# Service Manual

## MF3240 Series
## **LaserBase MF3240**

Canon

**Mar 31 2006**

## 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

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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 1 PRODUCT DESCRIPTION

# Contents

# 1.1 Detailed Specifications

## 1.1.1 Printing Speed

T-1-1

| | Fixing mode | | | | | | |
|---|---|---|---|---|---|---|---|
| **Paper size** | **Plain paper** | **Plain paper L** | **Heavy paper** | **Heavy paper H** | **Transparency** | **Envelope** | **COM10** |
| A4 ( to 64 g/m2) | 20 | 20 | 20 | 12 | 20 | - | - |
| A4 (65 to 90 g/m2) | - | 18 | 10 | 8 | 18 | - | - |
| B5 (64 to 90 g/m2) | 8 | 8 | 4 | 4 | 8 | - | - |
| A5 (64 to 90 g/m2) | 8 | 8 | 4 | 4 | 8 | - | - |
| A4 (105 to 128 g/m2) | - | - | 18 | 12 | - | - | - |
| B5 (105 to 128 g/m2) | - | - | 4 | 4 | - | - | - |
| LTR (75 to 90 g/m2) | 21 | 21 | 21 | 12 | 21 | - | - |
| LGL (75 to 90 g/m2) | 15 | - | - | - | - | - | - |
| LTR (Bond 75 to 90 g/m2, 105 g/m2) | - | - | 21 | 12 | - | - | - |
| Envelope | - | - | - | - | - | - | 4 |

(unit: sheets/min)

## 1.1.2 Stack Upon Delivery

T-1-2

| Paper type | Face-down | Face-up |
|---|---|---|
| Plain paper (64 to 90 g/m2) | Approx. 60 sheets | 1 sheet |
| Heavy paper (105 to 128 g/m2) | Approx. 30 sheets | 1 sheet |
| Transparency | Approx. 10 sheets | 1 sheet |
| Label | Approx. 10 sheets | 1 sheet |
| Envelope | Approx. 10 sheets | 1 sheet |

The values herein are estimates only and are subject to change for product improvement.

## 1.1.3 System Requirements for Printer Driver

**Operating System**
Windows 98/98SE, Windows Me, Windows 2000 Professional, Windows XP
**Computer**
Any computer on whitch Windows 98, Windows Se, Windows Me, Windows 2000, or Windows XP runs properly.
**Hardware Environment**
-IBM or IBM-compatible PC
-CD-ROM drive or network environment with the access to CD-ROM
-PC equipped with a USB port and the USB class driver installed

T-1-3

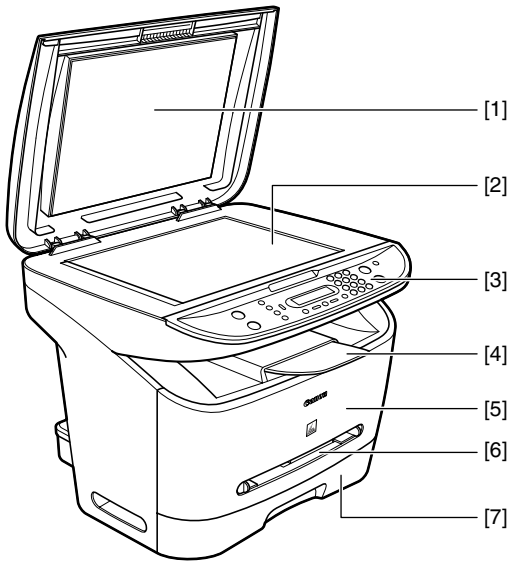
| OS | CPU | RAM | Available Free Disk Space |
|---|---|---|---|
| Windows 98 | Intel Pentium 90 MHz or greater | 32 MB of RAM, 64 MB or greater is recommended | At least 115 MB, 200MB or greater is recommended |
| Windows Me | Intel Pentium 150 MHz or greater | 32 MB of RAM, 64 MB or greater is recommended | At least 115 MB, 200MB or greater is recommended |
| Windows 2000* Professional | Intel Pentium 133 MHz or greater, or compatible micro processors (up to 2 processors are supported) | 64 MB of RAM, 128 MB or greater is recommended | At least 115 MB, 200MB or greater is recommended |
| Windows XP* | Pentium Family 300 MHz or greater | 64 MB of RAM, 128 MB or greater is recommended | At least 115 MB, 200MB or greater is recommended |

*Log on as a user with adominstrator privileges is recommended.

# 1.2 Names of Parts

## 1.2.1 External View

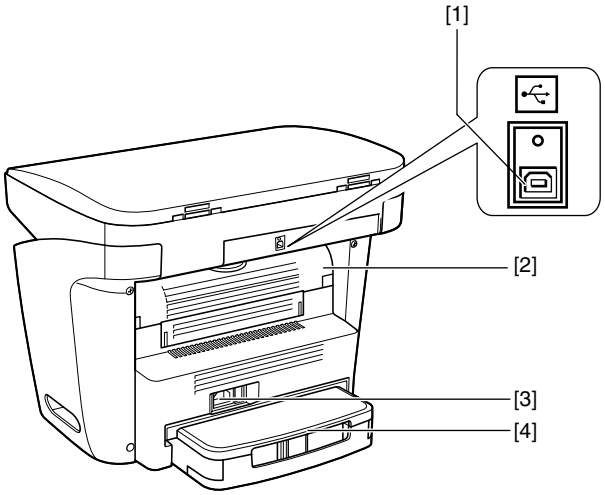
**<Front View>**




F-1-1
T-1-4

[1] Platen glass cover
[2] Platen glass
[3] Operation panel
[4] Output tray
[5] Front cover
[6] Multi-purpose feeder
[7] Cassette

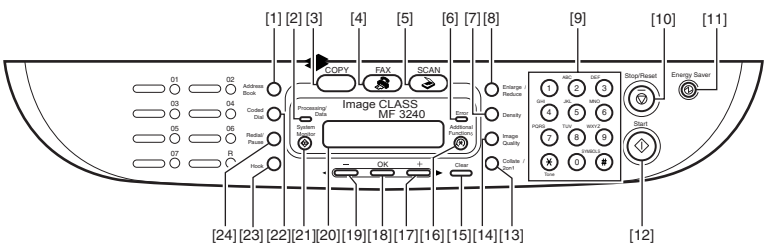
**<Rear View>**




F-1-2
T-1-5

[1] USB port
[2] Face up cover
[3] Power socket
[4] Extension cover

### 1.2.2 Operation panel




F-1-3
T-1-6

[1] Address list button
[2] Practice/Memory
[13] Collate/2on1 key
[14] image Quality key

[3] Copy key
[4] FAX key
[5] SCAN key
[6] Error indicator
[7] Exposure key
[8] Enlarge/Reduce key
[9] Numeric keys
[10] Stop/Reset key
[11] Energy Saver key
[12] Start key
[15] Clear key
[16] Initial setting/Registration
[17] (+) key
[18] OK key
[19] (-) key
[20] LCD
[21] Status Monitor key
[22] Shortening key
[23] Hook key
[24] Redial/Pose

## 1.3 Safety

### 1.3.1 Safety of Laser Light

Laser radiation could be hazardous to the human body. For this reason, laser radiation emitted inside this machine is hermetically sealed within the protective housing and external cover. No radiation can leaak from the machine in the normal operation of the product by the user.

### 1.3.2 Regulations Under the Center for Devices and Radiological Health (CDRH)

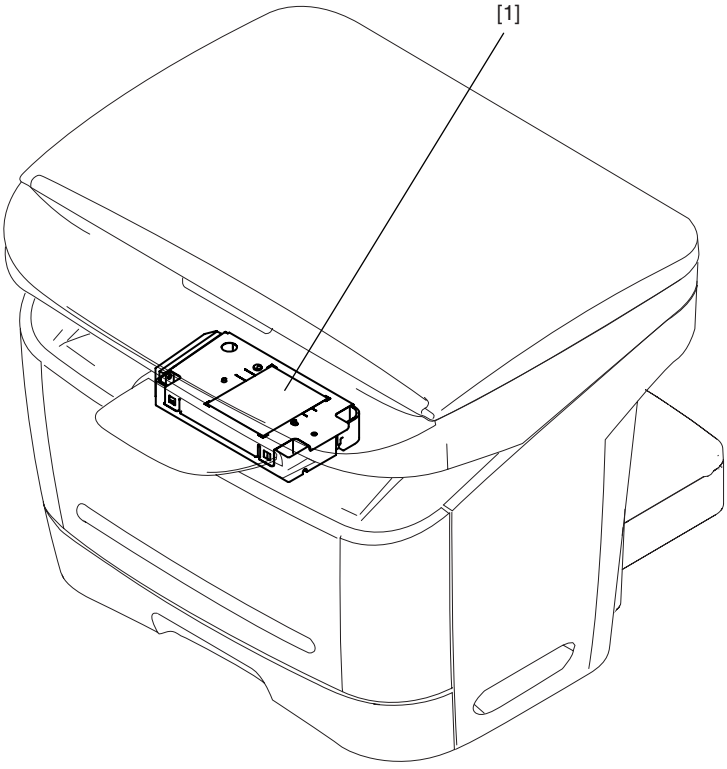
The CDRH of the US Food and Drug Administration put into effect regulations governing the sale of laser products in the US on August 2, 1976. These regulations apply to all laser products produced on and after August 1, 1976, and a laser product cannot be sold unless it has been certified to comply with the regulations. The following is the label used to indicate that the product has been certified under the regulations, and all laser products sold in the US must bear the label.

CANON
30-2, SHIMOMARUKO, 3-CHOME, OHTAKU, TOKYO,
146, JAPAN.
MANUFACTURED:
THIS PRODUCT CONFORMS WITH DHHS RADIATION
PERFORMANCE STANDARD 21CFR CHAPTER 1
SUBCHAPTER J.

F-1-4

### 1.3.3 Handling the Laser Unit

The laser scanner unit emits invisible laser light inside it. If exposed to laser light, the human eye can irreparably be damaged. Never attempt to disassemble the laser scanner unit. (It is not designed for servicing in the field). The covers around the laser scanner unit are identified by the following label [1].




F-1-5

### 1.3.4 Safety of Toner

The machine's toner is a non-toxic material composed of plastic, iron, and small amounts of dye.

Do not put the toner into fire. It may explode.

Toner on the Skin or Clothes
1. If your skin or clothes came into contact with toner, wash with water at once.
2. Do not use warm or hot water, which will cause the toner to jell, permanently fusing it with the fibers of the clothes.
3. Do not bring toner into contact with vinyl material. They are likely to react with each other.

### 1.3.5 Backup Battery

The machine's SCNT PCB are equipped with a lithium battery (1 pc.) serving as a backup source of power in the event of a power shortage or when the power plug is removed.

LISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

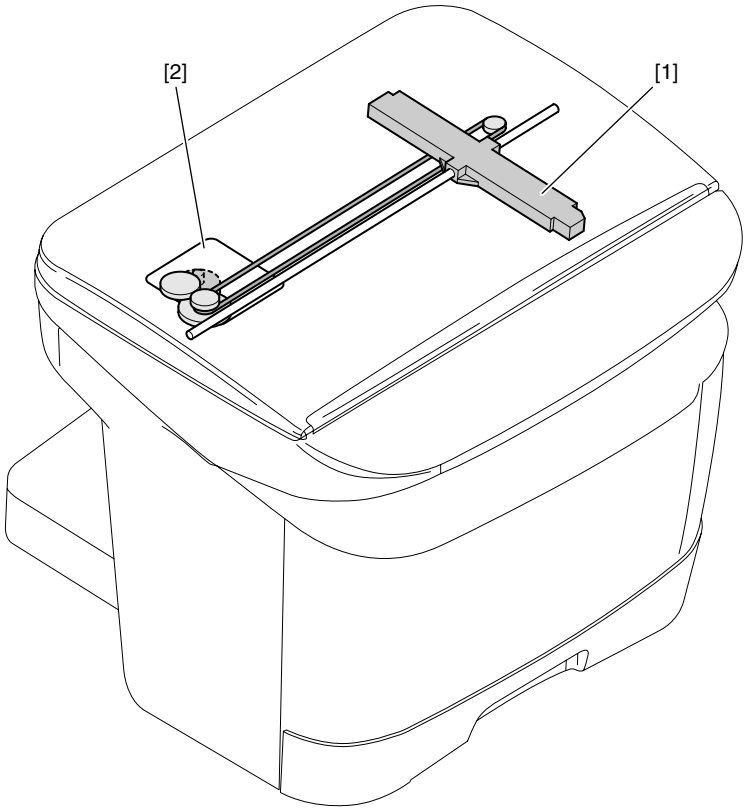
# Chapter 2 TECHNICAL REFERENCE

# Contents

# 2.1 Document Feed and Exposure System

## 2.1.1 Overview/Configuration

### 2.1.1.1 Overview




F-2-1
T-2-1

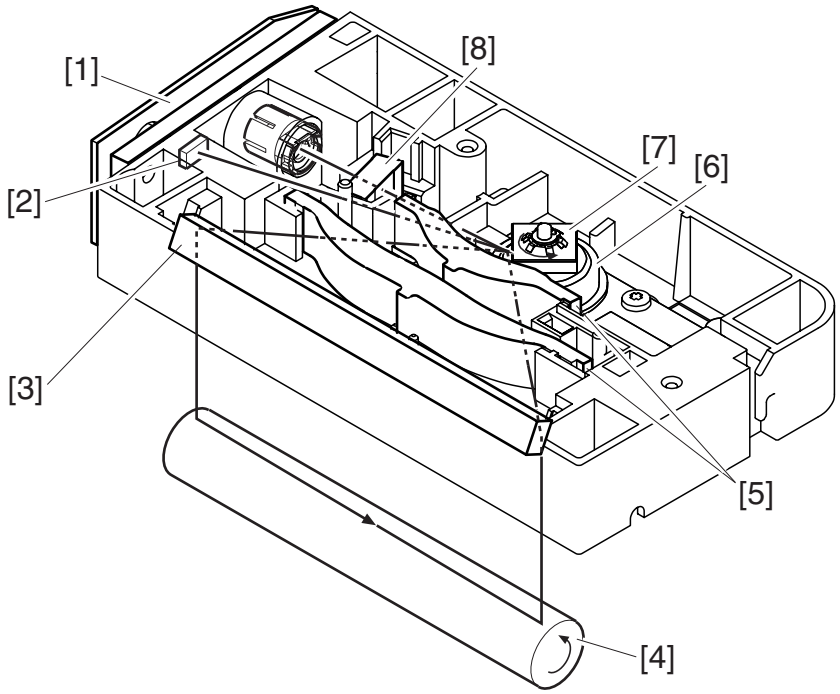
[1] CIS unit
[2] Flatbed motor

The CIS unit driven by the flatbed motor reads out image data of a document on the platen glass.

# 2.2 Laser Exposure

## 2.2.1 Overview/Configuration

### 2.2.1.1 Overview




F-2-2

T-2-2

| | |
|---|---|
| [1] Laser driver PCB | [5] Imaging lends |
| [2] BD sensor | [6] Scanner motor |
| [3] Reflecting mirror | [7] 4-facet mirror |
| [4] Photosensitive drum | [8] Cylindrical lens |

The machine's laser scanner assembly consists of the laser driver and the scanner motor, which are driven by signals coming from the engine controller.
The laser driver serves to turn on the laser diode according to the laser control signal and video signals from the engine controller.
The laser beam moves thorough the collimator less and the cylindrical lens to reach the 4-facet mirror rotating at a specific speed.
The leaser beam reflected by the 4-facet mirror moves through the imaging lens arranged in front of the 4-facet mirror and the reflecting mirror to reach and focus on the photosensitive drum.
When the 4-facet mirror rotates at a specific speed, the laser beam scans the photosensitive drum in keeping with the mirror rotation, thus drawing static images on the photosensitive drum.

MEMO:

**BD Fault**
The machine identifies a BD fault if it does not detect the /BDI signal within 0.1 sec after the scanner motor is forced to accelerate. It also detects a BD fault if it does not detect a specific interval of /BDI signals for 2 sec continuously after the scanner motor has reached a specific revolution (number of rotations).

**Scanner Fault**
If the machine does not detect the /BDI signal 1.4 sc after it has stopped forcing the scanner motor to accelerate, it extends the period of detection by 120 sec; if it still does not detect a specific interval of /BDI signals, it identifies a scanner fault.

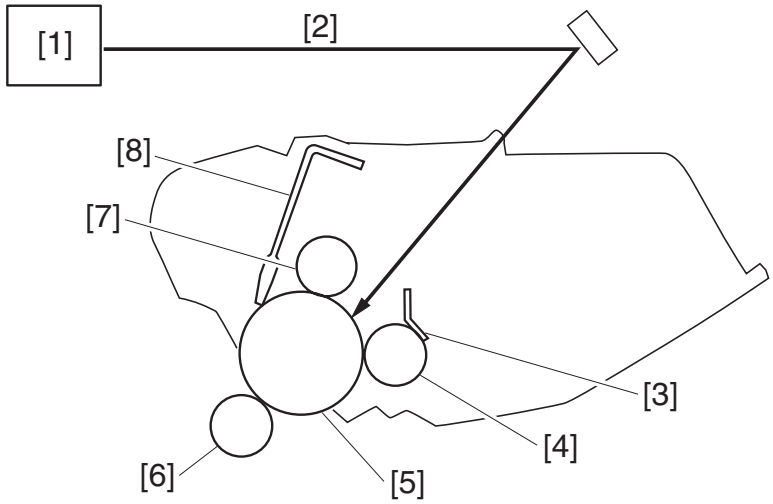
**BD Error**
The machine identifies a BD error if it does not detect the /BDI signal at a specific interval while the /BDI signal is being generated. It, however, does not identify a BD error under the following condition:
-the door is identified as being open within 0.2 sec after detection of a BD error.
-a BD fault or a scanner fault is detected after a BD error has been identified.

The laser/scanner unit contains parts that cannot be adjusted in the field. Do not attempt to disassemble the laser/scanner unit.

# 2.3 Image Formation

## 2.3.1 Overview/Configuration

### 2.3.1.1 Overview




F-2-3

T-2-3

| | |
|---|---|
| [1] Laser/scanner assembly | [5] Photosensitive drum |
| [2] Laser beam | [6] Transfer charging roller |
| [3] Blade | [7] Primary charging roller |
| [4] Developing cylinder | [8] Cleaning blade |

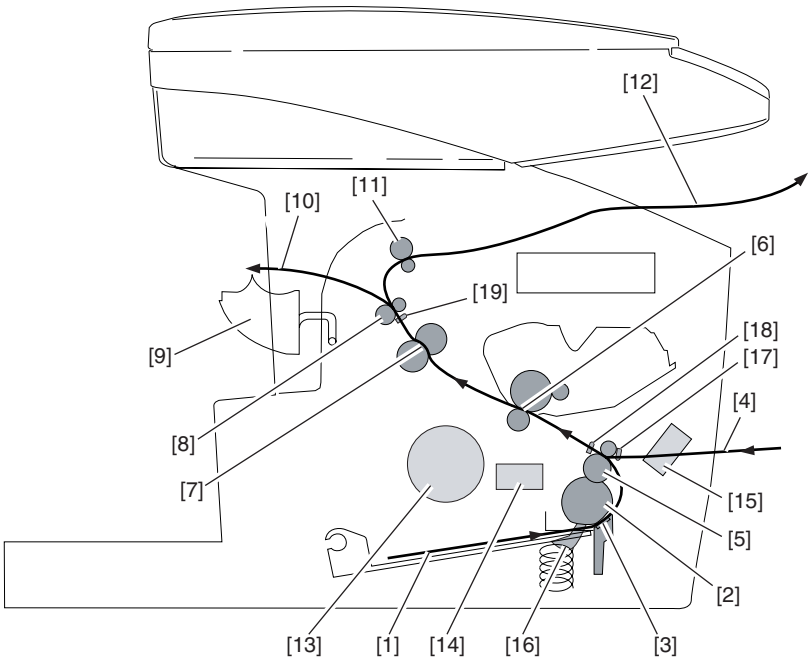
In response to a print command, the engine controller turns on the main motor to drive the photosensitive drum, developing cylinder, primary charging roller, and transfer charging roller.
Thereafter, the machine uses the primary charging roller to charge the surface of the photosensitive drum to an even, negative potential and, at the same time, directs the laser beam across the surface of the photosensitive drum. (The laser beam is modulated to according to the incoming video signals.)
The image thus formed on the photosensitive drum is a static, latent image; it is turned into a visible image by means of the toner from the developing cylinder. The resulting toner image is then transferred to paper by the work of the transfer charging roller, and the paper is sent to the fixing assembly. The surface of the photosensitive drum is cleaned by the cleaning blade so that it is free of residual toner; after cleaning, the primary charging roller once again charges the surface to an even, negative potential to prepare for the formation of a new static, latent image.

**Drum Cover Shutter**
If the surface of the photosensitive drum is exposed to strong light, it develops what is know as "photo memory," which can cause white spots or black lines in images. To protect the drum against light, the machine is equipped with a drum cover shutter. The drum cover shutter must never be opened unless doing so proves to be absolutely necessary.

# 2.4 Pickup and Feed System

## 2.4.1 Overview/Configuration

### 2.4.1.1 Overview




F-2-4

T-2-4

| | |
|---|---|
| [1] Cassette feed | [12] Face-down delivery |
| [2] Cassette pickup roller | [13] Main motor |
| [3] Separation pad | [14] Cassette pickup solenoid |
| [4] Manual feed | [15] Manual feed pickup solenoid |
| [5] Feed roller | [16] Cassette paper sensor |
| [6] Transfer assembly (photosensitive drum, transfer charging roller) | [17] Manual feed paper sensor |
| [7] Fixing assembly (fixing film, fixing pressure roller) | [18] Top sensor |
| [8] Delivery roller | [19] Delivery sensor |
| [9] Face-up cover | |
| [10] Face-up delivery | |
| [11] Face-down delivery roller | |

**Pickup and Feed Operation (from the cassette)**
If the cassette paper sensor detects the presence of paper while the absence of paper is identified in the manual feed pickup assembly, the machine picks up paper from the cassette.
When the main motor operates and the cassette pickup solenoid goes on, the cassette pickup roller makes a single rotation to pick up paper. The paper is then moved from the transfer assembly to the fixing assembly by the feed roller; it is ultimately delivered outside the machine by the work of the delivery roller.
When the face-up cover is open, the paper is delivered face-up at the rear of the machine. If the face-up cover is closed, on the other hand, the paper is moved along the feed guide of the cover, and is delivered face-down at the top of the machine by the work of the face-down delivery roller.
**Pickup and Feed Operation (from the manual feed section)**
When paper is inserted into the pickup assembly, the manual feed paper sensor detects the presence of paper, and the machine uses the feed roller to pick and hold the leading edge of the paper. When printing starts, the machine turns on the manual feed pickup solenoid to stop the rotation of the feed roller so that the paper will not move forward until the laser/scanner and the fixing unit become ready for operation. When the laser/scanner and the fixing unit become ready for operation, the machine turns off the manual feed pickup solenoid to rotate the feed roller, thus moving the paper forward; the operation thereafter is identical to the operation used for pickup from the cassette.

## 2.4.2 Other Control

### 2.4.2.1 Manual Pickup Control

Upon detection of manually inserted paper, the machine drives the main motor for the specified time to feed the paper to the position where it is to be fed between the feed rollers. In addition, the machine turns on the feed roller (manual pickup) solenoid to stop rotating the feed rollers, thus preventing the manually inserted paper from being fed askew. With the paper pressed against the feed rollers, the machine drives the main motor and turns off the solenoid to feed the paper between the feed rollers.

### 2.4.2.2 Cassette Pickup Control

With the main motor running, the machine turns on the paper pickup solenoid at the specified timing to rotate the pickup rollers. If paper exists over the top sensor at the start of timing retry, the machine stops cassette pickup control. If paper does not exist, the machine retries cassette pickup control.

## 2.4.3 Detection Jams

### 2.4.3.1 Jam Detection Outline

#### 2.4.3.1.1 Type so Jams

0012-0906

The machine identifies the following types of jams:
**Pickup Delay Jam**
The top sensor does not go on within a specific period of time after pickup starts.
**Pickup Stationary Jam**
The top sensor goes on, but does not go off within a specific period of time.
**Delivery Delay Jam**
The top sensor goes on, but the delivery sensor does not go on within a specific period of time.
**Wrap Jam**
The delivery sensor goes on, but it goes off before a specific period of time passes.
**Delivery Stationary Jam**
The delivery sensor goes on, but it does not go off within a specific period of time.
**Initial Jam**
The top sensor or the delivery sensor goes on while the main motor is starting to rotate.
**Cover Open Jam**
The machine identifies a condition in which the front cover is opened while it is moving paper.

### 2.4.3.2 Delay Jams

#### 2.4.3.2.1 Pickup Delay Jam

0012-0907

If the top sensor does not detect the leading edge of paper within 1.2 sec after the start of pickup operation, the machine initiates pickup operation once gain. The machine identifies a pickup delay jam if the top sensor does not detect the leading edge of paper within 1.2 sec after the 2nd pickup operation.

#### 2.4.3.2.2 Delivery Delay Jam

0012-0908

The machine identifies a delay jam if the delivery sensor does not detect the leading edge of paper within 1.615 sec after the top sensor has detected the leading edge of paper.

### 2.4.3.3 Stationary Jams

#### 2.4.3.3.1 Pickup Stationary Jam

0012-0909

The machine identifies a pickup stationary jam if the top sensor does not detect the absence of paper within 3.575 sec after the top sensor has detected the leading edge of paper.

#### 2.4.3.3.2 Delivery Stationary Jam

0012-0911

The machine moves to a delivery stationary jam sequence if it does not detect a wrap jam.
The machine identifies a delivery stationary jam if the delivery sensor does not detect the trailing edge of paper for 1.715 sec after the top sensor has detected the trailing edge of paper.

### 2.4.3.4 Other Jams

#### 2.4.3.4.1 Wrap Jam

0012-0912

The machine starts a wrap jam detection sequence in 0.1 sec if it does not detect a delivery delay jam.
It identifies a wrap jam if the delivery sensor detects the trailing edge of paper within 1.06 sec after the top sensor has detected the trailing edge of paper.
The term "wrap jam" refers to paper that wraps around the fixing pressure roller; its leading edge passes through the delivery sensor, but it jams thereafter. The machine is designed to identify such a jam so as to prevent wrapping paper from fully moving into the fixing assembly.

#### 2.4.3.4.2 Initial Jam

0012-0913

The machine identifies an initial jam if the top sensor or the delivery sensor detects the presence of paper when the main motor starts to rotate.

#### 2.4.3.4.3 Cover Open Jam

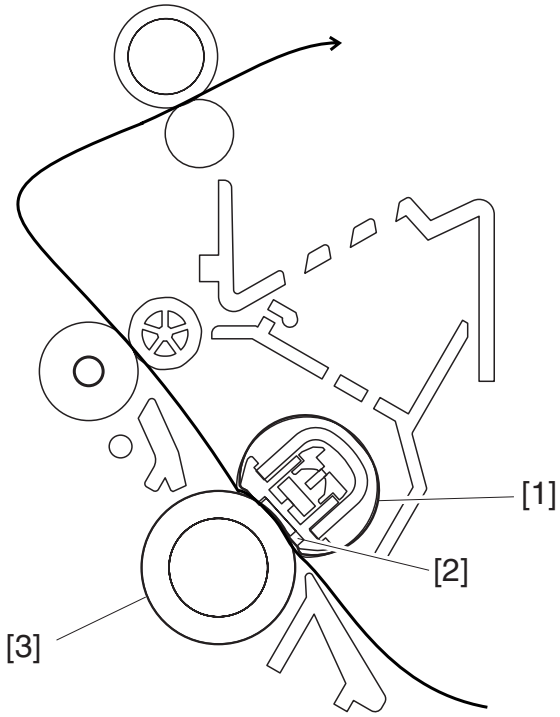
0012-0914

The machine identifies a cover open jam if it detects that the front cover is open with the top sensor or the delivery sensor detecting the presence of paper (while paper is being moved or the machine is not running a jam check).

# 2.5 Fixing Unit

## 2.5.1 Overview/Configuration

### 2.5.1.1 Overview




F-2-5

T-2-5

[1] Fixing film unit

[2] Fixing heater

[3] Pressure roller

The machine's fixing system is an on-demand type, and its fixing assembly consists of the fixing film unit and the pressure roller: the fixing film has a built-in fixing heater, thermistor, and thermal fuse.
The toner transferred to paper is heated by the fixing heater, which provides heat through the fixing film; the toner is forced under the pressure roller so that it is fused into the fibers of the paper under both heat and pressure.

## 2.5.2 Protection Function

### 2.5.2.1 Protective Mechanisms

The machine is equipped with the following 3 types of protective mechanisms used to prevent its fixing heater from going awry.
1. protective mechanism by the CPU
2. protective mechanism by the fixing heater safety circuit
3. protective mechanism by the thermal fuse

**1. Protective Mechanism by the CPU**

The machine's CPU monitors the voltage of the fixing heater temperature detection signal from the main thermistor and the sub thermistor at all times, and it cuts the power to the fixing heater if it finds that the fixing temperature appreciably exceeds a specific level.
When the fixing temperature abnormally increases and the voltage of the fixing heater temperature detection signal from the main thermistor drops to about 0.775 V (equivalent of 235 deg C) or less, the CPU causes the fixing heater drive signal to go Low and turns off the photo triac coupler, thus cutting power to the fixing heater.
If the temperature of the fixing heater abnormally increases and the voltage of the fixing heater temperature detection signal from the sub thermistor reaches about 2.779 V (equivalent of 320 deg C) or more, the CPU causes the fixing heater drive signal to go Low and turns off the photo triac couple, thus cutting off the power to the fixing heater.

**2. Protective Mechanism by the Fixing Heater Safety Circuit**

The fixing heater safety circuit monitors the voltage of the fixing heater temperature detection signal from the main thermistor and the sub thermistor at all times.
If the fixing temperature appreciably exceeds a specific level, the machine cuts off the power to the fixing heater regardless of the instructions from the CPU.
When the temperature of the fixing heater increases abnormally and the voltage of the fixing heater temperature detection signal of the main thermistor reaches about 0.775 V (equivalent of 235 deg C) or less, the output of the comparator turns Low to turn off the relay, thus cutting off the power to the fixing heater.
Likewise, if the temperature of the fixing heater increases abnormally and the voltage of the fixing heater temperature detection signal of the sub thermistor reaches about 2.779 V (equivalent of 320 deg C) or more, the output of the comparator turns Low to turn off the transistor, thus turning off the relay and cutting off the power to the fixing heater regardless of the relay drive signal from the CPU.

**3. Protective Mechanism by the Thermal Fuse**

If the temperature of the fixing heater increases abnormally and the temperature of the thermal fuse exceeds about 228 deg C, the thermal fuse starts to melt to cut off the power to the fixing heater.

### 2.5.2.2 Detecting a Fault in the Fixing Assembly

The CPU identifies a fault in the fixing assembly for the following conditions (a. thorough g.) and operates as described:
1. the CPU causes the fixing heater drive signal to go Low to cut off the power to the fixing heater.
2. the CPU causes the relay drive signal to go Low to turn off the relay.
3. the CPU, if it detects a fault while printing is under way, discharges the paper being picked up or moved at the time, and immediately turns off the main motor,

scanner motor, and high-voltage system and puts the printer unit in an error state.
a) the reading of the main thermistor does not exceed 50 deg C within 2.34 sec after the start-up temperature control mechanism is started.
b) the CPU detects that the reading of the main thermistor remains 235 deg C or more for 1 sec continuously while fixing temperature control is under way.
c) the CPU detects that the reading of the main thermistor remains 100 deg C or less for 1.2 sec continuously while paper passage temperature control is under way; or the CPU detects that the reading of the main thermistor remains 50 deg C or less for 0.3 sec continuously while between-sheets temperature control is under way.
d) the CPU detects that the reading of the main thermistor remains less than 20 deg C for 0.3 sec continuously while fixing heater temperature control is under way.
e) the temperature of the main thermistor does not exceed 100 deg C within 20 sec after the start of start-up temperature control.
f) the CPU detects that the reading of the sub thermistor remains less than 35 deg C for 0.15 sec continuously while fixing heater temperature control is under way.
g) the CPU detects that the reading of the sub thermistor remains 320 deg C for 0.15 sec continuously while fixing heater temperature control is under way.

## 2.6 External and Controls

### 2.6.1 Power Supply

### 2.6.1.1 Backup Battery

#### 2.6.1.1.1 Backup Battery

*0012-3264*

The machine's SCNT PCB are equipped with a lithium battery (1 pc.) serving as a backup source of power in the event of a power shortage or when the power plug is removed.

