Service Manual

Canon BW
Printer Kit-G2

Canon

Feb 21 2005

Application

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Corrections

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

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Caution

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

Symbols Used

This documentation uses the following symbols to indicate special information:

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

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.

   In the diagrams, ▮▮▮▮ represents the path of mechanical drive; where a signal name accompanies the symbol , the arrow ⟶ indicates the direction of the electric signal.

   The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.

2. In the digital circuits, '1'is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low".(The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.

   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.

All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

Contents

Chapter 1 Specifications

Chapter 2 Functions

Chapter 3 Installation

Chapter 1 Specifications

Contents

1.1 Specifications

1.1.1 Specifications

0009-4423

The main specifications and features of the kit are as shown below.

<Characteristics>

- printing is virtually immediate
- output is close to screen display

T-1-1

Specifications		
Data processing resolution		600 dpi
Effective print area	PCL	main scanning direction: 1/6 inch
		sub scanning direction: 1/6 inch
Supported operating systems		Windows 2000 Professional/Server/ Advanced Server
		Windows XP Home Edition/Professional
		Windows Server 2003 Stadard Edition/ Enterprise Edition
		Windows 98/98SE/ME
		Windows NT4.0 Workstation/Server
Paper size		default papers

Effective print area

T-1-2

	PCL5e/XL			
	Effective print area		End of Papaer	
	Main scaning	Sub scaning	Main scaning	Sub scaning
Minimum	90.53mm	139.53mm	4.23mm	4.23mm
Maximum	288.53mm	425.53mm	4.23mm	4.23mm

1.1.2 PCL Printer Driver

0009-4425

FONT HANDLING:

・PCL5e/5c

HP-GL/2 Mode

Texts are handled in the PCL mode, or in the HP-GL/2 mode if:

1. Characters are clipped.

2.Characters are rotated.

Supported typefaces include:

1. Standard

2. Italic

3. Bold

4. Bold Italic

Raster Mode

Use of a device font is determined by the driver setting.

If a device font is used, the Raster Mode will handle data the same as the HP-GL/2 Mode.

If not, the following restrictions will be imposed.

*GDI Raster Fonts unavailable 1 byte fonts such as Courier, MS Sans Serif, MS Serif, etc.

*GDI Vector Fonts available 1 byte fonts such as Modern, Roman, Script, etc.

*TrueType Fonts available 1 byte fonts such as Arial, Courier New, Symbol, Times New Roman, etc.

・PCL6

PCL6 controls the texts if:

1.Characters are enlarged or reduced.

2.Characters are rotated.

3.Characters are clipped.

NOTE:

GDI Vector Fonts and TrueType Fonts become available only after added to Windows.

Chapter 2 Functions

Contents

2.1 New Function

2.1.1 Canon Driver Information Assist Service (DIAS) 0008-5246

This is a subset version of the Netspot Suite Service, supporting Driver only: we have selected Driver's functions (mainly, the functions to acquire Device configuration information) and redesigned them. The DIAS has the following functions:
- To acquire Device configuration information (acquisition when setting up Printer Property.)
- To acquire calibration information (acquisition when setting up Printer Property and printing by the color LBP, Color iR, and etc.)
- To make recognition in department-control printing (communication when setting up Printer Property or when making a department-control print)

Main structure of DIAS
DIAS (DLL): It is a module loaded on Driver
DIAS (Service): It does a service of installation on printer server when using a shared printer (resident process)
CBT: It is a module group to control a local port, such as Centronics Cable or USB
H-VDC: It is a module group which are needed for the driver function in DIAS.

Characteristics of DIAS
- Local printer can acquire the configuration information in DIAS (DLL) only.
Local printer means a printer that is "Peer to Peer" connected with Local PC via LPR/IPP/Centronics Cable/USB and that Spooler (Print queue) appears on the Local PC.

- Shared printer needs to have DIAS (Service) installed on printer server.
The installation of DIAS (Service) must be done via Driver installer.
Shared printer means a printer whose Spooler (Print queue) appears on the printer server (Remote PC).

