PC-D320/D340
FAX-L400
SERVICE MANUAL

REVISION 0

PC-D320	H12-2553	230V	EC/UK/GER/FRN/ SWI/AST/SAF
PC-D340	H12-2563	230V	EC/UK/GER/FRN/ SWI/AST/SAF
FAX-L400	H12-2573	230V	EC/UK
FAX-L400	H12-2575	230V	GER
FAX-L400	H12-2577	230V	FRN
HANDSET APPARATUS			

Canon

JAN. 2003 **HY8-10AX-000**

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.

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DTP System

The data contained on this manual were created using Windows 2000® computers.
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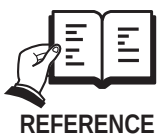
I. MEANING OF MARKS

The marks used in this manual have the following meanings.

Mark	Meaning
	States a precaution to be taken to prevent danger to personnel, damage to the product, or damage to electronic components by discharge of static electricity. for example.
	States a precaution to be taken to prevent damage to electronic components by electrostatic discharge.
	If the following mark is used, following the directions given.
	Informs you of fire-related cautions.
	Informs you that the plug must be removed from the power outlet before starting an operation.
 NOTE	Gives useful information to understand descriptions.
 REFERENCE	Indicates sections to be read to obtain more detailed information.

II. ABOUT THIS MANUAL

This manual is divided into five parts, and contains information required for servicing the product.

Each of the above parts is further divided into the following four chapters:

Chapter 1: General Description

This part explains product specifications and the how to service the unit safely. It is very important, so please read it.

Chapter 2: Technical Reference

This part explains the technical theory the product.

Chapter 3: Assembly and Disassembly

This part explains the assembly and disassembly of the product.

Chapter 4: Maintenance and Service

This part explains how to maintain the products for adjustment and troubleshooting and service operations and service switches.

Chapter 5: Appendix

This part explains the informations of the optional products and user data flow.

REFERENCE

- For more details of user operations and user reports, see the separate volume of *Basic Guide* and *Printer Guide*.
- Detailed description of each SSSW/parameter is not given in this manual except the new SSSWs/parameters added to this model.
  See *G3 Facsimile Service Data Handbook (supplied separately)* for details them.

III. REVISION HISTORY

REVISION	*CONTENT*
0	Original

IV. TABLE OF CONTENTS

Chapter 5: Appendix

Chapter 1

General Description

1. FEATURES

1.1 Overview

Small-Sized Printer with High Speed and High Resolution

This Printer is compact enough to set on a desk and has realized high speed of 15 pages per minute (Letter) and high resolution of Approx.1200 dpi × 600 dpi.

Shortened Wait Time & Low Power Consumption

By adopting an on-demand fixing method that drives the heater only during printing, the printer has shorten the wait time and reduced the consumption power during standby.

Employment of USB Interface as a Standard

The printer employs an USB interface as a standard, allowing easy connection to peripherals.

1.2 Option overview

Handset Kit (FAX-L400 only)

The handset kit includes a handset, a cradle, and installation screws. Installing the handset enables the telephone functions to be used.

2. SPECIFICATIONS

2.1 General Specifications

Type

Personal Desktop

Body color

Cool White

Power source

Voltage	from AC 220 to 240 V
Frequency	from 50 Hz

Power consumption

Standby (Energy Saver On)	
PC-D320/D340	approx. 5W
FAX-L400	approx. 6W
Standby (Energy Saver Off)	
PC-D320/D340	approx. 10W
FAX-L400	approx. 11W
Operation	approx. 440W
Maximum	approx. 670W

Main unit usage environment

Temperature	from 10°C to 32.5°C (50.0°F to 90.5°F)
Humidity	from 20% to 80% RH
Horizontality	±3° or less

Operating noise

Measured in accordance with ISO standards

Standby	approx. 30 dB(A)
Operating	approx. 50 dB(A)

Dimensions

FAX-L400	543mm × 457mm × 453mm
PC-D340	543mm × 457mm × 453mm
PC-D320	543mm × 446mm × 347mm

including tray

Weight

FAX-L400	Approx. 16.1 kg
PC-D340	Approx. 16.0 kg
PC-D320	Approx. 14.5 kg

including toner cartridge

2.2 Communication specifications (FAX-L400 only)

Applicable lines

Analog line (one line)
PSTN (Public Switched Telephone Network)

Handset (Option)

Handset with no numeric buttons

Transmission method

Half-duplex

Transmission control protocol

ITU-T V.8 protocol V.34 protocol/ECM protocol
ITU-T T.30 binary protocol/ECM protocol

Modulation method

G3 image signals	ITU-T V.27ter (2.4k, 4.8k bps) ITU-T V.29 (7.2k, 9.6k bps) ITU-T V.17 (14.4kbps, 12kbps, TC9.6kbps, TC7.2kbps) ITU-T V.34 (2.4kbps, 4.8kbps, 7.2kbps, 9.6kbps, 12kbps, 14.4kbps, 16.8kbps, 19.2kbps, 21.6kbps, 24kbps, 26.4kbps, 28.8kbps, 31.2kbps, 33.6kbps)
G3 procedure signals	ITU-T V.21 (No.2) 300bps ITU-T V.8, V.34 300bps, 600bps, 1200bps

Transmission speed

33.6k, 31.2k, 28.8k, 26.4k, 24k, 21.6k, 19.2k, 16.8k, 14.4k, 12k, TC9.6k, TC7.2k, 9.6k, 7.2k, 4.8k, 2.4k bps
With automatic fallback function

Coding

MH, MR, MMR, JBIG

Error correction

ITU-T ECM

Canon express protocol

None

Time required for transmission protocol

Mode	Pre-message Protocol *1	Post-message Protocol *2 (between pages)	Post-message Protocol *3 (after pages)
V.8 / V.34	Approx. 6 s	Approx. 1 s	Approx. 1 s
T.30 Standard	Approx. 18 s	Approx. 4 s	Approx. 4 s

*1 Time from when other facsimile is connected to the line until image transmission begins.

*2 Post-message (between pages): Time from after one document has been sent until transmission of the next document starts if several pages are transmitted.

*3 Post-message (after last pages): Time from after image transmission is completed until line is switched from facsimile to telephone.

Minimum transmission time

G3	10 ms
G3 (ECM)	0 ms

Transmission output level

from -8 to -15 dBm

Minimum receive input level

-43 dBm

Modem IC

CONEXANT (formerly Rockwell) FM336 Plus

2.3 Scanner Specifications

Type

Sheet/Books

Sheet dimensions

ADF Maximum	Width 216mm × length 356mm (Width 8.50" × length 14.02")
ADF Minimum	Width 148mm × length 105mm (Width 5.83" × length 4.13")
Platen glass	Width 216mm × length 297mm (Width 8.50" × length 11.69")
Thickness	
ADF	Multiple pages from 0.06mm to 0.13mm (0.002" to 0.005") Single page from 0.06mm to 0.16mm (0.002" to 0.006")
Platen glass	35mm or less (1.38" or less) Max. 2 kg (4.4 lb)
Weight	64 to 105 g/m^2 bond. (17 to 28 lb)

ADF capacity

A4/Letter	50 sheets or less
Legal	30 sheets or less

Effective scanning width

A4	206 mm (8.11")
LTR/LGL	212 mm (8.35")

FAX Scanning Speed

standard	Approx. 4.3 sec./page When reading Canon FAX Standard Chart No.1 at the standard resolution

FAX Scanning line density

Standard:	8 dots/mm (203.2 dpi) × 3.85 line/mm (97.79 dpi)
Fine:	8 dots/mm (203.2 dpi) × 7.7 line/mm (195.58 dpi)
Superfine:	8 dots/mm (203.2 dpi) × 15.4 line/mm (391.16 dpi)
Ultrafine	16 dots/mm (406.4 dpi) × 15.4 line/mm (391.16 dpi)

Scanning density adjustment

Lighter, Standard, Darker: The density level of each mode can be selected by the user data.

Halftone

256-gradation error diffusion system (UHQ)

Scanning range

Item	A4	Letter	Legal
Effective scanning width	208 ±1.0 mm (8.19"±0.04")	214 ±1.0 mm (8.43"±0.04")	214 ±1.0 mm (8.43"±0.04")
Left margin	2.0 ±2.0 mm (0.08" ±0.08")	2.0 ±2.0 mm (0.08" ±0.08")	2.0 ±2.0 mm (0.08" ±0.08")
Right margin	2.0 ±2.0 mm (0.08" ±0.08")	2.0 ±2.0 mm (0.08" ±0.08")	2.0 ±2.0 mm (0.08" ±0.08")
Top margin (Book mode)	3.5 ±2.0 mm (0.14" ±0.08")	3.5 ±2.0 mm (0.14" ±0.08")	3.5 ±2.0 mm (0.14" ±0.08")
Top margin (ADF mode)	3.5 +2.0/-2.5 mm (0.14" +0.08"/-0.1")	3.5 +2.0/-2.5 mm (0.14" +0.08"/-0.1"	3.5 +2.0/-2.5 mm (0.14" +0.08"/-0.1")
Bottom margin	2.0 ±2.0 mm (0.08" ±0.08")	2.0 ±2.0 mm (0.08" ±0.08")	2.0 ±2.0 mm (0.08" ±0.08")

Units are inches with mm shown in parentheses.

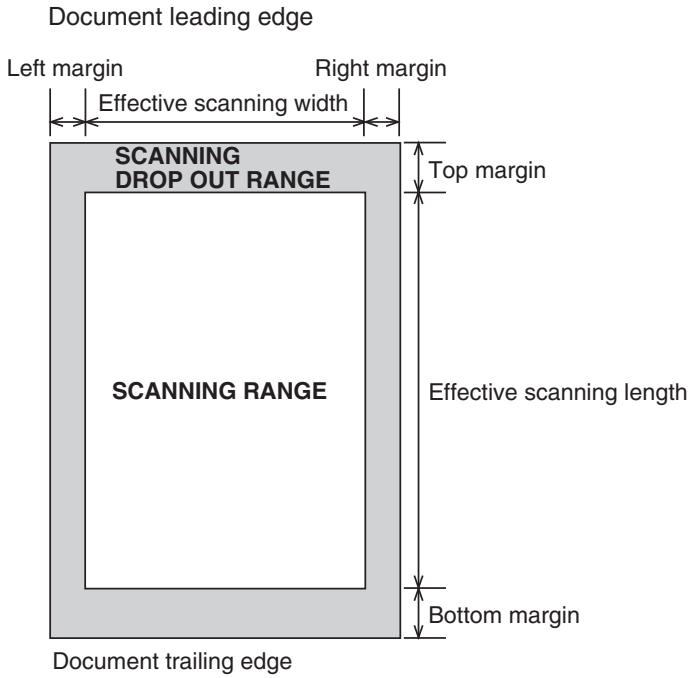


Figure 1-1 Scanning Range

NOTE

Document scanning width “A4/LTR” is set in service data #1SSSW SW 06, bit 4.

2.4 Printer Specifications

Paper types

Plain paper, colored paper, recycled paper, transparencies, envelopes, heavy paper

Paper size

76.2 (W) × 127 (L) mm - 216 (W) × 356 (L) mm sized plain paper (64 - 90 g/m^2 recommended paper), thick paper (91 - 128 g/m^2 recommended paper), and above mentioned paper)

Paper cassette capacity

Cassette

25mm (0.98") or less in stacking height (Approx. 250 sheets of 64 g/m^2)

Multi-purpose (MP) tray

1mm (0.04") or less in stacking height (Approx. 10 sheets of 64 g/m^2)

Tray stacking

Face-down delivery slot

Plain	50 sheets (A4/Letter)
	30 sheets (Legal)
Transparencies	10 sheets
Labels	10 sheets
Envelopes	10 sheets

Face-up delivery slot

Plain	1 sheet
Transparencies	1 sheet
Labels	1 sheet
Envelopes	1 sheet

Printing method

Laser beam printer

Printing cartridge

Product name	Canon S35 Toner Cartridge	
Product code	H11-6481	
Strage conditions	Temperature	From 32.0°F to 95.0°F (0°C to 35°C)
	Humidity	From 35% to 85% RH
Valid period	2.5 years from date of manufacture displayed on carton.	

Toner detection

PC-D320/PC-D340	None
FAX-L400	FAX communication only

Printing speed

LetterI	Approx. 15 Sheets/min
A4	Approx. 14 Sheets/min

Printing resolution

1200 dpi × 600 dpi

Recommended recording paper

Canon Copier LTR/LGL Premium Paper

Weight	75 g/m^2
Paper size	Letter, Legal
Manufactured by	BOISE CASCADE

KANGAS

Weight	80 g/m^2
Paper size	A4
Manufactured by	KANGAS

NEUSIEDLER Canon Paper

Weight	80 g/m^2
Paper size	A4
Manufactured by	NEUSIEDLER

Printing range

Item	A4	Letter	Legal
Effective Printing width	206 ±2.0 mm (8.11"±0.08")	212 ±2.0 mm (8.35"±0.08")	212 ±2.0 mm (8.35"±0.08")
Effective Printing length	287.5 ±3.0 mm (11.32"±0.12")	269.9 ±3.0 mm (10.63"±0.12")	346.1 ±3.5 mm (13.63"±0.14")
Left margin	2.0 ±2.0 mm (0.08" ±0.08")	2.0 ±2.0 mm (0.08" ±0.08")	2.0 ±2.0 mm (0.08" ±0.08")
Right margin	2.0 ±3.0 mm (0.08" ±0.12")	2.0 ±3.0 mm (0.08" ±0.12")	2.0 ±3.0 mm (0.08" ±0.12")
Top margin	3.5 ±2.0 mm (0.14" ±0.08")	3.5 ±2.0 mm (0.14" ±0.08")	3.5 ±2.0 mm (0.14" ±0.08")
Bottom margin	3.5 ±2.0 mm (0.14" ±0.08")	3.5 ±2.0 mm (0.14" ±0.08")	3.5 ±2.0 mm (0.14" ±0.08")

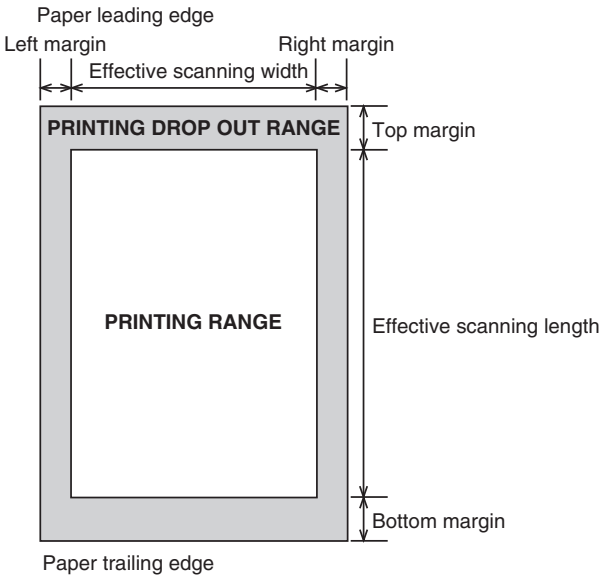


Figure 1-2 Printing Range

2.5 Copy Specifications

Copy resolution

Scanning	600 dpi × 600 dpi
Printing	1200 dpi × 600 dpi

First copy time

ADF (A4/Letter)	Approx. 14 sec.
Platen glass (A4/Letter)	Approx. 11 sec.

Multiple copy

99 copies

Color copy

None

Copy ratio

Inch	Preset copy ratio:	50%, 64%, 78%, 100%, 129%, 200%
	2 on 1 copy ratio:	64%, Letter size
A	Preset copy ratio:	50%, 70%, 100%, 141%, 200%
	2 on 1 copy ratio:	70%, A4 size
AB	Preset copy ratio:	50%, 70%, 81%, 86%, 100%, 115%, 141%, 200%
	2 on 1 copy ratio:	70%, A4 size

Zoom

50 % to 200 %

2.6 Functions

Collate copy

The collate copy allows you to sort copies. It convenient when you make multiple copies of multipage documents.

2 on 1 copy

Use 2 on 1 to reduce 2 sheets to fit on one sheet. Two letter-size documents are automatically reduced to fit on a letter-size page.

FAX/TEL switching

Method	CNG detection
Message	None
Pseudo CI	None
Pseudo ring	Yes
Pseudo ringback tone	Yes

Answering machine connection
Yes (Telephone answering priority type)

Polling
Polling transmission
The document is accumulated into memory ahead of time, then transmitted when there is a polling request from the other party.

Polling reception
Receives from a fax in automatic transmission mode

Confidential reception
None

Remote reception

Method	ID call# (ID input method)
Remote ID (with ID call#)	2 digits

Auto dialing

Telephone number digits	Max. 38 digits
One-touch dial	Max. 30
Coded speed dial	Max. 100
Group dial	Max. 129 (One-touch: 29, Coded speed dial: 100)
Redial	Numeric button redial function (max. 120 digits)

Delayed transmission

No. of Destinations	Max. 131 (One-touch :30, Coded speed dial :100) Numeric button:1)
No. of Reservation	Max. 70 time

Broadcast transmission

No. of Destinations	Max. 131 (One-touch :30, Coded speed dial :100) Numeric button:1)

Relay broadcasting originating
An equivalent function (Tx only) is available using the Password/Subaddress sending setting.

Closed network
None

Direct mail prevention
None

Memory reception

When receiving Canon FAX Standard Chart No.1

Standard	Max. 250 pages

Ohters

Display

Display size	2 rows × 20 digits

Memory backup

Backup contents	dial registration data, user data, service data, time
Backup IC	1024 kbyte SRAM
Backup battery	Lithium battery 3.0 V DC / 320 mAh
Battery life	Approx. 5 years

Image data backup

Backup contents	Memory reception, memory copy, delayed transmission and broadcast transmission image data, activity management report
Backup IC	16 Mbyte DRAM
Backup battery	Rechargeable capacitor
Backup time	1 hour

Activity management

a) User report

Activity management report
(Every 20 transactions: always transmission and reception together)
Activity report (sending/receiving)
One-touch speed dial tel # list
Coded speed dial tel # list
Group dial tel # list
Memory clear list
User's data list
Multi TX/RX report
Transmission reserve list
Document memory list

b) Service report

SERVICE DATA LIST
SYSTEM DUMP LIST
KEY HISTORY REPORT
MAIL HISTORY REPORT
COUNTER REPORT
PRINT SPEC REPORT

2.7 Interface Spcifications

Serial interface (USB)

a) Specifications

Interface Type

USB Interface (Universal Serial Bus; USB Specification Release Number 1.10)

Data Transmission

Control transfer method
Bulk transfer method

Signal Voltage Level

Input:
Input defference sensitivity: +0.2V (Max.)
Common-mode defference: +0.8V to +2.5V
Output:
Static output high: +2.8V to 3.6V
Static outpu low: less than +0.3V

Input/Output

Data signal pulled up with 3.3V
VBUS signal pulled up with 5.5V

Interface Cable

Twisted-pair shielded cable
USB standard compatible required
Material AWG No. 28, Data pair (AWG: American Wire Gauge)
AWG No. 20 to No. 28, Power distribution pair

Interface Connector

Printer-side USB standard, Series B receptacle
Cable-side USB standard, Series B plug

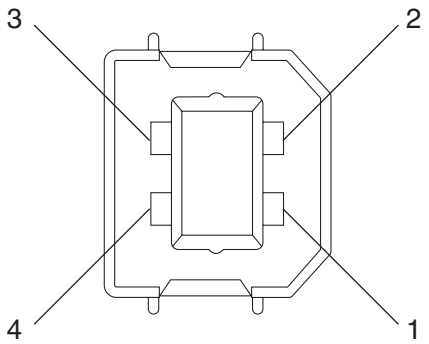


Figure 1-3 USB Connector (J1)

J1		PC	Signal name	Description
1	←	1	VBUS	Cable power supply (+5V DC)
2	—	2	D–	Data
3	—	3	D+	Data
4	—	4	GND	Cable GND

b) USB interface

USB is a serial interface which connects up to 127 peripheral devices to a host computer, and transmits data at a high-speed rate of 12Mbps. Hot plugging, in which connecting/ disconnecting devices while the host or the printer is in use, is supported. Each device is connected to a hub's port, where each port's detection/disconnection status is returned to the host.

Data transfer

The data transfer in USB is executed in terms of the transfer unit called a frame, a time frame of approximately 1ms, into which the data is divided. Data is transferred by piling up these frames.

All packets begin with a SYNC (synchronizing) field to synchronize with the local clock, and are separated with an EOP (End of Packet) field.

Frame lines begin with an SOF (Start of Frame) packet. An SOF is composed of a PID (Packet Identification Field) that represents the type of the packet and the direction, frame number, and a CRC (Cyclic Redundancy Check) used for error-check.

Inside a frame is a packet line containing a token packet, data packet and a handshake packet, which indicates the status of the flow control.

A token packet is composed of a PID, an address field which can specify up to 128 addresses, an ENDP (endpoint) field, and a CRC.

Inside a data packet are a PID, data field, CRC, and EOP.

Only a PID is present inside the handshake packet.

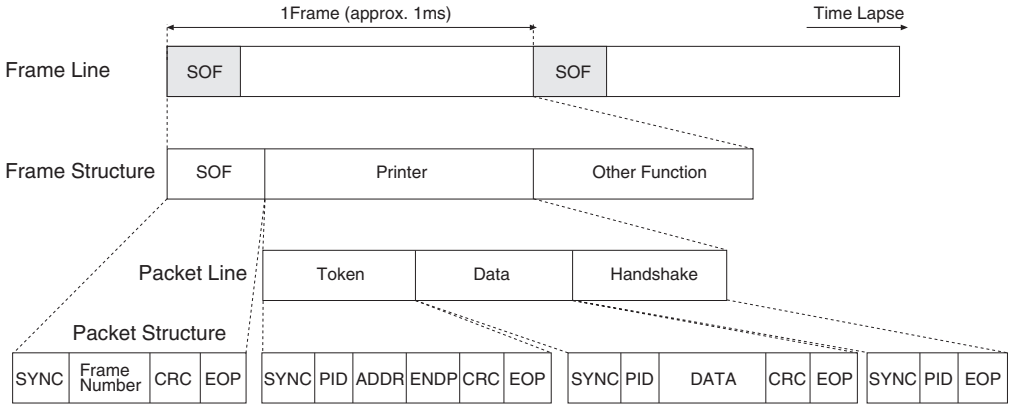


Figure 1-4 USB Data Transfer

Encoding/Decoding the Data

In USB, data transfer lines are ultimately encoded with NRZI (Non Return to Zero Invert) method. When the original data bit is 0, sent data bits are inverted; when the original data bit is 1, the value is retained.

However, if the level of the transferred data remain unchanged for a certain period of time, the receiving side may not be able to synchronize with the data sample position, which will result in data bits being out of phase. This is prevented by a method called bit stuffing; when data bit 1 is repeated 6 times, one 0 bit is added to the original data before encoded with NRZI.

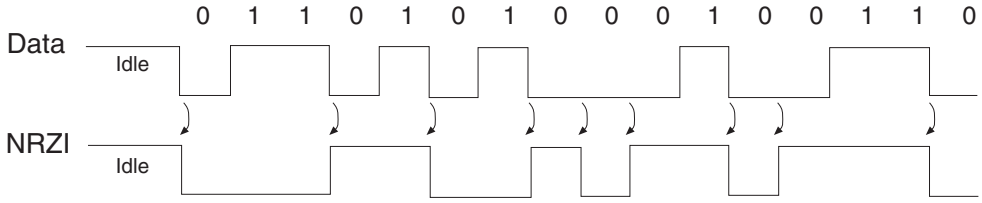


Figure 1-5 NRZI

Supported Software

The following table shows the relationship between available drivers and the interfaces for this model.

	D320/D340/L400 Suite Suite USB I/F
Windows 95	not supported
Windows 98	conditionally supported*
Windows NT 4.0	not supported
Windows 2000	conditionally supported*
Windows Me	conditionally supported*
Windows XP	conditionally supported*

*: A USB connection applies to Windows XP/Me/2000 pre-install models and to pre-install models upgraded to Windows XP/Me/2000 from Windows 98 or later.

Windows Drivers

Win98.Me LBP Printer Driver (USB supported)
Win2000.XP LBP Printer Driver (USB supported)

3. OVERVIEW

3.1 External View

Main Components of the Machine

This section describes the main components of the machine.

FAX-L400

Left Side View

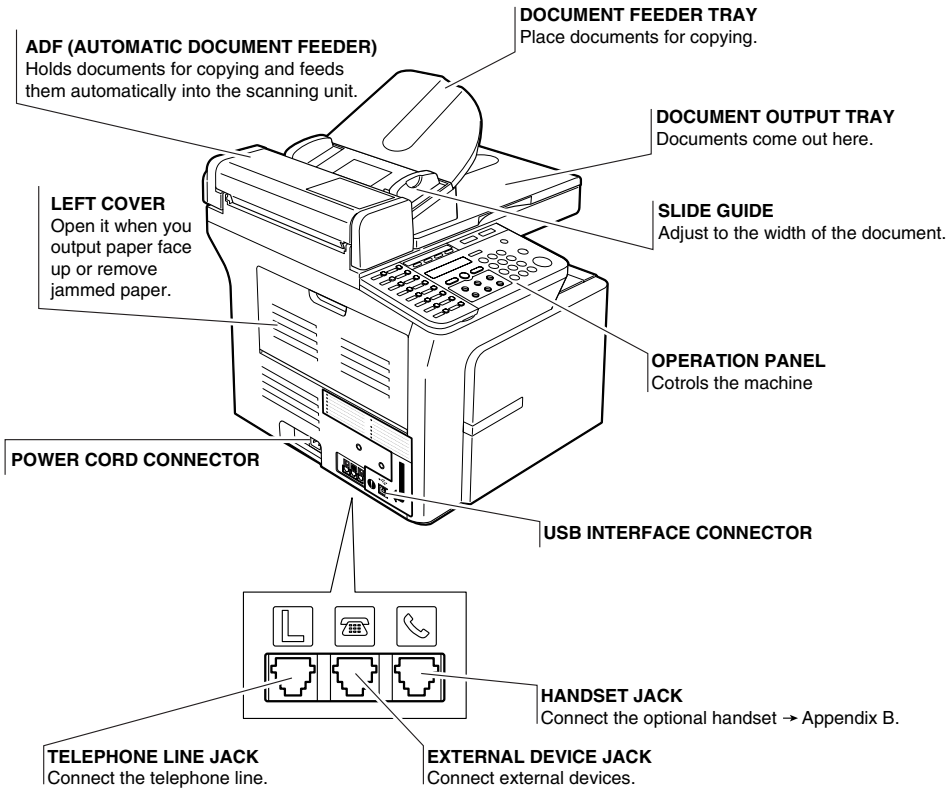


Figure 1-6 External View (1)

PC-D340

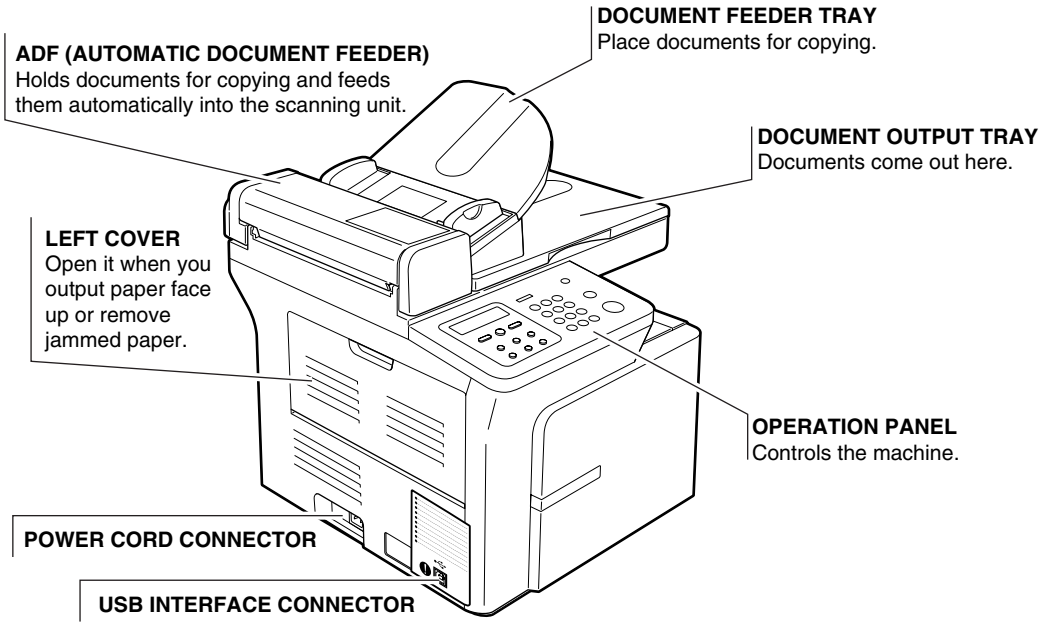
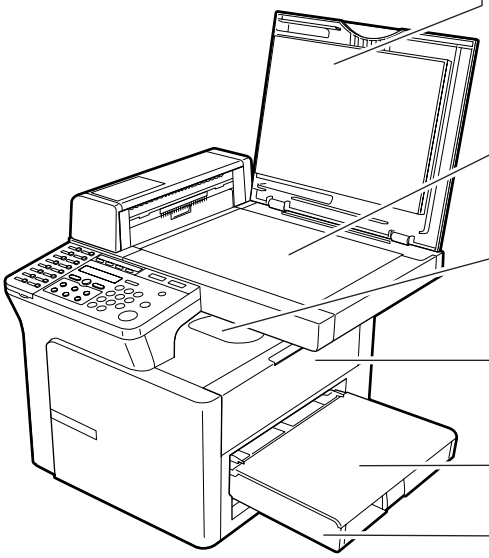


Figure 1-7 External View (2)

Right Side View

PC-D340 / FAX-L400



PLATEN GLASS COVER
Open it when you place documents on the platen glass for copying.

PLATEN GLASS
Place documents for copying.

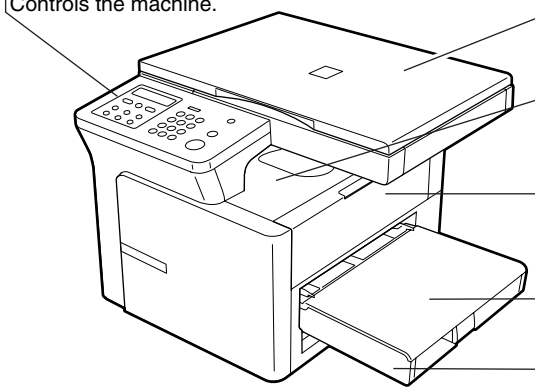
OUTPUT TRAY
Outputs printed pages.

RIGHT COVER
Open it when you install the cartridge, or remove jammed paper.

MULTI-PURPOSE TRAY
Load paper one by one.

CASSETTE
Load paper stack.

PC-D320



OPERATION PANEL
Controls the machine.

PLATEN GLASS COVER
Open it when you place documents on the platen glass for copying.

OUTPUT TRAY
Outputs printed pages.

RIGHT COVER
Open it when you install the cartridge or remove jammed paper.

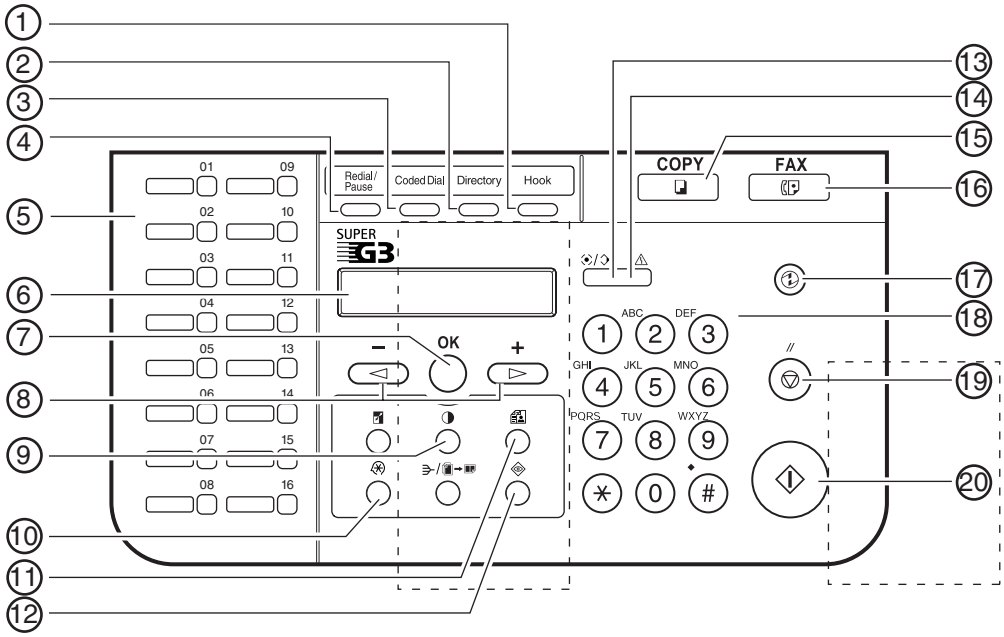
MULTI-PURPOSE TRAY
Load paper one by one.

CASSETTE
Load paper stack.

Figure 1-8 External View (3)

3.2 Operation Panel

FAX-L400



① **Hook Key**
Enables you to dial, even when the handset is still on the handset cradle.

② **Directory Key**
Enables you to search for fax/telephone numbers by the name under which they are registered for speed dialling, and then use the number for dialling.

③ **Coded Dial Key**
Press Coded Dial, followed by a two-digit code to dial the telephone number registered for coded speed dialling.

④ **Redial/Pause Key**
Redials the previous number dialled manually with the keys on the numeric keypad, and enters pauses between digits or after the entire telephone number when dialling or registering facsimile numbers.

⑤ **One-touch Speed Dialling Keys**
Dial numbers registered under one-touch speed dialling keys.

⑥ **LCD**
Displays messages and prompts during operation. Also displays selections, text and numbers when specifying settings.

⑦ **OK Key**
Determines the contents you set or register. Also, if the document being scanned stops in the ADF, pressing this key makes the document come out automatically.

⑧ **◀ (-) , ▶ (+) Keys**
Scroll through the selections so you can see other settings.

⑨ **Exposure Key**
Adjusts the fax exposure.

⑩ **Additional Functions Key**
Customizes the way your machine operates.

⑪ **Fax Resolution Key**
Adjusts the quality of fax image.

Figure 1-9 Operation Panel (1)

⑫ **System Monitor Key**
Checks the status of fax, copy, print and report jobs.

⑬ **In Use/Memory indicator**
Flashes green when a fax is being received or sent. Lights green when the reservation of fax transmission is set, or a fax is received into the memory.

⑭ **Alarm indicator**
Flashes orange when the machine has a problem such as a paper jam.
(The error message is displayed in the LCD.)

⑮ **COPY Key**
Switches standby display to Copy mode.

⑯ **FAX Key**
Switches standby display to Fax mode.

⑰ **Energy Saver Key**
Sets or cancels the energy saver mode manually. The key lights green when the energy saver mode is set, and goes off when the mode is cancelled.

⑱ **Numeric Keys**
Enter numbers when dialling or registering fax/telephone numbers. Also, enter characters when registering names.

⑲ **Stop/Reset Key**
Cancels sending or receiving faxes and other operations, and brings back the standby display in the LCD.

⑳ **Start Key**
Starts sending faxes.

Figure 1-10 Operation Panel (2)

PC-D340/PC-D320

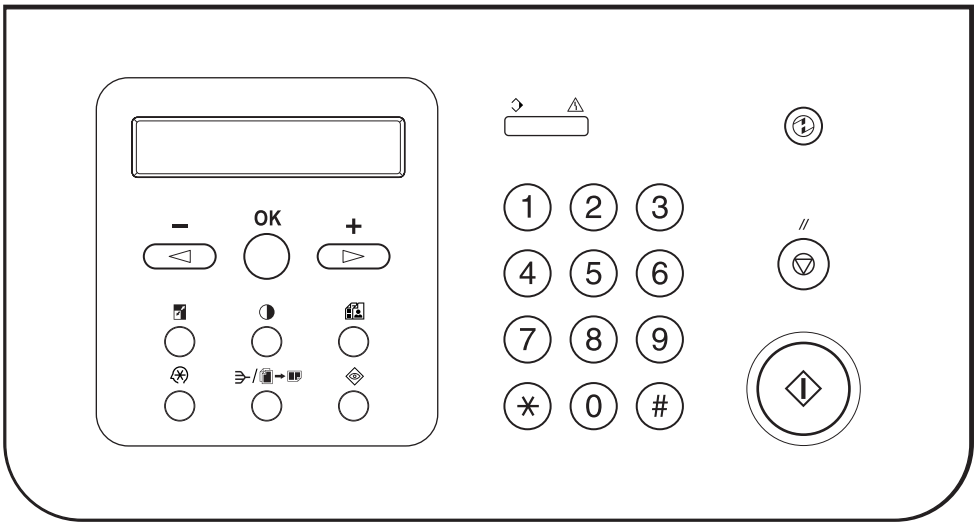
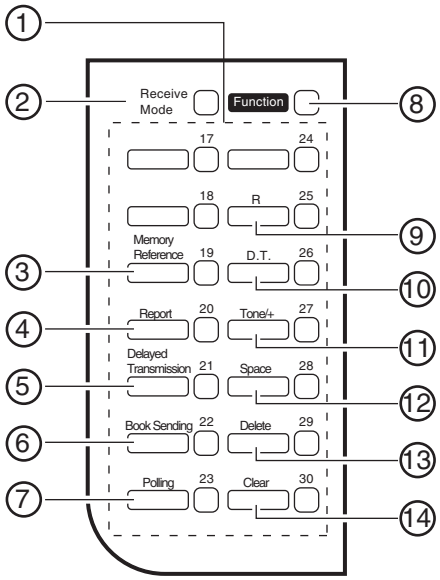


Figure 1-11 Operation Panel (3)

One-touch Panel Opened (FAX-L400)



① One-touch Speed Dialling Keys

The keys marked 17 to 30 can be used to dial fax/telephone numbers pre-registered.
To dial using these keys, you need to register the number for one-touch speed dialling. When the **Function** key is pressed, the following keys can be used for the fax functions. Also, if fax functions are programmed into these keys, they can be used directly as one-touch keys without pressing the **Function** key to execute the fax functions.

② Receive Mode Key

Selects the receive mode.

③ Memory Reference Key

Confirms documents stored in the machine for memory sending or memory receiving.

④ Report Key

Prints a report listing fax communications, dial list, data list or document list. You can also use this key to cancel the report job.

⑤ Delayed Transmission Key

Specifies the fax sending time for the delayed sending function.

⑥ Book Sending Key

This key can be used to send documents from the platen glass.

⑦ Polling

Press to set a document for advanced communications, such as polling sending and receiving.

⑧ Function Key

After pressing this key, you can use the keys marked Memory Reference, Report, Delayed Transmission, Book Sending, Polling, R, D.T., Tone/+, Space, Delete and Clear for the fax functions.

⑨ R Key

Press to dial an outside telephone number, or an extension number, when the fax is connected through a switchboard (PBX).

Figure 1-12 Operation Panel (4)

⑩ **D.T. Key**
Press to confirm the dial tone when dialling or registering a telephone number.

⑪ **Tone/+ Key**
Enters a plus sign in a fax number only when registering for USER TEL NO. Connects to information services that accept tone dialling only, even if you are using a rotary pulse.

⑫ **Space Key**
Enters a space between letters and numbers.

⑬ **Delete Key**
Deletes characters one by one.

⑭ **Clear Key**
Deletes all characters.

Figure 1-13 Operation Panel (5)

3.3 Consumables
3.3.1 Toner Cartridge

Handling and Storing the Cartridge

This section describes the precautions to ensure optimum copy quality.

Handling Precautions

WARNING

Do not throw cartridge into open flames, as this may cause the toner to ignite and result in burns or a fire.
The cartridge emits low level magnetic flux. If you use a cardiac pacemaker and feel abnormalities, please move away from the cartridge, and consult your doctor.

IMPORTANT

Never attempt to disassemble the cartridge or open the protective shutter of the drum.

NOTE

If the machine is brought from the cold outdoors into a warm room, or if the room is rapidly heated, condensation may form inside the machine.
This can adversely effect the quality of your copy image (e.g., copies are completely black).
When the machine is exposed to such conditions, allow at least two hours for the machine to adjust to room temperature before attempting to use it.
Always hold the cartridge as shown so that the side with the instructions are facing upward. Do not forcefully move or push the protection shutter of the drum in any way.

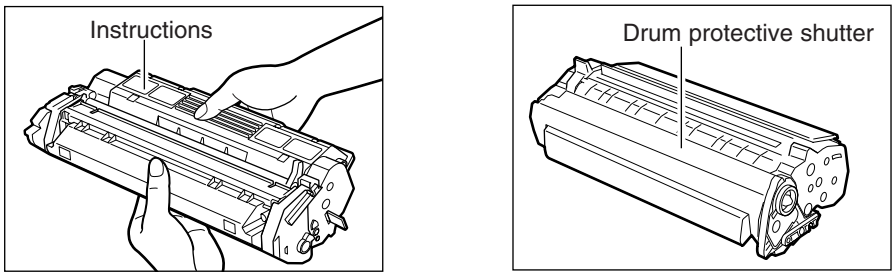


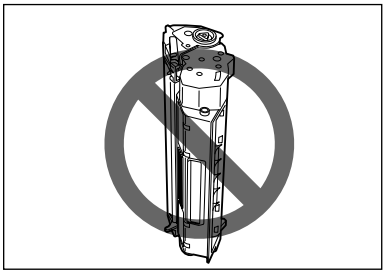
Figure 1-14 Toner Cartridge (1)

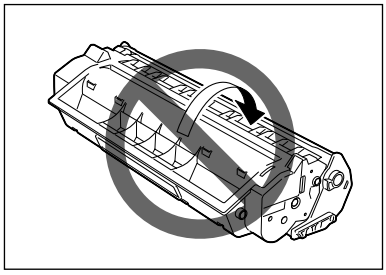
Storage Precautions

WARNING **Do not store cartridge or copy paper in places exposed to open flames, as this may cause the toner or copy paper to ignite and resulting in burns or a fire.**

CAUTION **Keep cartridges and other consumables out of the reach of children. If the contents of these items are ingested, consult a physician immediately.**

IMPORTANT Place the cartridge in its protective bag so that the side with the written instructions is facing upward. Then, place the bagged cartridge into its shipping box. Store the unused cartridge out of direct sunlight. For partially used/opened cartridges, place the cartridge in its protective bag so that the side with the written instructions is facing upward. Then place the bagged cartridge into its shipping box and store it away from direct sunlight.
Avoid storing the cartridge in front of heaters and humidifiers, etc. Store it in a location where the temperature does not exceed 104˚F (40˚C).
The recommended storage conditions are as follows:
Temperature 59˚F to 80.6˚F (15˚C to 27˚C)
Relative Humidity 20% to 80%
Do not stand the cartridge on end or turn it upside down.





Storing Partially Used Cartridges

If you remove a cartridge from the machine, store the cartridge as described below.
Place the cartridge in its protective bag so that the side with the written instructions is facing upward. Then, place the cartridge into its shipping box. Be sure to securely close the lid of the shipping box.
If you do not have the protective bag or shipping box for the cartridge, store the cartridge in a dark location.

Recycling Used Cartridges

Canon has instituted a worldwide recycling program for cartridges called "The Clean Earth Campaign." This program preserves precious natural resources by utilizing a variety of materials found in the used cartridges that are of no further use, to remanufacture new cartridges which, at the same time, keeps the environment cleaner by reducing landfill waste. Complete details concerning this program are enclosed in each shipping box.

Figure 1-15 Toner Cartridge (2)

3.3.2 Print media

Paper Handling

Print Media Requirements

For high-quality copies, we recommend using paper and transparencies recommended by Canon. Some types of paper available at office supply stores may not be suitable for this machine. If you have any questions about paper and transparencies, consult your dealer or Canon Customer Relations.

Paper Storage

In order to prevent paper jams, follow the procedure below:

To prevent moisture buildup, store remaining paper wrapped tightly in its original package. Store paper in a dry location, out of direct sunlight.

To prevent curling, store paper flat, not upright.

After copying, do not leave paper in the multi-purpose tray.

Unacceptable Paper

Do not copy on the following types of copy stock; doing so will result in paper jams.

Severely curled or wrinkled paper

Transparencies for full-color copiers or printers

Paper which has already been copied using a digital full-color copier (Do not copy on the reverse side either.)

Paper which has been printed on using a thermal transfer printer (Do not copy on the reverse side either.)

IMPORTANT

Never attempt to make copies on full-color transparencies. Doing so may result in copier malfunction.

Acceptable Paper

	Cassette/Multi-purpose Tray
Paper size	Letter, Legal, Executive, A4, B5, A5 Envelope : COM10, MONARCH, DL, ISO-C5 Free Size : 8.5 (216.0 mm) × 14 in. (356 mm)[max.] / 3 (76.2mm) × 5 in. (127.0 mm)[min.]
Paper weight	17 - 32-lb bond or 64 - 128 g/m^2
Type of paper	ÐPlain paper (17 - 24-lb bond or 64 - 90 g/m^2) ÐTransparencies ÐSpecial paper 1 (25 - 32-lb bond or 91 - 128 g/m^2) :Thick paper ÐSpecial paper 2 :Rough paper

NOTE

The printing speed may be gradually slower than usual depending on the paper size, the paper type and the number of sheets you specify.

This is because safety function works to prevent the failure due to the heat.

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Figure 1-16 Print media (1)

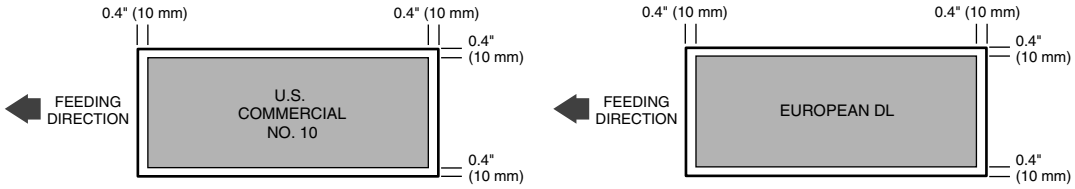
Printing Areas

Please note that the term "printing area" represents both the recommended area for optimum print quality and the entire area where the machine can technically print from your computer.

Printing area (light shade) : Canon recommends that you print within this area.

Paper

Envelope



NOTE Copying areas are a little larger than printing areas.

Figure 1-17 Print media (2)

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Chapter 2

Technical Reference

1. COMPONENT LAYOUT

1.1 Parts Layout

The parts layout of this machine consists of the scanner section, printer section and paper supply section.