T-2-6

| | |
|---|---|
| SCNT PCB | litium battery (3V,220mAh) |
| Life | 5yr or more (with power plug removed) |
| Replacement | not possible in the field on its own. |

LISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

# Chapter 3 DISASSEMBLY AND ASSEMBLY

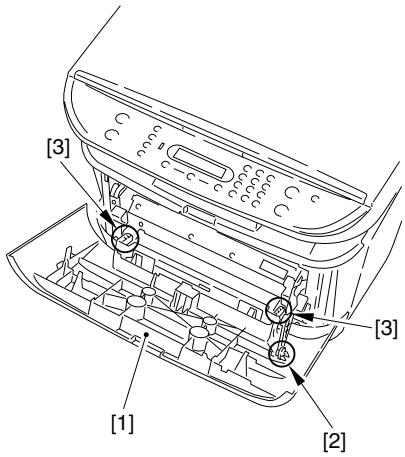
# Contents

# 3.1 EXTERNAL AND CONTROLS SYSTEM

## 3.1.1 Front Cover

### 3.1.1.1 Removing the front cover

1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-1

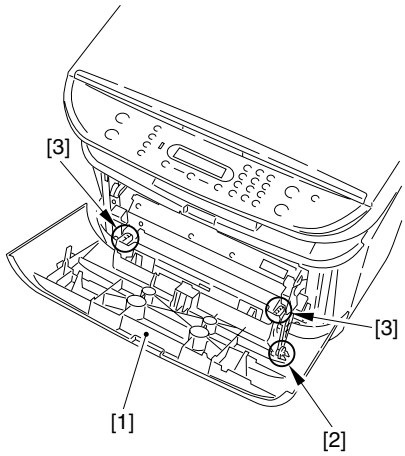
## 3.1.2 Rear Cover

### 3.1.2.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.1.2.2 Removing the front cover

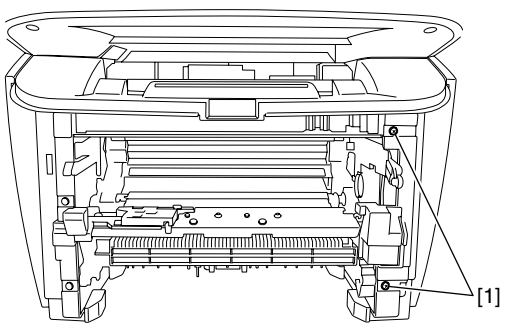
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-2

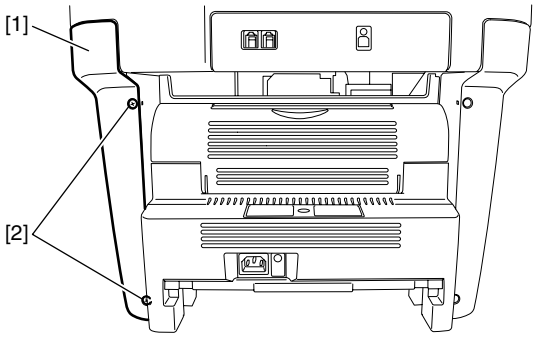
### 3.1.2.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-3

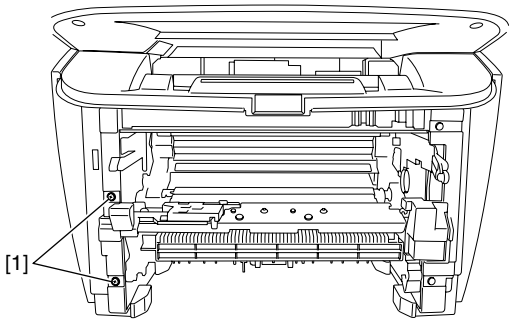
2) Remove the right cover [1].
- 2 screws [2]




F-3-4

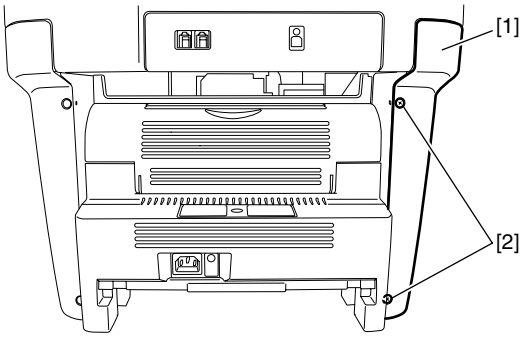
### 3.1.2.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-5

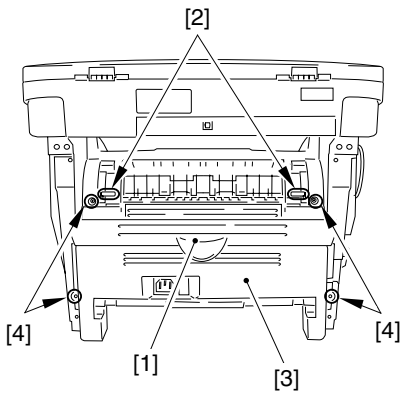
2) Remove the left cover [1].
- 2 screws [2]




F-3-6

### 3.1.2.5 Removing the rear cover

1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-7

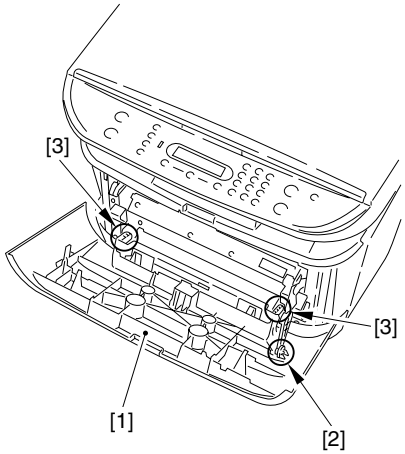
## 3.1.3 Top Cover

### 3.1.3.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.1.3.2 Removing the front cover

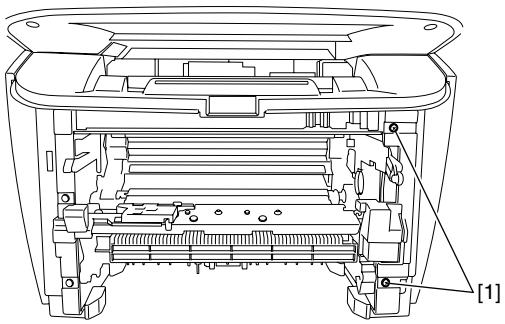
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-8

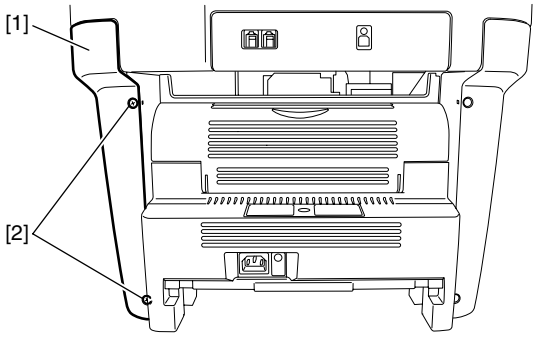
### 3.1.3.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-9

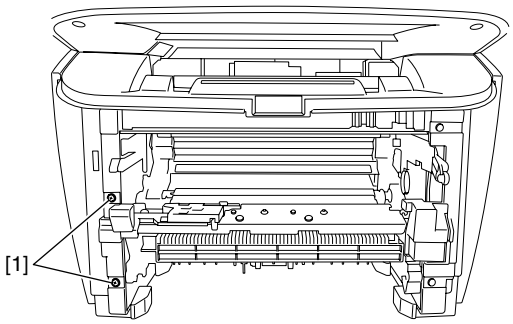
2) Remove the right cover [1].
- 2 screws [2]




F-3-10

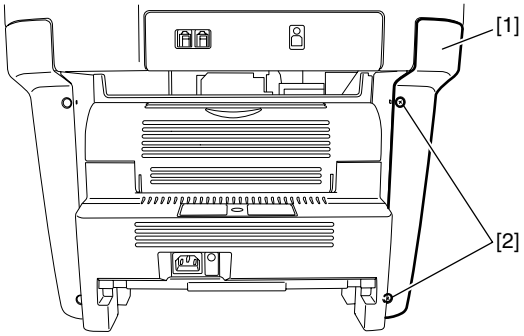
### 3.1.3.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-11

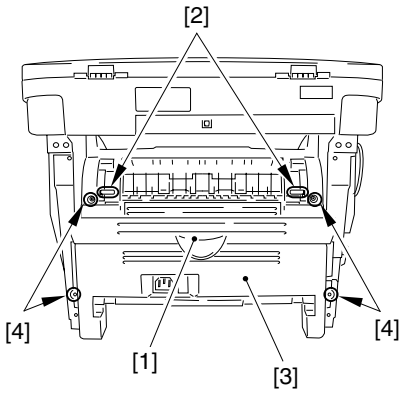
2) Remove the left cover [1].
- 2 screws [2]




F-3-12

### 3.1.3.5 Removing the rear cover

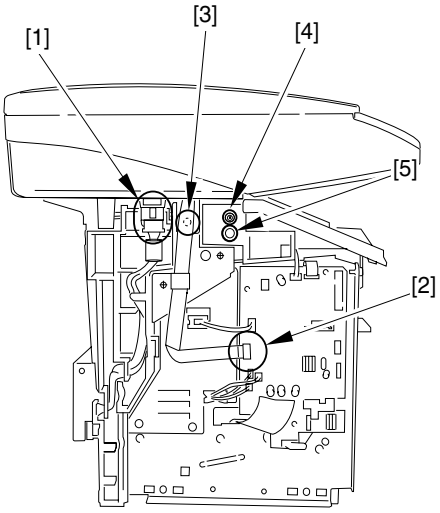
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-13

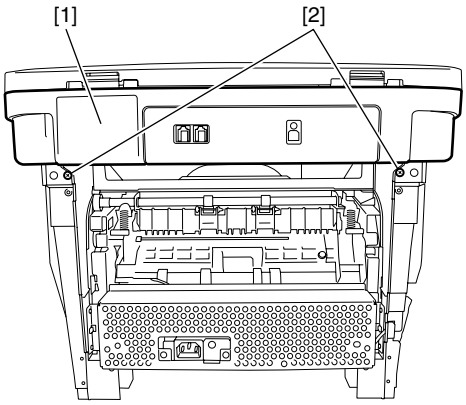
### 3.1.3.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-14

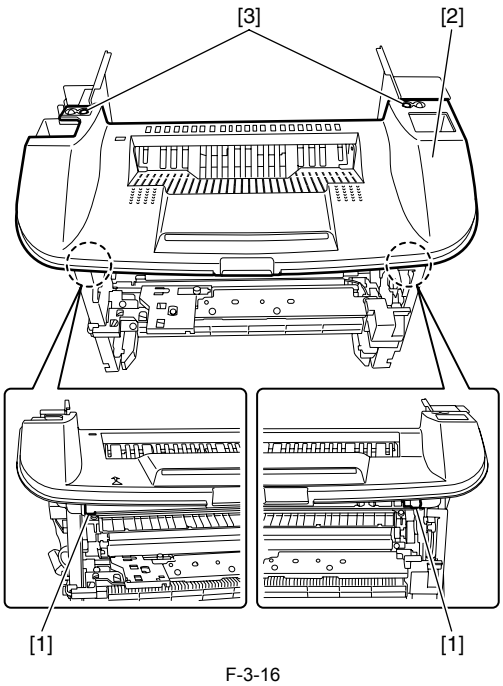
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-15

### 3.1.3.7 Removing the top cover

1) Free the 2 claws [1], and remove the top cover [2].
- 2 screws [3]




F-3-16

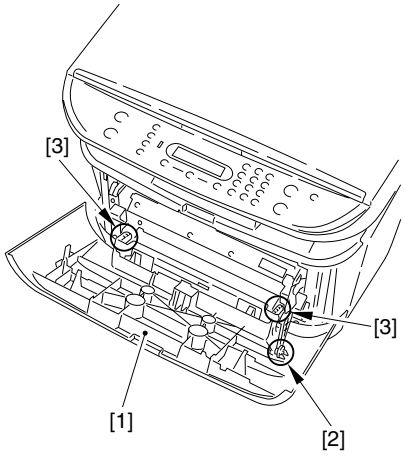
## 3.1.4 Right Cover

### 3.1.4.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.1.4.2 Removing the front cover

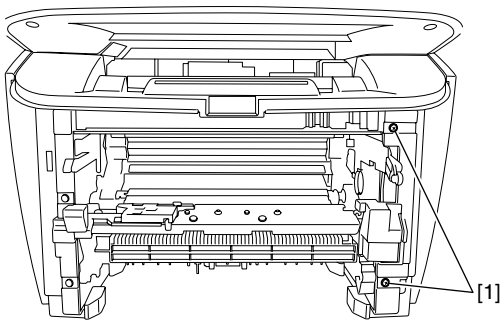
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-17

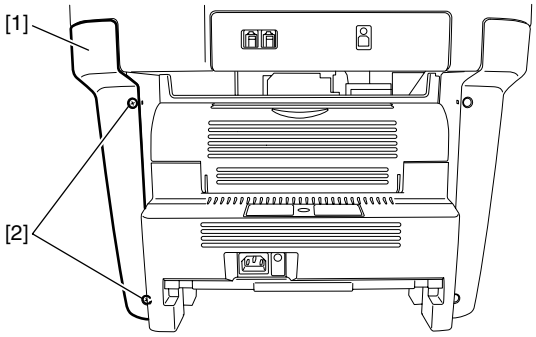
### 3.1.4.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-18

2) Remove the right cover [1].
- 2 screws [2]




F-3-19

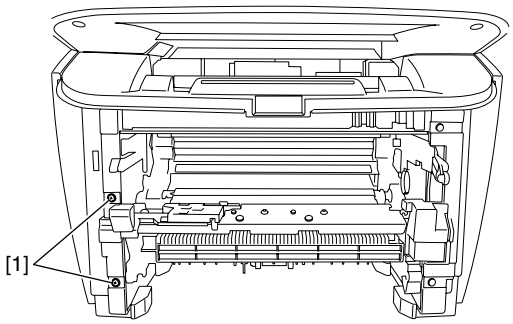
## 3.1.5 Left Cover

### 3.1.5.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

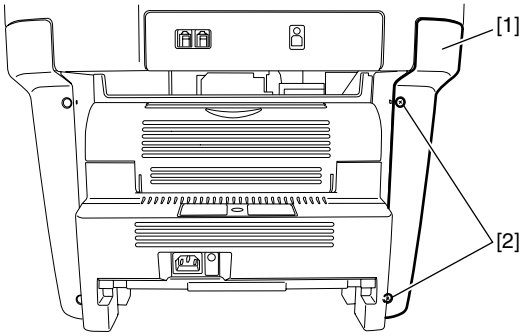
### 3.1.5.2 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-20

2) Remove the left cover [1].
- 2 screws [2]




F-3-21

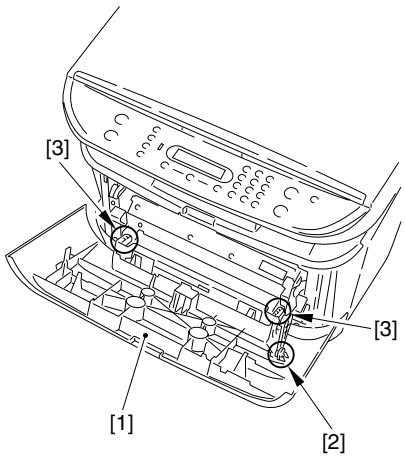
### 3.1.6 Operation Panel Unit

#### 3.1.6.1 Removung the Cassette

1) Remove the cassette by holding the cassette handle.

#### 3.1.6.2 Removing the front cover

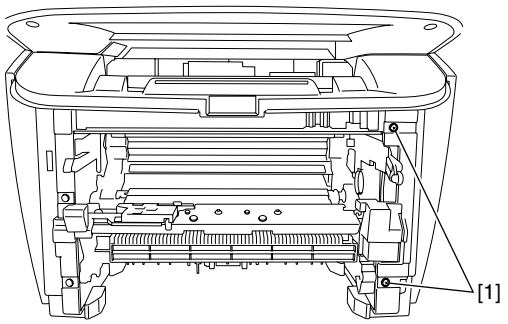
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-22

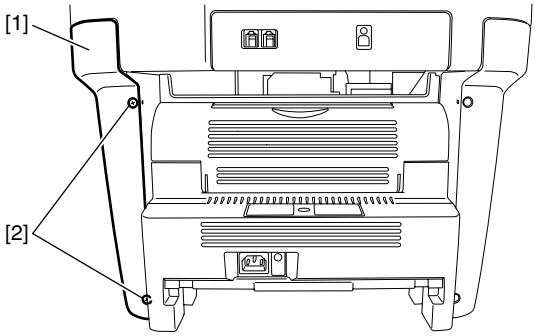
#### 3.1.6.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-23

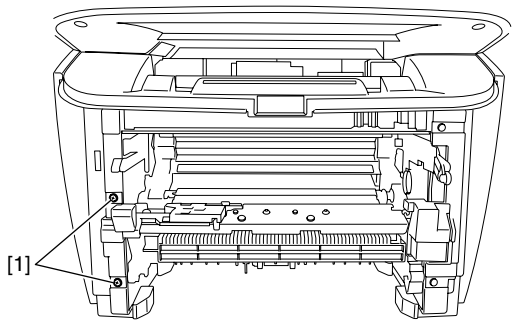
2) Remove the right cover [1].
- 2 screws [2]




F-3-24

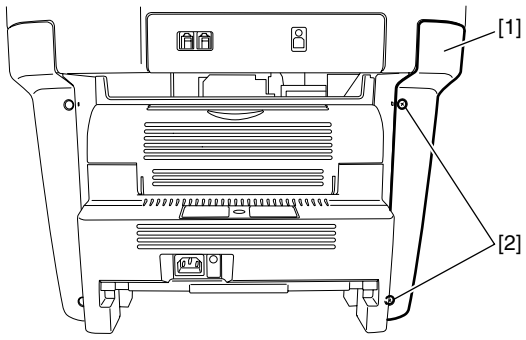
#### 3.1.6.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-25

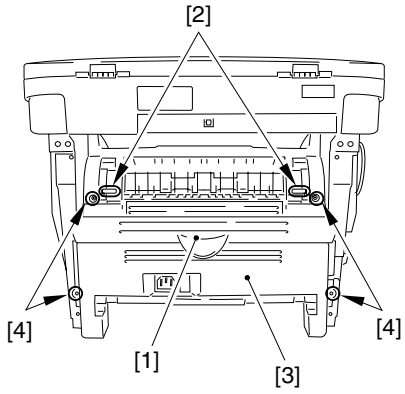
2) Remove the left cover [1].
- 2 screws [2]




F-3-26

#### 3.1.6.5 Removing the rear cover

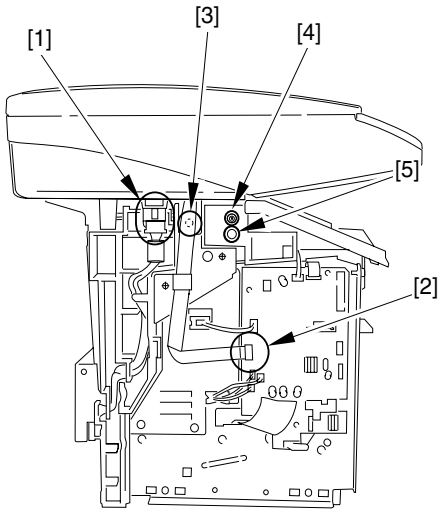
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-27

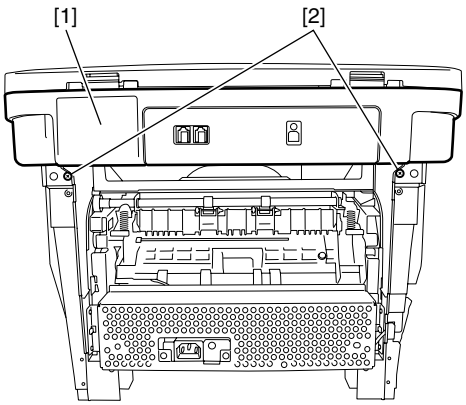
### 3.1.6.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-28

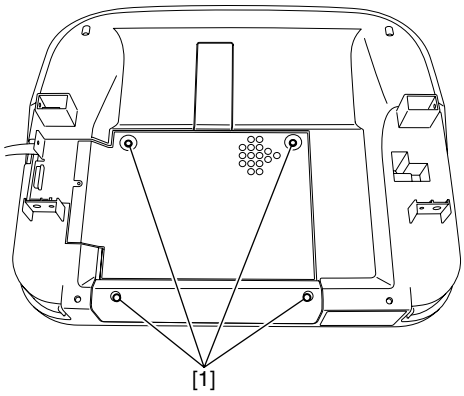
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-29

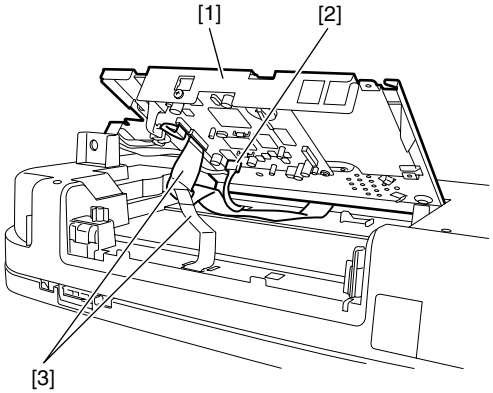
### 3.1.6.7 Removing the Board Unit

1) Remove the four screw[1]onthe back of scanner unit.




F-3-30

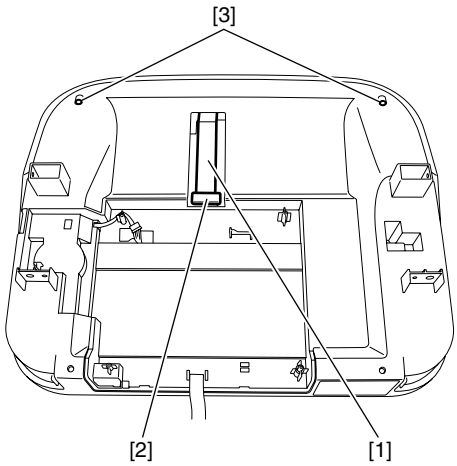
2) Open the board unit [1] and disconnect the connector [2] and two flat cables [3].




F-3-31

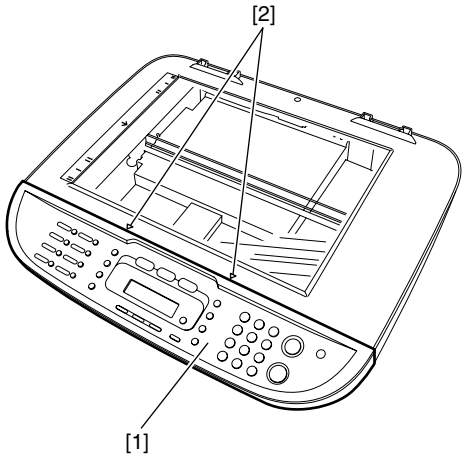
### 3.1.6.8 Removing the Operation Panel Unit

1) Detach the flat cable cover, and remove the flat cable [1] from the core [2].
- 2 screws [3]




F-3-32

2) Remove the 2 claws [2] on the operation panel unit [1], and remove the operation panel unit.




F-3-33

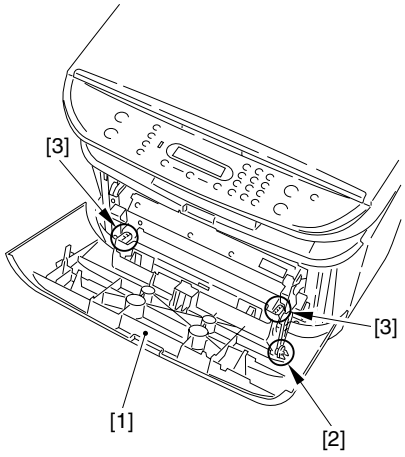
### 3.1.7 SCNT Board

#### 3.1.7.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

#### 3.1.7.2 Removing the front cover

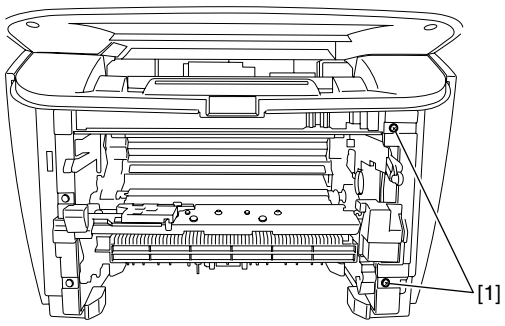
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-34

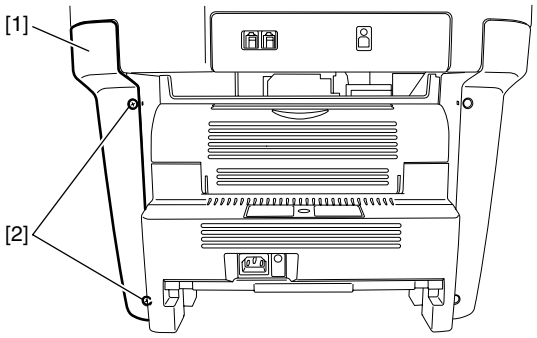
#### 3.1.7.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-35

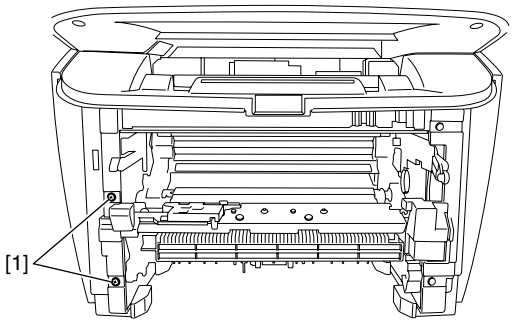
2) Remove the right cover [1].
- 2 screws [2]




F-3-36

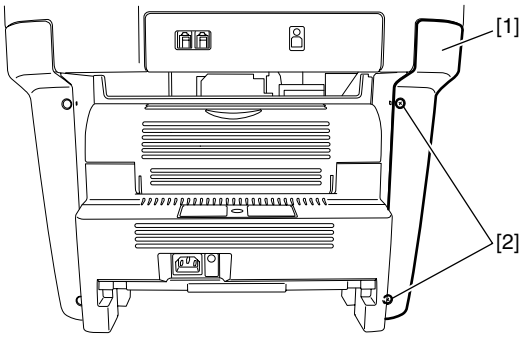
#### 3.1.7.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-37

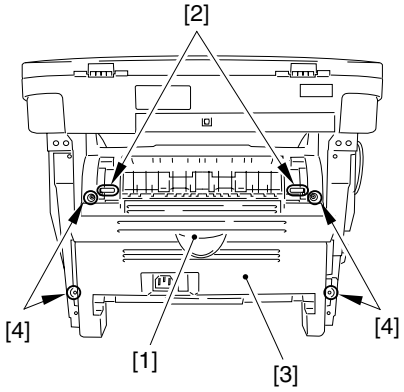
2) Remove the left cover [1].
- 2 screws [2]




F-3-38

#### 3.1.7.5 Removing the rear cover

1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]

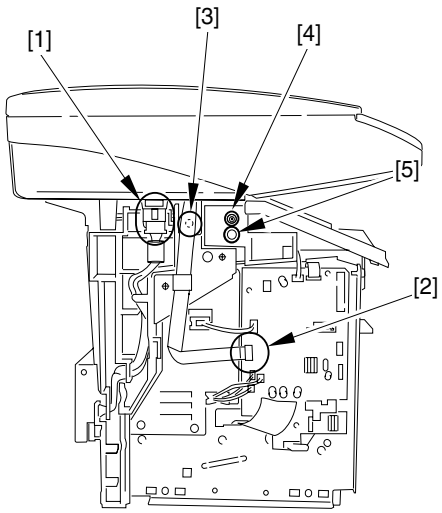



F-3-39

#### 3.1.7.6 Removing the Scanner Unit

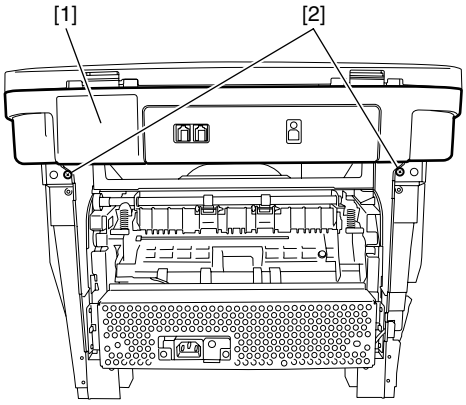
1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)

2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-40

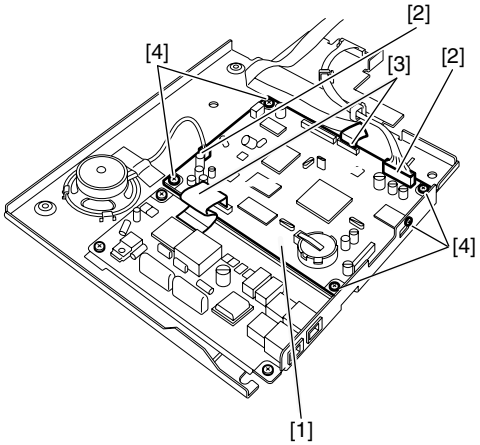
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-41

### 3.1.7.7 Removing the SCNT Board

1) Remove the SCNT PCB [1].
- Two connectors [2]
- Two flat cables [3]
- Five screws [4]




F-3-42

### 3.1.8 ECNT Board

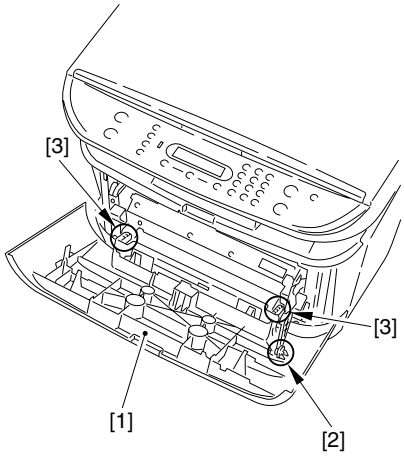
### 3.1.8.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.1.8.2 Removing the front cover

1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.

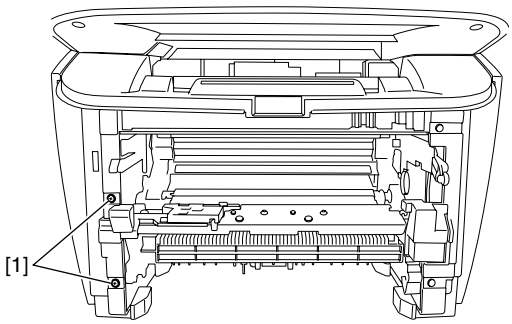
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-43

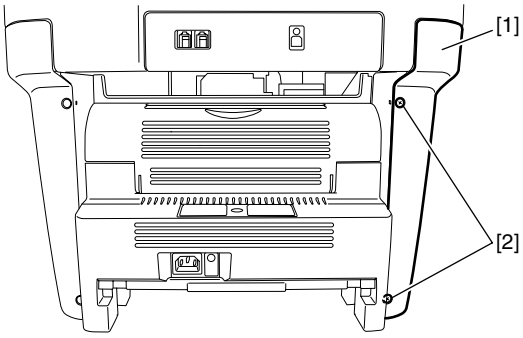
### 3.1.8.3 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-44

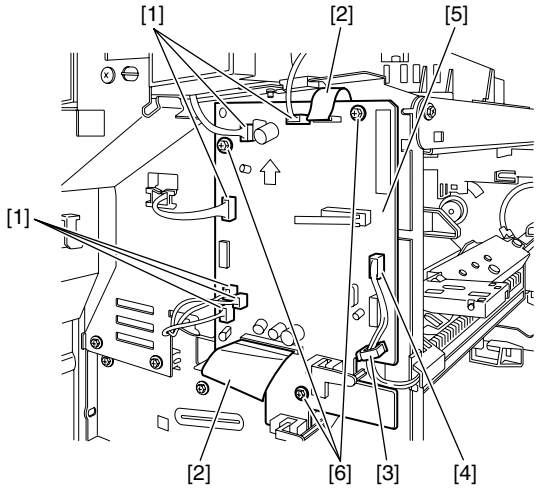
2) Remove the left cover [1].
- 2 screws [2]




F-3-45

### 3.1.8.4 Removing the ECNT Board

1) Remove the 6 connectors [1] and 2 flat cables [2].
2) Remove the wire saddle [3] and the connector [4].
3) Remove the ECNT board [5], taking care not to damage the sensor flag.
- 3 screws [6]




F-3-46

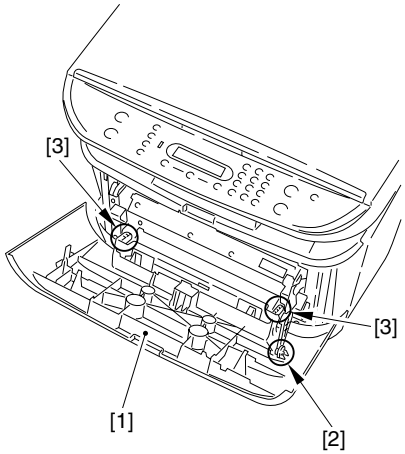
### 3.1.9 Power Supply PCB

#### 3.1.9.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

#### 3.1.9.2 Removing the front cover

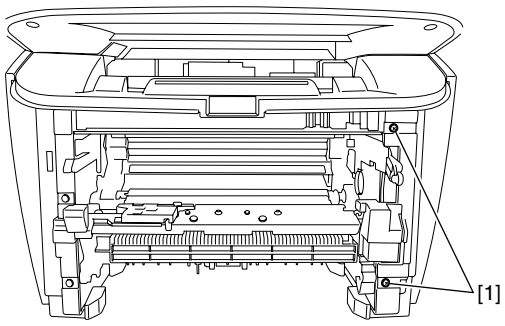
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-47

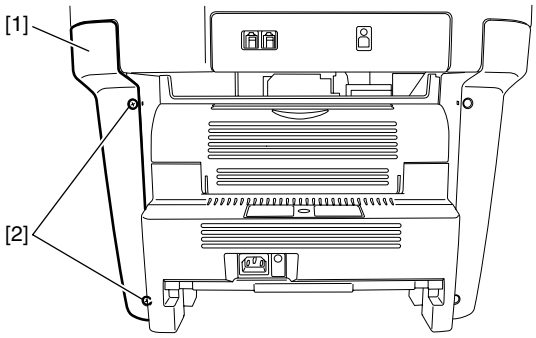
#### 3.1.9.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-48

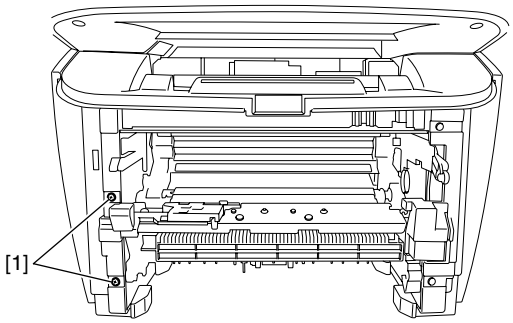
2) Remove the right cover [1].
- 2 screws [2]




F-3-49

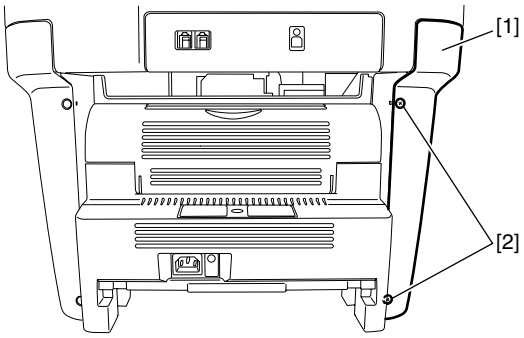
#### 3.1.9.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-50

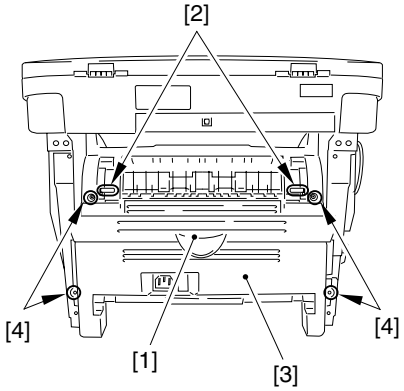
2) Remove the left cover [1].
- 2 screws [2]




F-3-51

#### 3.1.9.5 Removing the rear cover

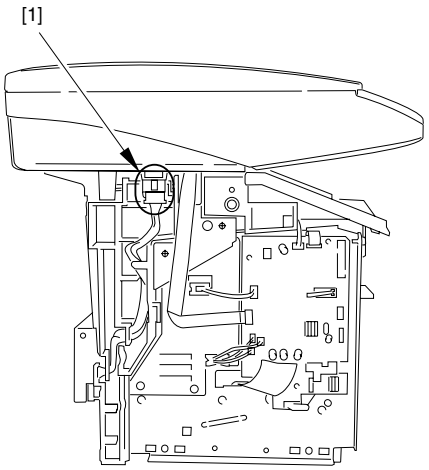
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-52

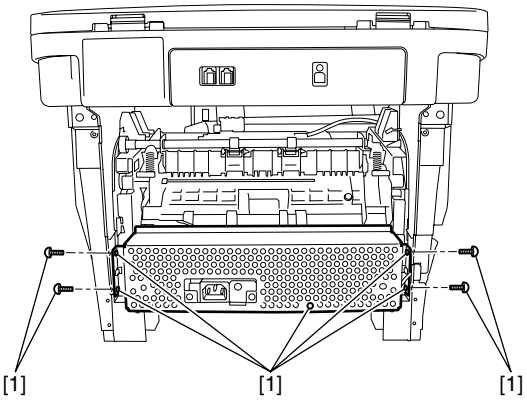
#### 3.1.9.6 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-53

2) Remove the power supply shield plate [1].
- 9 screws [2]




F-3-54

### 3.1.9.7 Removing the Power Supply Assembly

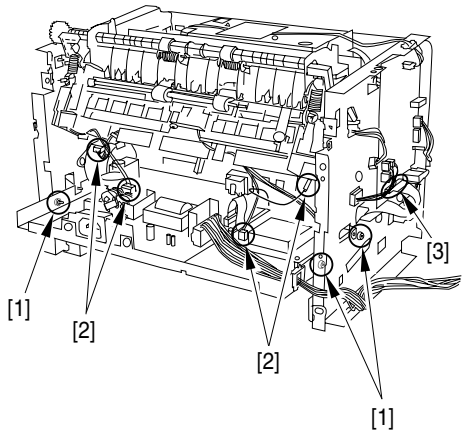
1) Remove the 3 screws [1]. (The external cover is omitted from the illustration below to show the instructions clearly.)
2) Remove the four connectors [2] as well as the flat cable [3] on the ECNT board.

---

⚠

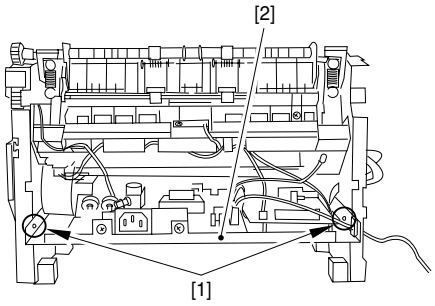
After having removed the flat cable [3], store it inside the unit to protect it from damage.

---




F-3-55

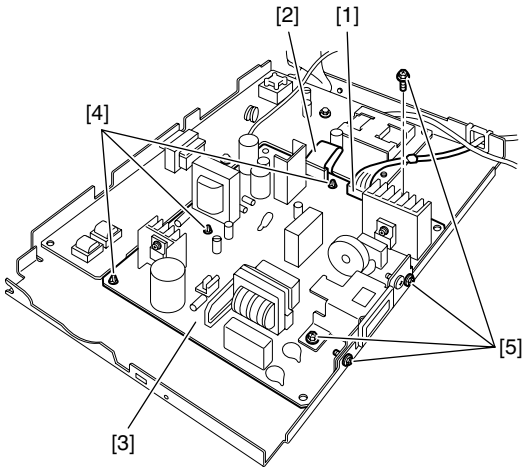
3) As you remove the bosses on both sides [1], lower the front part of the power supply assembly [2]. Then pull it to remove the power supply assembly.




