Color imageRUNNER C5180/C4580/C4080 Series

SERVICE
MANUAL

Canon

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Application

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

Corrections

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

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Caution

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

Symbols Used

This documentation uses the following symbols to indicate special information:

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

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Chapter 21 Service Tools

Chapter 1

INTRODUCTION

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1.1 System Construction

1.1.1 System Configuration with Pickup/Delivery Accessories [USA]

F-1-1

[1] Finisher-X1

[2] Saddle Finisher-W2

[3] Finisher-W1

[4] Puncher Unit-AH1

[5] Copy Tray-N1

[6] Copy Tray-M1
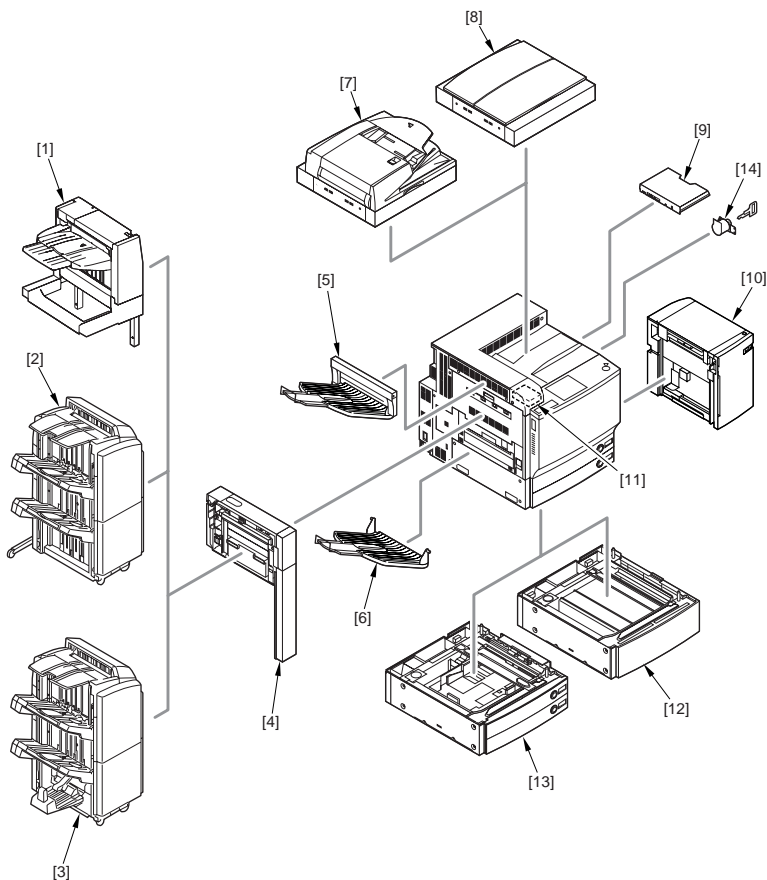
[7] DADF-M1 + Reader Unit (standard)

[8] Platen Cover + Reader Unit (standard)

[9] Document Tray-J1 (standard)

[10] Paper Deck-Y1

[11] Card Reader-D1

[12] Plain Pedestal-E1

[13] Cassette Feeding Unit-Z1

[14] Key Switch Unit-A2

1.1.2 System Configuration with Printing/Transmission Accessories [USA]
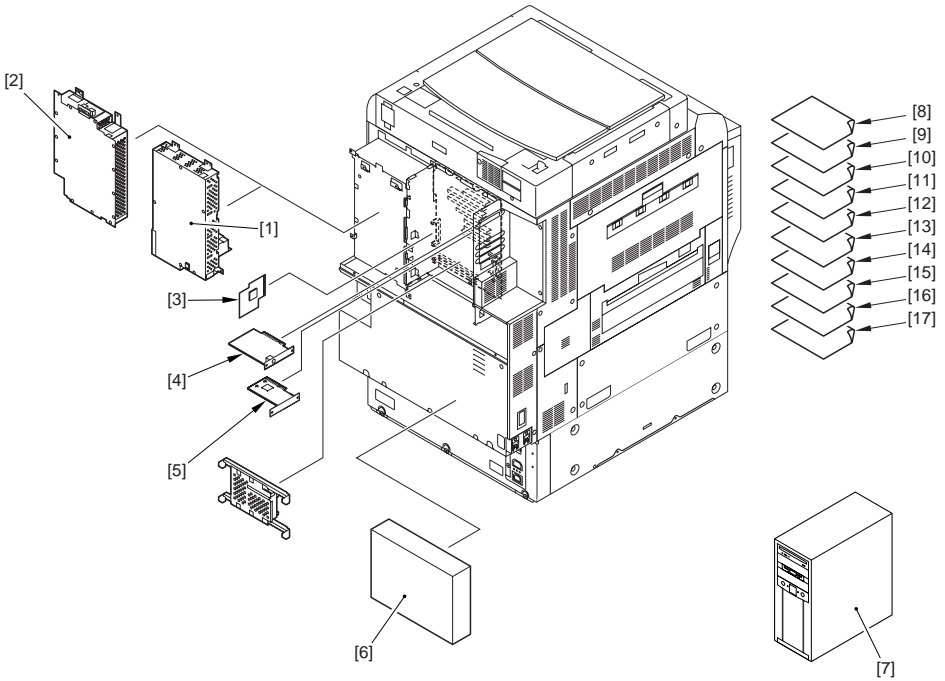
F-1-2

[1]	Super G3 FAX Board-V1
[2]	Super G3 Multi-Line FAX Board-H1
[3]	Main Controler Borad (Sub RB-A)
[4]	Voice Guidance Kit-A2
[5]	Security Expansion Board-E1
[6]	imagePASS-H1
[7]	ColorPASS-GX100
[8]	Color UFR II/PCL Printer Kit-N1 (licence*)
[9]	Color PS Printer Kit-N1 (licence)
[10]	Barcode Printing Kit-A1
[11]	Universal Send PDF Advanced Feature Set-A1 (licence)
[12]	Universal Send PDF Security Feature Set-A1 (licence)
[13]	Digital User Signature PDF Kit-A1 (licence)
[14]	Web Access Software-E1 (licence)
[15]	Secure Watermark-A1 (licence)

[16]   Encrypted Secure Print Software-C1 (licence)

[17]   Remote Operator's Software Kit-A2 (licence)

*: Need [4] at the same time.

1.1.3 Functions of Printing/Transmission Accessories

Transmitting	-->	- Canon Color Universal Send Kit
		- iR512MB Expansion RAM
Searchable PDF	-->	- Universal Send Searchable PDF Kit
Faxing	-->	- Super G3 Fax Board
		- Super G3 Multi-Line FAX Board
		- iR512MB Expansion RAM
UFR II/PCL Printing	-->	- Color UFR II/PCL Printer Kit
		- iR512MB Expansion RAM
PS Printing	-->	- Color PS Printer Kit
		- Color PCL/PS Printer Kit
		- Color UFR II/PCL Printer Kit
		- Color UFR II Printer Kit
		- iR512MB Expansion RAM
PS Printing Server	-->	- Color Network Printer Unit
	-->	- imagePASS
		- iR512MB Expansion RAM
PDF/TIFF/JPEG Direct Printing	-->	- Direct Printing Kit
		- Color UFR II/PCL/PS Printer Kit
		- Color UFR II/PCL Printer Kit
		- Color UFR II Printer Kit
		- iR512MB Expansion RAM

1.1.4 Overview of Printing/Transmitting Accessories

The following gives an outline of individual accessories; for details, see the descriptions found in subsequent chapters:

- Color UFR II Printer Kit
Adds GDI-UFR II printing functions and scanning functions associated with ScanGear.
The base kit for Color PCL/PS Printer Kit, Color PS Printer Kit, and Direct Printing Kit.

- Color UFR II/PCL Printer Kit
Adds GDI-UFR II printing functions, PCL printing functions, and scanning functions associated with ScanGear.

- Color UFR II/PCL/PS Printer Kit
Adds GDI-UFR II printing functions, PCL printing functions, PS printing functions, and scanning functions associated with ScanGear.

- Color PCL/PS Printer Kit
Adds PCL printing functions and PS printing functions.
Requires a Color UFR II Printer Kit.

- Color PS Printer Kit
Adds PS printing functions.
Requires a Color UFR II Printer Kit or Color UFR II/PCL Printer Kit.

- Direct Printing Kit
Adds direct printing function to print PDF and TIFF/JPEG images through remote UI.
Requires a Color UFR II Printer Kit, Color UFR II/PCL Printer Kit, or Color UFR II/PCL/PS Printer Kit.

- Color Network Printer Unit
Print control server with PostScript3 software by Adobe Systems Inc. installed.
Cannot use simultaneously color UFR II Printer Kit, Color UFR II/PCL Printer Kit, Color UFR II/PCL/PS
Printer Kit, Color PCL/PS Printer Kit, Color PS Printer Kit, and Direct Printing Kit.

- iR512MB Expansion RAM
Adds to the installed memory (512MB).
Required when MEAP functions are added.

- Super G3 Fax Board
Adds G3 fax functions. In G3 FAX, the document created by an application can be faxed directly from PC
via network.
Cannot use simultaneously with multi-line Fax board.

- Super G3 Multi-Line Fax Board
In addition to the functions of super G3 Multi-Line FAX Board, adds two-line faxing function
Cannot use simultaneously with Super G3 Fax board.

- Canon Color Universal Send Kit
Adds the function of sending the read-in document as E-mail or I-fax document, and of storing them into file
server and box.

- Encrypted PDF Extension Kit
Adds function of setting password for PDF created by this product and encrypting it.
Requires a Canon Color Universal Send Kit.

- Universal Send Searchable PDF Kit
Perform the OCR (optical character reader) processing for the document scanned by this machine and add
the function to generate text search-capable PDF (searchable PDF).
Requires a Canon Color Universal Send Kit.

1.2 Product Specifications

1.2.1 Names of Parts

1.2.1.1 External View
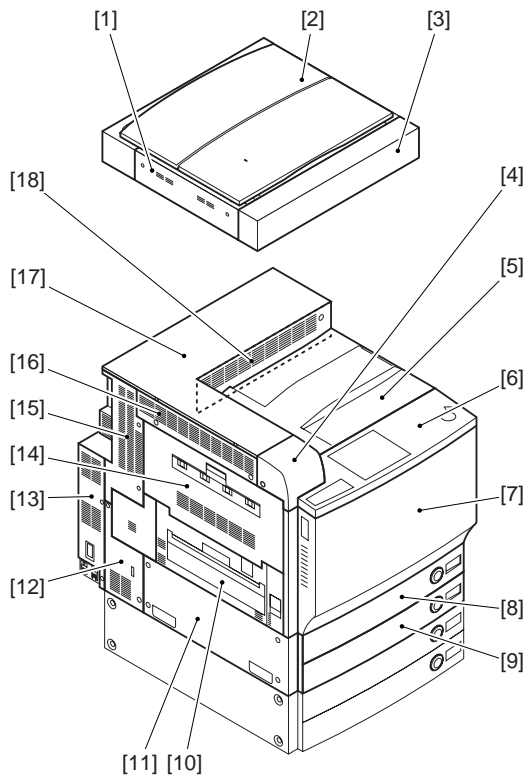
F-1-3

[1] Reader left cover
[2] Copyboard cover
[3] Reader front cover
[4] Card reader cover
[5] Center Delivery tray
[6] Control panel
[7] Front cover
[8] Cassette 1
[9] Cassette 2

[10] Fixing feeding unit cover
[11] Lower left cover
[12] Rear left cover (lower)
[13] Left rear cover (lower)
[14] Delivery vertical path cover
[15] Rear left cover (upper)
[16] Upper left cover
[17] Upper cover
[18] Inner upper cover
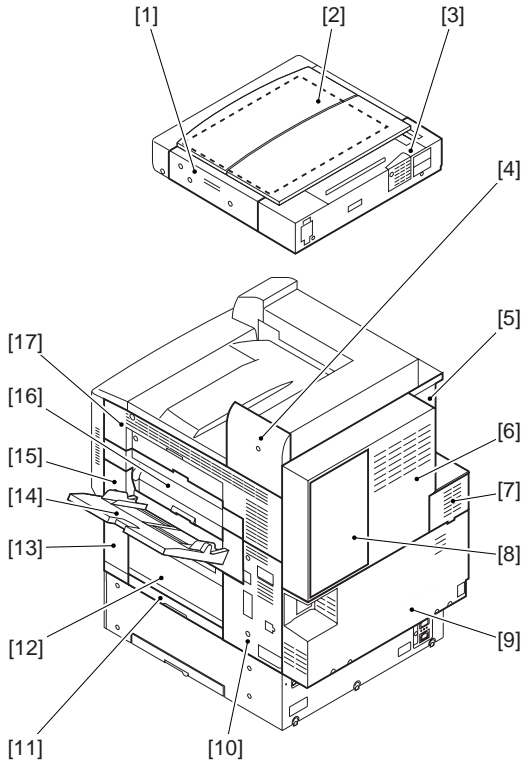
F-1-4