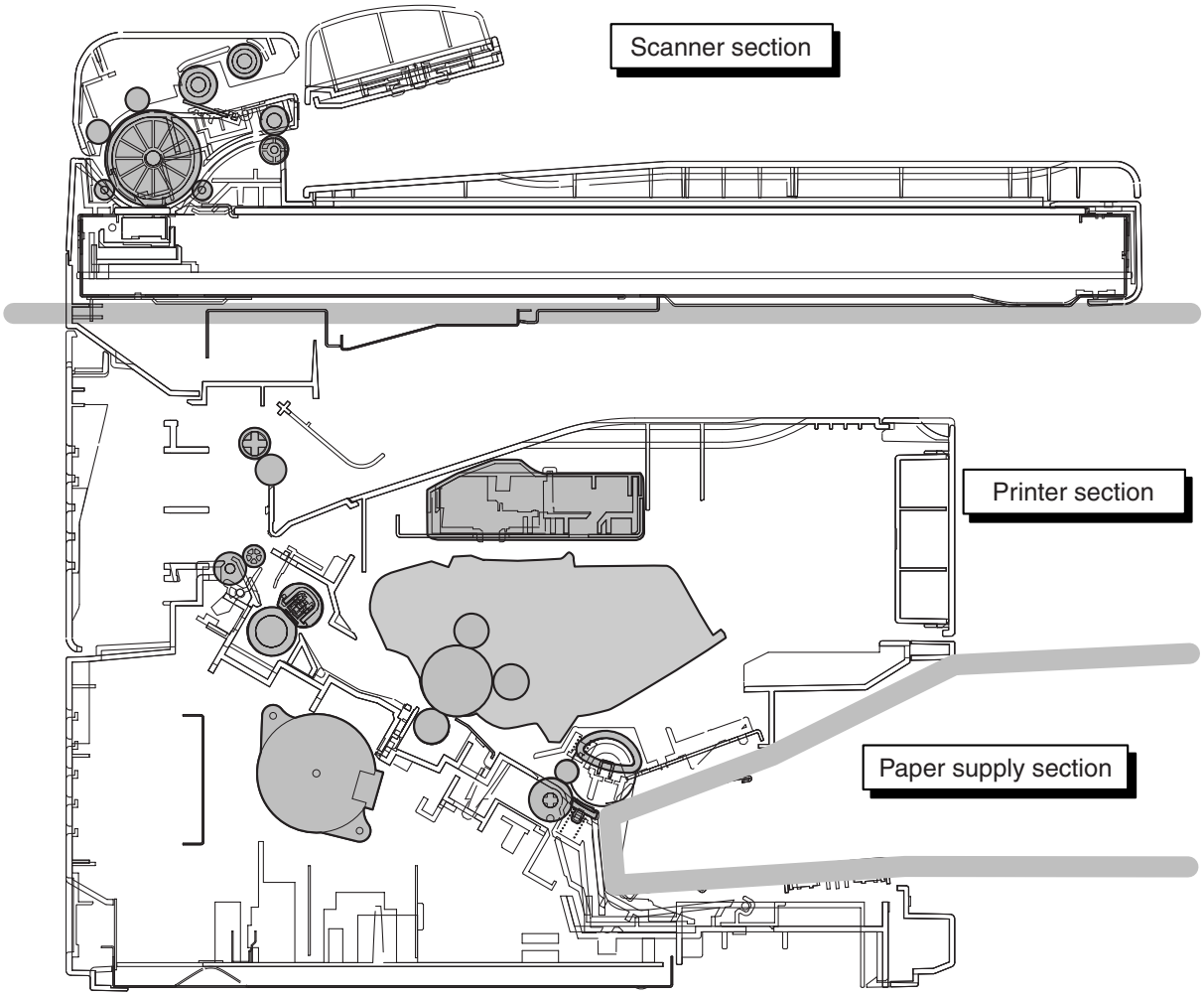

Figure 2-1 Parts Layout

1.2 Printed Circuit Boards Layout

The following four printed circuit boards are located in this machine:

1.SCNT board that controls the entire system

- Operation panel control
- Scanner control
- Printer interface control
- Sensor detection
- Memory functions
- Energy Saver control

2.ECNT board used to control the operation of the laser scanner, motor, and solenoid as well as pickup from the cassette.
A Power supply unit is also located in the ECNT board

- Fixing heater control
- High voltage control
- Drive control
- Sensors detection
- Laser control
- Scanner motor control
- Switching regulator as power supply

3.OPCNT board that controls the operation panel's keys and LCD

- Keys detection and LED drive function
- Display
- Serial communication

4.USB board, which connects to the USB cable from the computer, for PC-D320/D340 only

- USB interface

5.NCU board, which interfaces with to the telephone line, for FAX-L400 only

- Hybrid circuit
- Line voltage conversion circuit

6.USB-MJB board, which connects to the telephone line, to the NCU board, and to the USB cable from the computer, for FAX-L400

- Line interface

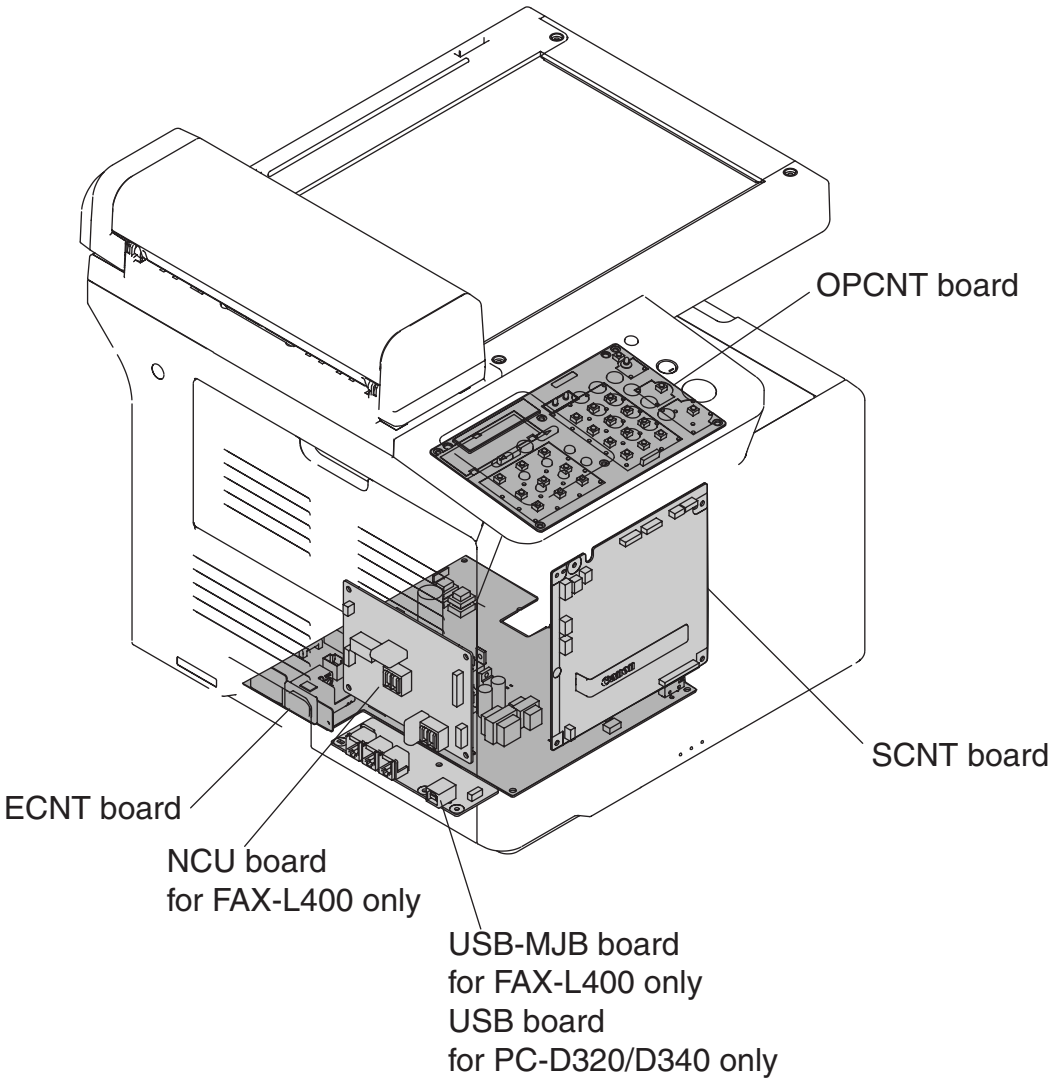

Figure 2-2 PCBs Layout

1.3 Sensors Layout

As many as 8 sensors are used to monitor the movement of original and recording paper or to detect the home position of contact sensor.

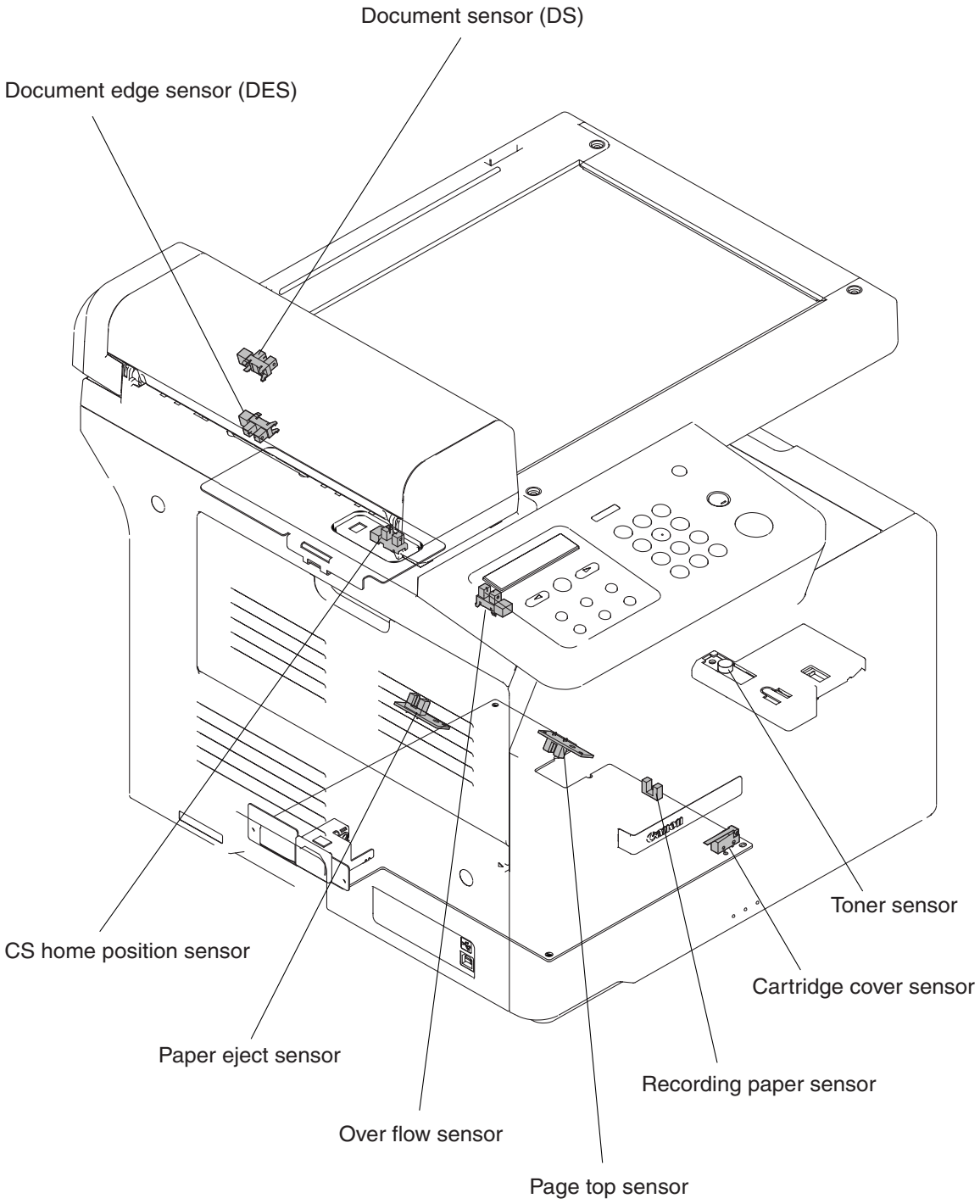

Figure 2-3 Sensors Layout

1. Document sensor (DS) for PC-D340/FAX-L400 only
It detects the presence/absence of a document.

2. Document edge sensor (DES) for PC-D340/FAX-L400 only
It detects the leading and trailing edges of a document.

3. CS home position sensor
It detects the home position of contact sensor.

4. Page top sensor
It detects the leading edge of the recording paper.

5. Paper eject sensor
It detects the recording paper eject conditions.

6. Over flow sensor
It checks the full loading of recording paper.

7. Recording paper sensor
It detects the presence/absence of recording paper.

8. Cartridge cover sensor
It detects the opening/closing of the cartridge cover.

9. Toner sensor (FAX-L400 only)
It detects the whether there is toner in the toner cartridge.

2. SCANNER SECTION

The scanner section scans documents that are to be copied.

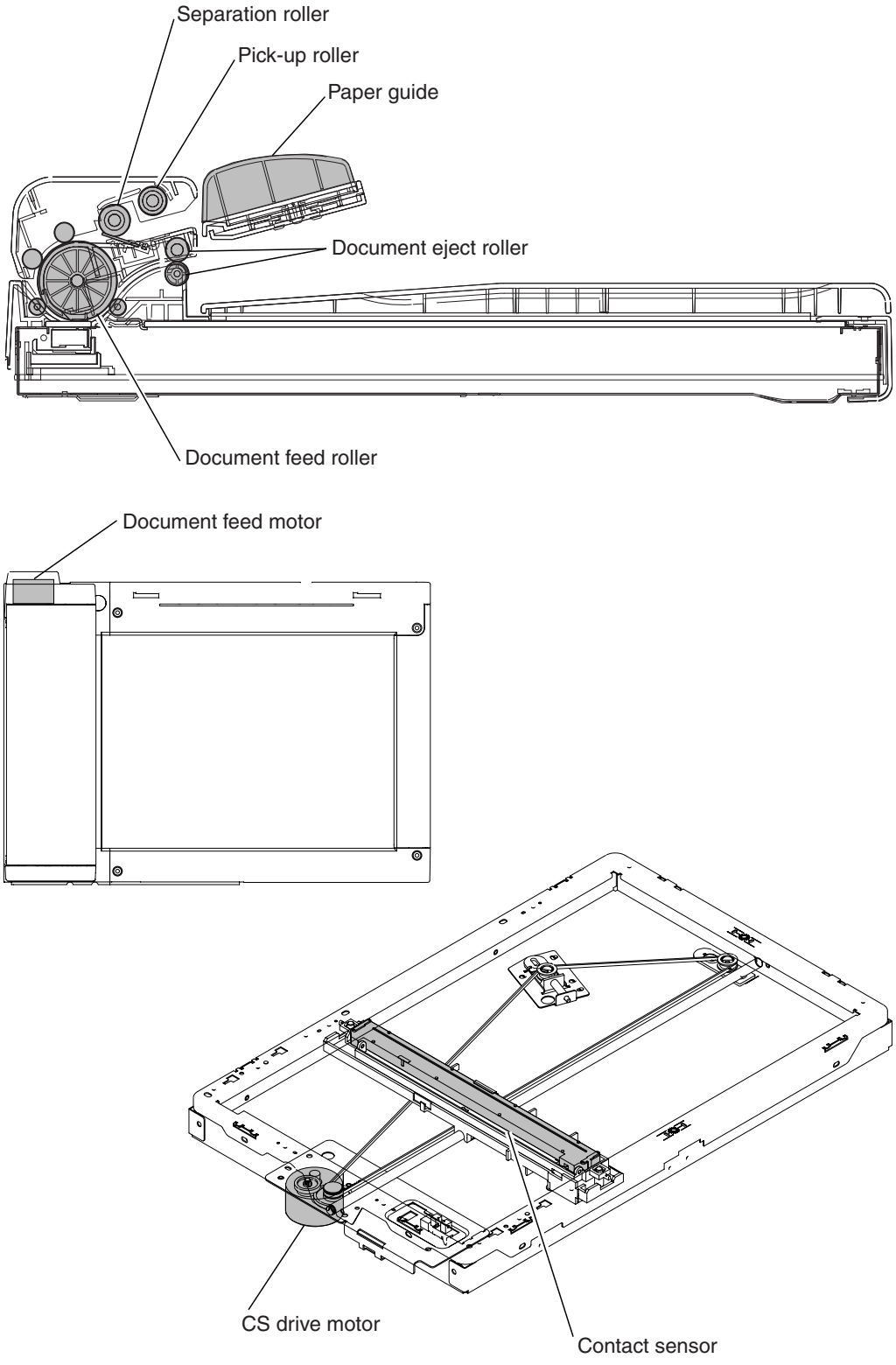

Figure 2-4 Scanner section

2.1 Names and Functions of Parts

1. Paper Guide for PC-D340/FAX-L400 only

This guide is used to hold the document in horizontal direction to prevent it from moving askew.

2. Pick-up Roller for PC-D340/FAX-L400 only

This roller is used to pick-up a document and feed it to the separation roller.

3. Separation Roller for PC-D340/FAX-L400 only

This roller uses differences in the coefficients of function of the separation guide, document and separation roller to separate each of the sheets in a multiple-page document.

4. Document Feed Roller for PC-D340/FAX-L400 only

This roller feeds documents to the contact sensor after they are separated by the separation roller.

5. Contact Sensor

The contact sensor scans the image information from the document, converts it to serial data, and transmits it to the SCNT board as an electrical signal.
The contact sensor has a scanning resolution of 600 dpi.

6. Document Eject Roller for PC-D340/FAX-L400 only

This roller ejects documents fed from the document feed roller.

7. Document Feed Motor for PC-D340/FAX-L400 only

This motor drives all the rollers in the scanner section.

8. CS Drive Motor

This motor drives the contact sensor.


NOTE

Initializing the document stopper

The projection on the middle document feed ass'y needs to be set (initialized) to the optimum position to operate the document stopper properly.

The machine performs initialization when the power is turned on, and after a document is ejected.

Document jam detection

The document edge sensor detects such document jams as pick-up jams and document too long errors.

A "pick-up jam" means the document edge sensor cannot detect the leading edge of the document within 10 seconds after document feeding begins.

A "document too long error" means that the document edge sensor cannot detect the trailing edge of the document, even after the stepping pulses for feeding more than 14" (356 mm) of document have been transmitted.

Document jam processing

If a document jam occurs, the machine stops the document feed motor and ADF operations and displays the error.

For a pick-up jam, "CHECK DOCUMENT" is displayed. For document too long error, "DOCUMENT TOO LONG" is displayed.

If the document is being copied when a document jam occurs, the image data scanned in and stored in memory are erased for all pages, and print operations are stopped.

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3. PAPER SUPPLY SECTION

The paper supply section is designed to separate the recording sheets stacked on the Cassette or MP tray one by one for forwarding to the printer unit.

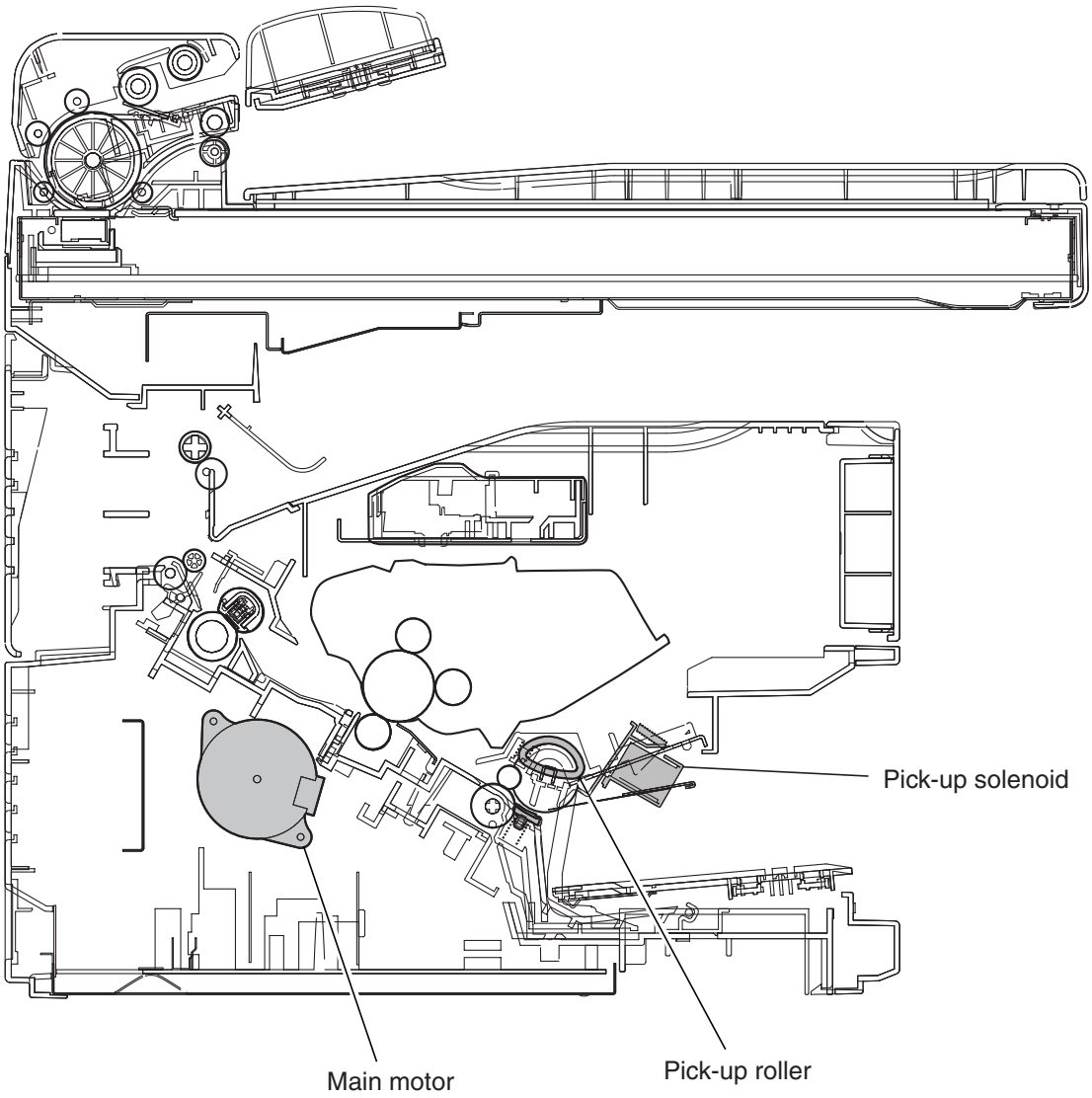

Figure 2-5 Paper supply section

3.1 Recording Paper Pick-up Function

(from Multi-purpose (MP) tray)

In case of paper pick-up from the MP tray, while the main motor rotates, the paper pick-up solenoid is turned ON. Then, the pick-up roller rotates, and a sheet of paper is fed into the printer section.

Up to 10 pages (64 g/m^2) can be loaded into the MP tray at one time and the position of the movable paper guides can be adjusted for recording paper.

(from cassette)

In case of paper pick-up from the cassette, while the main motor rotates, the pick-up solenoid is turned ON. Then, the pick-up roller rotates, and a sheet of paper is fed into the printer section.

3.1.1 Paper size error

The machine does not have a paper size sensor. It recognizes the paper sizes (Letter, A4, and Legal etc.) according to the user data setting (Additional Functions setting).

A paper size error occurs if the specified paper size is different from the size of the paper placed in the MP tray and cassette when one page is actually printed.

In this case, a message "INCORRECT PAPER SIZE" appears on the display.

3.2 Recording Paper Jam Detection Configuration

The following paper sensors are installed to detect paper presence and paper feed condition.

- Page top sensor
- Paper eject sensor

The CPU on the ECNT board determines a paper jam by checking whether or not paper is present on the sensor at the timing stored in the CPU.
When the CPU judges a paper jam, it stops print operation and notifies the jam.

3.2.1 Pick-up delay jam

This machine performs retry control to redress the pick-up delay jam caused by pick-up error. In this control, a pick-up operation is conducted a maximum of twice.
If the page top sensor cannot detect the leading edge of the paper within 1.4 seconds after the pick-up solenoid is turned ON in the first pick-up operation, the CPU tries another pick-up operation, the CPU determines a pick-up delay jam.

3.2.2 Pick-up stationary jam

If the page top sensor cannot detect the trailing edge of the paper within 4.6 seconds after detecting the leading edge, the CPU determines a pick-up stationary jam.

3.2.3 Delivery delay jam

If the leading edge of the paper cannot reach the paper eject sensor within 2.1 seconds after the page top sensor detects the edge, the CPU determines a delivery delay jam.

3.2.4 Wrapping jam

The CPU determines a wrapping jam under both the following two conditions:

- 10 seconds passed after the paper eject sensor detected the leading edge of the paper
- The paper eject sensor cannot detect the trailing edge within 1.5 seconds after the page top sensor detected the leading edge.

NOTE

In case of judging a wrapping jam, the CPU notifies the jam as a delivery stationary jam.

3.2.5 Delivery stationary jam

If the paper eject sensor cannot detect the leading edge of the paper within 2.2 seconds after the page top sensor detected the trailing edge, the CPU determines a delivery stationary jam.

3.2.6 Residual paper jam

During the initial rotation period, if the page top sensor or paper eject sensor detects the paper, the CPU determines a residual jam.

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4. PRINTER SECTION

The LASER beam printer engine comprises the following sections.

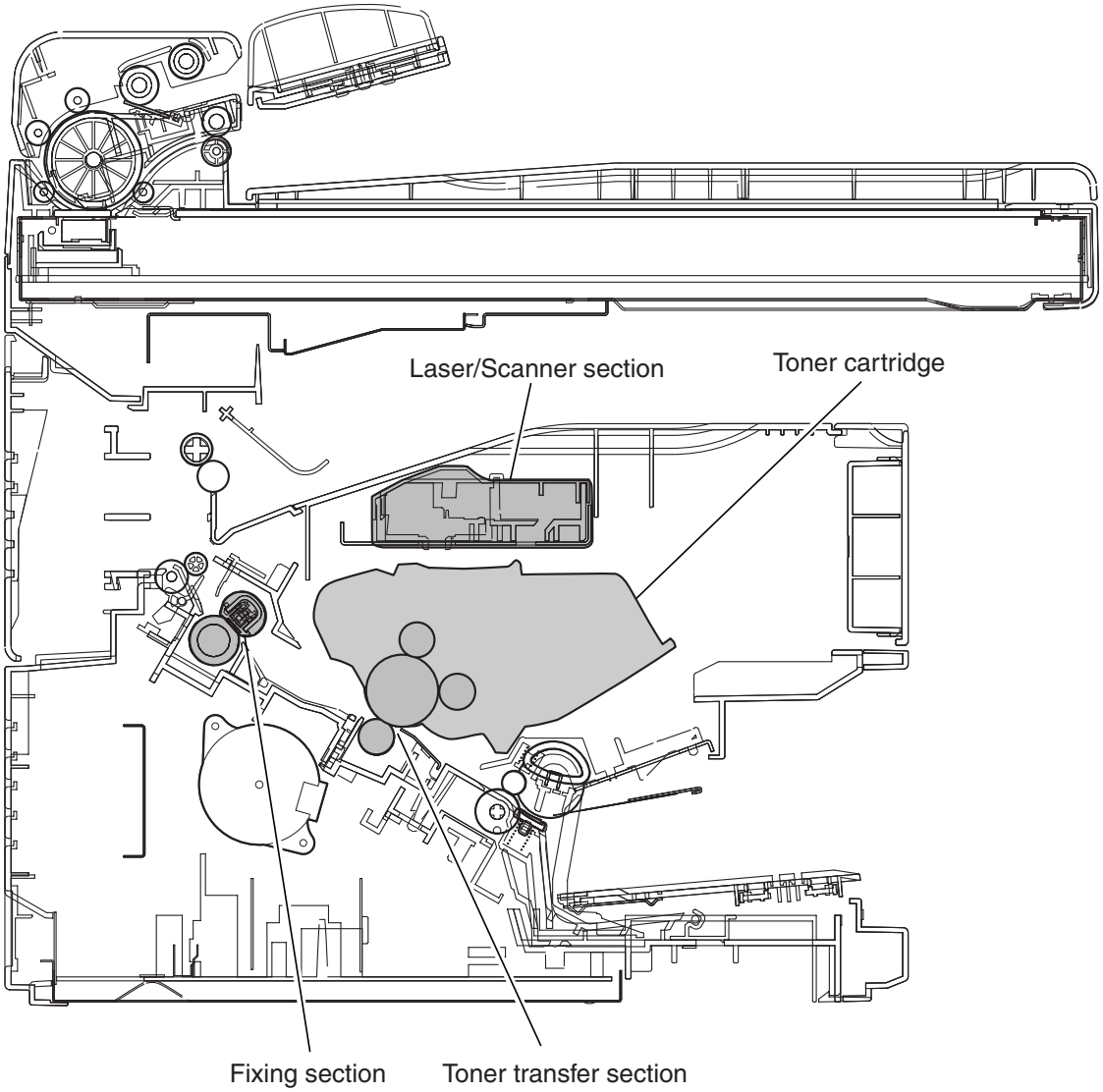

Figure 2-6 Printer section

4.1 Laser/Scanner Section

This section comprises a Laser unit, cylindrical lens, 4-faced polygon mirror, scanner motor, imaging lens, reflection mirror and BD sensor. The Laser is driven in accordance with the Laser drive signals that are sent from the SCNT board. This Laser light passes through the cylindrical lens to fall on the 4-faced polygon mirror that is rotating at a fixed speed. The Laser light is reflected from the 4-faced polygon mirror and passes through the imaging lens, and reflects from the reflection mirror to scan the photosensitive drum in the toner cartridge.

NOTE

BD Malfunction

The CPU on the ECNT board determines a BD malfunction if the /BDI signal is not detected within 0.1 second after the scanner motor is forcibly driven. Or, if the detected cycle of the /BDI signal has not reached the specified value within 2 seconds after the scanner motor reached its specified rotation number.

Laser/scanner unit Malfunction

If the /BDI signal is not detected within 1.5 seconds after the scanner motor is forcibly driven, the CPU on the ECNT board extends the time to 120 seconds, the CPU determines a scanner malfunction.

The Laser/scanner unit contains parts that require adjustment that cannot adjust in the field. Never disassemble the Laser/scanner unit.

4.2 Toner Cartridge

This cartridge comprises the primary charging roller, developing cylinder, photosensitive drum, cleaner blade, and toner.

The Laser beam from the Laser/scanner section forms a latent static image on the photosensitive drum that is charged by the primary charging roller.

The photosensitive drum rotates inside the toner cartridge, and rotation of the developing cylinder causes toner to adhere to the photosensitive drum to from a visible image which is then transferred to the recording paper at the toner transfer section. Residual toner is then removed from the surface of the photosensitive drum by the cleaning blade.

Drum cover shutter

If the photosensitive drum is subjected to strong light, optical memory can cause dropout areas or black bands to occur. To prevent the photosensitive drum from strong light, a drum cover shutter is attached. Do not open this cover unless absolutely necessary.

4.3 Toner Transfer Section

This section comprises the transfer charging roller and the static eliminator.

The recording paper passes between the photosensitive drum and the transfer charging roller, and the transfer charging roller is charged with a charge opposite to that of the toner to transfer the toner on the photosensitive drum to the recording paper. The charge on the rear side of the recording paper is then removed by the static eliminator.

4.4 Fixing Section

This section comprises the fixing ass'y and pressure roller. The fixing section on this machine is an on-demand method that uses fixing film with low thermal capacity.
The toner that was transferred to the recording paper at the toner transfer section is fused to the paper and fixed as a permanent image.
The fixing ass'y has a built-in fixing heater and thermistor.

4.4.1 Fixing unit Malfunction

The CPU on the ECNT board assesses a fixing unit malfunction under the conditions a) to g) indicated below and it performs the following three procedures:

1. Cuts off power to the fixing heater by setting the FIXING HEATER DRIVE (FSRD:ECNT board-IC201-39pin) signal "L".
2. Sets the RELAY DRIVE (RLYD:ECNT board-IC201-38pin) signal "L" to turn OFF the relay (RL101:ECNT board-RL101).
3. Stops the main motor, scanner motor, and high-voltage power supply system immediately, and then sets the printer an error state and notifies the malfunction to the SCNT board.

a) The main thermistor does not exceed 50 °C within 1.47 seconds after the start of start-up temperature control.
b) The main thermistor remains 230 °C or more continuously for 1.5 seconds during fixing heater temperature control.
c) The temperature of the main thermistor is 100°C or less continuously for 1.5 seconds during normal temperature control. Or, the main thermistor remains 50°C or less continuously for 1.5 seconds during between-sheet temperature control.
d) The temperature of the main thermistor remains less than 20°C continuously for 3 seconds during fixing heater temperature control.
e) The main thermistor does not exceed 100 °C within 30 seconds after the start of start-up temperature control.
f) The sub thermistor remains less than 20 °C continuously for 1.5 seconds during fixing heater temperature control.
g) The temperature of the sub thermistor is 320°C or more continuously for 3 seconds during fixing heater temperature control.

5. NEW FUNCTION

There is no new function in this model.

Chapter 3

Assembly and Disassembly

1. ATTENTION TO BE PAID DURING ASSEMBLY/DISASSEMBLY

1.1 Safety Cautions

Electrical shock

In order to prevent any risk of electrical shock, always be sure to check that the power cord and modular jack have been removed. Also, remove all cables connecting to the computer.
When conducting service that requires the main unit to be powered on, be sure to wear some kind of earthing, such as a wrist strap, etc. Otherwise, there is a danger of conduction and electrical shock.
Parts which are generally likely to cause electrical shock are as follows.

- Power supply unit primary (supplied with AC voltage)
- Telephone line primary
- LBP engine high voltage contacts (for high voltage during developing and transfer)

High temperature

In order to prevent burns during disassembly, allow at least ten minutes, after the power has been switched off, for the high temperature components to cool down.
General high temperature components are as follows.

- Motors
- Power supply unit
- Elements on driver ICs, etc., on PCBs (in particular, ICs with heatsinks)
- BJ cartridge aluminium plate (for BJ cartridge engine models)
- Fixing unit and peripheral covers (for LBP engines)

Battery Replacement

The batteries must be replaced correctly to avoid explosion.
Do not replace any battery with one not indicated for the machine, i.e., use one of the same type or equivalent. Be sure to dispose of used batteries according to local laws and regulations.

Fire

It is dangerous to throw lithium batteries and parts and components containing flammable substances, such as cartridges, etc., into fire. Such parts and components must be disposed of in accordance with local laws and regulations.

Ignition

When using solvents such as alcohol, etc., while conducting service, there is a danger of fire igniting from heat from internal circuitry and from sparks. Before using any such solvents, be sure to switch off the power and allow time for high temperature parts to cool down. Make sure that there is sufficient ventilation when working with solvents.

Movable parts

In order to prevent accidents with movable parts, be sure to remove the power cable when conducting service that requires disassembly. Also, take care that personal accessories and hair, etc., are not caught in any moving parts.

1.2 General Cautions

Damage due to electrostatic discharge

This machine contains contact sensors and printed circuit boards that use ROMs, RAMs, custom chips and other electronic components that are vulnerable to damage by electrostatic discharge.
Be careful to avoid any damage from electrostatic discharge when conducting service that requires disassembly.

Static electricity warning

Electrostatic discharge can destroy electronic components and alter electrical characteristics. Plastic tools and even your hands, if they are not earthed, contain sufficient static electricity to damage electronic components.

The following materials may be used as countermeasures against electrostatic discharge:

- an earthed, conductive mat
- an earthed wrist-strap
- crocodile clips for the purpose of grounding metallic parts of the main unit

For service conducted on the user's premises, etc., where such countermeasure materials are not available, the following countermeasures may be employed.

- Use anti-static bags for the storage and carrying of PCBs and electrical elements.
- Avoid silk and polyester clothing and leather soled shoes, favouring instead cotton clothes and rubber soled shoes.
- Avoid working in a carpeted area.
- Before beginning the work, touch the grounded earth terminals of the main unit in order to discharge any static electricity.
- Use a wrist-strap and earth the metal parts of the main unit.
- PCBs and electrical elements must lifted around the edges and their terminals must not be touched.

Caution against electrical shock while working with power on

In cases where service must be carried out with power on, via a connected power cable, be sure to wear an anti-static wrist-strap or other earth, in order to prevent an electrical path being created through you body.

Application of grease

Grease must not be applied to any parts that are not so designated. Also, never use any other than the specified type of grease. Otherwise, plastic parts and rubber parts may melt or be otherwise deformed.

Attaching and removing cables

Attaching and removing cables with the power still on may cause breakdowns and should be avoided. In particular, flat cables are likely to cause short circuit.
When attaching or removing cables, always be sure to turn the power off.

1.3 Product-Inherent Cautions

Laser Light

Do not perform any tasks outside the scope of work indicated in the manual. (If exposed to laser light, the retina of the eye can permanently be damaged.)
Further, the laser scanner unit must not be disassembled or modified under any circumstances.

Handling of the Transfer Charging Roller

The presence of oils or the like on the sponge portion of the transfer charging roller leads to faults in the printer. Do not hold the transfer charging roller by its sponge portion during service work.

Handling the Fixing Unit

The presence of oils or the like on the surface of the pressure roller or the fixing film found inside the fixing unit can cause fixing faults or jams. Do not hold the pressure roller during service work.

1.4 All Clear (Action in the Event of Abnormality)

In the event of extreme noise or shock, etc., in very rate cases, the display may go out, and all the keys become inoperable. In that case, perform an All Clear.

This operation returns all values and settings to their default settings. However, as all settings, such as user data and service data, etc., will be re-initialized, be sure to note down any settings that you will need to re-enter later.

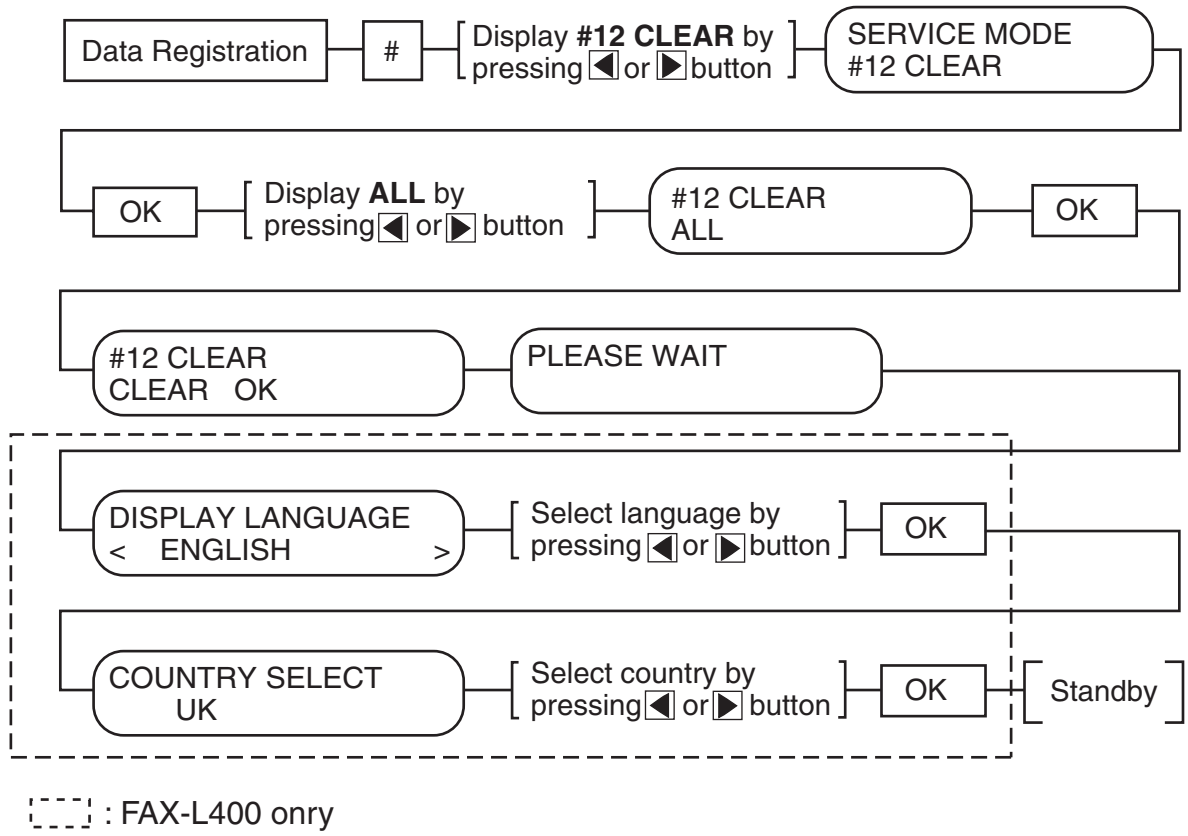

Figure 3-1 All Clear Operation

While waiting to return to the ready state after executing “All clear”, please do not press the stop button. Doing so may cause a malfunction afterwards.

In the case of PC-D320/D340, if you execute “All Clear”, the setting, #5 TYPE in SERVICE MODE will be set up to U.S.A.. Therefore, be sure to change #5 TYPE to a setting that is suitable for each country/region after “All Clear”.

In the case of FAX-L400, execute “All Clear” by following the steps on the display, and set up DISPLAY LANGUAGE and COUNTRY SELECT to settings that are suitable for each country/region.

2. DISASSEMBLY/ASSEMBLY

As a rule, refer to the Parts Catalog for instructions on how to disassemble and assemble the machine. The discussions that follow are limited to those components that are thought to require replacement relatively more often than others.

2.1 Disassembly Procedure

2.1.1 Document feed section

Separation Roller Ass'y, Separation Guide Unit, Document Feed Roller

(1) Open the cartridge cover and the face-up cover; remove the 2 screws (a). Remove the front cover while detaching the 2 claws.
(2) Remove the 3 screws (b), and remove the left cover ass'y while detaching the 2 claws.
(3) Remove the pressure plate unit by lifting up.

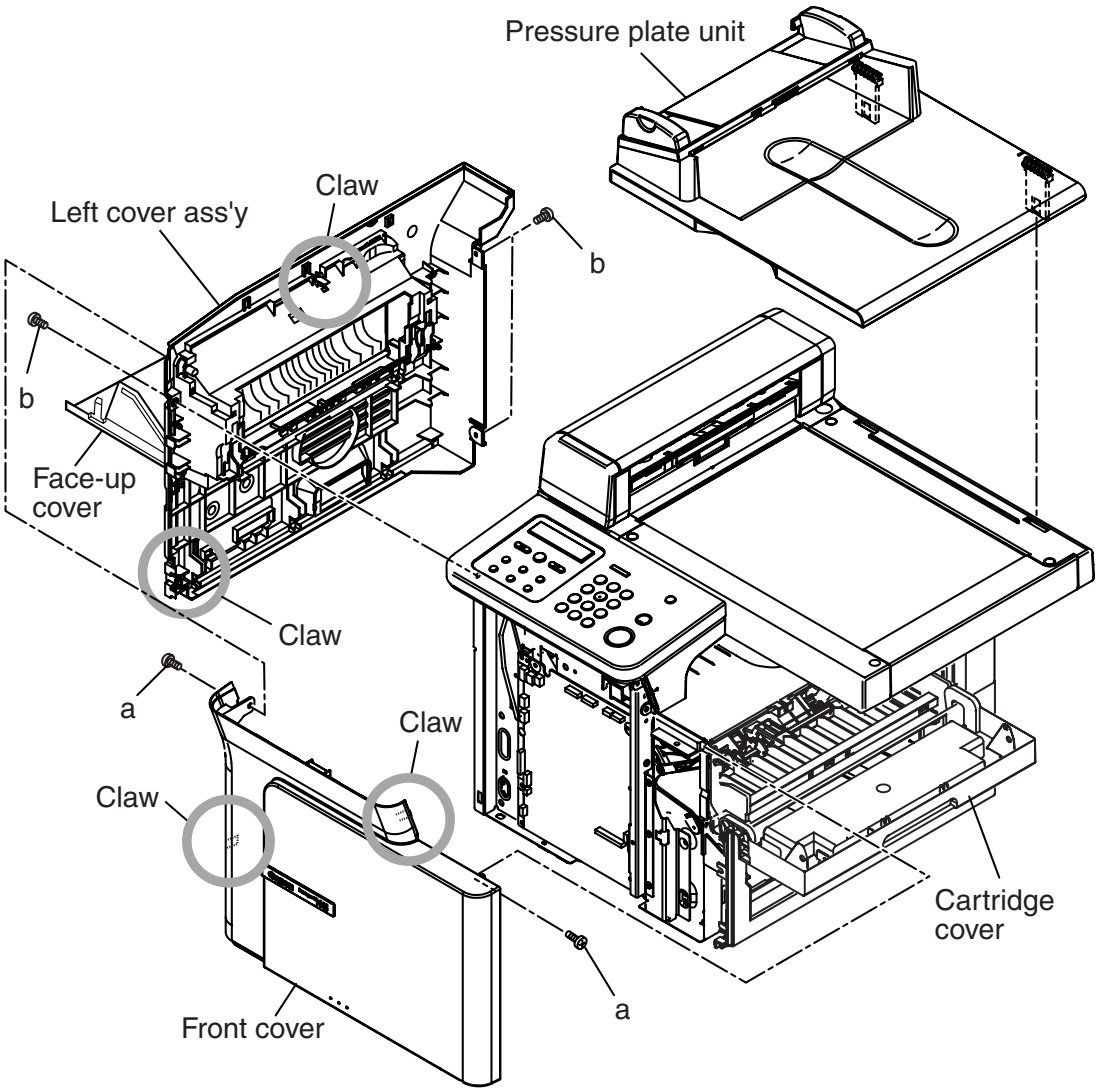

Figure 3-2 Document Feed Section 1

(4) Disconnect the connectors (J505 and J509) on the SCNT board, and detach the cable from the clamp.
(5) Remove the screw (c) on the rear side of the main unit, and detach the grounding cable. Remove the cable from the clamp.

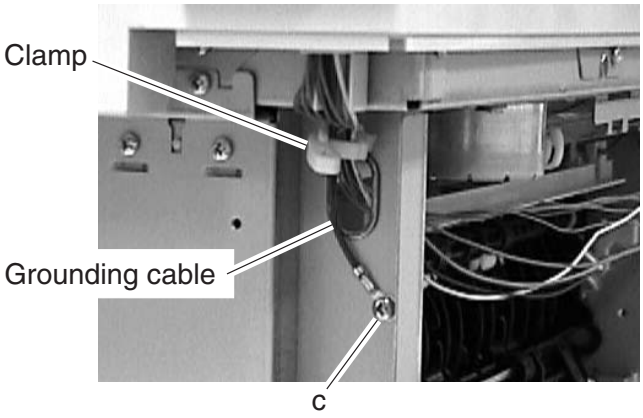

Figure 3-3 Document Feed Section 2

(6) Open the upper document feed ass'y, and remove the document feed front cover while detaching the 2 claws.

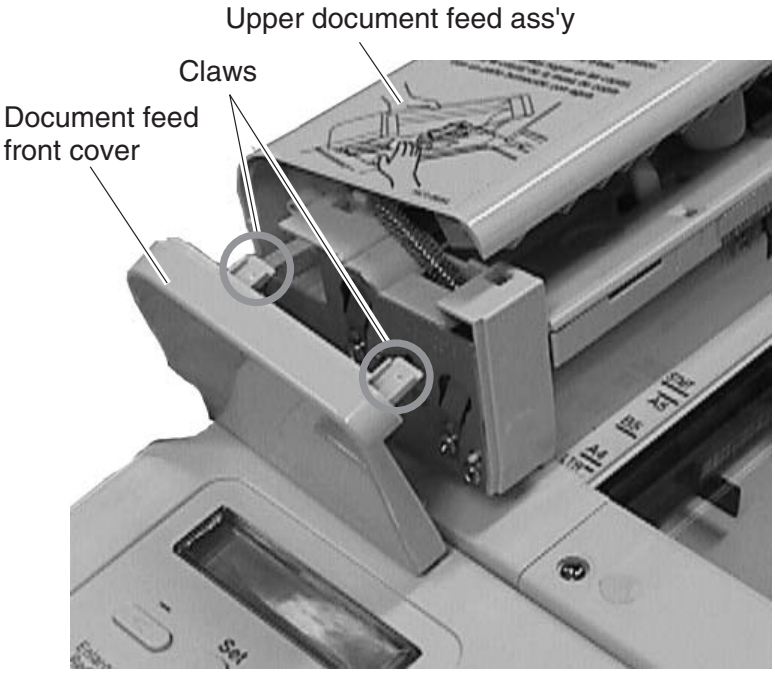

Figure 3-4 Document Feed Section 3

(7) Open the document feed ass'y, and detach the stopper. While lifting up the rear side of the document feed ass'y, shift it to the rear side for removing.

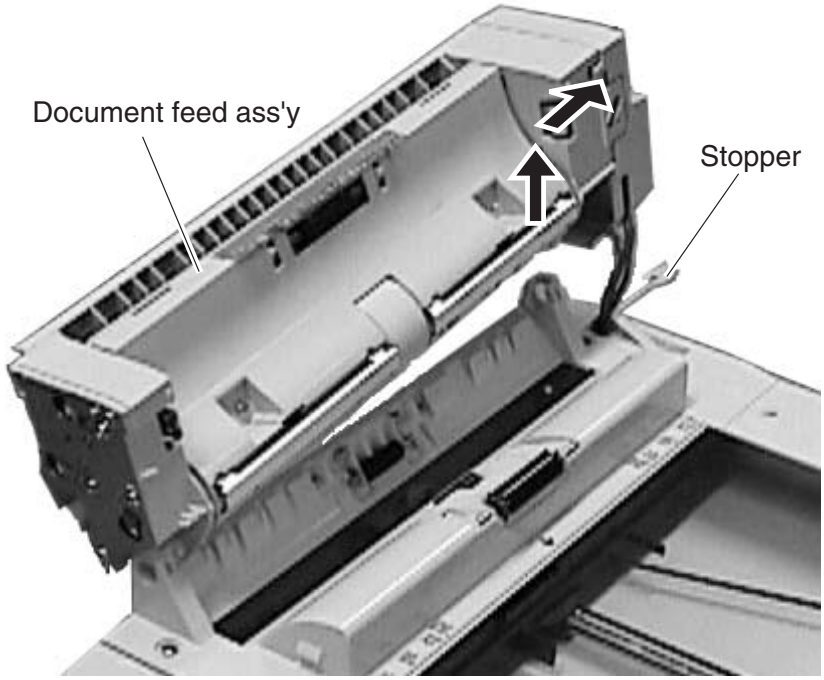

Figure 3-5 Document Feed Section 4

(8) Remove the document feed rear cover while detaching the 3 claws.