F-3-56

### 3.1.9.8 Removing the Power Supply Board

1) Remove the connector [1] and the flat cable [2].
2) Remove the power supply board [3].
- 3 spacers [4]
- 4 screws [5]




F-3-57

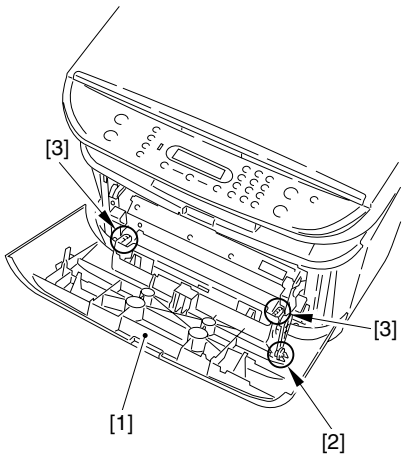
## 3.1.10 High-voitage Power Supply PCB

### 3.1.10.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.1.10.2 Removing the front cover

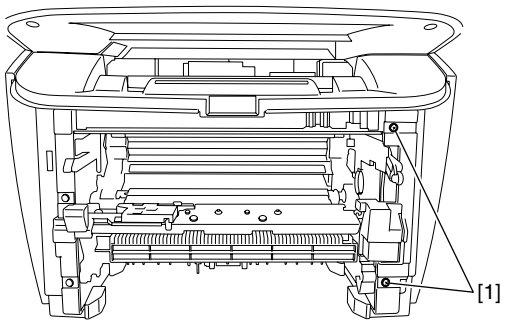
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-58

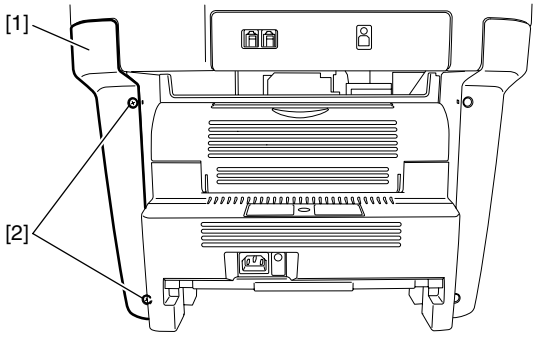
### 3.1.10.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-59

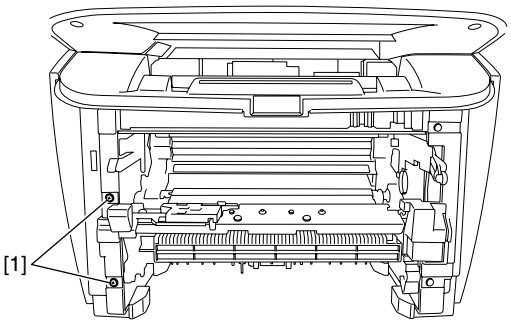
2) Remove the right cover [1].
- 2 screws [2]




F-3-60

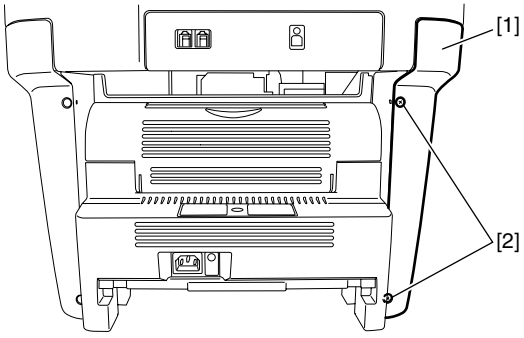
### 3.1.10.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-61

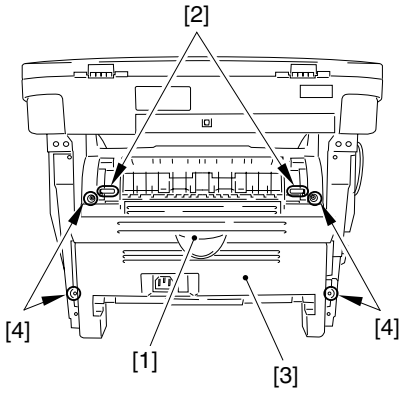
2) Remove the left cover [1].
- 2 screws [2]




F-3-62

### 3.1.10.5 Removing the rear cover

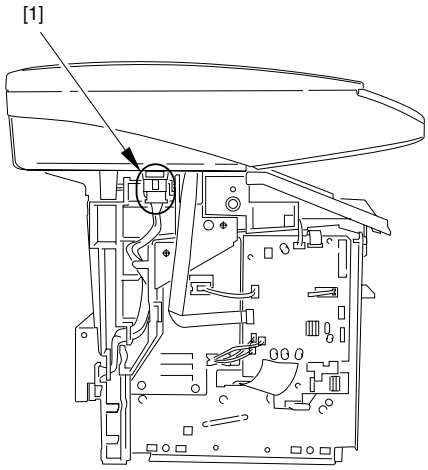
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-63

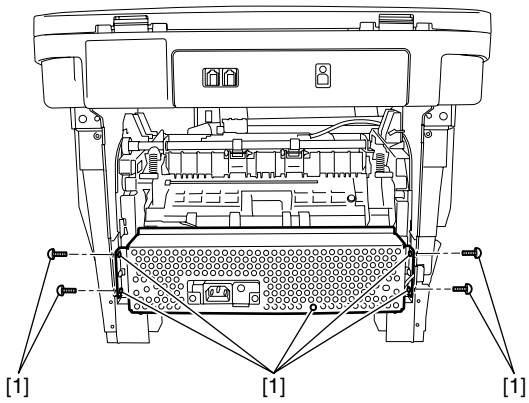
### 3.1.10.6 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-64

2) Remove the power supply shield plate [1].
- 9 screws [2]




F-3-65

### 3.1.10.7 Removing the Power Supply Board

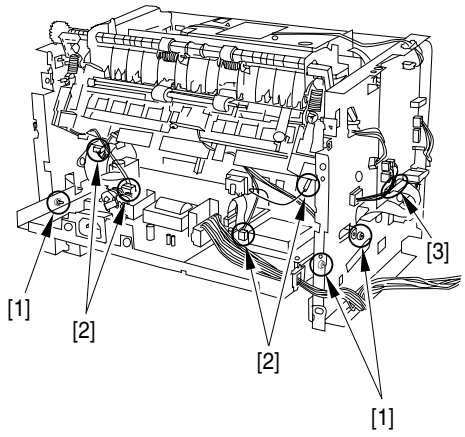
1) Remove the 3 screws [1]. (The external cover is omitted from the illustration below to show the instructions clearly.)
2) Remove the four connectors [2] as well as the flat cable [3] on the ECNT board.

---

⚠

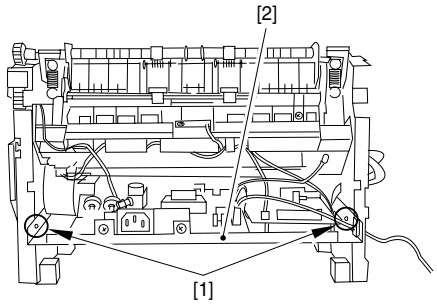
After having removed the flat cable [3], store it inside the unit to protect it from damage.

---




F-3-66

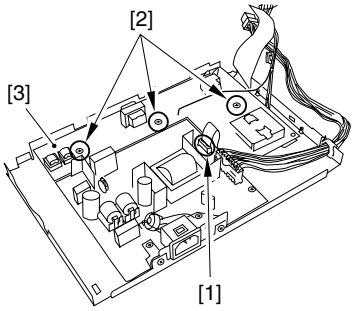
3) As you remove the bosses on both sides [1], lower the front part of the power supply assembly [2]. Then pull it to remove the power supply assembly.




F-3-67

### 3.1.10.8 Removing the High-Voltage Power Supply Board

1) Remove the high-voltage power supply board [1].
- One flat cable [2]
- Three screws [3]




F-3-68

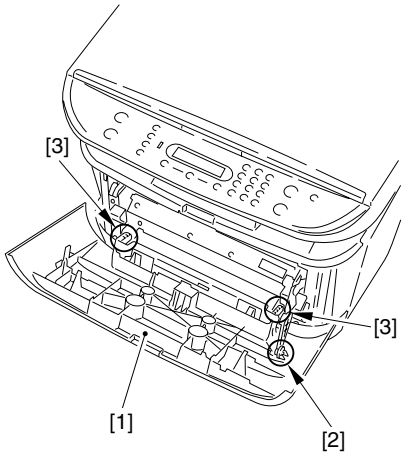
## 3.1.11 Top Sensor

### 3.1.11.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.1.11.2 Removing the front cover

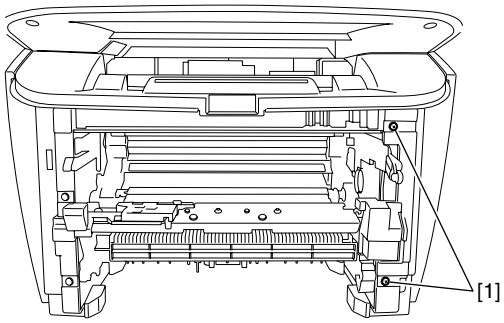
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-69

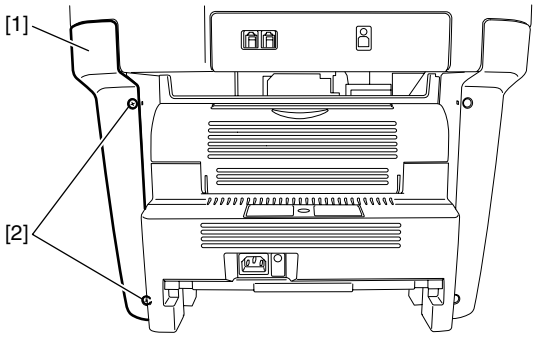
### 3.1.11.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-70

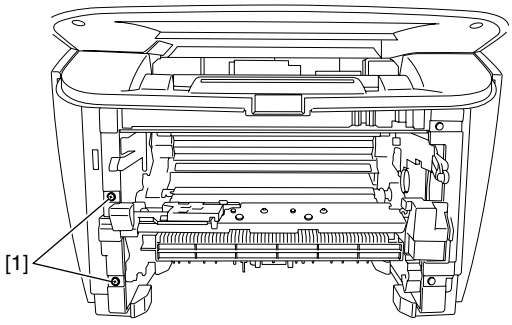
2) Remove the right cover [1].
- 2 screws [2]




F-3-71

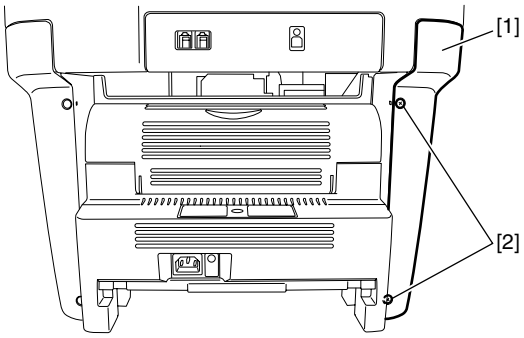
### 3.1.11.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-72

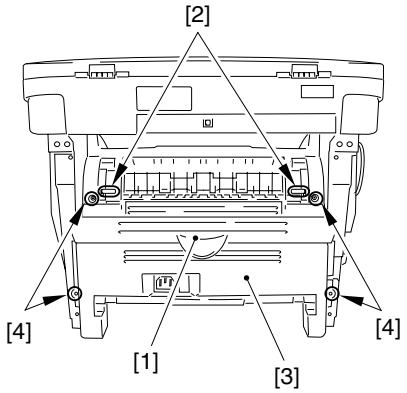
2) Remove the left cover [1].
- 2 screws [2]




F-3-73

### 3.1.11.5 Removing the rear cover

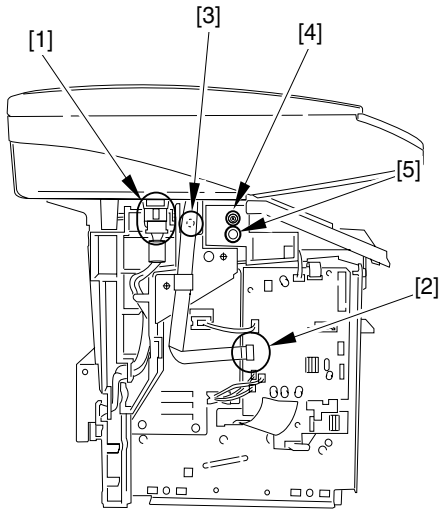
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-74

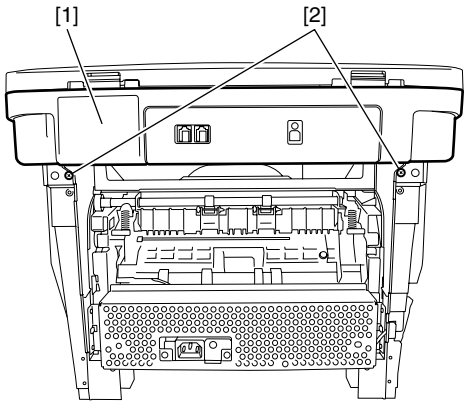
### 3.1.11.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-75

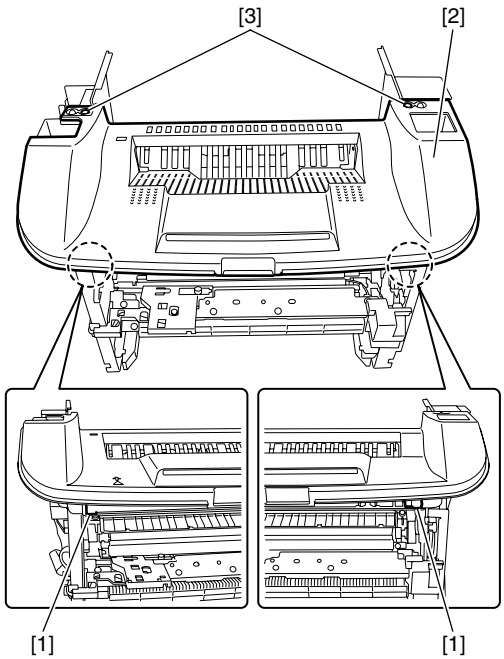
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-76

### 3.1.11.7 Removing the top cover

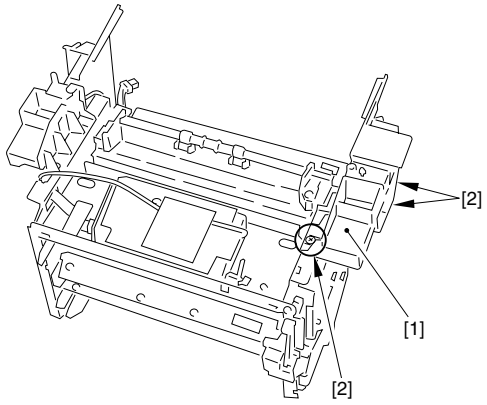
1) Free the 2 claws [1], and remove the top cover [2].
- 2 screws [3]




F-3-77

### 3.1.11.8 Removing the Right Frame

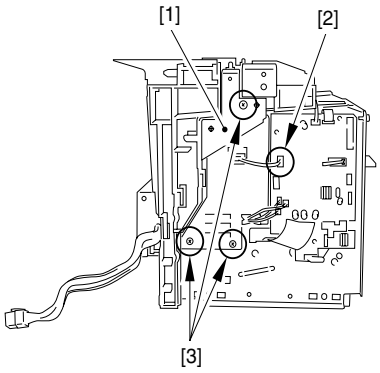
1) Remove the right frame [1].
- 3 screws [2]




F-3-78

### 3.1.11.9 Removing the Plate

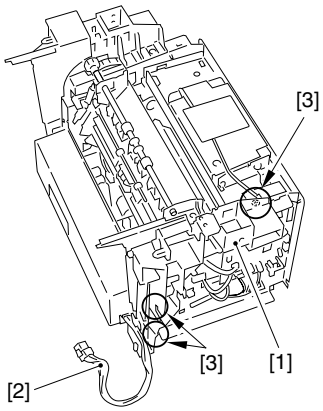
1) Remove the plate [1].
- 1 connector [2] on the ECNT board
- 3 screws [3]




F-3-79

### 3.1.11.10 Removing the Left Frame

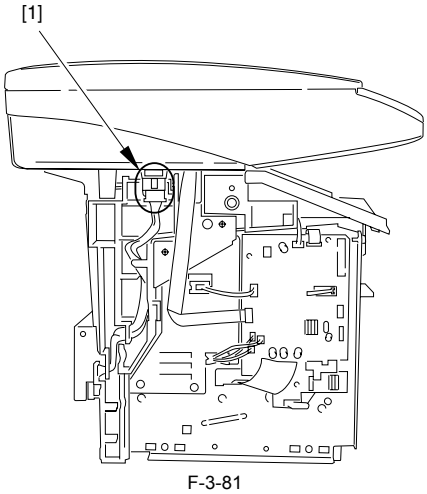
1) Remove the left frame [1].
- Remove the cable [2] from the guide.
- 3 screws [3]




F-3-80

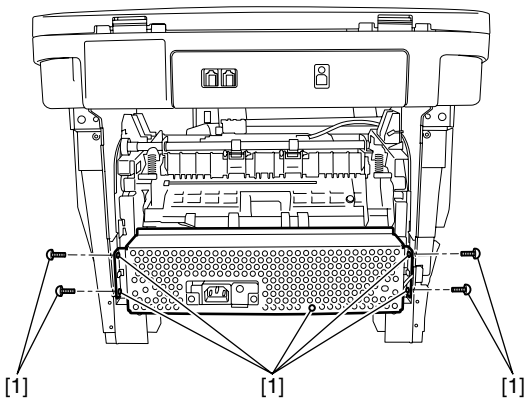
### 3.1.11.11 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-81

2) Remove the power supply shield plate [1].
- 9 screws [2]




F-3-82

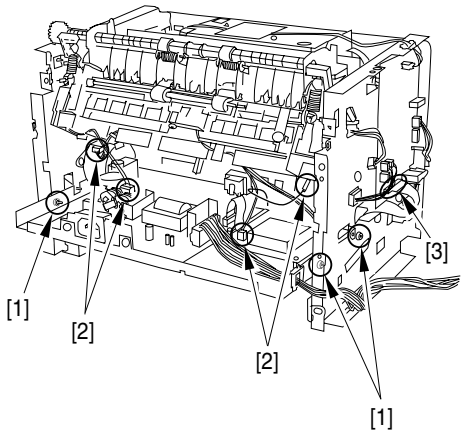
### 3.1.11.12 Removing the Power Supply Assembly

1) Remove the 3 screws [1]. (The external cover is omitted from the illustration below to show the instructions clearly.)
2) Remove the four connectors [2] as well as the flat cable [3] on the ECNT board.

---

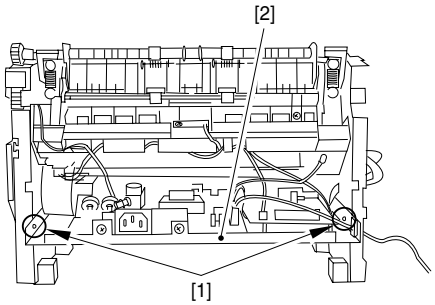
⚠
After having removed the flat cable [3], store it inside the unit to protect it from damage.

---




F-3-83

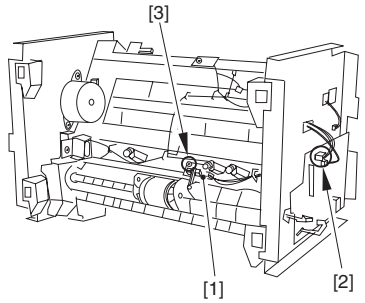
3) As you remove the bosses on both sides [1], lower the front part of the power supply assembly [2]. Then pull it to remove the power supply assembly.




F-3-84

### 3.1.11.13 Removing the top sensor

1) Place the main unit down on its front face (so that the interior of the main unit is easily visible).
2) Remove the top sensor [1].
- 1 connector [2]
- 1 screw [3]




F-3-85

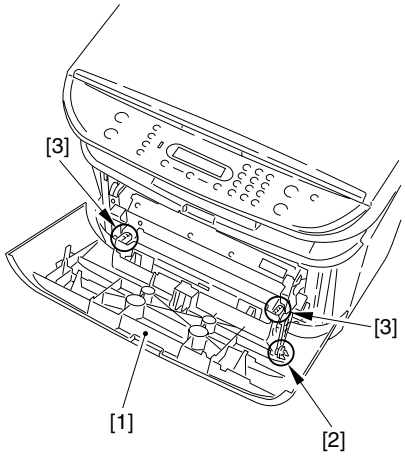
### 3.1.12 Paper Delivery Sensor

### 3.1.12.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.1.12.2 Removing the front cover

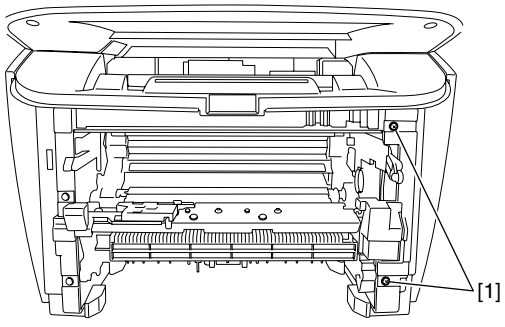
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-86

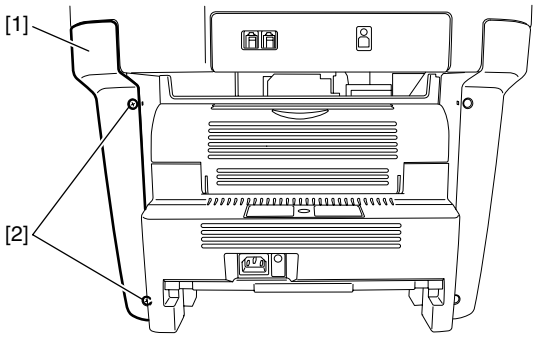
### 3.1.12.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-87

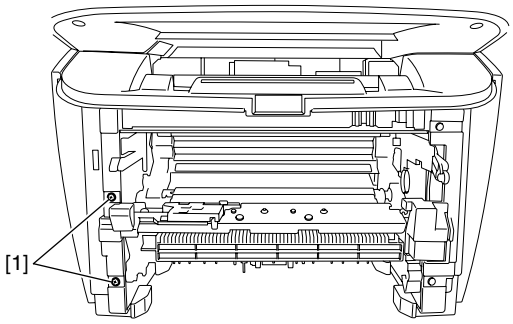
2) Remove the right cover [1].
- 2 screws [2]




F-3-88

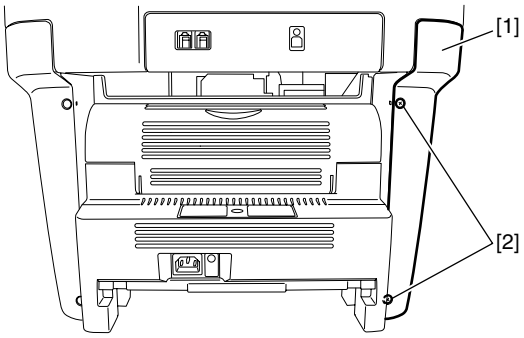
### 3.1.12.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-89

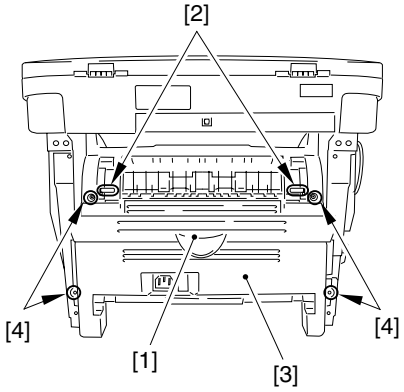
2) Remove the left cover [1].
- 2 screws [2]




F-3-90

### 3.1.12.5 Removing the rear cover

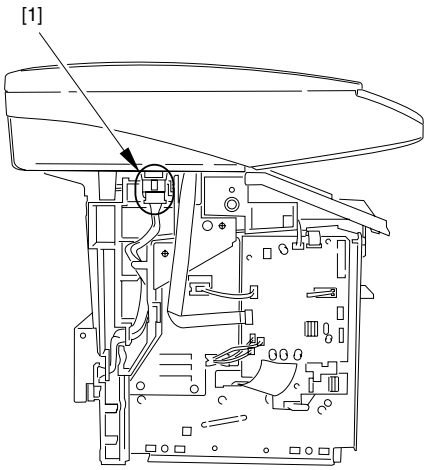
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-91

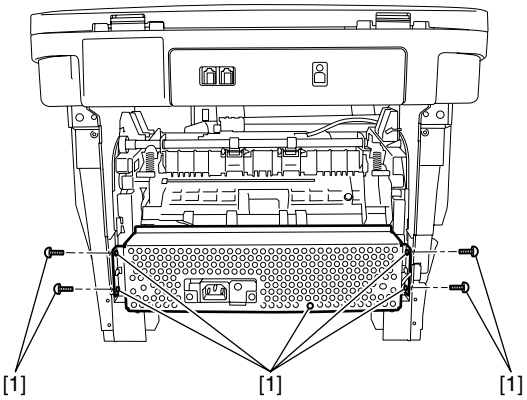
### 3.1.12.6 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-92

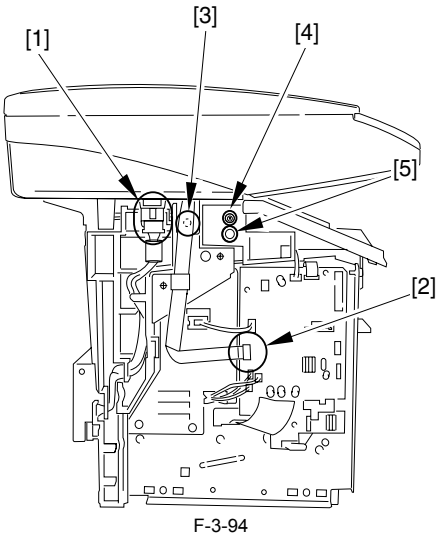
2) Remove the power supply shield plate [1].
- 9 screws [2]




F-3-93

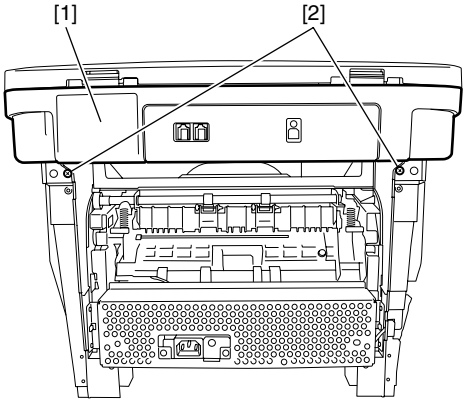
### 3.1.12.7 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-94

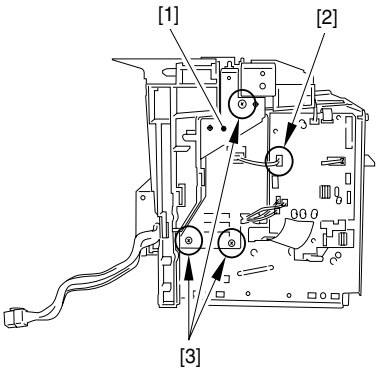
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-95

### 3.1.12.8 Removing the Plate

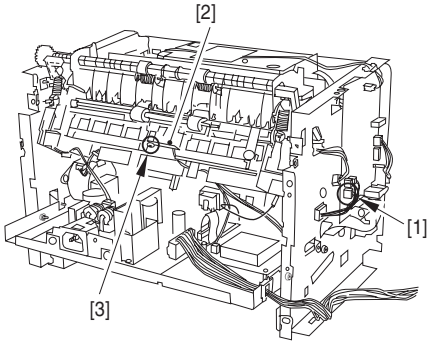
1) Remove the plate [1].
- 1 connector [2] on the ECNT board
- 3 screws [3]




F-3-96

### 3.1.12.9 Removing the Paper Delivery Sensor

1) Remove the connector [1] on the ECNT board, and detach the cable from the cable guide. (For better visibility, the covers have been removed in the illustration.)
2) Remove the paper delivery sensor [2].
- 1 screw [3]




F-3-97

## 3.2 Document Feed/Exposure System

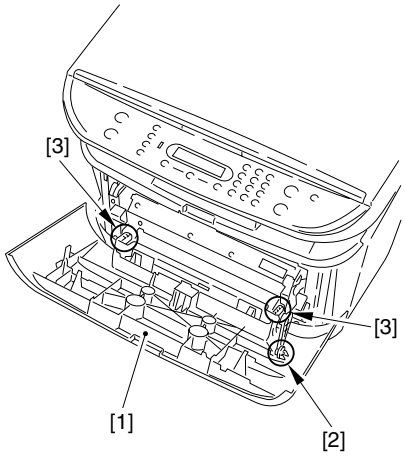
### 3.2.1 Scanner Unit

### 3.2.1.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.2.1.2 Removing the front cover

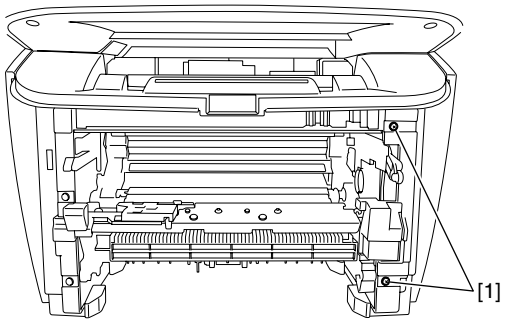
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-98

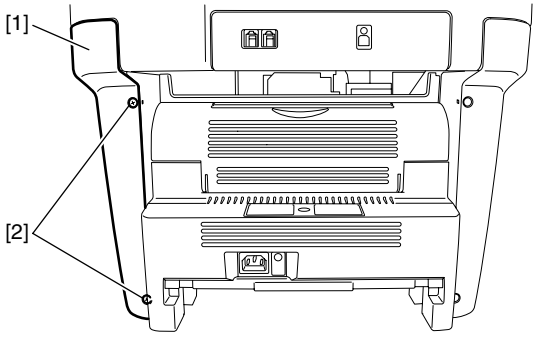
### 3.2.1.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-99

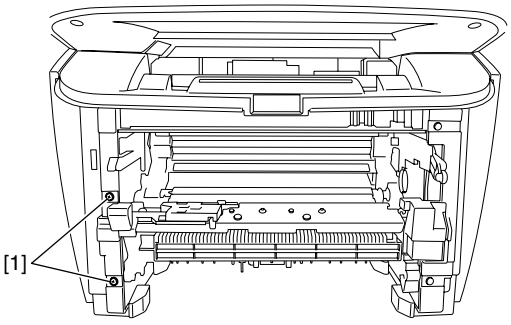
2) Remove the right cover [1].
- 2 screws [2]




F-3-100

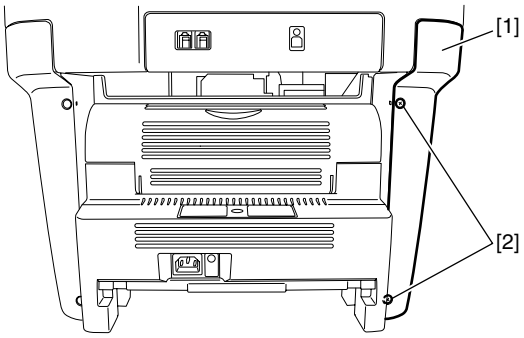
### 3.2.1.4 Removong the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-101

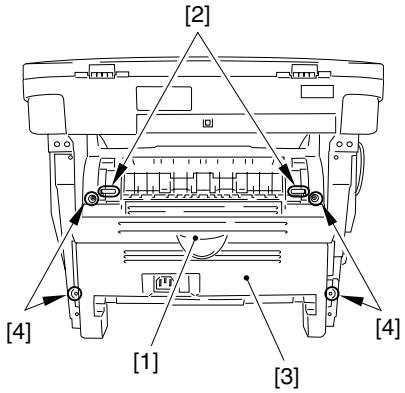
2) Remove the left cover [1].
- 2 screws [2]




F-3-102

### 3.2.1.5 Removing the rear cover

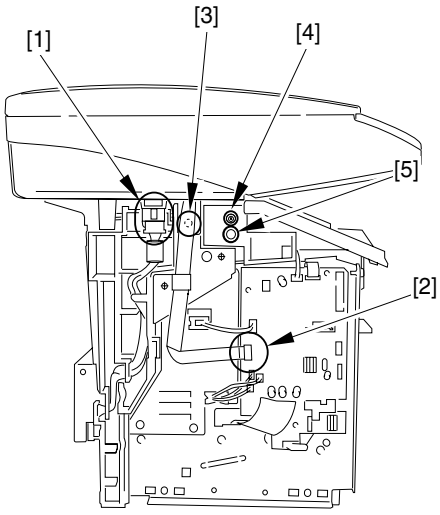
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-103

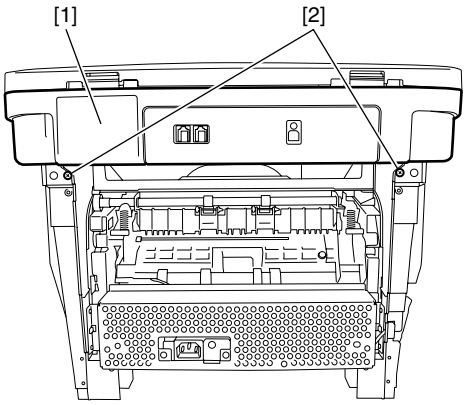
### 3.2.1.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-104

3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-105

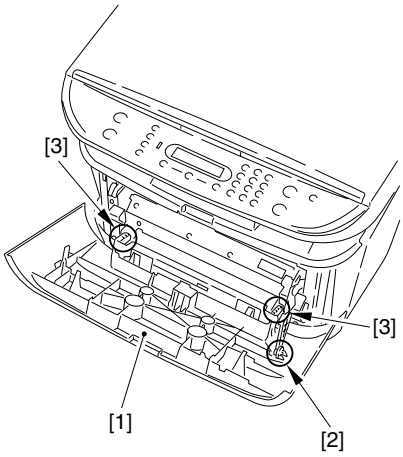
### 3.2.2 Scanner Cover Unit

#### 3.2.2.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

#### 3.2.2.2 Removing the front cover

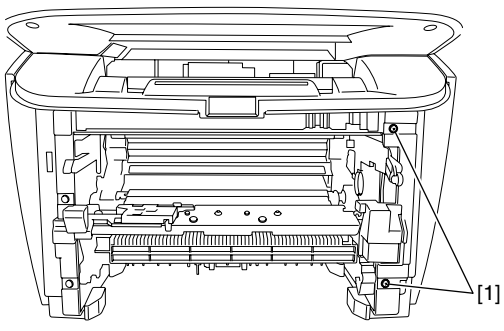
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-106

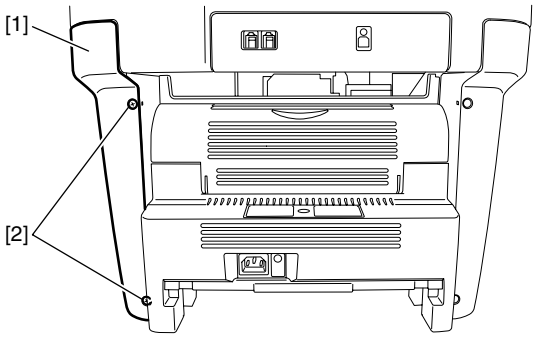
#### 3.2.2.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-107

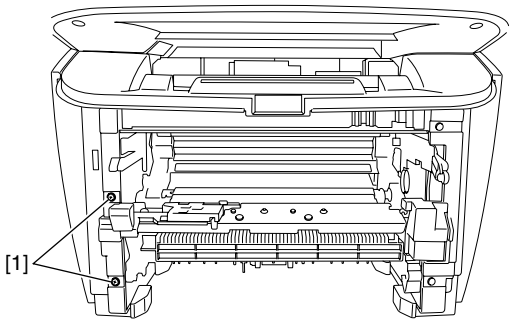
2) Remove the right cover [1].
- 2 screws [2]




F-3-108

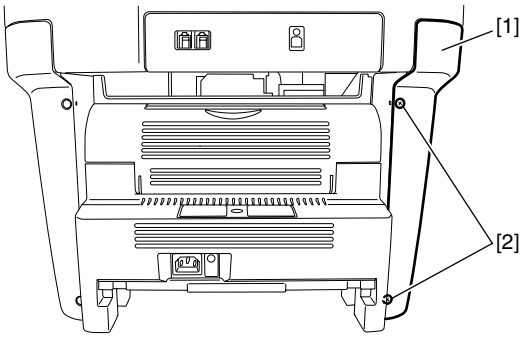
#### 3.2.2.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-109

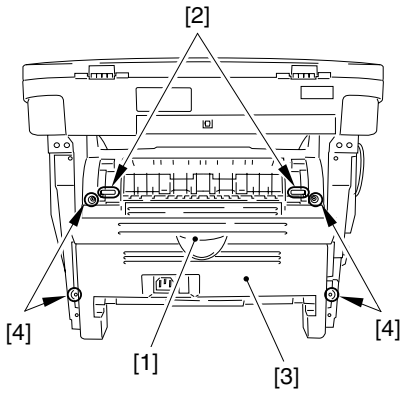
2) Remove the left cover [1].
- 2 screws [2]




F-3-110

#### 3.2.2.5 Removing the rear cover

1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]

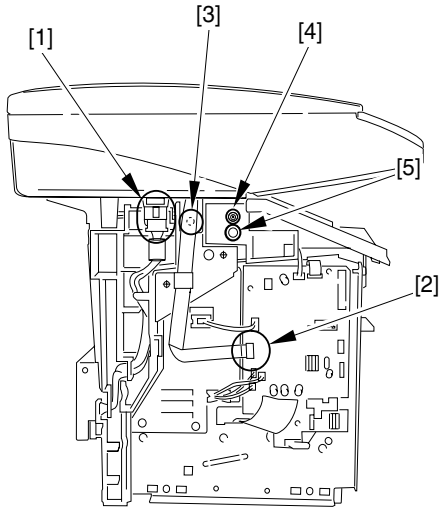



F-3-111

#### 3.2.2.6 Removing the Scanner Unit

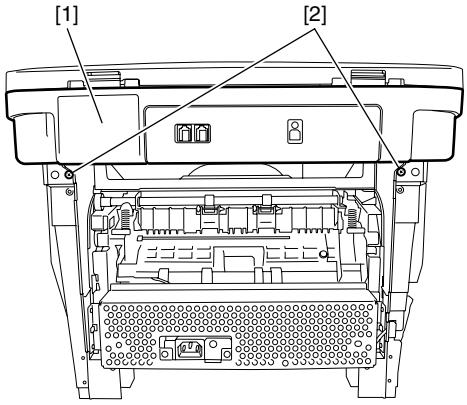
1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)

2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-112

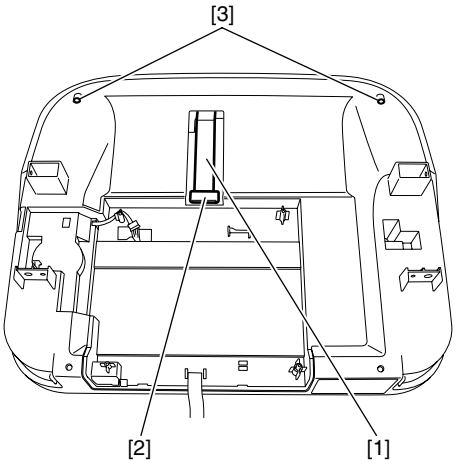
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-113

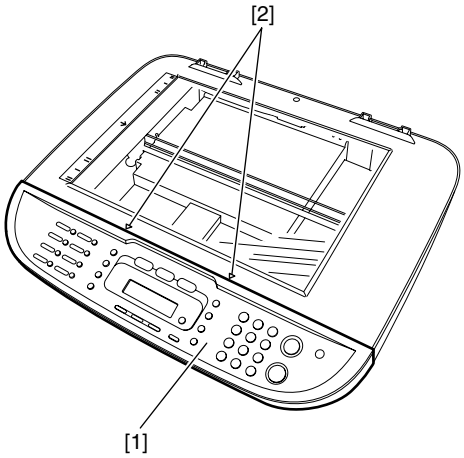
### 3.2.2.7 Removing the Operation Panel Unit

1) Detach the flat cable cover, and remove the flat cable [1] from the core [2].
- 2 screws [3]




F-3-114

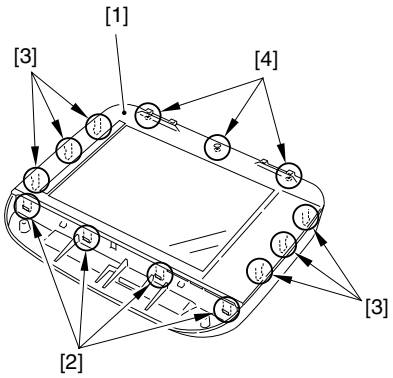
2) Remove the 2 claws [2] on the operation panel unit [1], and remove the operation panel unit.