- However, in some cases, DIAS (Service) needs to be installed for Local Port connection. (See "Help" > "Troubleshoot the acquisition of configuration information".
1, WinNT4.0 OS Family (All)/ At the time of Local Port connection (LPT)
2, Win2k Server OS Family (Except Professional)/At the time of Local Port connection (LPT/USB) and Terminal Service introduction
3, WinXP Home/Professional Edition/ServerOS 2003 Family (X86:All)/ At the time of Local Port connection (LPT/USB) and Terminal Service introduction

About the version indication
The same Driver version indication as the one via Netspot Suite Service appears only when communicating with Device via DIAS (Service) (i.e., when connected through a shared printer).

Compatibility of DIAS and Netspot Suite Service

DIAS and Netspot Suite Service are compatible and independent. Driver supporting DIAS does not use Netspot Suite Service even if it is installed.

Cautions when using DIAS

CBT controls all access to Local Port; both DIAS (DLL/Service) and NetSpot Suite Service use CBT to access Local Port from the same PC.

CBT was installed only on Netspot Suite Service before; it is automatically uninstalled in response to uninstalling the existing NetSpot Suite Service. Follow the procedures below when uninstalling the former versions of NetSpot Suite Service v3.40 and when uninstalling JobMonitor v4.20 and former.

- Reinstall DIAS after the uninstallation is complete. (Reinstallation of DIAS is enabled via Installer.)
- Update NetSpot Suite Service to the latest version (v3.40 and later).

Former versions of NetSpot Suite Service v3.40
PS Printer Driver v2.10 and former
PCL5e Printer Driver v6.11 and former
PCL5c Printer Driver v6.11 and former
PCL6 Printer Driver v6.11 and former
UFR Printer Driver v1.10 and former
JobMonitor v4.10 and former

About a file name of the CBT module

Following files are installed in the 'c:\Windows\system' folder. (For Windows XP/Windows 2000/NT/Server2003, this folder name is to be '%SystemRoot%\system32'.)
AuPort.exe
NBCBTNT.dll / NBCBT95.dll
NBPORTNT.exe / NBPORT95.exe
NBLOCALT.dll
nbcbtspt.dat

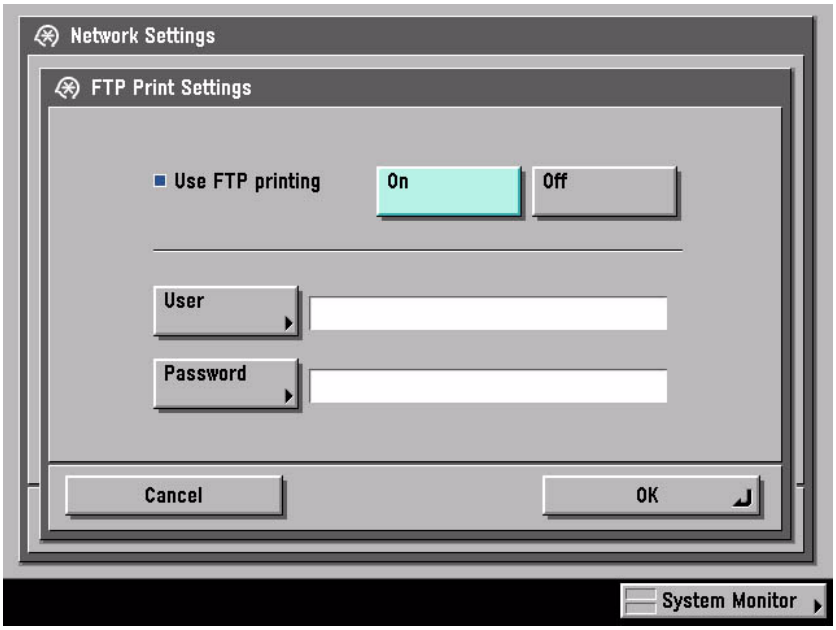
Method of confirming when CBT is deleted

The following message is displayed.
"Failed to obtain device information Make sure no printer error occurred and printout port setting is correct."

