSYS LBP3250

230V EUR	**F15-1491-000**	**MBBA**

LASER SHOT LBP3250

120V LTN	**F15-1431-000**	**MBEA**
230V ASIA	**F15-1441-000**	**MBDA**
230V AU	**F15-1441-000**	**MBFA**
230V CN	**F15-1451-000**	**MBCA**

Contents

FIGURE 001
ACCESSORIES

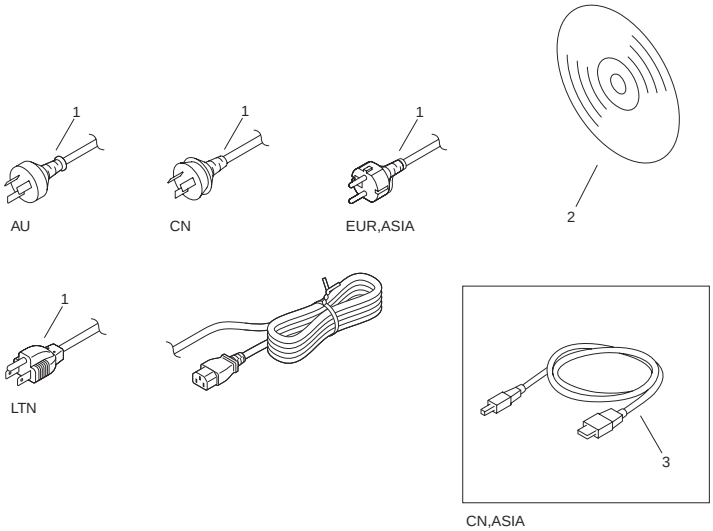


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.001	NPN		RF	ACCESSORIES		
1	RH9-1169-000		1	CORD, POWER, 230V	AU	
1	RH9-1166-000		1	CORD, POWER, 230V	CN	
1	RK2-1315-000		1	CORD, POWER, 230V	EUR,ASIA	
1	RH9-1164-000		1	CORD, POWER, 120V	LTN	
2	FM4-0365-000		1	CD-ROM, USER SOFTWARE	EUR English,French,German,Italian,Spanish,Russian	
2	FM4-0366-000		1	CD-ROM, USER SOFTWARE	EUR English,Dutch,Danish,Norwegian,Finnish,Swedish,Polish	
2	FM4-0367-000		1	CD-ROM, USER SOFTWARE	AU	
2	FM4-0368-000		1	CD-ROM, USER SOFTWARE	CN,ASIA,LTN	
3	RK2-1302-000		1	CABLE,USB	CN,ASIA	

FIGURE 100
EXTERNAL COVERS, PANELS, ETC.