F-3-115

### 3.2.2.8 Scanner cover unit

1) Remove the platen glass cover.
2) Remove the scanner cover unit [1].
- 4 front claws [2]
- 3 claws each on the right and left sides [3]
- 3 screws [4]




F-3-116

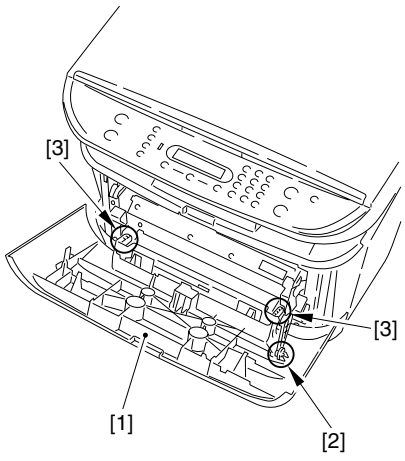
## 3.2.3 Contact Sensor

### 3.2.3.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.2.3.2 Removing the front cover

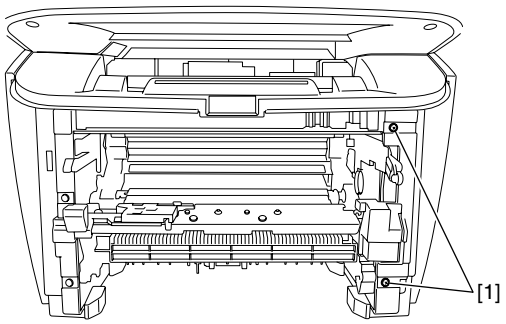
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-117

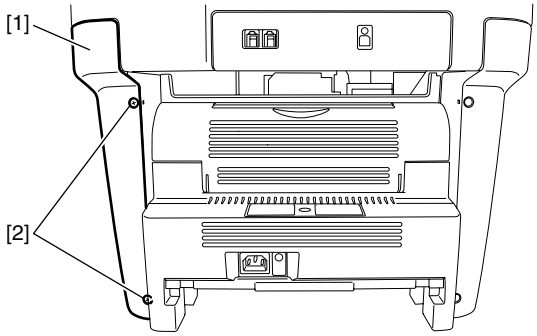
### 3.2.3.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-118

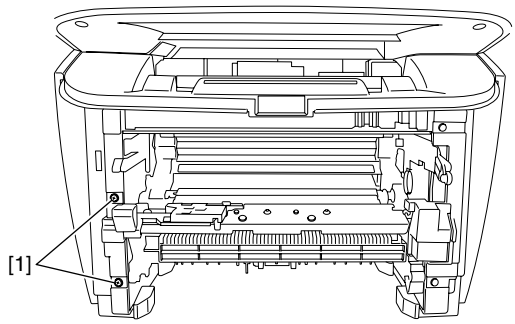
2) Remove the right cover [1].
- 2 screws [2]




F-3-119

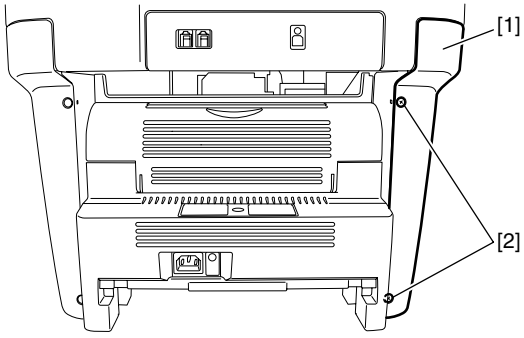
### 3.2.3.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-120

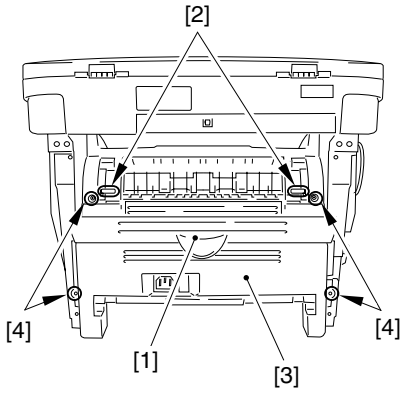
2) Remove the left cover [1].
- 2 screws [2]




F-3-121

### 3.2.3.5 Removing the rear cover

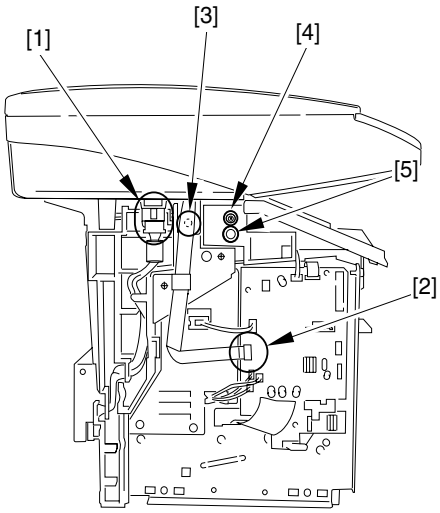
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-122

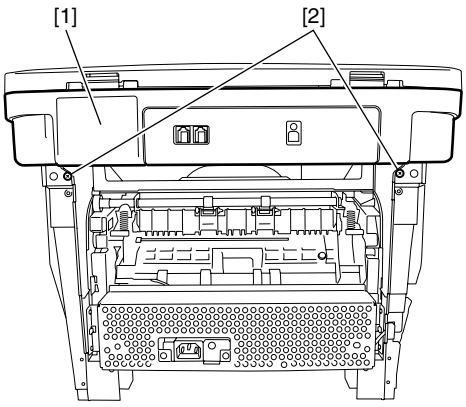
### 3.2.3.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-123

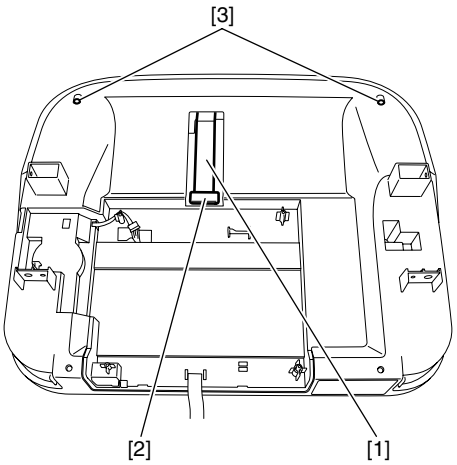
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-124

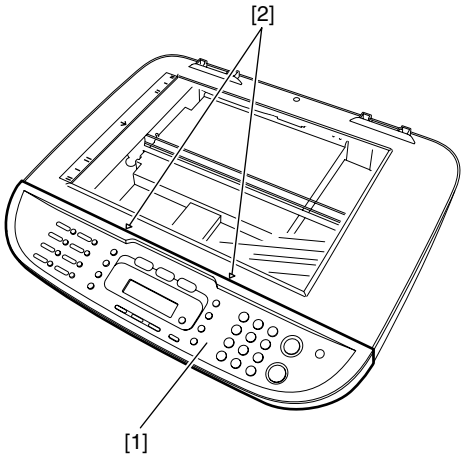
### 3.2.3.7 Removing the Operation Panel Unit

1) Detach the flat cable cover, and remove the flat cable [1] from the core [2].
- 2 screws [3]




F-3-125

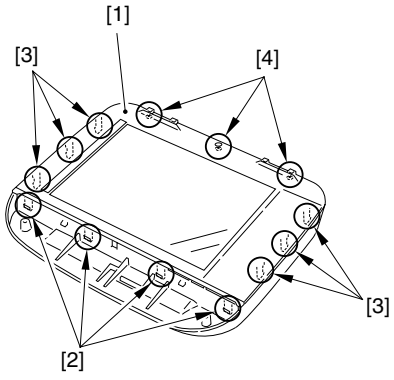
2) Remove the 2 claws [2] on the operation panel unit [1], and remove the operation panel unit.




F-3-126

### 3.2.3.8 Removing the Scanner Cover Unit

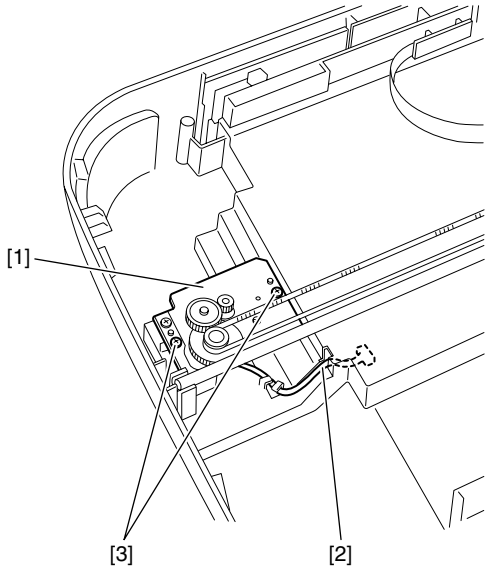
1) Remove the platen glass cover.
2) Remove the scanner cover unit [1].
- 4 front claws [2]
- 3 claws each on the right and left sides [3]
- 3 screws [4]




F-3-127

### 3.2.3.9 Removing the Flatbed Motor Unit

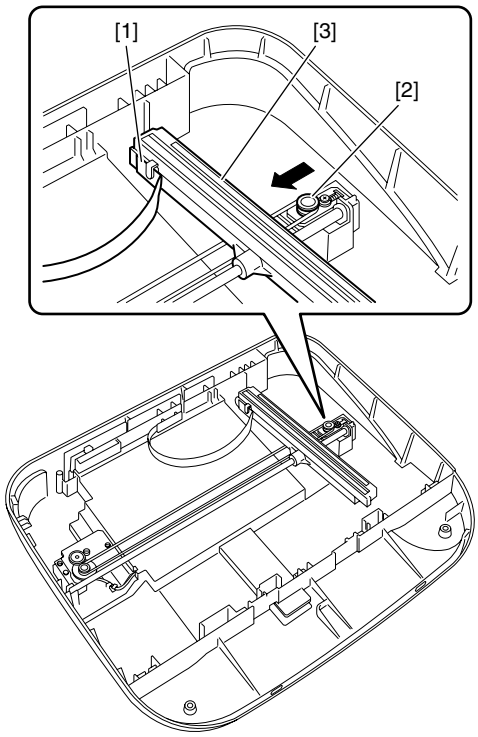
1) Remove the flat bed motor unit [1].
- 1 connector [2] (remove from the rear)
- 2 screws [3]




F-3-128

### 3.2.3.10 Removing the Contact Sensor

1) Remove the flat cable [1], and detach the contact sensor [3], while pushing the belt tension drive [2] in arrow direction.




F-3-129

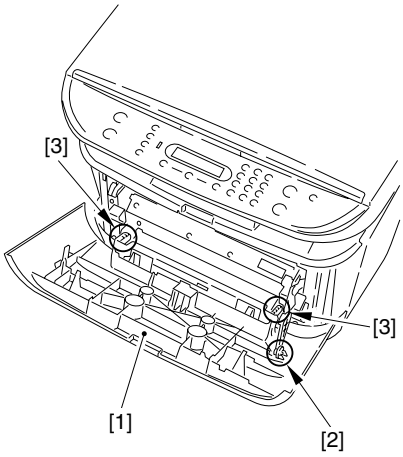
## 3.2.4 Flatbed Motor Unit

### 3.2.4.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.2.4.2 Removing the front cover

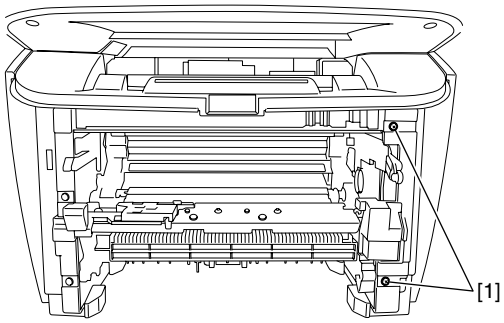
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-130

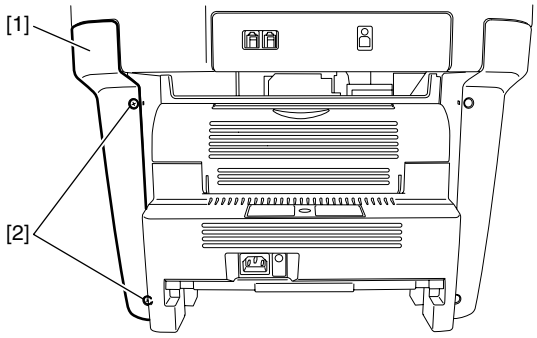
### 3.2.4.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-131

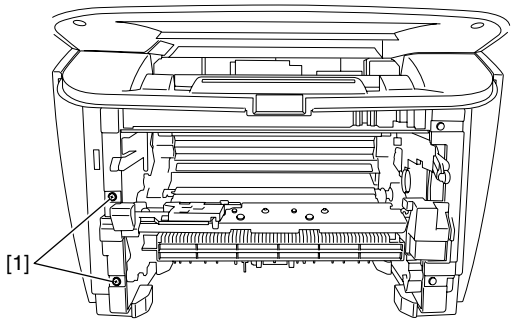
2) Remove the right cover [1].
- 2 screws [2]




F-3-132

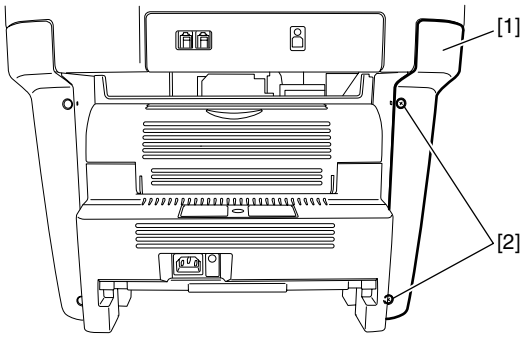
### 3.2.4.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-133

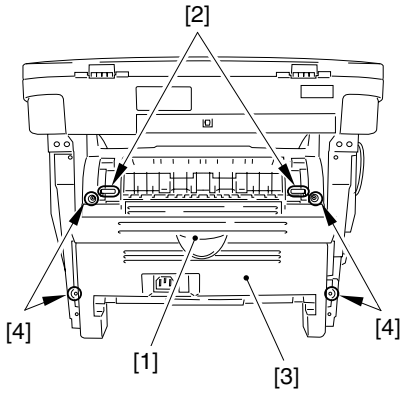
2) Remove the left cover [1].
- 2 screws [2]




F-3-134

### 3.2.4.5 Removing the rear cover

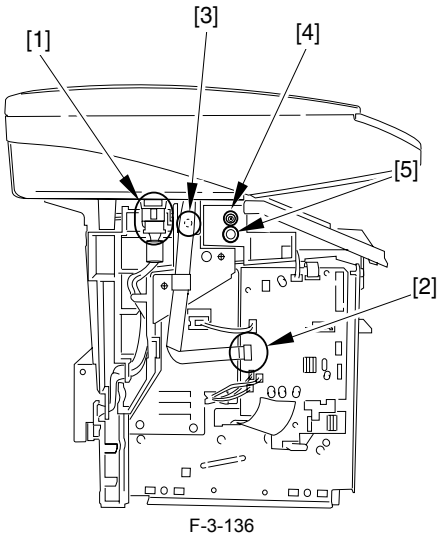
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-135

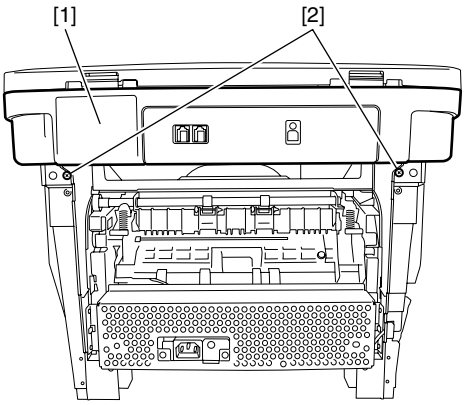
### 3.2.4.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-136

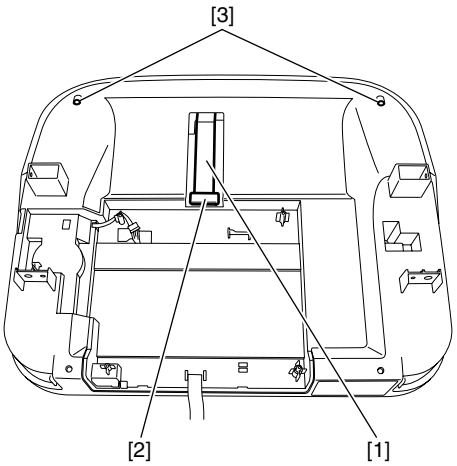
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-137

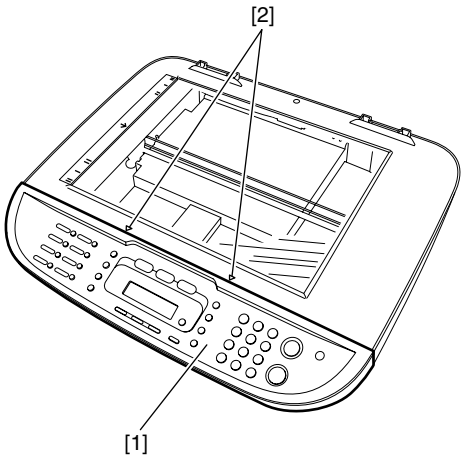
### 3.2.4.7 Removing the Operation Panel Unit

1) Detach the flat cable cover, and remove the flat cable [1] from the core [2].
- 2 screws [3]




F-3-138

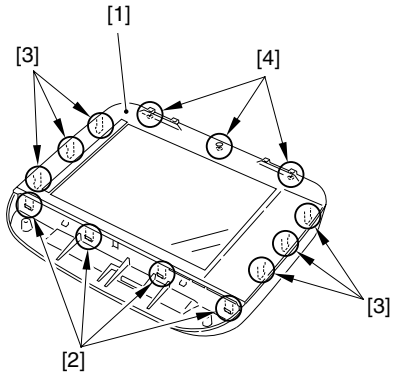
2) Remove the 2 claws [2] on the operation panel unit [1], and remove the operation panel unit.




F-3-139

### 3.2.4.8 Removing the Scanner Cover Unit

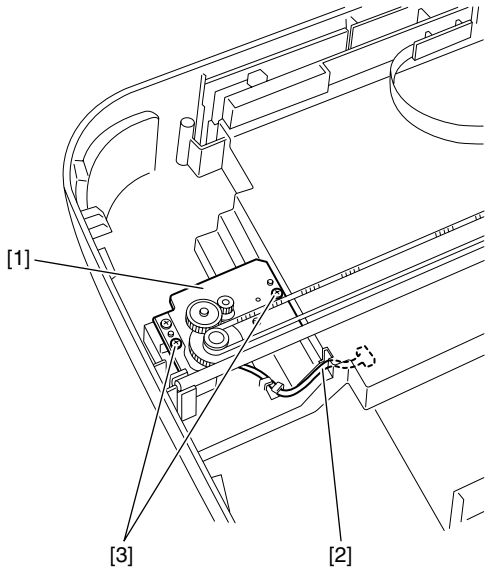
1) Remove the platen glass cover.
2) Remove the scanner cover unit [1].
- 4 front claws [2]
- 3 claws each on the right and left sides [3]
- 3 screws [4]




F-3-140

### 3.2.4.9 Removing the Flatbed Motor Unit

1) Remove the flat bed motor unit [1].
- 1 connector [2] (remove from the rear)
- 2 screws [3]




F-3-141

## 3.3 LASER EXPOSURE SYSTEM

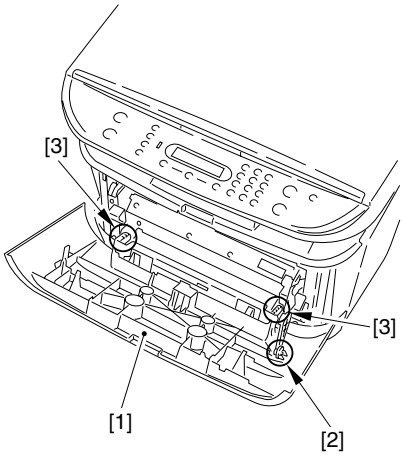
### 3.3.1 Laser/Scanner Unit

### 3.3.1.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.3.1.2 Removing the front cover

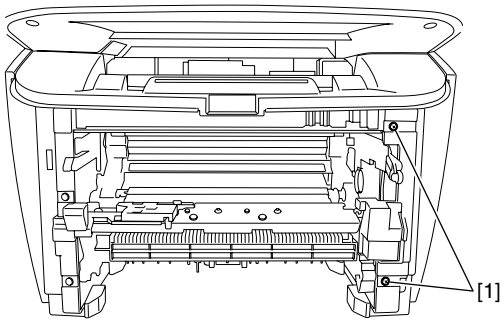
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-142

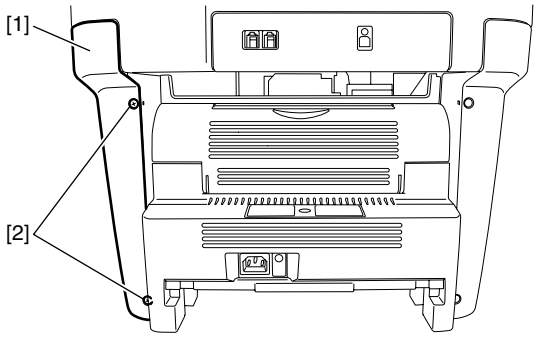
### 3.3.1.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-143

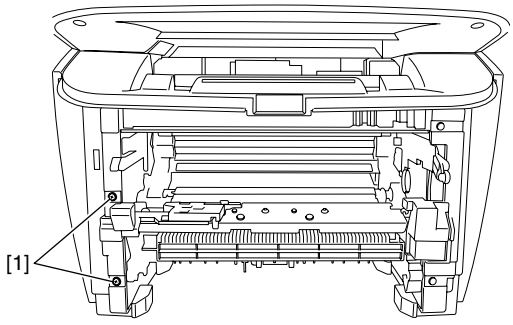
2) Remove the right cover [1].
- 2 screws [2]




F-3-144

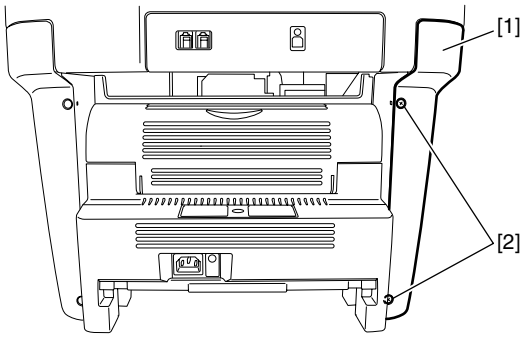
### 3.3.1.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-145

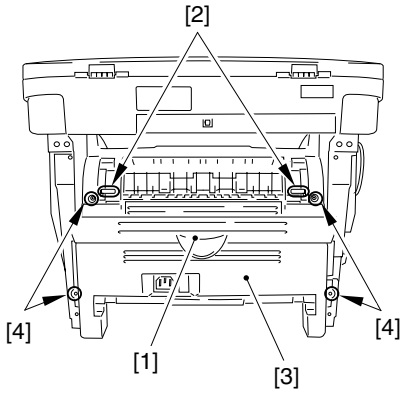
2) Remove the left cover [1].
- 2 screws [2]




F-3-146

### 3.3.1.5 Removing the rear cover

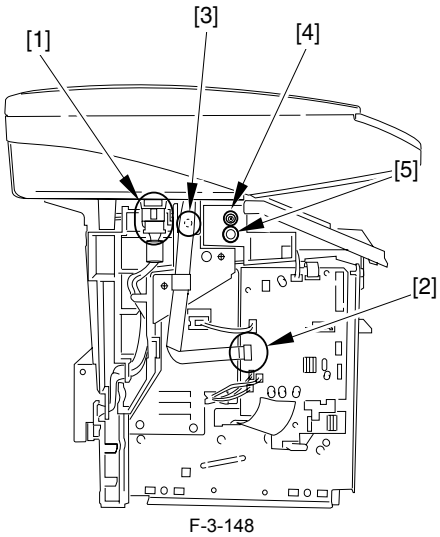
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-147

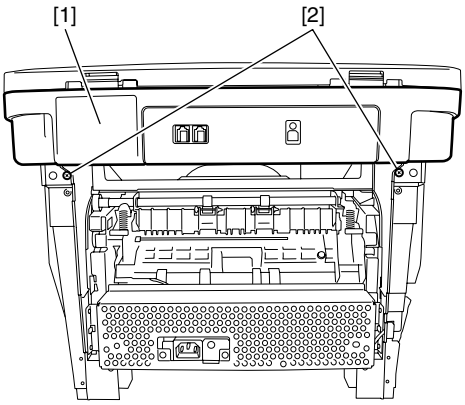
### 3.3.1.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-148

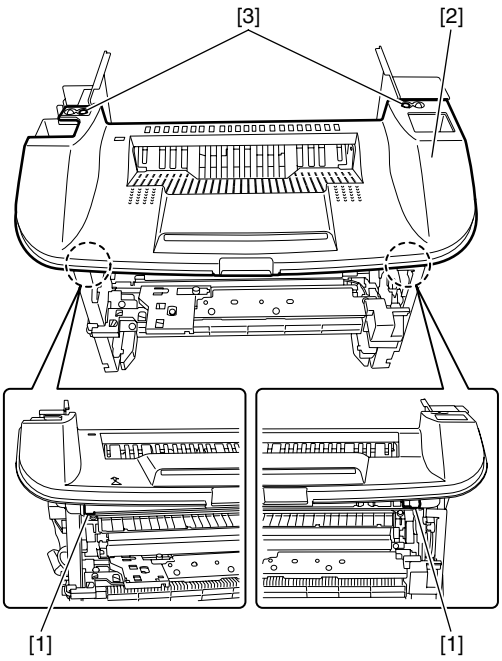
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-149

### 3.3.1.7 Removing the top cover

1) Free the 2 claws [1], and remove the top cover [2].
- 2 screws [3]

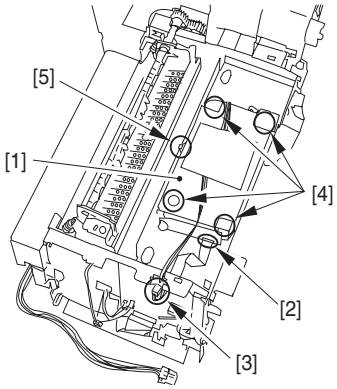



F-3-150

### 3.3.1.8 Removing the Laser/Scanner Unit

1) Remove the laser scanner unit [1]. (For better visibility, the covers, etc. have been removed in the illustration.)
- 1 flat cable [2]
- 1 connector [3]
- 4 screws [4]

When removing the laser scanner unit, take care not to lose the grounding plate [5].



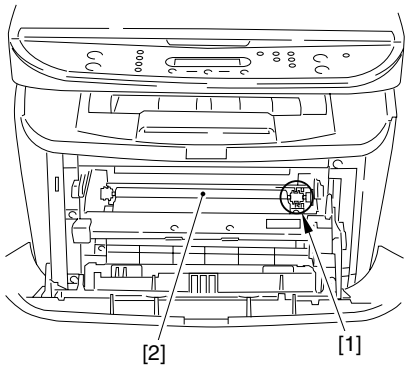

F-3-151

## 3.4 IMAGE FORMATION SYSTEM

### 3.4.1 Transfer Charging Roller

### 3.4.1.1 Removing the Transfer Charging Roller

1) Open the front cover.
2) Hold the 2 claws [1] on the right side of the roller, lifting them up.
3) Slide the transfer charging roller [2] by sliding it to the right.




F-3-152

## 3.5 PICKUP AND FEEDING SYSTEM

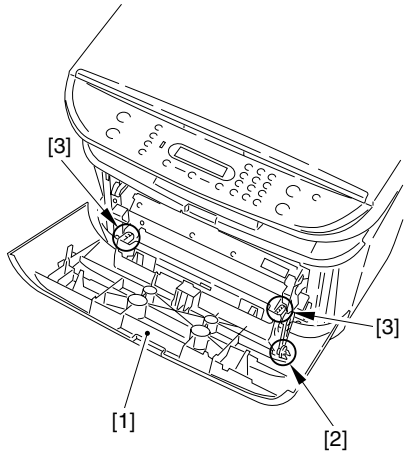
### 3.5.1 Cassette Pickup Roller

### 3.5.1.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.5.1.2 Removing the front cover

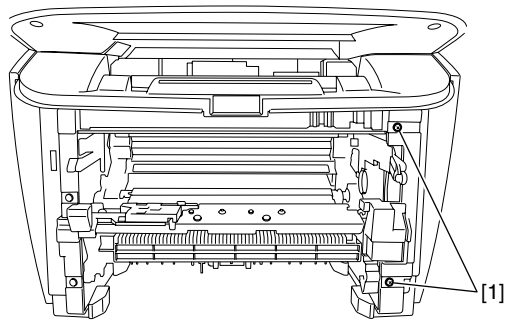
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-153

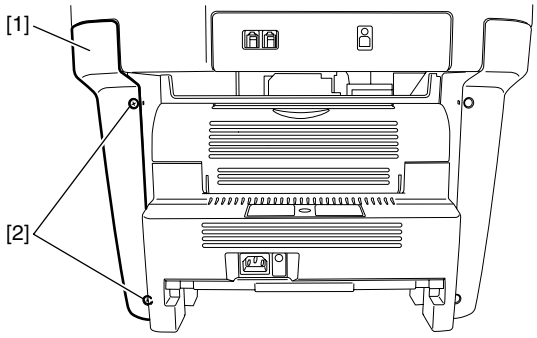
### 3.5.1.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-154

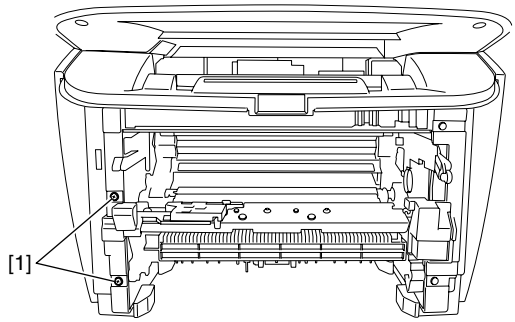
2) Remove the right cover [1].
- 2 screws [2]




F-3-155

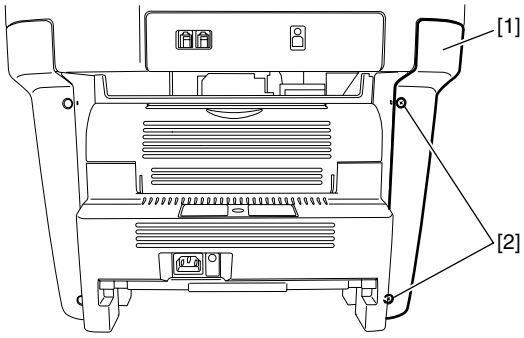
### 3.5.1.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-156

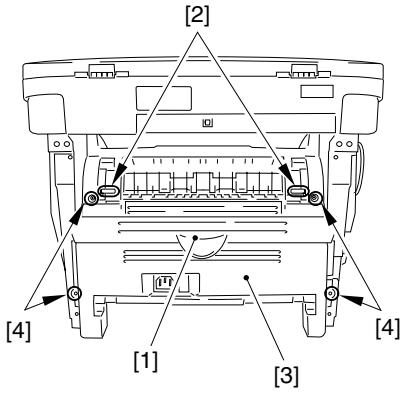
2) Remove the left cover [1].
- 2 screws [2]




F-3-157

### 3.5.1.5 Removing the rear cover

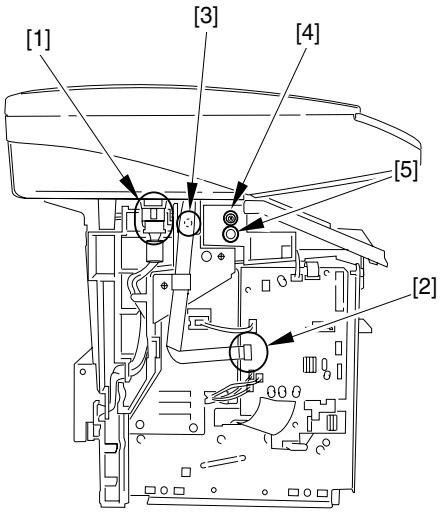
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-158

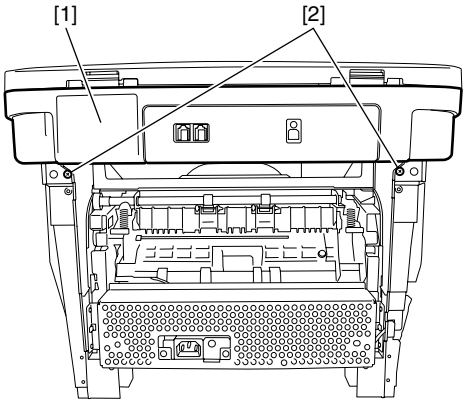
### 3.5.1.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-159

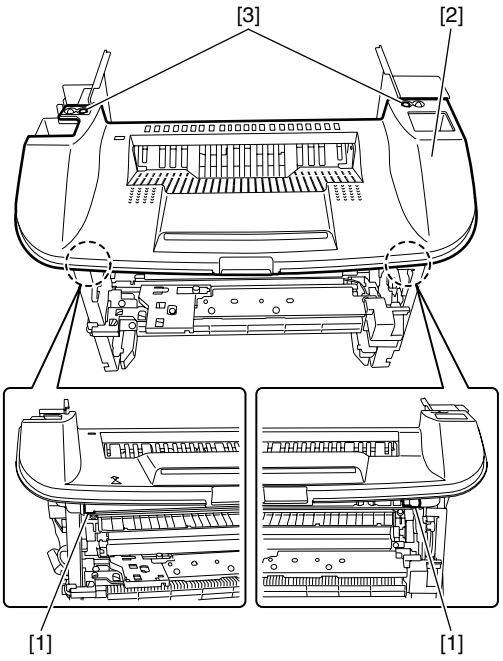
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-160

### 3.5.1.7 Removing the top cover

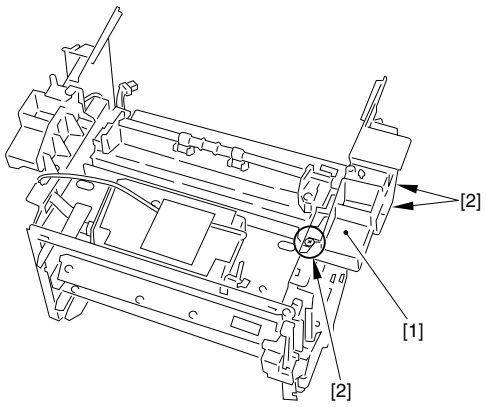
1) Free the 2 claws [1], and remove the top cover [2].
- 2 screws [3]




F-3-161

### 3.5.1.8 Removing the Right Frame

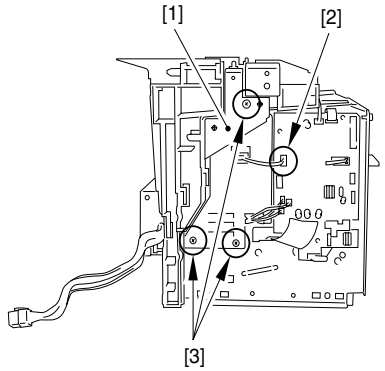
1) Remove the right frame [1].
- 3 screws [2]




F-3-162

### 3.5.1.9 Removing the Plate

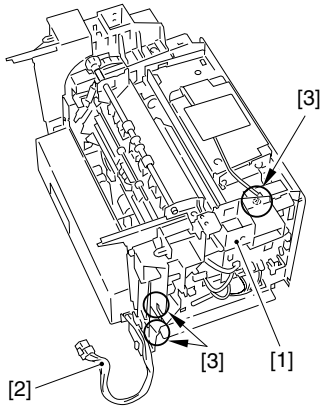
1) Remove the plate [1].
- 1 connector [2] on the ECNT board
- 3 screws [3]




F-3-163

### 3.5.1.10 Removing the Left Frame

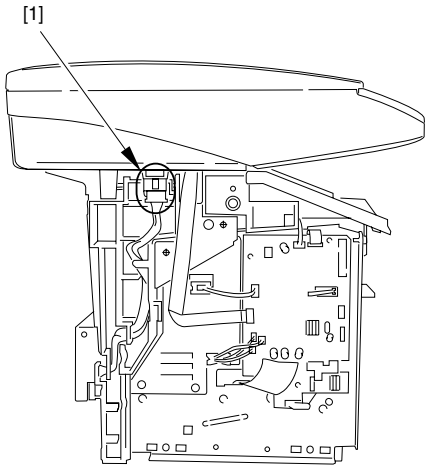
1) Remove the left frame [1].
- Remove the cable [2] from the guide.
- 3 screws [3]




F-3-164

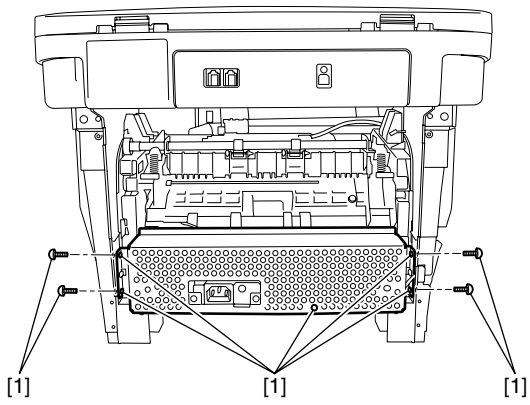
### 3.5.1.11 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-165

2) Remove the power supply shield plate [1].
- 9 screws [2]



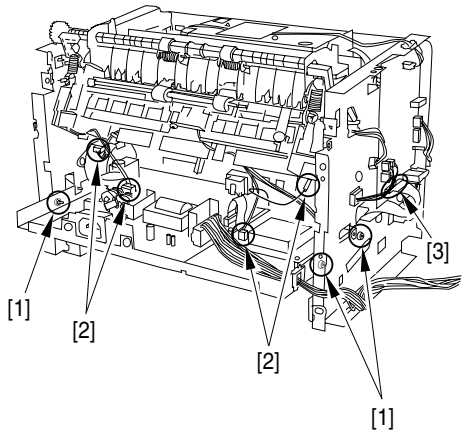

F-3-166

### 3.5.1.12 Removing the Power Supply Assembly

1) Remove the 3 screws [1]. (The external cover is omitted from the illustration below to show the instructions clearly.)
2) Remove the four connectors [2] as well as the flat cable [3] on the ECNT board.