2.1.2 FTP Printing

0008-5247

This device provides a FTP server for receiving print data. The device can accept print jobs sent in FTP from client PCs. This is called FTP printing, a new feature first employed on iRC 6800. To use this feature, the FTP Print option must be selected. It is selected by default. You can access the option by pressing Ad Func, System Settings, Network Settings, TCP/IP Settings, and FTP Print Settings buttons. In FTP Print Settings screen, only one pair of a user name and password can be entered for the user who can log in to the FTP server. No settings are made for both of the fields by default.



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Commands

The FTP server complies with the RFC 959 -- File Transfer Protocol -- but provides only printing function. Thus the server does not support other functions required as a RFC 959 compliant server. The commands available for the FTP client are "user," "password," "bin," "put," "bye," "hash," and "help." There is no use of other commands since the server does not provide functions other than printing. The following lists the notes to use the commands.

- To send print data with the command "put," set the mode to the binary mode using the command "bin." In the ascii mode, the data cannot be sent with the command "put."

- If the user and password fields are blank, any user with any password can log in. If the user name "anonymous" is used, any character string can be entered as the password. The device displays the string in User filed of Log screen.

- This function is featured mainly to print prn files output from PDL drivers. The device processes text files and the like as it receives data in LPR (and does not properly print depending on settings.) The device of PostScript-compatible model can print PDF files, compatible with PDF V1.3.

The following shows a command specification example, which you will connect the device of the IP address "172.16.181.131" in FTP with the user name "test" and the password "test" and print the file "test.prn" in the root directory of the drive C on the client PC.

C:\>**ftp 172.16.181.131**
Connected to 172.16.181.131.
220 Connection established.
User (172.16.181.131:(none)): **test**

331 Password required to login.
Password: **Note: The password is not displayed.**
230 User test logged in.
ftp> **bin**
200 Type set to IMAGE (binary).
ftp> **put c:\test.prn**
200 PORT command successful.
150 Opened BINARY data connection for file transfe
226 Transfer complete.
ftp: 15871 bytes sent in 0.00Seconds 15871000.00Kb
ftp> **bye**
221 Server closing down connection.

C:\>

Number of Connections and Used Ports

The maximum number of concurrent connections is three. If a user attempts to connect to the FTP server with which three connections have been established, the user cannot log in and fails in connection. The default port for the FTP server is 21. There is no measure provided to change the port.

The control port time-out is set to 300 seconds. You need to re-connect to the server if you have left the connection for 300 seconds or more after logging in. The data port time-out is 60 minutes. If a data transmission takes more than 60 minutes, the connection is automatically disconnected.

2.1.3 Secured Print Jobs

0008-5624

Overview:
Secured Print is the function that a password is provided to the PDL(UFR II and PCL) print job and it is sent to the device. Then, it is rasterized on the device side, saved in the image server and output by entering the password from the device's panel. This function is used when dealing with the documents which you do not want other people to see, such as confidential documents.

a) Password is provided.
In order to conduct the Secured Print, the printer driver requires the user to enter the password from GUI. This password is provided to the print job and it is sent to the device. This function can be conducted by using CPCA protocol(UFR II and PCL).

b) Job execution and pending
PDL print job sent to the device as the Secured Print job is compiled on the job queue like the normal PDL print job. Then, it is rasterized by PDL interpreter, saved in the image server as the document image file and becomes pending here. However, all job information, such as paper supply/output, the number of copies and finishing information remains.

c) Job started by entering the password

If the Secured Print job is pending, the display indicating the pending state appears on the job status screen of the panel. If you select this job from the panel, you are required to enter the password. When the password you entered is same as the password provided from the printer driver, the pending job will be started. When the password is different, the job is treated as an error, so it is not started and it remains in the pending state. Entering the password to start the job cannot be executed before the Secured Print job transfers to the pending state.

d) Output

The started Secured Print job is output to the printer engine with the top priority. This top priority means that if the jobs can be changed in priority order, the Secured Print job can be prioritized. This job is proceeded according to all job information specified by the printer driver, etc., such as paper supply/output, the number of copies and finishing information. When the processing is completed and all documents are output, the documents and job information stored in the image server are deleted.