[1] Reader right cover
[2] Copyboard glass
[3] Reader rear cover
[4] Reader joint cover
[5] Left rear cover (upper)
[6] Upper rear cover
[7] Rear fan cover
[8] Shield cover
[9] Lower rear cover

[10] Rear right cover
[11] Pick-up vertical path lower cover
[12] Pick-up vertical path cover
[13] Front right cover
[14] Manual feed pick-up tray
[15] Manual feed pick-up unit cover
[16] Middle right cover
[17] Upper right cover

1.2.1.2 Cross Section
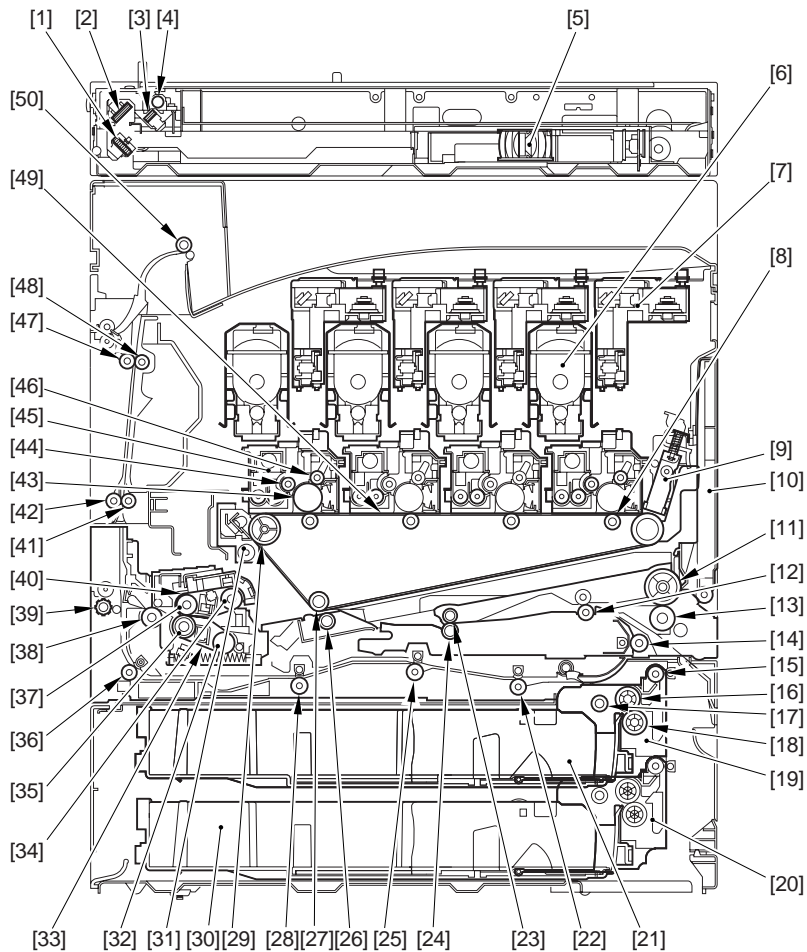
F-1-5

[1] No. 3 mirror	[26] Secondary transfer external roller
[2] No. 2 mirror	[27] Secondary transfer inside roller
[3] No. 1 mirror	[28] Duplex feed roller 2
[4] Scanning lamp	[29] Intermediate transfer belt tension roller
[5] CCD unit	[30] Cassette 2
[6] Toner cartridge	[31] Intermediate transfer belt cleaner unit
[7] Laser unit	[32] Pressure belt tension roller
[8] Primary transfer roller	[33] Pressure belt

[9] Pattern reader unit

[10] Manual pickup tray unit

[11] Manual feed roller

[12] Pre-registration roller

[13] Manual feed separation roller

[14] Re-pickup roller

[15] Pickup vertical path roller

[16] Feed roller

[17] Pickup roller

[18] Separation roller

[19] Pickup unit 1

[20] Pickup unit 2

[21] Cassette 1

[22] Duplex feed roller 4

[23] Upper registration roller

[24] Lower registration roller

[25] Duplex feed roller 3

[34] Fixing belt tension roller

[35] Pressure roller

[36] Duplex feed roller 1

[37] Fixing roller

[38] Inside delivery roller

[39] Face-up delivery roller

[40] Fixing belt

[41] Delivery vertical path member

[42] Delivery vertical path roller 2

[43] Photosensitive drum

[44] Developing cylinder

[45] Primary drum unit

[46] Charging roller

[47] Delivery vertical path roller 1

[48] Delivery vertical path member

[49] Intermediate transfer belt

[50] Face-down delivery roller 1

1.2.2 Using the Machine

1.2.2.1 Turning On the Power Switch

The machine is equipped with 2 power switches: main power switch and control panel power switch.
The machine goes on when the main power switch is turned on (i.e., other than in power save mode, low power mode, sleep mode).
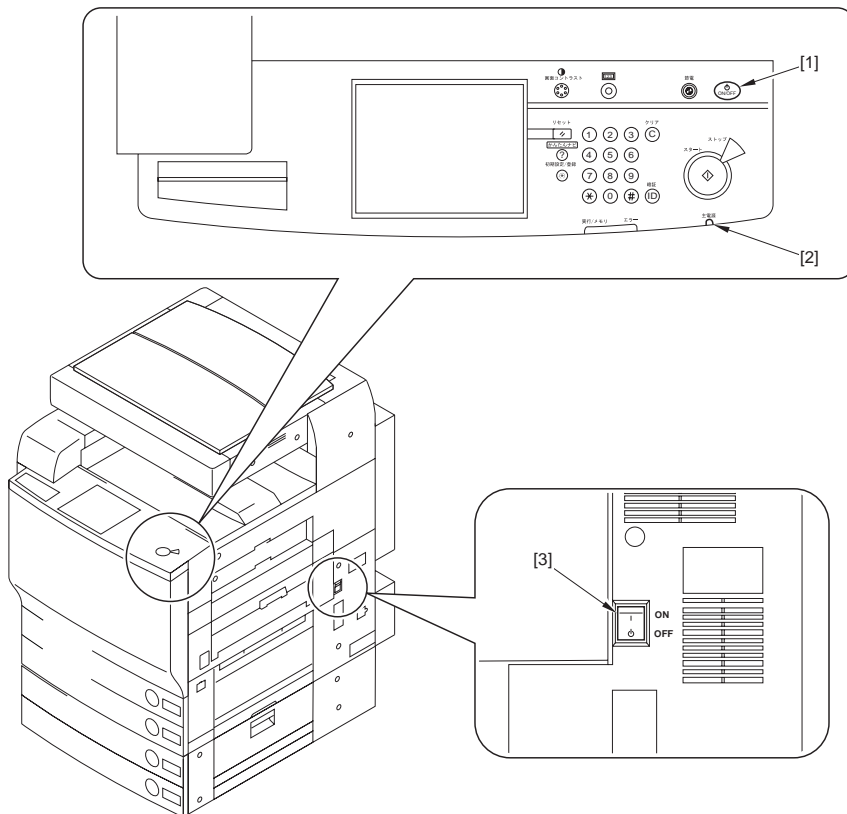
F-1-6

[1] Control panel power switch
[2] Main power indicator lamp
[3] Main power switch

⚠️
Do not turn off the main power while the progress bar is indicated, during which access is made to the HDD. If deprived of power, the HDD can suffer a fault (E602).
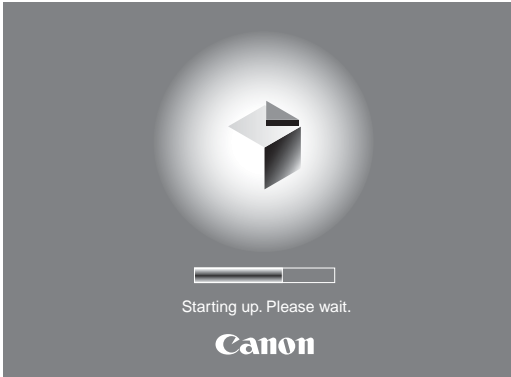
F-1-7

1.2.2.2 Points to Note About Turing Off the Main Power Switch

When the main power switch is turned OFF, be sure to press the power switch of the control panel for 3 sec or more and execute shutdown sequence.

⚠️ **When Sending Data to the Printer or Using the Fax Unit**
Be sure that the Execution/Memory lamp on the control panel is off before operating the main power switch.
(Turning off the main power while a job is under way can cause loss of the data being processed.)
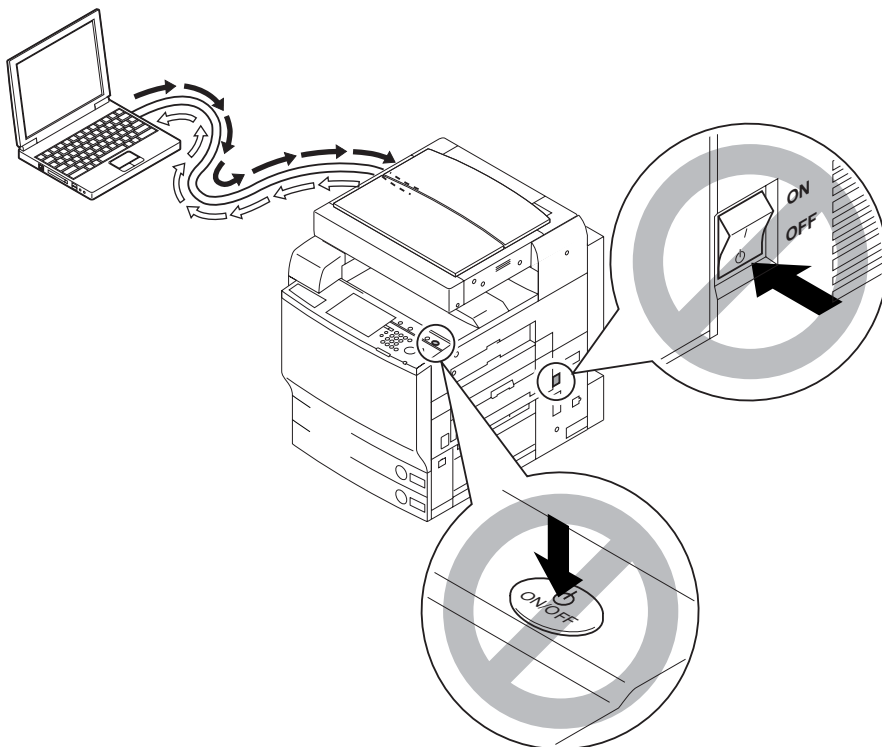
F-1-8