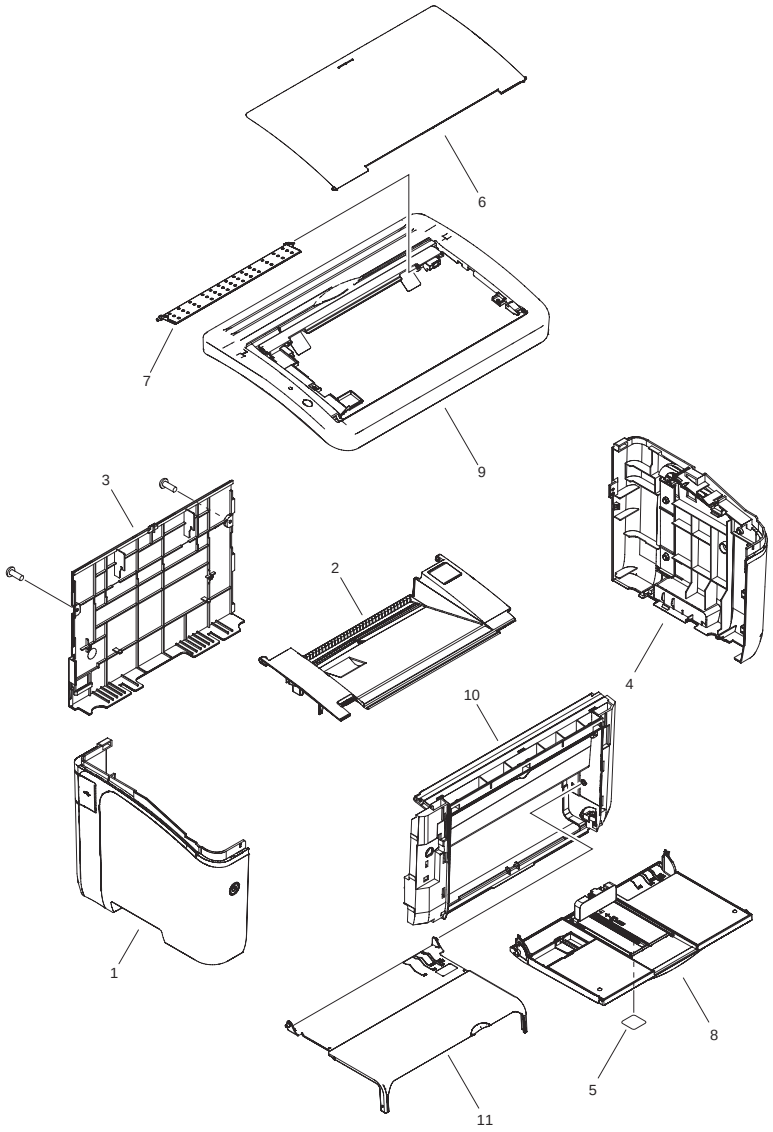


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.100	NPN		RF	EXTERNAL COVERS, PANELS, ETC.		
1	FM3-5677-000		1	LEFT COVER ASS'Y		
2	FC8-3667-000		1	DOOR, CARTRIDGE		
3	FC8-3668-000		1	COVER, REAR		
4	FM3-5678-000		1	RIGHT COVER ASS'Y		
5	RC1-6217-000		1	EMBLEM, LASER SHOT		
6	FC8-3688-000		1	PAPER DELIVERY TRAY ASS'Y		
7	FC8-3694-000		1	TRAY, PAPER DELIVERY		
8	FM3-5688-000		1	PAPER PICK-UP TRAY ASS'Y	EUR	
8	FM3-5690-000		1	PAPER PICK-UP TRAY ASS'Y	EXCEPT EUR	
9	FM3-5673-000		1	TOP COVER ASSEMBLY		
10	FM3-5675-000		1	FRONT COVER ASS'Y		
11	FM3-5679-000		1	TRAY, SINGLE SHEET FEED		

FIGURE 101
INTERNAL COMPONENTS 1

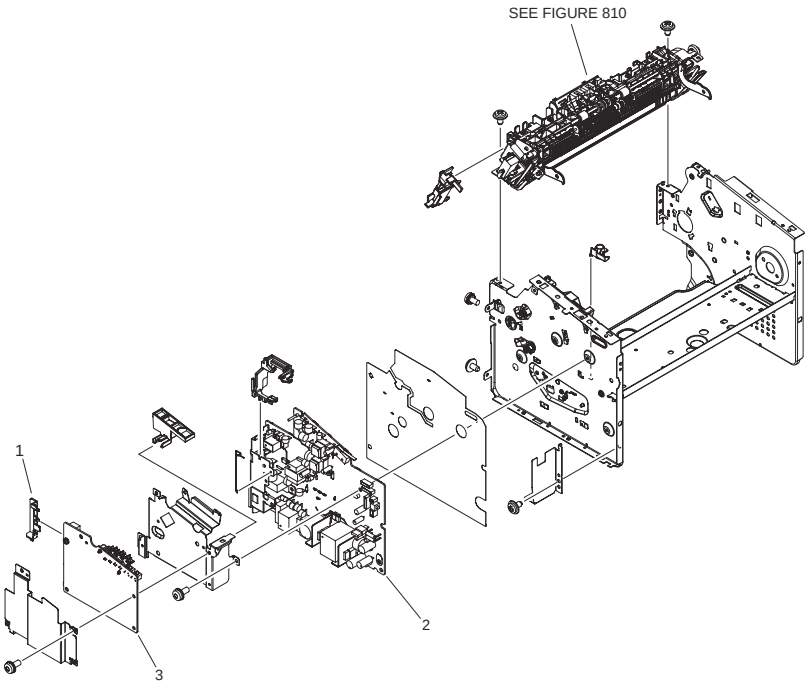


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.101	NPN		RF	INTERNAL COMPONENTS 1		
1	FC8-3685-000		1	COVER, USB		
2	FM3-5414-000		1	ENGINE CONTROL PCB ASS'Y	120V	
2	FM3-5415-000		1	ENGINE CONTROL PCB ASS'Y	230V	
3	FM3-5740-000		1	MAIN CONTROLLER PCB ASSEMBLY	CN	
3	FM3-5741-000		1	MAIN CONTROLLER PCB ASSEMBLY	EXCEPT CN	