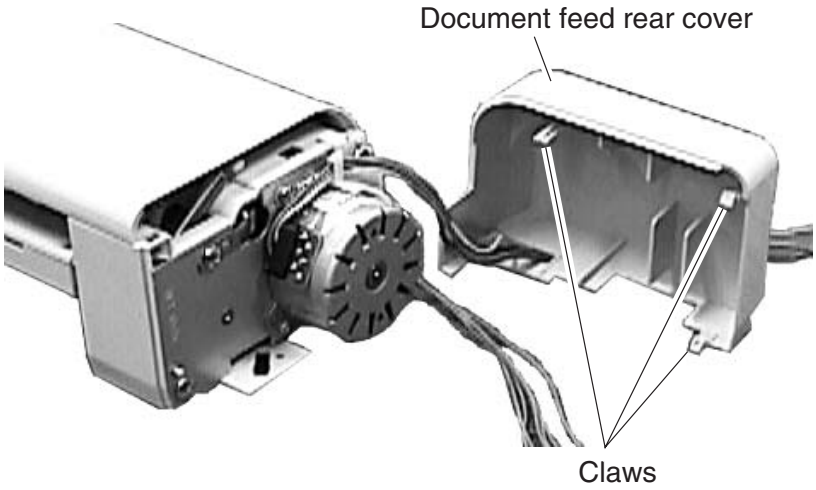

Figure 3-6 Document Feed Section 5

(9) Remove the 2 screws (d), and detach the document feed gear ass'y.
(10) Remove the 2 screws (e), and detach the document feed motor ass'y.
(11) Remove the springs (front and rear) from the hooks of the upper document feed ass'y.
(12) Remove the screw (f), and detach the stoppers (front and rear) and the turning lever.
(13) Remove the upper document feed ass'y while bending.
(14) Remove the 2 screws (g), and detach the lower document feed ass'y while disconnecting the connector of the sensor.

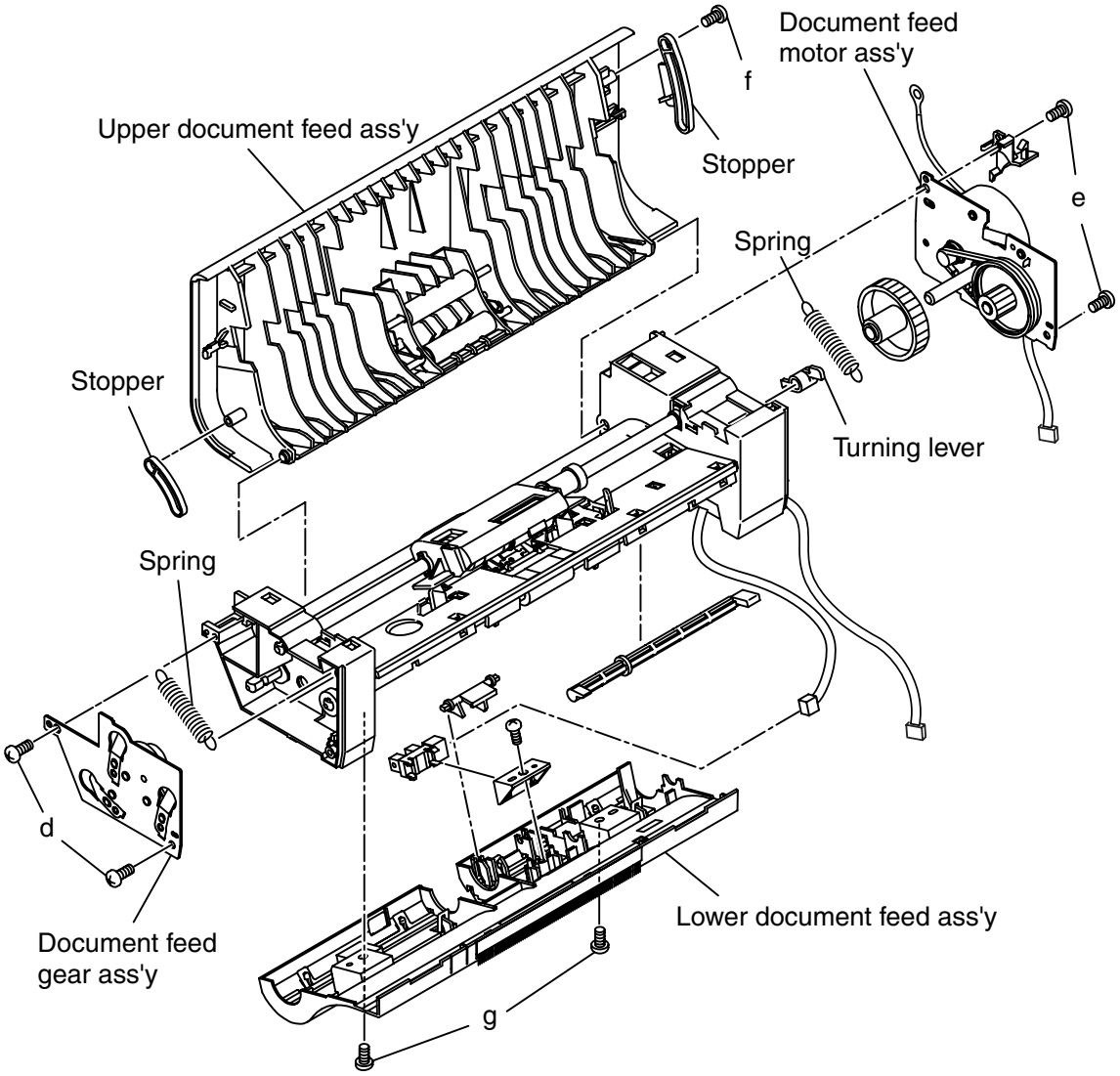

Figure 3-7 Document Feed Section 6

NOTE

Note for Assembling

When attaching the turning lever, be sure the positions of the stopper and the release lever (See the figure below).

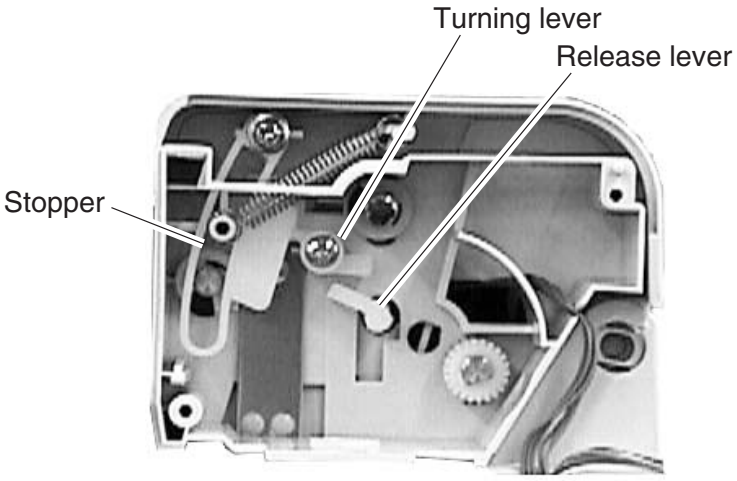

Figure 3-8 Document Feed Section 7

Check to make sure that the stopper lifts up the left side of the turning lever, and the right side of the turning lever pushes down the release lever.

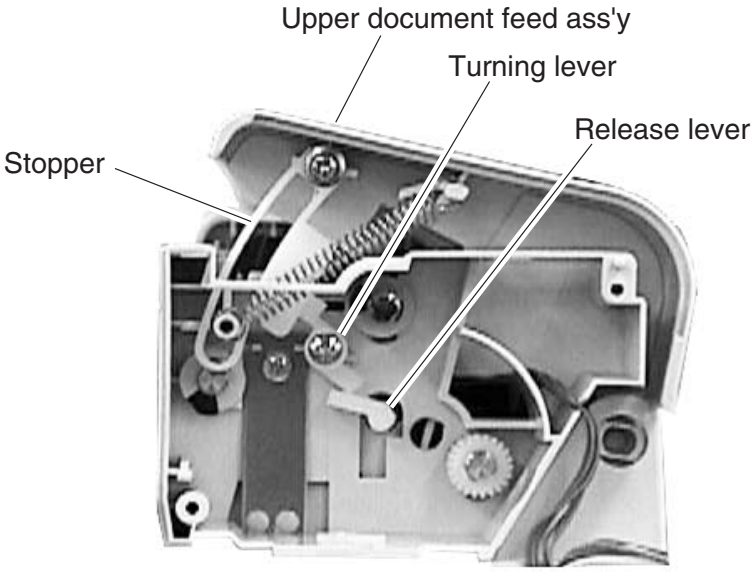

Figure 3-9 Document Feed Section 8

(15)Remove the retaining ring (h), and detach the bushing.
(16) Remove the gear (i), and detach the bushing.
(17) Remove the separation roller ass'y while shifting it to the front and the rear.
(18) Remove the claw of the separation guide unit, and detach the separation guide unit while rotating it up. Care should be taken not to lose the detached spring.
(19) Remove the gear (j), and detach the bushing.
(20) Remove the gear (k), and detach the bushing.
(21) Remove the retaining ring (l), and detach the document feed roller by shifting the shaft. Care should be taken not to lose the detached pin.

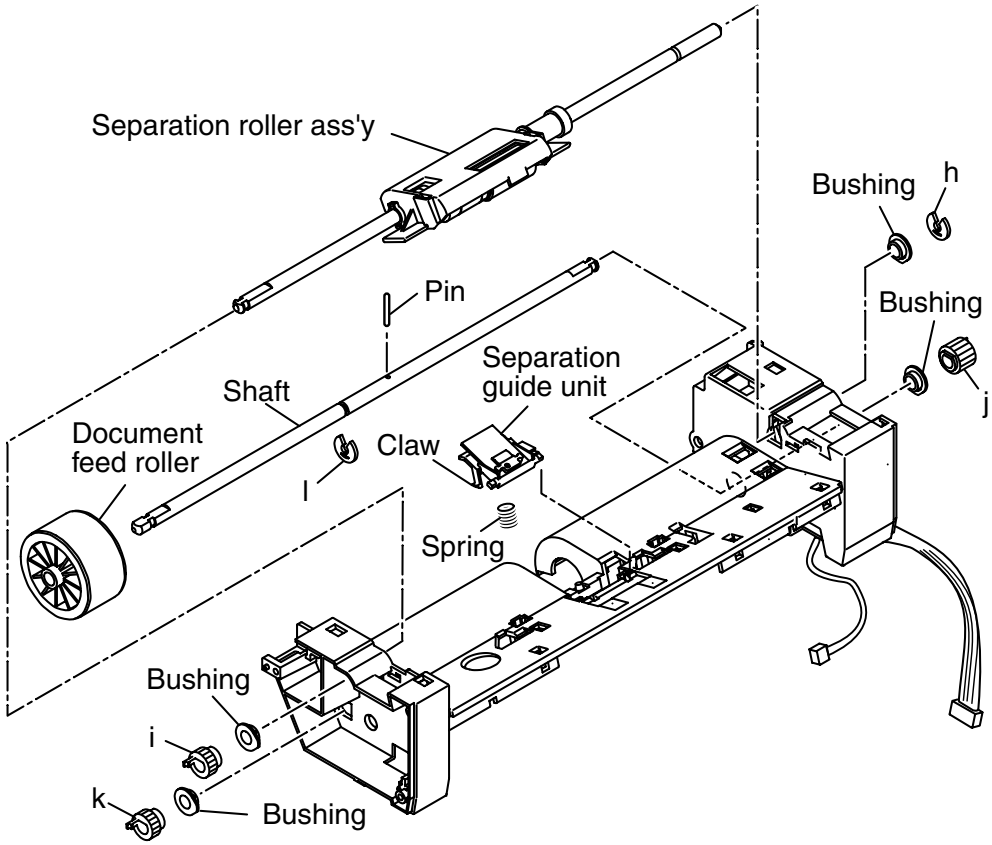

Figure 3-10 Document Feed Section 9

2.1.2 Recording section

Pick-up Roller

(1) Open the cartridge cover, and remove the cartridge.

(2) While opening the both claws of the pick-up roller placed on far behind of the cartridge inlet, remove the roller by rotating to the front.

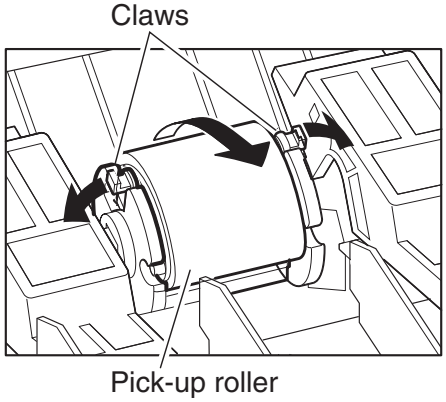

Figure 3-11 Recording Section 1

Separation Pad

(1) Open the cartridge cover and the face-up cover; detach the 2 screws (a). Remove the front cover while detaching the 2 claws.

(2) Remove the 3 screws (b), and detach the left cover ass'y while detaching the 2 claws.

(3) Remove the pressure plate unit by lifting up.

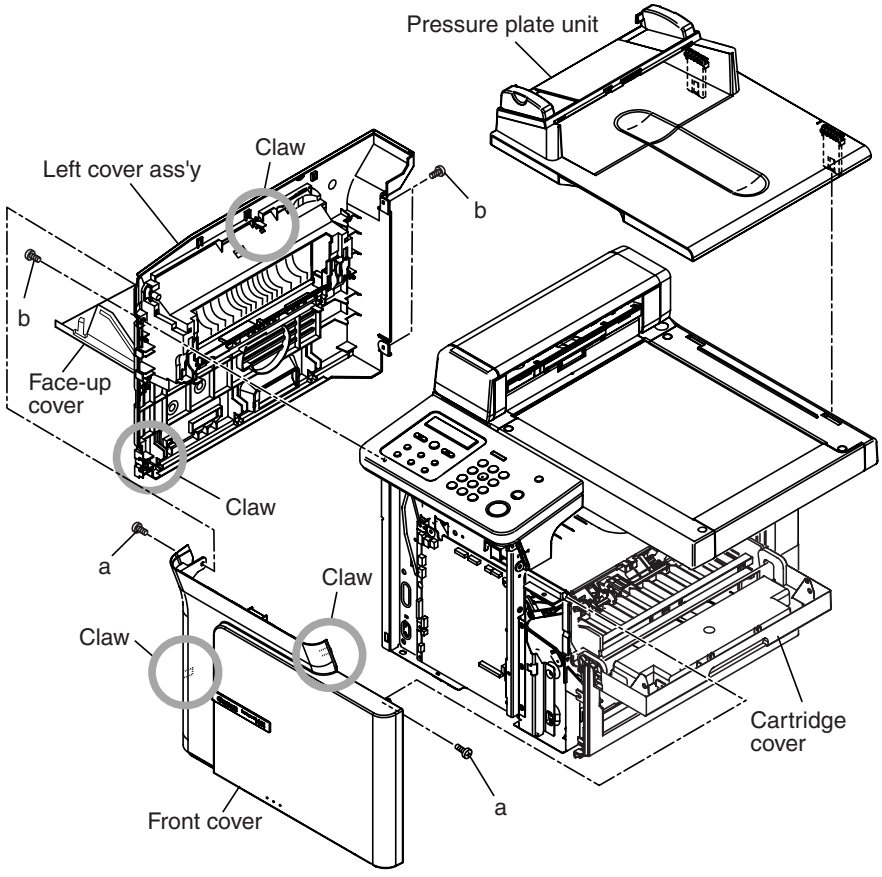

Figure 3-12 Recording Section 2

(4) Remove the 2 screws (c), and detach the right cover while removing the 5 claws.
(5) Remove the 2 interlocks of the cartridge cover arm, and detach the cartridge cover.
(6) Remove the 5 screws (d), and detach the fan cover, the rear bottom cover, and the rear right cover.

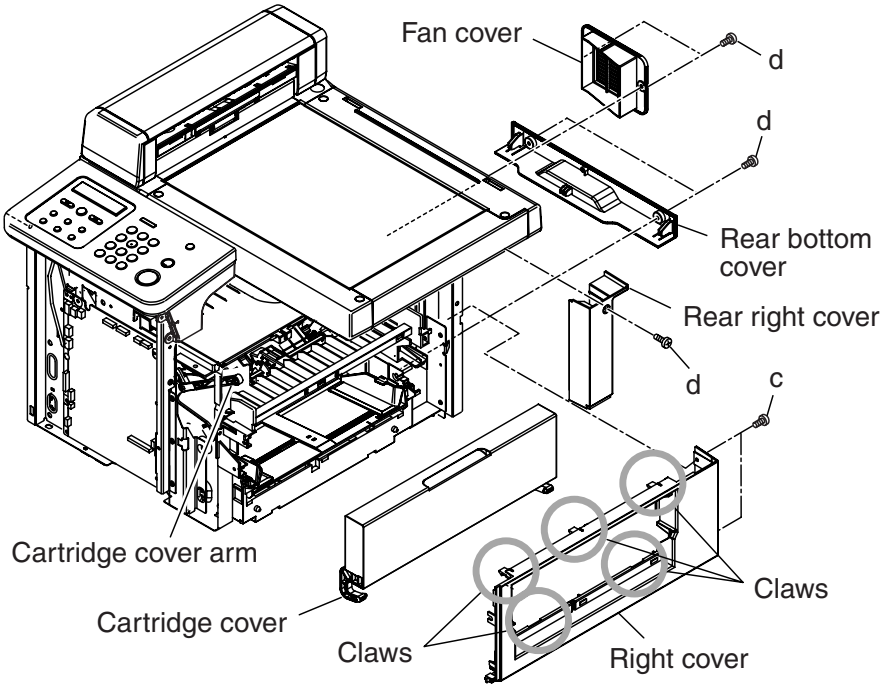

Figure 3-13 Recording Section 3

(7) Disconnect the connector J503 on the SCNT board, and detach the 2 screws (e); remove the operation panel ass'y.
(8) Remove the 4 screws (f), and detach the left stay.

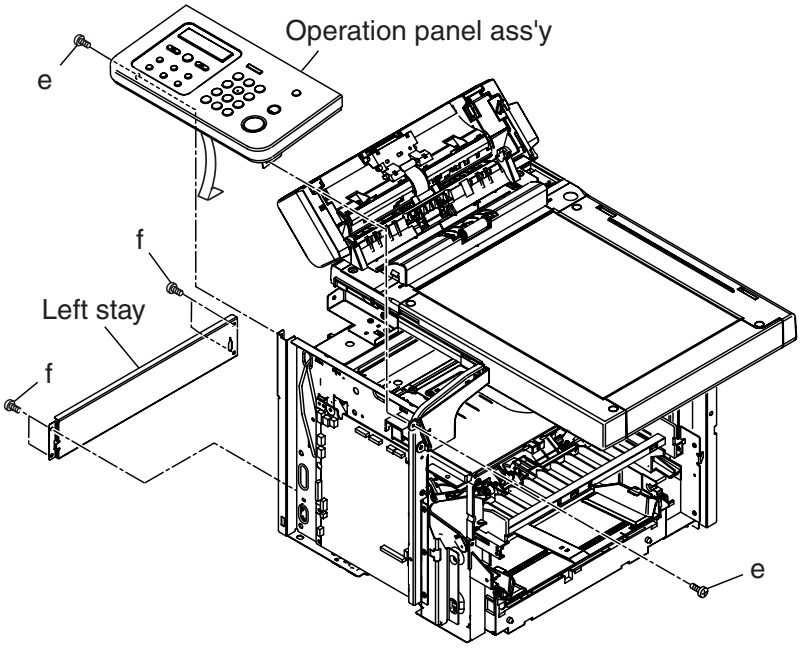

Figure 3-14 Recording Section 4

(9) Disconnect the connectors (J504, J505, J506, J509, and J516) on the SCNT board, and detach the cable from the clamp.
(10) Remove the 4 screws (h), and detach the flat bed ass'y.
(11) Remove the screw (i), and detach the operation panel under cover.

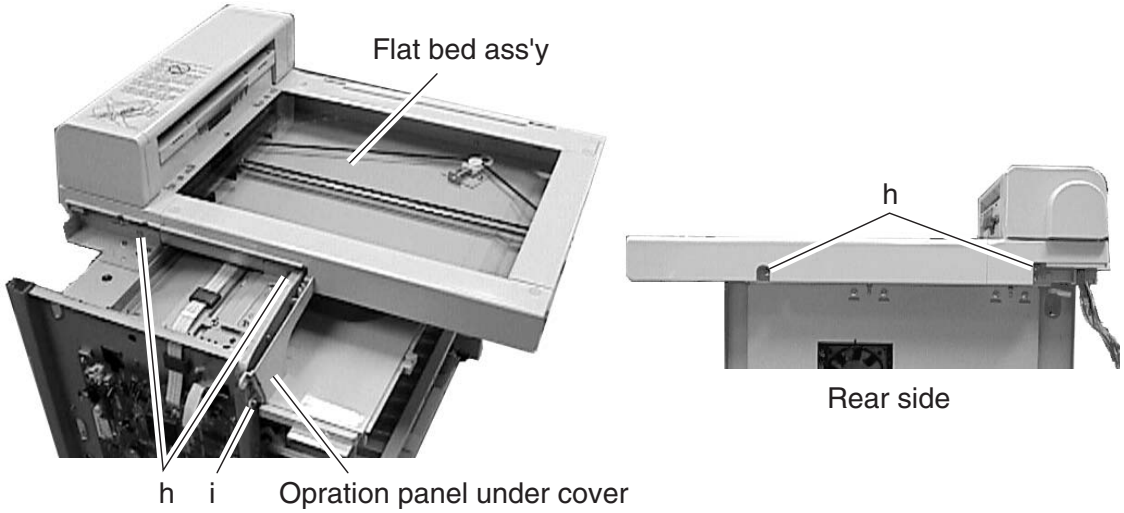

Figure 3-15 Recording Section 5

(12) Disconnect the connectors (J507, J508, J511, J514, and J515) on the SCNT board.
(13) Remove the 11 screws (j), and detach the metal chassis unit (For easier removing, free the fixing boss from its attached place).

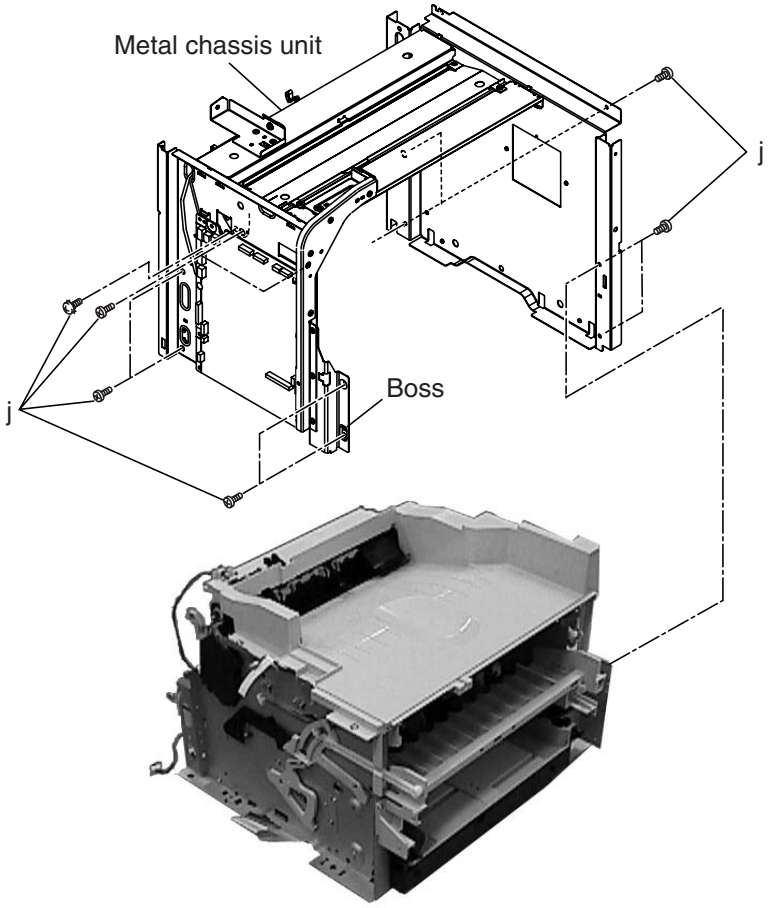

Figure 3-16 Recording Section 6

(14) Remove the 4 screws (k), and detach the paper eject frame unit.

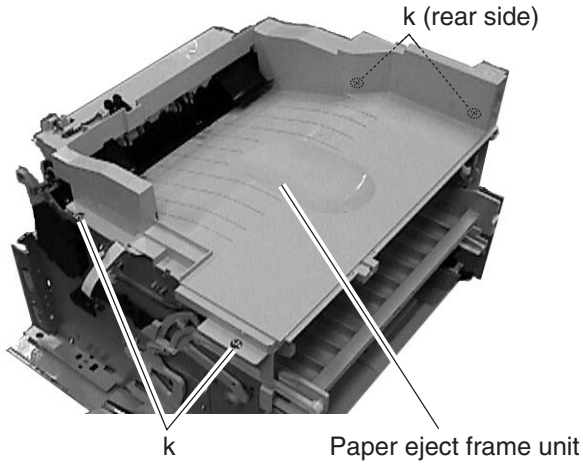

Figure 3-17 Recording Section 7

(15) Remove the screw (l).

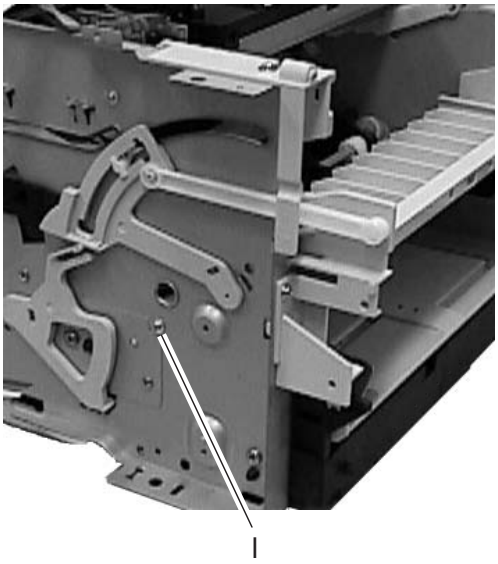

Figure 3-18 Recording Section 8

(16) Remove the 2 screws (m), and detach the front stay ass'y and the manual paper feed guide plate.

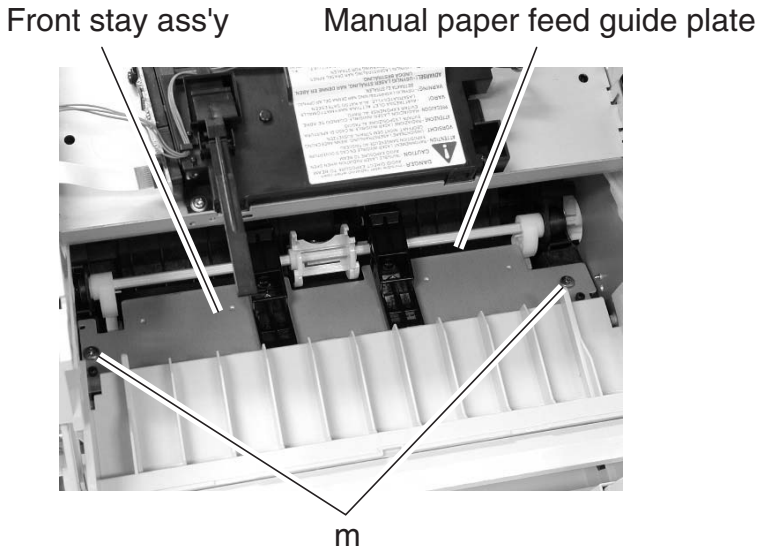

Figure 3-19 Recording Section 9

(17) While pushing the sensor lever and the arm, shift the pick-up roller holder to the left by pushing the claw.

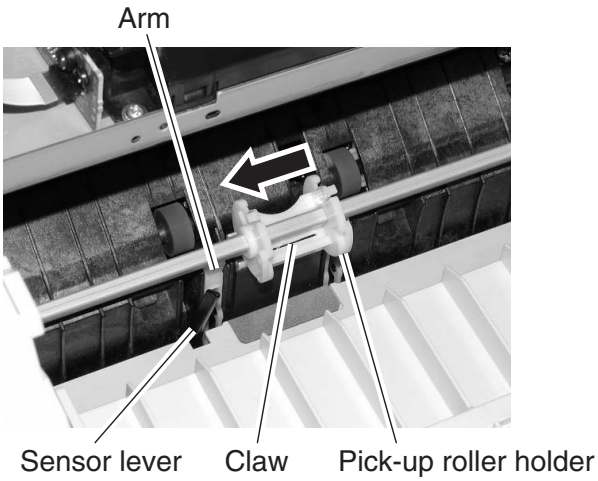

Figure 3-20 Recording Section 10

(18) Remove the separation pad with the flathead screwdriver.

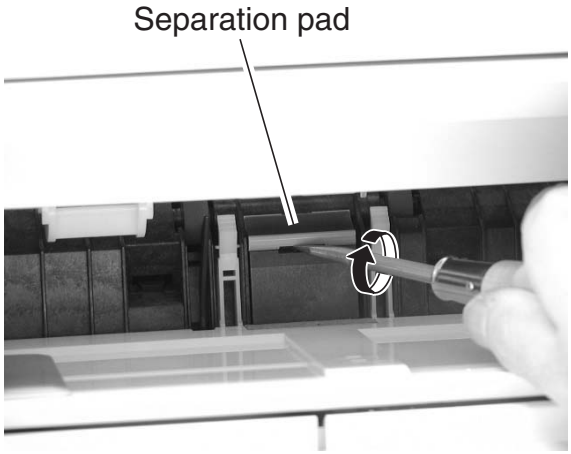

Figure 3-21 Recording Section 11

2.1.3 Fixing section

Fixing ass'y

For disassembling the fixing ass'y, follow the steps below after the steps (1)~(14) of 2.1.2 Recording Section: Removing the Separation Pad.

(15) Remove the 3 screws (l), and detach the plate.
(16) Remove the gear (m).

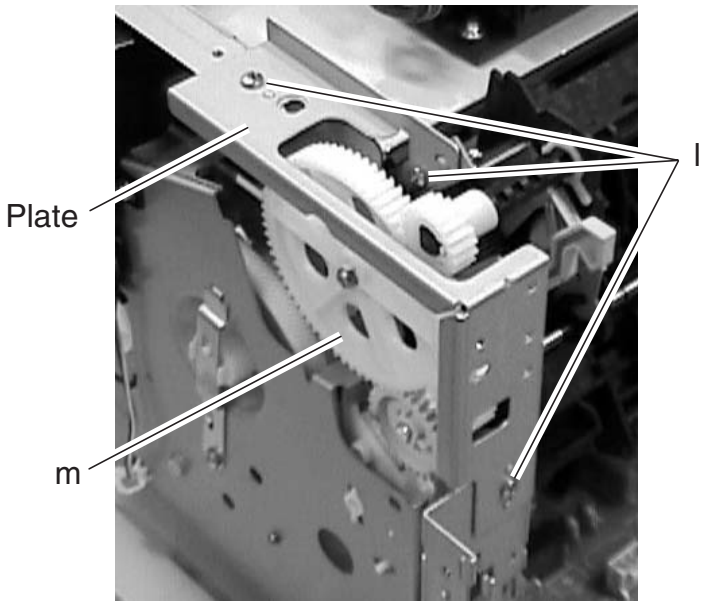

Figure 3-22 Fixing Section 1

(17) Disconnect the connectors (J102, J206 and J210) on the ECNT board, and disconnect the connector of the cable between the J305 on the ECNT board and the fixing ass'y.
(18) Remove the 2 screws (n); remove the fixing ass'y by shifting to the upper left while detaching the bosses on the both sides of the fixing ass'y.

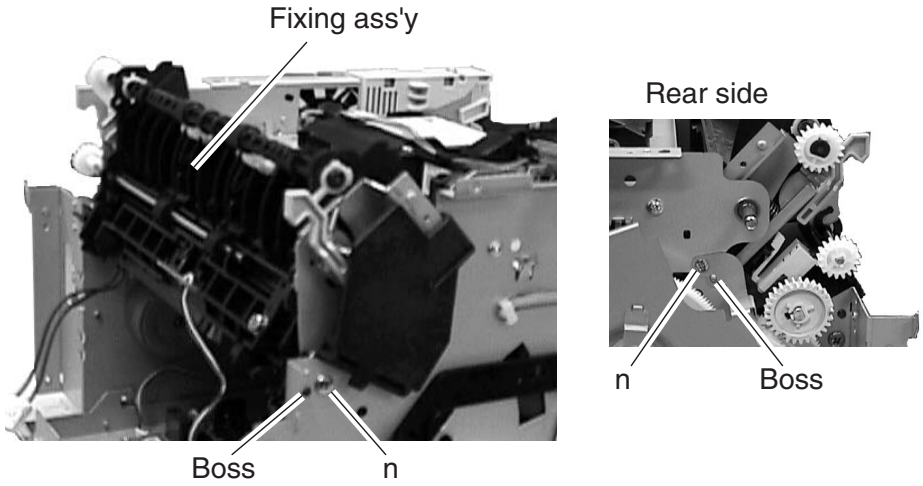

Figure 3-23 Fixing Section 2

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Chapter 4

Maintenance and Service

1. MAINTENANCE LIST

1.1 Consumables

Level	Consumable	When
User	Toner cartridge (S35)	When "**REPLACE CARTRIDGE**" is displayed.

1.2 Cleaning

Level	Location	When
User	Main unit outer covers	When dirty.
	Platen glass	When black vertical stripes appear in copied or transmitted.
	Platen glass cover	When copied or scanned images are light.
Service technician	Document pick-up roller	When document pick-up performance fails.
	Document separation roller	When document separation or feed performance roller fails.
	Document separation guide	When document separation performance roller fails.
	Document feed roller	When document feed performance fails.
	Document eject roller	When document feed performance fails.
	Platen glass	When black vertical stripes appear in copied or transmitted.
	White sheet	When copied or scanned images are light.
	Transfer guide	When dirty.
	Paper pick-up roller	When recording paper pick-up technician performance fails.
	Separation guide	When recording paper separation performance fails.
	Transfer charging	When marks on back of recording paper or roller blank spots at intervals of 45 mm in copied or received images.
	Static charge eliminator	When polka appear dots in copied images.
	Paper feed roller	When marks on back of recording paper.
	Fixing entrance guide	When marks, marks on back of recording paper, irregular/smudged black vertical line, paper jam, or wrinkles in copied or received images.
	Fixing film	When marks at intervals of 56 mm or poor fixing in printed-out.
	Fixing pressure roller	When marks on back of recording paper at intervals of 63 mm , poor fixing, paper jam, or wrinkles in printed-out.

1.3 Periodic Inspection

None

1.4 Periodic Replacement Parts

None

1.5 Adjustment Items

Checking the Nip Width of the Pressure Roller
Gain Auto Adjustment

1.6 General Tools

Tool	Use
Phillips screwdriver	Removing/inserting screws
Flat bladed screwdriver	Removing/inserting screws
Precision Phillips screwdriver	Removing/inserting screws
Precision flat bladed screwdriver	Removing plastic tabs
Tweezers	Removing/inserting coil springs
Pliers, needle nose	Driving retaining ring
Lint-free paper	Clean transfer charging roller, fixing film etc.
Isopropyl alcohol	Clean fixing film, fixing pressure roller, etc.

1.7 Special Tools

Tool	Use	Part No.
Grease (MOLYKOTE EM-50L)	Apply to specified parts	HY9-0007
Grease (MOLYKOTE EMD-110)	Apply to specified parts	HY9-0023
Grease (MOLYKOTE PG-641)	Apply to specified parts	CK-0562
Grease (IF-20)	Apply to specified parts	CK-8006
Grease (MOLYKOTE 41)	Apply to specified parts	CK-8007
IC-Removing Tool (24-64 pin)	Remove the main ROM on the SCNT board	HY9-0022

2. HOW TO CLEAN PARTS


REFERENCE

As for the parts (such as the separation guide and the fixing film) that require disassembly of each unit to clean, see Chapter 3. Assembly and Disassembly.

2.1 Main Unit Outer Covers

Wipe any dirt off with a soft, dry cloth.

2.2 Platen Glass

Open the ADF or platen glass cover and wipe any dirt off with a soft, dry cloth.

2.3 Platen Glass Cover

Open the platen glass cover and wipe any dirt off with a soft, dry cloth.

2.4 Document Pick-up Roller for PC-D340/FAX-L400 only

Open the ADF and wipe any dirt off with a soft, dry cloth.

2.5 Document Separation Roller for PC-D340/FAX-L400 only

Open the ADF and wipe any dirt off with a soft, dry cloth.

2.6 Document Separation guide for PC-D340/FAX-L400 only

Open the ADF and wipe any dirt off with a soft, dry cloth.

2.7 Document Feed Roller for PC-D340/FAX-L400 only

Open the ADF and wipe any dirt off with a soft, dry cloth.

2.8 Document Eject Roller for PC-D340/FAX-L400 only

Open the ADF and wipe any dirt off with a soft, dry cloth.

2.9 White Sheet for PC-D340/FAX-L400 only

Open the ADF and wipe any dirt off with a soft, dry cloth.

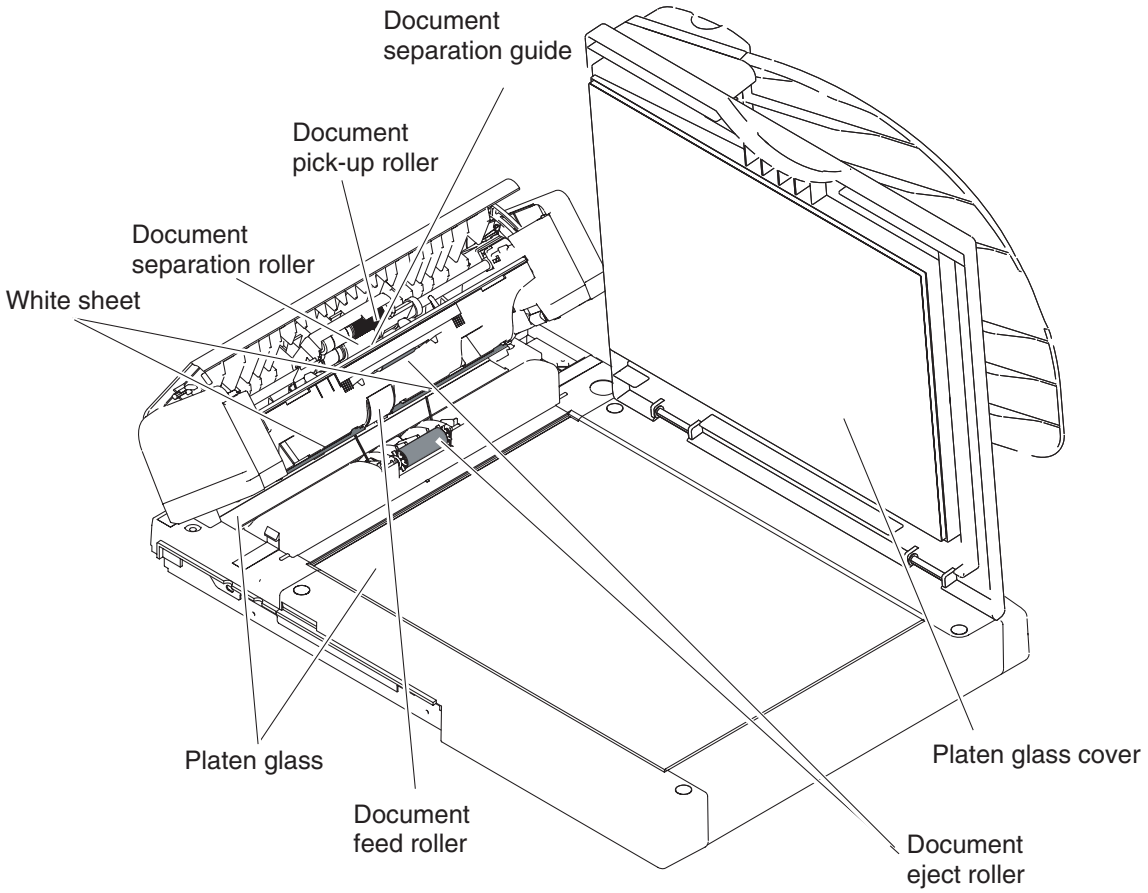


Figure 4-1 Cleaning Location 1

Do not use tissue. Otherwise, paper dust may stick to the parts or a static charge may be generated.

Precautions when using Isopropyl alcohol (IPA)

When cleaning with IPA, take care to prevent the IPA from splashing high-temperature parts. If IPA splashes high-temperature parts, leave for at least three minutes to allow the IPA to evaporate.

2.10 Transfer Guide

(1) Disconnect the power cord of the main unit from the power source.
(2) Open the right cover and remove the toner cartridge.
Store the toner cartridge in its original protective bag to avoid exposure to light.
(3) Using a soft clean cloth, wipe any dust off the blank plate of the transfer guide.


NOTE

To avoid the deterioration of print quality, never touch the transfer charging roller when you clean the metal strip.

2.11 Paper Pick-up Roller

Wipe with lint-free paper and remove any toner or paper debris.

2.12 Separation Guide

Wipe with lint-free paper and remove any toner or paper debris.

2.13 Transfer Charging Roller

Wipe with lint-free paper and remove any toner or paper debris.

Do not touch or hold the sponge section of the transfer charging roller. Doing so can cause marks on back of paper or blank spots in copied images. Do not use solvent.
Replace the charging roller it is deformed or cannot be thoroughly cleared using lint-free paper.

2.14 Static Charge Eliminator

Wipe with a lint-free paper and remove any foreign matter, such as paper fragments.

2.15 Paper Feed roller

Wipe with lint-free paper and remove any toner or paper debris.

2.16 Fixing Entrance Guide

Wipe with a lint-free paper and remove any toner or paper debris.

2.17 Fixing Film

Using lint-free paper dipped in isopropyl alcohol, wipe of the fixing film.

2.18 Fixing Pressure Roller

Using lint-free paper dipped in isopropyl alcohol, wipe of the fixing pressure roller.

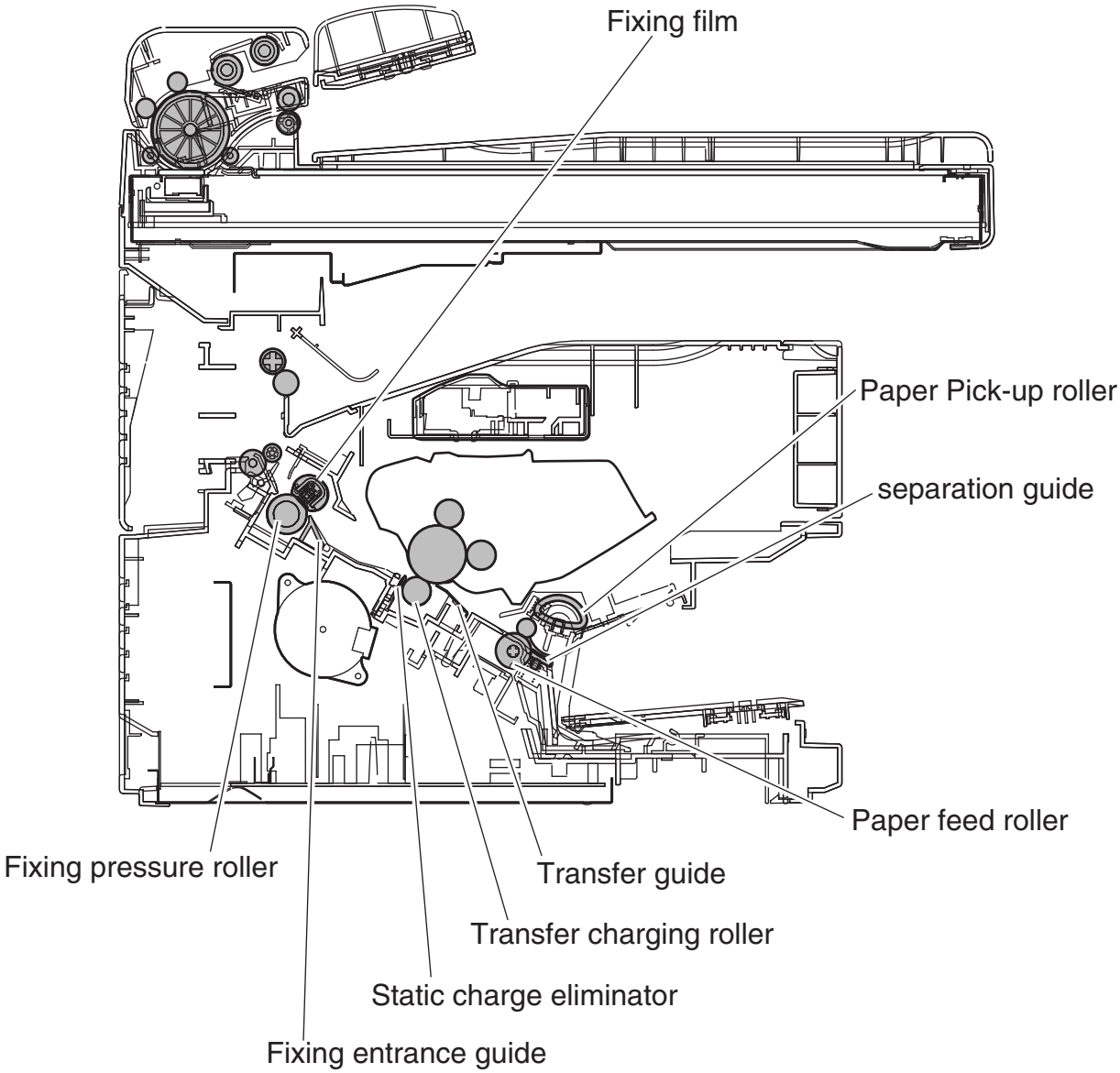


Figure 4-2 Cleaning Location 1

3. ADJUSTMENT

3.1 Checking the Nip Width of the Pressure Roller

The fixing unit is not designed to allow adjustment of the pressure (nip width); however, the incorrect nip width can cause fixing problems.

Follow the procedures below to check the nip width:

(1) Make an all-black print of A4 size using an EP cartridge,and bring the print to the customer's site.

(2) Place the all-black print in the multi-purpose tray of the printer,with the printed side facing down.

(3) Select face-up delivery by shifting the delivery switching lever downward.

(4) Press the test print switch.

(5) Turn OFF the printer when the leading edge of the print emerges at the face-up tray. Openthe rear cartridge cover and take out the print about 60 seconds later.

(6) Measure the width of the glossy band across the paper and check that it meets the require-ments as shown in Figure 4-3.

Center (a):6.0 mm to 7.6 mm

Right and left:6.0 mm to 7.6 mm

Difference between right side and left side (|b-c|):1.0 mm or less

Difference between right/left side and center (b-a,c-a):1.0 mm or less

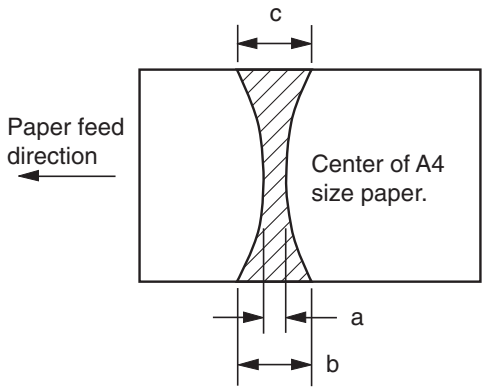


Figure 4-3 Fixing Nip Width

3.2 Gain Auto Adjustment

Performing Gain Auto Adjustment

In case of having replaced the SCNT board, the contact sensor, or the platen glass, check to make sure that the platen glass cover is closed properly before implementing Gain Auto Adjustment.