⚠ **When Downloading Is Under Way**
Do not turn off the control panel switch or the main power switch. (Turning off the main power switch while downloading is under way can disable the machine.)
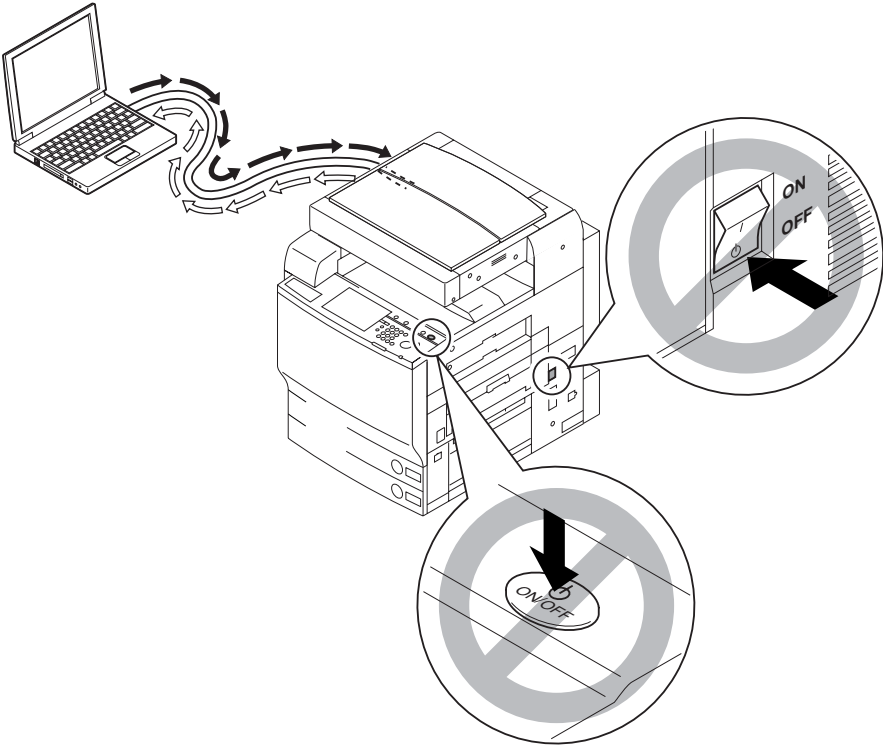
F-1-9

1.2.2.3 Control Panel
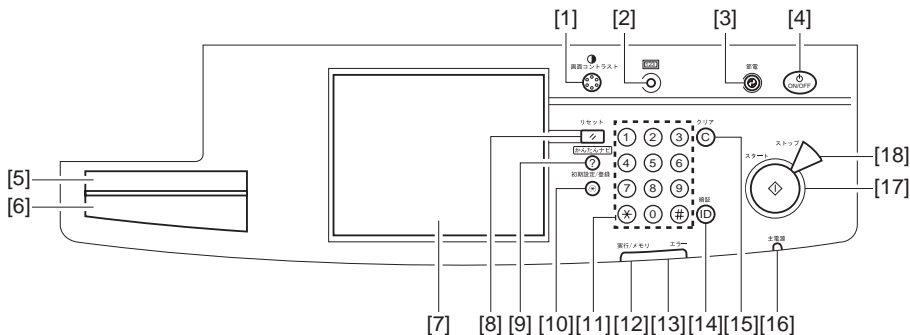
F-1-10

[1] Image contrast adjustment dial
[2] Counter check key
[3] Power Save key
[4] Control panel power switch
[5] Place to put touch pen
[6] Plate to put clip
[7] Touch panel
[8] Reset key
[9] Help key (simplified navi)

[10] User mode key (initial setting/registration)
[11] Keypad
[12] Execute/Memory indicator lamp
[13] Error indicator lamp
[14] ID key
[15] Clear key
[16] Main power indicator lamp
[17] Start key
[18] Stop key

1.2.3 User Mode Items

1.2.3.1 Common Settings

*: Factory default.
**: Indicates items that appear only when the appropriate optional equipment is attached.
***: Indicates items that appear when optional equipment is attached. (For N-model, it is the standard equipment.)

T-1-1

Mode	Description
Initial functions	*Copy, Send/Fax, Mail box, MEAP
	Use it to switch the System Status screen to the Initial screen: On, *Off
	Setup the initial screen of the system status: copy, send, fax, print, receive, *device.
Function after auto clear	*Return, do not return
Function order settings	Settings for Function Group Order: Group A/MEAP/ Group B

Mode	Description
Enable/disable buzzer	Input correct: *On, Off
	Input incorrect: On, *Off
	Supply alert: On, *Off
	Alert: *On, Off
	Job end: *On, Off
	Residual original: On, *Off
Display Remaining Paper Message	*On, Off
Priority on text/photo upon selection of auto color	Text, *photo
Display the back mode shortcut key	On, *Off
Inch input	Enable inch input: On, *Off; On if 120 V
Paper type registration upon cassette auto selection	copier, printer, box, receive/fax, other (Manual feed : On, *Off; Other pickup points : *On, Off)
	Copy: consider the paper type: YES, *NO
Register paper type	*Plain, recycled, color, heavy, transparency
Change power save mode	*-10%/-5%/-0%, immediate recovery
Power consumption in sleep state	*Little, much
Setup the delivery tray**	When the finisher is not attached.
	Tray A: *copier, *box, *printer, *receive/fax, *other
	Tray B: copier, box, printer, receive/fax, other
	Tray C: copier, box, printer, receive/fax, other
	If the optional finisher-M1 is attached:
	Tray A: *copier, *box, *printer, receive/fax, other
	Tray B: copier, box, printer, *receive/fax, *other
	If the optional finisher-T1 or saddle finisher-T2 is attached:
	Tray A: copier, box, printer, *receive/fax, *other
	Tray B: *copier, *box, printer, receive/fax, other
	Tray C: copier, box, *printer, receive/fax, other
	Normal position of tray: *tray B, tray C, Off
Priority on print	Copy: *1, 2, 3
	Printer: 1, *2, 3
	Box, receive/fax, other: 1, 2, *3
Form registration of image synthesis	Register, delete, check copy, detailed information
Image quality priority upon image synthesis	*Auto, document, form
Register character string of page print/stamp	Register, edit, delete
Register standard mode for manually fed paper	On, *Off
Register size set by user	Register/edit, delete, name registration

Mode	Description
Switch pickup method	*Speed, print
Standard mode for local print	Paper select: *auto/pickup position select
	Print count: *1 to 9999
	Sorter:
	When the finisher is not attached, when copy tray unit H1/XX is attached: non-sort, *sort, rotation sort, group sort, rotation group
	When the finisher M1 is attached: non-sort, sort, *shift sort, group, shift group, staple (corner)
	When the finisher T1/saddle finisher T2 is attached: non-sort, sort, *group, shift group, staple (corner (upper left, lower left, upper right, lower right), double (left, right))
	When the finisher T1/saddle finisher T2 + puncher unit L1 are attached: non-sort, sort, *shift sort, group, shift group, staple (corner (upper left, lower left, upper right, lower right), double (left, right)), punch hole
	Double-sided print: On, *Off
	File delete after print: On, *Off
	Print merge: On, *Off
Switch language of display	On, *Off
Reverse screen color	On, *Off
Between-jobs shift**	*On, Off
Separator between Jobs	On, *Off
Separator between Copies	On, *Off
Display print waiting time	Copier: On, *Off
	Box: On, *Off
	Other: On, *Off
Display set/waiting time status	*On, Off
Display the cleaning of the document reading part ***	*On, Off
JPEG compression rate at remote scan***	High, *average, low
Gamma value at remote scan***	g1.0/g1.4/*g1.8/g2.2
Function limit mode**	On, *Off
Delete the toner level warning display	Clear
Shut-down mode	Press [start]
Initialize common settings	*Yes, no

1.2.3.2 Timer Settings

*: Factory default.

T-1-2

Mode	Description
Time fine adjustment	00:00 to 23:59 (1-min increments)
Auto sleep time	10 min, 15 min, 20 min, 30 min, 40 min, 50 min, *1 hr, 90 min, 2 hr, 3 hr, 4 hr
Auto clear time	0: none; 1 to 9 min (1-min increments) (*2 min)
Set weekly timer	Sunday to Saturday, 00:00 to 23:59 (1-min increments)
Shift to low-power consumption mode	10 min, *15 min, 20 min, 30 min, 40 min, 50 min, 1 hr, 90 min, 2 hr, 3 hr, 4 hr

1.2.3.3 Adjustments and Cleaning

*: Factory default.
**: Indicates items that appear only when the appropriate optional equipment is attached.

T-1-3

Mode	Description
Zoom fine adjust	X: -1.0 to +1.0%; 0.1% intervals (*0%)
	Y: -1.0 to +1.0%; 0.1% intervals (*0%)
Center binding staple edging**	Press [start]
Center binding position change**	Position: -2.0mm to +2.0mm; 0.25mm intervals (*0mm)
Auto gradation correction	Quick correction: press [start]
	Full correction: automatic correction after the machine prints and scans 3 sets of test prints.
Density correction	Copy/box: 1 to 9 settings (*5)
	Black-and-white transmission: 1 to 9 settings (*5)
	Color transmission: 1 to 9 settings (*5)
Contrast adjustment of text/ background	Relative contrast value: -7 to +7 (*0), print setting
	Setting of the standard value: standard contrast value: 0 to 64 (*20), sample print, print setting
	Density of latent area: 0 to 36 (*8)
Cleaning inside machine	Press [start]
Cleaning of feeder	Press [start]

1.2.3.4 Report Settings

"Report Settings" is the item displayed when optional equipment is attached.
*: Factory default.

T-1-4

Mode	Description
Settings: send	
TX report	*For error only: On, Off
	Report with TX image: *On, Off
	Report with color TX image: On, *Off
Activity report	Every 100 communications auto print: *On, Off
	Daily activity report time: On, *Off
	Timer setting: 00:00 to 23:59
	Send/receive separate: On, *Off
Settings: fax	
Fax TX report	*For error only: On, Off
	Report with TX image: *On, Off
Fax activity report	Every 40 communications auto print: *On, Off
	Daily activity report time: On, *Off
	Timer setting: 00:00 to 23:59
	Send/receive separate: On, *Off
Fax RX report	For error only: On, *Off
Fax box RX report	*On, Off
Print list: send	
Address book list	Address book: 1 to 10, *address book 1; one-touch buttons
	Print list: print
User's data list	Print
Print list: fax	
User's data list	Print

1.2.3.5 System Settings

*: Factory default.
**: Indicates items that appear only when the appropriate optional equipment is attached.
***: Indicates items that appear when optional equipment is attached. (For N-model, it is the standard equipment.)
*1: The machine may not enter the sleep mode completely, depending on the status and type of installed MEAP applications.

T-1-5

Mode	Description
System Manager Settings	
System Manager ID	Seven digit number maximum
System Password	Seven digit number maximum
System Manager	32 characters maximum
E-mail Address	64 characters maximum
Contact Information	32 characters maximum
Comment	32 characters maximum
Dept. ID Management	
Dept. ID Management	On, *Off
Register Dept. ID/Password	Register, Edit, Erase, Limit Functions
Count management	Clear, Count print, Clear All Totals
Allow Printer Jobs with Unknown IDs	*On, Off
Allow Remote Scan Jobs with Unknown IDs	*On, Off
Allow Black Copy/Inbox Print Jobs	On, *Off
Allow Black Printer Jobs	On, *Off
Communications Setting	
E-mail/I-Fax Settings**	Maximum Data Size for Sending: 0 (Off), 1 to 99 MB (*3 MB)
	Full Mode TX Timeout: 1 to 99 hours (*24 hours)
	Divided Data RX Timeout: 0 to 99 hours (*24 hours)
	Default Subject: 40 characters maximum (*Attached Image)
	Print MDN/DSN on Receipt: On, *Off
	Always send notice for RX errors: *On, Off
	Use Send Via Server: On, *Off
	Through MDN server: On, *Off
Fax Settings**	Send Start Speed: *33600 bps, 14400 bps, 9600 bps, 7200 bps, 4800 bps, 2400 bps
	Receive Start Speed: *33600 bps, 14400 bps, 9600 bps, 7200 bps, 4800 bps, 2400 bps
	Receive Password: 20 digits maximum
	FIS switch: On, *Off

Mode	Description
System box settings	System box PIN : Seven digit number
	Use Fax Memory RX : On, *Off
	Use I-Fax Memory RX: On, *Off
	Memory Receive Start Time: Everyday, Select Days, *Off
	Memory Receive End Time: Everyday, Select Days, *Off
Remote UI	*On, Off
	Use SSL: On/ *Off
Restrict Access to Destinations**	
Address Book Password	Seven digit number
Access Number Management	On, *Off
Restrict New Addresses	On, *Off
Allow Fax Driver TX	*On, Off
E-mail/I-Fax Domain Sending Restriction	Restrict Sending to Domain: On, *Off
	TX permission domain: register, detail/edit, delete
Device Information Settings	
Device Name	32 characters maximum
Location	32 characters maximum
Forwarding Settings ***	Receive Type, Validate/Invalidate, Register (Registered Forwarding Settings), Forward w/o Conditions, E-mail Priority, Edit, Erase, Print List
Clear Message Board	Clear
Auto Online/Offline***	
Auto Online	On, *Off
Auto Offline	On, *Off
Date & Time Settings	Date and Time Setting (12 digit number)
	Time Zone: GMT -12:00 to GMT +12:00 (*GMT+9:00)
	Daylight Saving Time: On, *Off
Limit Functions with the Security Key Off	*Partial Functions/All Functions
License Registration	24 characters maximum
Register LDAP Server**	Register, Edit, Erase, Print List
MEAP Settings*1	Use HTTP: *On, Off
	Use SSL: On, *Off
	Print System Information: Print
Copy Set Numbering Option Settings	On, *Off
	Dept. ID: On, *Off
	Date: On, *Off
	Characters: On, *Off
Display Remaining Toner Error Message	*On, Off
Display Dept.ID/ User Name	*On, Off