FIGURE 102
INTERNAL COMPONENTS 2

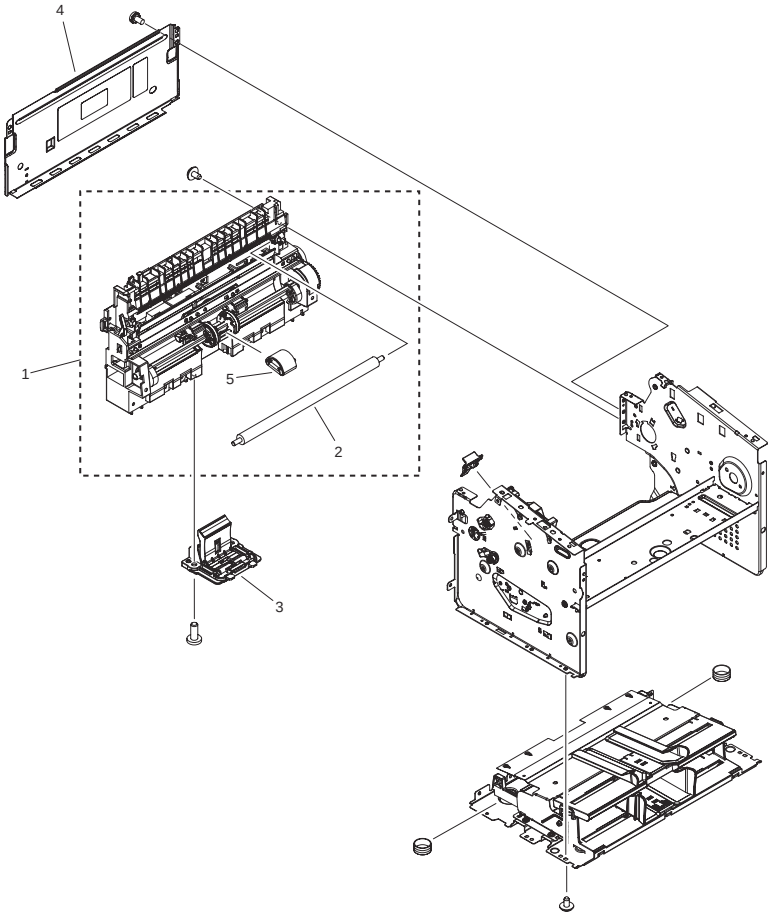


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.102	NPN		RF	INTERNAL COMPONENTS 2		
1	FM3-5684-000		1	PICK-UP TRANSFER FRAME ASS'Y		
2	RM1-4023-000		1	TRANSFER ROLLER ASS'Y		
3	RM1-4227-000		1	SEPARATION PAD ASS'Y		
4	FC8-3669-000		1	PANEL, REAR		
5	RL1-1497-000		1	ROLLER, PICK-UP		