Procedure

(1) Select “TEST MODE” in Service Mode.
(2) Press the numeric key “2”, and select “CCD TEST”.
(3) Press the numeric key “0”,“8”, and Gain Auto Adjustment is performed. Be sure that “OK” is indicated on the display.
(4) Press STOP/RESET key, and the display goes back to TEST MODE.

In case that the test result is NG, check the following and try the adjustment again.
(1) Be sure that the platen glass cover is closed properly.
(2) Be sure that the platen glass is attached properly.
(3) Check if dirt is stuck to the white sheet.
(4) Be sure that the cable is connected between the contact sensor and the SCNT board.
(5) Replace the contact sensor.

4. TROUBLESHOOTING

4.1 Troubleshooting Index

Using the troubleshooting index below to investigate the cause of a problem and refer to the specified page for countermeasures.

Problem

• Errors shown on the display (Evaluation criteria: Look at the unit in question.)

• General errors

• Printing problems (Evaluation criteria: Test printing is faulty.)

• Scanning problems (Evaluation criteria: Test printing is good, but the copied image is poor.)

• Test mode function problems

4.2 Error Shown on the Display

4.2.1 User error message

Look for the applicable error message and implement the appropriate countermeasures.

"CHECK DOCUMENT"

Cause: Document jam. This is displayed when the document sensor detects paper, but the document edge sensor cannot detect the leading edge of the document with 15 seconds from the start of the feed operation.

Solution: (1) Remove the document and try again.
(2) If the document does not feed correctly, clean the rollers.

"CHECK PRINTER"

Cause: (1) An abnormality has occurred in the printer.
(2) BD signal is not detected at the specified interval.
(3) Page top sensor is detected earlier than the specified timing during paper feeding.

Solution: (1) Reset the machine by opening the right cover and then closing it.
(2) Replace the Laser/Scanner unit.
(3) Replace the ECNT board.
(4) Replace the SCNT board.

"DOCUMENT TOO LONG"

Cause: Displayed when one page of the document was longer than 14 inches (356 mm).

Solution: (1) Use a copy machine to copy the document onto several shorter pages, then copy again.
(2) Reduce them on a copy machine if necessary. Then paste them on standard letter or A4-size sheets for scanning.

"HUNG UP HONE"

Cause: The handset was left off the hook after the completion of transmission or reception.

Solution: Put the handset back on the handset rest.

"INCORRECT PAPER SIZE"

Cause: The size of the available recording paper does not match the size of the document waiting to be printed.

Solution: Load the correct paper size or change the PAPER SIZE setting of the Additional Functions. Then reset the machine by opening the right cover and then closing it.

'INSTALL CARTRIDGE"

Cause: (1) The toner cartridge has run out of toner.
(2) Toner detection structure defects.

Solution: (1) Replace the toner cartridge.
(2) Check the connection the ECNT board (J304).
(3) Clean the primary bias contact on the ECNT board and cartridge contact.
(4) Clean the drum grounding contact pin of the drive unit and cartridge contact.
(5) Replace the ECNT board.

'LOAD A4 SIZE PAPER"

Cause: No A4-size paper is loaded in the cassette or multi-purpose tray.

Solution: Load A4-size paper in the cassette or multi-purpose tray.

'MEMORY FULL"

Cause: This machine's memory is full because collate copy or 2 on 1 copy was set when a large document is loaded.

Solution: (1) Divide the document and send each part separately.
(2) If "MEMORY FULL" and "PRESS OK KEY" appear while scanning documents using the ADF, the document being scanned stops in the ADF. In this case, press "OK" to make the document come out automatically.

'OUTPUT TRAY FULL"

Cause: Output tray is full of recording paper.

Solution: (1) Remove the recording paper on the Output tray.
(2) Check if the Over flow sensor is operating correctly using the methodes given in this chapter, 6.6 Faculty Tests, Test mode [6] Faculty test, [3] Sensor tests.
(3) Check the connection between the SCNT board (J511) and Over flow sensor.
(4) Replace the Over flow sensor.
(5) Replace the SCNT board.

'PLEASE WAIT"

Cause: The standby state and the message "PLEASE WAIT" appears alternately on the screen.

Solution: (1) Check the connection between the CS drive motor and the SCNT board (J504).
(2) Replace the CS drive motor.
(3) Replace the SCNT board.

‘PRINTER DATA ERROR”

Cause: Abnormality has occurred in the data transmission between the mashine and computer.

Solution: Use Status Monitor to delete the current print job or the final print job (If more than one jobs are being printed). Then you can shift to the next job.
If you use PRINTER RESET of the Additional Functions, all the print jobs are deleted.

‘RECEIVED IN MEMORY”

Cause: (1) The fax unit has run out of recording paper.
(2) The toner supply of the toner cartridge is exhausted.
(3) The output tray is full of paper.

Solution: (1) Supply paper to the paper cassettes.
(2) Change the toner cartridge.
(3) pick up the printed pages onthetray.

‘REC. PAPER JAM”

Cause: Recording paper jam.
This is displayed when the sensor detects a paper jam.

Solution: (1) Recover paper jam.
(2) Check the connection between the ECNT board (J211) and Page top sensor.
(3) Check the connection between the ECNT board (J210) and Paper eject sensor.
(4) Check the connection between the ECNT board (J204) and Paper pick-up solenoid.
(5) Check the connection between the ECNT board (J401) and Main motor.
(6) Replace the sensors, solenoid and main motor.
(7) Replace the ECNT board.
(8) Replace the SCNT board.

‘START AGAIN”

Cause: An error due to system malfunction or line breakdown.

Solution: Carry out the same operation again.

‘STOP KEY PRESSED / PRESS OK KEY”

Cause: You have pressed the Stop / Reset button to cancel the current transaction.

Solution: No need.

‘SUPPLY REC. PAPER”

Cause: (1) Either recording paper run out or there is no recording paper cassette loaded. This is displayed when the recording paper sensor detects no paper.
(2) Either recording paper run out or there is no recording paper multi-purpose tray loaded.

Solution: (1) Refill the recording paper in the cassette.
(2) Refill the recording paper in the multi-purpose tray.
(3) Install the paper correctly.
(4) Check if the Recording paper sensor is operating correctly using the methodes given in this chapter, 6.7 Faculty Tests, Test mode [6] Faculty test, [3] Sensor tests.
(5) Check the Recording paper sensor on the ECNT board (PS201) and actuator.
(6) Replace the ECNT board.
(7) Replace the SCNT board.

‘SYSTEM ERROR”

See Printer error codes (E000, E100, E805)

4.2.2 Error codes

a) Service error code output

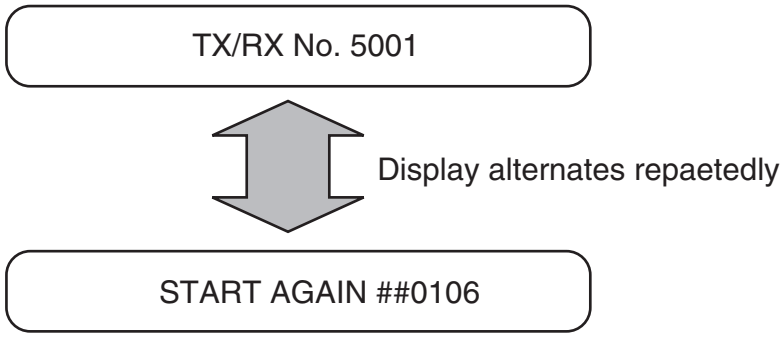


Figure 4-4 Service Error Code Display

b) Error code countermeasures

The following item c) lists all the error codes that the product can display. As for causes and countermeasures, only the error codes which are newly incorporated in the unit as well as which require remedies unique to the product are included in the item d).

- **Increase the transmission level**

  Increase service data #2 MENU Parameter No.07 toward 0 (dBm).

- **Decrease the transmission level**

  Decrease service data #2 MENU Parameter No.07 toward -15 (dBm).

- **Echo measures**

  Change the following bit switches of service data #1 SSSW SW03.

Bit 4:	1	Ignore the first DIS signal sent by the other fax machine.
	0	Do not ignore the first DIS signal sent by the other fax machine.
Bit 5:	1	Transmit a tonal signal (1850 or 1650 Hz) when the other fax machine sends a DIS signal.
	0	Do not transmit a tonal signal when the other fax machine sends a DIS signal.
Bit 6:	1	Transmit a 1850-Hz tonal signal when bit 5 is 1.
	0	Transmit a 1650-Hz tonal signal when bit 5 is 1.
Bit 7:	1	Transmit a tonal signal before sending a CED signal.
	0	Do not transmit a tonal signal before sending a CED signal.

- **EPT (Echo Protect Tone)**

Change service data #1 SSSW SW03 bit 1.

Bit 1: 1 Transmit an echo protect tone.
0 Do not transmit an echo protect tone.

- **Adjust NL equalizer.**

Set service data #2 MENU Parameter No.05 to "ON".

- **Reduce the transmission start speed.**

Reduce the transmission speed by changing "TX START SPEED" setting in user data "SYSTEM SETTINGS".

- **Loosen the TCF judgment standard.**

Not available for this fax.

- **Loosen the RTN transmission conditions.**

Change service data #3 NUMERIC Param. Parameters No.02 to 04.

No.02 Percentage of errors in all lines : Set close to 99%.
No.03 Number of lines of burst condition : Set close to 99 lines.
No.04 Lines below the burst condition : Set close to 99 times.

- **Increase the no-sound time after CFR reception.**

Change service data #1 SSSW SW04 bit 4 to "1".

Bit 4: 1 Time when the low-speed signal is ignored after sending a CFR signal: 1500 ms
0 Time when the low-speed signal is ignored after sending a CFR signal: 700 ms

c) ERROR CODE LIST

The error codes that have newly been added starting with the product are identified by the notation "New"; those error codes for which remedies unique to the product are offered are identified by the notation "UNQ (UNIQUE)".

• User error code

	No.	Tx or Rx	Definition
UNQ	#0001	[TX]	Document has jamed
UNQ	#0003	[TX/RX]	Document is too long, or page time-over
UNQ	#0005	[TX/RX]	Initial identification (T0/T1) time-over
	#0006	[TX]	Transmission cannot be made
		[RX]	Phase synchronization fails in OLD-FM
	#0008	[TX]	Password does not match for polling transmission
UNQ	#0009	[RX]	Recording paper has jamed or the recording paper has run out
	#0011	[RX]	Polling reception error
	#0012	[TX]	The other party has run out of recording paper
	#0018	[TX/RX]	Auto dialing transmission error
	#0021	[RX]	The other party has rejected the machine during polling reception
	#0022	[TX]	Call fails
	#0025	[TX/RX]	Auto-dial setting is wrong
	#0033	[TX]	Confidential transmission cannot be used
	#0034	[TX]	Transmission to the confidentical mailbox of the other party cannot be made in confidential transmission
	#0035	[TX]	Relay control transmission cannot be used
	#0036	[TX]	Relay control transmission cannot be made
	#0037	[RX]	Memory has overflowed when receiving images
	#0039	[TX]	Closed network transmission fails
	#0054	[TX/RX]	Call cannot be made
	#0056	[RX]	Recording paper feed fault
	#0057	[RX]	Recording paper feed fault
	#0058	[RX]	Recording paper feed fault
	#0059	[TX]	Dialed number and the connected number (CSI) do not match
	#0080	[TX]	The other party is not equipped with an ITU-T-compliant subaddress reception function
	#0081	[TX]	The other party is not equipped with an ITU-T-compliant password reception function
	#0082	[RX]	The other party is not equipped with an ITU-T-compliant selective polling transmission function
	#0083	[RX]	Selective polling address or the password does not match during ITU-T-compliant selective polling reception
	#0084	[RX]	The other party is not equipped with a password function for ITU-T-compliant selective polling reception
	#0099	[TX/RX]	Stop button was pressed during a communication
	#0995	[TX/RX]	Memory transmission reservation clear/memory reception image clear

• **Service error code**

No.	Tx or Rx	Definition
##0100	[TX]	The number allowed for retransmission of the procedure signal was exceeded during transmission
##0101	[TX/RX]	The modem speed of the machine does not match that of the other party
##0102	[TX]	Fallback is not possible
##0103	[RX]	EOL cannot be detected for 5 sec (15 sec if CBT)
##0104	[TX]	RTN or PIN has been received
##0106	[RX]	The procedure singal cannot be received for 6 sec while in wait
##0107	[RX]	The transmitting machine cannot be use fallback
##0109	[TX]	After transmitting DCS, a signal other than DIS, DTC, FTT, CFR, and CRP was received, exceeding the permitted number of transmissions of the procedure signal
##0111	[TX/RX]	Memory error
##0114	[RX]	RTN was transmitted
##0116	[TX/RX]	During a communication, suspension of loop current was detected
##0200	[RX]	During image reception, a carrier is not detected for 5 sec
##0201	[TX/RX]	DCN was received through a non-normal procedure
##0220	[TX/RX]	System error (e.g., main program may have gone away)
##0223	[TX]	The line was disconnected during communication
##0224	[TX/RX]	Fault occurred in the communication procedure signal
##0229	[RX]	The recording system became locked for 1 min
##0237	[RX]	The IC used to control the decoder malfunctioned
##0238	[RX]	The unit used to control recording malfunctioned
##0261	[TX/RX]	System error occurred between the modem and system control board
##0280	[TX]	The number of re-transmissions of the procedure signal has been exceeded
##0281	[TX]	The number of re-transmissions of the procedure signal has been exceeded
##0282	[TX]	The number of re-transmissions of the procedure signal has been exceeded
##0283	[TX]	The number of re-transmissions of the procedure signal has been exceeded
##0284	[TX]	DCN has been received after transmission of TCF
##0285	[TX]	DCN has been received after transmitting EOP
##0286	[TX]	DCN has been received after transmitting EOM
##0287	[TX]	DCN has been received after transmitting MPS
##0288	[TX]	After transmitting EOP, a signal other than PIN, PIP, MCF, RTP, or RTN was received
##0289	[TX]	After transmitting EOM, a signal other than PIN, PIP,MCF, RTP, or RTN was received

No.	Tx or Rx	Definition
##0290	[TX]	After transmitting MPS, a signal other than PIN, PIP,MCF, RTP, or RTN was received
##0295	[TX]	For the auto alarm notification function, the other party does not have an NTT remote maintenance function
##0670	[TX]	In V.8 late start, the V.8 ability was detected in DIS from the other party and, in response, CI was transmitted; however, the procedure failed to advance, causing a T1 time-over condition
##0671	[RX]	In V.8 call arrives, the procedure fails to advance to phase 2 after CM detection, causing a T1 time-over condition
##0672	[TX]	In V.34 transmission, the procedure fails to move from phase 2 to phase 3 and later, causing a T1 time-over condition
##0673	[RX]	In V.34 reception, the procedure fails to move from phase 2 to phase 3 and later, causing a T1 time-over condition
##0674	[TX]	In V.34 transmission, the procedure fails to move from phase 3 or phase 4 to a control channel or later, causing a T1 time-over condition
##0675	[RX]	In V.34 reception, the procedure fails to move from phase 3 or phase 4 to a control channel or later, causing a T1 time-over condition
##0705	[TX]	In CHT transmission, DCN was received after detecting NACK
##0711	[TX]	In CHT transmission, REJ was received after transmission of an image signal
##0750	[TX]	In ECM transmission, no significant signal can be received after transmission of PPS-NULL, and the allowed number of procedure signal re-transmissions was exceeded
##0751	[TX]	In ECM transmission, a signal other than MCF, PPR, or RNR was received after transmission of PPS-NULL
##0752	[TX]	In ECM transmission, DCN was received after transmission of PPS-NULL
##0753	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-NULL
##0754	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-NULL
##0755	[TX]	In ECM transmission, no significant signal can be received after transmission of PPS-MPS, and the allowed number of procedure signal re-transmissions was exceeded
##0757	[TX]	In ECM transmission, DCN was received after transmission of PPS-MPS
##0758	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-MPS

No.	Tx or Rx	Definition
##0759	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-MPS
##0760	[TX]	In ECM transmission, no significant signal can be received after transmission of PPS-EOM, and the allowed number of procedure signal re-transmissions was exceeded
##0762	[TX]	In ECM transmission, DCN was received after transmission of PPS-EOM
##0763	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-EOM
##0764	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-EOM
##0765	[TX]	In ECM transmission, no significant signal can be received after transmission of PPS-EOP, and the allowed number of procedure signal re-transmissions was exceeded
##0767	[TX]	In ECM transmission, DCN was received after transmission of PPS-EOP
##0768	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-EOP
##0769	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-EOP
##0770	[TX]	In ECM transmission, no significant signal can be received after transmission of EOR-NULL, and the allowed number of procedure signal re-transmissions was exceeded
##0772	[TX]	In ECM transmission, DCN was received after transmission of EOR-NULL
##0773	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-NULL
##0774	[TX]	In ECM transmission, ERR was received after transmission of EOR-NULL
##0775	[TX]	In ECM transmission, no significant signal can be received after transmission of EOR-MPS, and the allowed number of procedure signal re-transmissions was exceeded
##0777	[TX]	In ECM transmission, DCN was received after transmission of EOR-MPS
##0778	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-MPS
##0779	[TX]	In ECM transmission, ERR was received after transmission of EOR-MPS

No.	Tx or Rx	Definition
##0780	[TX]	In ECM transmission, no significant signal can be received after transmission of EOR-EOM, and the allowed number of procedure signal re-transmissions was exceeded
##0782	[TX]	In ECM transmission, DCN was received after transmission of EOR-EOM
##0783	[TX]	In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-EOM
##0784	[TX]	In ECM transmission, ERR was received after transmission of EOR-EOM
##0785	[TX]	In ECM transmission, no significant signal can be received after transmission of EOR-EOP, and the allowed number of procedure signal re-transmissions was exceeded
##0787	[TX]	In ECM transmission, DCN was received after transmission of EOR-EOP
##0788	[TX]	In ECM transmission, the allowed number of procedure signl re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-EOP
##0789	[TX]	In ECM transmission, ERR was received after transmission of EOR-EOP
##0790	[RX]	In ECM receprion, ERR was transmitted after reception of EOR-Q
##0791	[TX/RX]	During an ECM mode procedure, a signal other than a significant signal was received
##0792	[RX]	In ECM reception, PPS-NULL between partial pages cannot be detected
##0793	[RX]	In ECM reception, no effective frame was detected while signals were received at high speed, and a time-over condition occurred
##0795	[TX/RX]	A fault occurred in decoding process during a communication
##0799	[TX]	System error

	No.	Definition
New	E000	Fixing unit failure
New	E100	Scanner unit failure
New	E805	Fan failure

d) New error codes and recovery methods

Those error codes that have been added starting with the product and those error codes for which remedies unique to the product are offered are shown together with causes and remedies, where applicable.

#001 [TX] Document has jammed

Cause: The document jammed in the fax machine.

Solutions: Remove the document and transmit/copy again.

Cause: The document width size or thickness does not meet the standards.

Solutions: Use a copy machine to copy the document to LTR or other standard size paper, then transmit that copy.

Cause: Internal structure defect.

Solutions:

(1) Check if the document sensor (DS) and document edge sensor (DES) are operating correctly using the methods given in this chapter, 6.7 Faculty Tests, Test mode [6] Faculty test, [3] Sensor tests.

(2) Check the document sensor(DS) and SCNT board (J509) connections.

(3) Check the document edge sensor (DES) and SCNT board (J509) connections.

(4) Make a copy, and make sure that the document feed motor is operating corrctly.

(5) Check the document feed motor and SCNT board (J505) connections.

(6) Replace the document sensor(DS).

(7) Replace the document edge sensor (DES).

(8) Replace the document feed motor.

(9) Replace the SCNT board.

#003 [TX/RX] Document is too long, or page time-over

Cause: One page of the document was longer than 39.4 inches (1 meter) or transmission/copying took longer than the regulated time (32 minutes).

Solutions:
(1) Use a copy machine to copy the document onto serveral shorter page, then tranmit/copy.
(2) Raise the page timer value with Service Data #1 SSSW SW12.

Cause: Reception took longer than the regulated time (32 minutes).

Solutions:
(1) Have the other party split the document over multiple pages and receive it that way.
(2) Contact the other party and check the cause.
(3) Raise the page timer value with Service Data #1 SSSW SW12.

Cause: Internal structure defect.

Solutions:
(1) Check if the document edge sensor (DES) are operating correctly using the methods given in this chapter, 6.7 Faculty Tests, Test mode [6] Faculty test, [3] Sensor tests.
(2) Check the document edge sensor (DES) and SCNT board (J509) connections.
(3) Make a copy,and make sure that the document read motor is operating corrctly.
(4) Check the document feed motor and SCNT board (J505) connections.
(5) Replace the document edge sensor (DES).
(6) Replace the document feed motor.
(7) Replace the SCNT board.

#005 [TX/RX] Initial identification (T0/T1) time-over

Cause: Tone/pulse parameter set incorrectly.

Solutions: Set the user data "TEL LINE TYPE" tone/pulse parameter correctly.

Cause: The time until connection with the other fax is too long.

Solutions:
(1) When registering for auto dialing, add a long pause to delay the start of the timer.
(2) Lengthen the T0 timer with Service Data #3 Numeric param.10 so that the timer does not time out.

Cause: The other fax does not answer.

Solutions: Contact the other party and have them check for the cause.

Cause: A significant signal has not been received after starting transmitting theDIS signal.

Solutions: Lengthen the T1 timer (Rx) with Service Data #3 Numeric param.11 so that the time-out error does not occurr.

Cause: The communications mode (G2,G3,etc) of the other fax does not match that of this fax.

Solutions: The communications mode is a part of specification for the fax, so there is no countermeasure.

Cause:
(1) The other fax malfunctioned during transmission due to echoes.
(2) Malfunction due to echoes during reception.

Solutions: Provide measures against echoing using SW03 of service data #1 SSSW.

#009 [RX] Recording paper has jammed or the recording paper has run out

Cause: The recording paper jammed.

Solutions: Clear the recording paper jam.

Cause: There is no recording paper.

Solutions: Load recording paper.

Cause: Internal structure defect.

Solutions:
(1) Check if the cassette recording paper sensor, multi-purpose tray paper sensor are operating correctly using the methodes given in this chapter, 6.7 Faculty Tests, Test mode [6] Faculty test, [3] Sensor tests.
(2) Check the page top sensor, the sensor cable and the ECNT board (J211) connections.
(3) Check the paper eject sensor, the sensor cable and the ECNT board (J210) connections.
(4) Check the main motor, main motor connector and the ECNT board(J401).
(5) Replace the page top sensor.
(6) Replace the paper eject sensor.
(7) Replace the main motor.
(8) Replace the ECNT board.
(9) Replace the SCNT board.

E000 Fixing unit failure

Cause:
(1) Shorted/broken wired main thermistor
(2) Shorted/broken wired sub thermistor
(3) Broken wired heater/blown thermal fuse

Solutions:
(1) Turn the power off and remove the fixing unit from the machine. Measure the resistance between the fixing unit connector J206-2 (FSRTH) and J206-1 (GND).
If the resistance is not within the range between 350 KW and 520 KW (room temperature of 20°C), replace the fixing film unit.
(2) Turn the power off and remove the fixing unit from the machine. Measure the resistance between the fixing unit connector J206-3 (FSRTH2) and J206-4 (+3.3V).
If the resistance is not within the range between 370 KW and 520 KW (room temperature of 20°C), replace the fixing film unit.
(3) With the fixing film unit removed, if there is no continuity between the fixing unit connectors J102-1 (ACH) and J102-2 (ACN), replace the fixing film unit.
(4) Replace the ECNT board.
(5) Replace the SCNT board.

E100 Scanner unit failure

Cause:
(1) Poor contact in the Laser/Scanner unit connectors
(2) Defective Laser/Scanner unit
(3) Poor contact in the SCNT board connectors
(4) Defective SCNT board

Solutions:
(1) Reconnect the SCNT board connectors J507 and J508 correctly.
(2) Reconnect the Laser driver board (J801), and the Scanner motor connector (J802).
(3) Replace the Laser/Scanner unit
(4) Replace the SCNT board.

E805 Fan failure

Cause:
(1) While the fan is rotating, fan lock state is detected for 10 sec. or more continuously.
(2) When the fan starts rotating, fan lock state is not detected within 10 sec.

Solutions:
(1) Reconnect the ECNT board connector J203 correctly.
(2) Disconnect the ECNT board connector J203. Measure the voltage between the ECNT board connector J203-1 (/FANON) and J203-2 (GND) immediately after power-ON.
If the voltage changes from 0V to about 24V, replace the fan.
(3) Replace the ECNT board.

4.3 Errors not Shown on the Display

4.3.1 General errors

•The unit does not power on. (Evaluation criteria: Look at the actual unit.)

(1) Check the power cord connection.
(2) Check the connection between the SCNT board (J514) and the ECNT board (J201).
(3) Replace the ECNT board.
(4) Replace the SCNT board.

• Abnormal display. (Applicable test mode: Operation panel test)
Nothing is displayed.

(1) Check the connection between the OPCNT board (J1) and the SCNT board (J503).
(2) Check the connection between the LCD unit and the OPCNT board (J5).
(3) Replace the LCD unit.
(4) Replace the OPCNT board.
(5) Replace the SCNT board.

Part of the LCD panel does not display anything.

(1) Check for LCD problems with the test mode.
(2) Check the connection between the OPCNT board (J1) and the SCNT board (J503).
(3) Check the connection between the LCD unit and the OPCNT board (J5).
(4) Replace the LCD unit.
(5) Replace the OPCNT board.
(6) Replace the SCNT board.

•The keys do not work. (Applicable test mode: Operation panel test)

(1) If the test mode can be used, check for faulty keys.
(2) Check the connection between the OPCNT board (J1) and the SCNT board (J503).
(3) Replace the OPCNT board.
(4) Replace the SCNT board.

4.3.2 Printing problems

- **Faulty printing (Evaluation criteria: Test print is faulty.)**
- **The paper is not fed correctly. (Evaluation criteria: Look at the actual unit.)**

The main motor does not run.

(1) Check the connection between the main motor and the ECNT board (J401).
(2) Replace the main motor.
(3) Replace the ECNT board.
(4) Replace the SCNT board.

The paper is not picked up from the multi-purpose tray.

(1) Check whether the recommended paper is used.
(2) Check whether more than 10 sheets of paper have been loaded in the multi-purpose tray.
(3) Check whether the paper has been loaded into the multi-purpose tray correctly.
(4) Check the connection between the paper pick-up solenoid and the ECNT board (J204).
(5) Replace the paper pick-up solenoid.
(6) Clean the separation pad.
(7) Replace the separation pad.
(8) Replace the ECNT board.
(9) Replace the SCNT board.

The paper is not picked up from the cassette.

(1) Check whether the recommended paper is used.
(2) Check whether more than 250 sheets of paper have been loaded in the cassette.
(3) Check whether the paper has been loaded into the cassette correctly.
(4) Check the connection between the paper pickup solenoid and the ECNT board (J204).
(5) Replace the paper pickup solenoid.
(6) Clean the separation pad.
(7) Replace the separation pad.
(8) Replace the ECNT board.
(9) Replace the SCNT board.

The paper skews.

(1) Check whether the recommended paper is used.
(2) Check whether more than 10 sheets of paper have been loaded in the multi-purpose tray.
(3) Check whether more than 250 sheets of paper have been loaded in the cassette.
(4) Check whether the paper has been loaded into the multi-purpose tray correctly.
(5) Check whether the paper has been loaded into the cassette correctly.
(6) Check whether dust or paper debris have built up inside the cassette and the multi-purpose tray.
(7) Check whether the paper pickup roller, or any other rollers, are damaged or scratched.

•The printing operation is abnormal.

The unit indicates there is a paper jam when there is no paper jam.

(1) Check if the recording paper sensor is operating correctly using the methodes given in this chapter, 6.6 Faculty Tests, Test mode [6] Faculty test, [3] Sensor tests.
(2) Check the recording paper sensor, the sensor and the ECNT board (PS201).
(3) Check the page top sensor, the sensor cable and the ECNT board (J211) connections.
(4) Check the paper eject sensor, the sensor cable and the ECNT board (J210) connections.
(5) Check the main motor, main motor connector and the ECNT board (J401).
(6) Replace the recording paper sensor.
(7) Replace the page top sensor.
(8) Replace the paper eject sensor.
(9) Replace the main motor.
(10) Replace the ECNT board.
(11) Replace the SCNT board.

• Poor printing quality (Evaluation criteria: Check the test print image's faults.)

Before checking for the cause of print defects, check whether the user uses Canon-recommended paper and stores it correctly. If the problem is solved by using the recommended paper, the customer should be advised to use the recommended paper and store it correctly.

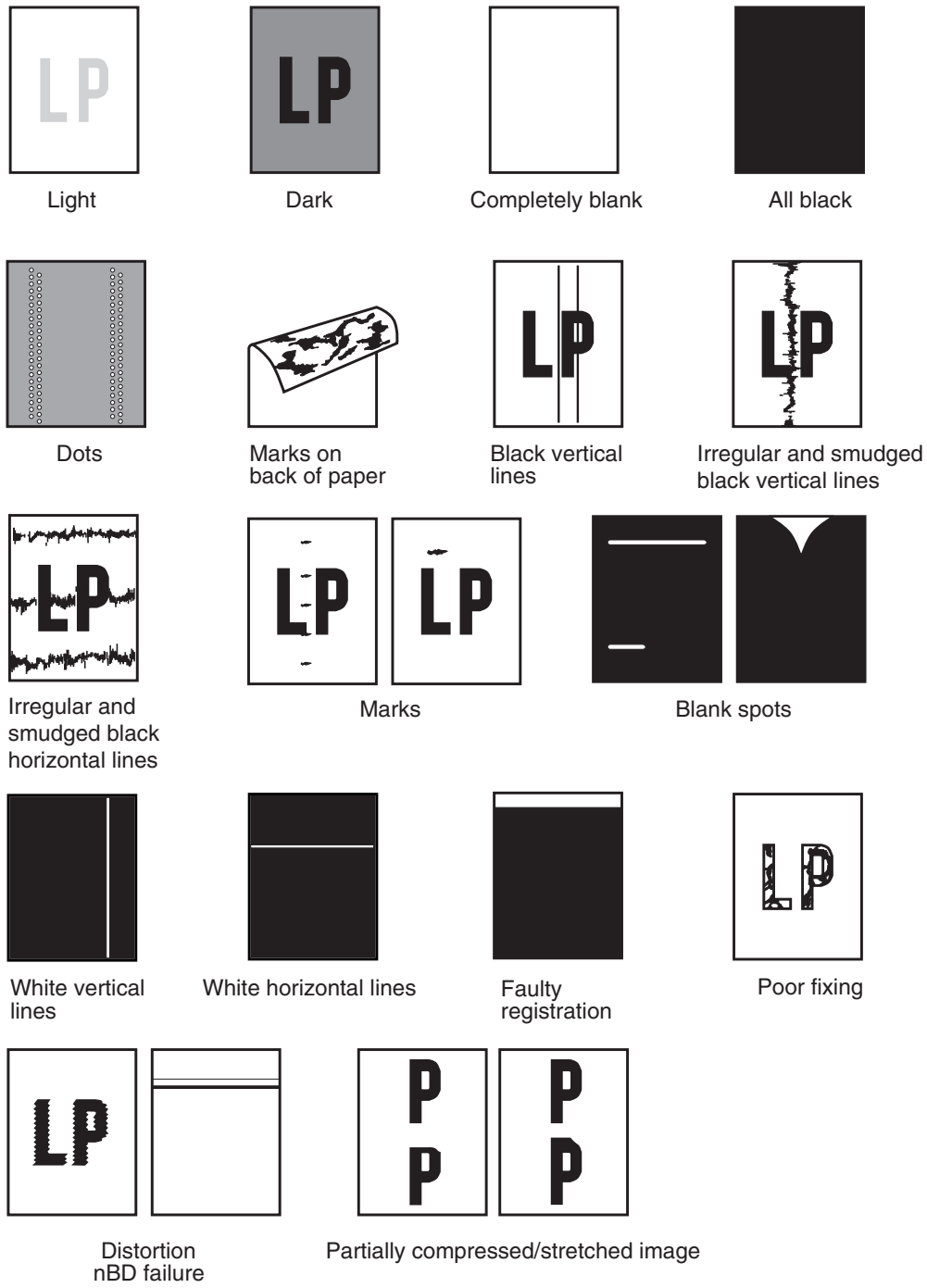


Figure 4-5 Faulty Print Samples

• Light

Solutions:
(1) Remove the toner cartridge and shake it lightly five or six times.
(2) Verify that user data "COMMON SETTING" "TONER SAVER MODE" is not "ON".
(3) Replace the toner cartridge.
(4) Open the right cover during printing, and remove the toner cartridge. Open the cartridge drum cover shutter manually, and check whether the toner image on the photosensitive drum is transferred onto the paper. If it is transferred, go to item (7). If not, go the following step.
(5) Clean the transfer bias contact and the transfer charging roller shaft contact.
(6) Replace the transfer charging roller.
(7) Clean the developing bias contact and the toner cartridge contact.
(8) Replace the ECNT board.
(9) Replace the SCNT board.

• Dark

Solutions:
(1) Verify that user data "COMMON SETTING" "TONER SAVER MODE" is not "OFF".
(2) Clean the drum ground contact and the toner cartridge contact
(3) Clean the primary charging contact and the toner cartridge contact.
(4) Replace the ECNT board.
(5) Replace the SCNT board.

• Completely blank

Solutions:
(1) Clean the developing bias contact and the toner cartridge contact.
(2) Check whether the projection for opening and closing the Laser shutter on the toner cartridge is damaged.
(3) Replace the Laser shutter lever or the Laser shutter.
(4) Replace the Laser/Scanner unit.
(5) Replace the ECNT board.
(6) Replace the SCNT board.

• All black

Solutions:
(1) Replace the toner cartridge.
(2) Clean the primary charging contact and the toner cartridge contact.
(3) Replace the ECNT board.
(4) Replace the SCNT board.

• Dots

Solutions:
(1) Clean the static charge eliminator in the toner transfer section.
(2) Check the static charge eliminator contact.
(3) Clean the transfer charging roller.
(4) Replace the transfer charging roller.
(5) Clean the transfer charging bias contact on the ECNT board and the transfer charging roller shaft contact.
(6) Replace the ECNT board.
(7) Replace the SCNT board.

• Marks on back of papers

Solutions:
(1) Copy a few white paper documents.
(2) Clean the separation guide.
(3) Replace the separaton guide.
(4) If the marks are at intervals of approx. 45.2mm (1.78"), clean the transfer charging roller, but if they are at intervals of approx. 62.8mm (2.47"), clean the pressure roller.
(5) Clean the transfer guide, paper feed guide and fixing entrance guide.
(6) Replace the transfer charging roller.
(7) Replace the pressure roller.
(8) Clean the eject roller.
(9) Replace the eject roller.

• Black vertical lines

Solutions:
(1) Open the printer cover during printing, and remove the toner cartridge. Open the cartridge drum cover shutter manually, and check whether there are black vertical lines on the photosensitive drum. If there are black lines, replace the toner cartridge. If not, go the following step.
(2) Clean the fixing entrance guide.
(3) Replace the fixing film unit.

• Irregular and smudged black vertical lines

Solutions:
(1) Clean the fixing entrance guide.
(2) Replace the toner cartridge.

• Irregular and smudged black horizontal lines

Solutions: If the irregular smudged black lines occur cyclically, replace the toner cartridge. If they are non-cyclical, replace the fixing ass'y.

• Marks

Solutions:
(1) If the marks are at intervals of approx. 62.8mm (2.47"), clean the pressure roller; if they are at intervals of approx. 56.5mm (2.22"), clean the fixing film unit; and if they are at intervals of approx. 75.4mm (2.97"),or 37.7mm (1.48"), replace the toner cartridge.
(2) Clean the eject roller.
(3) Clean the fixing entrance guide.
(4) Replace the pressure roller.
(5) Replace the eject roller.
(6) Replace the fixing film unit.

• Blank spots

Solutions:
(1) Remove the toner cartridge and shake it lightly five or six times.
(2) Replace the toner cartridge.
(3) Clean the transfer charging roller.
(4) Replace the transfer charging roller.
(5) Clean the developing bias contact and the toner cartridge contact.
(6) Replace the ECNT board.
(7) Replace the SCNT board.

• White vertical lines

Solutions:
(1) Remove the toner cartridge and shake it lightly five or six times.
(2) While printing is taking place, open the right cover, and take out the toner cartridge.
(3) Open the toner cartridge drum shutter and if there are vertical white lines on the photosensitive drum, replace the toner cartridge.
(4) Check for foreign matter stuck in the Laser output hole on the Laser/Scanner unit or the Laser input hole on the toner cartridge.
(5) Clean the eject roller.
(6) Replace the eject roller.
(7) Clean the fixing entrance guide.
(8) Clean the fixing film unit.
(9) Replace the fixing film unit.
(10) Replace the Laser/Scanner unit.

• White horizontal lines

Solutions:
(1) Replace the toner cartridge.
(2) Clean the fixing film unit.
(3) Replace the fixing film unit.

• Faulty registration

Solutions:
(1) Check if more than the regulation amount of paper is loaded in the multi-purpose tray and cassette.
(2) Clean the paper pick-up roller.
(3) Replace the paper pick-up roller.
(4) Check whether the page top sensor actuator is damaged or deformed.
(5) Clean the paper feed roller.
(6) Replace the paper feed roller.
(7) Replace the page top sensor.
(8) Replace the ECNT board.
(9) Replace the SCNT board.

• Distortion/BD signal failure

Solutions:
(1) Check the connection between the Laser/Scanner unit (J801/J802) and the SCNT board (J507/J508) connector connections.
(2) Replace the Laser/Scanner unit.
(3) Replace the SCNT board.

• Partially compressed/stretched image

Solutions:
(1) Check for foreign matter between the toner cartridge gear and the drive gear.
(2) Check if the toner cartridge gear is broken.
(3) Replace the toner cartridge.

• Poor fixing

Solutions:
(1) If the marks are at intervals of approx. 56.5mm (2.22"), clean the fixing film unit; if they are at intervals of approx. 62.8mm (2.47"), clean the pressure roller.
(2) Replace the pressure roller.
(3) Replace the fixing film unit.
(4) Check the nip width of the fixing section. If it is not as specified, replace the fixing film unit.
(5) Replace the ECNT board.
(6) Replace the SCNT board.

4.3.3 Scanning problems

- **Faulty scanning (Evaluation criteria: Test print is good, but the copied image is poor.)**
- **The document is not fed.**

The document feed motor does not run. (Evaluation criteria: Check it visually.)

(1) Check the connection between the document feed motor and the SCNT board (J505).
(2) Replace the document feed motor.
(3) Replace the SCNT board.

The document slips against the rollers. (Evaluation criteria: Check it visually. Stretched copy image.)

(1) See page 4-3 and clean the document reading section.
(2) Replace the reading section's rollers.

The document does not separate. (Evaluation criteria: Check it visually.)

(1) Check whether the document feed motor is driving all the rollers.
(Check for any damaged gears or foreign matter stuck inside.)
(2) See page 4-3 and clean the separation roller and separation guide.
(3) Replace the separation roller and separation guide.

The scanner unit's sensors are defective (Evaluation criteria: The placed document or transported document is not detected.)

(1) Check for any faulty sensors while executing the copying operation and test mode.
(2) Check the connection between the DS sensor, DES sensor and the SCNT board (J509).
(3) In test mode check whether the DS sensor and the DES sensor are operating correctly.
(4) Replace the DS sensor and DES sensor.
(5) Replace the SCNT board.

- **The scanning image is abnormal. (Evaluation criteria: Check the copy image's faults.)**

Nothing is printed.

(1) Check the connection between the contact sensor and SCNT board (J506).
(2) Replace the contact sensor unit.
(3) Replace the SCNT board.

The image has vertical stripes.

(1) Clean the contact sensor's scanning glass, platen glass and white sheet.
(2) Check the connection between the contact sensor and SCNT board (J506).
(3) Replace the contact sensor unit.
(4) Replace the SCNT board.

The image has thick vertical stripes.

(1) Clean the contact sensor's scanning glass, platen glass and white sheet.
(2) Check the connection between the contact sensor and the SCNT board (J506).
(3) Replace the contact sensor unit.
(4) Replace the SCNT board.

•The contact sensor operation is faulty.

The CS drive motor does not run. (Evaluation criteria: Check it visually.)

(1) Check the connection between the CS drive motor and the SCNT board (J504).
(2) Replace the CS drive motor.
(3) Replace the SCNT board.

The CS home position sensor is defective (Evaluation criteria: Check it visually.)

(1) Check the connection between the CS home position sensor and the SCNT board (J516).
(2) Check whether the CS home position sensor and actuator are in their correct positions.
(3) In test mode check whether the CS home position sensor (J516) is operating correctly.
(4) Replace the CS home potision sensor.
(5) Replace the SCNT board.

4.3.4 Test mode function problems

• Faulty control panel test

The LCD panel does not display correctly.

(1) Check the connection between the OPCNT board (J1) and the SCNT board (J503).
(2) Check the connection between the LCD unit and the OPCNT board (J5).
(3) Replace the LCD unit.
(4) Replace the OPCNT board.
(5) Replace the SCNT board.

The LED lamp fails to go ON.

(1) Check the connection between the OPCNT board (J1) and the SCNT board (J503).
(2) Replace the OPCNT board.
(3) Replace the SCNT board.

The keys on the operation panel fails to work properly.

(1) Check the connection between the OPCNT board (J1) and the SCNT board (J503).
(2) Replace the OPCNT board.
(3) Replace the SCNT board.

• Faulty contact sensor test.

The LED of the contact sensor fails to go ON properly.

(1) Check the connection between the Contact sensor and the SCNT board (J506).
(2) Replace the Contact sensor.
(3) Replace the SCNT board.

• Faulty DRAM test.

The indication 'READ & COMPARE NG"appears.

(1) Perform the DRAM test again. In case "READ & COMPARE NG" still appears, replace the SCNT board.

• Faulty sensor test.

DES sensor fails to operate properly.

(1) Check whether the actuator of DES sensor is in correct position.
(2) Check the connection between the DES sensor and the SCNT board (J509).
(3) Replace the DES sensor.
(4) Replace the SCNT board.

DS sensor fails to operate properly.

(1) Check whether the actuator of DS sensor is in correct position.
(2) Check the connection between the DS sensor and the SCNT board (J509).
(3) Replace the DS sensor.
(4) Replace the SCNT board.

Recording paper sensor fails to operate properly.

(1) Check whether the actuator of recording paper sensor is in correct position.
(2) Check the connection between the SCNT board (J514) and the ECNT board (J201).
(3) Replace the ECNT board.
(4) Replace the SCNT board.

Cartridge cover sensor fails to operate properly.

(1) Check whether the actuator of cartridge cover sensor is in correct position.
(2) Check the connection between the SCNT board (J514) and the ECNT board (J201).
(3) Replace the ECNT board.
(4) Replace the SCNT board.

4.4 Processing Communication Problems

4.4.1 Initial identification of problems

Since the facsimile must transmit picture information, a transmitter, a receiver and telephone lines are required for this purpose. Transmissions may cause problems if one or more of the there is poor.

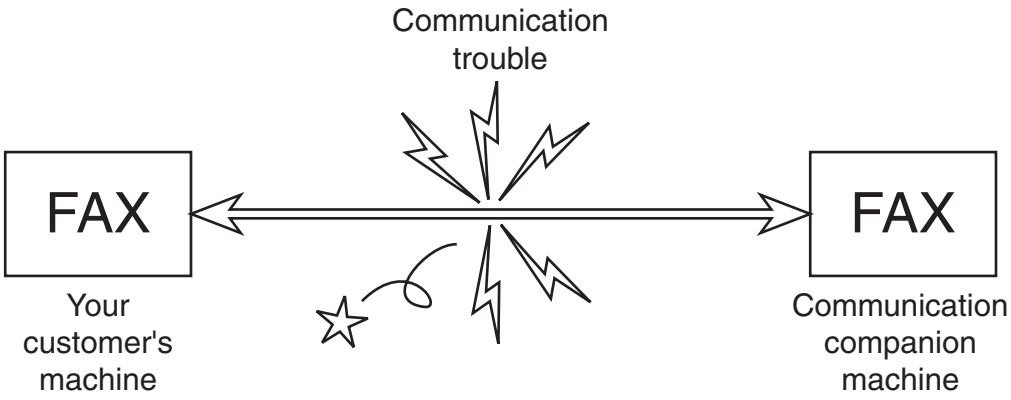


Figure 4-6 Communication Trouble

To process communication ploblrems, first of all, it is necessary to narrow down the cause of the problem. Thus, the procedures appearing below must be checked accordingly.

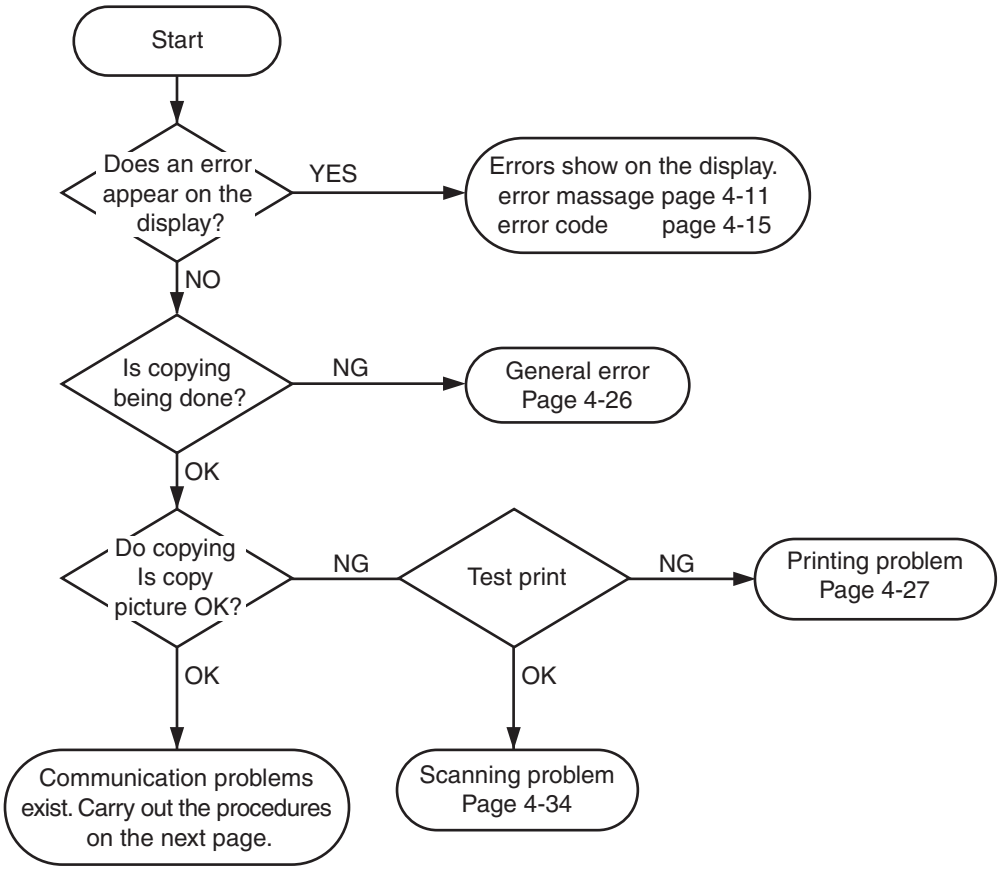


Figure 4-7 Procedures for Initial Identification of Trouble

4.4.2 Procedures for processing communication problems

If the problem proves to be communication trouble, deal with it according to the following procedures.

(1) Study the conditions at the time of trouble as closely as possible. Record or keep the items listed below.

a) Operations at the time of trouble.
Document number, transmission mode, error occurrence timing call set-up method (auto dialing etc.)

b) Sample of defective picture (When receiving)

c) LCD display at the time of trouble.

d) Communication management report at the time of trouble.

e) User's name, telephone number (to contact), Fax number, model name.

f) User's name, of the other party, telephone number (to contact), Fax number, model name, name of servicemen in charge.

g) Frequency of trouble and error code (##100 etc.).

h) Condition of the other party's facsimile:
Transmitted/received page number? Automatic or manual?
Error occourred? The receive condition? etc.


NOTE

When visiting a user with a trouble report, a) can be known by outputting the error protcol data (or error dump), and g) can be known by outputting the total transacation report (or the system error data list).

(2) Test communication according to flowchart procedures appearing on the next page.

- Carry out the tests with the actual lines on each item, verify the symptoms and record it.
- In the case of trouble with another manufacturer's facsimile, refer to the flowchart for troubles with other manufacture's.