Mode	Description
Device Information Delivery Settings	
Register Destinations	Auto Search/Register, Register, Details, Erase, Print List
Auto Delivery Settings	Everyday, Select Days, *Off
	Initial setting/register setting value: On, *Off
	Network Settings: Include, *Exclude
	Dept. ID: On, *Off
	Address Book: On, *Off
Manual Delivery	Initial setting/register setting value: On, *Off
	Network Settings: Include, *Exclude
	Dept. ID: On, *Off
	Address Book: On, *Off
Restrictions for Receiving Device Info	On, *Off
Restore Data	Initial setting/register setting value, Dept. ID, Address Book
Receive Limit for Each Function	Initial setting/register setting value: *On, Off
	Dept. ID: *On, Off
	Address Book: *On, Off
Communication Log	Details, Print List, Report Settings
Initialize All Data/ Settings	Initialize
Use Asterisks to Enter Access No./ Passwords	*On, Off
	Number of entry: 1 time entry, 2 times entry
Forcible background marking printing mode	Copy: *Off, On
	Box: *Off, On
	Printer: *Off, On
USB setting	
Use USB device	*On, Off
Use USB host	*On, Off

1.2.3.6 Copy Settings

*: Factory default.
**: Indicates items that appear only when the appropriate optional equipment is attached.

T-1-6

Mode	Description
Screen Display Setting	Simple Only, *Simple + Quick, Quick Only
	Regular Copy Only*1, Regular and Express Copy, Express Copy Only
	Priority on Simple Screen display :
	Regular Copy Screen Priority: *On, Off
Paper Select Key Size for Express Copy Screen	*Large (Stack Bypass, Stack bypass Settings, 1: Paper Drawer 1, 2: Paper Drawer 2, 3: Paper Drawer 3, 4: Paper Drawer 4, 5: Paper Deck-U1), Small; Four paper sources maximum
Standard Key 1, 2 Settings for Regular Screen	Various modes; *No Settings
Standard Key Settings for Express Copy Screen	Displayed Standard Keys: *Up to 5 Set Keys, Up to 10 Set Keys
	Settings: Various modes; *No Settings
Auto Collate**	*On, Off
Image Orientation Priority	On, *Off
Auto Orientation	*On, Off
Standard Settings	Store, Initialize
Initialize Copy Settings	Initialize

1.2.3.7 Communications Settings

"Communications Settings" is the item displayed when optional equipment is attached.
*: Factory default.

T-1-7

Mode	Description
Common Settings: TX Settings	
Sender's Names (TTI)	01 to 99: Register/Edit, Erase
Unit Name	24 characters maximum
Permit non-ASCII code for FTP TX specification	On, *Off
Erase Failed TX	*On, Off
Data compression rate	High, *Average, Low
Handle Documents with Forwarding Errors	Always Print, Store/Print, *Off
Retry Times	0 to 5 times; *3 times
Edit Standard Send Settings	Scanning Mode, File Format, Divide into Pages, Stamp
Register Favorites Button	Register/Edit, Erase (M1 to M18)

Mode	Description
Image Level for PDF (Compct)*	Image Level in Text/Photo or Photo Mode: Data Size Priority, *Normal, Image Priority
	Image Level in Text Mode: Data Size Priority, *Normal, Image Priority
PDF(OCR) Settings	Smart Scan: *On, Off
	Num. of Char. for Doc. Name Setting: 1 to 24 characters; *24 characters
Default Screen for Send	Favorites Buttons, One-touch Buttons, *New Address
TX Terminal ID	*On, Off
Gamma Value for YCbCr Send Jobs	Gamma 1.0, Gamma 1.4, Gamma 1.8*1, Gamma 2.2
Initialize TX Settings	Initialize
Common Settings: RX Settings	
Two-sided Print	On, *Off
Select Cassette	Switch A: *On, Off
	Switch B: *On, Off
	Switch C: *On, Off
	Switch D: *On, Off
Image reduction	*On, Off
Received Page Footer	On, *Off
2 on 1 Log	On, *Off
Gamma Value for YCbCr Received Jobs	Gamma 1.0, Gamma 1.4, Gamma 1.8*1, Gamma 2.2
Fax Settings: User Settings	
Unit Telephone #	20 digits maximum
Tel Line Type	Pulse, *Tone
Volume Control	Alarm Volume: 0 to 8 levels; *4
	Monitor Volume: 0 to 8 levels; *4
Off-hook alarm	*On, Off
Fax Settings: TX Settings	
ECM TX	*On, Off
Pause Time	1 to 15 seconds; *2 seconds
Auto Redial	*On, Off
	Redial Times: 1 to 15 times; *2 times
	Redial Interval: 2 to 99 minutes; *2 minutes
	TX Error Resend: *Error and 1st Page, All pages, Off
Check Dial Tone Before Sending	*On, Off
Fax Settings: RX Settings	
ECM RX	*On, Off
Select RX mode	*Auto RX, FAX/TEL switch
RX call	On, *Off
Remote RX	On, *Off
Auto RX switch	On, *Off

Mode	Description
Fax settings: additional Tel line settings	
Unit Telephone #	20 digits maximum
Select abbreviated user name	24 characters maximum
Tel Line Type	Pulse, *Tone
Select TX line	Line 1: *prioritized TX/TX prohibition
	Line 2: prioritized TX/TX prohibition

1.2.3.8 Mail Box Settings

*: Factory default.
**: Indicates items that appear only when the appropriate optional equipment is attached.

T-1-8

Mode	Description
User Inboxes Settings	Inbox No.: 00 to 99
	Register Inbox Name: 24 characters maximum
	Password: Seven digits maximum
	Time until Doc. Auto Erase: 0 (Off), 1, 2, 3, 6, 12 hours, 1, 2, 3*1, 7, 30 days
	URL Send Settings
	Print data saved in the mail box from the printer driver: On, *Off
	Initialize
Standard Scan Settings	Store, Initialize
Confidential Fax Inboxes Settings**	Inbox No.: 00 to 99
	Register Inbox Name: 24 characters maximum
	Password: Seven digits maximum
	URL Send Settings
	Initialize

1.2.3.9 Address Book Settings

"Address Book Settings" is the item displayed when optional equipment is attached.
*: Factory default.

T-1-9

Mode	Description
Address register	Register new address , detail/edit, or delete
Address list name register	Register name
One-touch button register	Register/edit, delete

1.2.4 User Maintenance

1.2.4.1 Cleaning

The machine has some components that must be cleaned by the user on a periodical basis (about once a month); advise the user on how to clean such components:

1. Feeder(back) (Copyboard Cover)
Wipe the copyboard cover [1] using a cloth moistened with water or solution of mild detergent (well wrung); then, dry wipe it with a soft cloth.
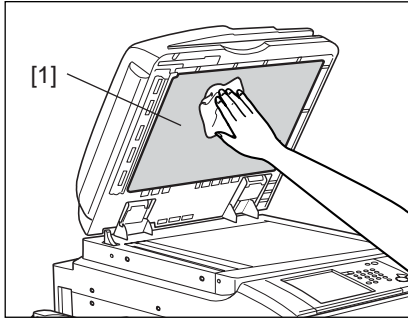
F-1-11

2. Rubber roller (Platen Roller)
Wipe the platen roller [1] using a cloth moistened with water or solution of mild detergent (well wrung); thereafter, dry wipe it with a soft cloth.
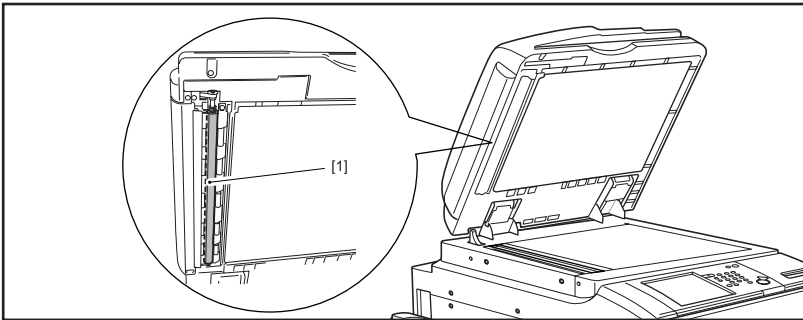
F-1-12

3. Copyboard Glass, Original reading area(ADF Reading Glass)
Wipe the copyboard glass [1] and the DF reading glass [2] using a cloth moistened with water or solution of mild detergent (well wrung); thereafter, dry wipe them with a soft cloth.
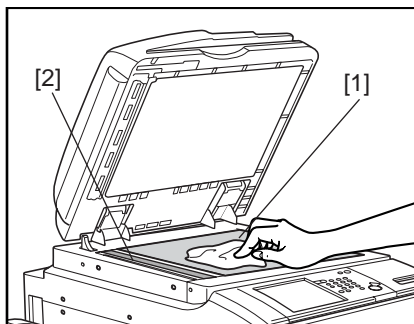
F-1-13

4. DF Glass Retainer, Edge Guide
Wipe the DF glass retainer [1] and the edge guide [2] using a cloth moistened with water or solution of mild detergent (well wrung); thereafter, dry wipe them with a soft cloth.
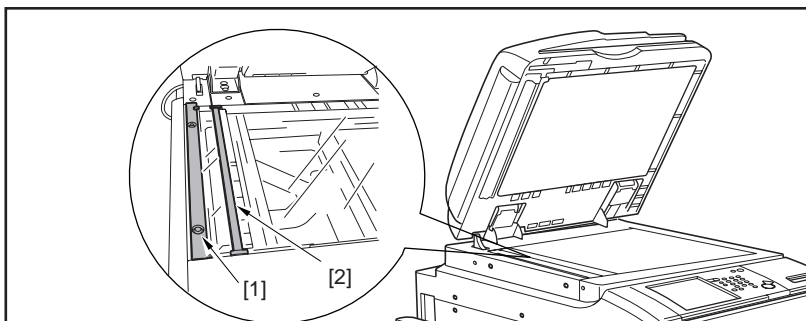
F-1-14

5. Vertical Size Plate
Clean the vertical size plate [1] using a cloth moistened with water or solution of middle detergent (well wrung); thereafter, dry wipe it with a soft cloth.
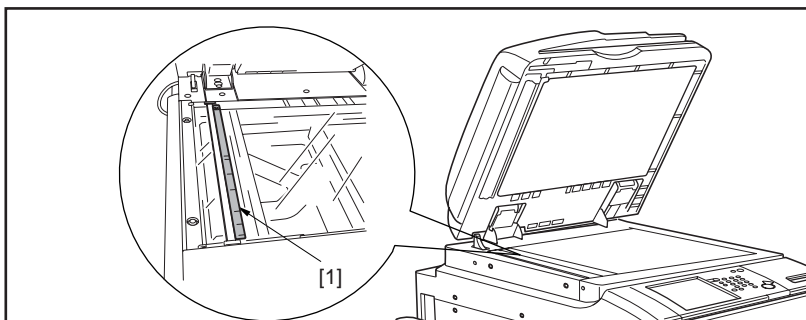
F-1-15

1.2.4.2 Inspection

The machine is equipped with a breaker for detection of over-current and leakage current for enhanced safety, and it is important to check and see that the breaker operates properly.
Advise the user to check the breaker on a periodical basis (about once a month), and keep a record of inspection.
Go through the following:

1) Turn off the main power switch.
2) Push the test button [1] of the breaker with the tip of a ball-point pen or the like.
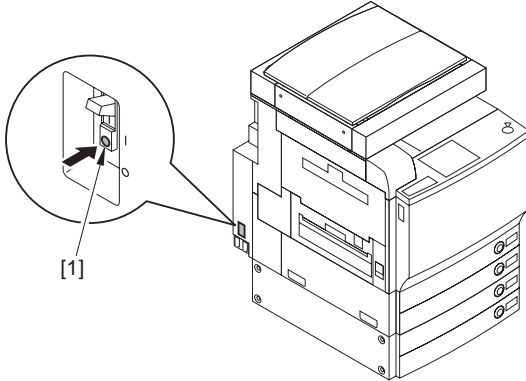
F-1-16

3) See that the breaker switch [1] shifts to the OFF side, thus cutting off the power.
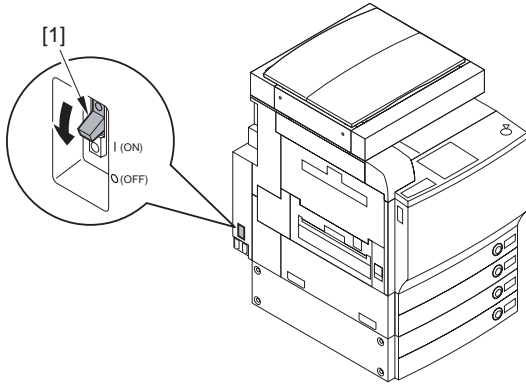
F-1-17

4) Turn off the main power switch.
5) Shift the breaker switch [1] back to the ON side.