FIGURE 103
INTERNAL COMPONENTS 3

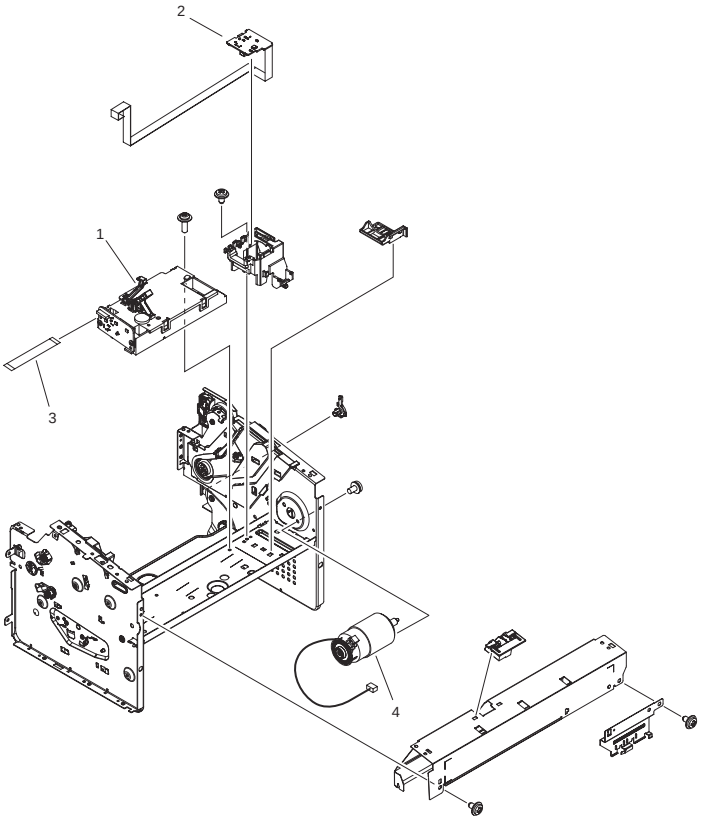


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.103	NPN		RF	INTERNAL COMPONENTS 3		
1	RM1-4184-000		1	LASER SCANNER ASS'Y		
2	FM3-5418-000		1	MOTOR PCB ASS'Y		
3	RK2-1757-000		1	CABLE, FLAT		
4	RM1-4196-000		1	MOTOR, DC24V		

FIGURE 810
FIXING PAPER DELIVERY ASS'Y

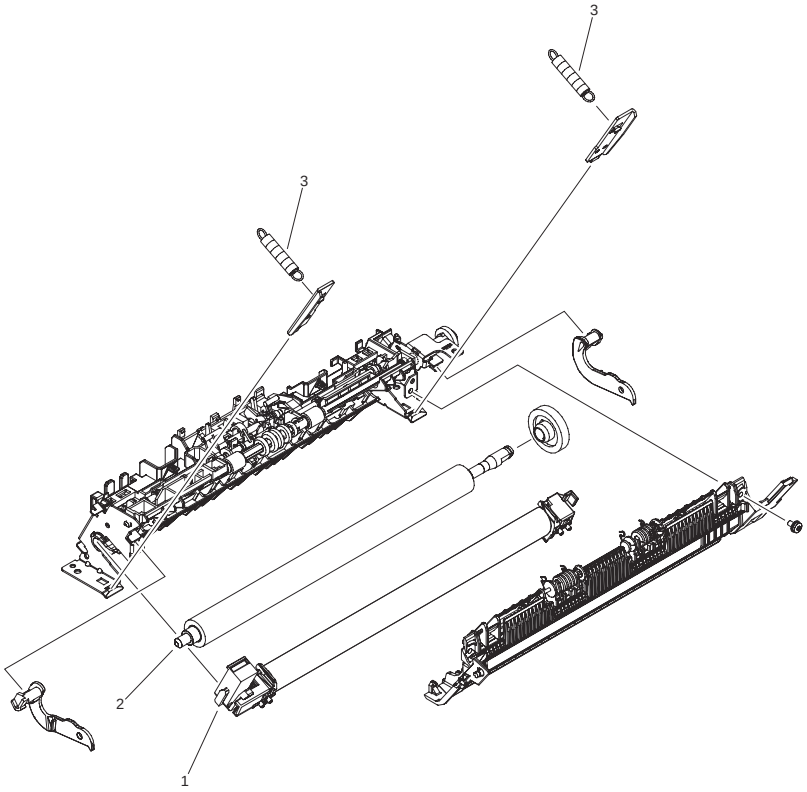


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.810	FM3-5691-000		1	FIXING PAPER DELIVERY ASS'Y	120V	
Fig.810	FM3-5689-000		1	FIXING PAPER DELIVERY ASS'Y	230V	
1	RM1-4230-000		1	FIXING FILM ASSEMBLY	120V	
1	RM1-4231-000		1	FIXING FILM ASSEMBLY	230V	
2	FC8-3705-000		1	ROLLER, PRESSURE		
3	RC2-1414-000		2	SPRING, TENSION		

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