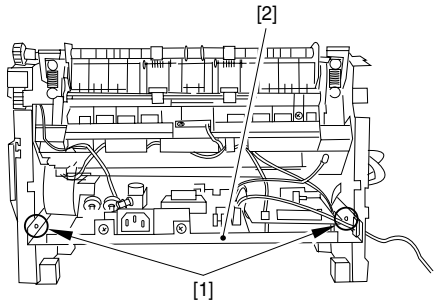
⚠

After having removed the flat cable [3], store it inside the unit to protect it from damage.




F-3-167

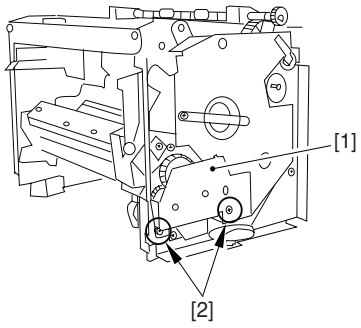
3) As you remove the bosses on both sides [1], lower the front part of the power supply assembly [2]. Then pull it to remove the power supply assembly.




F-3-168

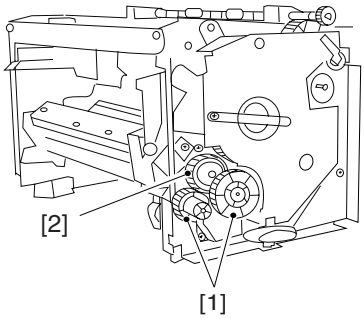
### 3.5.1.13 Removing the Gear Unit

1) Remove the drive plate (small) [1].
- 2 screws [2]




F-3-169

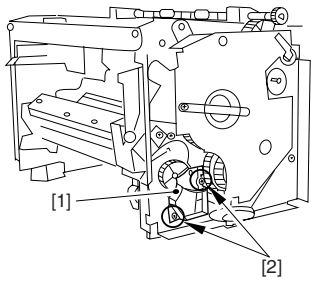
2) Remove the 2 gears [1].
3) While freeing the claw, detach the gear unit [2].




F-3-170

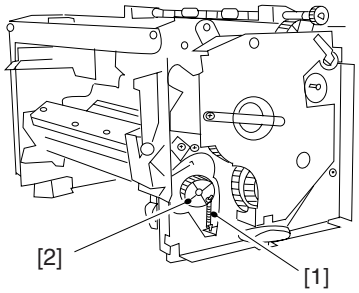
### 3.5.1.14 Removing the Tooth-Missing Gear

1) Remove the gear support [1].
- 2 screws [2]




F-3-171

2) Remove the spring [1].
3) While freeing the claw, detach the tooth-missing gear [2].




F-3-172

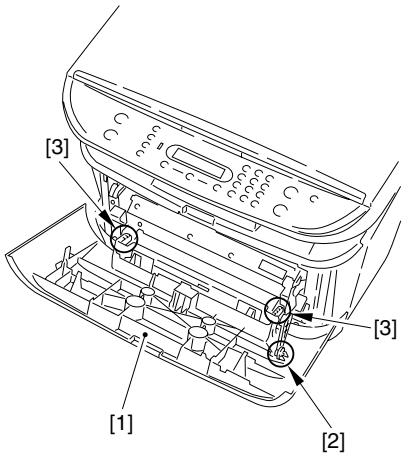
## 3.5.2 Cassette Pickup Solenoid

### 3.5.2.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.5.2.2 Removing the front cover

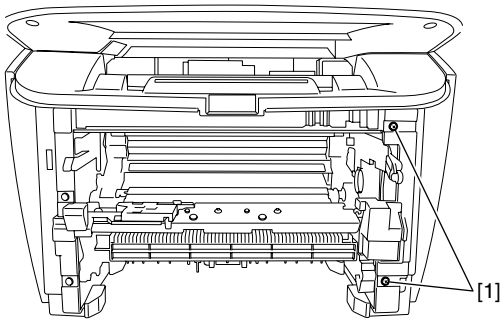
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-173

### 3.5.2.3 Removing the right cover

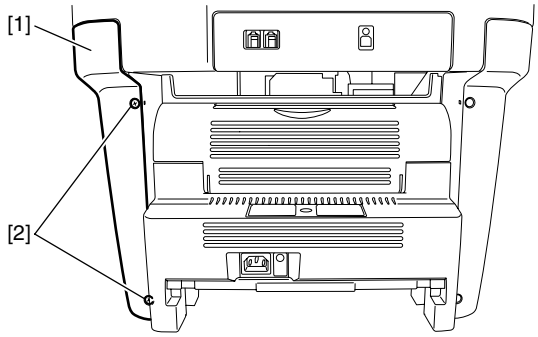
1) Remove the 2 screws [1] on the right cover.




F-3-174

2) Remove the right cover [1].

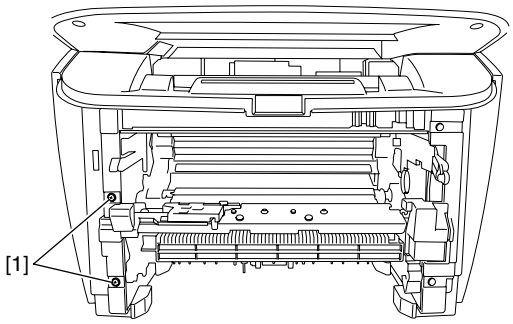
- 2 screws [2]




F-3-175

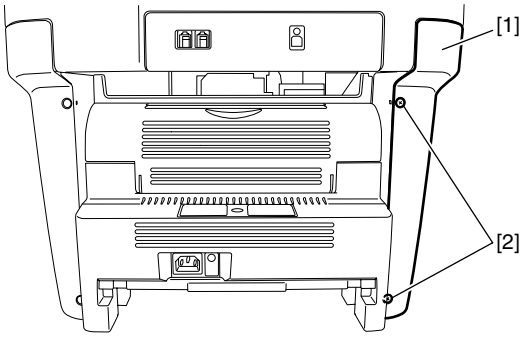
### 3.5.2.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-176

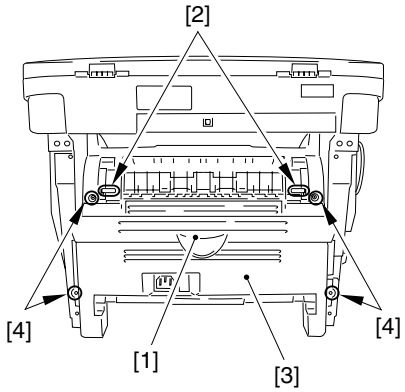
2) Remove the left cover [1].
- 2 screws [2]




F-3-177

### 3.5.2.5 Removing the rear cover

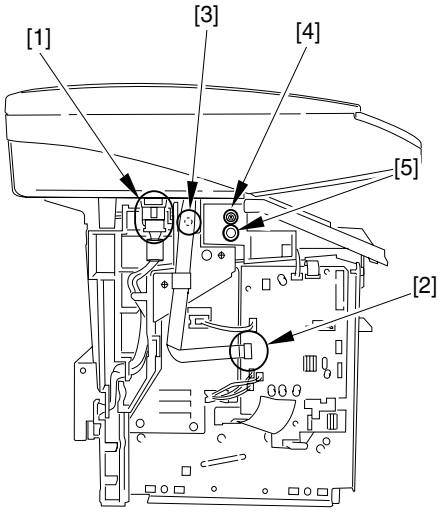
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-178

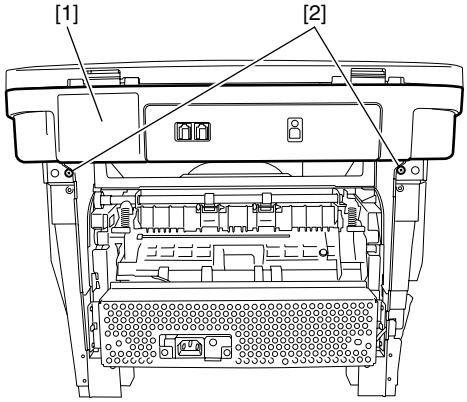
### 3.5.2.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-179

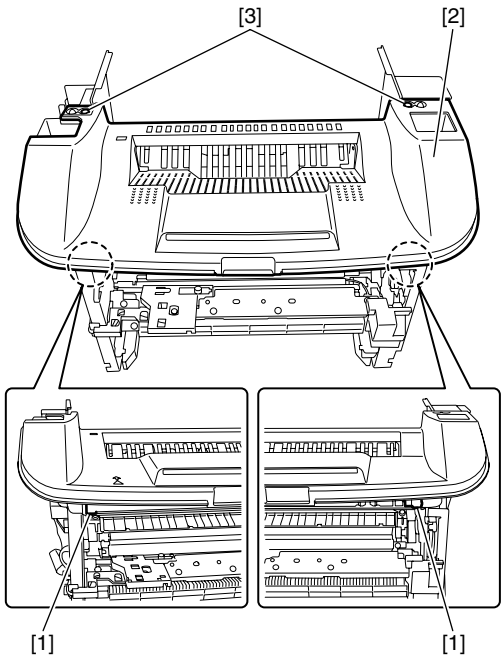
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-180

### 3.5.2.7 Removing the top cover

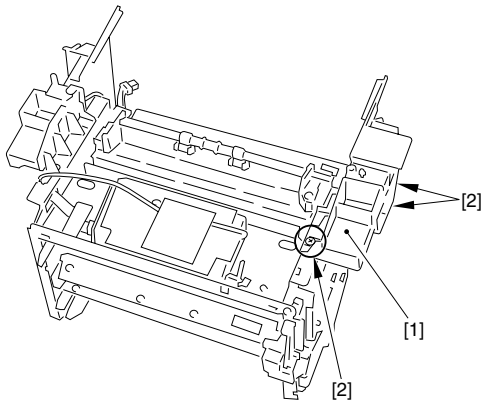
1) Free the 2 claws [1], and remove the top cover [2].
- 2 screws [3]




F-3-181

### 3.5.2.8 Removing the Right Frame

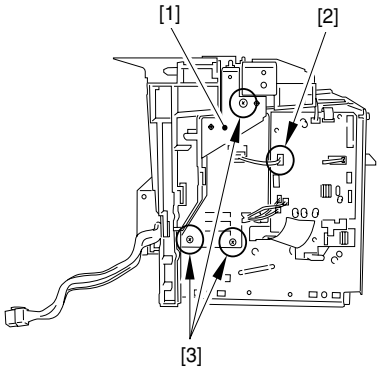
1) Remove the right frame [1].
- 3 screws [2]




F-3-182

### 3.5.2.9 Removing the Plate

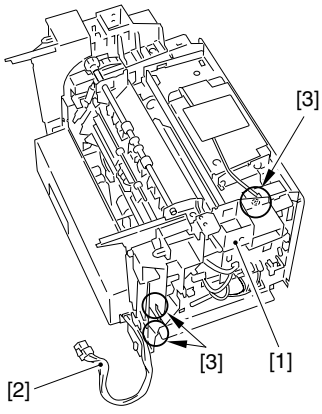
1) Remove the plate [1].
- 1 connector [2] on the ECNT board
- 3 screws [3]




F-3-183

### 3.5.2.10 Removing the Left Frame

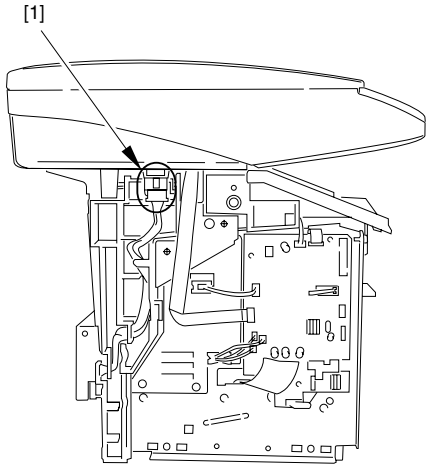
1) Remove the left frame [1].
- Remove the cable [2] from the guide.
- 3 screws [3]




F-3-184

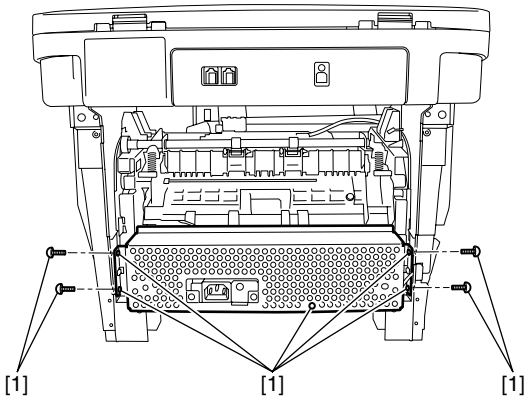
### 3.5.2.11 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-185

2) Remove the power supply shield plate [1].
- 9 screws [2]




F-3-186

### 3.5.2.12 Removing the Power Supply Assembly

1) Remove the 3 screws [1]. (The external cover is omitted from the illustration below to show the instructions clearly.)
2) Remove the four connectors [2] as well as the flat cable [3] on the ECNT board.

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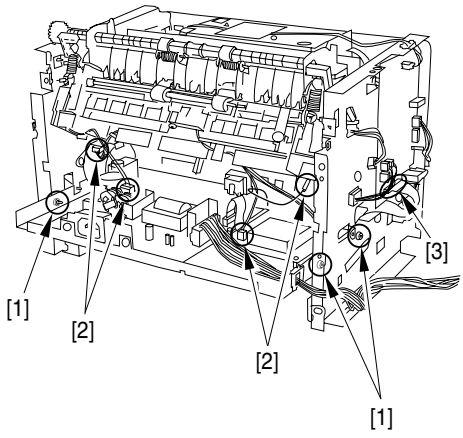
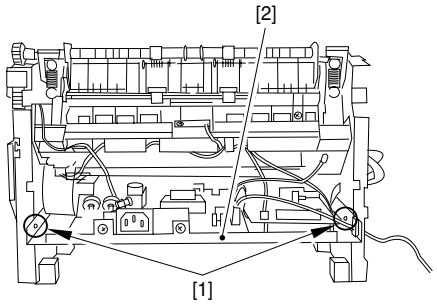
⚠
After having removed the flat cable [3], store it inside the unit to protect it from damage.

---




F-3-187

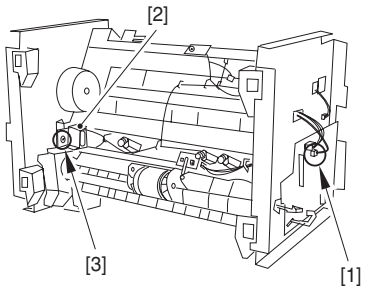
3) As you remove the bosses on both sides [1], lower the front part of the power supply assembly [2]. Then pull it to remove the power supply assembly.




F-3-188

### 3.5.2.13 Removing the Cassette Pickup Solenoid

1) Place the main unit down on its front face (so that the interior of the main unit is easily visible).
2) Remove the connector [1] on the ECNT board and take out the cable from the cable guide.
3) Remove the cassette pickup solenoid [2] (behind the main motor).
- 1 screw [3]




F-3-189

### 3.5.3 Cassette Separation Pad

### 3.5.3.1 Removing the Cassette

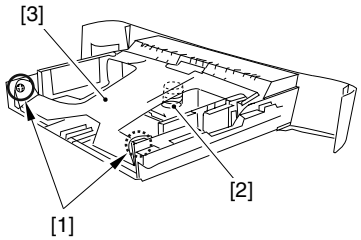
1) Remove the cassette by holding the cassette handle.

### 3.5.3.2 Removing the Rear of the Cassette

1) Lift the rear of the cassette, and separate the rear from the front.

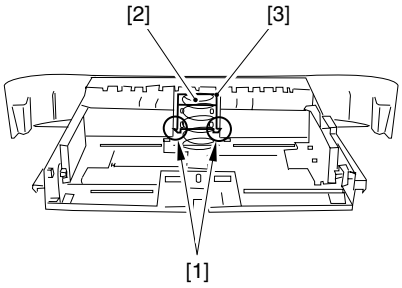
### 3.5.3.3 Removing the Cassette Separation Pad

1) Remove the shafts [1] on both sides of the lifting plate. Remove the lifting plate [3] while watching the lifting plate spring [2] carefully.




F-3-190

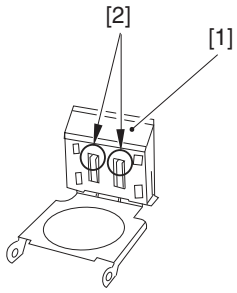
2) Remove the 2 claws [1] on both sides of the cassette separation pad and lift it up while watching the lifting plate spring [2] carefully. Ensure that the separation pad spring does not get lost.
3) Remove both the plate and the cassette separation pad [3] by sliding them to the left.




F-3-191

4) Remove the cassette separation pad [1] by sliding it upward.

- 2 claws [2]




F-3-192

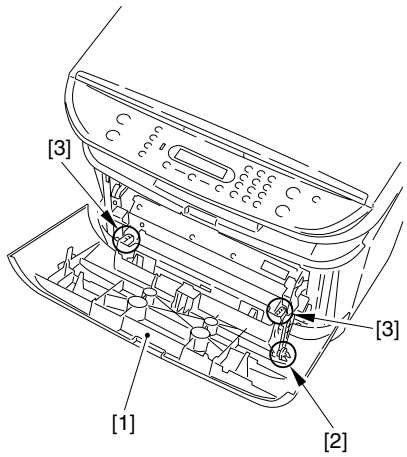
### 3.5.4 Paper Feed Roller

### 3.5.4.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.5.4.2 Removing the front cover

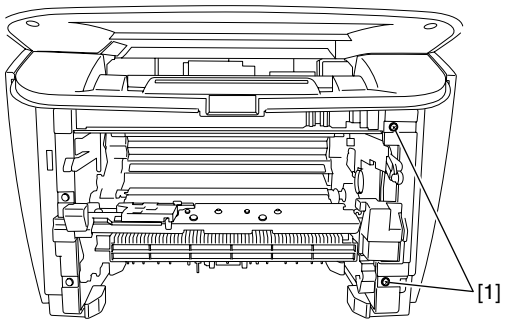
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-193

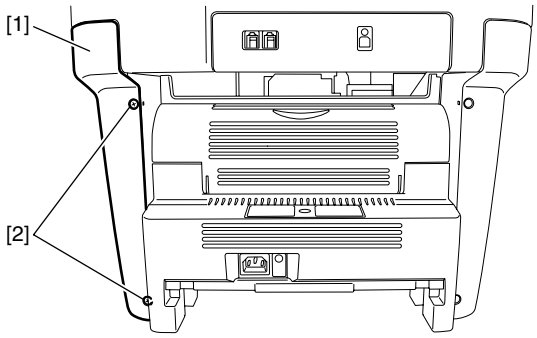
### 3.5.4.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-194

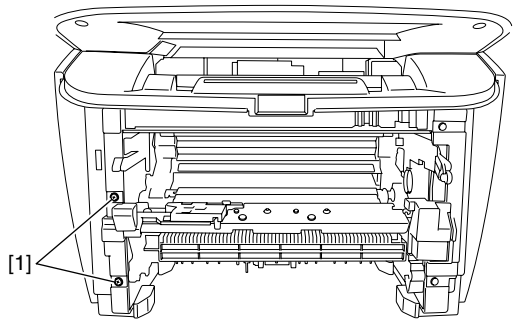
2) Remove the right cover [1].
- 2 screws [2]




F-3-195

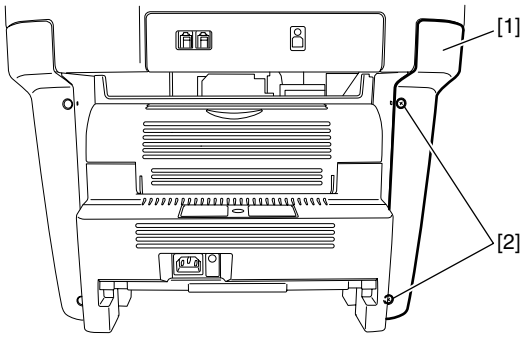
### 3.5.4.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-196

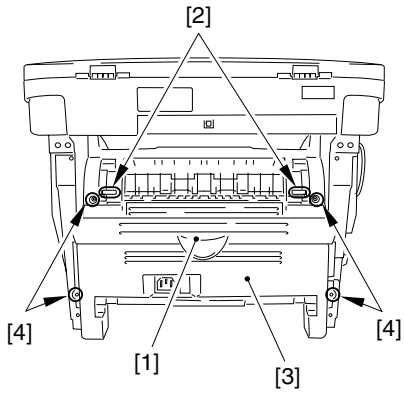
2) Remove the left cover [1].
- 2 screws [2]




F-3-197

### 3.5.4.5 Removing the rear cover

1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]

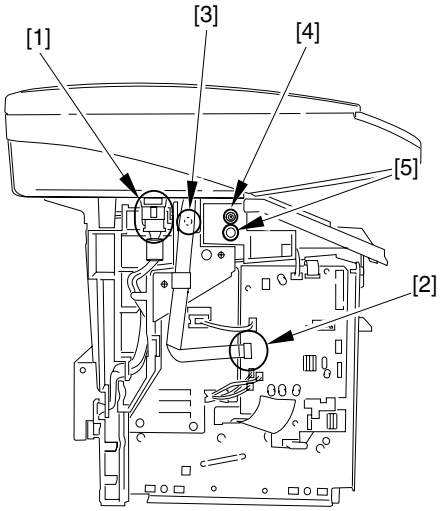



F-3-198

### 3.5.4.6 Removing the Scanner Unit

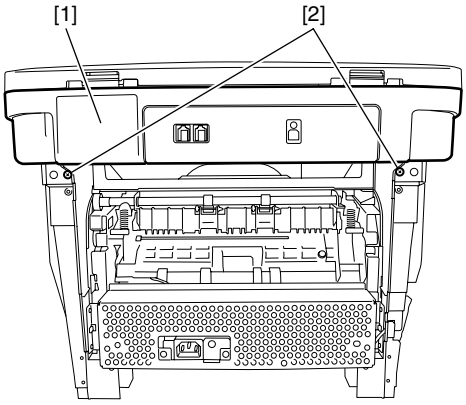
1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)

2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-199

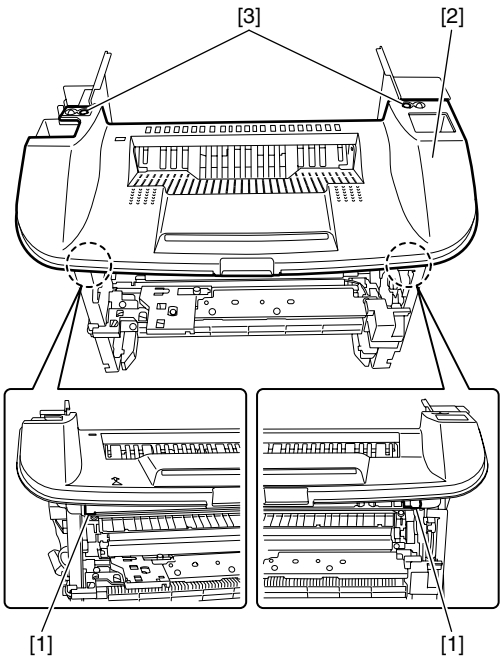
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-200

### 3.5.4.7 Removing the top cover

1) Free the 2 claws [1], and remove the top cover [2].
- 2 screws [3]

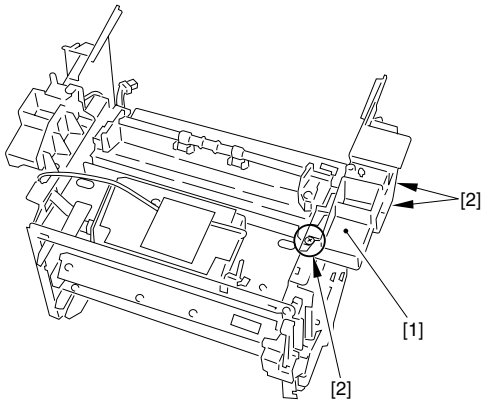



F-3-201

### 3.5.4.8 Removing the Right Frame

1) Remove the right frame [1].

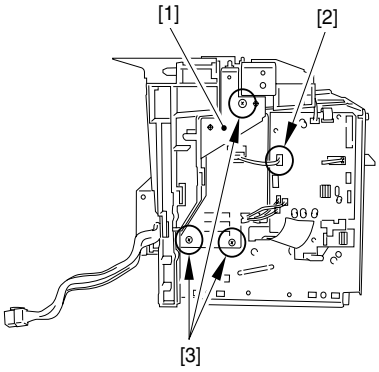
- 3 screws [2]




F-3-202

### 3.5.4.9 Removing the Plate

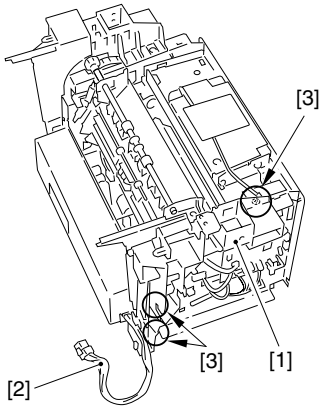
1) Remove the plate [1].
- 1 connector [2] on the ECNT board
- 3 screws [3]




F-3-203

### 3.5.4.10 Removing the Left Frame

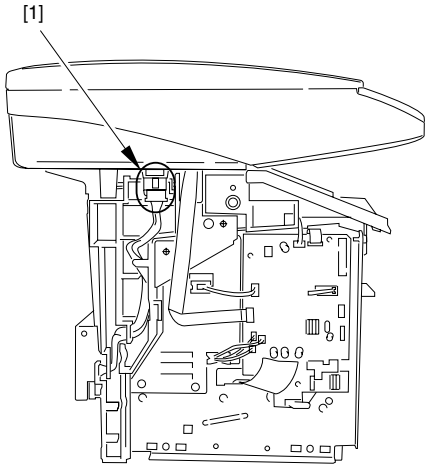
1) Remove the left frame [1].
- Remove the cable [2] from the guide.
- 3 screws [3]




F-3-204

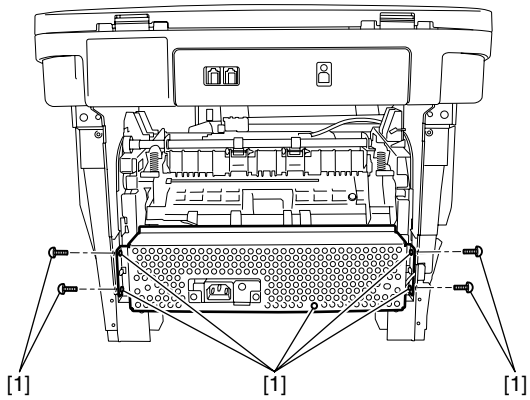
### 3.5.4.11 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-205

2) Remove the power supply shield plate [1].
- 9 screws [2]




F-3-206

### 3.5.4.12 Removing the Power Supply Assembly

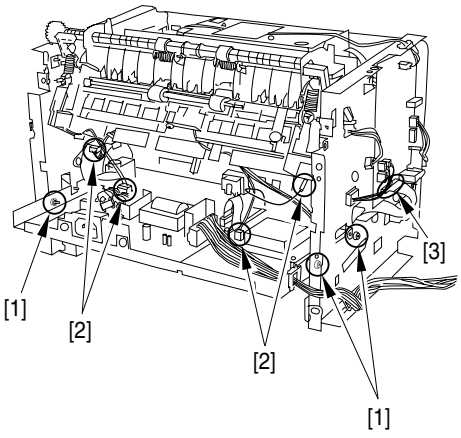
1) Remove the 3 screws [1]. (The external cover is omitted from the illustration below to show the instructions clearly.)
2) Remove the four connectors [2] as well as the flat cable [3] on the ECNT board.

---

⚠

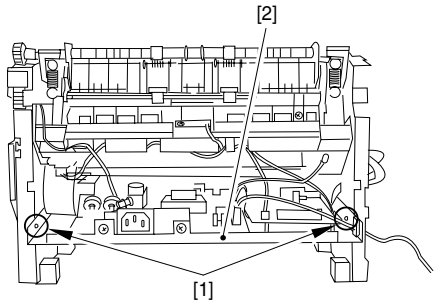
After having removed the flat cable [3], store it inside the unit to protect it from damage.

---




F-3-207

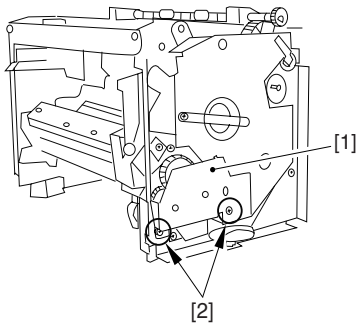
3) As you remove the bosses on both sides [1], lower the front part of the power supply assembly [2]. Then pull it to remove the power supply assembly.




F-3-208

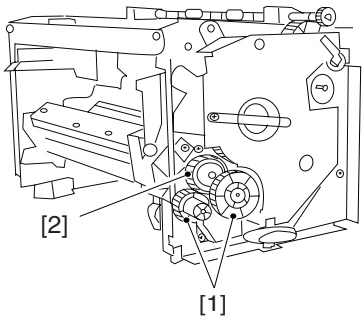
### 3.5.4.13 Removing the Gear Unit

1) Remove the drive plate (small) [1].
- 2 screws [2]




F-3-209

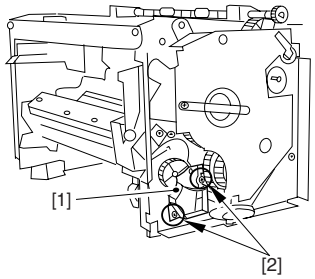
2) Remove the 2 gears [1].
3) While freeing the claw, detach the gear unit [2].




F-3-210

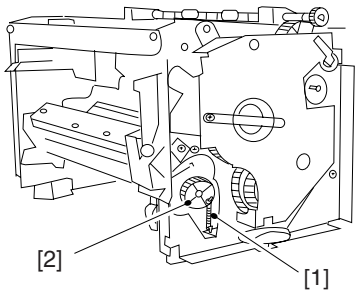
### 3.5.4.14 Removing the Tooth-Missing Gear

1) Remove the gear support [1].
- 2 screws [2]




F-3-211

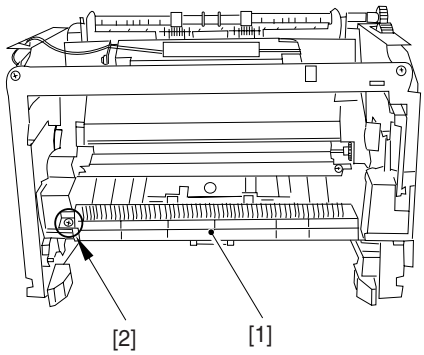
2) Remove the spring [1].
3) While freeing the claw, detach the tooth-missing gear [2].




F-3-212

### 3.5.4.15 Removing the Paper Feed Guide

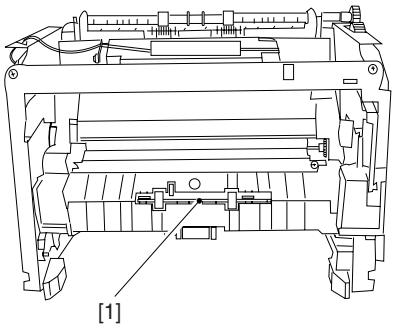
1) Remove the feed guide [1].
- 1 screw [2]




F-3-213

### 3.5.4.16 Removing the Paper Feed Roller

1) Lift the left side of the paper feed roller [1], and slide it to detach.