(3) Finally, process over by judging systematically all the data.


NOTE

If the other party's facsimile is that of another manufacturer and there is nothing wrong with your customer's machine, it is recommended that you ask your customer to contact the facsimile user of the other party, so that the other party's facsimile is checked by the dealer. "Call the service station" in the flowchart (Fig.4-9) means that problems may occur with regard to the communication compatibility of facsimile, consult the matter with the staff in charge at the service station. To quicken the resolving of the problem, report the information listed in (1) above.

• Procedures for processing communication problems with Canon facsimile.

The process for carrying out communications at three points as shown in the figure.

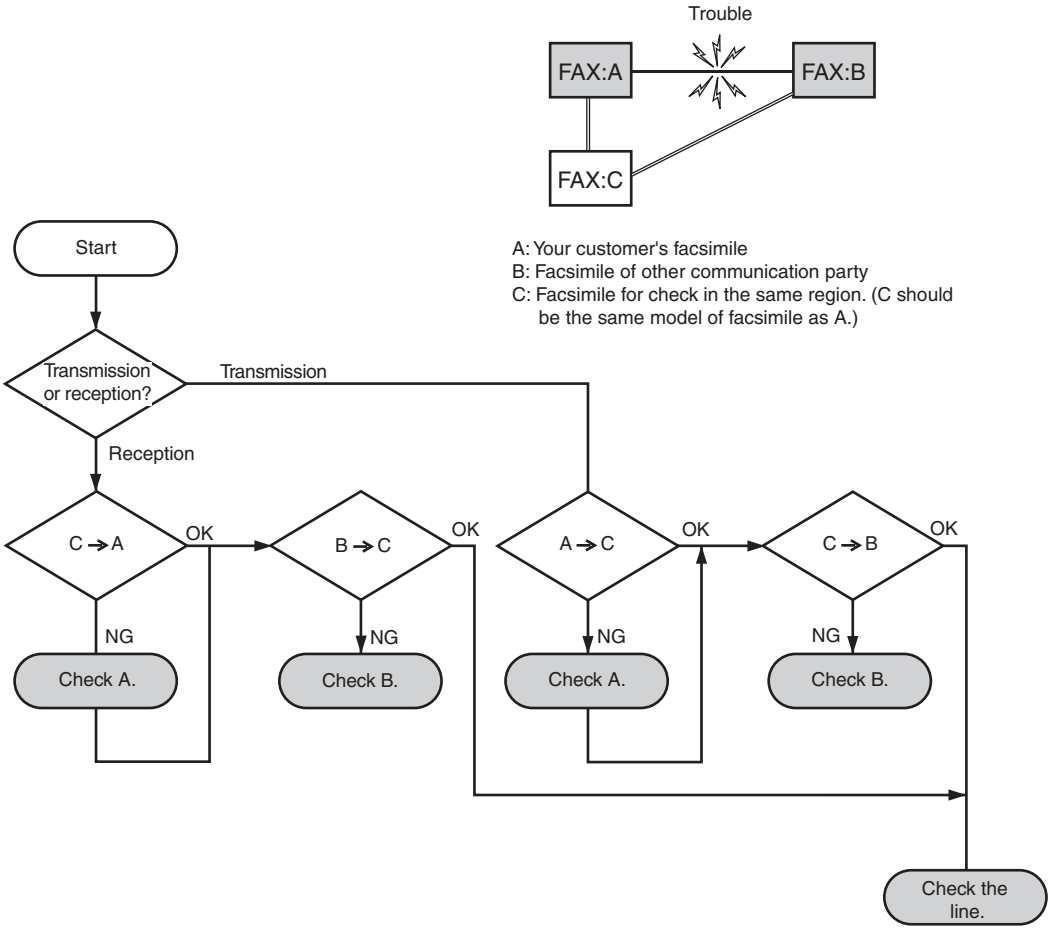


Figure 4-8 Flowchart for Processing Communication Troubles with Canon Facsimile

- Procedures for processing communication problems with other manufacturer's facsimiles.
  When problems occur with other manufacturer's facsimiles, make the user of the other party's facsimile call the serviceman in charge. Perform communication at the four points listed in the figure.

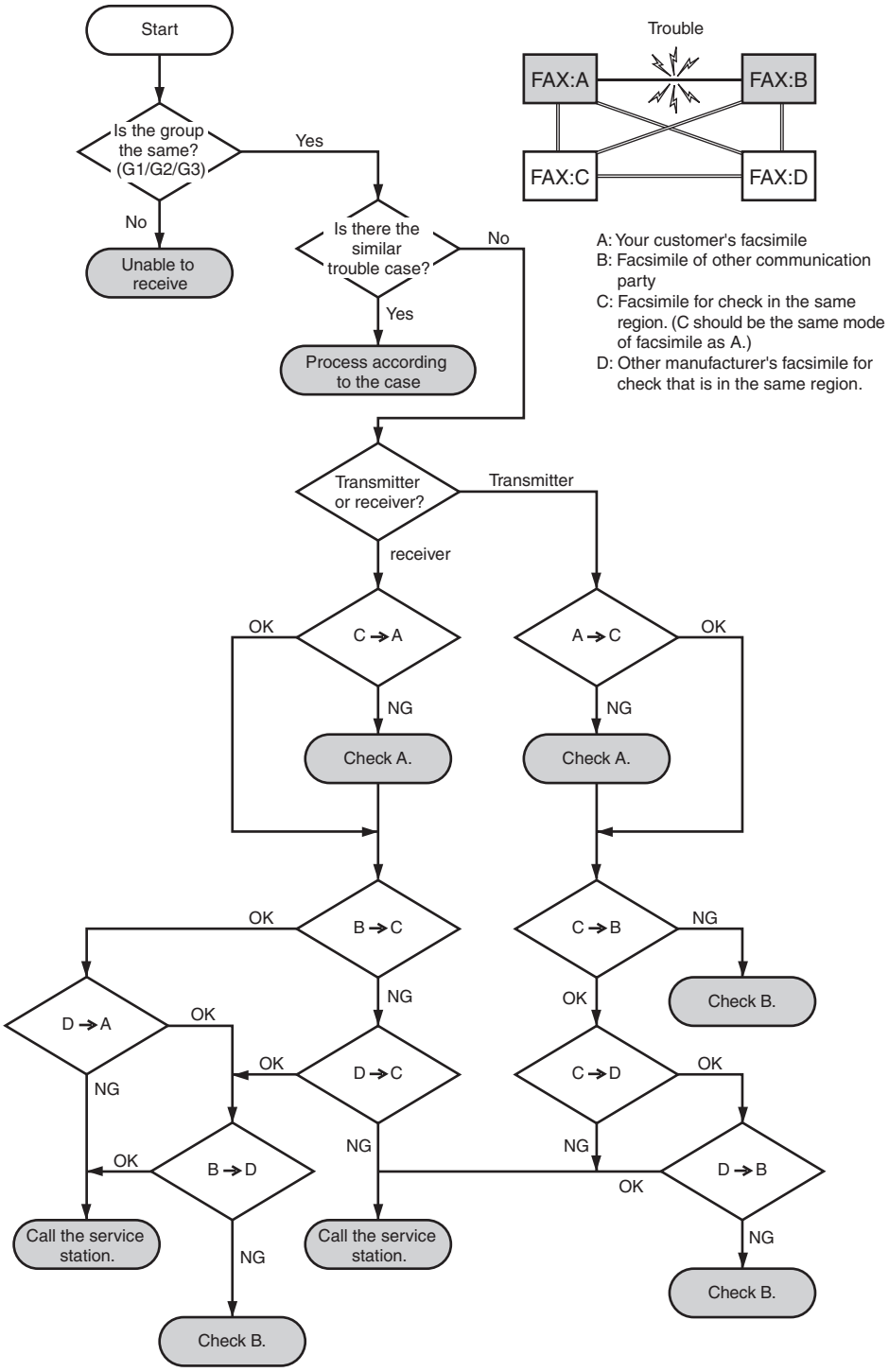


Figure 4-9 Flowchart for Processing Communication Troubles with other manufacturer's facsimile

5. SERVICE SWITCHES

5.1 Hardware Switches

This machine has the following hardware switches. Be sure not to use those switches not discussed herein; they are for use at the factory.

a) SCNT board

Jumper switch (JP1)

The lithium battery backs up control memory by causing a short with the jumper plug.

b) ECNT board

Push switch (SW201)

This is a test print switch.

5.2 Service Data Setting

Service data can be checked and changed with items on display menus. The effective SSSWs/parameters and their default values in this machine are shown in *5.4 Service Data Flowchart* in this chapter. Detailed description of each SSSW/parameter is not given in this manual except the new SSSWs/parameters added to this model. See *G3 Facsimile SERVICE DATA HANDBOOK (Rev. 0) (supplied separately)* for details of them. The new switches for this model are described in *5.6 New SSSWs/Parameters Added to this Model*.

#1 SSSW (Service Soft Switch Settings)

These setting items are for basic fax service functions such as error management, echo countermeasures, and communication trouble countermeasures.

#2 MENU (MENU switch settings)

These setting items are for functions required during installation, such as NL equalizer and transmission levels.

#3 NUMERIC Param. (NUMERIC parameter settings)

These setting items are for inputting numeric parameters such as the various conditions for the RTN signal transmission.

#4A SPECIAL (Special settings)

These setting items are for telephone network control functions.

#4B NCU (NCU settings)

These setting items are for telephone network control functions such as the selection signal transmission conditions and the detection conditions, for the control signals sent from the exchange.

#5 TYPE (TYPE setting)

The type setting makes the service data conform to a specific country communications standards.

#6 SCANNER (SCANNER function setting)

These setting items are for scanned image processing such as edge enhancement and error diffusion processing.

#7 PRINTER (PRINTER function settings)

These setting items are for basic printer service functions such as the reception picture reduction conditions. Also there is an item for resetting the printer section without switching the power off-on.

#8 PDL (PDL settings)

Do not use.

#9 COUNTER (Counter indication)

Use it to check estimates for maintenance/parts replacement.

#10 REPORT (Report output)

Use it to output reports on various service data.

#11 DOWNLOAD (Download)

Do not use.

#12 CLEAR (data initialization mode)

Various data are initialized by selecting one of these setting items. There is a setting item for checking/inputting the total number of pages printed and total number of pages scanned by this fax.

#13 ROM (ROM management)

ROM data such as the version number and checksum are displayed.

#14 CS SET (CS unit position)

Use it to change the Contact sensor unit back to its position at time of shipment.

5.3 Service Data Registration/Setting Method

Service data can be registered/set by the following operations:

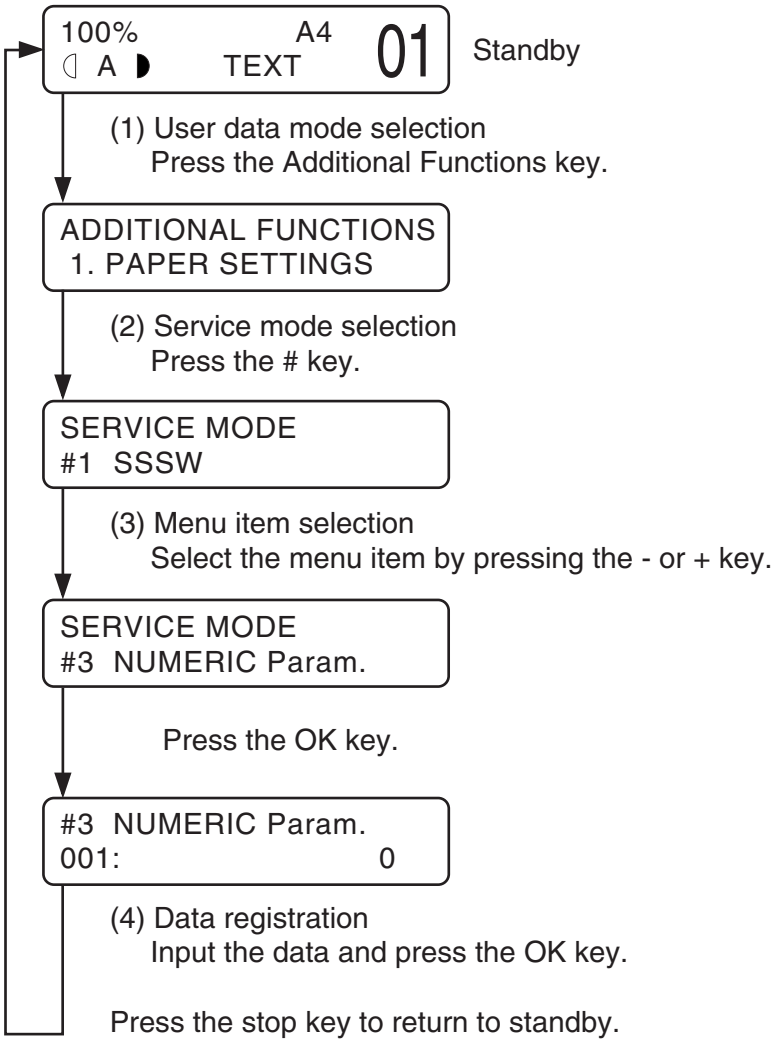


Figure 4-10 Service Data Setting Method

5.4 Service Data Flowchart

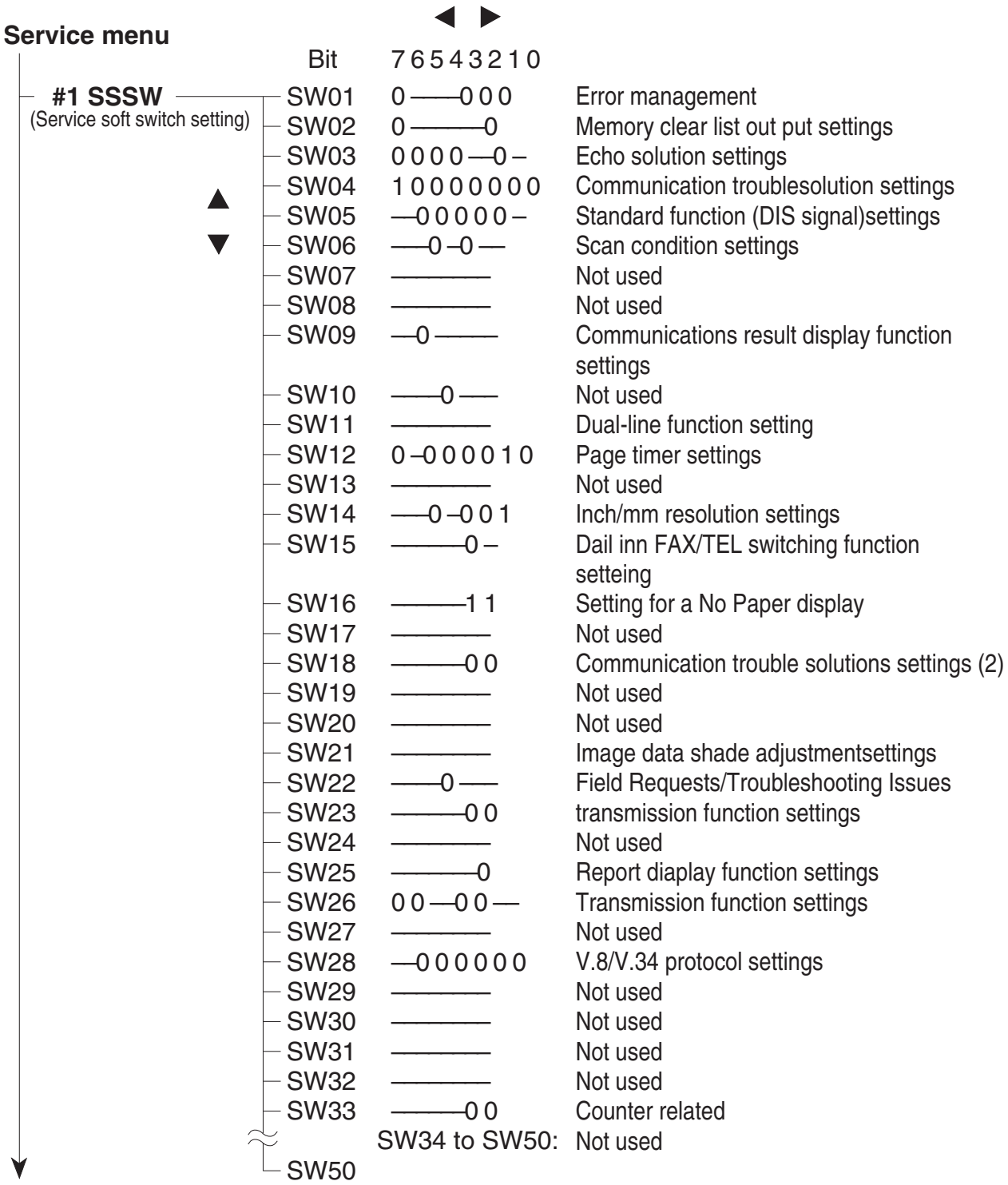


Figure 4-11 Service Data 1

The switches marked "-" are not used. Do not change their settings.

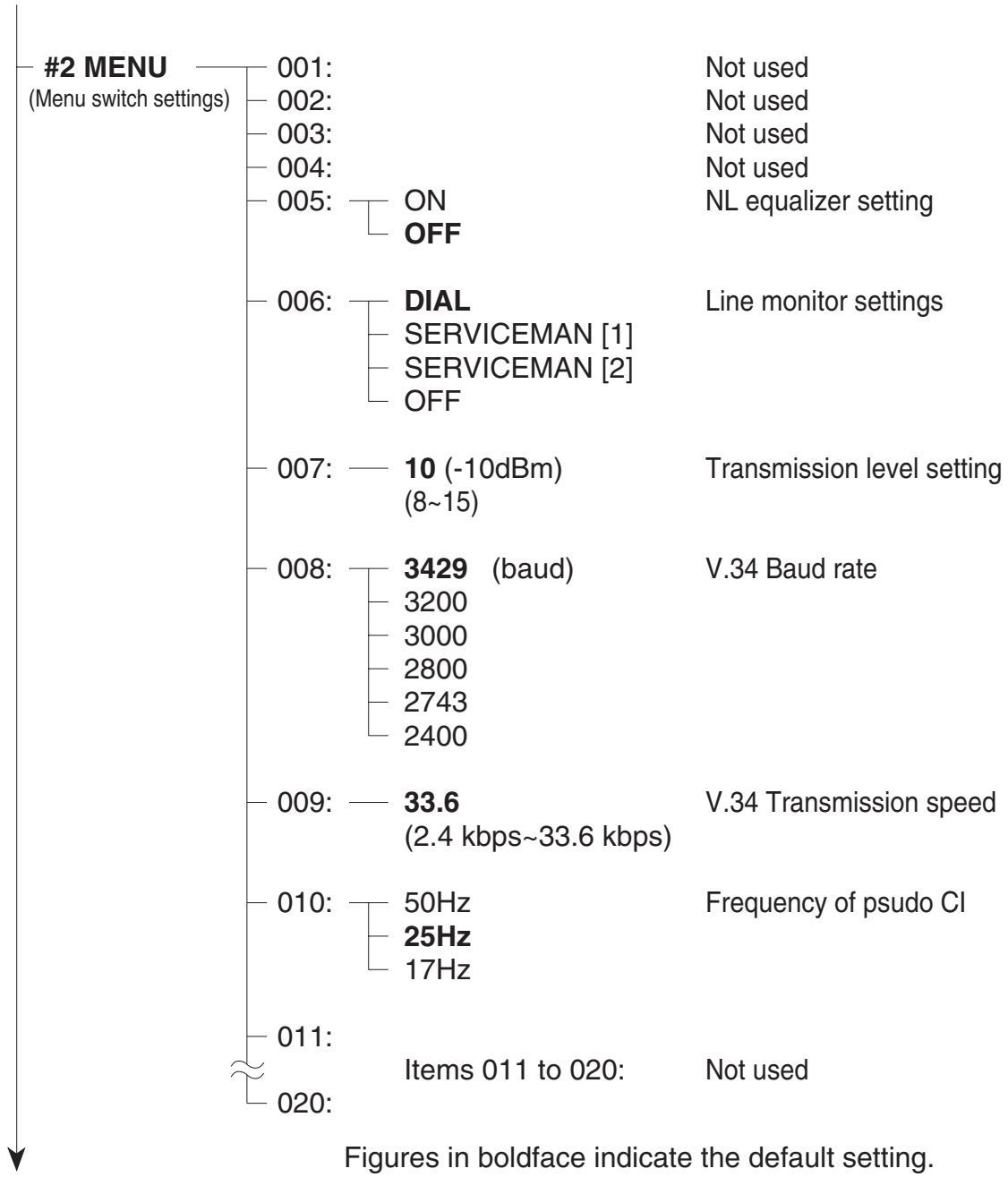


Figure 4-12 Service Data 2

No.001 to 004, 011 to 020 are not used. Do not change their settings. SERVICEMAN[2] of No.006 is not used.

#3 NUMERIC Param.
(Numeric parameter settings)

	Default	Range	
001:	0		Not used
002:	10 (10%)	(1~99)	RTN signal transmission condition (1)
003:	15 (15 times)	(2~99)	RTN signal transmission condition (2)
004:	12 (12 lines)	(1~99)	RTN signal transmission condition (3)
005:	4 (sec)	(1~60)	Pause time for NCC (before the ID code)
006:	4 (sec)	(1~60)	Pause time for NCC (after the ID code)
007:	0		Not used
008:	0		Not used
009:	6 (6 digits)	(1~20)	The number of digits in telephone compared against TSI signal to be matched for restricted receiving function
010:	5500 (55 sec)	(0~9999)	Line connection detection time (T0 timer)
011:	3500 (35 sec)	(0~9999)	T1 timer (Rx)
012:	0 (0 line)	(0~65535)	Not used
013:	1300 (13 sec)	(500~9999)	Maximum time allowed to receive one line of image data
014:	0		Not used
015:	120 (100 ms)	(0~999)	Hooking detection time
016:	2 (2 seconds)	(0~9)	Pseudo RBT transmission from CML on time until start
017:	100 (1000 ms)	(0~999)	Pseudo RBT signal pattern: On time
018:	0 (0 ms)	(0~999)	Pseudo RBT signal pattern: Off time (short)
019:	400 (4000 ms)	(0~999)	Pseudo RBT signal pattern: Off time (long)
020:	100 (1000 ms)	(0~999)	Pseudo ring pattern: On time setting
021:	0 (0 ms)	(0~999)	Pseudo ring pattern: Off time setting (short)
022:	400 (4000 ms)	(0~999)	Pseudo ring pattern: Off time setting (long)
023:	0	(0~9)	FAX/TEL switching function : Signal detection level
024:	10	(0~20)	Pseudo-RBT signal transmission level
025:	60	(0~999)	answering machine connection function signal detection level
026:	0		Not used
027:	0		Not used
028:	3 (3 sec)	(1~60)	Menu pop-up time
≈	Item 029 to 055:		Not used
055:			

Figure 4-13 Service Data 3

No. 001, 007, 008, 012, 014, 029 to 055 and 071 to 080 are not used. Do not change their settings

NOTE

#3 NUMERIC PARAM. (Numeric parameter settings)

The relationship between the settings and the detection levels is as follows:

Parameter 24

0: Not used	1: Not used	2: Not used	3: Not used	4: Not used
5: -8 dBm	6: -9 dBm	7: -10 dBm	8: -11 dBm	9: -12 dBm
10: -13 dBm	11: -14 dBm	12: -15 dBm	13: -16 dBm	14: -17 dBm
15: -18 dBm	16: -19 dBm	17: -20 dBm	18: -21 dBm	19: -22 dBm
20: -23 dBm				

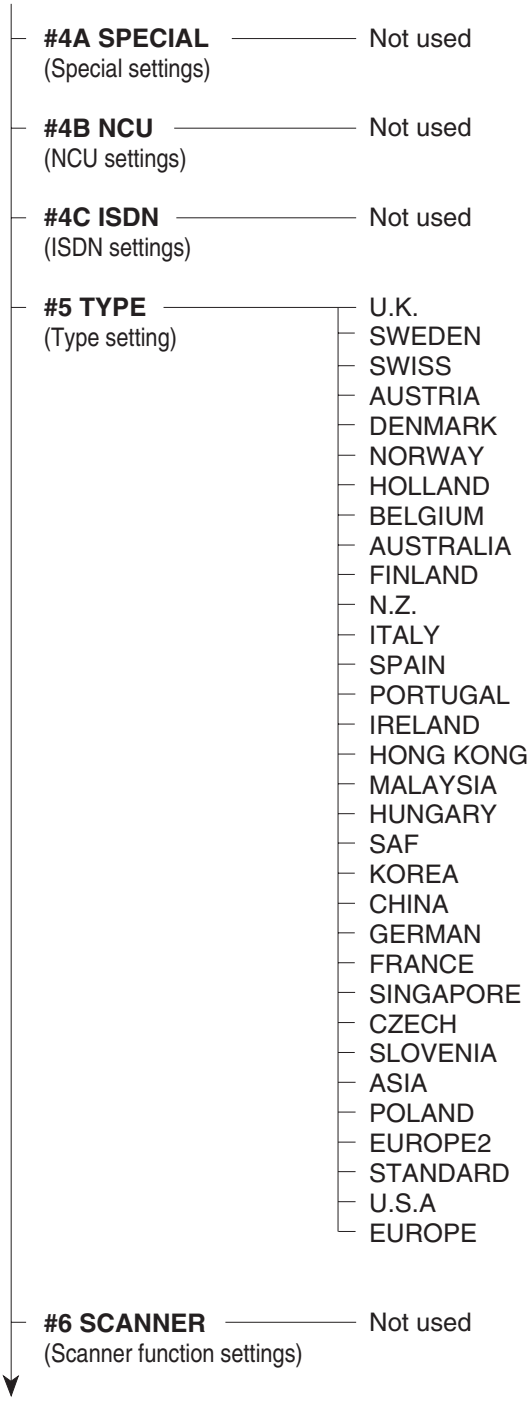


Figure 4-14 Service Data 4

#4A SPECIAL, #4B NCU, #4C ISDN

The values of these items are all set to match a specific nation's communications standards by the #5 TYPE setting. Do not change these settings.

#6 SCANNER

Tampering with this setting may cause the scanned image quality to deteriorate. Do not change these settings.

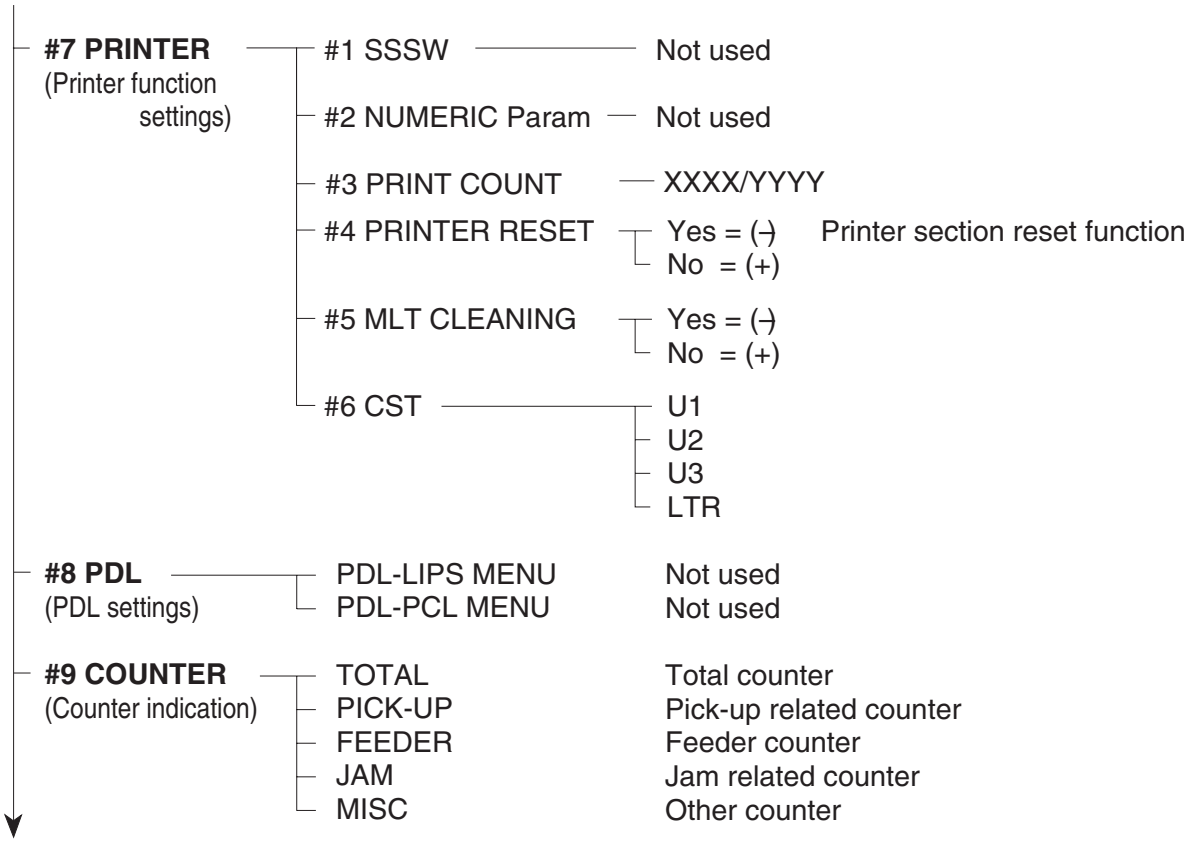


Figure 4-15 Service Data 5

#8 PDL

Not used. Do not change these settings.

- **#10 REPORT** (Service report output)
  - 1.SERVICE & SYSTEM
  - 2.SERVICE DATA
  - 3.SYSTEM DUMP
  - 4.KEY HISTORY REPOR
  - 5.COUNTER REPORT
  - 6.PRINT SPEC REPORT
- **#11 DOWNLOAD** (Download) — Not used
- **#12 CLEAR** (Data initialization mode settings)

TEL & USER DATA		Dialing data and user data initialization
USER DATA		User data initialization
SERVICE SW		Service soft switch #1 to #7 initialization
SERVICE DATA		Data on system dump list initialization
REPORT	ACTIVITY	Data on activity report initialization
	JAM	Jam history initialization
	ERR	Error (E CODE) history initialization
	ALARM	Alarm history initialization
COUNTER		Total number of pages printed/scanned
CARD		Not used
ERR		---
ALL		All user data, service data, activity management data, and image data initialization (except COUNTER)

- **#13 ROM** (ROM management)
  - MAIN: USA-10-02 020830 10D1 FFFF — Version No. and Checksum display
  - MAIN2:DD-01-01-QUAD 981111 0000 FFFF
  - ECONT:0005 FFFF
- **#14 CS SET** (CS unit position)
- **TEST MODE**

Figure 4-16 Service Data 6

#11 DOWNLOAD

Not used.

REFERENCE

For details on test mode, see *this Chapter, 6.TEST FUNCTIONS*.

5.5 Explanation of SSSW (Service Soft Switch Settings)

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.

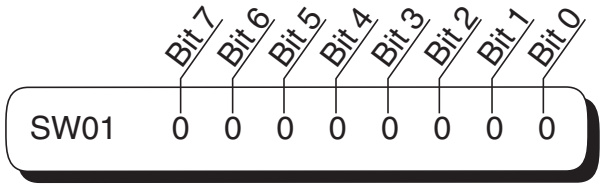
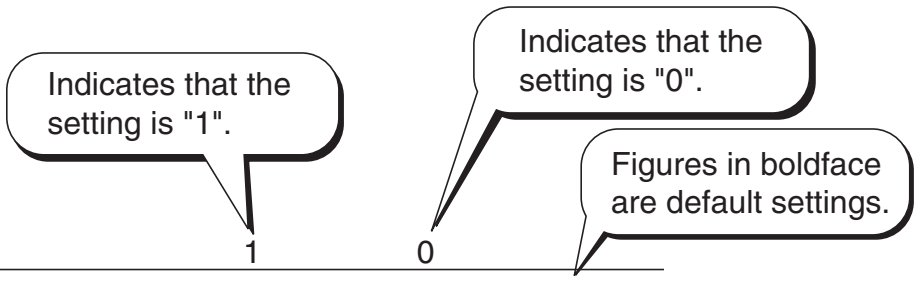


Figure 4-17 Bit Switch Display

See the chart in the service menu shown in Section 5.4 Service data flowchart to see effective bits and their default values. The meanings (functions) of the bits are not described in this manual except the new switches added to this model. See *G3 Facsimile SERVICE DATA HANDBOOK (Rev. 0) (supplied separately)* for details of the switches.
Below are examples showing how to read bit switch tables.



Bit	Function	1	0
0	Service error code	Output	**Not Output**
1	Error dump list	Output	**Not output**
2	Receive image transfer	Yes	**No**
3	Not used		
4	Not used		
5	Not used		
6	Not used		
7	Not used		

Figure 4-18 How to Read Bit Switch Tables

Do not change the settings of switches listed as “Not used”.

5.6 New SSSWs/Parameters Added to this Model

#1 SSSW

SW01 (service soft switch 01: error management)

Bit	Function	1	0
0	Service error code	**Output**	Not output
1	Error dump list	**Output**	Not output
2	Enter password at confidential Rx image data transfer	**No**	Yes
3	Copy function	**No**	Yes
4 (New)	##300 series service error code	**Output**	Not output
5	Not used		
6	Date & Time setting restriction	**Setting restricted**	Setting possible
7	User setting restriction	**Setting possible**	Setting restricted

[Bit 4]

When "Output" is selected, ##300 series Service error codes are displayed and in reports. When "Not output" is selected, no Service error codes are displayed.

SW28 (service soft switch 28: V.8/V.34 protocol settings)

Bit	Function	1	0
0 (New)	Caller V.8 protocol	No	**Yes**
1 (New)	Called party V.8 protocol	No	**Yes**
2 (New)	Caller V.8 protocol late start	No	**Yes**
3 (New)	Called party V.8 protocol late start	No	**Yes**
4 (New)	V.34 reception fallback	Prohibited	**Not prohibited**
5 (New)	V.34 transmission fallback	Prohibited	**Not prohibited**
6	Not used		
7	Not used		

[Bit 0]

Select whether to use the V.8 protocol when calling. If "NO" is selected, the V.8 protocol is inhibited at calling and the V.21 protocol is used.

[Bit 1]

Select whether to use the V.8 protocol when called. If "NO" is selected, the V.8 protocol is inhibited when called and the V.21 protocol is used.

[Bit 2]

If ANSam signal is not received during transmission, select whether to use the V.8 protocol when the other fax machine declares the V.8 protocol in DIS signal. If "NO" is selected, the CI signal is not transmitted and the V.8 protocol is not used even if the DIS that specifies the V.8 protocol is received.

[Bit 3]

Select whether to declare the V.8 protocol in DIS signal for reception. If "NO" is selected, the V.8 protocol cannot be used because it is not declared in DIS signal.

[Bit 4]

Select whether the reception side falls back during V.34 reception. If Prohibited is selected, the reception side does not fall back.

[Bit 5]

Select whether the transmission side falls back during V.34 transmission. If Prohibited is selected, the transmission side does not fall back.

SW33 (service soft switch 33: counter related)

Bit	Function	1	0
0 (New)	Count B4 as large size	Yes	**No**
1 (New)	Indicate serial No. on counter check screen	Yes	**No**
2	Not used		
3	Not used		
4	Not used		
5	Not used		
6	Not used		
7	Not used		

[Bit 0]

Use it to specify whether B4 paper should be count as large-size paper. If "Yes" is selected, B4 paper will be counted as large-size paper. If "No" is selected, on the other hand, B4 paper will be counted as small-size paper.

[Bit 1]

Use it to specific whether to indicate the machine serial No. on the Counter Check screen, appearing when the Counter button is pressed. If "Yes" is selected, the serial No. will be indicated. If "No" is selected, on the other hand, the serial No. will not be indicated.

#2 MENU

No.	Function	Selection range	Default setting
008	V.34 max. baud rate	2400~3429	3429 (3429 baud)
009	V.34 max. transmission speed	2.4~33.6	33.6 (33.6 kbps)

[No. 008]

Select the maximum baud rate for V.34 transmission: 3429, 3200, 3000, 2800, 2743, and 2400.

NOTE

This model cannot use 2743 baud due to its modem specification. If it is set to 2743 baud, the maximum baud rate is 2400 baud.

[No.009]

Select the maximum transmission speed for V.34 transmission: 2.4 to 33.6 kbps.

#3 NUMERIC PARAM. (numeric parameter settings)

No.	Function	Selection range	Default setting
028	Menu selection screen display time length	1~60	3 (3 sec)

[No.028]

Use it to set the length of time during which the Menu Select screen is indicated on the LCD.

#9 COUNTER

The following are items under COUNTER.
Small-size paper is counted for “1”, while large-size paper is counted for “2”.

Level 1	Level 2	Level 3	Description
COUNTER			
	TOTAL (total counter)		
		SERVICE1	total counter 1 for service
		SERVICE2	total counter 2 for service
		TTL	total counter
		COPY	total copy counter
		PDL-PRT	PDL print counter
		FAX-PRT	fax reception print counter
		RPT-PRT	report print counter
		SCAN	scanner counter
	PICK-UP (pickup-related counter)		
		C1	cassette 1 pickup counter
		C2	cassette 2 pickup counter
		C3	cassette 3 pickup counter
		C4	cassette 4 pickup counter
		MF	multifeeder tray pickup counter
	FEEDER (feeder-related counter)		
		FEED	feed pickup total counter
	JAM (jam counter)		
		TTL	total jam counter for machine
		FEEDER	jam counter for feeder
		SORTER	jam counter for sorter
		MF	multifeeder tray jam counter
		C1	cassette 1 jam counter
		C2	cassette 2 jam counter
		C3	cassette 3 jam counter
		C4	cassette 4 jam counter
	MISC (waste toner counter)		
		WST-TNR	waste toner counter

SSSW Default Setting

TYPE	EUROPE	U.K.	SWEDEN	SWISS	AUSTRIA	DENMARK
#1 SSSW						
SW01	00010000	00010000	00010000	00010000	00010000	00010000
SW02	00000000	00000000	00000000	00000000	00000000	00000000
SW03	00000000	00000000	00000000	00000000	00000000	00000000
SW04	00000000	00000000	00000010	00000010	00000010	00000000
SW05	00000000	00000000	00000000	00000000	00000000	00000000
SW06	10001000	10001000	10001000	10001000	10001000	10001000
SW07	00000000	00000000	00000000	00000000	00000000	00000000
SW08	00000000	00000000	00000000	00000000	00000000	00000000
SW09	00000000	00000000	00000000	00000000	00000000	00000000
SW10	00000000	00000000	00000000	00000000	00000000	00000000
SW11	00000000	00000000	00000000	00000000	00000000	00000000
SW12	00000010	00000010	00000010	00000010	00000010	00000010
SW13	00000000	00000000	00000000	00000000	00000000	00000000
SW14	00000010	00000010	00000010	00000010	00000010	00000010
SW15	00000000	00000000	00000000	00000000	00000000	00000000
SW16	00000011	00000011	00000011	00000011	00000011	00000011
SW17	00000000	00000000	00000000	00000000	00000000	00000000
SW18	00000000	00000000	00000000	00000000	00000000	00000000
SW19	00000000	00000000	00000000	00000000	00000000	00000000
SW20	00000000	00000000	00000000	00000000	00000000	00000000
SW21	00000000	00000000	00000000	00000000	00000000	00000000
SW22	00000000	00000000	00000000	00000000	00000000	00000000
SW23	00000000	00000000	00000000	00000000	00000000	00000000
SW24	00000000	00000000	00000000	00000000	00000000	00000000
SW25	00000000	00000000	00000000	00000000	00000000	00000000
SW26	00000000	00000000	00000000	00000000	00000000	00000000
SW27	00000000	00000000	00000000	00000000	00000000	00000000
SW28	00000000	00000000	00000000	00000000	00000000	00000000
SW29	00000000	00000000	00000000	00000000	00000000	00000000
SW30	00000000	00000000	00000000	00000000	00000000	00000000
#2 MENU						
05:	OFF	OFF	OFF	OFF	OFF	OFF
06:	DIAL	DIAL	DIAL	DIAL	DIAL	DIAL
07:	10	10	10	10	10	10
08:	3429Hz	3429Hz	3429Hz	3429Hz	3429Hz	3429Hz
09:	33.6	33.6	33.6	33.6	33.6	33.6
10:	25Hz	25Hz	25Hz	25Hz	25Hz	25Hz

SSSW Default Setting

TYPE	NORWAY	HOLLAND	BELGIUM	AUSTRALIA	FINLAND	N.Z.
#1 SSSW						
SW01	00010000	00010000	00010000	00010000	00010001	00010000
SW02	00000000	00000000	00000000	00000000	00000000	00000000
SW03	00000000	00000000	00000000	00000000	00000000	00000000
SW04	00000010	00000010	00000000	00000000	00000000	00000000
SW05	00000000	00000000	00000000	00000000	00000000	00000000
SW06	10001000	10001000	10001000	10001000	10001000	10001000
SW07	00000000	00000000	00000000	00000000	00000000	00000000
SW08	00000000	00000000	00000000	00000000	00000000	00000000
SW09	00000000	00000000	00000000	00000000	00000000	0000000
SW10	00000000	00000000	00000000	00000000	00000000	00000000
SW11	00000000	00000000	00000000	00000000	00000000	00000000
SW12	00000010	00000010	00000010	00000010	00000010	00000010
SW13	00000000	00000000	00000000	00000000	00000000	00000000
SW14	00000010	00000010	00000010	00000000	00000010	00000010
SW15	00000000	00000000	00000000	00000000	00000000	00000000
SW16	00000011	00000011	00000011	00000011	00000011	00000011
SW17	00000000	00000000	00000000	00000000	00000000	00000000
SW18	00000000	00000000	00000000	00000000	00000000	00000000
SW19	00000000	00000000	00000000	00000000	00000000	00000000
SW20	00000000	00000000	00000000	00000000	00000000	00000000
SW21	00000000	00000000	00000000	00000000	00000000	00000000
SW22	00000000	00000000	00000000	00000000	00000000	00000000
SW23	00000000	00000000	00000000	00000000	00000000	00000000
SW24	00000000	00000000	00000000	00000000	00000000	00000000
SW25	00000000	00000000	00000000	00000000	00000000	00000000
SW26	00000000	00000000	00000000	00000000	00000000	00000000
SW27	00000000	00000000	00000000	00000000	00000000	00000000
SW28	00000000	00000000	00000000	00000000	00000000	00000000
SW29	00000000	00000000	00000000	00000000	00000000	00000000
SW30	00000000	00000000	00000000	00000000	00000000	00000000
#2 MENU						
05:	OFF	OFF	OFF	OFF	OFF	OFF
06:	DIAL	DIAL	DIAL	DIAL	DIAL	DIAL
07:	10	10	10	10	10	10
08:	3429Hz	3429Hz	3429Hz	3429Hz	3429Hz	3429Hz
09:	33.6	33.6	33.6	33.6	33.6	33.6
10:	25Hz	25Hz	25Hz	25Hz	25Hz	25Hz

SSSW Default Setting

TYPE	ITALY	SPAIN	PORTUGAL	IRELAND	HONG KONG	MALAYSIA
#1 SSSW						
SW01	00010000	00010000	00010000	00010000	00010000	00010000
SW02	00000000	00000000	00000000	00000000	00000000	00000000
SW03	00000000	00000000	00000000	00000000	00000000	00000000
SW04	00000010	00000010	00000010	00000000	00000000	00000000
SW05	00000000	00000000	00000000	00000000	00000000	00000000
SW06	10001000	10001000	10001000	10001000	10001000	10001000
SW07	00000000	00000000	00000000	00000000	00000000	00000000
SW08	00000000	00000000	00000000	00000000	00000000	00000000
SW09	00000000	00000000	00000000	00000000	00000000	00000000
SW10	00000000	00000000	00000000	00000000	00000000	00000000
SW11	00000000	00000000	00000000	00000000	00000000	00000000
SW12	00000010	00000010	00000010	00000010	00000010	00000010
SW13	00000000	00000000	00000000	00000000	00000000	00000000
SW14	00000010	00000010	00000010	00000010	00000000	00000000
SW15	00000000	00000000	00000000	00000000	00000000	00000000
SW16	00000011	00000011	00000011	00000011	00000011	00000011
SW17	00000000	00000000	00000000	00000000	00000000	00000000
SW18	00000000	00000000	00000000	00000000	00000000	00000000
SW19	00000000	00000000	00000000	00000000	00000000	00000000
SW20	00000000	00000000	00000000	00000000	00000000	00000000
SW21	00000000	00000000	00000000	00000000	00000000	00000000
SW22	00000000	00000000	00000000	00000000	00000000	00000000
SW23	00000000	00000000	00000000	00000000	00000000	00000000
SW24	00000000	00000000	00000000	00000000	00000000	00000000
SW25	00000000	00000000	00000000	00000000	00000000	00000000
SW26	00000000	00000000	00000000	00000000	00000000	00000000
SW27	00000000	00000000	00000000	00000000	00000000	00000000
SW28	00000000	00000000	00000000	00000000	00000000	00000000
SW29	00000000	00000000	00000000	00000000	00000000	00000000
SW30	00000000	00000000	00000000	00000000	00000000	00000000
#2 MENU						
05:	OFF	OFF	OFF	OFF	OFF	OFF
06:	DIAL	DIAL	DIAL	DIAL	DIAL	DIAL
07:	10	10	10	10	10	10
08:	3429Hz	3429Hz	3429Hz	3429Hz	3429Hz	3429Hz
09:	33.6	33.6	33.6	33.6	33.6	33.6
10:	25Hz	25Hz	25Hz	25Hz	25Hz	25Hz

SSSW Default Setting

TYPE	HUNGARY	SAF	KOREA	CHINA	GERMAN	FRANCE
#1 SSSW						
SW01	00010000	00010000	00010000	00010000	00010000	00010000
SW02	00000000	00000000	00000000	00000000	00000000	00000000
SW03	00000000	00000000	00000000	00000000	00000000	00000000
SW04	00000000	00000000	00000000	00000000	00000010	00000010
SW05	00000000	00000000	00000000	00000000	00000000	00000000
SW06	10001000	10010000	10001000	10001000	10001000	10000000
SW07	00000000	00000000	00000000	00000000	00000000	00000000
SW08	00000000	00000000	00000000	00000000	00000000	00000000
SW09	00000000	00000000	00000000	00000000	00000000	00000000
SW10	00000000	00000000	00000000	00000000	00000000	00000000
SW11	00000000	00000000	00000000	00000000	00000000	00000000
SW12	00000010	00000010	00000010	00000010	00000010	00000010
SW13	00000000	00000000	00000000	00000000	00000000	00000000
SW14	00000010	00000010	00000000	00000000	00000010	00000010
SW15	00000000	00000000	00000000	00000000	00000000	00000000
SW16	00000011	00000011	00000011	00000011	00000011	00000011
SW17	00000000	00000000	00000000	00000000	00000000	00000000
SW18	00000000	00000000	00000000	00000000	00000000	00000000
SW19	00000000	00000000	00000000	00000000	00000000	00000000
SW20	00000000	00000000	00000000	00000000	00000000	00000000
SW21	00000000	00000000	00000000	00000000	00000000	00000000
SW22	00000000	00000000	00000000	00000000	00001000	00000000
SW23	00000000	00000000	00000000	00000000	00000000	00000000
SW24	00000000	00000000	00000000	00000000	00000000	00000000
SW25	00000001	00000000	00000000	00000000	00000101	00000000
SW26	00000000	00000000	00000000	00000000	00000000	00000000
SW27	00000000	00000000	00000000	00000000	00000000	00000000
SW28	00000000	00000000	00000000	00000000	00000000	00000000
SW29	00000000	00000000	00000000	00000000	00000000	00000000
SW30	00000000	00000000	00000000	00000000	00000000	00000000
#2 MENU						
05:	OFF	OFF	OFF	OFF	OFF	OFF
06:	DIAL	DIAL	DIAL	DIAL	DIAL	DIAL
07:	10	10	10	13	10	10
08:	3429Hz	3429Hz	3429Hz	3429Hz	3429Hz	3429Hz
09:	33.6	33.6	33.6	33.6	33.6	33.6
10:	25Hz	25Hz	25Hz	25Hz	50Hz	25Hz

SSSW Default Setting

TYPE	SINGAPORE	CZECH	SLOVENIA	ASIA	POLAND	EUROPE2
#1 SSSW						
SW01	00010000	00010000	00010000	00010000	00010000	00010000
SW02	00000000	00000000	00000000	00000000	00000000	00000000
SW03	00000000	00000000	00000000	00000000	00000000	00000000
SW04	00000000	00000000	00000000	00000000	00000000	00000000
SW05	00000000	00000000	00000000	00000000	00000000	00000000
SW06	10001000	10001000	10001000	10001000	10001000	10001000
SW07	00000000	00000000	00000000	00000000	00000000	00000000
SW08	00000000	00000000	00000000	00000000	00000000	00000000
SW09	00000000	00000000	00000000	00000000	00000000	00000000
SW10	00000000	00000000	00000000	00000000	00000000	00000000
SW11	00000000	00000000	00000000	00000000	00000000	00000000
SW12	00000010	00000010	00000010	00000010	00000010	00000010
SW13	00000000	00000000	00000000	00000000	00000000	00000000
SW14	00000000	00000010	00000010	00000000	00000010	00000010
SW15	00000000	00000000	00000000	00000000	00000000	00000000
SW16	00000011	00000011	00000011	00000011	00000011	00000011
SW17	00000000	00000000	00000000	00000000	00000000	00000000
SW18	00000000	00000000	00000000	00000000	00000000	00000000
SW19	00000000	00000000	00000000	00000000	00000000	00000000
SW20	00000000	00000000	00000000	00000000	00000000	00000000
SW21	00000000	00000000	00000000	00000000	00000000	00000000
SW22	00000000	00000000	00000000	00000000	00000000	00000000
SW23	00000000	00000000	00000000	00000000	00000000	00000000
SW24	00000000	00000000	00000000	00000000	00000000	00000000
SW25	00000000	00000000	00000000	00000000	00000000	00000000
SW26	00000000	00000000	00000000	00000000	00000000	00000000
SW27	00000000	00000000	00000000	00000000	00000000	00000000
SW28	00000000	00000000	00000000	00000000	00000000	00000000
SW29	00000000	00000000	00000000	00000000	00000000	00000000
SW30	00000000	00000000	00000000	00000000	00000000	00000000
#2 MENU						
05:	OFF	OFF	OFF	OFF	OFF	OFF
06:	DIAL	DIAL	DIAL	DIAL	DIAL	DIAL
07:	10	10	10	10	10	10
08:	3429Hz	3429Hz	3429Hz	3429Hz	3429Hz	3429Hz
09:	33.6	33.6	33.6	33.6	33.6	33.6
10:	25Hz	25Hz	25Hz	25Hz	25Hz	25Hz

SSSW Default Setting

TYPE	STANDARD	U.S.A.
#1 SSSW		
SW01	00010000	00000000
SW02	10000000	00000000
SW03	00000000	00000000
SW04	10000000	10000000
SW05	00000000	00000000
SW06	10001000	10001000
SW07	00000000	00000000
SW08	00000000	00000000
SW09	00000000	00000000
SW10	00000000	00000000
SW11	00000000	00000000
SW12	00000010	00000010
SW13	00000000	00000000
SW14	00000000	00000001
SW15	00000000	00000000
SW16	00000011	00000011
SW17	00000000	00000000
SW18	00000000	00000000
SW19	00000000	00000000
SW20	00000000	00000000
SW21	00000000	00000000
SW22	00000000	00000000
SW23	00000000	00000000
SW24	00000000	00000000
SW25	00000000	00000000
SW26	00000000	00000000
SW27	00000000	00000000
SW28	00000000	00000000
SW29	00000001	00000000
SW30	00000000	00000000
#2 MENU		
05:	OFF	OFF
06:	DIAL	DIAL
07:	10	10
08:	3429Hz	3429Hz
09:	33.6	33.6
10:	25Hz	25Hz

SSSW Default Setting

TYPE	EUROPE	U.K.	SWEDEN	SWISS	AUSTRIA	DENMARK
#3 NUMERIC Param						
02:	10	10	10	10	10	10
03:	15	15	15	15	15	15
04:	12	12	12	12	12	12
05:	4	4	4	4	4	4
06:	4	1	4	4	4	4
09:	6	6	6	6	6	6
10:	5500	5500	5500	5500	5500	5500
11:	3500	3500	3500	3500	3500	3500
13:	1300	1300	1300	1300	1300	1300
15:	120	120	120	120	120	120
16:	2	2	2	2	2	2
17:	100	100	100	100	100	100
18:	0	0	0	0	0	0
19:	400	400	400	400	400	400
20:	100	100	100	100	100	100
21:	0	0	0	0	0	0
22:	400	400	400	400	400	400
23:	0	0	0	0	0	0
24:	10	10	10	10	10	10
25:	60	60	60	60	60	60
26:	0	0	0	0	0	0
27:	0	0	0	0	0	0
28:	3	3	3	3	3	3
#5 TYPE	EUROPE	U.K.	SWEDEN	SWISS	AUSTRIA	DENMARK

SSSW Default Setting

TYPE	NORWAY	HOLLAND	BELGIUM	AUSTRALIA	FINLAND	N.Z.
#3 NUMERIC						
Param						
02:	10	10	10	10	10	10
03:	15	15	15	15	15	15
04:	12	12	12	12	12	12
05:	4	4	4	4	4	4
06:	4	4	4	4	4	4
09:	6	6	6	6	6	6
10:	5500	5500	5500	5500	5500	5500
11:	3500	3500	3500	3500	3500	3500
13:	1300	1300	1300	1300	1300	1300
15:	120	120	120	120	120	120
16:	2	2	2	2	2	2
17:	100	100	100	100	100	100
18:	0	0	0	0	0	0
19:	400	400	400	400	400	400
20:	100	100	100	100	100	100
21:	0	0	0	0	0	0
22:	400	400	400	400	400	400
23:	0	0	0	0	0	0
24:	10	10	10	10	12	10
25:	60	60	60	60	60	60
26:	0	0	0	0	0	0
27:	0	0	0	0	0	0
28:	3	3	3	3	3	3
#5 TYPE	NORWAY	HOLLAND	BELGIUM	AUSTRALIA	FINLAND	N.Z.