e) Operations for Secured Print jobs

Like other print jobs, Secured Print jobs can be deleted, interrupted, restarted and promoted by operating from the status screen of the print job. Regarding these operations, the device side does not distinguish from operations of the normal PDL job. That is, the password entry is required only when the job is output. If you interrupt or restart the job during outputting, the password setting and matching are not conducted.

f) Automatically delete of Secured Print Jobs

When Secured Print Job is continuing being suspended for a long time, apparatus deletes a job automatically.
There are options for automatic job deletion time -- 1, 2, 3, 6, 12, and 24 hours. With a view of security and memory usage, no option longer than 1 day is available. The elapsed time starts after all the processes for the PDL data and the rendering for all the image data, for which Secured Print is specified, are finished.

g) Specifications and Limitations on Secured Print Jobs

The limitations on Secured Print jobs are listed as follows.

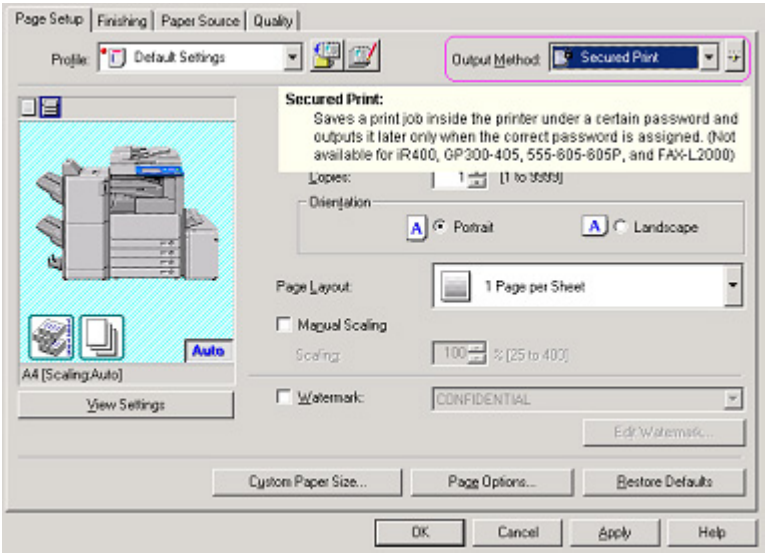
- Once data of a Secured Print job is printed, it is immediately deleted and cannot be printed any more.

- If the power for the controller is shut down, unprinted data of a Secured Print job is deleted from the printer.

- All the job information, represented by the paper source and output information, information of the number of copies, and finishing information, cannot be changed on the printer.

- If the entire raster information for a Secured Print job cannot be stored in the image server (hard disk drive) due to insufficient memory, the job results in an error, to be deleted.

- Up to 50 Secured Print jobs of image data being rendered and left unprinted can be stored.


Page Setup
Finishing
Paper Source
Quality
Profile:
Default Settings
Output Method:
Secured Print
Secured Print:
Saves a print job inside the printer under a certain password and outputs it later only when the correct password is assigned. (Not available for iR400, GP300-405, 555-605-605P, and FAX-L2000)
Copies:
1
[1 to 9999]
Orientation
Portrait
Landscape
Page Layout:
1 Page per Sheet
Manual Scaling
Scaling:
100
% [25 to 400]
Watermark:
CONFIDENTIAL
Edit Watermark...
Auto
A4 [Scaling:Auto]
View Settings
Custom Paper Size...
Page Options...
Restore Defaults
OK
Cancel
Apply
Help