F-3-214

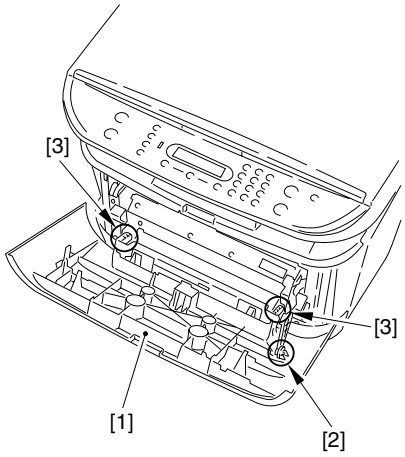
## 3.5.5 Manual Pickup Solenoid

### 3.5.5.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.5.5.2 Removing the front cover

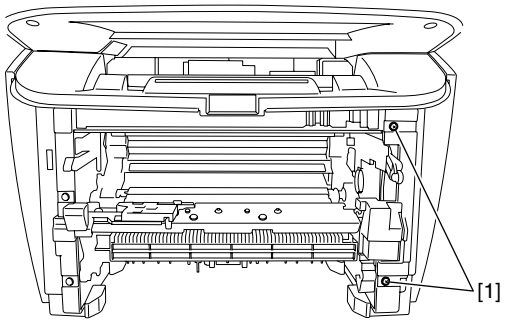
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-215

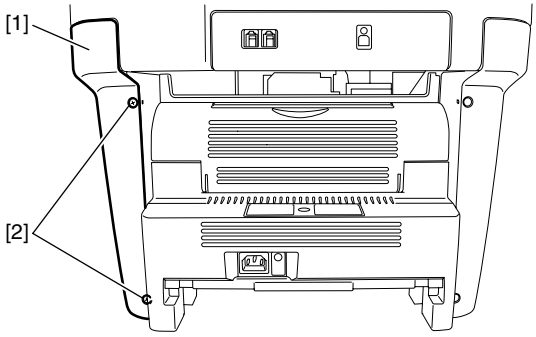
### 3.5.5.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-216

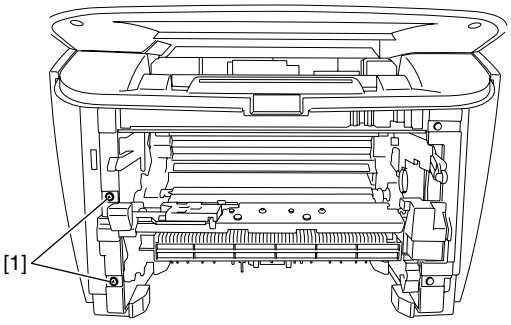
2) Remove the right cover [1].
- 2 screws [2]




F-3-217

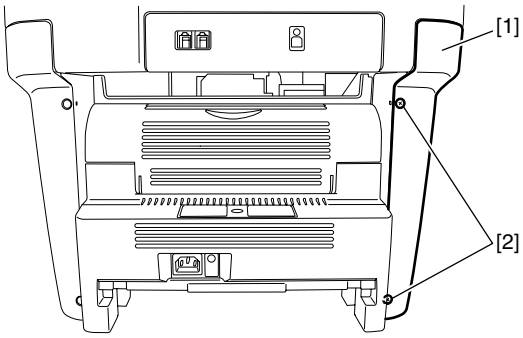
### 3.5.5.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-218

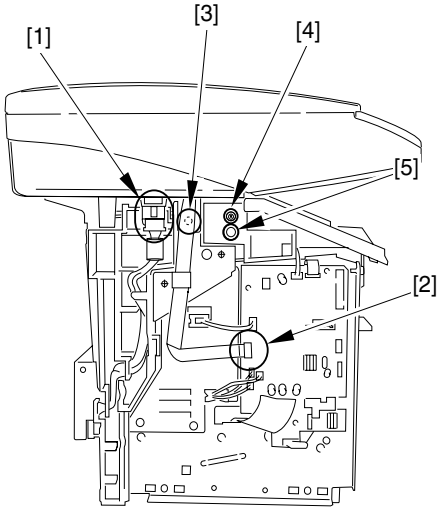
2) Remove the left cover [1].
- 2 screws [2]




F-3-219

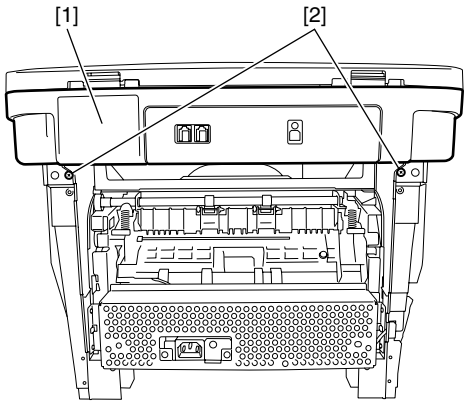
### 3.5.5.5 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-220

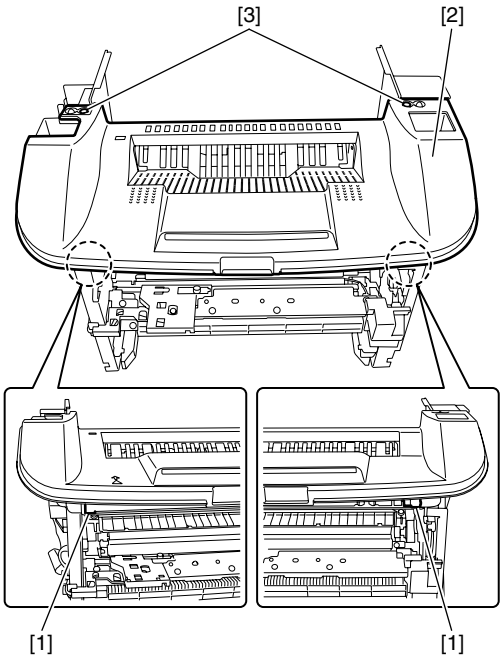
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-221

### 3.5.5.6 Removing the top cover

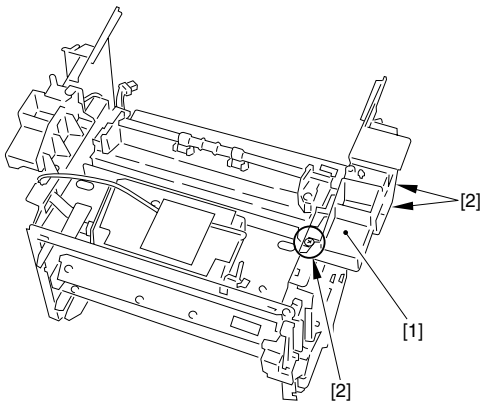
1) Free the 2 claws [1], and remove the top cover [2].
- 2 screws [3]




F-3-222

### 3.5.5.7 Removing the Right Frame

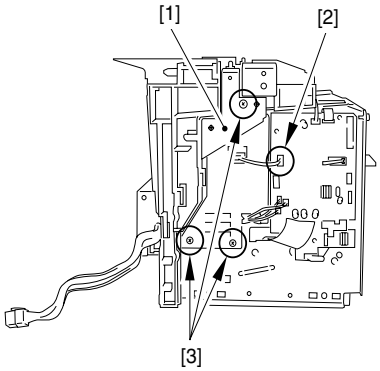
1) Remove the right frame [1].
- 3 screws [2]




F-3-223

### 3.5.5.8 Removing the Plate

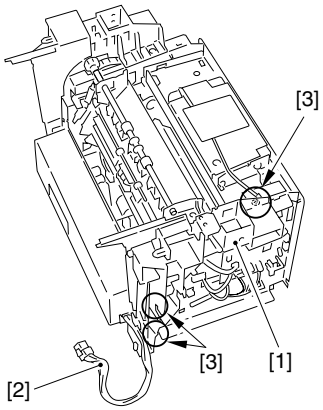
1) Remove the plate [1].
- 1 connector [2] on the ECNT board
- 3 screws [3]




F-3-224

### 3.5.5.9 Removing the Left Frame

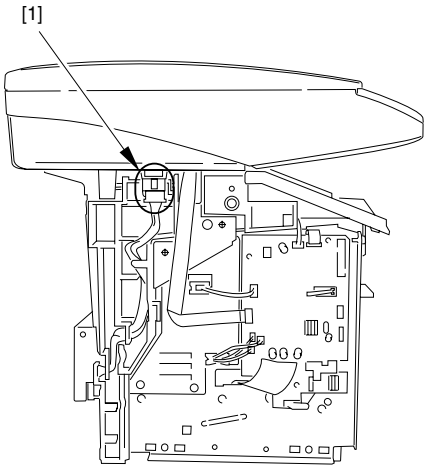
1) Remove the left frame [1].
- Remove the cable [2] from the guide.
- 3 screws [3]




F-3-225

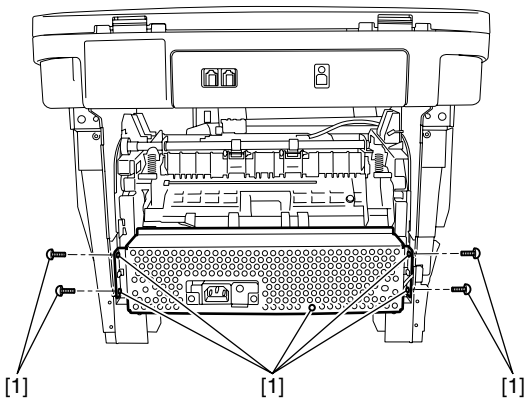
### 3.5.5.10 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-226

2) Remove the power supply shield plate [1].
- 9 screws [2]




F-3-227

### 3.5.5.11 Removing the Power Supply Assembly

1) Remove the 3 screws [1]. (The external cover is omitted from the illustration below to show the instructions clearly.)
2) Remove the four connectors [2] as well as the flat cable [3] on the ECNT board.

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⚠

After having removed the flat cable [3], store it inside the unit to protect it from damage.

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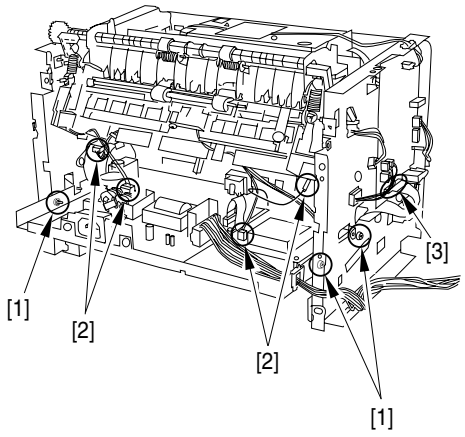
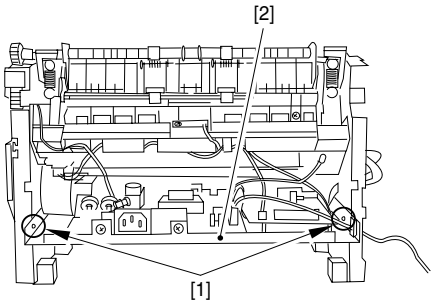



F-3-228

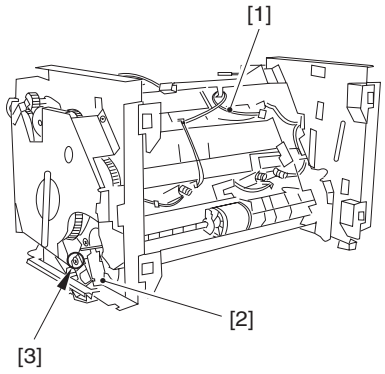
3) As you remove the bosses on both sides [1], lower the front part of the power supply assembly [2]. Then pull it to remove the power supply assembly.




F-3-229

### 3.5.5.12 Removing the Manual Pickup Solenoid

1) Turn the main unit over so that the front faces down (and the inside is visible).
2) Remove the cable [1] from the cable guide.
3) Remove the manual feed solenoid [2].
- 1 screw [3]




F-3-230

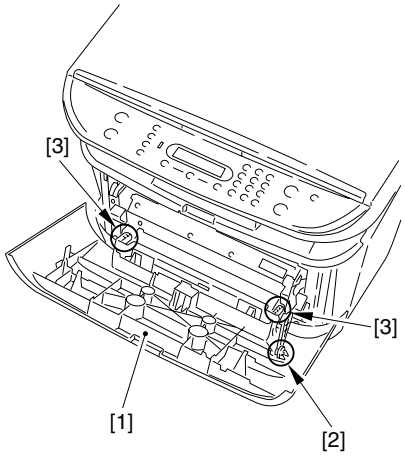
### 3.5.6 Main Motor

### 3.5.6.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.5.6.2 Removing the front cover

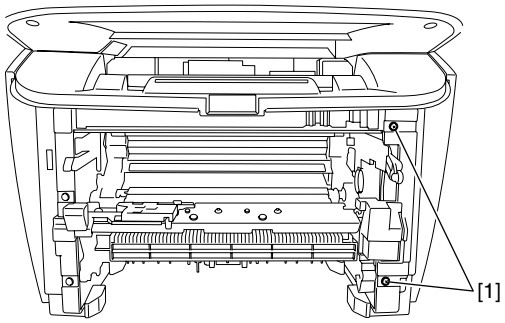
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-231

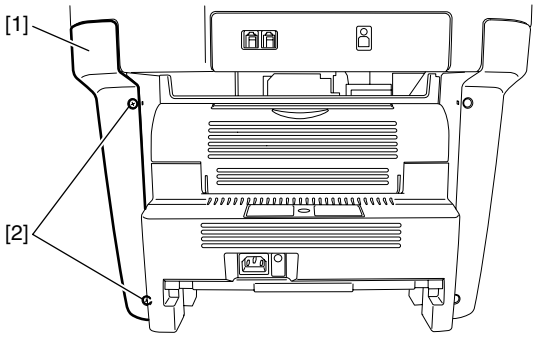
### 3.5.6.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-232

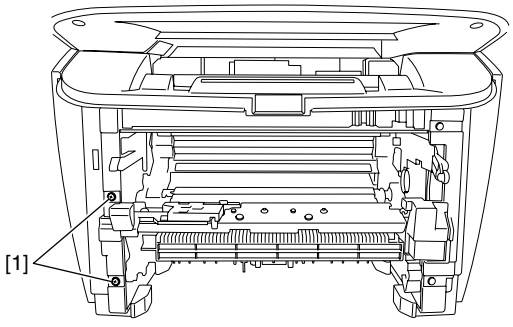
2) Remove the right cover [1].
- 2 screws [2]




F-3-233

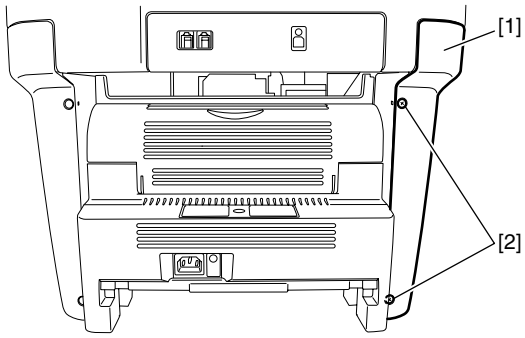
### 3.5.6.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-234

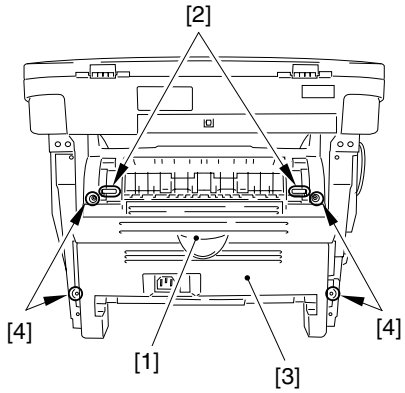
2) Remove the left cover [1].
- 2 screws [2]




F-3-235

### 3.5.6.5 Removing the rear cover

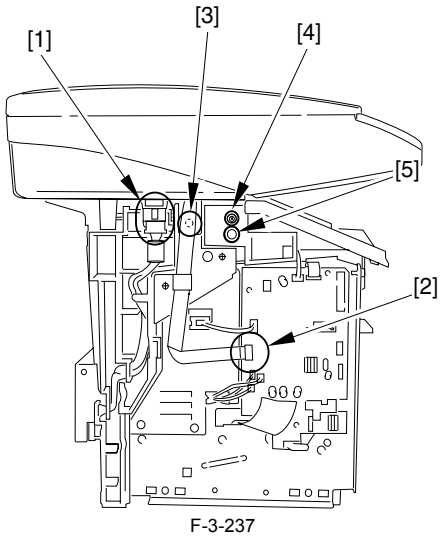
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-236

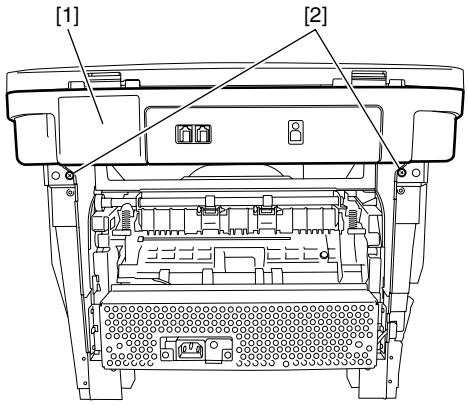
### 3.5.6.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-237

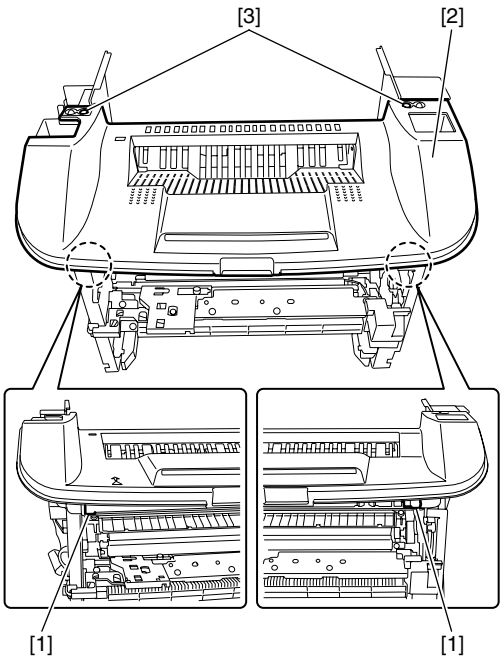
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-238

### 3.5.6.7 Removing the top cover

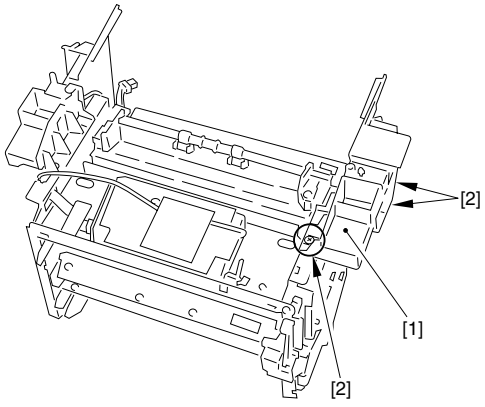
1) Free the 2 claws [1], and remove the top cover [2].
- 2 screws [3]




F-3-239

### 3.5.6.8 Removing the Right Frame

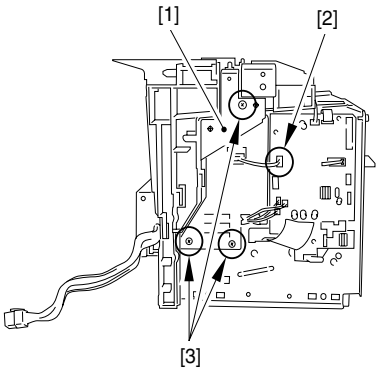
1) Remove the right frame [1].
- 3 screws [2]




F-3-240

### 3.5.6.9 Removing the Plate

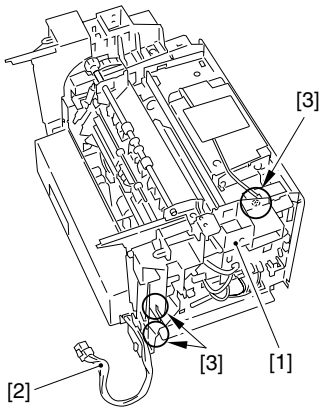
1) Remove the plate [1].
- 1 connector [2] on the ECNT board
- 3 screws [3]




F-3-241

### 3.5.6.10 Removing the Left Frame

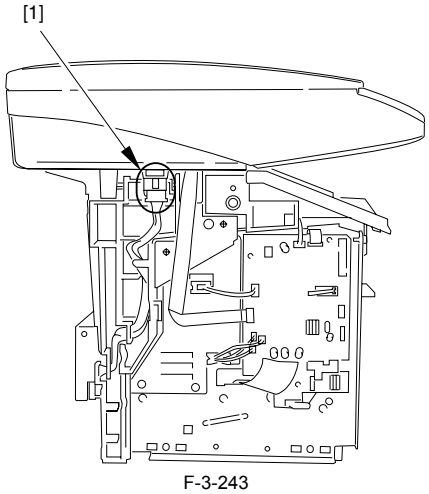
1) Remove the left frame [1].
- Remove the cable [2] from the guide.
- 3 screws [3]




F-3-242

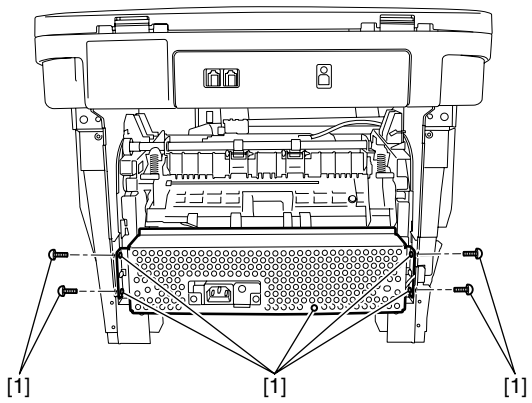
### 3.5.6.11 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-243

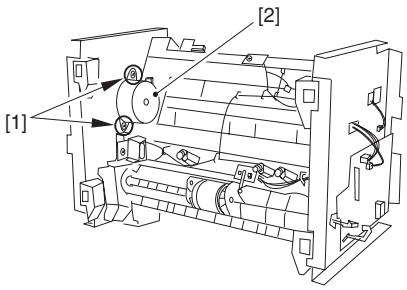
2) Remove the power supply shield plate [1].
- 9 screws [2]




F-3-244

### 3.5.6.12 Removing the Main Motor

1) Place the main unit down on its front face (so that the interior of the main unit is easily visible).
2) Remove the main motor [1].
- 2 screws [2]




F-3-245

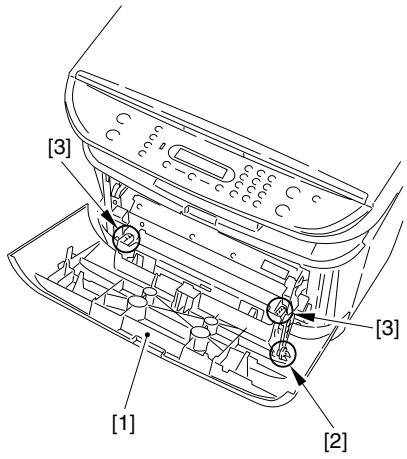
## 3.5.7 Gear Unit

### 3.5.7.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.5.7.2 Removing the front cover

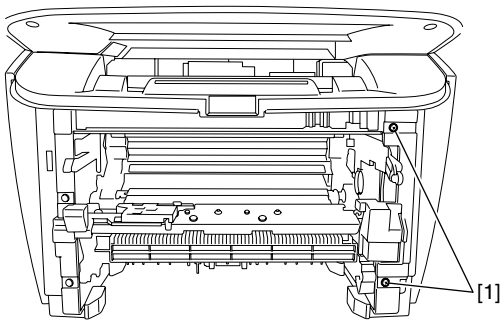
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-246

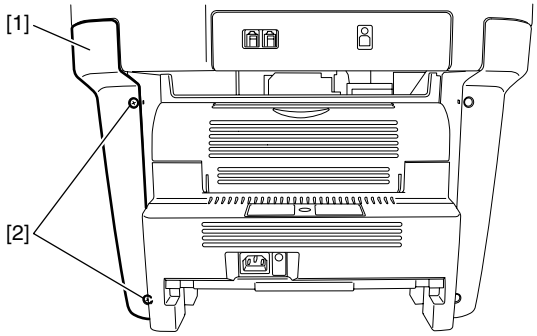
### 3.5.7.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-247

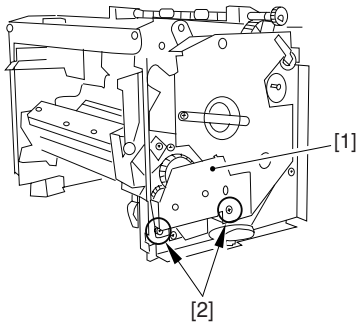
2) Remove the right cover [1].
- 2 screws [2]




F-3-248

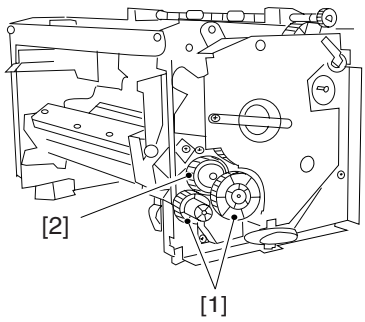
### 3.5.7.4 Removing the Gear Unit

1) Remove the drive plate (small) [1].
- 2 screws [2]




F-3-249

2) Remove the 2 gears [1].
3) While freeing the claw, detach the gear unit [2].




F-3-250

## 3.6 FIXING SYSTEM

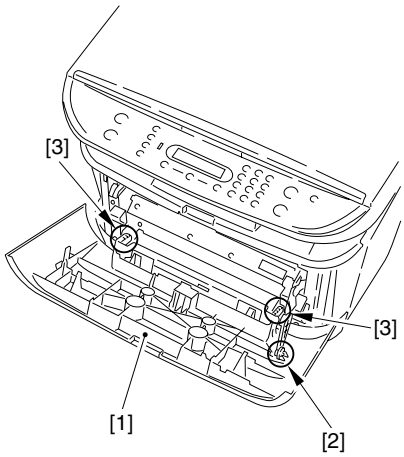
### 3.6.1 Fixing Film Unit

### 3.6.1.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

### 3.6.1.2 Removing the front cover

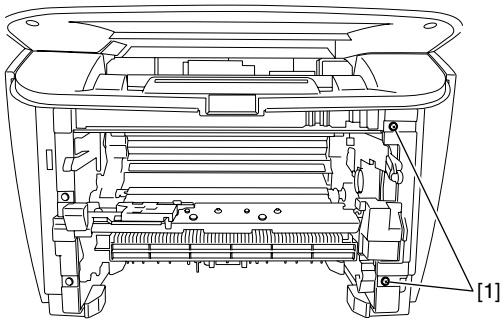
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-251

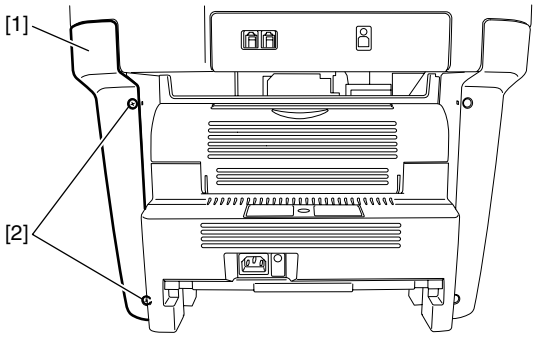
### 3.6.1.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-252

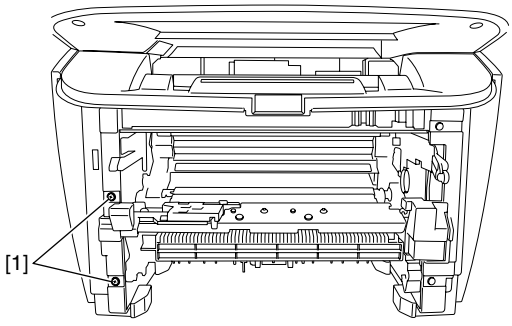
2) Remove the right cover [1].
- 2 screws [2]




F-3-253

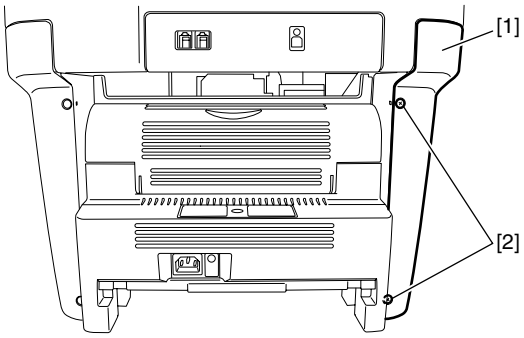
### 3.6.1.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-254

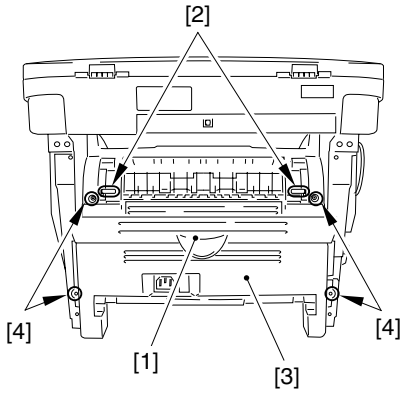
2) Remove the left cover [1].
- 2 screws [2]




F-3-255

### 3.6.1.5 Removing the rear cover

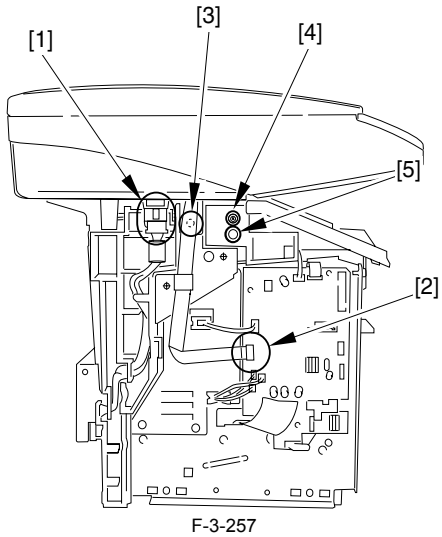
1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]




F-3-256

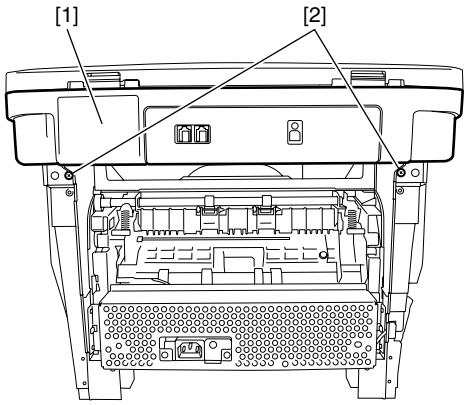
### 3.6.1.6 Removing the Scanner Unit

1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)
2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-257

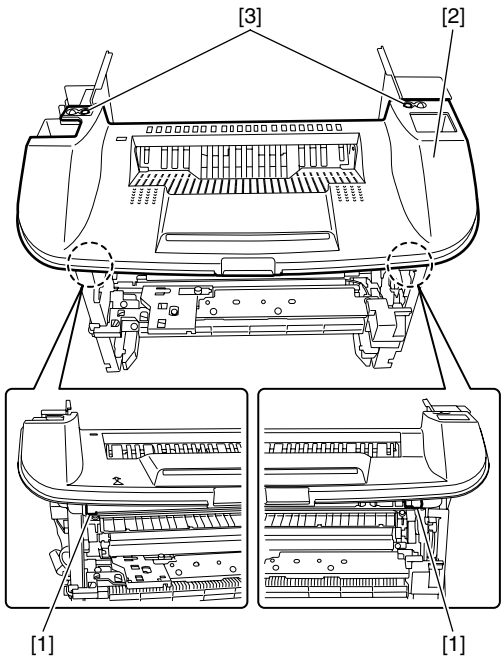
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-258

### 3.6.1.7 Removing the top cover

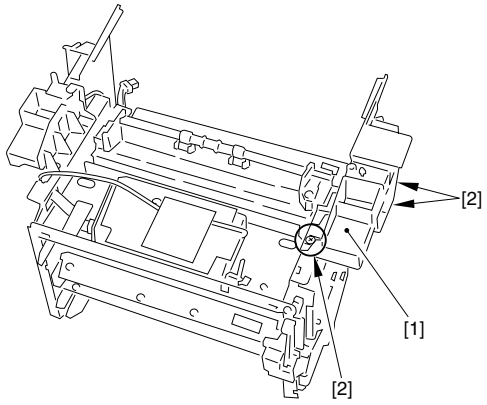
1) Free the 2 claws [1], and remove the top cover [2].
- 2 screws [3]




F-3-259

### 3.6.1.8 Removing the Right Frame

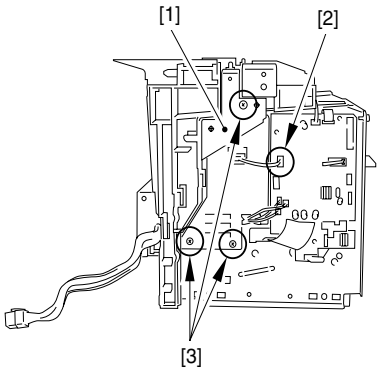
1) Remove the right frame [1].
- 3 screws [2]




F-3-260

### 3.6.1.9 Removing the Plate

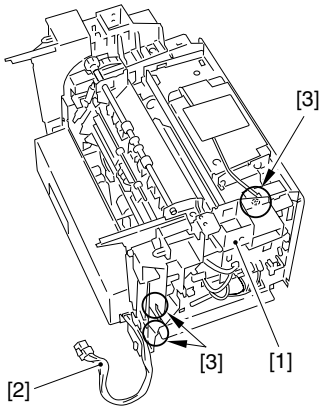
1) Remove the plate [1].
- 1 connector [2] on the ECNT board
- 3 screws [3]




F-3-261

### 3.6.1.10 Removing the Left Frame

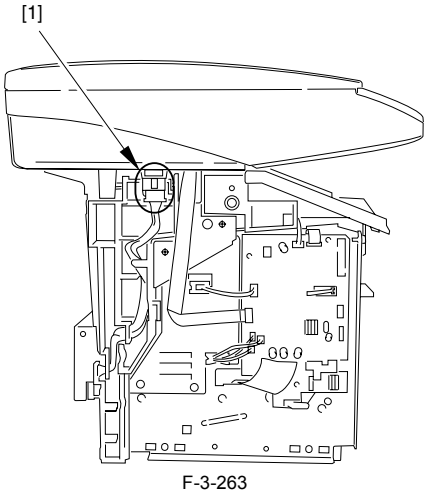
1) Remove the left frame [1].
- Remove the cable [2] from the guide.
- 3 screws [3]




F-3-262

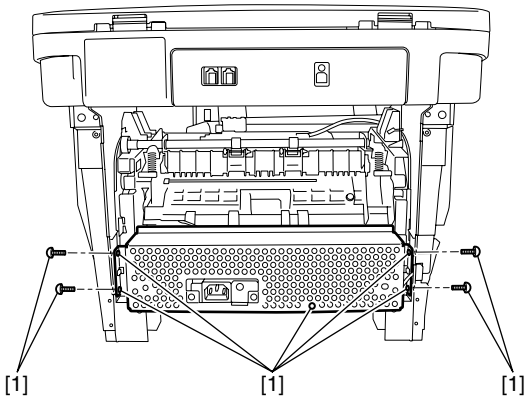
### 3.6.1.11 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-263

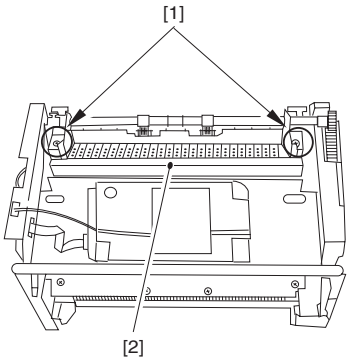
2) Remove the power supply shield plate [1].
- 9 screws [2]




F-3-264

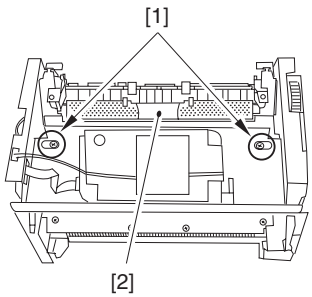
### 3.6.1.12 Removing the Fixing Film Unit

1) Remove the fixing cover [1].
- 2 screws [2]



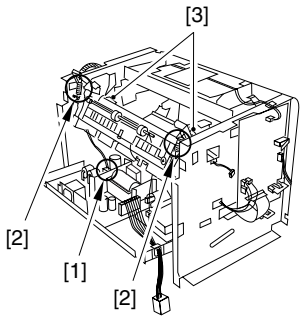

F-3-265

2) Remove the fixing entrance guide [1] by sliding it to the left and right.
- 2 screws [2]



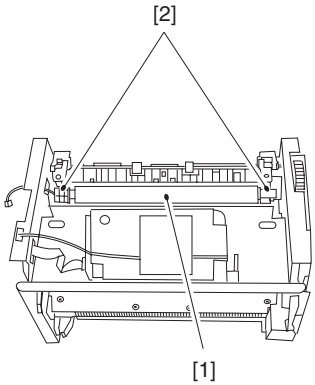

F-3-266

3) Disengage the connector [1] of the power supply board.
4) Remove the grounding springs and the pressure springs [2] on both sides.
5) Remove the pressure plates [3] on both sides.




F-3-267

6) While holding the left and right frames [2] of the Fixing film unit [1], lift it up at an angle and remove it.




F-3-268

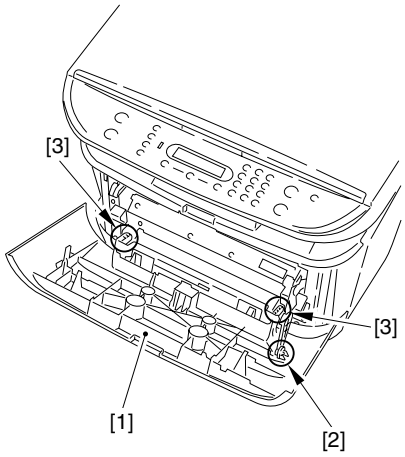
### 3.6.2 Fixing Pressure Roller

#### 3.6.2.1 Removing the Cassette

1) Remove the cassette by holding the cassette handle.

#### 3.6.2.2 Removing the front cover

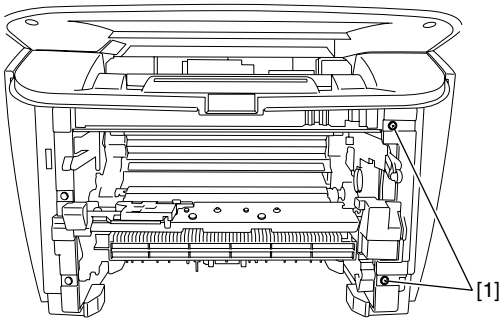
1) Open the front cover [1] and remove the arm claws [2] to disengage the connection.
2) Remove the shafts on both sides [3] while warping the shaft arms inside, and remove the front cover.




F-3-269

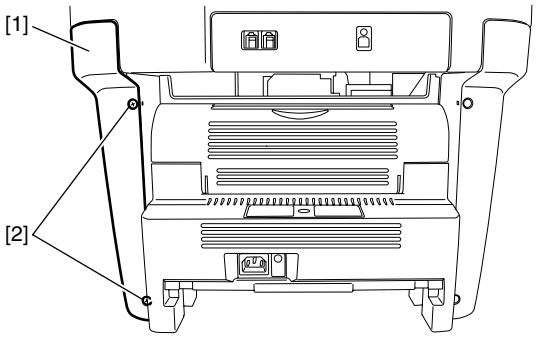
#### 3.6.2.3 Removing the right cover

1) Remove the 2 screws [1] on the right cover.