[1]

I (ON)

O (OFF)
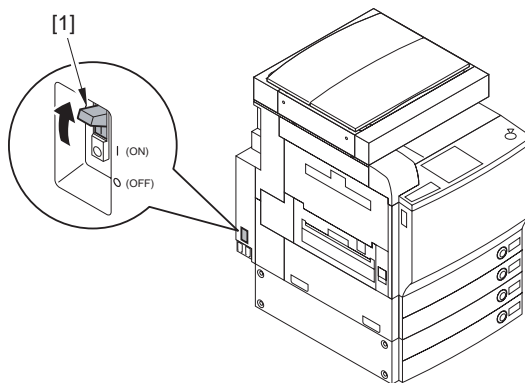
F-1-18

⚠

Check to be sure that the breaker switch is on the ON side. If it has stopped between the ON and OFF sides, push it back to the OFF side and then to the ON side.

6) Turn on the main power switch.

1.2.5 Safety

1.2.5.1 CDRH Regulations

The Center for Devices and Radiological Health of the US Food and Drum Administration put into force regulations concerning laser products on August 2, 1976. These regulations apply to laser products manufactured on and after August 1, 1976, and the sale of laser products not certified under the regulations is banned within the Untied States. The label shown here indicates compliance with the CDRH regulations, and its attachment is required on all laser products that are soled in the United States.

CANON INC.

30-2,SHIMOMARUKO,3-CHOME,OHTA-KU,TOKYO,
146.JAPAN

MANUFACTURED :

THIS PRODUCT CONFORMS WITH DHHS RADIATION
PERFORMANCE STANDARD 21CFR CHAPTER1
SUBCHAPTER J.

F-1-19

⚠
A different description may be used for a different product.

1.2.5.2 Laser safety

Laser beam radiation may pose a danger to the human body. A laser scanner mounted on the machine is sealed with the protection housing and external cover to prevent the laser beam from leaking to the outside. The laser beam never leaks out of the scanner as far as users operate the machine normally

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

1.2.5.3 Handling the Laser Assembly

When servicing the area around the laser assembly, be sure to turn off the main power.
If you must servicr while the power is turned on, be sure to keep the followings:
- Do not use a screwdriver or tools that have a high level of reflectance in the laser path.
- Remove watches and rings before starting the work. (They can reflect the laser beam, possibly hitting the eye.)
The machine's covers that can reflect laser light are identified by means of a warning label (Figure). If you must detach a cover showing the label, be sure to take extra caution during the work.
The following warnings are given to comply with Safety Principles (EN60950).

Handhabung des Laserteils

Bei Servicearbeiten am oder in der Nähe des Laserteils zuerst das Hauptgerät abschalten.

Bei Servicearbeiten, die unbedingt bei eingeschaltetem Gerät durchgeführt werden müssen, auf jeden Fall die folgenden Vorsichtsmaßnahmen beachten.

• Keine stark reflektierenden Schraubenzieher oder ähnliche Werkzeuge direkt in den Lichtpfad des Laserstrahls bringen.

• Vor Beginn der Arbeit Uhren, Ringe und ähnliche Gegenstände abnehmen. (Reflektierte Laserstrahlen könnten sonst in die Augen geraten.)

Abdeckungen, die möglicherweise Laserstrahlen reflektieren, haben in der auf dem Bild gezeigten Position einen Aufkleber. Bei Servicearbeiten auf der Innenseite von Abdeckungen mit Aufkleber ist besondere Vorsicht erforderlich.

F-1-20

F-1-21

1.2.5.4 Safety of Toner

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

⚠

Do not throw toner into fire. It may cause explosion.

2. Toner on Clothing or Skin
- If your clothing or skin has come into contact with toner, wipe it off with tissue; then, wash it off with water.
- Do not use warm water, which will cause the toner to jell and fuse permanently with the fibers of the cloth.
- Do not bring toner into contact with plastic material. It tends to react easily.

1.2.5.5 Notes when handling a lithium battery

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

The following warnings are given to comply with Safety Principles (EN60950).

⚠
Wenn mit dem falschen Typ ausgewechselt, besteht Explosionsgefahr.
Gebrauchte Batterien gemäß der Anleitung beseitigen.

1.2.5.6 Notes at Replacing/Disposing the Fixing Unit

⚠ **Points to Notes at Replacing/Disposing the Fixing Unit**
Be sure not to throw the fixing unit into the fire in case of explosion.

1.2.5.7 Notes before it works serving

⚠ Notes before it works serving
At servicing, be sure to turn OFF the power source according to the specified steps and disconnect the power plug.

1.2.6 Product Specifications

1.2.6.1 Type and Functions

Copyboard	Flat-bed
Body	Desk-top
Photosensitive medium	OPC drum 30.6 mm dia. (4 pc.)
Exposure method	Laser exposure
Charging method	Roller charging
Development method	Bk Dry, 2-component; Color Dry, 2-component
Cassette pickup method	Separation retard
Multifeeder pickup method	Simple retard
Transfer method	Intermediate transfer belt
Transfer method (primary transfer)	Transfer roller system
Transfer method (secondary transfer)	Transfer roller system
Separation method	Curvature separation (static eliminator)
Drum cleaning method	None
Trasnsfer cleaning method	Blade (with equalization) + spring pressure
Fixing method	Twin belt fixing
Delivery method	Face-down, face-up
Warm-up time	At power-on (at 20 deg C room temperature) - iR C5180 Series: 4 min or less - iR C4580/4080 Series: 5 min or less
Print area	Maximum image guarantee area 301 x 452 mm; Maximum print area 305 x 452 mm
Printing resolution	1200 dpi x 1200 dpi
Toner level detection function	Yes
Drum wear detection function	Yes

1.2.7 Function List

1.2.7.1 Print Speed

A. First Print Time

T-1-10

Unit: sec

	Full-color	Monochrome
A4, plain (64 g/m2 to 105 g/m2)	8.0 (iR C5180) 9.5 (iR C4580/iR C4080)	6.2 (iR C5180) 6.7 (iR C4580/iR C4080)

B. Printing Speed

1.C iR C5180
a. Single-sided

T-1-11

		Single-sided			
Mode	**Paper size**	**Cassette**		**Manual Feeder**	
		Mono	**Color**	**Mono**	**Color**
Plain paper 64 to 105g/m2	SR-A3 (320x450mm)	-	-	19.5	19.5
	12x18inch (305x457mm)	24	24	19.5	19.5
	A3, LDR	25.5	25.5	19.5	19.5
	B4, LGL	25.5	25.5	22.3	22.3
	A4, LTR, B5	51	51	31	31
	A4R, LTRR, B5R	25.5	25.5	25.5	25.5
	A5R, STMTR	25.5	25.5	25.5	25.5
Heavy paper up to 105g/m2	SR-A3 (320x450mm)	-	-	9.75	9.75
	12x18inch (305x457mm)	12	12	9.75	9.75
	A3, LDR	12.75	12.75	9.75	9.75
	B4, LGL	15	15	11	11
	A4, LTR, B5	25.5	25.5	15.5	15.5
	A4R, LTRR, B5R	17.5	17.5	12.75	12.75
	A5R, STMTR	25.5	25.5	15	15
	Tab paper	-	-	14	14
Transparency	A3, A4, A4R, LTR, LTRR	11	9.5	11	9.5
Postcard		-	-	15	15

Unit: prints/min

b. Double-sided

T-1-12

		Double-sided							
		Face-down				Face-up			
Mode	**Paper size**	**Cassette**		**Manual Feeder**		**Cassette**		**Manual Feeder**	
		Mono	**Color**	**Mono**	**Color**	**Mono**	**Color**	**Mono**	**Color**
Plain paper 64 to 105g/m2	SR-A3 (320x450mm)	-	-	-	-	-	-	-	-
	12x18inch (305x457mm)	19.4	19.4	18.0	18.0	17	17	15.5	15.5
	A3, LDR	20.1	20.1	18.2	18.2	17	17	15.1	15.1
	B4, LGL	20.1	20.1	19.3	19.3	17	17	16.1	16.1
	A4, LTR, B5	41.2	41.2	33.7	33.7	31.5	31.5	25.8	25.8
	A4R, LTRR, B5R	20.1	20.1	20.4	20.4	20.1	20.1	20	20
	A5R, STMTR	20.1	20.1	20.4	20.4	20.1	20.1	20	20
Heavy paper up to 105g/m2	SR-A3 (320x450mm)	-	-	-	-	-	-		
	12x18inch (305x457mm)	9.4	9.4	8.7	8.7	8.4	8.4	7.3	7.3
	A3, LDR	10.0	10.0	9.0	9.0	8.4	8.4	7.1	7.1
	B4, LGL	10.0	10.0	8.9	8.9	8.4	8.4	7.4	7.4
	A4, LTR, B5	20.8	20.8	16.7	16.7	15.8	15.8	12.4	12.4
	A4R, LTRR, B5R	11.6	11.6	10.4	10.4	10.8	10.8	9.4	9.4
	A5R, STMTR	20.8	20.8	17.5	17.5	17.8	17.8	14.5	14.5
	Tab paper	-	-	-	-	-	-	-	-

Unit: prints/min

2.C iR C4580
a. Single-sided

T-1-13

		Single-sided			
		Cassette		Manual Feeder	
Mode	**Paper size**	**Mono**	**Color**	**Mono**	**Color**
Plain paper 64 to 105g/m2	SR-A3 (320x450mm)	-	-	16.5	14.5
	12x18inch (305x457mm)	21	18.8	16.5	14.5
	A3, LDR	22.5	20	16.5	14.5
	B4, LGL	22.5	20	19	16.8
	A4, LTR, B5	45	40	26.5	23.5
	A4R, LTRR, B5R	22.5	20	21.5	19.3
	A5R, STMTR	22.5	20	21.5	19.3
Heavy paper up to 105g/m2	SR-A3 (320x450mm)	-	-	7	7
	12x18inch (305x457mm)	9.3	9.3	7	7
	A3, LDR	10	10	7	7
	B4, LGL	11.8	11.8	8.4	8.4
	A4, LTR, B5	20	20	11.8	11.8
	A4R, LTRR, B5R	13.7	13.7	10	10
	A5R, STMTR	20	20	11.8	11.8
	Tab paper	-	-	11	11
Transparency	A3, A4, A4R, LTR, LTRR	11	9.5	11	9.5
Postcard		-	-	11.8	11.8