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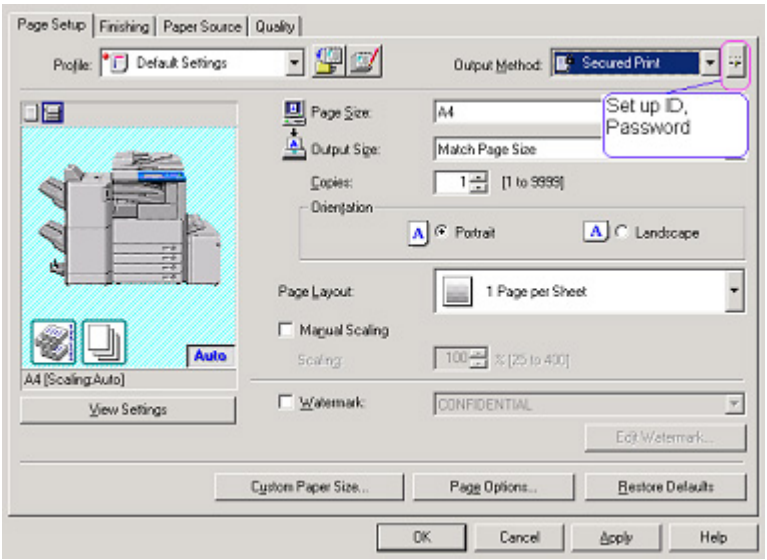
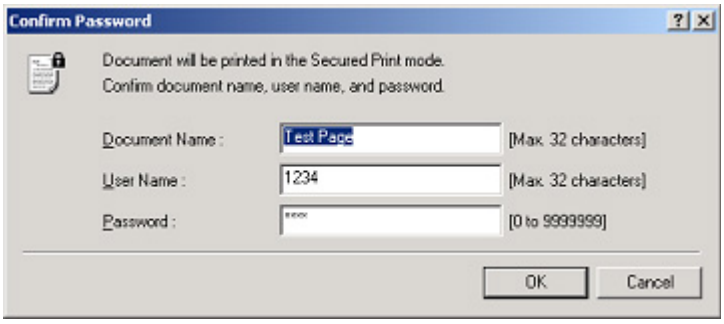

Page Setup
Finishing
Paper Source
Quality
Profile:
Default Settings
Output Method:
Secured Print
Set up ID, Password
Page Size:
A4
Output Size:
Match Page Size
Copies:
1
[1 to 9999]
Orientation
Portrait
Landscape
Page Layout:
1 Page per Sheet
Manual Scaling
Scaling:
100
% [25 to 400]
Watermark:
CONFIDENTIAL
Edit Watermark...
Auto
A4 [Scaling:Auto]
View Settings
Custom Paper Size...
Page Options...
Restore Defaults
OK
Cancel
Apply
Help

F-2-3

F-2-4



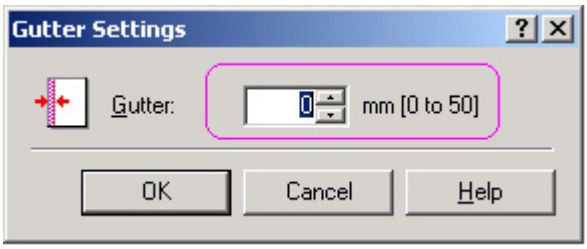
F-2-5

2.1.4 Up to 50 mm of Gutter

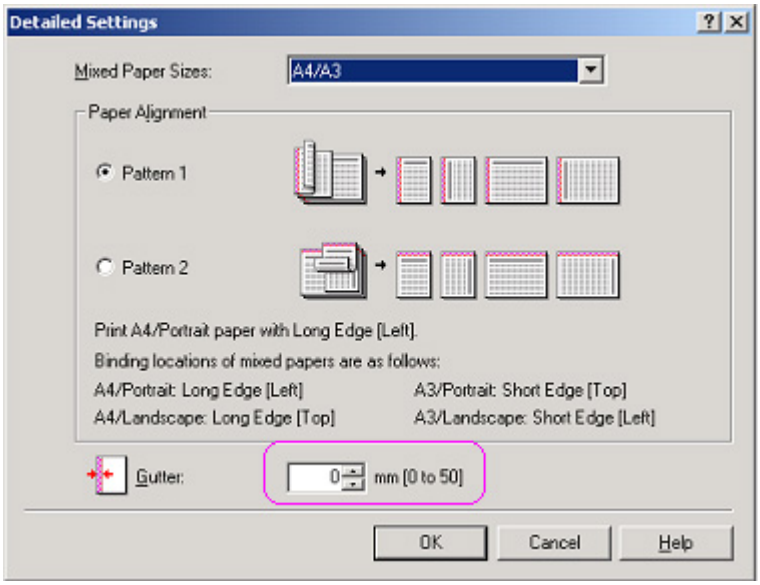
0008-5626

Up to 50 mm of the gutter can be specified. The gutter can be adjusted within a range from -50 mm to 50 mm in 1 mm increments. The local UI and the print driver have the controls for the gutter settings.