SSSW Default Setting

TYPE	ITALY	SPAIN	PORTUGAL	IRELAND	HONG KONG	MALAYSIA
#3 NUMERIC Param						
02:	10	10	10	10	10	10
03:	15	15	15	15	15	15
04:	12	12	12	12	12	12
05:	4	15	4	4	4	4
06:	4	3	4	4	1	4
09:	6	6	6	6	6	6
10:	5500	5500	5500	5500	5500	5500
11:	3500	3500	3500	3500	3500	3500
13:	1300	1300	1300	1300	1300	1300
15:	120	120	120	120	120	120
16:	2	2	2	2	2	2
17:	100	100	100	100	100	100
18:	0	0	0	0	0	0
19:	400	400	400	400	400	400
20:	100	100	100	100	100	100
21:	0	0	0	0	0	0
22:	400	400	400	400	400	400
23:	0	0	0	0	0	0
24:	10	10	10	10	10	10
25:	60	60	60	60	60	60
26:	0	0	0	0	0	0
27:	0	0	0	0	0	0
28:	3	3	3	3	3	3
#5 TYPE	ITALY	SPAIN	PORTUGAL	IRELAND	HONG KONG	MALAYSIA

SSSW Default Setting

TYPE	HUNGARY	SAF	KOREA	CHINA	GERMAN	FRANCE
#3 NUMERIC						
Param						
02:	10	10	10	10	8	10
03:	15	15	15	15	15	15
04:	12	12	12	12	6	12
05:	4	4	4	4	4	4
06:	4	4	4	4	4	4
09:	6	6	6	6	6	6
10:	5500	5500	5500	4500	9000	5500
11:	3500	3500	3500	3500	3500	3500
13:	1300	1300	1200	1300	1300	1300
15:	120	120	120	120	120	120
16:	2	2	2	2	2	2
17:	100	100	100	100	100	100
18:	0	0	0	0	0	0
19:	400	400	400	400	400	400
20:	100	100	100	100	100	100
21:	0	0	0	0	0	0
22:	400	400	400	400	400	400
23:	0	0	0	0	0	0
24:	10	10	10	10	10	10
25:	60	60	60	60	60	60
26:	0	0	4	0	0	0
27:	0	0	0	0	0	0
28:	3	3	3	3	3	3
#5 TYPE	HUNGARY	SAF	KOREA	CHINA	GERMAN	FRANCE

SSSW Default Setting

TYPE	SINGAPORE	CZECH	SLOVENIA	ASIA	POLAND	EUROPE2
#3 NUMERIC						
Param						
02:	10	10	10	10	10	10
03:	15	15	15	15	15	15
04:	12	12	12	12	12	12
05:	4	4	4	4	4	4
06:	4	4	4	4	4	4
09:	6	6	6	6	6	6
10:	5500	5500	5500	5500	5500	5500
11:	3500	3500	3500	3500	3500	3500
13:	1300	1300	1300	1300	1300	1300
15:	120	120	120	120	120	120
16:	2	2	2	2	2	2
17:	100	100	100	100	100	100
18:	0	0	0	0	0	0
19:	400	400	400	400	400	400
20:	100	100	100	100	100	100
21:	0	0	0	0	0	0
22:	400	400	400	400	400	400
23:	0	0	0	0	0	0
24:	10	10	10	10	10	10
25:	60	60	60	60	60	60
26:	0	0	0	0	0	0
27:	0	0	0	0	0	0
28:	3	3	3	3	3	3
#5 TYPE	SINGAPORE	CZECH	SLOVENIA	ASIA	POLAND	EUROPE2

SSSW Default Setting

TYPE	STANDARD	U.S.A.
#3 NUMERIC		
Param		
02:	10	10
03:	15	15
04:	12	12
05:	4	4
06:	4	4
07:	350	350
09:	6	6
10:	5500	5500
11:	3500	3500
13:	1300	1300
15:	120	120
16:	4	4
17:	100	100
18:	0	0
19:	200	200
20:	100	100
21:	0	0
22:	200	200
23:	3	4
24:	10	10
25:	60	60
26:	3	4
27:	0	0
28:	3	3
#5 TYPE	STANDARD	U.S.A.

6. TEST FUNCTIONS

This machine functions for testing individual operations, such as below.

6.1 Test Mode Overview

Test mode can be executed by following the menu items from the display.

a) D-RAM tests

Writes data to DRAM image storage areas and reads that data to check operations.

b) Print test

Print patterns within the print area.

c) MODEM, NCU test

The frequency test, G3 signal transmission test, and Tonal and DTMF signals reception tests, and V.34 G3 signal transmission test.

d) Faculty tests

Test the sensor functions and operation of operation panel.

6.2 Test Mode Flowchart

To operate the test mode, after pressing the Additional Function key, press the # key and select "SERVICE MODE". After this, select "TEST MODE" with the - or + keys, and press the OK key.

To end test mode, keep pressing the Stop/Reset key while pressing the Additional Function key.

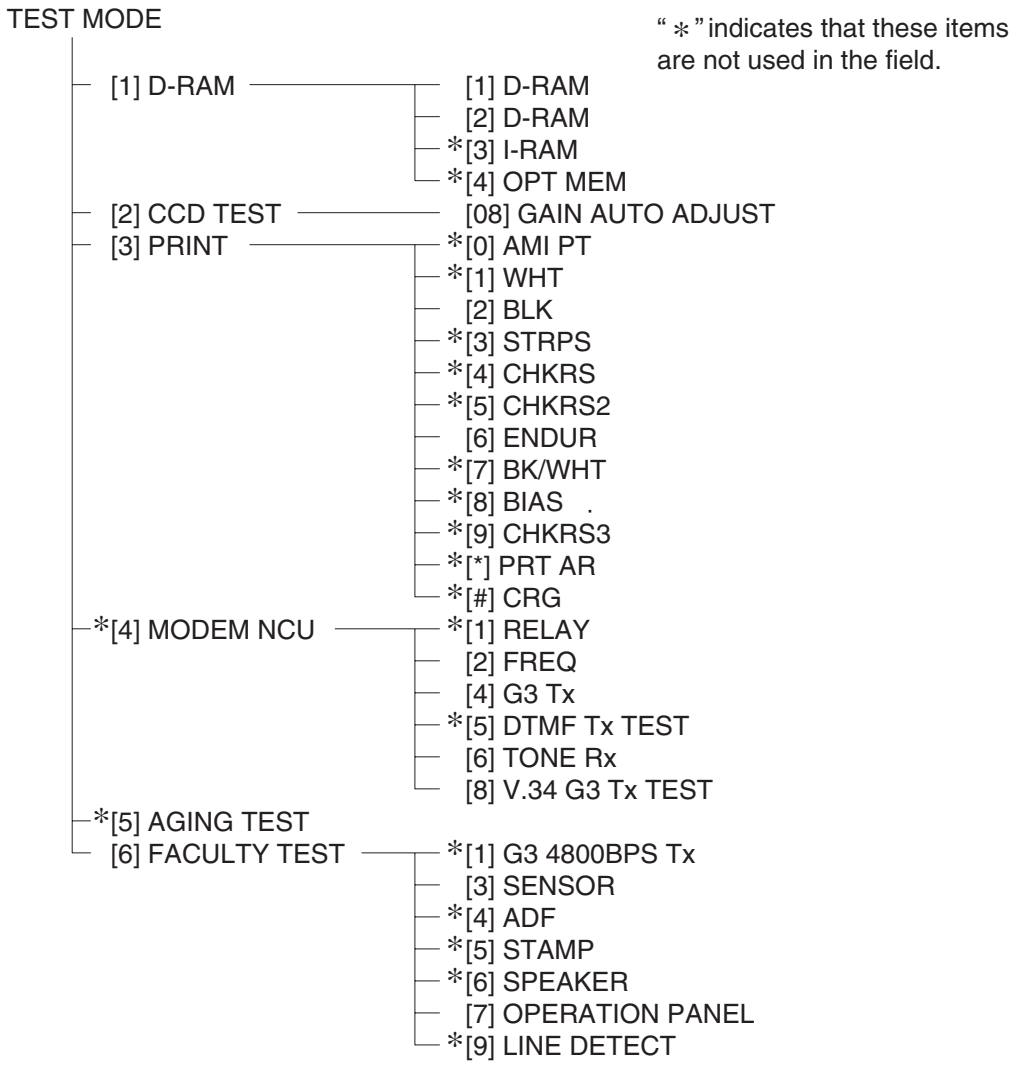


Figure 4-19 Test Mode Menu

6.3 D-RAM Tests

D-RAM test menu is selected by pressing the numeric key 1 from the test mode menu. D-RAM Test 1 writes data to the entire D-RAM region and reads it out to check that operations are correct. D-RAM Test 2 just reads data at high speed.

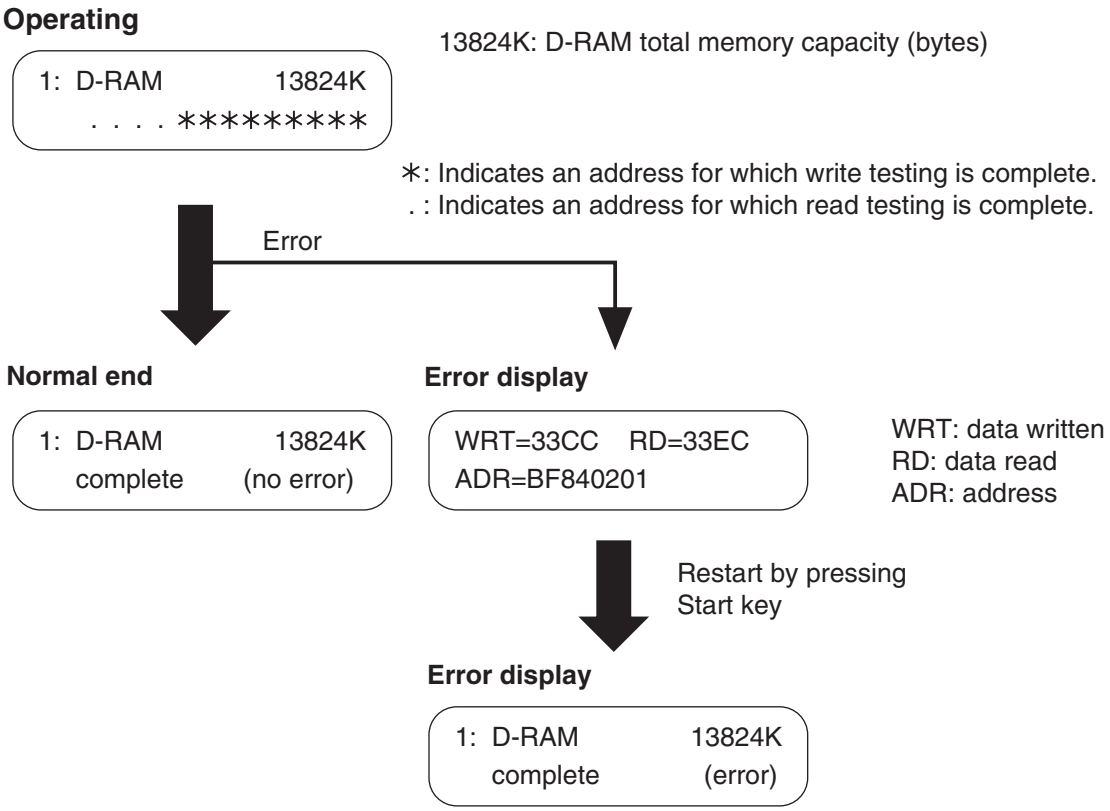


Figure 4-20 D-RAM Test

Before D-RAM test, output all image data in image memory. When D-RAM test is performed, all image data are cleared.

6.4 CCD Test

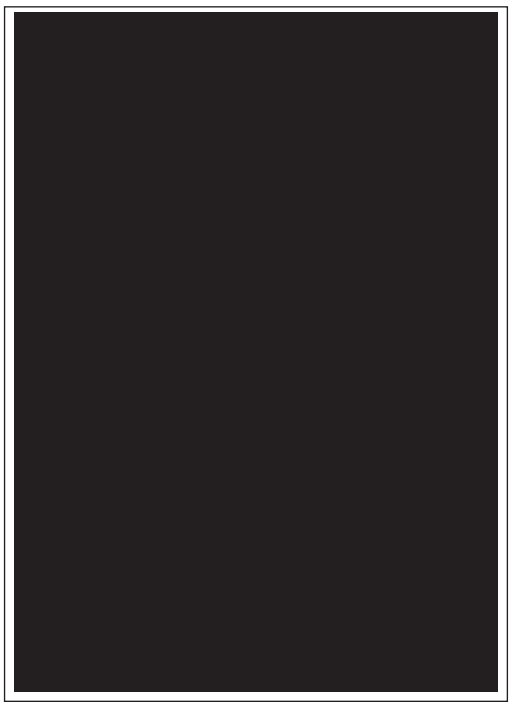
CCD test menu is selected by pressing the numeric key 2 from the test mode menu. The gain auto adjustment is selected by pressing the numeric key 08 from the CCD test menu. In this test, automatically correcting the contact sensor output and setting the contact sensor parameters.

6.5 Print Tests

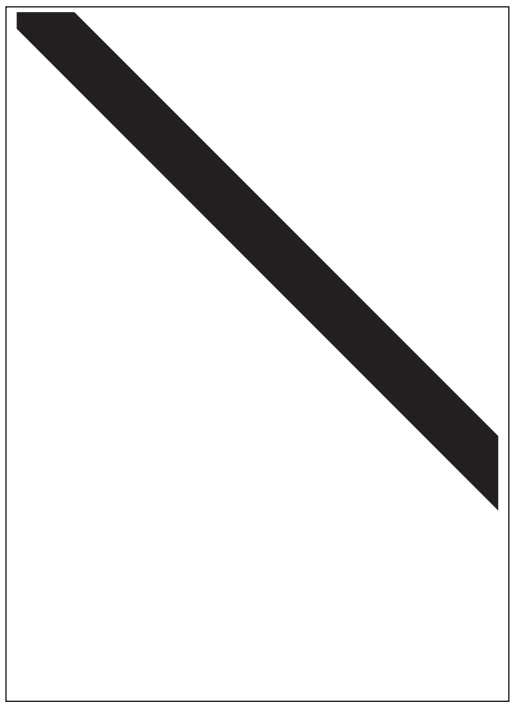
a) Test mode print test

The Print Test menu is selected by pressing the numeric key 3 from the test mode menu. In this test, various print patterns are output from the printer. As service print patterns, press the numeric key 2 from the Print Test menu to select “2: BLK” or press the numeric key 6 to select “6: ENDUR”. Do not use the other patterns. They are for development and factory use.

Check the following for the print pattern.



"2: BLK"
Check for white stripes and unevenness.



"6: ENDUR"
Check for image shrinkig, stretching, soiling, aand black strips.

Figure 4-21 Print Pattern Check

NOTE

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.

6.6 Modem and NCU Tests

The Modem and NCU Test menu is selected by pressing the numeric button 4 from the test mode menu. These tests test modem and NCU transmission and reception. The modem tests check whether signals are sent correctly from the modem by comparing the sound of the signals from the speaker with the sounds from a normal modem. Also, you check on the display whether or not the modem correctly detected received tone signals and DTMF signals.
End this test by pressing the Stop button.

Modem test type	Overview
Frequency test	The modem sends tonal signals from the modular jack and the speaker.
G3 signal transmission test	The modem sends G3 signals from the modular jack and the speaker.
Tonal signal/DTMF signal reception tests	The modem detects specific frequencies and DTMF signals received from the modular jack.
V.34 G3 signal transmission test	The modem sends V.34 G3 signals from the modular jack and the speaker.

a) Frequency test

The frequency test menu is selected by pressing the numeric button 2 from the MODEM NCU test menu. Signals of the frequencies below are sent from the modem using the modular jack and the speaker. The frequency can be changed with the numeric buttons.

Numeric button	Frequency
1	462 Hz
2	1100 Hz
3	1300 Hz
4	1500 Hz
5	1650 Hz
6	1850 Hz
7	2100 Hz

b) G3 signal transmission test

The G3 signal transmission test menu is selected by pressing the numeric button 4 from the MODEM NCU test menu. The G3 signals below are sent from the modem using the modular jack and the speaker. The Speed can be changed with the numeric buttons.

Numeric button	Speed
0	300 bps
1	2400 bps
2	4800 bps
3	7200 bps
4	9600 bps
5	TC7200 bps
6	TC9600 bps
7	12000 bps
8	14400 bps

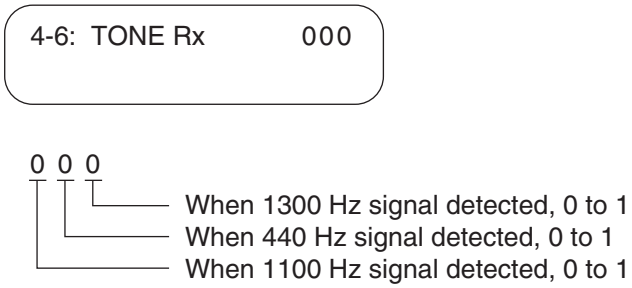
NOTE

The transmission level for each frequency follows the service data.

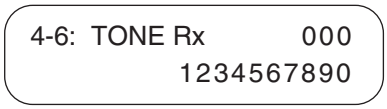
c) Tonal and DTMF signal reception tests

The tonal and DTMF signal reception test is selected by pressing the numeric button 6 from the MODEM NCU test menu. In these tests, you can check whether the tonal signals and DTMF signals received from the modular jack are detected by the modem.
The 462Hz test is included because the modem has a 462Hz detection function.

Tone signal reception test



DTMF signal reception test



The received DTMF signals are displayed in order from the right on the second line of the display.

Figure 4-22 Tonal and DTMF Signal Reception Tests

d) V.34 G3 signal transmission test

The V.34 G3 signal transmission test menu is selected by pressing the numeric button 8 from the MODEM NCU test menu. The V.34 G3 signals below are sent from the modem using the modular jack and the speaker by pressing the Start button. The Baud rate can be changed with the numeric buttons, and the Speed can be changed with the search buttons.

Numeric button	Baud rate
0	3429 baud
1	3200 baud
2	3000 baud
3	2800 baud
4	2743 baud
5	2400 baud

Search button	Speed
	33.6 kbps
	31.2 kbps
	28.8 kbps
▲	26.4 kbps
	24.0 kbps
	21.6 kbps
	19.2 kbps
	16.8 kbps
▼	14.4 kbps
	12.0 kbps
	9.6 kbps
	7.2 kbps
	4.8 kbps
	2.4 kbps

NOTE

The transmission level for each baud rate and speed follows the service data.

6.7 Faculty Tests

The faculty tests are selected by pressing the numeric key 6 from the test mode menu. These tests test the following faculties of this machine.

Test type	Overview
Sensor tests	Test whether the sensors are operating correctly.
Operation panel test	Tests whether the key switches on the control panel are operating correctly.

a) Sensor tests

The sensor test is selected by pressing the numeric key 3 from the faculty test menu. In this test, you can check the status of each sensor of this machine in items 1 to 4 on the display. You can also check if sensors that use actuators and microswitches are operating correctly by moving the actuator or microswitch.

a-1) Toner sensor test check method

Use the following methods to test “TN on”, and “TN of”.

"TN on" check

(1) Open the printer cover.
(2) Insert a cartridge containing toner into the machine.
(3) Close the printer cover.

"TN of" check

(1) Open the printer cover.
(2) Insert the empty cartridge into the machine.
(3) Close the printer cover.

If the printer cover is closed without a cartridge being inserted, there will be “TN on” display.

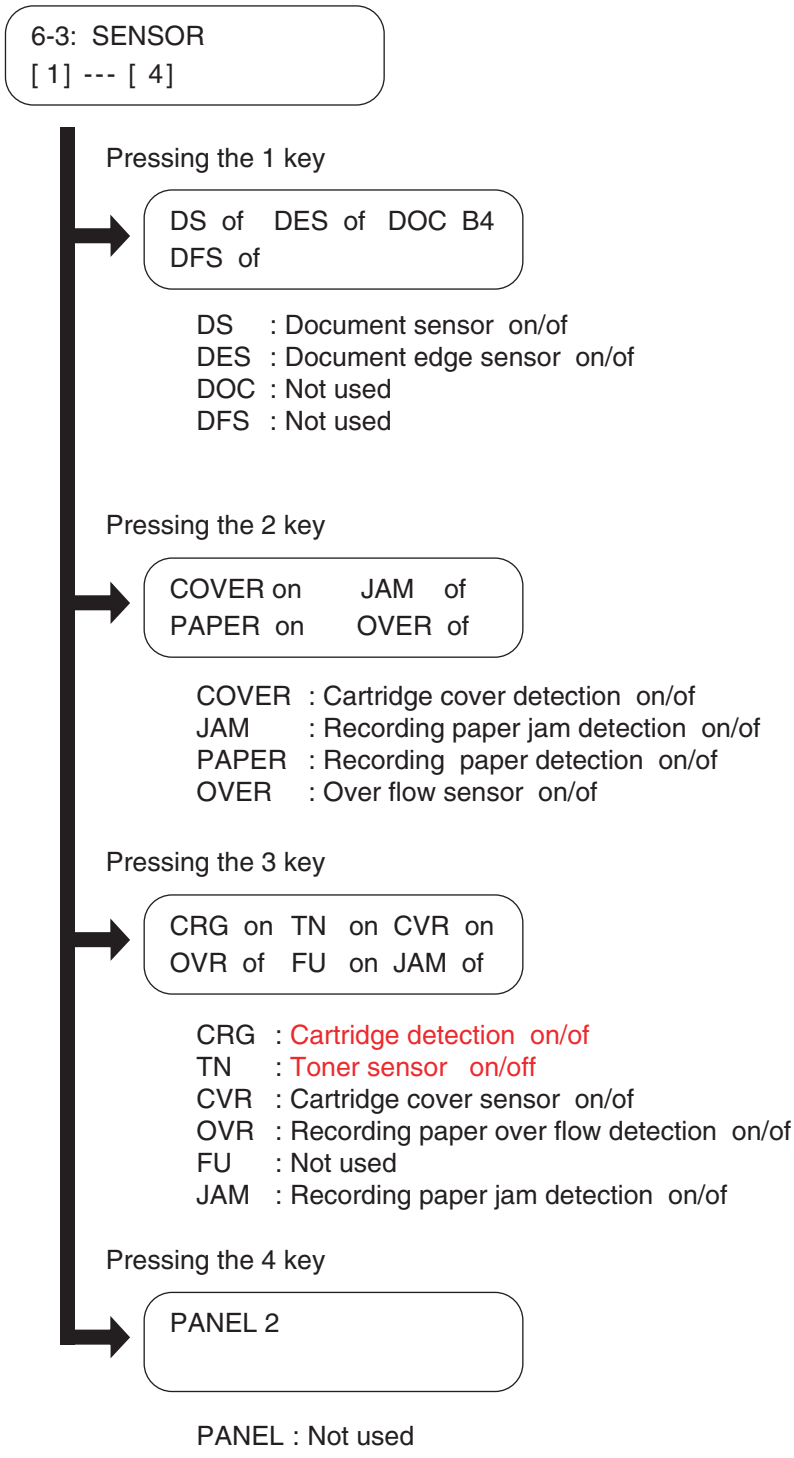


Figure 4-23 Sensor Tests

NOTE

The indication 'on/of' of OVR appears after SCNT board recognizes 'on/of' of Over flow sensor (OVER), thus 'on/of' of OVR is properly indicated 6 sec after 'on/of'(OVER) is detected.

b) Operation panel tests

The operation panel test is selected by pressing the numeric key 7 from the faculty test menu. In this test, check that the display, LED lamps, keys and the sensors of one-touch speed dialing panel on the operation panel are operating correctly.

b-1) Display test

Pressing the Start key from the operation panel menu, "H" is displayed 20 characters by 2 lines. The next time the Start key is pressed, all the LCD dots are displayed. Check for any LCD dots in the display that are not displayed.

b-2) LED lamp test

The LED lamp test is selected by pressing the Start key after the display test.
When the Start key is pressed, all the lamps on the operation panel light. Check for any LED that does not blink during the test.

b-3) Operation key test

The Operation key test is selected by pressing the Start key after the LED lamp test.
In this test, you press the key corresponding to the displayed character to put it out. The table giving the correspondence between the characters and the keys is below.

Character	Operation key		
0-#	Numeric keys	a-p	One-touch Speed Dialling keys
A	- key	M	Redial/Pause key
B	OK key	N	Corded Dial Key
C	+ key	O	Directory Key
D	Enlarge/Reduce key	F	Hook Key
E	Exposure key	G	COPY key
F	Image Quality key	H	FAX key
G	Additional Functions key		
H	Collate/2 on 1 key		
I	Status Monitor key		
K	Stop/Reset key		
L	Start key		

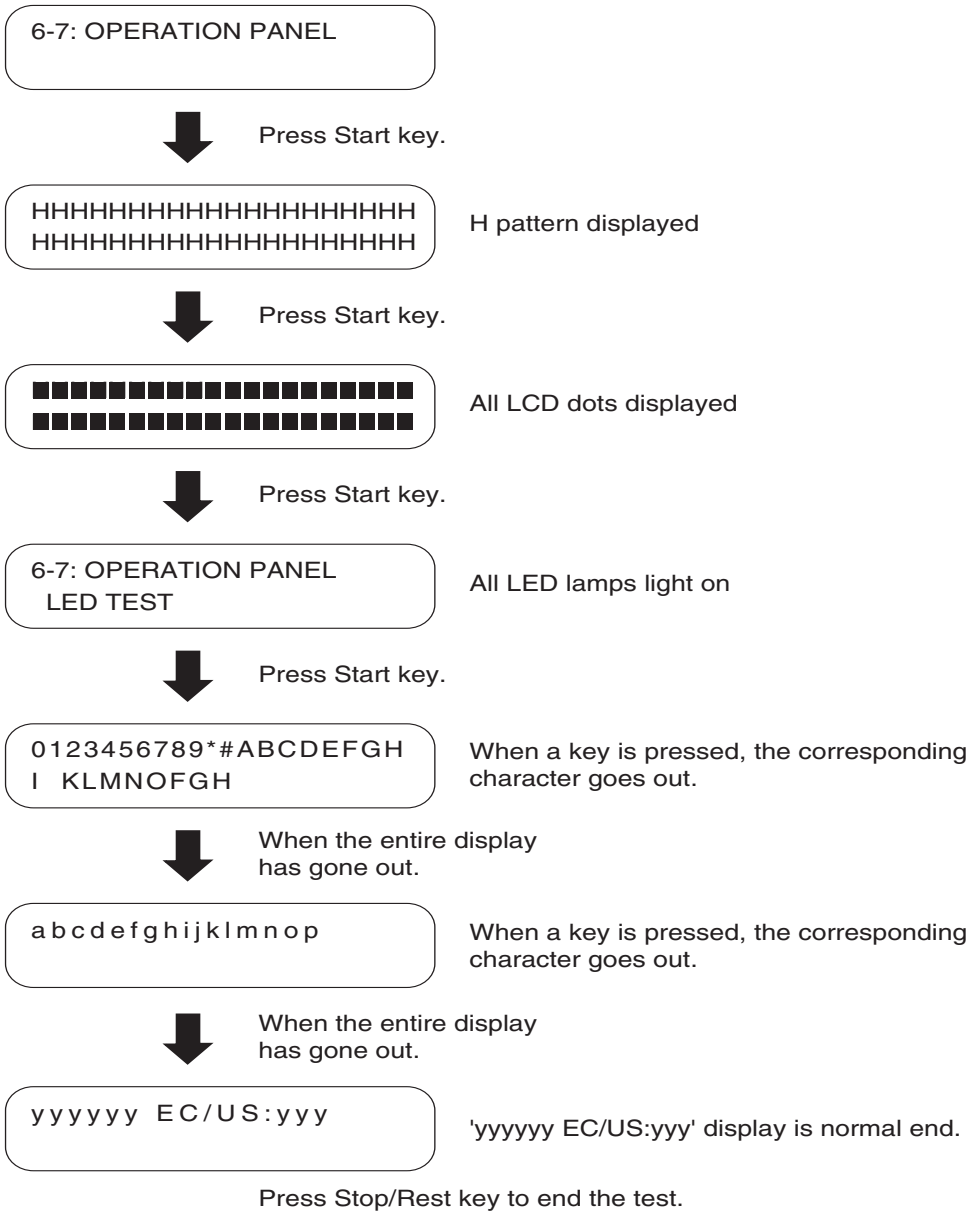


Figure 4-24 Operation Panel Test

7. SERVICE REPORT

7.1 Report Output Function

7.1.1 User report output functions

This machine can output user report manually by user operation.

a) Manual output of reports by user operation

Report type	Operations
User's data list	Press the Functions key, and press the report key, select the report type and press OK key.
1-touch list	
Coded dial list	
Group dial list	
Activity report	
Document memory list	

b) Reports output automatically by user data registration

Each report written below can be automatically output by specifying "REPORT SETTINGS" in user data registration.

Transmission report
Reception report
Memory box report
Activity Report


REFERENCE

For samples of user reports, see the *Facsimile Guide*.

c) Reports output automatically (Memory clear report)

When this fax is turned on and the memory clear report is automatically printed out, the image data which appears on the report is the data which was deleted without being able to be backed up. After the memory clear report is printed, the image data management information is automatically deleted.

31/07 2002 10:12 FAX 001

****
*** MEMORY CLEAR REPORT ***
****

MEMORY FILES DELETED

TX/RX NO	MODE	DESTINATION TEL/ID	PGS.	SET TIME	ST. TIME	SENDER NAME
0010	DELAYED TX	[01]Canon	2	31/07 10:09	23:00	
5003	MEMORY RX		1	31/07 10:10	-----	

Figure 4-25 Memory Clear Report

TX/RX NO : Indicates four digits of the transaction number
MODE : Displays the communication modes of TX, RX, delayed TX, memory RX, etc.
DESTINATION TEL/ID : Displays the number and each digit (24 digits) of one-touch speed dial and coded speed dial.
PGS. : Number of pages are stored in memory
SET TIME : Time when data is stored in memory (24-hour display)
ST. TIME : Displays a start time for delayed TX, etc. (24-hour display)
SENDER NAME : Sender name appended to transmission (up to 24 characters) Displays a 7-digits department ID (only used when department ID setup is “ON”).

7.1.2 Service report output functions

This machine outputs the service data setting status, data unique to the machine, etc. in service mode.

a) List of service reports

This machine outputs the service reports shown below.

Report type	Operations
Service data list System dump list Key history report Mail History report Counter report Print spec report	In the service mode, select REPORT menu, and press OK key. Then select the report type, and press OK key.
Transmission report (with service error code and dump list)	If you set bits 0 and 1 of #1 SSSW SW01 in the service mode, the service error code and dump list are indicated on the activity report.
Reception report (with service error code and dump list)	If you set bits 0 and 1 of #1 SSSW SW01 in the service mode, the service error code and dump list are indicated on the activity report.

a-1) System data list

This list shows service data setting statuses of service soft switches and service parameters.

17/12 2002 13:35 FAX 001

****
*** SYSTEM DATA LIST ***
****

#1 SSSW

SW01	-----	00010000
SW02	-----	00000000
SW03	-----	00000000
SW04	-----	00000000
SW05	-----	00000000
SW06	-----	10001000
SW07	-----	00000000
SW08	-----	00000000
SW09	-----	00000000
SW10	-----	00000000
SW11	-----	00000000
SW12	-----	00000010
SW13	-----	00000000
SW14	-----	00000010
SW15	-----	00000000
SW16	-----	00000011
SW17	-----	00000000
SW18	-----	00000000
SW19	-----	00000000
SW20	-----	00000000
SW21	-----	00000000
SW22	-----	00000000
SW23	-----	00000000
SW24	-----	00000000
SW25	-----	00000000
SW26	-----	00000000
SW27	-----	00000000
SW28	-----	00000000
SW29	-----	00000000
SW30	-----	00000000
SW31	-----	00000000
SW32	-----	01100000
SW33	-----	00000000
SW34	-----	00000000
SW35	-----	00000000
SW36	-----	00000000
SW37	-----	00000000
SW38	-----	00000000
SW39	-----	00000000
SW40	-----	00000000
SW41	-----	00000000
SW42	-----	00000000
SW43	-----	00000000
SW44	-----	00000000
SW45	-----	00000000
SW46	-----	00000000
SW47	-----	00000000
SW48	-----	00000000
SW49	-----	00000000
SW50	-----	00000000

#2 MENU

05:	-----	OFF
06:	-----	DIAL
07:	-----	10
08:	-----	3429
09:	-----	33.6
10:	-----	25Hz

Figure 4-26 System Data List 1

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#3 NUMERIC Param.

01:	-----	0
02:	-----	10
03:	-----	15
04:	-----	12
05:	-----	4
06:	-----	1
07:	-----	0
08:	-----	0
09:	-----	6
10:	-----	5500
11:	-----	3500
12:	-----	0
13:	-----	1300
14:	-----	0
15:	-----	120
16:	-----	2
17:	-----	100
18:	-----	0
19:	-----	400
20:	-----	100
21:	-----	0
22:	-----	400
23:	-----	0
24:	-----	10
25:	-----	60
26:	-----	0
27:	-----	0
28:	-----	3
29:	-----	0
30:	-----	20
51:	-----	0
52:	-----	0
53:	-----	2
54:	-----	0
55:	-----	0
56:	-----	101
57:	-----	0
58:	-----	0
59:	-----	0
60:	-----	0
61:	-----	0
62:	-----	300
63:	-----	300
64:	-----	300
65:	-----	300
66:	-----	60
67:	-----	60
68:	-----	60
69:	-----	60
70:	-----	300

#4A SPECIAL

SW01	-----	00001000
SW02	-----	10000100
SW03	-----	00000000
SW04	-----	00000100
SW05	-----	00000000
SW06	-----	00000000
SW07	-----	00010010
SW08	-----	00000000
SW09	-----	00000000
SW10	-----	00000000

Figure 4-27 System Data List 2

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SW11	-----	00000000
SW12	-----	00000000
SW13	-----	00000000
SW14	-----	10000001
SW15	-----	00000000
SW16	-----	10100000
SW17	-----	00010011
SW18	-----	00000000
SW19	-----	00000000
SW20	-----	00000010
SW21	-----	00000010
SW22	-----	00000000
SW23	-----	00000000
SW24	-----	00000010
SW25	-----	00000101
SW26	-----	00000000
SW27	-----	00000000
SW28	-----	01000000
SW29	-----	00000000
SW30	-----	00011010
01 :	-----	5
02 :	-----	30
03 :	-----	30
04 :	-----	4
05 :	-----	150
06 :	-----	100
07 :	-----	26
08 :	-----	0
09 :	-----	0
10 :	-----	10
11 :	-----	2
12 :	-----	5
13 :	-----	8
14 :	-----	60
15 :	-----	6000
16 :	-----	8
17 :	-----	60
18 :	-----	99
19 :	-----	0
20 :	-----	58
21 :	-----	0
22 :	-----	0
23 :	-----	99
24 :	-----	10
25 :	-----	25
26 :	-----	2
27 :	-----	2
28 :	-----	0
29 :	-----	5
30 :	-----	6
31 :	-----	60
32 :	-----	94
33 :	-----	185
34 :	-----	102
35 :	-----	1420
36 :	-----	40
37 :	-----	74
38 :	-----	142
39 :	-----	1432
40 :	-----	0
41 :	-----	0
42 :	-----	0
43 :	-----	0
44 :	-----	0
45 :	-----	0

Figure 4-28 System Data List 3

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46 :	-----	0
47 :	-----	0
48 :	-----	0
49 :	-----	0
50 :	-----	30
51 :	-----	60
52 :	-----	10
53 :	-----	400
54 :	-----	180
55 :	-----	0
56 :	-----	0
57 :	-----	0
58 :	-----	0
59 :	-----	0
60 :	-----	0
61 :	-----	0
62 :	-----	0
63 :	-----	10
64 :	-----	30
65 :	-----	1144
66 :	-----	1400
67 :	-----	11
68 :	-----	14
69 :	-----	0
70 :	-----	0

#4B NCU

1.TONE / PULSE

1.TONE

01 :	-----	100
02 :	-----	100
2.PULSE	-----	DP(N)
01 :	-----	100
02 :	-----	200
03 :	-----	34
04 :	-----	820

2.DIAL TONE 01000000

01 :	-----	350
02 :	-----	130
03 :	-----	10
04 :	-----	0
05 :	-----	0
06 :	-----	5
07 :	-----	1
08 :	-----	0

3.2nd DIAL TONE 00000000

01 :	-----	200
02 :	-----	0
03 :	-----	0
04 :	-----	0
05 :	-----	0
06 :	-----	0
07 :	-----	0
08 :	-----	0

4.BUSY TONE 0 00000000

01 :	-----	1000
02 :	-----	40
03 :	-----	60
04 :	-----	40
05 :	-----	60
06 :	-----	1
07 :	-----	0
08 :	-----	3

Figure 4-29 System Data List 4

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5.BUSY TONE 1		00000000
01 :	-----	1000
02 :	-----	40
03 :	-----	60
04 :	-----	40
05 :	-----	60
06 :	-----	1
07 :	-----	0
08 :	-----	3
6.REORDER TONE		10000000
01 :	-----	1000
02 :	-----	11
03 :	-----	63
04 :	-----	11
05 :	-----	63
06 :	-----	20
07 :	-----	5
08 :	-----	3
7.MULTI		
01 :	-----	0
02 :	-----	10
03 :	-----	0
04 :	-----	0
8.AUTO RX		
01 :	-----	13
02 :	-----	50
03 :	-----	10
04 :	-----	50
05 :	-----	1100
06 :	-----	0
07 :	-----	2
08 :	-----	13
09 :	-----	65
9.CNG DETECT		
01 :	-----	40
02 :	-----	60
03 :	-----	0
04 :	-----	0
05 :	-----	0
06 :	-----	85
07 :	-----	40
08 :	-----	60
09 :	-----	8
10 :	-----	0
11 :	-----	2
12 :	-----	70
10.RKEY		
01 :	-----	8
02 :	-----	18
03 :	-----	0
11.PBX DIAL TONE		00000000
01 :	-----	350
02 :	-----	130
03 :	-----	10
04 :	-----	0
05 :	-----	0
06 :	-----	5
07 :	-----	0
08 :	-----	0

Figure 4-30 System Data List 5

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12.PBX BUSY TONE 00000000

01 :	-----	1000
02 :	-----	40
03 :	-----	60
04 :	-----	40
05 :	-----	60
06 :	-----	1
07 :	-----	0
08 :	-----	3

#4C ISDN

ISDN BASIC

SW01	-----	00000000
SW02	-----	00000000
SW03	-----	00000000
SW04	-----	00000000
SW05	-----	00000000
SW06	-----	00000000
SW07	-----	00010000
SW08	-----	00010000
SW09	-----	00000000
SW10	-----	00000000
SW11	-----	00000000
SW12	-----	00000000
SW13	-----	00000000
SW14	-----	00000000
SW15	-----	00000000
SW16	-----	00000000
SW17	-----	00000000
SW18	-----	00000000
SW19	-----	00000000
SW20	-----	00000000
SW21	-----	00000000
SW22	-----	00000000
SW23	-----	00000000
SW24	-----	00000000
SW25	-----	00000000
SW26	-----	00000000
SW27	-----	00000000
SW28	-----	00000000
SW29	-----	00000000
SW30	-----	00000000

01 :	-----	60
02 :	-----	3
03 :	-----	0
04 :	-----	0
05 :	-----	20
06 :	-----	20
07 :	-----	35
08 :	-----	30
09 :	-----	30
10 :	-----	30
11 :	-----	0
12 :	-----	0
13 :	-----	4
14 :	-----	4
15 :	-----	120
16 :	-----	0
17 :	-----	0
18 :	-----	0
19 :	-----	0
20 :	-----	0
21 :	-----	0
22 :	-----	0
23 :	-----	0
24 :	-----	0
25 :	-----	0

Figure 4-31 System Data List 6

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26 :	-----	0
27 :	-----	0
28 :	-----	0
29 :	-----	0
30 :	-----	0
31 :	-----	0
32 :	-----	0
33 :	-----	0
34 :	-----	0
35 :	-----	0
36 :	-----	0
37 :	-----	0
38 :	-----	0
39 :	-----	0
40 :	-----	0

Redial Code

001 :	-----	1017,	1018,	1019,	1027,	1031,
006 :	-----	1034,	1041,	1042,	1044,	1049,
011 :	-----	1127,	1131,	1144,	1145,	0,
016 :	-----	0,	0,	0,	0,	0,
021 :	-----	0,	0,	0,	0,	0,
026 :	-----	0,	0,	0,	0,	0,
031 :	-----	0,	0,	0,	0,	0,
036 :	-----	0,	0,	0,	0,	0,
041 :	-----	0,	0,	0,	0,	0,
046 :	-----	0,	0,	0,	0,	0,
051 :	-----	0,	0,	0,	0,	0,
056 :	-----	0,	0,	0,	0,	0,
061 :	-----	0,	0,	0,	0,	0,
066 :	-----	0,	0,	0,	0,	0,
071 :	-----	0,	0,	0,	0,	0,
076 :	-----	0,	0,	0,	0,	0,
081 :	-----	0,	0,	0,	0,	0,
086 :	-----	0,	0,	0,	0,	0,
091 :	-----	0,	0,	0,	0,	0,
096 :	-----	0,	0,	0,	0,	0,
101 :	-----	0,	0,	0,	0,	0,
106 :	-----	0,	0,	0,	0,	0,
111 :	-----	0,	0,	0,	0,	0,
116 :	-----	0,	0,	0,	0,	0,
121 :	-----	0,	0,	0,	0,	0,
126 :	-----	0,	0,	0		

Figure 4-32 System Data List 7

17/12 2002 13:35 FAX ☑008

G4/G3 Fallback

001 :	-----	1003,	1018,	1057,	1058,	1063,
006 :	-----	1065,	1070,	1079,	1088,	1127,
011 :	-----	0,	0,	0,	0,	0,
016 :	-----	0,	0,	0,	0,	0,
021 :	-----	0,	0,	0,	0,	0,
026 :	-----	0,	0,	0,	0,	0,
031 :	-----	0,	0,	0,	0,	0,
036 :	-----	0,	0,	0,	0,	0,
041 :	-----	0,	0,	0,	0,	0,
046 :	-----	0,	0,	0,	0,	0,
051 :	-----	0,	0,	0,	0,	0,
056 :	-----	0,	0,	0,	0,	0,
061 :	-----	0,	0,	0,	0,	0,
066 :	-----	0,	0,	0,	0,	0,
071 :	-----	0,	0,	0,	0,	0,
076 :	-----	0,	0,	0,	0,	0,
081 :	-----	0,	0,	0,	0,	0,
086 :	-----	0,	0,	0,	0,	0,
091 :	-----	0,	0,	0,	0,	0,
096 :	-----	0,	0,	0,	0,	0,
101 :	-----	0,	0,	0,	0,	0,
106 :	-----	0,	0,	0,	0,	0,
111 :	-----	0,	0,	0,	0,	0,
116 :	-----	0,	0,	0,	0,	0,
121 :	-----	0,	0,	0,	0,	0,
126 :	-----	0,	0,	0		