Unit: prints/min

b. Double-sided

T-1-14

Mode	Paper size	Double-sided							
		Face-down				**Face-up**			
		Cassette		**Manual Feeder**		**Cassette**		**Manual Feeder**	
		Mono	**Color**	**Mono**	**Color**	**Mono**	**Color**	**Mono**	**Color**
Plain paper 64 to 105g/ m2	SR-A3 (320x450mm)	-	-	-	-	-	-	-	-
	12x18inch (305x457mm)	17.1	15.1	15.6	13.6	15	13.1	13.8	11.9
	A3, LDR	17.7	15.8	15.7	13.9	15	13.1	13.5	11.7
	B4, LGL	17.7	15.8	16.8	14.9	15	13.1	14.3	12.4
	A4, LTR, B5	36.6	32.6	29.2	25.9	27.8	24.7	23.3	20.6
	A4R, LTRR, B5R	20.4	18.2	20.4	18.2	18.1	17	18.1	17
	A5R, STMTR	20.4	18.2	20.4	18.2	18.1	17	18.1	17
Heavy paper up to 105g/m2	SR-A3 (320x450mm)	-	-	-	-	-	-	-	-
	12x18inch (305x457mm)	7.5	7.5	6.6	6.6	6.7	6.7	5.9	5.9
	A3, LDR	7.6	7.6	6.5	6.5	6.7	6.7	5.8	5.8
	B4, LGL	7.6	7.6	6.7	6.7	6.7	6.7	6	6
	A4, LTR, B5	16.3	16.3	12.7	12.7	12.4	12.4	10.2	10.2
	A4R, LTRR, B5R	9	9	8.1	8.1	8.4	8.4	7.6	7.6
	A5R, STMTR	16.3	16.3	12.7	12.7	12.4	12.4	12.4	12.4
	Tab paper	-	-	-	-	-	-	-	-

Unit: prints/min

3. iR C4080
a. Single-sided

T-1-15

		Single-sided			
		Cassette		Manual Feeder	
Mode	**Paper size**	**Mono**	**Color**	**Mono**	**Color**
Plain paper 64 to 105g/m2	SR-A3 (320x450mm)	-	-	16.5	14.5
	12x18inch (305x457mm)	21	18.8	16.5	14.5
	A3, LDR	22.5	20	16.5	14.5
	B4, LGL	22.5	20	19	16.8
	A4, LTR, B5	40	36	26.5	23.5
	A4R, LTRR, B5R	22.5	20	21.5	19.3
	A5R, STMTR	22.5	20	21.5	19.3
Heavy paper up to 105g/m2	SR-A3 (320x450mm)	-	-	7	7
	12x18inch (305x457mm)	9.3	9.3	7	7
	A3, LDR	10	10	7	7
	B4, LGL	11.8	11.8	8.4	8.4
	A4, LTR, B5	20	20	11.8	11.8
	A4R, LTRR, B5R	13.7	13.7	10	10
	A5R, STMTR	20	20	11.8	11.8
	Tab paper	-	-	11	11
Transparency	A3, A4, A4R, LTR, LTRR	11	9.5	11	9.5
Postcard		-	-	11.8	11.8

Unit: prints/min

b. Double-sided

T-1-16

		Double-sided							
		Face-down				Face-up			
Mode	Paper size	Cassette		Manual Feeder		Cassette		Manual Feeder	
		Mono	Color	Mono	Color	Mono	Color	Mono	Color
Plain paper 64 to 105g/m2	SR-A3 (320x450mm)	-	-	-	-	-	-	-	-
	12x18inch (305x457mm)	17.1	15.1	15.6	13.6	15	13.1	13.8	11.9
	A3, LDR	17.7	15.8	15.7	13.9	15	13.1	13.5	11.7
	B4, LGL	17.7	15.8	16.8	14.9	15	13.1	14.3	12.4
	A4, LTR, B5	36.6	32.6	29.2	25.9	27.8	24.7	23.3	20.6
	A4R, LTRR, B5R	20.4	18.2	20.4	18.2	18.1	17	18.1	17
	A5R, STMTR	20.4	18.2	20.4	18.2	18.1	17	18.1	17
Heavy paper up to 105g/m2	SR-A3 (320x450mm)	-	-	-	-	-	-	-	-
	12x18inch (305x457mm)	7.5	7.5	6.6	6.6	6.7	6.7	5.9	5.9
	A3, LDR	7.6	7.6	6.5	6.5	6.7	6.7	5.8	5.8
	B4, LGL	7.6	7.6	6.7	6.7	6.7	6.7	6	6
	A4, LTR, B5	16.3	16.3	12.7	12.7	12.4	12.4	10.2	10.2
	A4R, LTRR, B5R	9	9	8.1	8.1	8.4	8.4	7.6	7.6
	A5R, STMTR	16.3	16.3	12.7	12.7	12.4	12.4	12.4	12.4
	Tab paper	-	-	-	-	-	-	-	-

Unit: prints/min

1.2.7.2 Print Size

Paper Size

T-1-17

	Cassette	Manual Feed Tray	Cassette Pedestal	Side Paper Deck
A3	yes	yes	yes	no
A4	yes	yes	yes	yes
A4R	yes	yes	yes	no
A5R	yes	yes	yes	no
B4	yes	yes	yes	no
B5	yes	yes	yes	yes
B5R	yes	yes	yes	no
LGL	yes	yes	yes	no
LTR	yes	yes	yes	yes
LTR-R	yes	yes	yes	no
STMT-R	yes	yes	yes	no
279x432 [mm] (11x17)	yes	yes	yes	no
305x457 [mm] (12x18)	yes	yes	yes	no
320x457 [mm]	no	yes	no	no

Paper Type

T-1-18

	Cassette	Manual Feed Tray	Cassette Pedestal	Side Paper Deck
Plain paper (64 to 105 g/m2)	yes	yes	yes	yes
Heavy paper (up to 209 g/m2)	yes	yes	yes	yes
Recycled paper	yes	yes	yes	yes
Gloss paper *1	no	yes	no	no
Bond paper	yes	yes	yes	yes
Transparency *1	yes	yes	yes	no
Postcard	no	yes	no	no
2-pane postcard *1	no	yes	no	no
4-pane postcard *1	no	yes	no	no
Label paper *1	no	yes	no	no
Tracing paper *1	no	yes	no	no
Tab paper *1	no	yes	no	no
Envelope *1	no	yes	no	no
Pre-punched paper	no	yes	no	no

*1: support limited to single-sided printing.

1.2.7.3 Others

T-1-19

Operation environment	Temperature range	15 to 32.5 deg C
	Humidity range	25 to 75%
	Atmospheric pressure range	810.6 to 1013.3 hpa
		(0.8 to 1.0 atm)
Operating noise	In operation	74 dB or less
	In standby	50 dB or less
Power supply	100 V	
	120 V	
	230 V	
Power consumption (Reference value)	maximum	1500 W or less (if equipped with cassette pedestal)
	In standby	100V:344W*
		120V:273W*
		230V:350W*
		*When equipped with all accessories.
Ozone	Maximum	0.05 ppm or less
	Average	0.02 ppm or less
Dimensions	Width (W)	620 mm
	Depth (D)	850 mm
	Height (H)	1198 mm (including printer unit, reader unit, ADF, and cassette pedestal)
Weight	Total	130.0 kg (including printer unit; excluding toner cartridge)

The descriptions are subject to change for product improvement.

1.2.7.4 Reader Unit Specifications

T-1-20

Copyboard	Fixed
Original size detection	Feed sensors, reading CCD; copyboard cover angle
Original type	Sheet, book, 3-D object (2 kg max.)
Maximum original size	297 mm x 432 mm
Reproduction ratio	100%, Reduce I (1:0.250), Reduce II (1:0.500), Reduce III (1:0.611), Reduce IV (1:0.707), Reduce V (1:0.816), Reduce VI (1:0.865);
	Enlarge I (1:1.154), Enlarge II (1:1.224), Enlarge III (1:1.414), Enlarge IV (1:2.000), Enlarge V (1:4.000);
	Zoom (1:0.250 to 4.000; 25% to 400%: in 1% increments)
Reading resolution	Main scanning direction 600 dpi
	Sub scanning direction 600 dpi
Number of gradations Reading maximum	256
	Main scanning direction 0 to 2 mm against 297 mm
	Sub scanning direction 0 to 2 mm against 420 mm
Source of light	Xenon lamp
Dimensions	Width (W) 586 mm
	Depth (D) 565 mm
	Height (H) 104 mm
Weight	14 kg
Option	Anti-condensation heater (100/230V model only)

The descriptions are subject to change for product improvement

Chapter 2

INSTALLATION

Contents

2.1 Making Pre-Checks

2.1.1 Points to Note

The site of installation must meet the following requirements; if possible, visit the site before the machine is delivered:

1) Moving a machine from a cold to warm place can cause condensation (i.e., droplets of water on its metal surfaces), consequently leading to faulty images. Be sure to leave the machine alone until it becomes used to the room temperature whenever condensation is expected.

MEMO;
Measures against condensation
- When transferring the body from the site in low temperature to in mild temperature, implement this mode before automatic graduation adjustment.

⚠

    - Toner cartridge and drum unit should be removed before implementing this mode.
    - Dummy transfer cleaning unit should be installed.
    - Working time of this mode is six to eighteen minutes, varying due to its circumstances ("OK" is displayed if normally completed).

Enter the Srvice mode.
COPIER > FUNCTION > INSTALL > DRY-RT

2) The outlet that meets the requirements indicated in the following table should be enabled to connect to the power supply exclusively.

	CiR C5180	**CiR C4580 / CiR C4080**
100V model	(100V, 20A or more)	(100V, 15A or more)
120V model	(120V to 127V, 20A or more)	(120V to 127V, 15A or more)
230V model	230V model	(220V to 240V, 10A or more)

3) The temperature and humidity should be within the range indicated in the following figure. Avoid areas near water faucets, water boilers, humidifiers, and refrigerators.

F-2-1
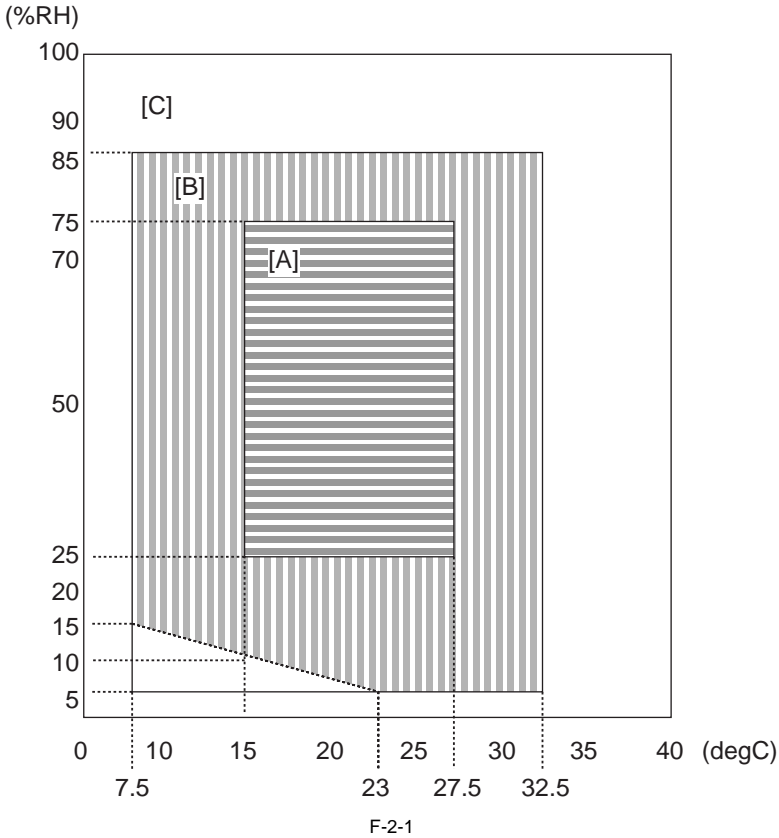
<Guaranteed Environment Zones>
[A]: A zone. All of the quality standard items are satisfied.
[B]: B zone. In this zone, some quality standard items do not satisfy the A zone criteria, and some other items are not applicable.
[C]: C zone. In this zone, there is no problems related to safety, malfunction, and faulty display, and the copy is operated normally.

4) The site must not be near sources of fire, and must be free of dust and ammonium gas. If the machine is likely to be subject to the direct rays of the sun, provide curtains or shades.
5) The site must be well-ventilated. It is important; however, that the machine will not be placed near air vents of the room. The amount of ozone generated by the machine should not affect the health of the individuals nearby. Nevertheless, some individuals may find the odor rather unpleasant. Be sure the room will be ventilated properly.
6) When lifting the machine, be sure to work as a group of 4 or more persons, since the machine weighs 130 kg. Also, be sure that the machine remains level.
7) The site must be such that the machine's feet will remain in contact with its floor and the machine will remain level.
8) The site must provide enough space for maintenance work.