The image is shifted to the width value specified for gutter, making a margin. If the shift causes the image to overflow from the printable area, the overflowing area is missing from the print results. The overflowing image will not be reduced to fit into the printable area.



F-2-6



F-2-7

The gutter width range changed to 0-50 mm.
US: 0.0 to 2.0 inches
UK: 0.0 to 50.0 mm

2.1.5 Processing on System

0008-5622

Processing after Power Shutdown

If the power is shut down during PDL data processing, all the image data temporarily stored in the hard disk drive to be printed or stored in Mail Boxes are destroyed and the jobs are canceled. PDL data stored in the hard disk drive immediately before a power shutdown are destroyed as the power is shut down. Processing the data of those, therefore, will not resume when the power is turned on after the shutdown. Jobs interrupted by a power shutdown will be displayed in the Log list with the End Code “NG (#852).”

Chapter 3 Installation

Contents

3.1 Points to Note About Installation

3.1.1 Precaution for installation

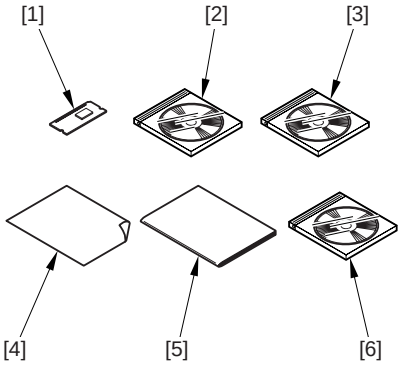
0009-2235

To install the Kit, you will need a separately available expansion RAM (256 MB).

3.2 Checking components

3.2.1 Checking the Contents

0009-2020



F-3-1

[1] Boot ROM.....1 pc.
[2] User Software CD-ROM Unit
(English, French, German, Italian, Spanish).....1 pc.
[3] N/W ScanGear CD-ROM
(English, French, German, Italian, Spanish) .....1 pc.
[4] Release Note (English, French, German, Italian).....1 pc.
[5] N/W Quick Start Guide (English, French, German, Italian)...1 pc.
[6] User's Manual CD-ROM (English, French, German, Italian)....1 pc.

3.3 Installation procedure

3.3.1 Installation

0009-2019

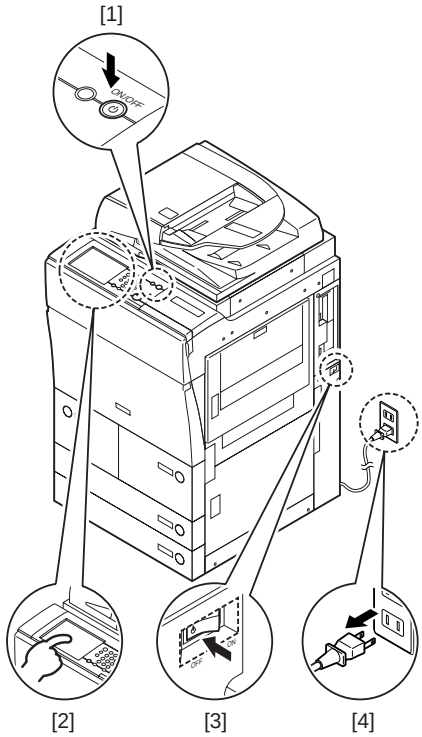
1. Turning Off the iR Machine

⚠

Turning Off the Main Power

When turning off the main power, be sure to go through the following in strict sequence to protect the machine's hard disk:

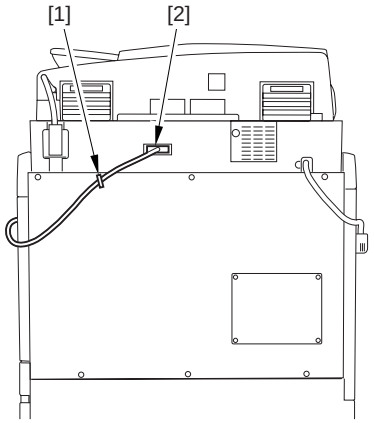
1. Hold down on the power switch on the control panel for 3 sec or more.
2. Operate on the touch panel according to the shut-down sequence indicated so that the main power switch may be turned off.
3. Turn off the main power switch.
4. Disconnect the power cable (for the power outlet).



F-3-2

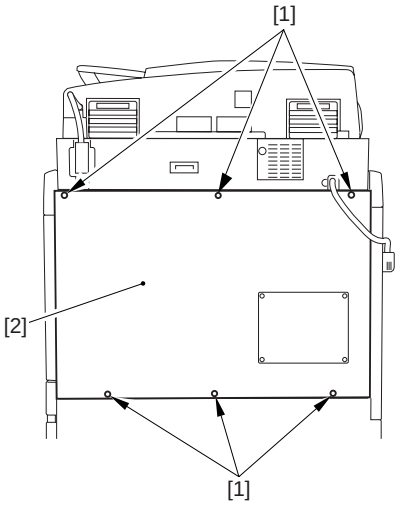
2. Installation

1) Open the cable clamp [1], and detach the reader communication cable [2].



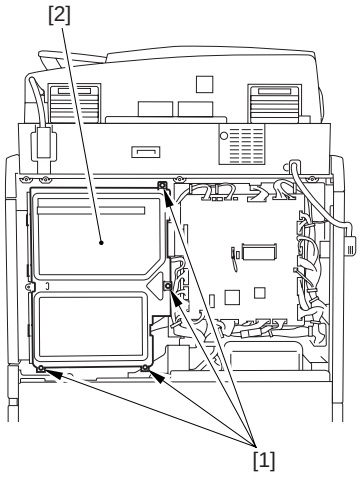
F-3-3

2) Remove the 6 screws [1], and detach the upper rear cover [2].



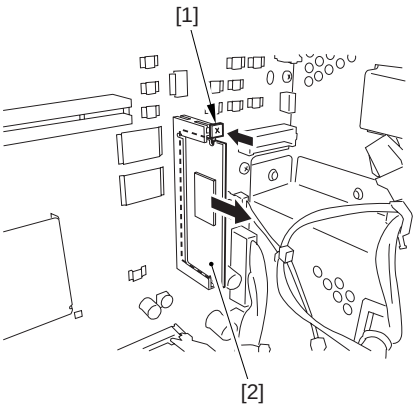
F-3-4

3) Remove the 4 screws [1], and detach the main controller box cover [2].



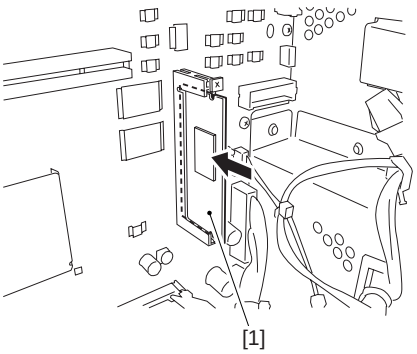
F-3-5

4) Push the locking lever [1], and remove the boot ROM [2].



F-3-6

5) Fit the included boot ROM [1] in place.



F-3-7

6) Attach the main controller box cover using 4 screws.

7) Attach the upper rear cover using 6 screws.

8) Pass the reader communication cable through the cable clamp, and close the cable clamp.

9) Connect the reader communication cable.

10) Connect the machine's power cable (for the power outlet).

11) Turn on the main power switch.

3. Checking the Installation

Make the following selections in service mode, and check the state of the following bit: COPIER > ACC-STS > PDL-FNC1.

1x1x xxxx xxxx xxxx (0: OFF, 1: ON)

In the case of the PDL-FNC1, bits 31 through 16 are indicated.

Check to be sure that the following bits are '1': 31, 29.

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Canon