Speech Fallback

001 :	-----	1041,	1088,	0,	0,	0,
006 :	-----	0,	0,	0,	0,	0,
011 :	-----	0,	0,	0,	0,	0,
016 :	-----	0,	0,	0,	0,	0,
021 :	-----	0,	0,	0,	0,	0,
026 :	-----	0,	0,	0,	0,	0,
031 :	-----	0,	0,	0,	0,	0,
036 :	-----	0,	0,	0,	0,	0,
041 :	-----	0,	0,	0,	0,	0,
046 :	-----	0,	0,	0,	0,	0,
051 :	-----	0,	0,	0,	0,	0,
056 :	-----	0,	0,	0,	0,	0,
061 :	-----	0,	0,	0,	0,	0,
066 :	-----	0,	0,	0,	0,	0,
071 :	-----	0,	0,	0,	0,	0,
076 :	-----	0,	0,	0,	0,	0,
081 :	-----	0,	0,	0,	0,	0,
086 :	-----	0,	0,	0,	0,	0,
091 :	-----	0,	0,	0,	0,	0,
096 :	-----	0,	0,	0,	0,	0,
101 :	-----	0,	0,	0,	0,	0,
106 :	-----	0,	0,	0,	0,	0,
111 :	-----	0,	0,	0,	0,	0,
116 :	-----	0,	0,	0,	0,	0,
121 :	-----	0,	0,	0,	0,	0,
126 :	-----	0,	0,	0		

Othernetwork

Network A

SW01 ----- 00000000

SW02 ----- 00000000

Address

Subaddress

Figure 4-33 System Data List 8

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Network B		
SW01	-----	00000000
SW02	-----	00000000
Address		
Subaddress		
Network C		
SW01	-----	00000000
SW02	-----	00000000
Address		
Subaddress		
ISDN G4		
SW01	-----	10000100
SW02	-----	00000000
SW03	-----	00000000
SW04	-----	00000000
01 :	-----	4
02 :	-----	0
03 :	-----	45
04 :	-----	6
05 :	-----	45
06 :	-----	4
07 :	-----	60
08 :	-----	60
09 :	-----	4
10 :	-----	55
11 :	-----	1
12 :	-----	30
13 :	-----	4
14 :	-----	4
15 :	-----	4
16 :	-----	4
17 :	-----	1
18 :	-----	1
19 :	-----	2
20 :	-----	10
21 :	-----	2
22 :	-----	10
23 :	-----	3
24 :	-----	230
25 :	-----	3
26 :	-----	100
27 :	-----	1
28 :	-----	3
29 :	-----	1800
30 :	-----	1800
31 :	-----	1800
32 :	-----	0
33 :	-----	0
34 :	-----	0
35 :	-----	0
36 :	-----	0
37 :	-----	0
38 :	-----	0
39 :	-----	0
40 :	-----	0
41 :	-----	0
42 :	-----	0
43 :	-----	0
44 :	-----	0
45 :	-----	0

Figure 4-34 System Data List 9

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46 :	-----	0
47 :	-----	0
48 :	-----	0
49 :	-----	0
50 :	-----	0

ISDN G4 Circuit

SW01	-----	00000000
SW02	-----	00000000
01 :	-----	15
02 :	-----	0
03 :	-----	0
04 :	-----	4
05 :	-----	20
06 :	-----	7
07 :	-----	0
08 :	-----	4
09 :	-----	2
10 :	-----	7
11 :	-----	180
12 :	-----	200
13 :	-----	180
14 :	-----	180
15 :	-----	60
16 :	-----	1
17 :	-----	1
18 :	-----	1
19 :	-----	0
20 :	-----	0
21 :	-----	0
22 :	-----	0
23 :	-----	0
24 :	-----	0
25 :	-----	0
26 :	-----	0
27 :	-----	0
28 :	-----	0
29 :	-----	0
30 :	-----	0

ISDN G4 Packet

SW01	-----	00000000
SW02	-----	00000000
01 :	-----	3
02 :	-----	0
03 :	-----	0
04 :	-----	4
05 :	-----	25
06 :	-----	7
07 :	-----	0
08 :	-----	3
09 :	-----	2
10 :	-----	2
11 :	-----	180
12 :	-----	200
13 :	-----	180
14 :	-----	180
15 :	-----	60
16 :	-----	1
17 :	-----	1
18 :	-----	1
19 :	-----	0
20 :	-----	0

Figure 4-35 System Data List 10

```
17/12 2002 13:36 FAX                                                   011
              21 :                -----            0
              22 :                -----            0
              23 :                -----            0
              24 :                -----            0
              25 :                -----            0
              26 :                -----            0
              27 :                -----            0
              28 :                -----            0
              29 :                -----            0
              30 :                -----            0

         ISDN G3
              SW01                -----     00000000
              SW02                -----     00000000
              SW03                -----     00000000
              SW04                -----     00000000

              01 :                -----            0
              02 :                -----            0
              03 :                -----            0
              04 :                -----            0
              05 :                -----            0
              06 :                -----            0
              07 :                -----            0
              08 :                -----            0
              09 :                -----            0
              10 :                -----            0
              11 :                -----            0
              12 :                -----            0
              13 :                -----            0
              14 :                -----            0
              15 :                -----            0
              16 :                -----            0
              17 :                -----            0
              18 :                -----            0
              19 :                -----            0
              20 :                -----            0

         #5  TYPE
              TYPE                -----     U.K.

         #6  SCANNER
           SCANNER Bit SW
              SW01                -----     00000000
              SW02                -----     00000000

           SCANNER SLICE
              01 :                -----          224
              02 :                -----          193
              03 :                -----          176
              04 :                -----          150
              05 :                -----          126
              06 :                -----          105
              07 :                -----           86
              08 :                -----           72
              09 :                -----           58

           SCANNER GAMMA
              001 :               -----            0
              002 :               -----            0
              003 :               -----            0
              004 :               -----            0
              005 :               -----            0
              006 :               -----            0
              007 :               -----            0
              008 :               -----            0
              009 :               -----            0
              010 :               -----            0
```

Figure 4-36 System Data List 11

17/12 2002 13:36 FAX 012

011 :	-----	0
012 :	-----	0
013 :	-----	0
014 :	-----	0
015 :	-----	0
016 :	-----	0
017 :	-----	0
018 :	-----	0
019 :	-----	0
020 :	-----	0
021 :	-----	0
022 :	-----	0
023 :	-----	0
024 :	-----	0
025 :	-----	0
026 :	-----	0
027 :	-----	0
028 :	-----	0
029 :	-----	0
030 :	-----	0
031 :	-----	0
032 :	-----	0
033 :	-----	0
034 :	-----	2
035 :	-----	2
036 :	-----	2
037 :	-----	3
038 :	-----	3
039 :	-----	3
040 :	-----	4
041 :	-----	4
042 :	-----	4
043 :	-----	5
044 :	-----	5
045 :	-----	5
046 :	-----	6
047 :	-----	6
048 :	-----	6
049 :	-----	7
050 :	-----	7
051 :	-----	8
052 :	-----	8
053 :	-----	8
054 :	-----	9
055 :	-----	9
056 :	-----	9
057 :	-----	10
058 :	-----	10
059 :	-----	10
060 :	-----	11
061 :	-----	11
062 :	-----	12
063 :	-----	12
064 :	-----	12
065 :	-----	12
066 :	-----	13
067 :	-----	13
068 :	-----	13
069 :	-----	14
070 :	-----	14
071 :	-----	14
072 :	-----	15
073 :	-----	15
074 :	-----	15
075 :	-----	16

Figure 4-37 System Data List 12

17/12 2002 13:36 FAX ☑013

076 :	-----	16
077 :	-----	16
078 :	-----	17
079 :	-----	17
080 :	-----	17
081 :	-----	18
082 :	-----	18
083 :	-----	18
084 :	-----	19
085 :	-----	19
086 :	-----	19
087 :	-----	19
088 :	-----	20
089 :	-----	20
090 :	-----	20
091 :	-----	20
092 :	-----	20
093 :	-----	22
094 :	-----	22
095 :	-----	22
096 :	-----	22
097 :	-----	22
098 :	-----	23
099 :	-----	23
100 :	-----	23
101 :	-----	23
102 :	-----	24
103 :	-----	24
104 :	-----	24
105 :	-----	25
106 :	-----	25
107 :	-----	25
108 :	-----	25
109 :	-----	26
110 :	-----	26
111 :	-----	26
112 :	-----	27
113 :	-----	27
114 :	-----	27
115 :	-----	27
116 :	-----	28
117 :	-----	28
118 :	-----	28
119 :	-----	28
120 :	-----	29
121 :	-----	29
122 :	-----	29
123 :	-----	29
124 :	-----	30
125 :	-----	30
126 :	-----	30
127 :	-----	30
128 :	-----	30
129 :	-----	31
130 :	-----	31
131 :	-----	31
132 :	-----	31
133 :	-----	31
134 :	-----	32
135 :	-----	32
136 :	-----	32
137 :	-----	33
138 :	-----	33
139 :	-----	34
140 :	-----	34

Figure 4-38 System Data List 13

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141 :	-----	35
142 :	-----	35
143 :	-----	36
144 :	-----	36
145 :	-----	37
146 :	-----	37
147 :	-----	37
148 :	-----	37
149 :	-----	38
150 :	-----	38
151 :	-----	38
152 :	-----	38
153 :	-----	39
154 :	-----	39
155 :	-----	39
156 :	-----	39
157 :	-----	40
158 :	-----	40
159 :	-----	40
160 :	-----	40
161 :	-----	41
162 :	-----	41
163 :	-----	41
164 :	-----	41
165 :	-----	43
166 :	-----	43
167 :	-----	43
168 :	-----	43
169 :	-----	44
170 :	-----	44
171 :	-----	44
172 :	-----	45
173 :	-----	45
174 :	-----	45
175 :	-----	46
176 :	-----	46
177 :	-----	46
178 :	-----	47
179 :	-----	47
180 :	-----	47
181 :	-----	48
182 :	-----	48
183 :	-----	49
184 :	-----	50
185 :	-----	50
186 :	-----	51
187 :	-----	51
188 :	-----	52
189 :	-----	52
190 :	-----	53
191 :	-----	53
192 :	-----	53
193 :	-----	54
194 :	-----	54
195 :	-----	54
196 :	-----	55
197 :	-----	55
198 :	-----	55
199 :	-----	56
200 :	-----	56
201 :	-----	56
202 :	-----	57
203 :	-----	57
204 :	-----	57
205 :	-----	57

Figure 4-39 System Data List 14

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206 :	-----	58
207 :	-----	58
208 :	-----	58
209 :	-----	59
210 :	-----	59
211 :	-----	59
212 :	-----	59
213 :	-----	59
214 :	-----	60
215 :	-----	60
216 :	-----	60
217 :	-----	60
218 :	-----	61
219 :	-----	61
220 :	-----	61
221 :	-----	61
222 :	-----	61
223 :	-----	61
224 :	-----	62
225 :	-----	62
226 :	-----	62
227 :	-----	62
228 :	-----	62
229 :	-----	62
230 :	-----	62
231 :	-----	62
232 :	-----	62
233 :	-----	63
234 :	-----	63
235 :	-----	63
236 :	-----	63
237 :	-----	63
238 :	-----	63
239 :	-----	63
240 :	-----	63
241 :	-----	63
242 :	-----	63
243 :	-----	63
244 :	-----	63
245 :	-----	63
246 :	-----	63
247 :	-----	63
248 :	-----	63
249 :	-----	63
250 :	-----	63
251 :	-----	63
252 :	-----	63
253 :	-----	63
254 :	-----	63
255 :	-----	63
256 :	-----	63

SCANNER Numeric

001 :	-----	0
002 :	-----	2
003 :	-----	1000
004 :	-----	5
005 :	-----	0
006 :	-----	0
007 :	-----	25
008 :	-----	1
009 :	-----	405
010 :	-----	0
011 :	-----	2
012 :	-----	127
013 :	-----	191
014 :	-----	225
015 :	-----	20

Figure 4-40 System Data List 15

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016 :	-----	340
017 :	-----	340
018 :	-----	340
019 :	-----	1
020 :	-----	255
021 :	-----	160
022 :	-----	242
023 :	-----	144
024 :	-----	0
025 :	-----	0
026 :	-----	162
027 :	-----	0
028 :	-----	0
029 :	-----	0
030 :	-----	4050
031 :	-----	4800
032 :	-----	5000
033 :	-----	11000
034 :	-----	2000
035 :	-----	2100
036 :	-----	1100
037 :	-----	1
038 :	-----	0
039 :	-----	0
040 :	-----	0
041 :	-----	600
042 :	-----	100
043 :	-----	1500
044 :	-----	300
045 :	-----	840
046 :	-----	351
047 :	-----	647
048 :	-----	10
049 :	-----	0
050 :	-----	50
051 :	-----	100
052 :	-----	100
053 :	-----	100
054 :	-----	30
055 :	-----	0
056 :	-----	20
057 :	-----	20
058 :	-----	0
059 :	-----	0
060 :	-----	0
061 :	-----	32767
062 :	-----	0
063 :	-----	2
064 :	-----	809
065 :	-----	1909
066 :	-----	12
067 :	-----	1509
068 :	-----	12
069 :	-----	1288
070 :	-----	12
071 :	-----	1142
072 :	-----	12
073 :	-----	1037
074 :	-----	12
075 :	-----	957
076 :	-----	12
077 :	-----	892
078 :	-----	12
079 :	-----	839
080 :	-----	8

Figure 4-41 System Data List 16

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081 :	-----	809
082 :	-----	8
083 :	-----	32767
084 :	-----	32767
085 :	-----	555
086 :	-----	12
087 :	-----	536
088 :	-----	12
089 :	-----	522
090 :	-----	12
091 :	-----	506
092 :	-----	12
093 :	-----	491
094 :	-----	12
095 :	-----	479
096 :	-----	12
097 :	-----	467
098 :	-----	12
099 :	-----	457
100 :	-----	12
101 :	-----	448
102 :	-----	12
103 :	-----	440
104 :	-----	12
105 :	-----	433
106 :	-----	12
107 :	-----	426
108 :	-----	12
109 :	-----	420
110 :	-----	12
111 :	-----	414
112 :	-----	12
113 :	-----	410
114 :	-----	12
115 :	-----	405
116 :	-----	12
117 :	-----	401
118 :	-----	12
119 :	-----	398
120 :	-----	12
121 :	-----	395
122 :	-----	12
123 :	-----	392
124 :	-----	12
125 :	-----	32767
126 :	-----	32767
127 :	-----	392
128 :	-----	12
129 :	-----	392
130 :	-----	12
131 :	-----	392
132 :	-----	12
133 :	-----	392
134 :	-----	12
135 :	-----	392
136 :	-----	12
137 :	-----	392
138 :	-----	12
139 :	-----	392
140 :	-----	12
141 :	-----	392
142 :	-----	12
143 :	-----	392
144 :	-----	12
145 :	-----	32767

Figure 4-42 System Data List 17

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146 :	-----	32767
147 :	-----	1909
148 :	-----	8
149 :	-----	1558
150 :	-----	8
151 :	-----	1260
152 :	-----	8
153 :	-----	1086
154 :	-----	8
155 :	-----	969
156 :	-----	8
157 :	-----	892
158 :	-----	8
159 :	-----	809
160 :	-----	8
161 :	-----	32767
162 :	-----	32767
163 :	-----	599
164 :	-----	12
165 :	-----	575
166 :	-----	12
167 :	-----	555
168 :	-----	12
169 :	-----	536
170 :	-----	12
171 :	-----	522
172 :	-----	12
173 :	-----	506
174 :	-----	12
175 :	-----	491
176 :	-----	12
177 :	-----	479
178 :	-----	12
179 :	-----	467
180 :	-----	12
181 :	-----	457
182 :	-----	12
183 :	-----	448
184 :	-----	12
185 :	-----	440
186 :	-----	12
187 :	-----	433
188 :	-----	12
189 :	-----	426
190 :	-----	12
191 :	-----	420
192 :	-----	12
193 :	-----	414
194 :	-----	12
195 :	-----	410
196 :	-----	12
197 :	-----	405
198 :	-----	12
199 :	-----	401
200 :	-----	12
201 :	-----	398
202 :	-----	12
203 :	-----	395
204 :	-----	12
205 :	-----	392
206 :	-----	12
207 :	-----	32767
208 :	-----	32767
209 :	-----	392
210 :	-----	12

Figure 4-43 System Data List 18

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211 :	-----	392
212 :	-----	12
213 :	-----	392
214 :	-----	12
215 :	-----	392
216 :	-----	12
217 :	-----	392
218 :	-----	12
219 :	-----	392
220 :	-----	12
221 :	-----	392
222 :	-----	12
223 :	-----	392
224 :	-----	12
225 :	-----	392
226 :	-----	12
227 :	-----	32767
228 :	-----	32767
229 :	-----	1
230 :	-----	4228
231 :	-----	4228
232 :	-----	4229
233 :	-----	4229
234 :	-----	129
235 :	-----	129
236 :	-----	4233
237 :	-----	4233
238 :	-----	4232
239 :	-----	4232
240 :	-----	4234
241 :	-----	4234
242 :	-----	130
243 :	-----	130
244 :	-----	4230
245 :	-----	4230
246 :	-----	0
247 :	-----	670
248 :	-----	0
249 :	-----	0
250 :	-----	1
251 :	-----	1
252 :	-----	0
253 :	-----	0
254 :	-----	0
255 :	-----	0
256 :	-----	0
257 :	-----	0
258 :	-----	0
259 :	-----	0
260 :	-----	0
261 :	-----	0
262 :	-----	0
263 :	-----	0
264 :	-----	0
265 :	-----	0
266 :	-----	0
267 :	-----	0
268 :	-----	0
269 :	-----	0
270 :	-----	0
271 :	-----	0
272 :	-----	0
273 :	-----	0
274 :	-----	2
275 :	-----	70

Figure 4-44 System Data List 19

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276 :	-----	3
277 :	-----	176
278 :	-----	0
279 :	-----	0
280 :	-----	0
281 :	-----	0
282 :	-----	0
283 :	-----	0
284 :	-----	0
285 :	-----	1
286 :	-----	0
287 :	-----	0
288 :	-----	0
289 :	-----	0
290 :	-----	0
291 :	-----	1
292 :	-----	1
293 :	-----	242
294 :	-----	0
295 :	-----	100
296 :	-----	0
297 :	-----	0
298 :	-----	0
299 :	-----	0
300 :	-----	0
SCANNER LUT1 fno		
01 :	-----	0
02 :	-----	0
03 :	-----	0
04 :	-----	0
05 :	-----	0
SCANNER LUT2 adj		
01 :	-----	0
02 :	-----	0
03 :	-----	0
04 :	-----	0
05 :	-----	0
SCANNER CCD		
01 :	-----	26
02 :	-----	26
03 :	-----	26
04 :	-----	26
05 :	-----	557
06 :	-----	1116
07 :	-----	996
08 :	-----	0
09 :	-----	0
10 :	-----	0
11 :	-----	0
12 :	-----	280
13 :	-----	0
14 :	-----	0
15 :	-----	0
16 :	-----	40
17 :	-----	100
18 :	-----	405
19 :	-----	230
20 :	-----	0
21 :	-----	40
22 :	-----	40
23 :	-----	270
24 :	-----	175
25 :	-----	25

Figure 4-45 System Data List 20

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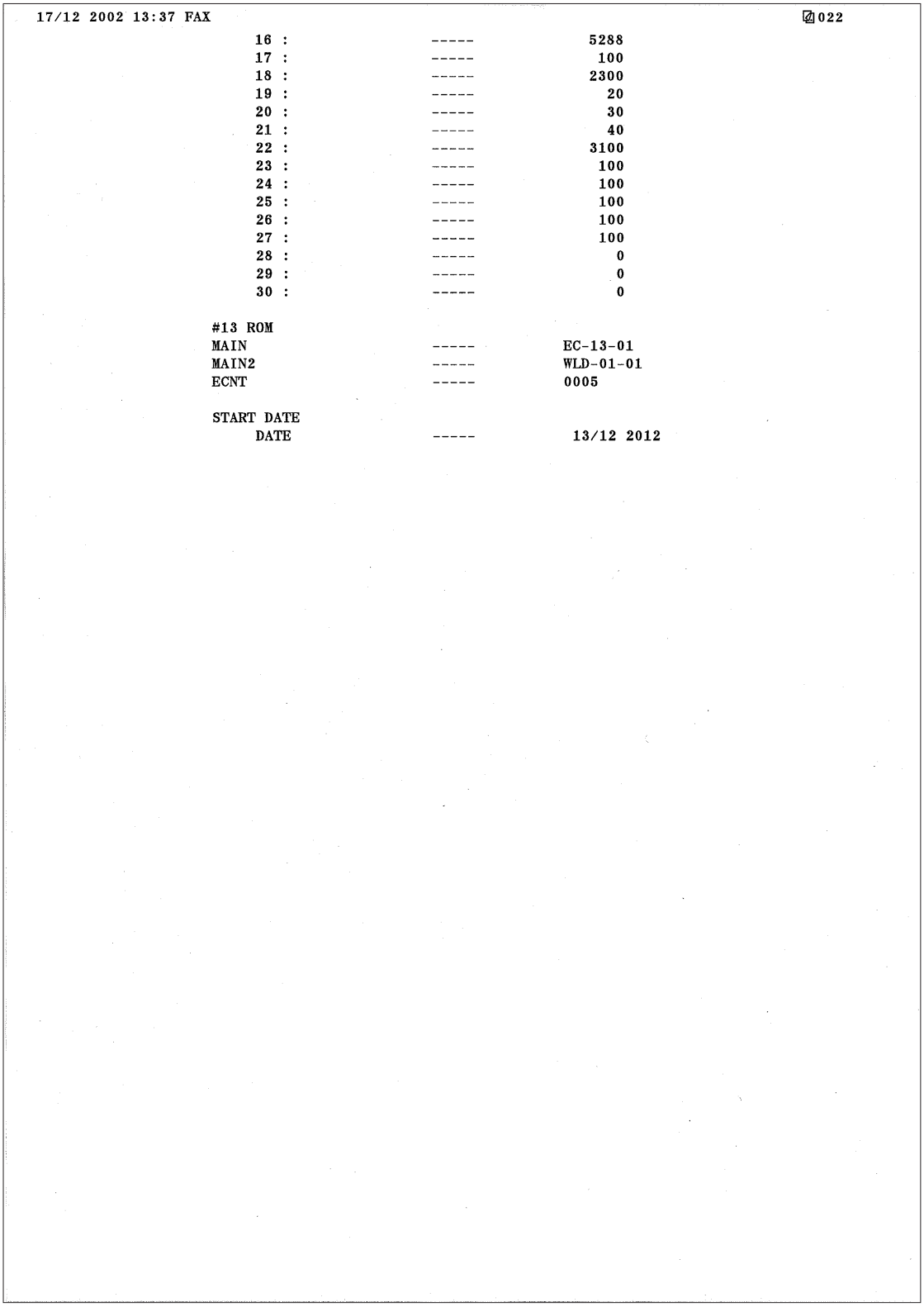
26 :	-----	39
27 :	-----	39
28 :	-----	39
29 :	-----	16
30 :	-----	16
31 :	-----	16
32 :	-----	16
33 :	-----	50
34 :	-----	50
35 :	-----	130
36 :	-----	0
37 :	-----	0
38 :	-----	0
39 :	-----	0
40 :	-----	0
41 :	-----	0
42 :	-----	0
43 :	-----	0
44 :	-----	0
45 :	-----	0
46 :	-----	0
47 :	-----	0
48 :	-----	0
49 :	-----	2005
50 :	-----	2005

#7 PRINTER

SW01	-----	00000000
SW02	-----	00000000
SW03	-----	00000001
SW04	-----	00000000
SW05	-----	10000000
SW06	-----	00000100
SW07	-----	00000000
SW08	-----	00000000
SW09	-----	00000000
SW10	-----	00000000
SW11	-----	00000000
SW12	-----	00000000
SW13	-----	00000000
SW14	-----	00000000
SW15	-----	00000000
SW16	-----	00000000
SW17	-----	00000000
SW18	-----	00000000
SW19	-----	00000000
SW20	-----	00000000

01 :	-----	15
02 :	-----	0
03 :	-----	0
04 :	-----	20
05 :	-----	20
06 :	-----	0
07 :	-----	0
08 :	-----	0
09 :	-----	0
10 :	-----	0
11 :	-----	0
12 :	-----	0
13 :	-----	10
14 :	-----	0
15 :	-----	60

Figure 4-46 System Data List 21



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16 :	-----	5288
17 :	-----	100
18 :	-----	2300
19 :	-----	20
20 :	-----	30
21 :	-----	40
22 :	-----	3100
23 :	-----	100
24 :	-----	100
25 :	-----	100
26 :	-----	100
27 :	-----	100
28 :	-----	0
29 :	-----	0
30 :	-----	0

#13 ROM

MAIN	-----	EC-13-01
MAIN2	-----	WLD-01-01
ECNT	-----	0005

START DATE

DATE	-----	13/12 2012

Figure 4-47 System Data List 22

NOTE

This machine does not offer an option for DATE & TIME registration; as such, the setting START DATE is not valid.

a-2) System dump list

This list shows the past communications statuses and error communications history.

```
17/12 2002 13:40 FAX                                                                   001

      CLEAR DATE               06/12 2002

      TX    =     0
      A4    =     0   B4    =     0   A3    =     0
      RX    =     0
      A4    =     0   B4    =     0   A3    =     0   LTR   =     0   LGL   =     0
      33600 =     0   31200 =     0   28800 =     0   26400 =     0   24000 =     0
      21600 =     0   19200 =     0   16800 =     0   14400 =     0   12000 =     0
      9600  =     0   7200  =     0   4800  =     0   2400  =     0
      14400 =     0   12000 =     0   TC9600=     0   TC7200=     0
      14400 =     0   12000 =     0
      9600  =     0   7200  =     0   4800  =     0   2400  =     0
      STD   =     0   FINE  =     0   SUPER =     0   ULTRA =     0
      MH    =     0   MR    =     0   MMR   =     0   JBIG  =     0
      G3    =     0   ECM   =     0
      PRINT =    55 /    10           READ  =     8 /     8


    #000            0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0

    #700            0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0

   ##100            0      0      0      0      0      0      0      0
                    0      0      0      0      0      0      0      0
                    0

   ##200            0      0      0      0      0      0
```

Figure 4-48 System Dump List

*1 : Not used
*2 : Not used
*3 : Not used
*4 : Not used
*5 : Not used
*6 : Not used
*7 : Not used
*8 : Not used
*9 : Not used
*10 : Total number of pages printed/scanned

[Display example]

PRINT = 30*/100** READ = 30*/100**

* This value indicates the value of TTL (for PRINT) and SCAN (for READ) in Service Data #9 COUNTER-TOTAL.
The value of PRINT and READ can be input from TTL and SCAN menu in Service Data #9 COUNTER-TOTAL.
The both values are cleared to "0" by the clear operation of Service Data #12 CLEAR-COUNTER.

** This value indicates the value (not including service reports output) counted since shipment from the factory.

*11 : Not used

[Display example]

##100	0	0	0	0	0
	##0100 errors	##0101 errors	##0102 errors		

a-3) Key history report

This report shows history of key press.

17/12 2002 13:41 FAX 001

****
*** KEY HISTORY REPORT ***
****

17/12 13:41:25	SET_KEY	17/12 13:41:24	NEXT_KEY	17/12 13:41:24	NEXT_KEY
17/12 13:41:23	NEXT_KEY	17/12 13:41:22	SET_KEY	17/12 13:41:21	PREV_KEY
17/12 13:41:21	PREV_KEY	17/12 13:41:20	PREV_KEY	17/12 13:41:20	PREV_KEY
17/12 13:41:20	PREV_KEY	17/12 13:41:20	PREV_KEY	17/12 13:41:19	SHARP_KEY
17/12 13:41:18	USER_KEY	17/12 13:40:32	SET_KEY	17/12 13:40:29	NEXT_KEY
17/12 13:40:29	NEXT_KEY	17/12 13:40:28	SET_KEY	17/12 13:40:27	NEXT_KEY
17/12 13:40:27	PREV_KEY	17/12 13:40:26	PREV_KEY	17/12 13:40:26	PREV_KEY
17/12 13:40:25	PREV_KEY	17/12 13:40:25	PREV_KEY	17/12 13:40:25	PREV_KEY
17/12 13:40:25	PREV_KEY	17/12 13:40:24	SHARP_KEY	17/12 13:40:22	USER_KEY
17/12 13:40:21	STOP_KEY	17/12 13:40:13	ONE_KEY_20	17/12 13:40:11	FUNC_ONE_KEY
17/12 13:40:10	FAX_MODE_KEY	17/12 13:40:09	FUNC_ONE_KEY	17/12 13:35:06	SET_KEY
17/12 13:34:53	NEXT_KEY	17/12 13:34:52	PREV_KEY	17/12 13:34:50	PREV_KEY
17/12 13:34:41	PREV_KEY	17/12 13:34:39	PREV_KEY	17/12 13:34:36	PREV_KEY
17/12 13:34:33	PREV_KEY	17/12 13:34:30	SET_KEY	17/12 13:34:29	PREV_KEY
17/12 13:34:29	PREV_KEY	17/12 13:34:28	PREV_KEY	17/12 13:34:27	PREV_KEY
17/12 13:34:27	PREV_KEY	17/12 13:34:26	PREV_KEY	17/12 13:34:25	SHARP_KEY
17/12 13:34:24	USER_KEY	17/12 13:32:06	STOP_KEY	17/12 13:32:04	NEXT_KEY
17/12 13:31:49	NEXT_KEY	17/12 13:31:20	NEXT_KEY	17/12 13:31:06	NEXT_KEY
17/12 13:30:50	NEXT_KEY	17/12 13:30:23	ONE_KEY_20	17/12 13:30:22	FUNC_ONE_KEY
17/12 13:30:20	STOP_KEY	17/12 13:28:51	ONE_KEY_20	17/12 13:28:49	FUNC_ONE_KEY
17/12 13:28:46	STOP_KEY	17/12 13:28:44	PREV_KEY	17/12 13:28:43	PREV_KEY
17/12 13:27:36	SET_KEY	17/12 13:27:36	PREV_KEY	17/12 13:27:35	USER_KEY
17/12 13:25:50	SET_KEY	17/12 13:25:50	NEXT_KEY	17/12 13:25:49	NEXT_KEY
17/12 13:25:47	NEXT_KEY	17/12 13:25:46	NEXT_KEY	17/12 13:25:45	NEXT_KEY
17/12 13:24:28	NEXT_KEY	17/12 13:24:27	NEXT_KEY	17/12 13:24:26	NEXT_KEY
17/12 13:24:25	NEXT_KEY	17/12 13:24:24	NEXT_KEY	17/12 13:24:23	ONE_KEY_20
17/12 13:24:22	FUNC_ONE_KEY	17/12 13:24:20	FAX_MODE_KEY	17/12 13:24:19	STOP_KEY
17/12 13:24:01	NEXT_KEY	17/12 13:23:39	PREV_KEY	17/12 13:23:39	PREV_KEY
17/12 13:23:38	SET_KEY	17/12 13:23:36	PREV_KEY	17/12 13:23:36	USER_KEY
17/12 13:23:34	STOP_KEY	17/12 13:23:30	PREV_KEY	17/12 13:23:29	NEXT_KEY
17/12 13:23:28	SET_KEY	17/12 13:23:14	SET_KEY	17/12 13:23:11	PREV_KEY
17/12 13:23:10	PREV_KEY	17/12 13:23:09	PREV_KEY	17/12 13:23:07	PREV_KEY
17/12 13:23:06	NEXT_KEY	17/12 13:23:04	NEXT_KEY	17/12 13:23:03	NEXT_KEY
17/12 13:23:02	SET_KEY	17/12 13:22:57	NEXT_KEY	17/12 13:22:56	PREV_KEY
17/12 13:22:56	PREV_KEY	17/12 13:22:55	ONE_KEY_20	17/12 13:22:55	ONE_KEY_20
17/12 13:22:54	ONE_KEY_20	17/12 13:22:53	USER_KEY	17/12 13:22:50	STOP_KEY
17/12 13:22:48	FAX_MODE_KEY	17/12 13:22:39	READ_MODE_KEY	17/12 13:22:31	USER_KEY
17/12 13:22:29	ONE_KEY_20	17/12 13:22:25	FUNC_ONE_KEY	17/12 13:21:50	SET_KEY
17/12 13:21:50	NEXT_KEY	17/12 13:21:49	PREV_KEY	17/12 13:21:49	PREV_KEY
17/12 13:21:48	PREV_KEY	17/12 13:21:48	PREV_KEY	17/12 13:21:48	PREV_KEY
17/12 13:21:47	PREV_KEY	17/12 13:21:47	PREV_KEY	17/12 13:21:47	PREV_KEY
17/12 13:21:46	PREV_KEY	17/12 13:21:46	PREV_KEY	17/12 13:21:46	PREV_KEY
17/12 13:21:46	PREV_KEY	17/12 13:21:45	PREV_KEY	17/12 13:21:45	PREV_KEY
17/12 13:21:45	PREV_KEY	17/12 13:21:44	PREV_KEY	17/12 13:21:44	PREV_KEY
17/12 13:21:44	PREV_KEY	17/12 13:21:43	PREV_KEY	17/12 13:21:43	PREV_KEY
17/12 13:21:43	PREV_KEY	17/12 13:21:41	SET_KEY	17/12 13:21:38	PREV_KEY
17/12 13:21:38	PREV_KEY	17/12 13:21:37	PREV_KEY	17/12 13:21:37	PREV_KEY
17/12 13:21:37	PREV_KEY	17/12 13:21:36	PREV_KEY	17/12 13:21:36	PREV_KEY
17/12 13:21:35	PREV_KEY	17/12 13:21:35	PREV_KEY	17/12 13:21:35	PREV_KEY
17/12 13:21:34	PREV_KEY				

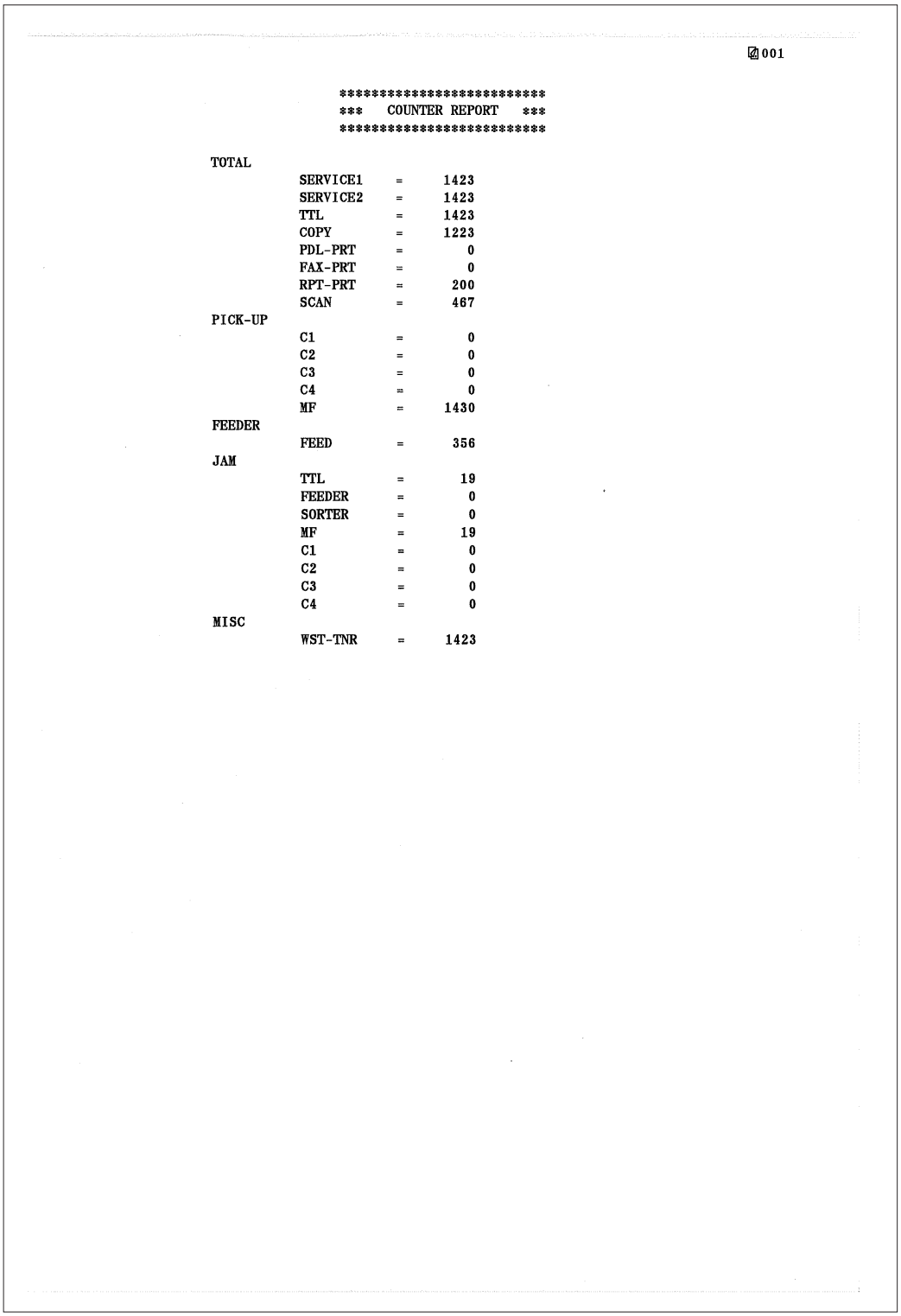
Figure 4-49 Key History Report

NOTE

This machine does not offer an option for DATE & TIME registration; as such, the date is displayed using the following notation: 00/00 00:00:00.

a-4) Counter report

This report shows counter of read, print and copy. Then output the list of changes made to the defaults of user data list and system data list.



001

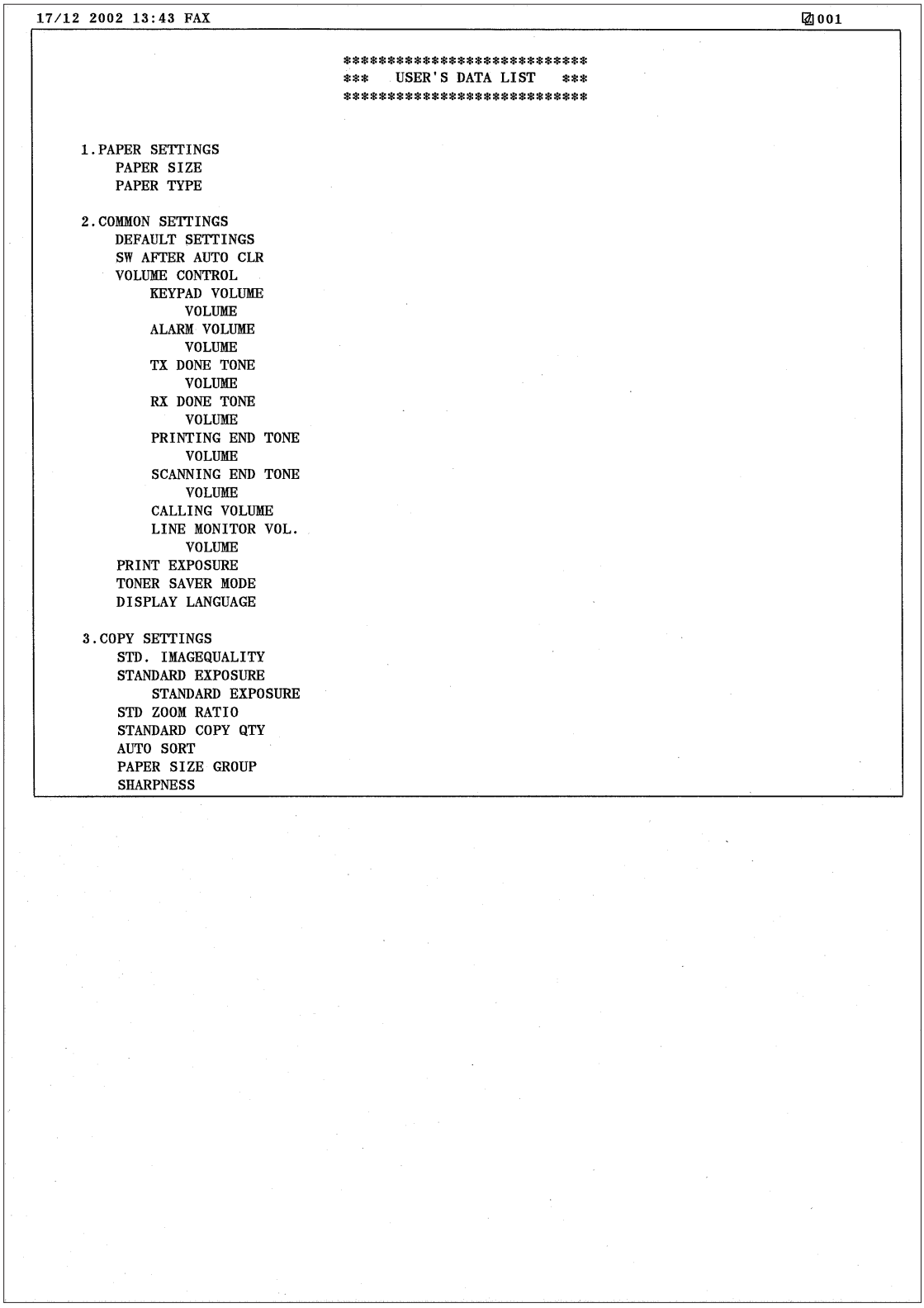
```
**************************
***   COUNTER REPORT   ***
**************************

TOTAL
        SERVICE1    =     1423
        SERVICE2    =     1423
        TTL         =     1423
        COPY        =     1223
        PDL-PRT     =        0
        FAX-PRT     =        0
        RPT-PRT     =      200
        SCAN        =      467
PICK-UP
        C1          =        0
        C2          =        0
        C3          =        0
        C4          =        0
        MF          =     1430
FEEDER
        FEED        =      356
JAM
        TTL         =       19
        FEEDER      =        0
        SORTER      =        0
        MF          =       19
        C1          =        0
        C2          =        0
        C3          =        0
        C4          =        0
MISC
        WST-TNR     =     1423
```

Figure 4-50 Counter Report

NOTE

For particulars of counters, see #9 COUNTER in service mode.