2.1.2 Spatial Requirements

⚠

The dimensions indicated in the figure are minimum requirements. Try to make available as much space as possible.

(a) Machine
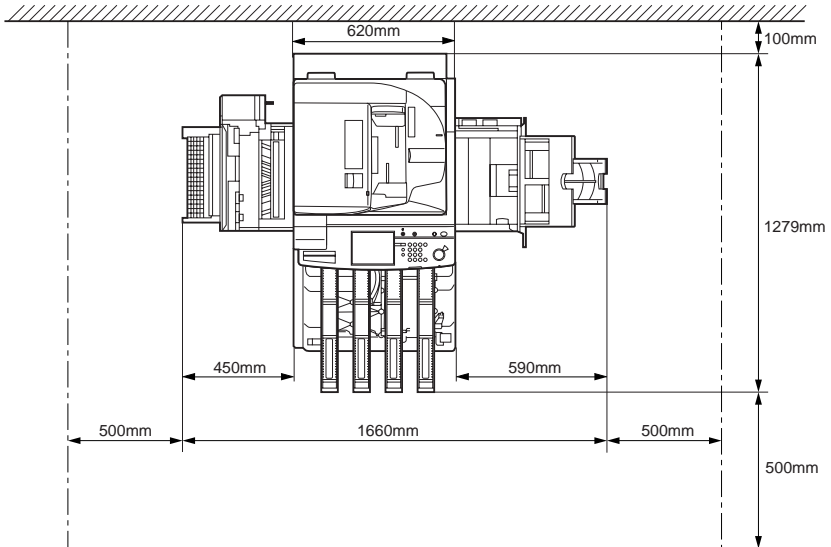
F-2-2

(b) Machine + Paper Deck + Finisher/Saddle Finisher + Fax + Puncher
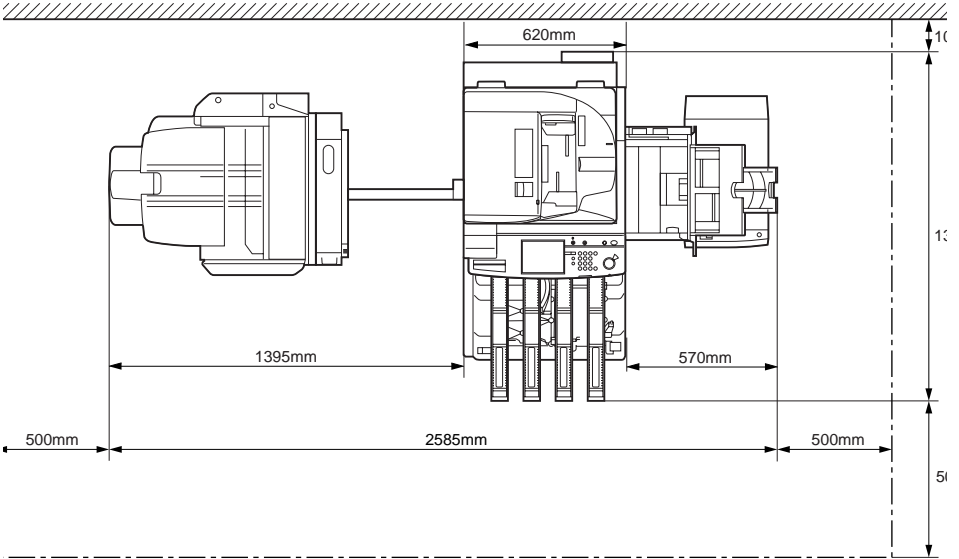
F-2-3

(c) Machine + Deck + Finisher + Fax
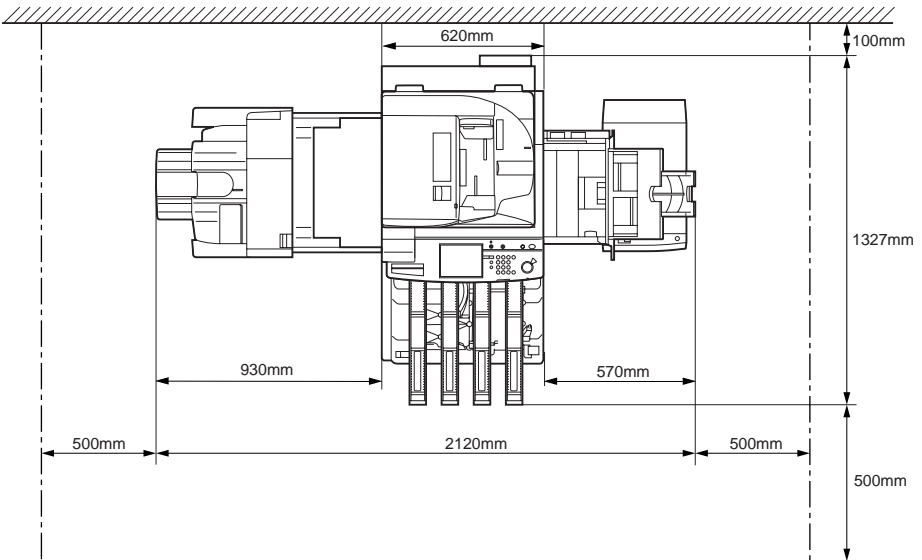
F-2-4

(d) Machine+ Deck +Copy Tray + Fax
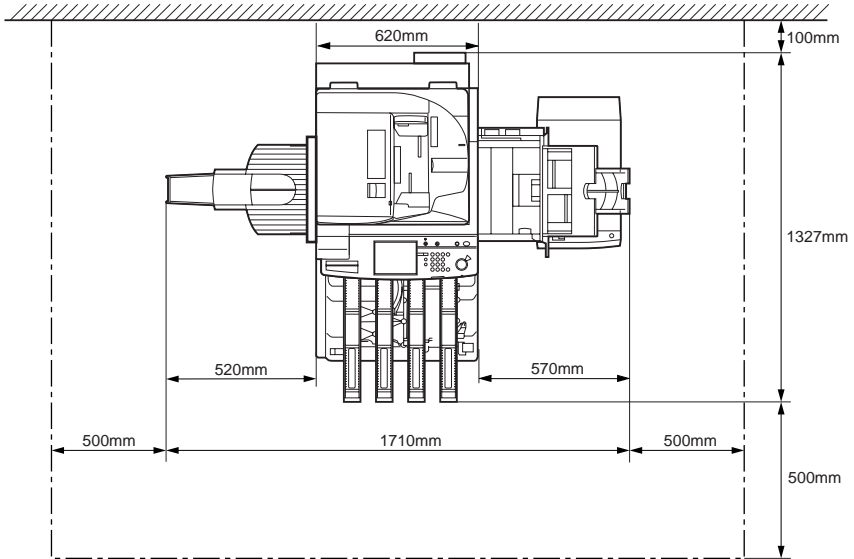
F-2-5

2.1.3 Order of Installing Accessories

Be sure that the accessories, if any, are installed in the following order:

(1) Cassette heater kit (to the pedestal)
(2) 2-cassette pedestal, or plain pedestal (Note: Including the work to mount the main body on the pedestal.)
(3) Reader unit
(4) Main body
(5) Reader Heater
(6) Cassette heater kit (to the machine proper)
(7) Card reader
(8) Cassette heater
(9) Side paper deck
(10) Key switch unit
(11) Document Tray
(12) Copy Tray
(13) Finisher/saddle finisher

2.1.4 Checking the Contents
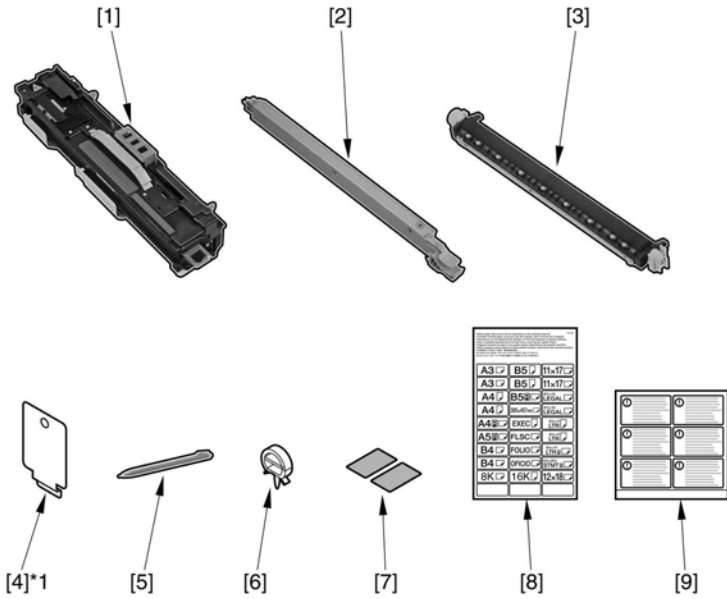
F-2-6

[1]	Drum unit (Y, M, C, Bk)	1 pc. each	[6]	Clamp Large (Round)	8 pc.
[2]	Transfer cleaning unit	1 pc.	[7]	Size plate	2 pc.
[3]	Secondary transfer outside roller unit	1 pc.	[8]	Cassette size label	1 pc.
[4]*1	power cord face plate	1 pc.	[9]	Shut-down instructions label	1 pc.
[5]	Touch pen	1 pc.			

*1 Use it only when the plain pedestal/the 2-cassette pedestal is not installed.

Check the contents (Operatosr manual, User's Manual, CD, and others) against the following tables:

Operatosr manual	C iR C5180	C iR C5180i	C iR C4580	CiR C4580i	CiR C4080	CiR C4080i
Operators manual: Reference guide	Yes	Yes	Yes	Yes	Yes	Yes
Operators manual: Copy/Box guide	Yes	Yes	Yes	Yes	Yes	Yes
Operatosr manual: Sending/Facsimile Guide	Yes	Yes	Yes	Yes	Yes	Yes

User's Manual	CiR C5180	CiR C5180i	CiR C4580	CiR C4580i	CiR C4080	CiR C4080i
Easy Operation Guide	Yes	Yes	Yes	Yes	Yes	Yes
UFR II/PCL/PS Printer Guide	No	Yes	No	Yes	No	Yes
Registration card	Yes	Yes	Yes	Yes	Yes	Yes
Installation check list	Yes	Yes	Yes	Yes	Yes	Yes
Main unit warranty card	Yes	Yes	Yes	Yes	Yes	Yes
Drum warranty card	Yes	Yes	Yes	Yes	Yes	Yes
EULA	Yes	Yes	Yes	Yes	Yes	Yes
Network Quick Start Guide	No	Yes	No	Yes	No	Yes
Release Note	No	Yes	No	Yes	No	Yes
Universal Send Trial Kit-B1	Yes	No	Yes	No	Yes	No

CD, and others	CiR C5180	CiR C5180i	CiR C4580	CiR C4580i	CiR C4080	CiR C4080i
Operators manual CD-ROM:NW/RUI guide	Yes	Yes	Yes	Yes	Yes	Yes
iW DM personal V4 (10L)	Yes	Yes	Yes	Yes	Yes	Yes
iW DM EMC CD	Yes	Yes	No	Yes	No	Yes
Tutorial CD	Yes	Yes	Yes	Yes	Yes	Yes
MEAP Administration software CD	Yes	Yes	Yes	Yes	Yes	Yes
N/W ScanGear CD-ROM	Yes	No	Yes	No	Yes	No
UFR II/PCL/PS Driver/ Utility CD	No	Yes	No	Yes	No	Yes

2.2 Unpacking and Installation

2.2.1 Points to Note About Relocating the machine

⚠ **Points to Note About Relocating the machine**
Be sure not to push the machine strongly from the front side, otherwise it can fall over. (Especially in the case of the carpet floor.)

2.2.2 Mounting the Reader Unit (Color Image Reader E1/F1)

Working as a group of 4, hold the 4 grips (left, right), and lift the machine off the skid [1].

⚠

The machine weighs about 130 kg. Be sure to work as a group of 4. Also, lift the main body while keeping it level.
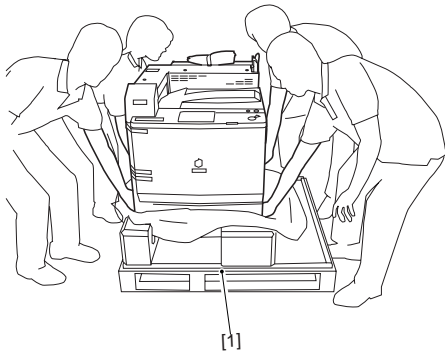
F-2-7

⚠

Install two-cassette pedestal and plane pedestal as in the following order.
1. Two-cassette pedestal and plane pedestal (including mounting the body on pedestal).
2. Reader
3. Main body

The Color Image Reader F1and the Color Image Reader E1 may be installed in the same way. The illustrations that follow are of the Color Image Reader F1.