F-3-270

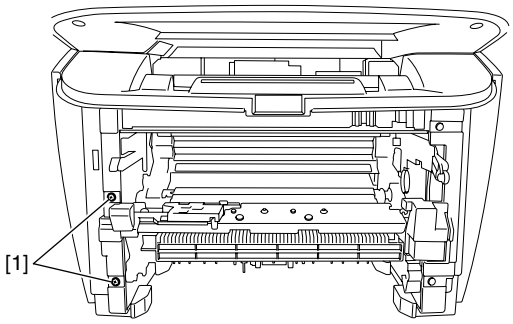
2) Remove the right cover [1].
- 2 screws [2]




F-3-271

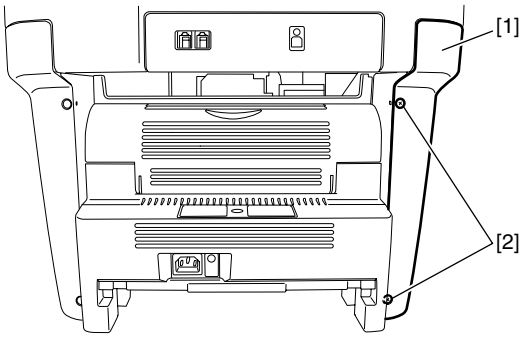
#### 3.6.2.4 Removing the left cover

1) Remove the 2 screws [1] on the left cover.




F-3-272

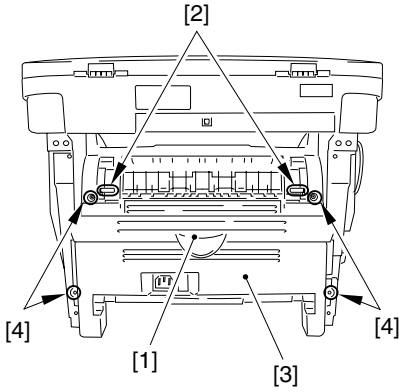
2) Remove the left cover [1].
- 2 screws [2]




F-3-273

#### 3.6.2.5 Removing the rear cover

1) Opening the face-up cover [1], and then lower the fixing pressure release levers [2] on both sides and release the pressure.
2) Remove the rear cover [3] by sliding it to the rear.
- 4 screws [4]

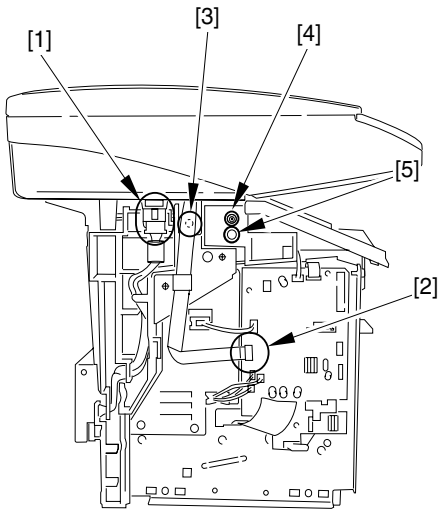



F-3-274

#### 3.6.2.6 Removing the Scanner Unit

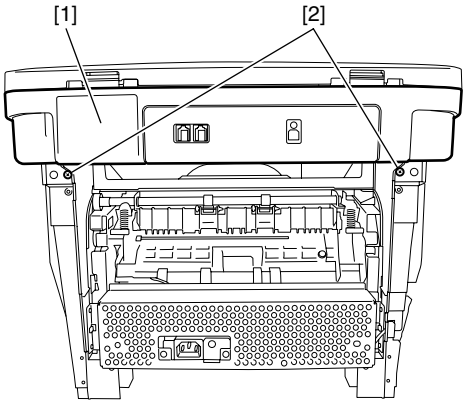
1) Remove the connector [1] and the flat cable [2] on the ECNT board, and remove the screw [3]. (Remove the flat cable from the core.)

2) Remove the 2 screws [4] and the 2 pins [5] on the right and left sides.




F-3-275

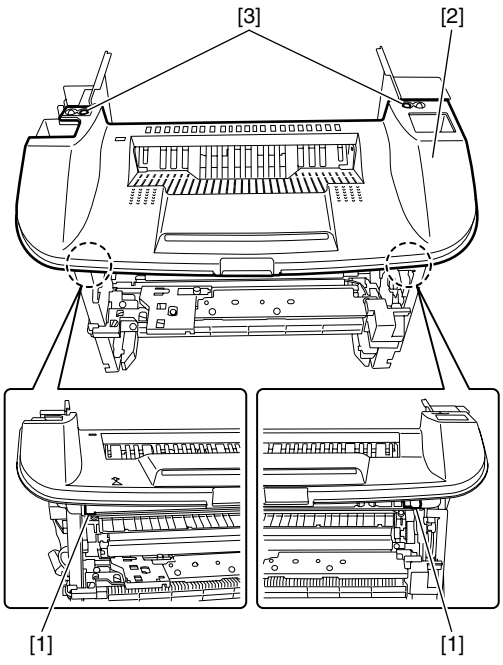
3) Remove the scanner unit [1] by sliding it to the rear and lifting it up.
- 2 screws [2]




F-3-276

### 3.6.2.7 Removing the top cover

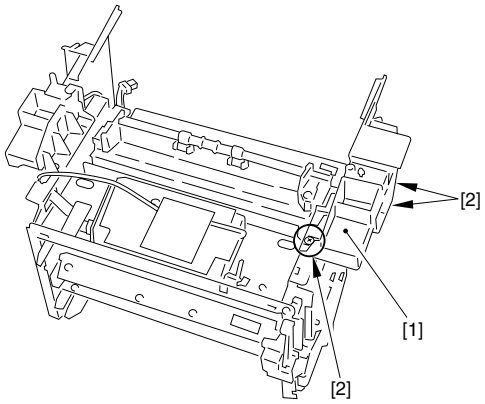
1) Free the 2 claws [1], and remove the top cover [2].
- 2 screws [3]




F-3-277

### 3.6.2.8 Removing the Right Frame

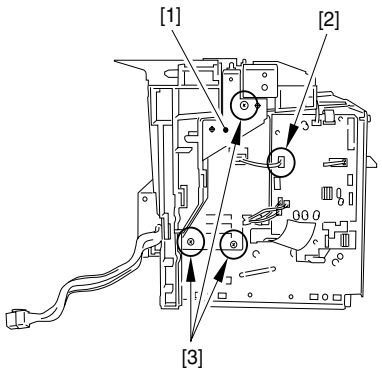
1) Remove the right frame [1].
- 3 screws [2]




F-3-278

### 3.6.2.9 Removing the Plate

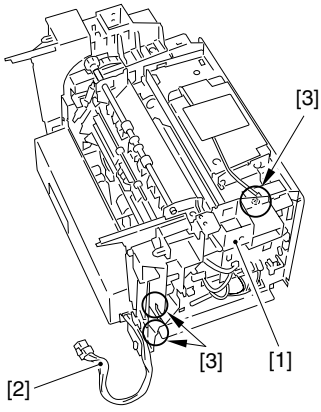
1) Remove the plate [1].
- 1 connector [2] on the ECNT board
- 3 screws [3]




F-3-279

### 3.6.2.10 Removing the Left Frame

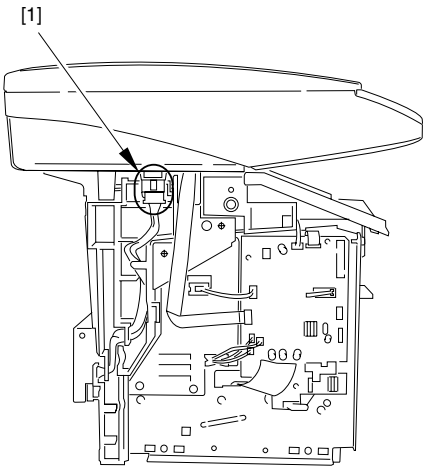
1) Remove the left frame [1].
- Remove the cable [2] from the guide.
- 3 screws [3]




F-3-280

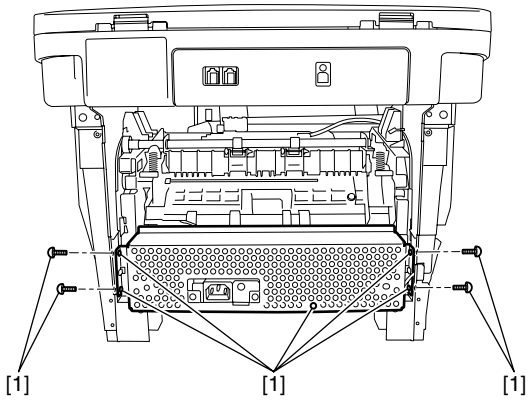
### 3.6.2.11 Removing the Power Supply Shield Plate

1) Remove the cable from the cable guide.
- 1 connector [1]




F-3-281

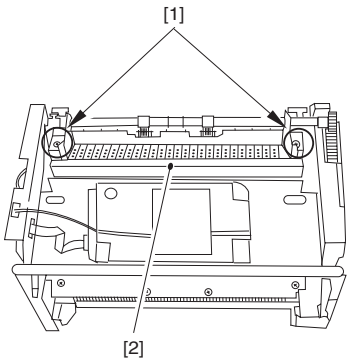
2) Remove the power supply shield plate [1].
- 9 screws [2]




F-3-282

### 3.6.2.12 Removing the Fixing Film Unit

1) Remove the fixing cover [1].
- 2 screws [2]

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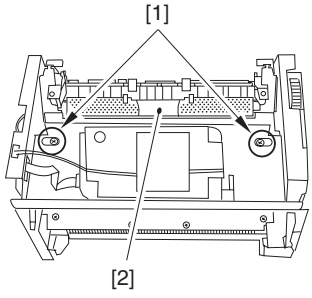
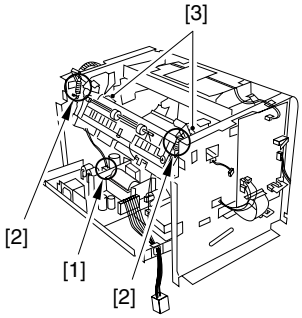
2) Remove the fixing entrance guide [1] by sliding it to the left and right.
- 2 screws [2]




F-3-284

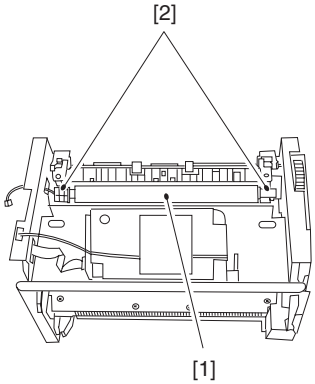
3) Disengage the connector [1] of the power supply board.
4) Remove the grounding springs and the pressure springs [2] on both sides.

5) Remove the pressure plates [3] on both sides.




F-3-285

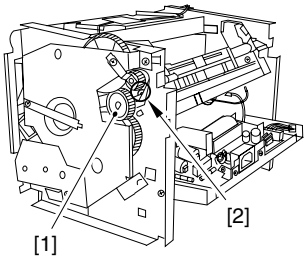
6) While holding the left and right frames [2] of the Fixing film unit [1], lift it up at an angle and remove it.




F-3-286

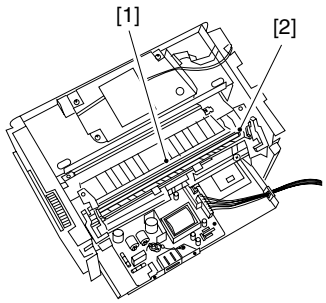
### 3.6.2.13 Removing the Fixing Pressure Roller

1) Remove the gear [1] by disengaging the claw.
2) Take out the boss of the bushing [2], turn it, and remove the bushing.




F-3-287

3) Hold the shorter shaft [2] of the Fixing pressure roller [1] and lift it up at an angle to remove it from the bushing. Remove the Fixing pressure roller by sliding it.




F-3-288

# Chapter 4 MAINTENANCE AND INSPECTION

# Contents

# 4.1 Periodically Replaced Parts

## 4.1.1 Periodic Replacement Parts

No parts require periodic replacement in this printer.

# 4.2 Periodical Service

## 4.2.1 Periodical Service

The printer has no parts that require periodic servicing.

# 4.3 Cleaning

## 4.3.1 Items Requiring Cleaning

T-4-1

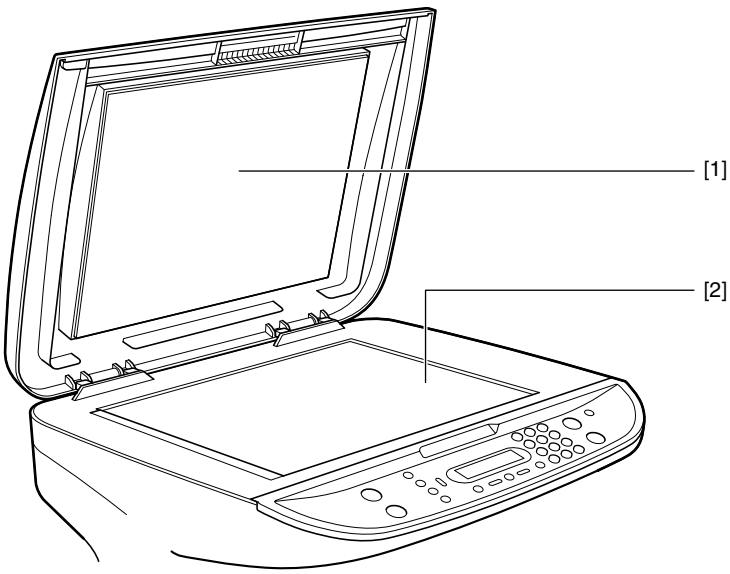
| Work by | Item | Intervals |
|---|---|---|
| User | External covers | As needed (when soiled) |
| | Platen glass | When smears appear on image scanned from the platen galss |
| | Rear surface of the platen glass cover | When smears appear on image scanned from the platen galss |
| Service technician | Cassette pickup roller | When paper pickup performance has lowered |
| | Cassette separation pad | When paper separation performance has lowered |
| | Feed roller | When paper feed performance has lowered |
| | Transfer charging roller | When the back of paper tends to become soiled; or, when a white spot appears in the images at intervals of about 46 mm |
| | Static eliminator | When dots appear in images |
| | Paper feed guide | When the back of paper tends to become soiled |
| | Fixing entrance guide | When paper tends to become soiled; when a black line appears vertically at irregular intervals; when paper jams; when paper wrinkles |
| | Fixing film | When images tend to become soiled at intervals of about 57 mm |
| | Fixing pressure roller | When the back of paper shows traces at intervals of about 64 mm; when fixing faults occur; when paper jams; when paper wrinkles |

Before starting cleaning work, be sure to turn off the power and disconnect the power plug to avoid fires and electric shocks.

## 4.3.2 Cleaning Method (external covers)

Moisten a soft cloth with water or solution of mild detergent, making sure it is well wrung; then, wipe the soiling. If you have used detergent, be sure to remove its residue using a soft, moist cloth.After removing all soiling, dry wipe the area with a soft, dry cloth.

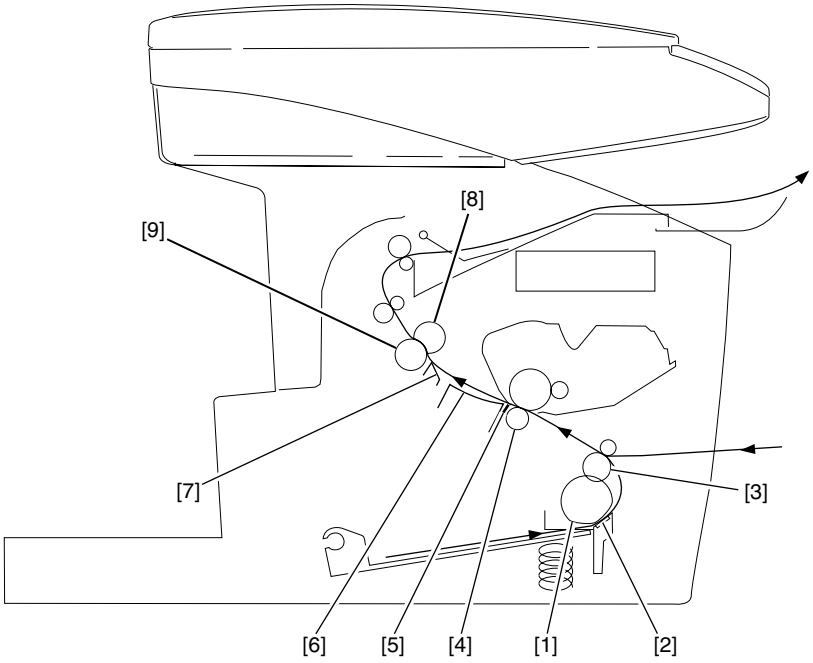
### 4.3.3 Cleaning Method (scanning unit)




F-4-1

**[1] Rear surface of the platen glass cover**
Open the platen glass cover and wipe any dirt off with a soft, dry cloth.
**[2] Platen glass**
Open the platen glass cover and wipe any dirt off with a soft, dry cloth.

### 4.3.4 Cleaning Method (printer unit)




F-4-2

**[1] Cassette Pickup Roller**
Use lint-free paper to remove soling.
**[2] Cassette Separation Pad**
Use lint-free paper to remove soling.
**[3] Feed Roller**
Use lint-free paper to remove soling.
**[4] Transfer Charging Roller**
Use lint-free paper to remove toner and paper lint.

---

⚠

- Do not touch the sponge area of the transfer charging roller to avoid soiling the back of paper or white spots in the images.
- Never use solvent.
- If the soiling cannot be removed using lint-free paper or the roller is deformed, replace the roller.

---

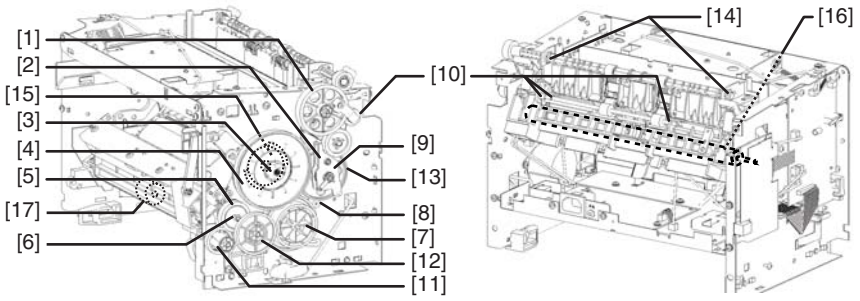
**[5] Static Eliminator**
Remove dust and paper lint using a brush.
**[6] Paper Feed Guide**
Use lint-free paper to remove soiling.
**[7] Fixing Entrance Guide**
Use lint-free paper moistened with isopropyl alcohol to remove the soiling.

**[8] Fixing Film**
Use lint-free paper to remove soiling.
**[9] Fixing Pressure Roller**
Use lint-free paper to remove soiling.

## 4.4 Lubrications

### 4.4.1 Areas Requiring Application of Grease

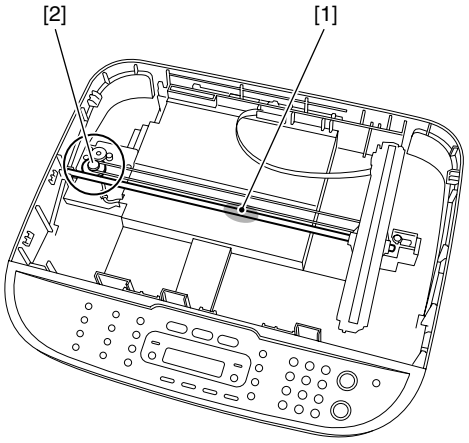
The machine has areas that require grease to permit smooth movement of parts or ensure good electrical conductivity. If you have replaced a part in these areas or if you have removed the grease, be sure to apply grease.
**Printer unit**




F-4-3
T-4-2

[1] Delivery idler gear
[2] Fixing drive transmission gear
[3] Large gear bushing R
[4] Large gear
[5] Feed gear
[6] Internal gear
[7] Large gear deceleration gear/Plate R
[8] Main motor
[9] Drive releasing arm
[10] FU delivery roller
[11] Pickup idler gear
[12] Feed deceleration gear
[13] Fixing deceleration gear
[14] FD delivery gear
[15] Large gear bushing F
[16] Pressure roller
[17] Cassette pickup roller

**Scanner unit**

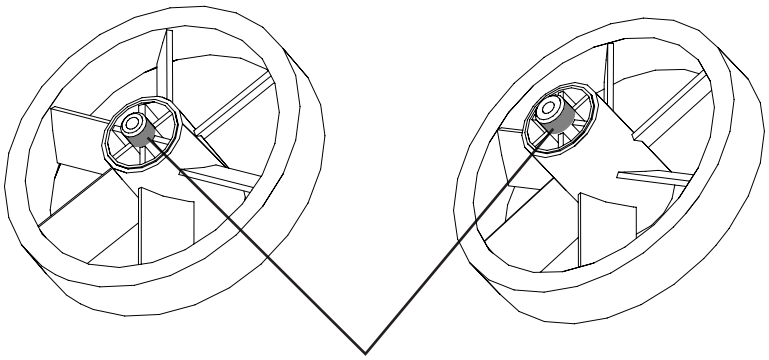



F-4-4
T-4-3

[1] CIS shaft
[2] Wheel shaft

### 4.4.2 Delivery Idler Gear

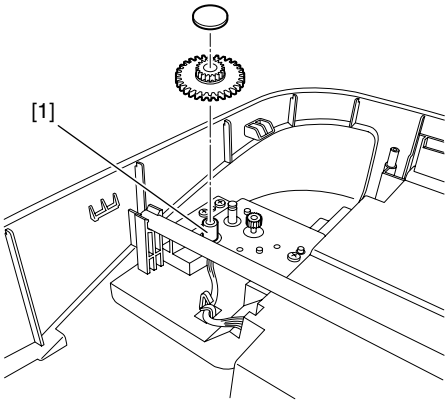
Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 40 +/-10 mg
Location of application:
- 2 locations on gear support shaft in opposition
- spread in axial direction




F-4-5

### 4.4.3 Wheel Shaft

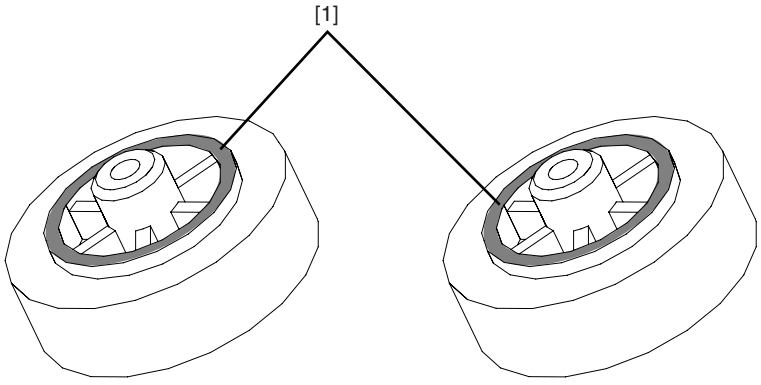
Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: suitable amount
Location of application:
- part of wheel shaft where contacts the wheel unit




F-4-6

### 4.4.4 Fixing Drive Transmission Gear

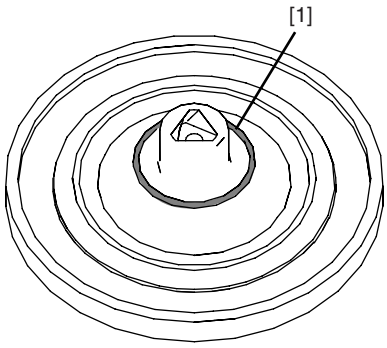
Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
Location of application:
- 2 locations on gear butting ribs in opposition
- spread in circumferential direction over a length of 1/4 or more




F-4-7

### 4.4.5 Large Gear

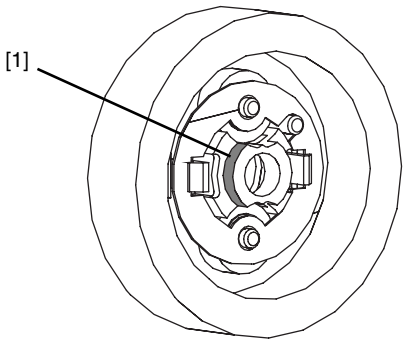
Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 20 +/-10 mg
Location of application:
- rib against which gear is butted
- spread in circumferential direction over a length of 1/2 or more




F-4-8

### 4.4.6 Feed Gear

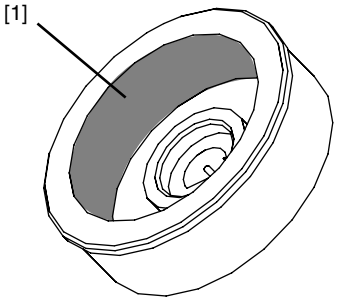
Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
Location of application:
- 1 location on boss engaging with internal gear
- spread in axial direction




F-4-9

### 4.4.7 Internal Gear

Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 40 +/-10 mg
Location of application:
- 5 teeth or more of internal gear in opposition
- 2 locations in circumferential direction

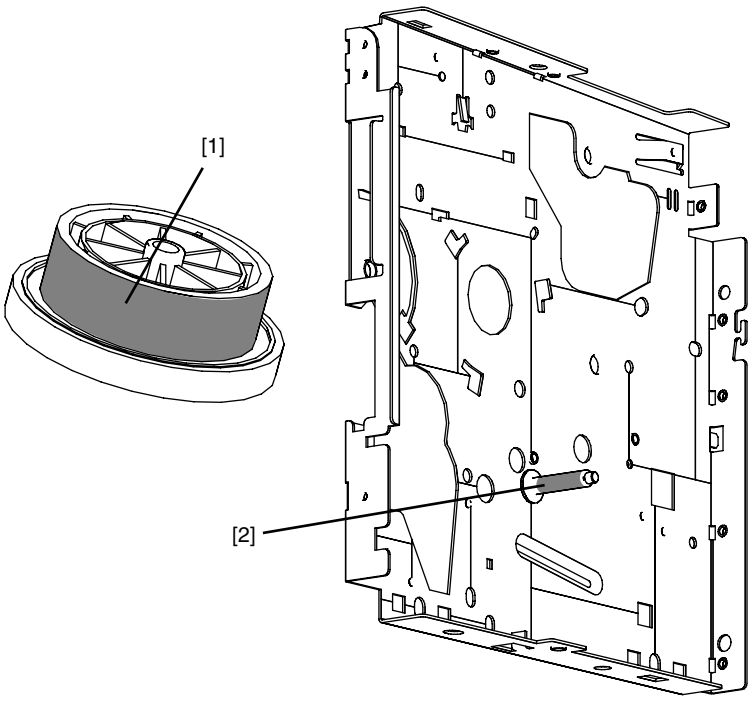



F-4-10

### 4.4.8 Large Gear Deceleration Gear/Plate R

Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 40 +/-10 mg
Location of application:
- 5 teeth or more (covering entire small-dia tooth area)

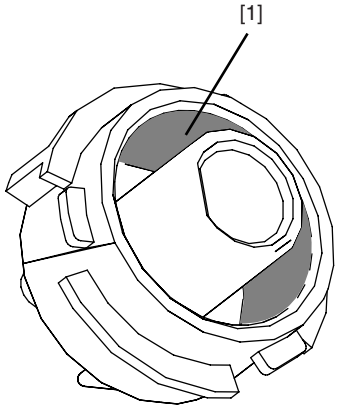
Are of application: [2]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
Location of application
- support shaft of plate R (sliding surface against large gear deceleration gear)
- spread in axial direction




F-4-11

### 4.4.9 Large Gear Bushing R

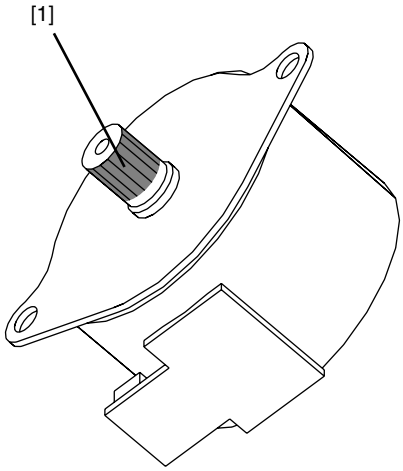
Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
location of application:
- wall surface on inner circumferential side of bushing
- spread in circumferential direction over a length of 1/2 or more




F-4-12

### 4.4.10 Main Motor

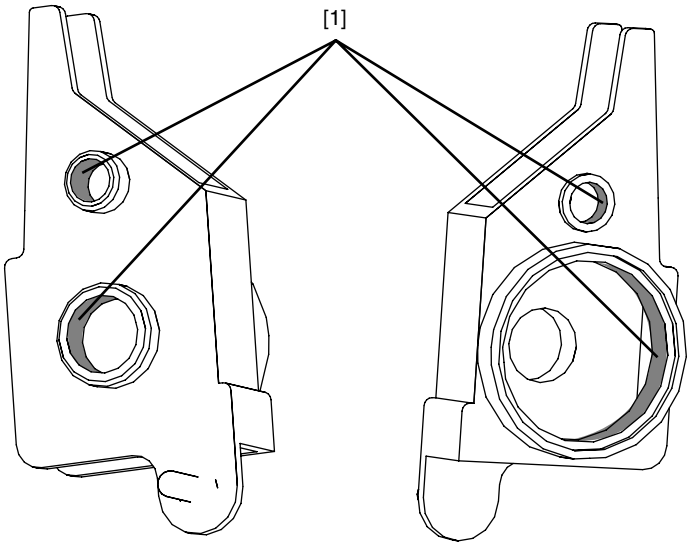
Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 40 +/-10 mg
Location of application:
- 5 teeth or more (covering entire gear width)




F-4-13

### 4.4.11 Drive Releasing Arm

Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
Location of application:
- 4 locations on sliding surface against gear support shaft of drive releasing arm



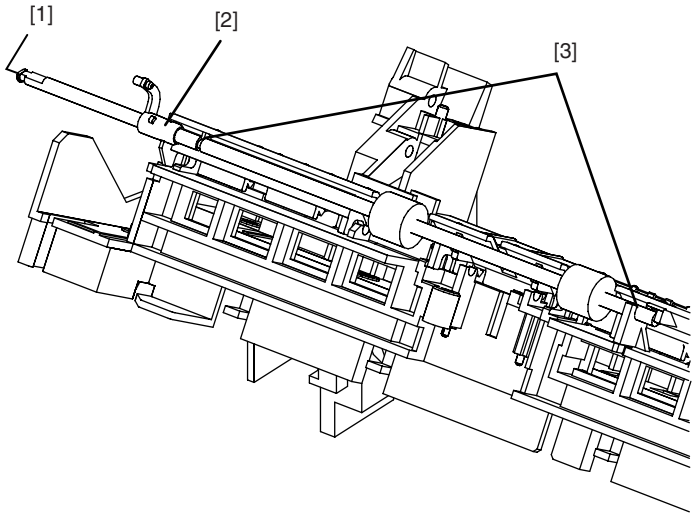

F-4-14

### 4.4.12 FU Delivery Roller

Area of application: [1]
Grease: MOLYKOTE 41
Amount: 10 +/-5 mg
Location of application:
- edge of FU delivery roller shaft (sliding surface against FU grounding spring)

Area of application: [2]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
Location of application:
- sliding surface between FU delivery roller shaft and FU delivery roller bushing

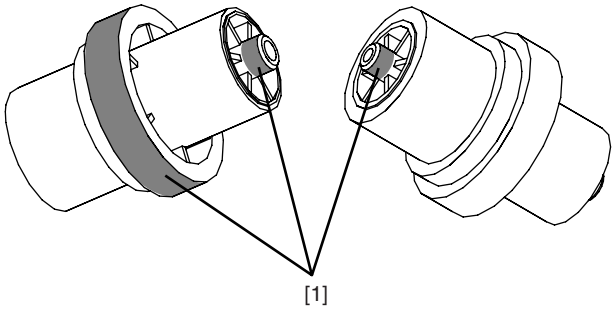
Area of application: [3]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
Location of application:
- sliding surface between FU delivery roller shaft and delivery guide (FU delivery roller shaft stop rib)




F-4-15

### 4.4.13 Pickup Idler Gear

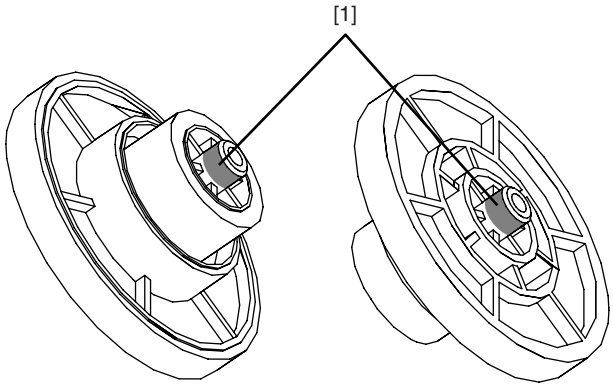
Are of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
Location of application:
- 2 locations on pickup idler gear support shaft
- 5 teeth or more (covering entire large-diameter tooth surface of pickup idler gear)




F-4-16

### 4.4.14 Feed Deceleration Gear

Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
Location of application:
- 2 locations on feed deceleration gear support shaft
- spread in axial direction




F-4-17

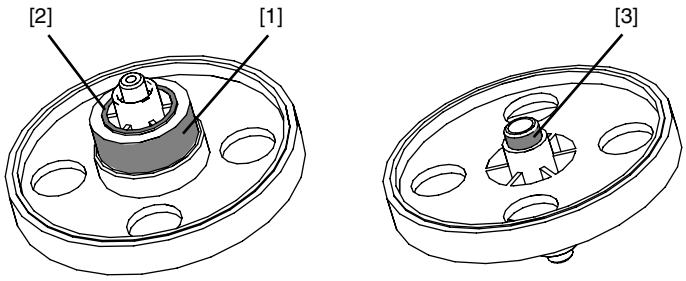
### 4.4.15 Fixing Deceleration Gear

Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 40 +/-10 mg
Location of application
- 5 teeth or more (covering entire surface of fixing deceleration gear; small-diameter teeth)

Area of application: [2]
Grease: MOLYKOTE EM-50L

Amount: 10 +/-5 mg
Location application:
- tip of feed deceleration gear butting rib in circumferential direction over a length of 1/2 or more

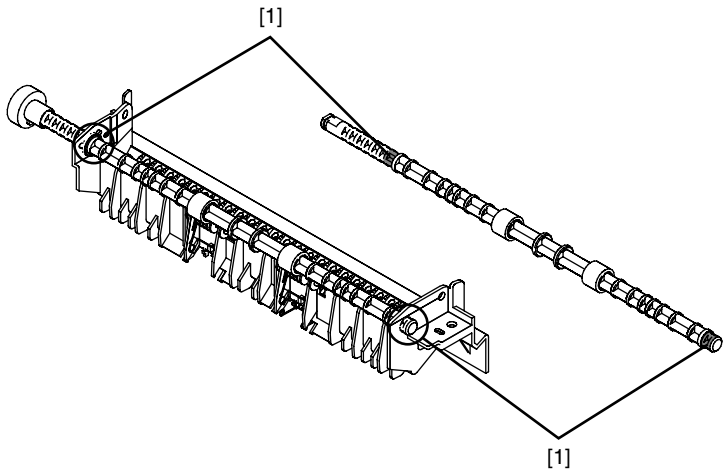
Area of location: [3]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
Location of application:
- sliding surface against plate R of fixing deceleration gear in circumstantial direction over a length of 1/2 or more




F-4-18

### 4.4.16 FD Delivery Roller

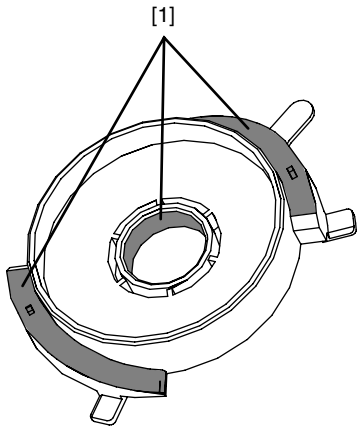
Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 30 +/-5 mg
Location of application
- entire sliding surface against FD delivery bushing




F-4-19

### 4.4.17 Large Gear Bushing F

Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: 10 +/-5 mg
Location of application:
- entire sliding surface against large gear support shaft

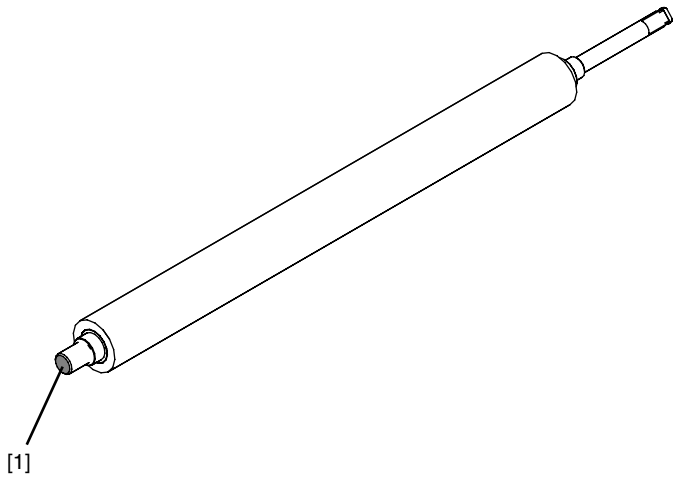



F-4-20

### 4.4.18 Pressure roller

Area of application: [1]
Grease: MOLYKOTE 41

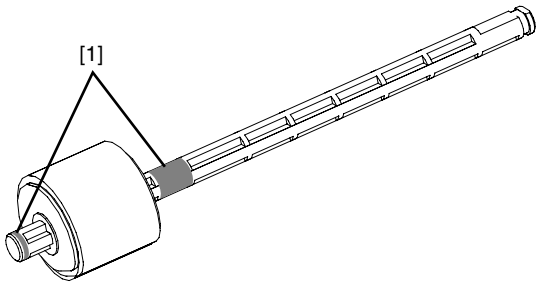
Amount: 10 +/-10 mg
Location of application:
- edge of pressure roller shaft (sliding surface against contact spring F)




F-4-21

### 4.4.19 Cassette Pickup Roller

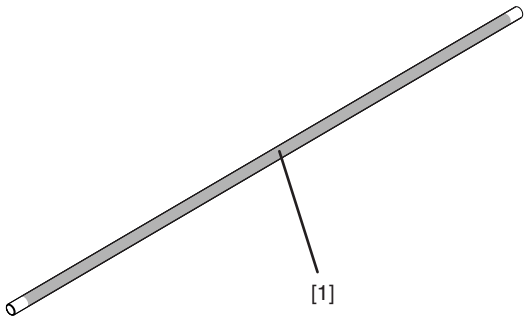
Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: approx. 10 mg
Location of application:
- cassette pickup roller shaft, main unit frame (around the bushing), and the area where contacts the cassette pickup bushing




F-4-22

### 4.4.20 CIS Shaft

Area of application: [1]
Grease: MOLYKOTE EM-50L
Amount: suitable amount
Location of application:
- part of CIS shaft where contacts the CIS unit (all the faces in the shaft direction)




F-4-23

# Chapter 5 TROUBLESHOOTING

# Contents

# 5.1 Measurement and Adjustment

## 5.1.1 Basic Adjustments

### 5.1.1.1 Items of Adjustment

The machine does not have items that are cited for adjustment.