17/12 2002 13:43 FAX 001

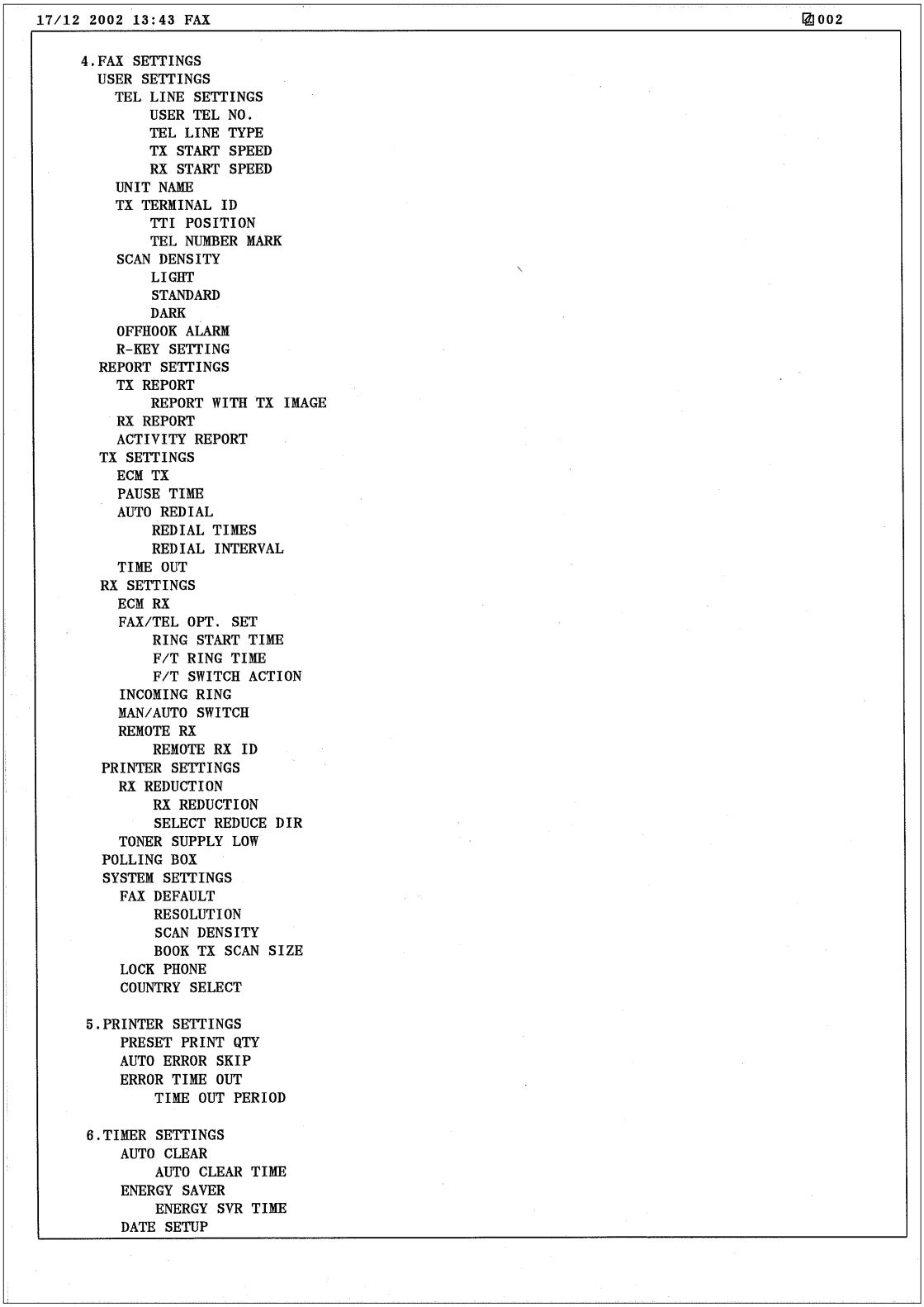
****
*** USER'S DATA LIST ***
****

1.PAPER SETTINGS
PAPER SIZE
PAPER TYPE

2.COMMON SETTINGS
DEFAULT SETTINGS
SW AFTER AUTO CLR
VOLUME CONTROL
KEYPAD VOLUME
VOLUME
ALARM VOLUME
VOLUME
TX DONE TONE
VOLUME
RX DONE TONE
VOLUME
PRINTING END TONE
VOLUME
SCANNING END TONE
VOLUME
CALLING VOLUME
LINE MONITOR VOL.
VOLUME
PRINT EXPOSURE
TONER SAVER MODE
DISPLAY LANGUAGE

3.COPY SETTINGS
STD. IMAGEQUALITY
STANDARD EXPOSURE
STANDARD EXPOSURE
STD ZOOM RATIO
STANDARD COPY QTY
AUTO SORT
PAPER SIZE GROUP
SHARPNESS

Figure 4-51 Changed Data List (User's Data List) 1



```
17/12 2002 13:43 FAX                                    002

  4.FAX SETTINGS
    USER SETTINGS
      TEL LINE SETTINGS
          USER TEL NO.
          TEL LINE TYPE
          TX START SPEED
          RX START SPEED
      UNIT NAME
      TX TERMINAL ID
          TTI POSITION
          TEL NUMBER MARK
      SCAN DENSITY
          LIGHT
          STANDARD
          DARK
      OFFHOOK ALARM
      R-KEY SETTING
    REPORT SETTINGS
      TX REPORT
          REPORT WITH TX IMAGE
      RX REPORT
      ACTIVITY REPORT
    TX SETTINGS
      ECM TX
      PAUSE TIME
      AUTO REDIAL
          REDIAL TIMES
          REDIAL INTERVAL
      TIME OUT
    RX SETTINGS
      ECM RX
      FAX/TEL OPT. SET
          RING START TIME
          F/T RING TIME
          F/T SWITCH ACTION
      INCOMING RING
      MAN/AUTO SWITCH
      REMOTE RX
          REMOTE RX ID
    PRINTER SETTINGS
      RX REDUCTION
          RX REDUCTION
          SELECT REDUCE DIR
      TONER SUPPLY LOW
    POLLING BOX
    SYSTEM SETTINGS
      FAX DEFAULT
          RESOLUTION
          SCAN DENSITY
          BOOK TX SCAN SIZE
      LOCK PHONE
      COUNTRY SELECT

  5.PRINTER SETTINGS
      PRESET PRINT QTY
      AUTO ERROR SKIP
      ERROR TIME OUT
          TIME OUT PERIOD

  6.TIMER SETTINGS
      AUTO CLEAR
          AUTO CLEAR TIME
      ENERGY SAVER
          ENERGY SVR TIME
      DATE SETUP
```

Figure 4-52 Changed Data List (User's Data List) 2

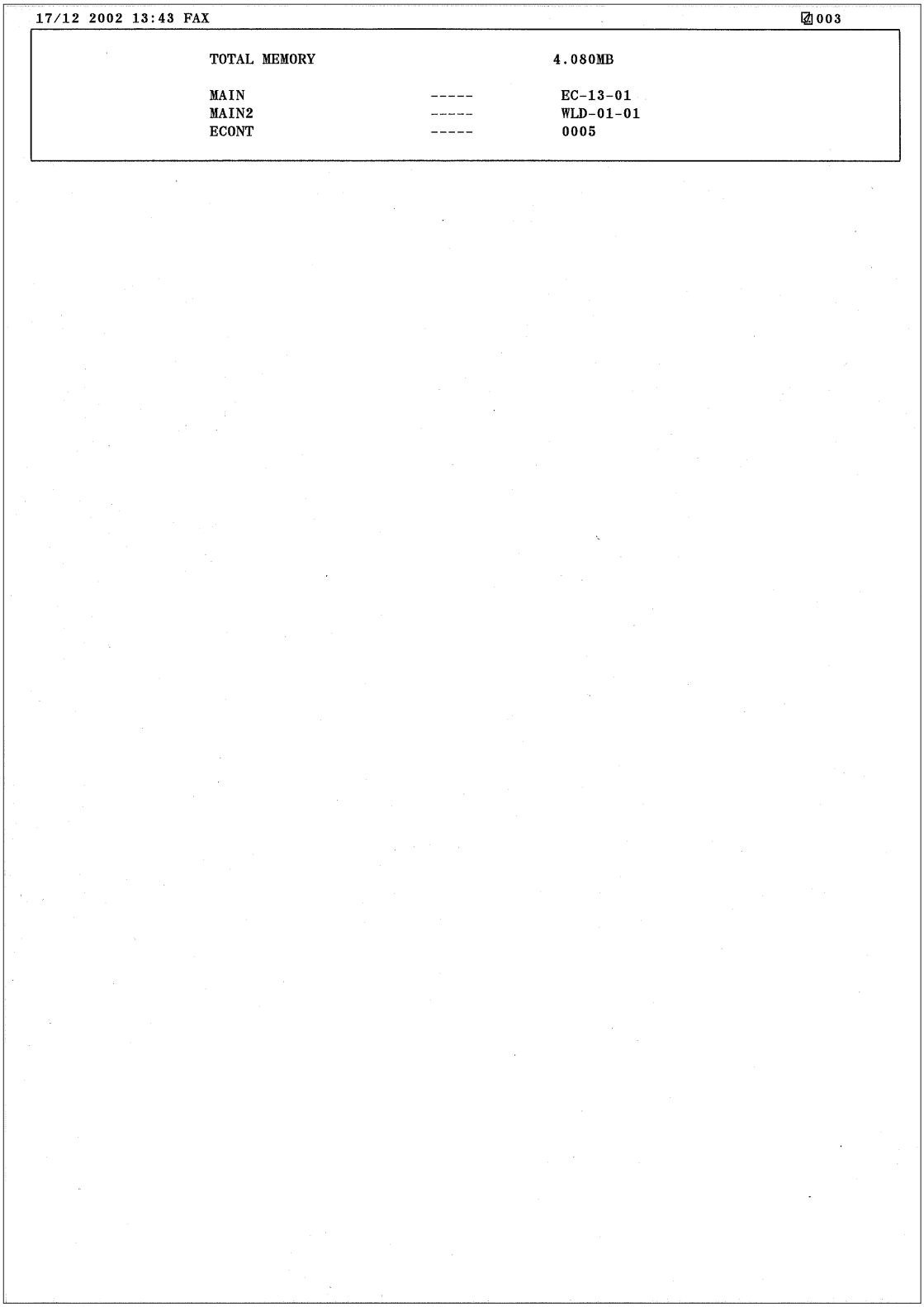
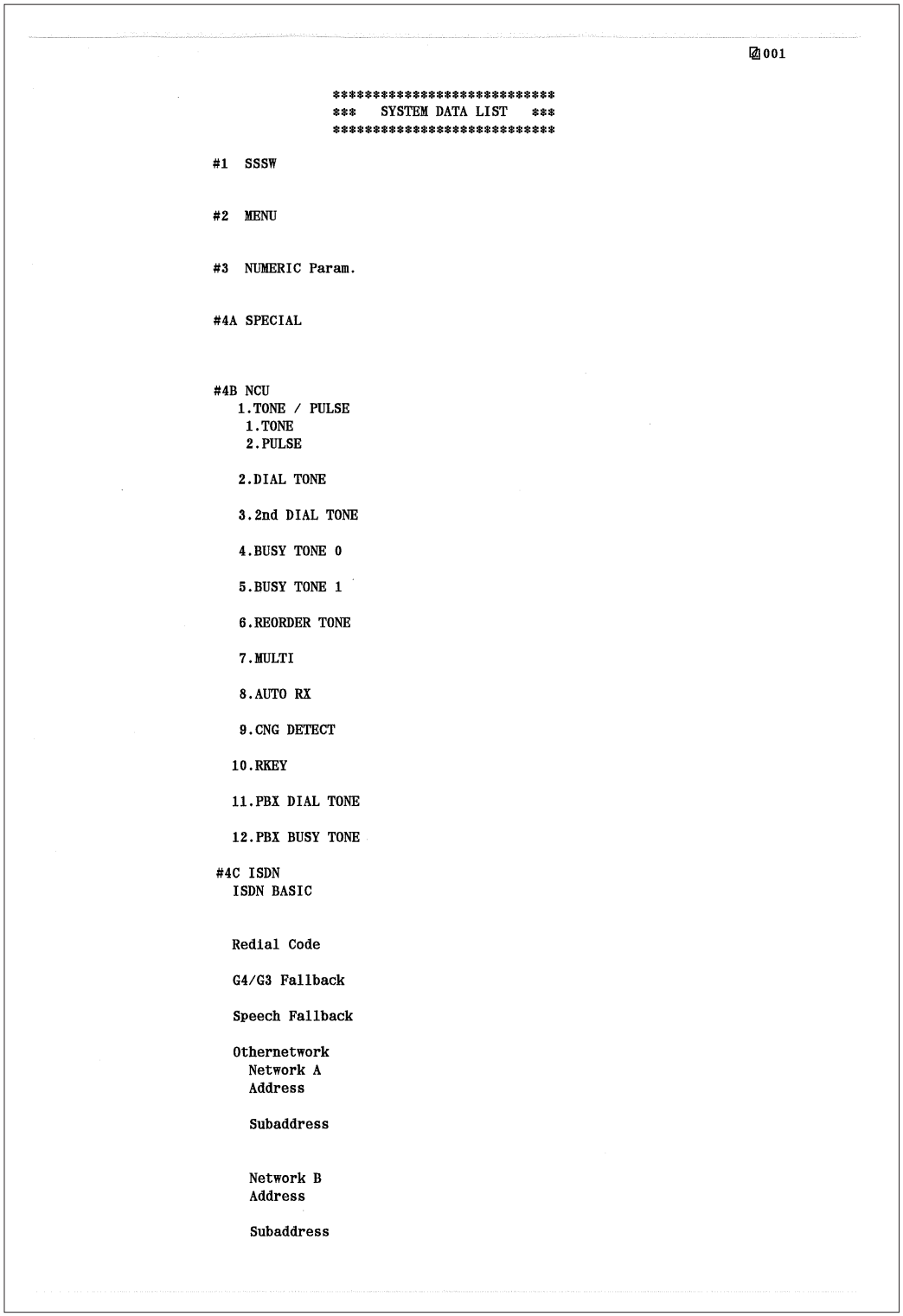


Figure 4-53 Changed Data List (User's Data List) 3



001

****
*** SYSTEM DATA LIST ***
****

#1 SSSW

#2 MENU

#3 NUMERIC Param.

#4A SPECIAL

#4B NCU
1.TONE / PULSE
1.TONE
2.PULSE

2.DIAL TONE

3.2nd DIAL TONE

4.BUSY TONE 0

5.BUSY TONE 1

6.REORDER TONE

7.MULTI

8.AUTO RX

9.CNG DETECT

10.RKEY

11.PBX DIAL TONE

12.PBX BUSY TONE

#4C ISDN
ISDN BASIC

Redial Code

G4/G3 Fallback

Speech Fallback

Othernetwork
Network A
Address

Subaddress

Network B
Address

Subaddress

Figure 4-54 Changed Data List (System Data List)

a-6) Print spec report

This report shows specification of the machine.

17/12 2002 13:46 FAX 001

TYPE	-----	U.K.
TOTAL MEMORY	-----	13824K
MAIN	-----	EC-13-01
MAIN2	-----	WLD-01-01
ECONT	-----	0005
READ ADJ PRM		
18 :	-----	0405
19 :	-----	0230
20 :	-----	0000
21 :	-----	0040
22 :	-----	0040
23 :	-----	0270
24 :	-----	0175
25 :	-----	0025
26 :	-----	0039
27 :	-----	0039
28 :	-----	0039
29 :	-----	0016
30 :	-----	0016
31 :	-----	0016
32 :	-----	0016
34 :	-----	0050
34 :	-----	0050
CS TYPE	-----	LTR
USB	-----	NONE

Figure 4-55 Print Spec Report

*1 : Country setting under '#5 TYPE' in service mode
*2 : Total memory size
*3 : Version of the ROM on the SCNT board
*4 : Version of the CPU on the SCNT board
*5 : Version of the ROM on the ECNT board
*6 : Adjustment items and settings for the service mode item #6 SCANNER>7.CCD
*7 : Contact sensor size
*8 : Use of USB

8. WIRING DIAGRAM

8.1 Wiring Diagram

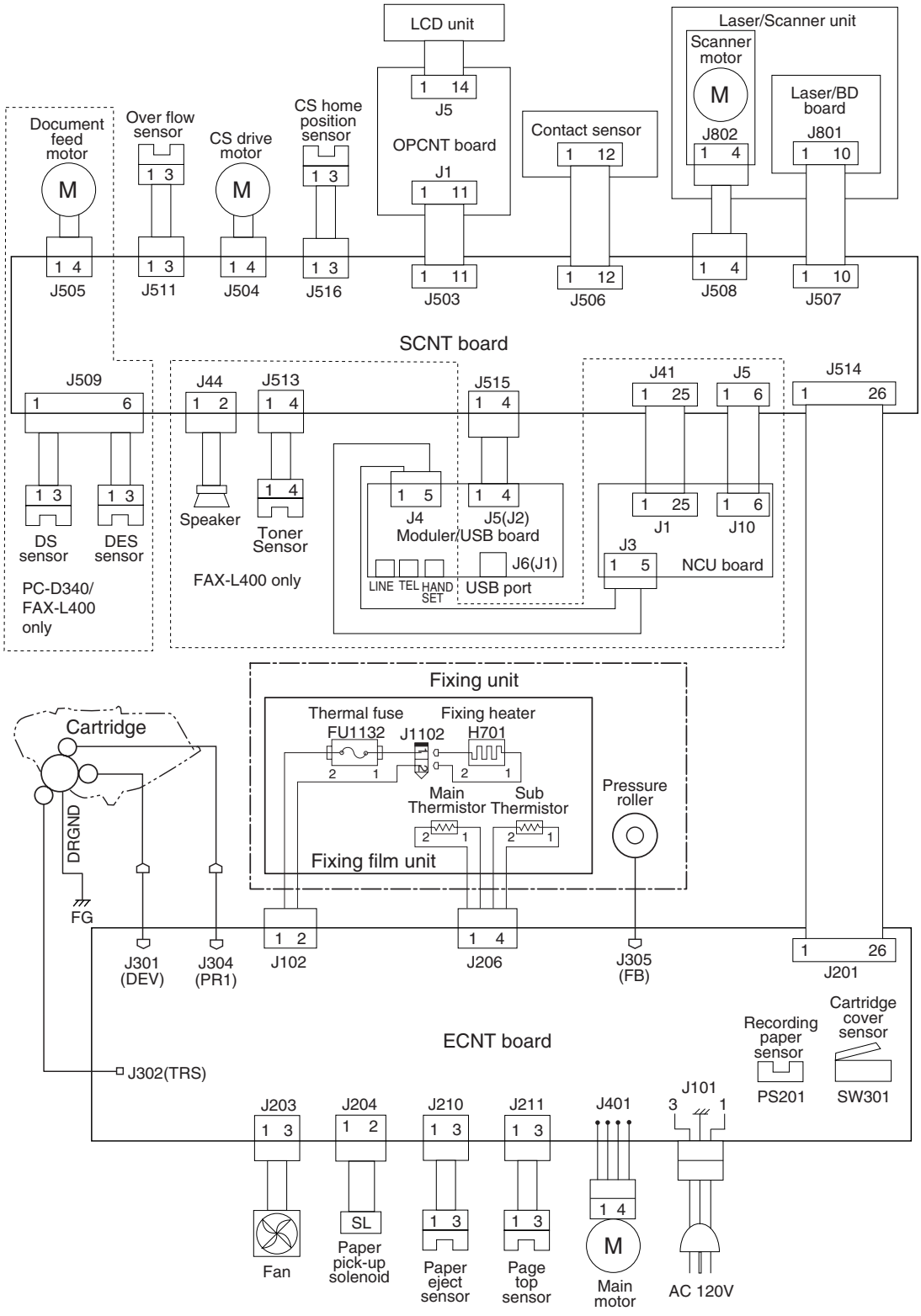


Figure 4-56 Wiring Diagram

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Chapter 5

Appendix

1. INSTALLATION

1.1 Setting up

- Select a site of installation.
- Unpack the machine, and check the attachments.
  Make sure none is missing and there is no damage.
- Remove the packing material.
  Remove all tape and protective material used on the machine.
- Fit the attachments.
- Make connections.
  Connect the USB cable to the computer.
  Connect the telephone line and option handset (FAX-L400 only).
- Turn on the power.
  Connect the power cord.
- Selecting the language.
  When you turn on the power for the first time, you need to select the correct language.
  For the FAX-L400, you also need to select the correct country.
- Fit the toner cartridge.
  Shake the cartridge, and remove the protective material; then, pull the tab to remove the seal.
- Set the recording paper.
  Put recording paper in the paper tray. Register the size of the recording paper by changing PAPER SETTINGS under Additional Functions.
- Set the type of telephone line (FAX-L400 only).
  To do so, make the following selections: Additional Functions>FAX SETTINGS>USER SETTINGS>TEL LINE SETTINGS>TEL LINE TYPE.
- Register user data for date and time (FAX-L400 only), by selecting Additional Functions>TIMER SETTINGS>DATE/TIME SETTINGS; for telephone number, by selecting FAX SETTINGS>USER SETTINGS>TEL LINE SETTINGS>USER TEL NO.; for fax machine name, Additional Functions>FAX SETTINGS>USER SETTINGS>UNIT NAME.

1.2 Checking Operation

- Check the level of quality for both reading and printing.
  Make a copy, and see that it is free of a fault for both reading and printing.
- Conduct a communications test.
  Send and receive a fax by connecting to another fax machine, making sure that the image is normally sent and the received image is normally printed.

What to do when trouble occurs

Very rarely, during use, the display may go out, all the keys may stop working, or some other trouble may occur because of strong electrical noise or a large amount of static. If such trouble occurs, initialize the RAM (All clear operation). For how, please refer to *Chapter 3, 1.4 All Clear*.

2. USER DATA FLOW

2.1 User Data Flow (by Operation Panel)

a) COPY model

Press the Additional Functions key.

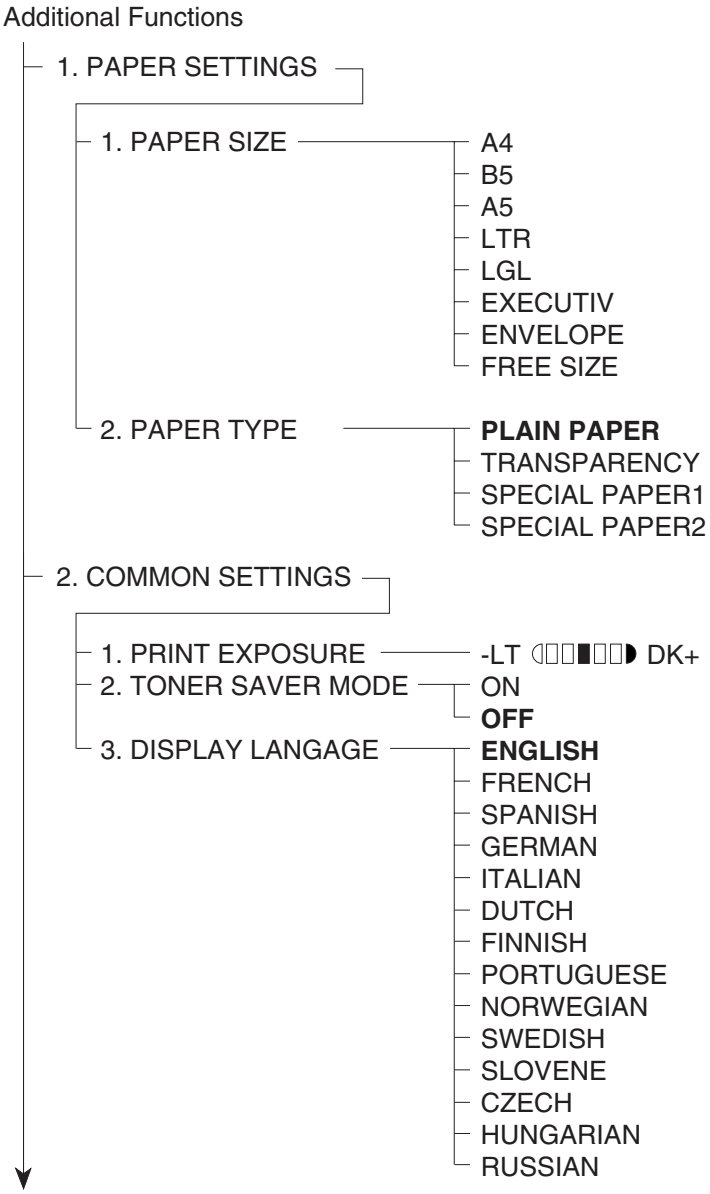


Figure 5-1 User Data Flow 1

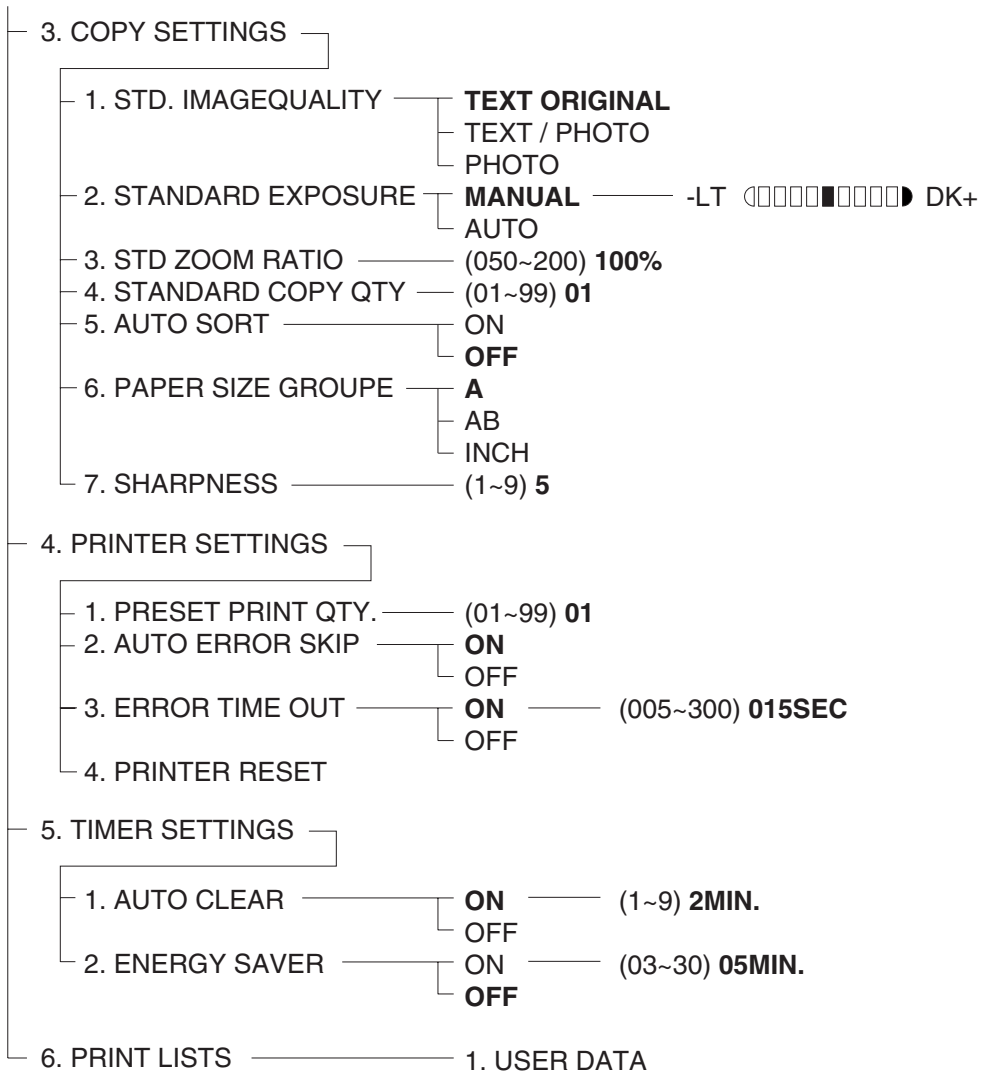


Figure 5-2 User Data Flow 2

a) FAX model

Press the Additional Functions key.

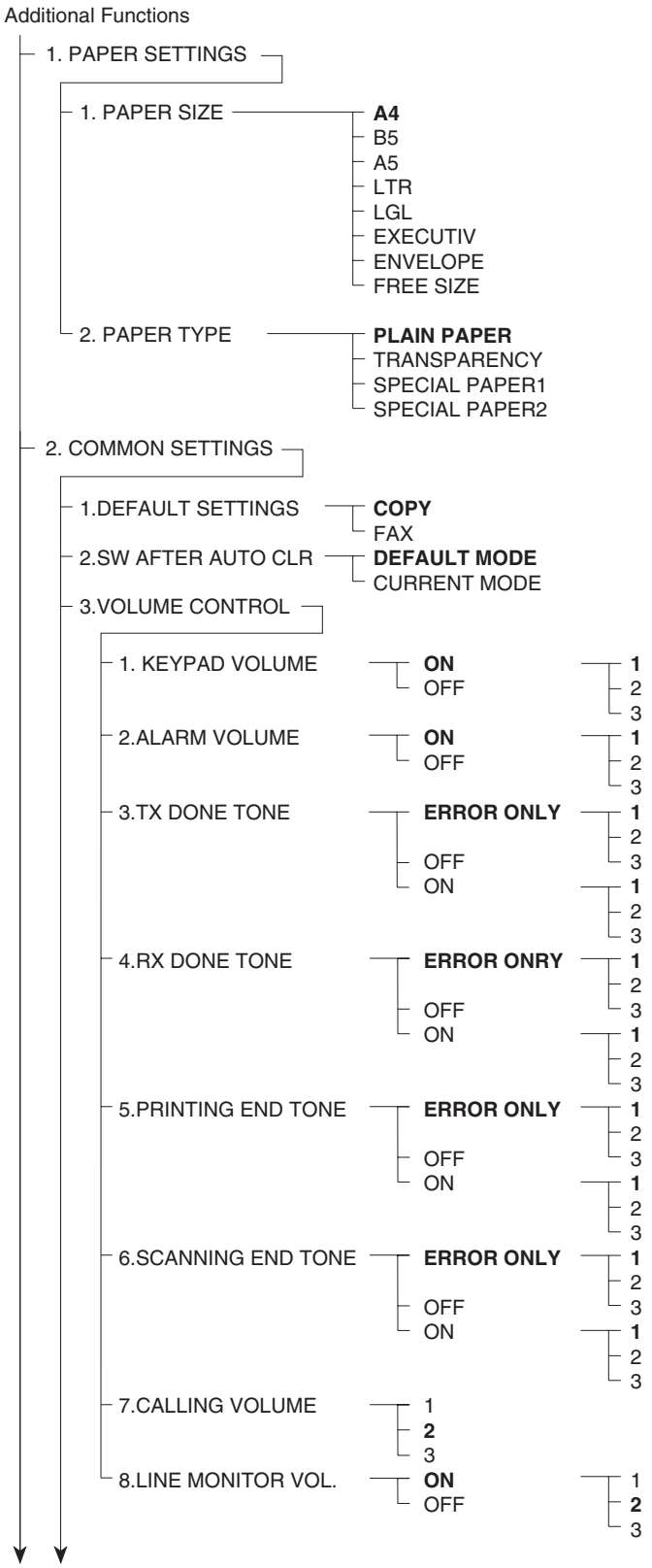


Figure 5-3 User Data Flow 1

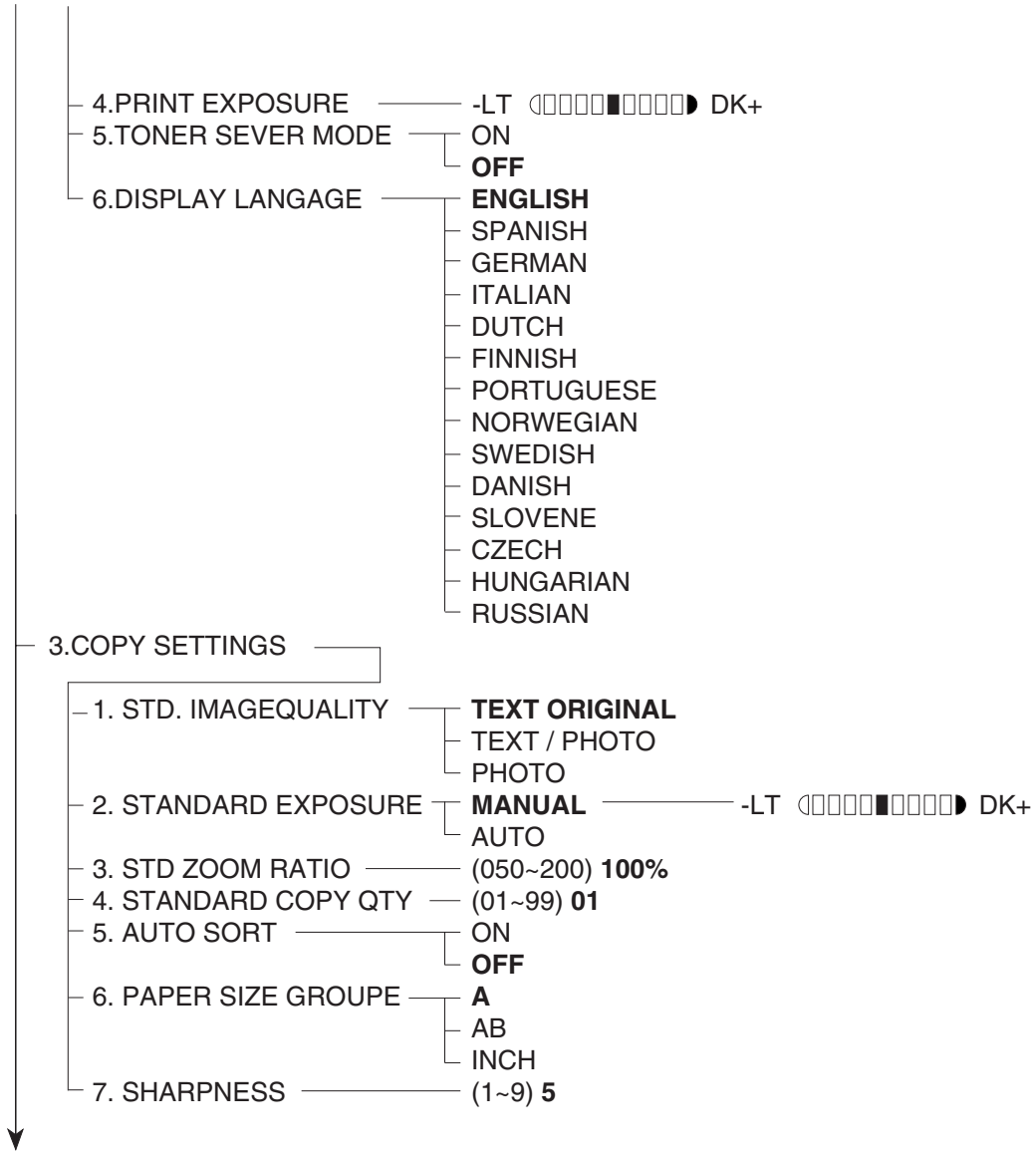


Figure 5-4 User Data Flow 2

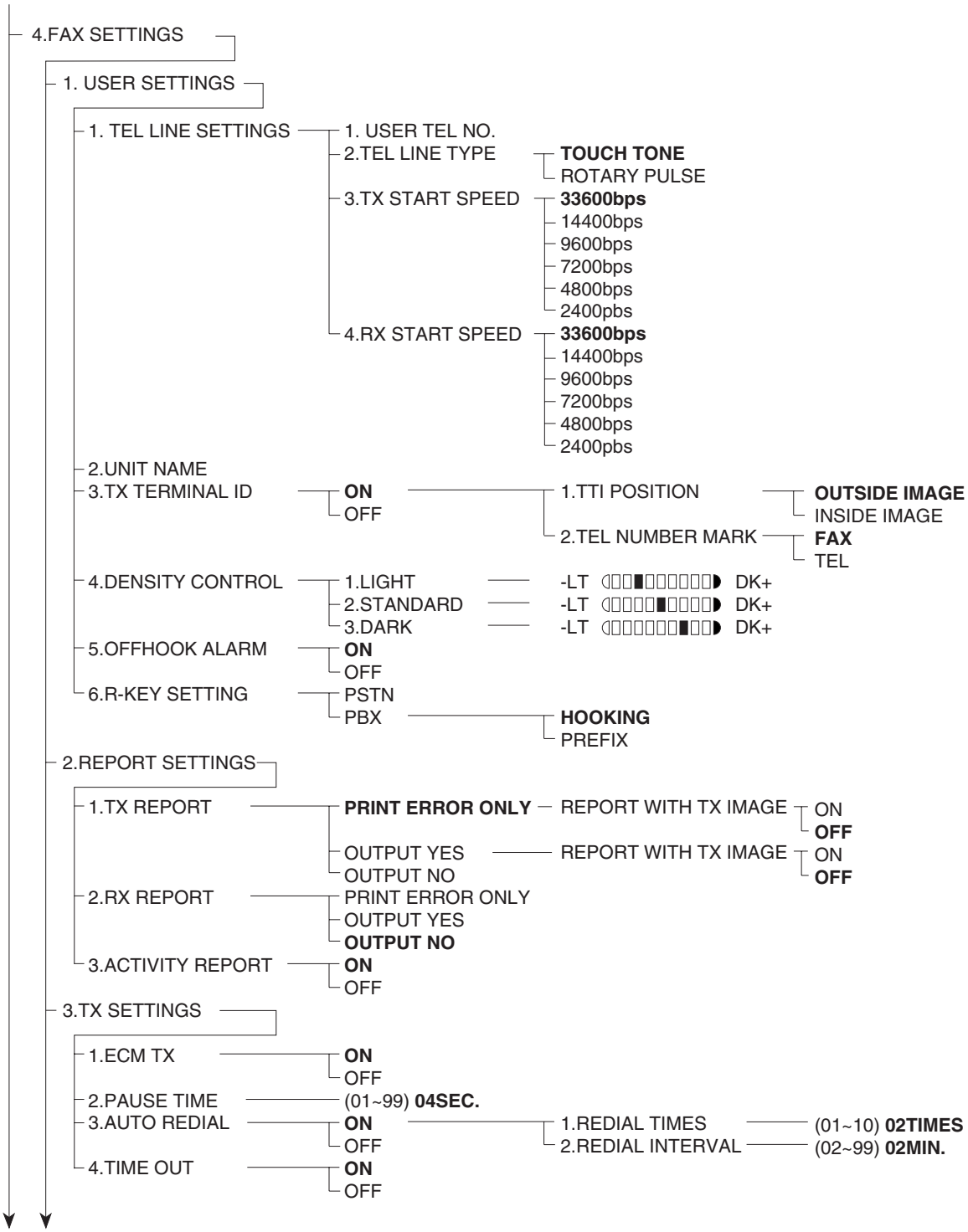


Figure 5-5 User Data Flow 3

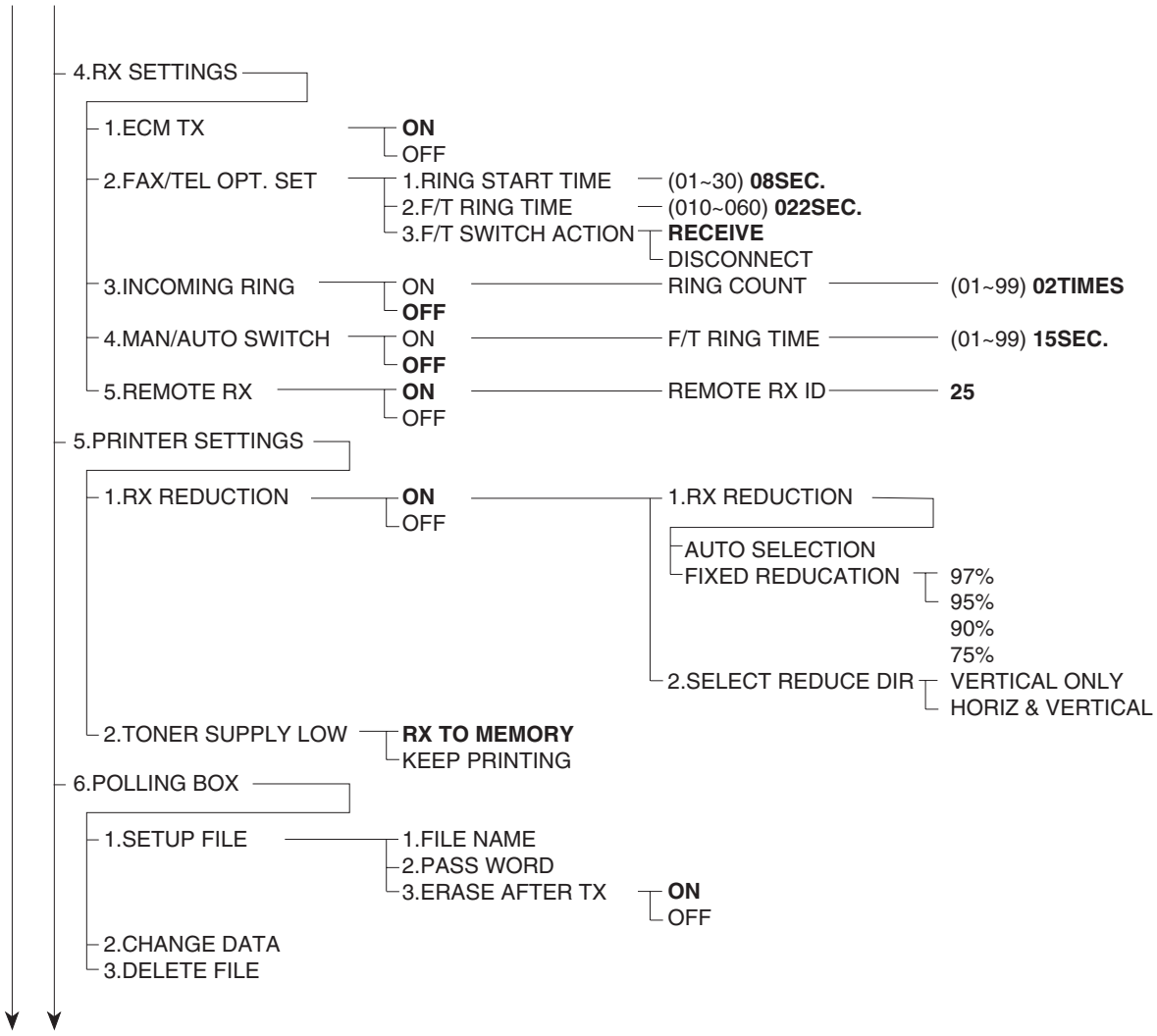


Figure 5-6 User Data Flow 4

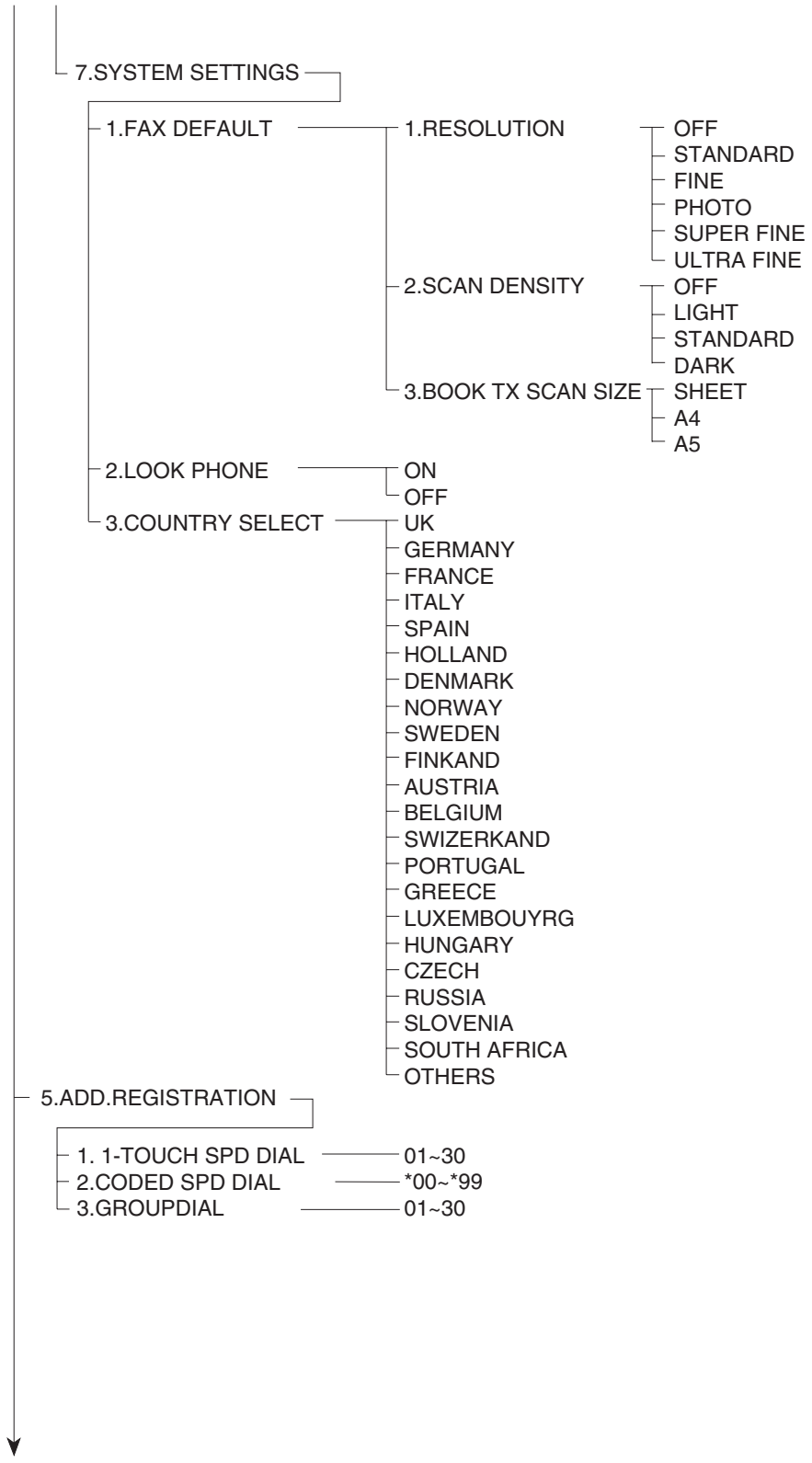


Figure 5-7 User Data Flow 5

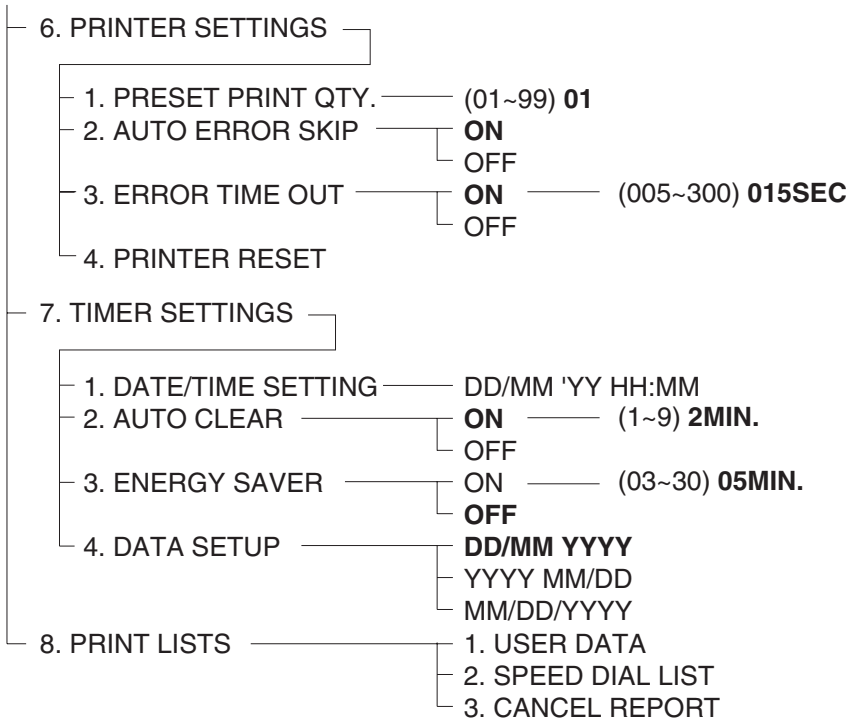


Figure 5-8 User Data Flow 6

3. OPTION

3.1 Handset Kit (FAX-L400 only)

3.1.1 Service operations

a) External view

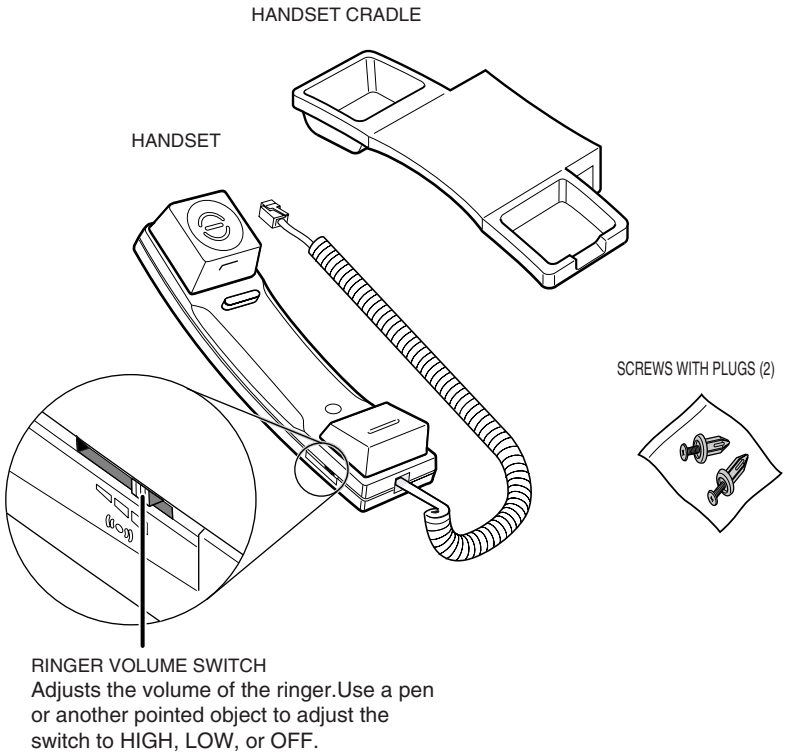


Figure 5-9 External View

b) Installation

b-1) Attachment to the main unit

Use a screwdriver to remove the two covers on the left side of the unit.

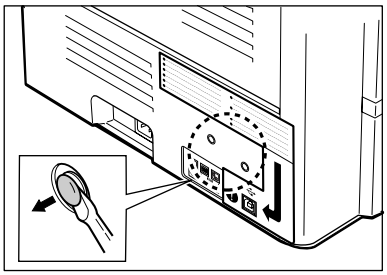
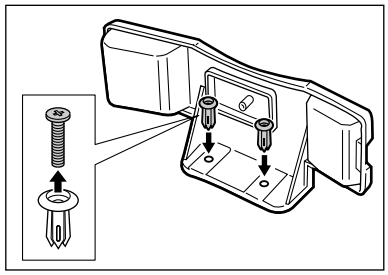


Figure 5-10 Handset Installation 1

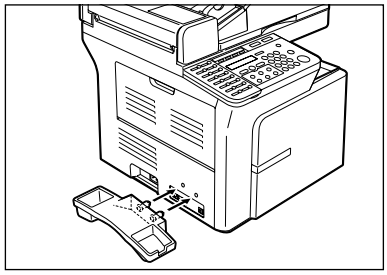
Remove the screws from the plugs and insert the plugs into the holes on the handset cradle.

Figure 5-11 Handset Installation 2



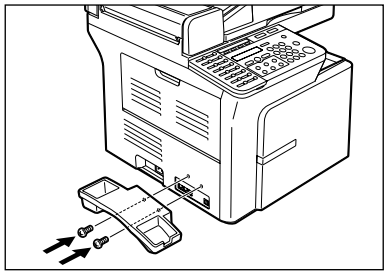
Insert the plugs (with the handset cradle) into the holes on the unit.
If you have difficulty inserting the plugs, turn the unit so that the left side is facing you and the right side is abainst a wall. You can now insert the plugs without the unit moving.

Figure 5-12 Handset Installation 3



Use your finger to push the screws into the plugs.
If you have difficulty, use a cross-point screwdriver to push the screws all the way into the plugs. (Do not screw them in as the screws may break.)
Make sure you support the unit when inserting the screws.

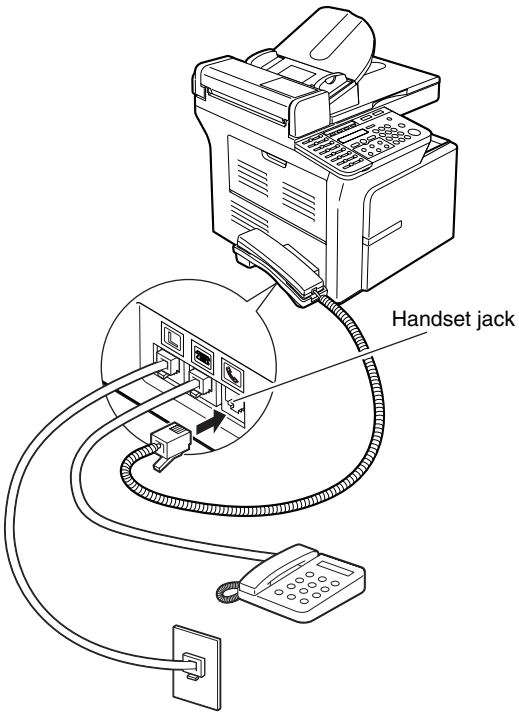
Figure 5-13 Handset Installation 4



b-2) Connecting the Handset

Place the handset in its cradle and connect the handset cord to the handset jack.

Figure 5-14 Connecting the Handset



Canon