# 5.2 Service Tools

## 5.2.1 Special Tools

T-5-1

| Tool | Description | Parts No. |
|---|---|---|
| Grease (MOLYKOTE EM-50L) | Apply to specified areas. | HY9-0007 |
| Grease (MOLYKOTE EMD-110) | Apply to specified areas. | HY9-0023 |
| Grease (IF-20) | Apply to specified areas. | CK-8006 |
| Grease (MOLYKOTE 41) | Apply to specified areas. | CK-8007 |

# 5.3 Error Code

## 5.3.1 Outline

### 5.3.1.1 Error Code Outline

An error code is used to indicate a fault in a machine, and is indicated in the machine's LCD, showing the nature (symptoms) of the fault. Using the error code, the service man can readily find out how to correct the fault by simply referring to the service manual.
An error code may be either of the following two types:

**Service Error Codes**

If a fault calls for a service man for correction, it is indicated as a service man error code in the form of "SYSTEM ERROR E+number."

### 5.3.1.2 Error Code

**System error code**

T-5-2

| Error code | Major cause/detection | Remedy |
|---|---|---|
| E198 | Flash ROM write error. | - Turn the power OFF and then back ON..<br>- Replace the SCNT board. |
| E674 | Modem error. | - Turn the power OFF and then back ON..<br>- Replace the SCNT board. |

**Scanner error code**

T-5-3

| Error code | Major cause/detection | Remedy |
|---|---|---|
| E225 | CIS lamp has a fault. | - Turn the power OFF and then back ON..<br>- Replase the CIS unit. |

**Printer error code**

T-5-4

| Error code | Major cause/detection | Remedy |
|---|---|---|
| E000 | The thermistor has an open circuit or a short circuit. | - Check the connector of the fixing film unit.<br>- Replace the fixing film unit.<br>- Replace the High-voltage power supply board.<br>- Replace the DCNT board. |
| | The heater has an open circuit. The thermal fuse has blown. | |
| | The High-voltage power supply board has a fault. | |
| | The DCNT board has a fault. | |
| E100 | The scanner assembly has a fault. | - Check the connector of the laser scanner assembly.<br>- Replace the laser scanner assembly.<br>- Replace the engine controller PCB. |

**Communication error code**

T-5-5

| Error Code | Description |
|---|---|
| 0001 | Nothing G3 signal received within 35 sec. |
| 0003 | Received DIS after sending DIS signal |
| 0004 | Received DCN after sending DTC signal |
| 0009 | Can't receive any signal within 35 sec. in manual polling mode. |
| 0010 | Received DCN signal after sending DTC signal in Polling Rx. |
| 0011 | Can't receive any correct response after sending DTC signal. |
| 0012 | Remote side Password not match in Polling Rx/our side no any file to be polling. |
| 0013 | Can't receive carrier within 6 sec. after sending CFR in date phase C. |
| 0014 | Can't receive T.30 signal after sending FTT signal. |
| 0016 | Receive DCN signal after sending PTT signal. |
| 0017 | Can't receive any response from remote side after sending DIS |
| 0018 | Can't detect energy within 6 sec after sending FTT command |
| 0019 | Received DCN signal sending CFR signal |
| 001A | No energy on line over 6 sec. within phase C before any corrected ECM frame. |
| 001D | Can't detect flag after sending CFR signal |
| 001E | Timeout in V.17 ECM Rx phase C |
| 0020 | Can't correct frame within 6 sec at phase C. |
| 0021 | File full. |
| 0022 | Owing to noise interference on the line, receiving side can't receive correct data within specified time (no ECM) |
| 0023 | Can't receive correct signal after sending CFR signal |

| Error Code | Description |
|---|---|
| 0030 | Can't receive any signal within 6 sec. At phase D. |
| 0031 | Received incorrect signal at phase D (not EOP, MPS, EOM, DCN, PPS_Q, PPS_Q,etc) |
| 0032 | Can't receive carrier within 6 sec after sending MCF or RTP, RTN signal |
| 0033 | Received DCN signal at ohase D within pages (not last page). |
| 0039 | In non_ECM mode, when machine alredy received the data dosen't receive 13.1 seconds |
| 001F | Can't detect any G3 signal within 35 sec after sending DTC signal |
| 003F | Remote side TSI not define in machine one touch or speed dial directory |
| 0040 | Can't receive carrier within 6 sec. after sending CTR. |
| 0041 | Can't receive carrier within 6 sec. after sending PPR. |
| 0042 | Can't receive correct signal after sending RNR signal |
| 0043 | Receive incorrect signal at phase D in ECM mode. |
| 0044 | Can't receive carrier/FSK signal within 6 sec. After sending MCF. ln ECM mode. |
| 0047 | Can't receive correct signal or DCN received after sending ERR signal. |
| 0048 | Can't receive correct signal after receive PPS_PRI_Q |
| 004B | Can't detect correct FSK signal even through detected FSK tone within 6 sec. |
| 004C | Handshake fail during re-train or between page in V34 Rx. |
| 004E | Receive DCN signal after sending DIS in V.34. |
| 004F | Remote side disconnected after sending ANSam in V.8 phase. |
| 0050 | Can't receive any correct signal after detected CJ signal in V.8 phase. |
| 0051 | Can't receive phase 3 signal after phase 2 within 20 seconds in V.34. |
| 0053 | Modem disconnect after phase 4 in V.34. |
| 0054 | Remote side disconnect after phase 4 in V.8 |
| 0055 | Receive incorrect signal after sending DIS signal in V.34 |
| 0056 | Modem disconnect after sending CFR in V.34 |
| 0058 | Can't detect image signal within 6 sec after modem enter to primary phase in V.34 |
| 005A | Modem cannot detect any correct ECM frame with 3 minutes in phase C. |
| 005B | Modem can't detect control channel with 12 sec in phase C |
| 005C | Detect busy tone within control channel after phase C. |
| 005D | Modem can't detect any correct ECM frame with 12 sec in phase C. |
| 005E | Can't detect control channel signal after received RCP frame within 6 sec |
| 005F | Can't detect silence after sending JM signal for polling TX function. |
| 0060 | There are no any bullietin files to be polled in V.34. |
| 0061 | Machine cannot detect V.21 or V.8 signal with 35 sec. |
| 0062 | Modem disconnect in phase D after our side sending out flags sequence in control channel. |
| 0063 | Can't receive any flag sequence in control channel within 25 sec in phase D. |
| 0064 | Can't detect any control channel signal in phase D within 60 sec even through energy still on the line. |
| 0065 | Can't detect any control channel signal within 60 sec after detect sillence in phase D. |
| 0066 | Can't receive T.30 signal or carrier after sending CFR in V.34. |
| 0069 | Capability no match paper size after received is DCS signal. |
| 0070 | User press stop key within receiving. |
| 0071 | Memory full within receiving. |
| 0080 | Can't detect any G3 signal within 35 sec. specified by ITU-T in phase B. |
| 0081 | Received DTC signal in transmission phase. |
| 0082 | Transmitting unit receives a signal other than DIS or DTC. And DCN in phase B. |
| 0083 | Detected FSK signal, but Can't receive any signal within 35 sec. |
| 0084 | Detect DCN signal in phase B. |
| 0085 | Transmitting unit sending DCS 3 times consecutively, but each time responds with DIS/DTC |
| 0086 | Detected responds signal other than DTC,DIS,FTT,DCN or CFR after sending DCS. |
| 0087 | Training attempt has failed because speed unit can't adjust to low lower speed. |
| 0088 | Received DCN signal after sending out DCS signal |
| 008B | Receivers protcol of DIS is received, but it is not compatible with our machine. |
| 008C | Remote side or our side not support capability. |
| 008D | Receivers protocol of DIS is received, but remote side can't receive document temporary, may because by run out of paper or other reason. |
| 008F | Modem not ready to received V.34 data within 6 sec after received CFR signal. |
| 0090 | Called side document not ready for our polling. |
| 0091 | Can't receive any commabd after send DCN signal 3 times consecutively |
| 0093 | Received DCN signal after sending out DCN signal |
| 0094 | Time out during transmit ECM frame or RCP command. |
| 0095 | Wrong ID number |
| 0096 | SUBADDRESS/PASSWORD capability not match in polling Rx mode. |
| 009A | Can't detect any signal after sending CI signal. |
| 009D | Remote side hang up before V.34 modem enter phase 2 state in V.34 polling Rx. |
| 009E | Manual Tx over 15 minutes whin in phase C by non-ECM mode. |
| 00A0 | User stop or cancel transmission job. |
| 00A1 | Document JAM within transmission |

| Error Code | Description |
|---|---|
| 00AE | Can't finished V.8 procedure or detect V.21 signal after CM signal |
| 00AF | Modem can't enter into control channel after TX side sending out RCP signal for V34 |
| 00B1 | Can't finish V.8 procedure or detect V.21 signal after ANSam signal within 35 sec. |
| 00B2 | Can't detect phase 2 signal after our side sending CJ signal within 30 sec |
| 00B3 | Can't detect correct V.21 or JM signal after sending CM or CJ signal. |
| 00B4 | Can't detect correct phase 2 signal within 25 second after CM/JM signal exchange. |
| 00B5 | Can't detect phase 3 signal after Phase 2 |
| 00B6 | Can't detect phase 4 signal within 25 sec after CM/JM exchange. |
| 00B8 | Remote side disconnect after our side sending DCS signal in V.34. |
| 00BA | Cannot received correct signal after our side sending DTC signal in V.34. |
| 00BB | Every time our side received DIS signal after sending DTC in V.34. |
| 00BC | Modem can't ready within 10 second after entering primary channel in V.34. |
| 00BD | Can't detect correct V.21 or JM signal after detected FSK frequency. |
| 00BE | Remote side no document to be polled after V.8 handshaking. |
| 00BF | Capability no match after V.8 handshaking |
| 00C1 | At phase-D, transmitting units out EOP 3 times consecutively, but receive no answer from receiving unit. |
| 00C2 | Remote side disconnect after sending out V.8 CM signal. |
| 00C4 | After sending MPS signal, the received is not one of MCF, RTN, PIP, PIN, RTP, DCN. |
| 00C5 | Received DCN signal after sending MPS signal. |
| 00C9 | At phase D, sending MPS 3 times consecutively, but no answer from receiveing unit. |
| 00CA | After sending EOP signal, the received is not one of MCF, RTN, PIP, PIN, PRI-EOP, DCN, RTP. |
| 00CB | After sending EOP signal, the received is DCN signal. |
| 00CF | Received incorrect signal after sending DTC signal for V.34 polling. |
| 00D0 | Received ERR signal after sending EOR_NULL. |
| 00D1 | Received incorrect response after sending PPS_EOP signal |
| 00D2 | Received DCN after sending PPS_EOP signal |
| 00D3 | Received DCN after sending PPS_NULL signal |
| 00D8 | Can't detect correct phase 3 signal for poling. |
| 00D9 | Can't detect correct phase 3 signal after detect silence after phase 2. |
| 00DA | Can't detect phase 4 signal within 30 sec. |
| 00DB | Can't received any T.30 signal within 30 sec within phase 4. |
| 00DC | Received T.30 signal in phase 4 other than DCS, DIS or DTC |
| 00DE | Remote side no SUB capability. |
| 00E0 | At phase-D, transmitting units out PPS_NULL 3 times consecutively but receive not answer. |
| 00E1 | Received incorrect response after sending PPS_NULL. |
| 00E2 | Can't receive any response in RR response procedure after sending PPS_NULL. |
| 00E4 | At phase D, transmitting units out PPS_MPS 3 times consecutivery but receive no answer. |
| 00E5 | Received incorrect response after sending PPS_MPS signal |
| 00E6 | Can't receive any response in RR response procedure after sending PPS_MPS. |
| 00E7 | Reseived DCN after sending PPS_MPS. |
| 00E8 | At phase-D, transmitting units out PPS_EOP 3 times consecutively but receive no answer. |
| 00E9 | Receive PIN signal after sent last page data. |
| 00EA | Can't receive any response in RR response procedure after sending PPS_EOP. |
| 00EE | At phase-D, transmitting units out EOR_NULL 3 times consecutively but receive no answer. |
| 00EF | Received incorrect response after sending EOR_NULL. |
| 00F0 | Can't receive any response in RR response procedure after sending EOR_NULL. |
| 00F1 | At phasa-D, transmitting units out EOR_MPS 3 times consecutively but receive no answer. |
| 00F2 | Received incorrect response after sending EOR_MPS. |
| 00F3 | Received ERR signal after sending EOR_MPS. |
| 00F4 | Can't receive any response in RR response procedure after sending EOR_MPS. |
| 00F5 | At phasa-D, transmitting units out EOR_EOP 3 times consecutively but receive no answer. |
| 00F6 | Received incorrect response after sending EOR_EOP |
| 00F7 | After Received ERR, our side can't received response after sending EOR_EOP command. |
| 00FC | Can't receive any response after sending CTC. |
| 00FD | Can't speed down to lower speed. |
| 00FE | Memory full for transmission |
| 00FF | REDAIL ALL FAIL |

## 5.4 Service Mode

### 5.4.1 Outline

#### 5.4.1.1 Service Data Setting

Service mode has the following service data items. These items can be checked/changed according to the menu on the display.

**SERVICE'S CHOICE**
Use it to select service data to suit the country/region of installation, to reset the user data, or to set the transmission/reception speed.
**ADJUST**
Use it to execute margin adjustment for printing or reading.
**VERSION DISPLAY**
Use it to indicate version information on the display.
**SOFT SWITCH**

Use it to make settings that relate to basic fax service functions, as for correcting communication problems.

**REPORT**
Use it to output reports on various service data.

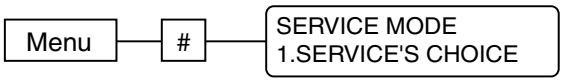
**CLEAR DATA**
Various data are initialized by selecting one of these setting items.

**FUNCTION**
Use it to print out a print pattern or to test the ADF for paper transport.

**H/W TEST**
Use it to execute sensor testing or key testing.

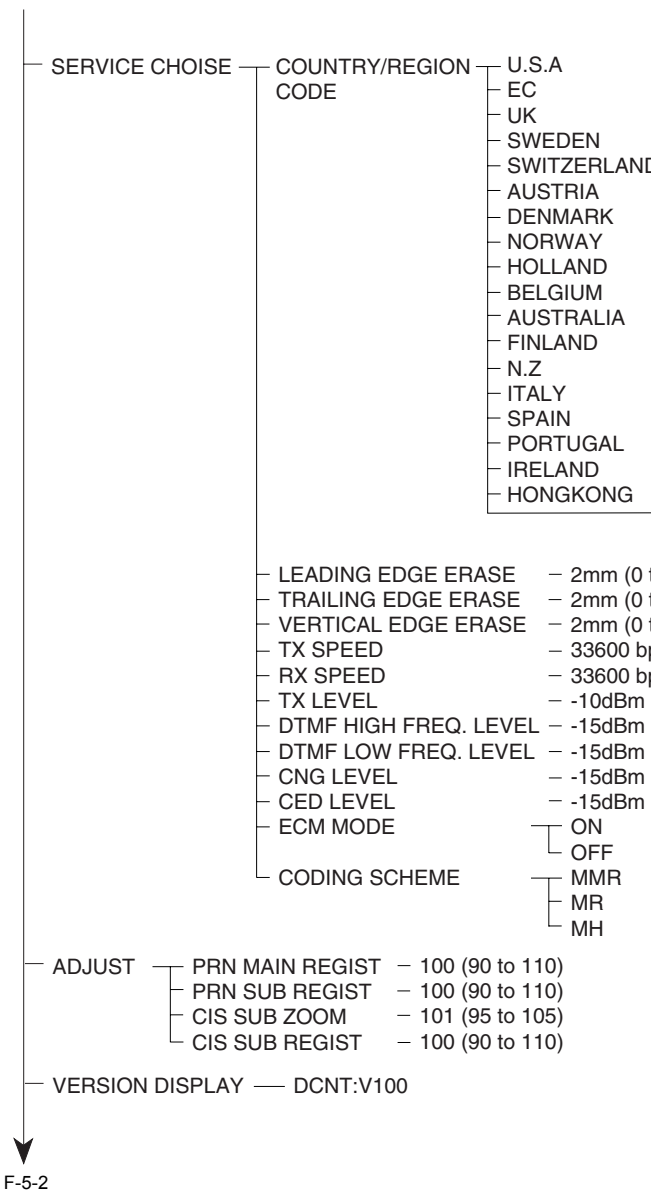
### 5.4.1.2 Service Data Entry Method

You can enter the Service Mode with the following operation.

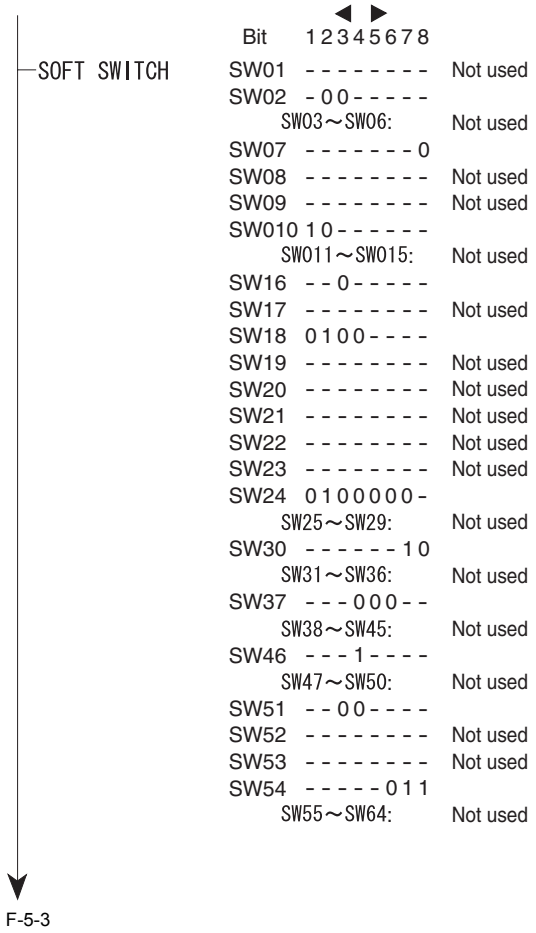



F-5-1

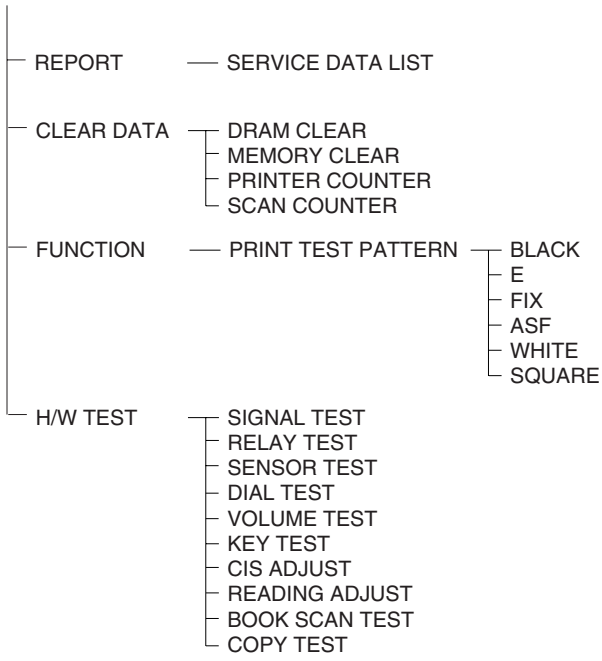
### 5.4.1.3 Service Data Flowchart




F-5-2




F-5-3




F-5-4

## 5.4.2 Service Soft Switch Settings (SSSW)

### 5.4.2.1 Outline

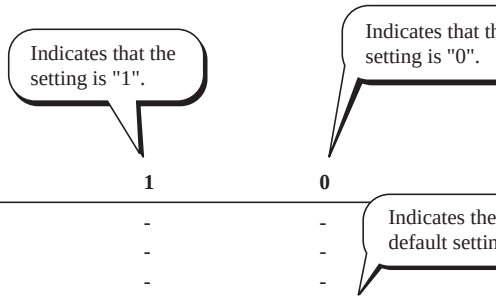
#### 5.4.2.1.1 Explanation of SOFT SWITCH

*0012-6716*

The items registered and set by each of these switches comprise 8-bit switches. The figure below shows which numbers are assigned to which bits. Each bit has a value of either 0 or 1.


F-5-5

Below are examples showing how to read bit switch tables.




| Function | 1 | 0 |
|---|---|---|
| Not used | - | - |
| Not used | - | - |
| Not used | - | - |
| Document scan width | LETTER | A4* |
| Not used | - | - |
| Not used | - | - |
| Not used | - | - |
| Not used | - | - |

F-5-6

### 5.4.2.2 SSSW-SW02

#### 5.4.2.2.1 List of Functions

0012-7129

T-5-6

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 1 | Not used | - | - |
| 2 | RTN signal transmission condition | 1 | 0* |
| 3 | RTN signal transmission condition | 1 | 0* |
| 4 | Not used | - | - |
| 5 | Menu display of message language Display | Display | Do not display |
| 6 | Not used | - | - |
| 7 | Not used | - | - |
| 8 | Not used | - | - |

#### 5.4.2.2.2 Details of Bit 2 and Bit 3

0012-7130

During reception if frequent errors occur because of RTN signal transmission, raise these parameters to loosen the RTN signal transmission conditions.
RTN signal transmission condition is the ratio of the number of error lines to the total number of lines per page of the received image.
The combination of bit 2 and bit 3 will bring about the following:

T-5-7

(Bit2, Bit3)= (0, 0) 10%
(1, 0) 15%
(0, 1) 20%
(1, 1) 25%

#### 5.4.2.2.3 Detalis of Bit 5

0012-7196

When Display is selected, adds a Message Language menu to the user data System Setting. This allows selecting different languages which to show display and reports.

### 5.4.2.3 SSSW-SW10

#### 5.4.2.3.1 List of Functions

0012-7131

T-5-8

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 1 | Sound alarm if ends in error | Sound* | Do not sound |
| 2 | Page timer for manual transmission | 15 min | impose no limit* |
| 3 | Not used | - | - |
| 4 | Not used | - | - |
| 5 | Not used | - | - |
| 6 | Not used | - | - |
| 7 | Not used | - | - |
| 8 | Not used | - | - |

#### 5.4.2.3.2 Details of Bit 1

0012-7132

If a transmission ends in error, sound the alarm for 3 sec. If not desired, change it to "Do not sound".

#### 5.4.2.3.3 Details of Bit 2

0012-7133

Use it to select a page timer setting for manual transmission.

### 5.4.2.4 SSSW-SW16

#### 5.4.2.4.1 List of Functions

0012-7148

T-5-9

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 1 | Not used | - | - |
| 2 | Not used | - | - |
| 3 | Document scan width | LETTER | A4* |
| 4 | Not used | - | - |

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 5 | Not used | - | - |
| 6 | Not used | - | - |
| 7 | Not used | - | - |
| 8 | Not used | - | - |

#### 5.4.2.4.2 Details of Bit 3

0012-7150

The document reading width can be selected.
When selecting the "LTR" size, a "LTR" size document can be read in the "LTR" width (214 mm).

### 5.4.2.5 SSSW-SW30

#### 5.4.2.5.1 List of Functions

0012-7135

T-5-10

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 1 | Not used | - | - |
| 2 | Not used | - | - |
| 3 | Not used | - | - |
| 4 | Not used | - | - |
| 5 | Not used | - | - |
| 6 | Not used | - | - |
| 7 | Pause time | 1* | 0 |
| 8 | Pause time | 1 | 0* |

#### 5.4.2.5.2 Details of Bit 7 and Bit 8

0012-7136

Use it to set the length of a pause; the following will be ture depending on the combination of bit 7 and bit 8:

T-5-11

(Bit7, Bit8)= (0, 0) 2.0 sec.
(1, 0) 2.5 sec.
(0, 1) 3.0 sec.
(1, 1) 3.5 sec.

### 5.4.2.6 SSSW-SW33

#### 5.4.2.6.1 List of Functions

0012-7201

T-5-12

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 1 | Not used | - | - |
| 2 | Not used | - | - |
| 3 | Not used | - | - |
| 4 | NL Equalize (Transmission) | ON | OFF |
| 5 | NL Equalize (Reception) | ON | OFF |
| 6 | Not used | - | - |
| 7 | Not used | - | - |
| 8 | Not used | - | - |

#### 5.4.2.6.2 Details of Bit 4 and Bit 5

0012-7202

Selects whether the NL equalizer Transmission and reception is on or off. If frequent errors occur during transmission and reception because of line conditions, select the NL equalizer ON.

### 5.4.2.7 SSSW-SW37

#### 5.4.2.7.1 List of Functions

0012-7137

T-5-13

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 1 | V.34 Baud rate (TX) | 1 | 0* |
| 2 | V.34 Baud rate (TX) | 1 | 0* |
| 3 | V.34 Baud rate (TX) | 1 | 0* |
| 4 | V.34 Baud rate (RX) | 1 | 0* |
| 5 | V.34 Baud rate (RX) | 1 | 0* |
| 6 | V.34 Baud rate (RX) | 1 | 0* |
| 7 | Not used | - | - |
| 8 | Not used | - | - |

#### 5.4.2.7.2 Details of Bit 1 through Bit 6

0012-7138

Select the maximum baud rate for V.34 transmission: 3429, 3200, 3000, 2800, and 2400.
The following will be ture depending on the combination of bit 1 through bit 6
at time of transmission

T-5-14

(Bit1, Bit2, Bit3)= (0, 0, 0) 3429
(1, 0, 0) 3200
(0, 1, 0) 3000
(1, 1, 0) 2800
(0, 0, 1) 2400

at time of reception

T-5-15

(Bit4, Bit5, Bit6)= (0, 0, 0) 3429
(1, 0, 0) 3200
(0, 1, 0) 3000
(1, 1, 0) 2800
(0, 0, 1) 2400

## 5.4.2.8 SSSW-SW51

### 5.4.2.8.1 List of Functions

0012-7139

T-5-16

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 1 | Not used | - | - |
| 2 | Not used | - | - |
| 3 | Protocol monitor report | 1 | 0* |
| 4 | Protocol monitor report | 1 | 0* |
| 5 | Not used | - | - |
| 6 | Not used | - | - |
| 7 | Not used | - | - |
| 8 | Not used | - | - |

### 5.4.2.8.2 Details of Bit 3 and Bit 4

0012-7140

Use it to select the mode of printing a protocol monitor report; the following will be true depending on the combination of bit 3 and bit 4:

T-5-17

(Bit3, Bit4)= (0, 0) Do not print
(1, 0) Print
(0, 1) Print if error
(1, 1) Not used

## 5.4.2.9 SSSW-SW54

### 5.4.2.9.1 List of Functions

0012-7141

T-5-18

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 1 | Not used | - | - |
| 2 | Not used | - | - |
| 3 | Not used | - | - |
| 4 | Not used | - | - |
| 5 | Not used | - | - |
| 6 | Date/time notation for report | 1 | 0* |
| 7 | Date/time notation for report | 1* | 0 |
| 8 | Month notation for report | 1* | 0 |

### 5.4.2.9.2 Details of Bit 6 and Bit 7

0012-7142

Use it to select the date/time notation for reports; the following will be true depending on the combination of bit 6 and bit 7:

T-5-19

(Bit6, Bit7)= (0, 0) YYYY MM/DD
(1, 0) MM/DD YYYY
(0, 1) DD/MM YYYY
(1, 1) Not used

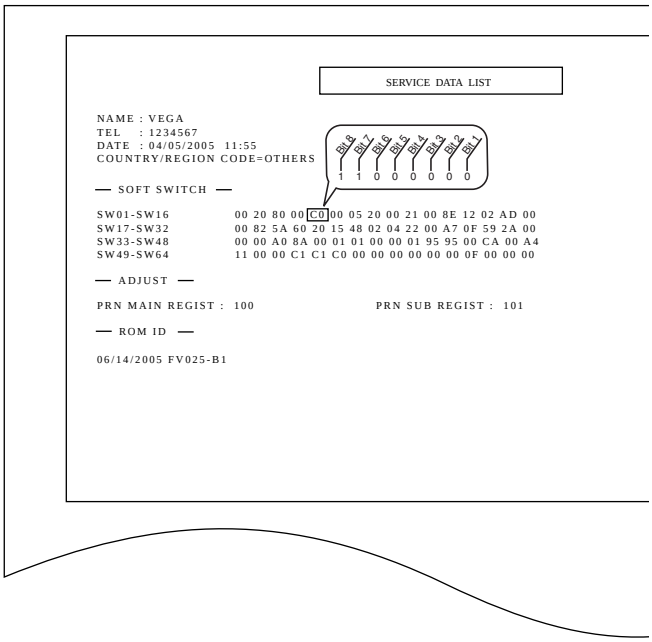
### 5.4.2.9.3 Details of Bit 8

0012-7143

Use it to select the month notation for reports:
If [1] is selected, the month will be expressed in alphabet characters (e.g., 25.MAR.2005)
If [0] is selected, year, month, and day will all be expressed in numberals (e.g., 25.03.2005)

## 5.4.3 Report Output (REPORT)

### 5.4.3.1 SERVICE DATA LIST




F-5-7

## 5.4.4 Test Mode (TEST)

## 5.4.4.1 Faculty Test

### 5.4.4.1.1 PRINT TEST PATTERN

0012-6671

From the FUNCTION menu, select PRINT TEST PATTERN.
In this test, the printer unit will be used to print various patterns. For service

work, be sure to use the BLACK pattern and the SQUARE pattern.
Use the BLACK print pattern to meke sure that the printout is free of white lines and unevenness; on the other hand, use the SQUARE printout to make sure that the printout is free of image contraction, elongation, and soiling.

**MEMO**

After completion of the print test, if the printing was normal, copy a document. If there is any defect in the copied image, there is a defect in the scan section.

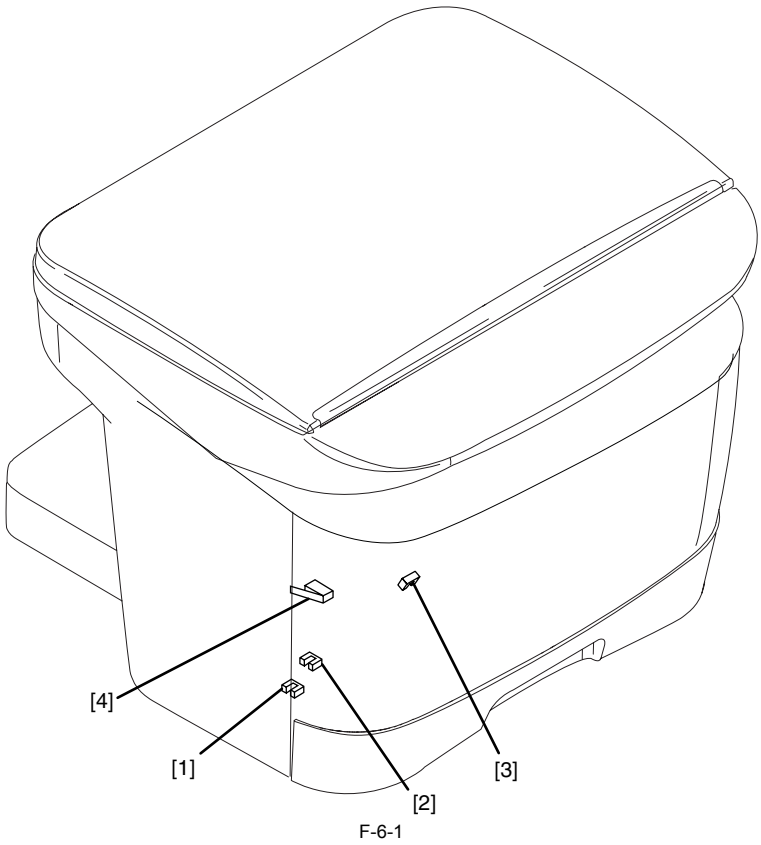
# Chapter 6 APPENDIX

# Contents

# 6.1 Outline of Electrical Components

## 6.1.1 Sensor

### 6.1.1.1 Arrangement of Sensors and Switches

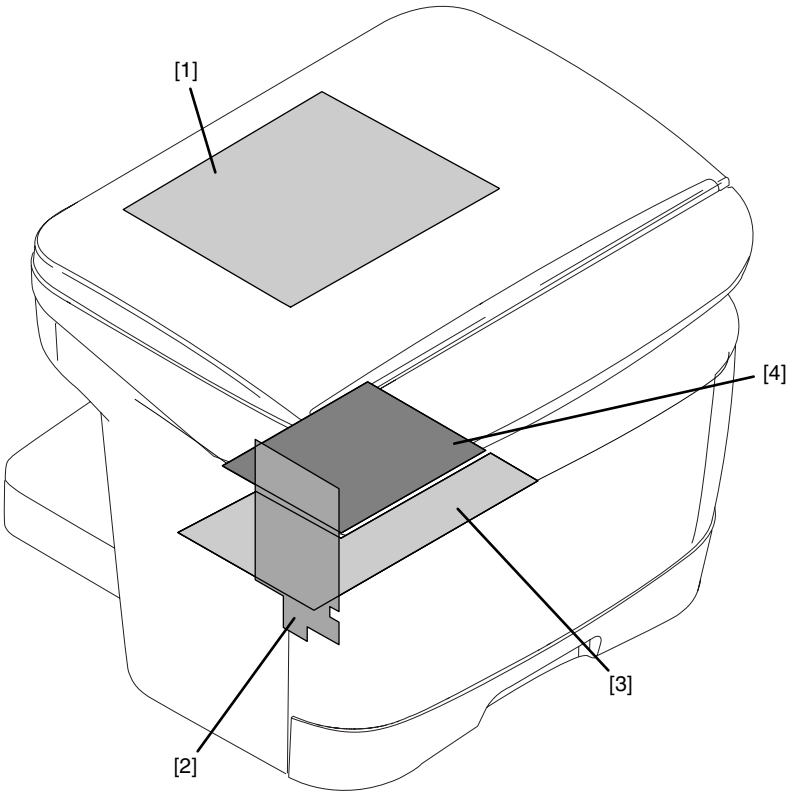



F-6-1

**[1] Cassette Paper Sensor**
Used to detect the presence/absence of paper in the cassette.
**[2] Manual Feed Paper Sensor**
Used to detect the presence/absence of paper in the manual feed section.
**[3] Paper Leading Edge Sensor (top sensor)**
Used to detect the leading/trailing edge of paper being moved.
**[5] Front Cover Switch**
Used to detect the state (open/closed) of the front cover.

### 6.1.2 PCBs

#### 6.1.2.1 Arrangement of PCBs




F-6-2

**[1] SCNT Board**
Used to control the whole of the system.
**[2] ECNT Board**
Used to control the operation of the printer unit.
**[3] High-Voltage Power Supply Board**
Used to supply high-voltage power to the printer unit.
**[4] Power Supply Board**
Used to control the supply of power to various components.

Mar 31 2006

Canon