1) Unpack and take the reader unit out of its shipping box.
2) Remove al tape from the reader unit and the machine.
3) Shift the reader unit [1] to the left as shown, and place it on the machine [2].

100 mm or more
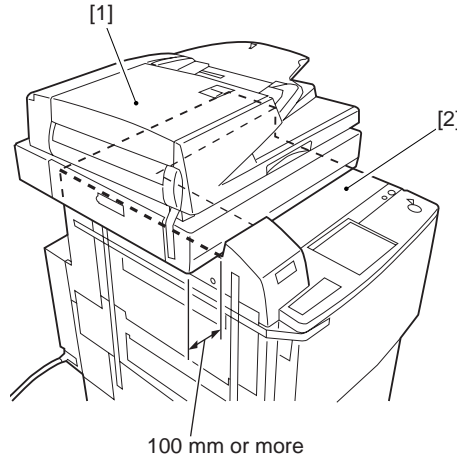
F-2-8

4) Using a screwdriver, fit the 2 reader unit positioning pins [1] to the reader unit [2].
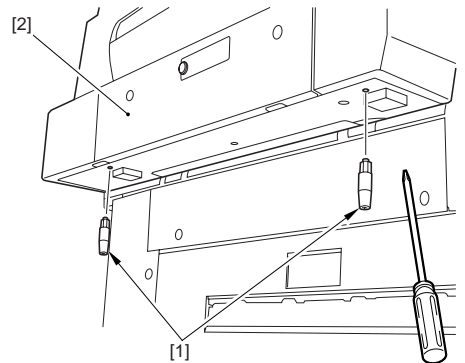
F-2-9

5) Lift the left side of the reader unit [1], and slide the unit in the direction of the arrow to force it against the plate; then, fit the pins [2] into the slots [3] while taking care to avoid impact.

⚠

Take care not to trap your hand between the reader unit and the host machine.
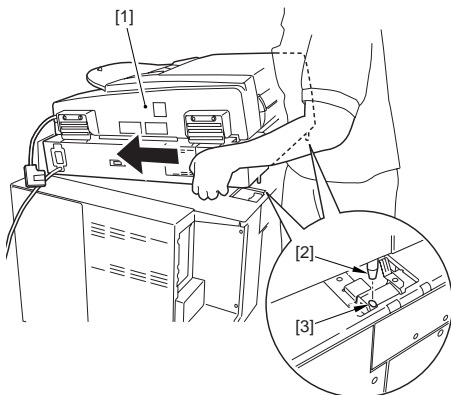
F-2-10

6) While lifting the reader unit slightly, fit the reader unit fixing plate [1], and fix it in place using a stepped screw [2].
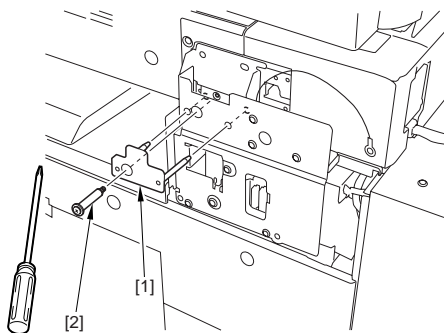
F-2-11

7) Fix the wire [1] in place using the stepped screw.

⚠

Be sure that the orientation of the wire is correct.
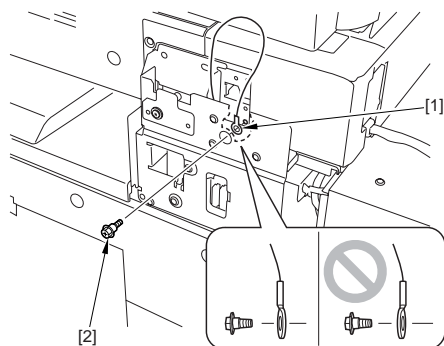
F-2-12

8) Hook the washer [1] fitted in step 7) on the screw [2].
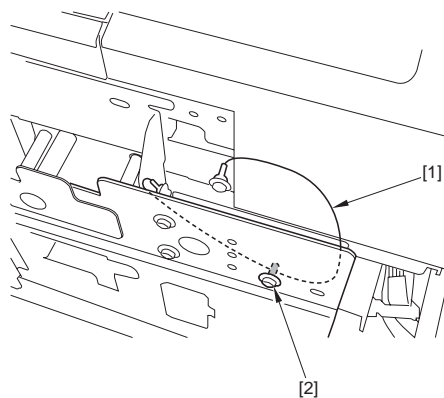
F-2-13

9)

⚠ **Points to Note When Mounting the Joint Cover**
Be sure the joint cover [1] has not trapped the wire [2].
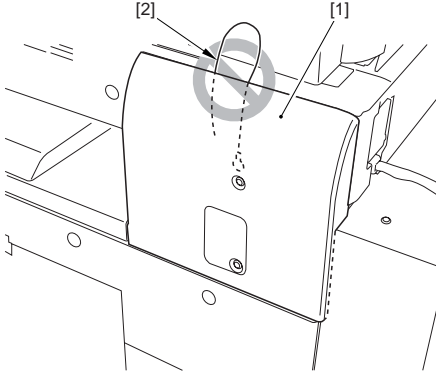
F-2-14

Mount the joint cover [1].
- 2 screws (RS tightening; M4X8) [2]
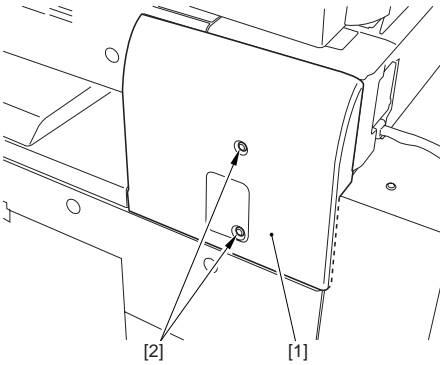
F-2-15

10) Remove the 3 mirror fixing screw [1].

⚠

Be sure to store the 3 mirror fixing screws [1] away. They will be needed when transporting the machine in the future.
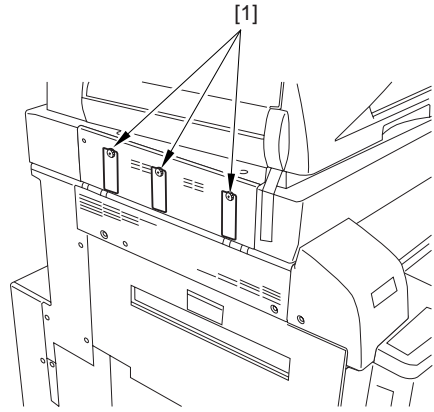
F-2-16

11) Remove the reader unit left cover [1].
- 2 screws [2]
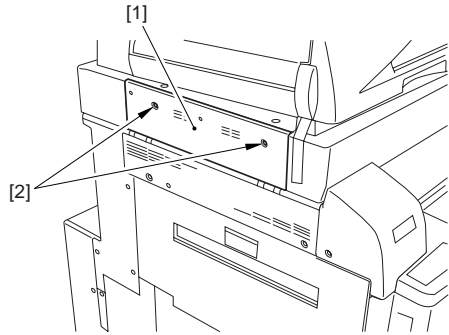
F-2-17

12) Remove the face cap [1] and the 2 screws [2]; then, detach the card reader cover [3].
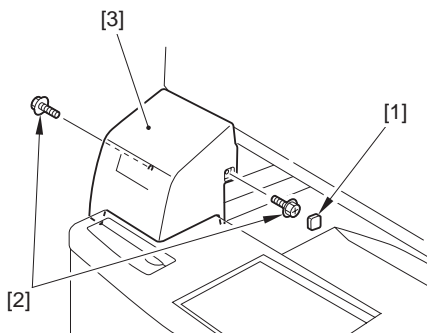
F-2-18

13) Remove the upper left cover [1].
   - 2 screws [2]
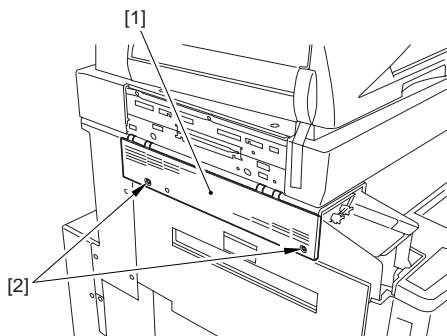
F-2-19

14) Cut the 2 areas [B] of the upper left cover claw using nippers, and remove the 2 areas [A].
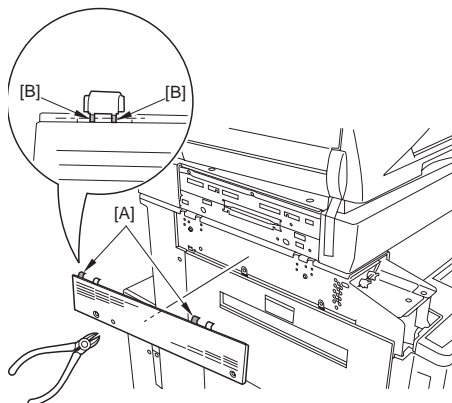
F-2-20

15) While forcing the 2 hooks [1] in the direction of the arrow, fix it in place using 2 screws [2] each.
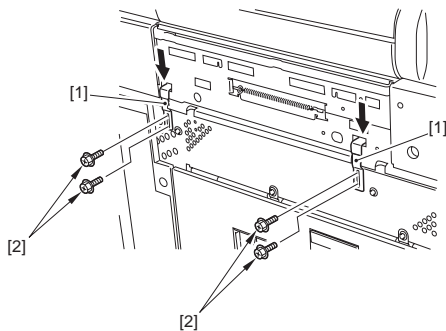
F-2-21

⚠️

If the hook does not have a cushion area [A],
The cushion [1] will not fit on the plate if the hook is moved excessively. Check to be sure that the cushion is on the plate.
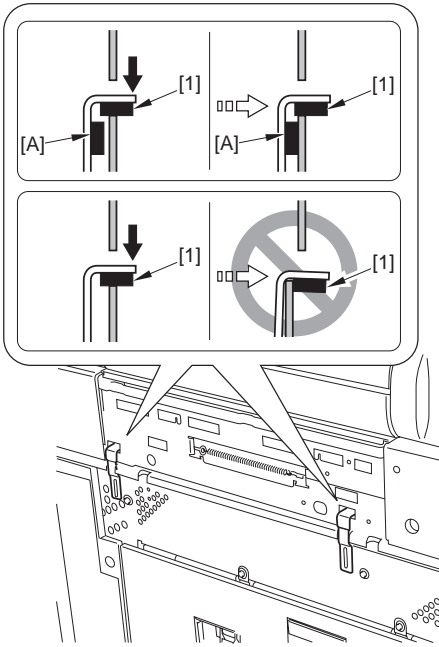
F-2-22

16) Put back the following parts in the order used to remove them but in reverse.
   - upper left cover
   - card reader cover
   - reader left cover

17) Connect the reader communication cable [1], and fix it in place using a clamp [2].
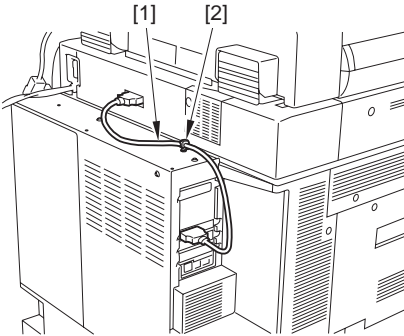
F-2-23

18) Mount the ADF power cable [1] to the host machine.
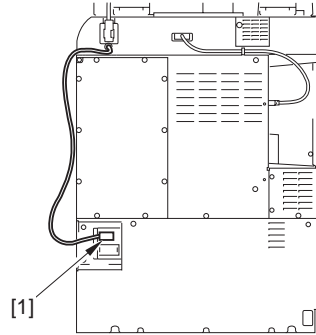
F-2-24

19) Fix the ADF power cable [1] in place using 3 clamps [2].
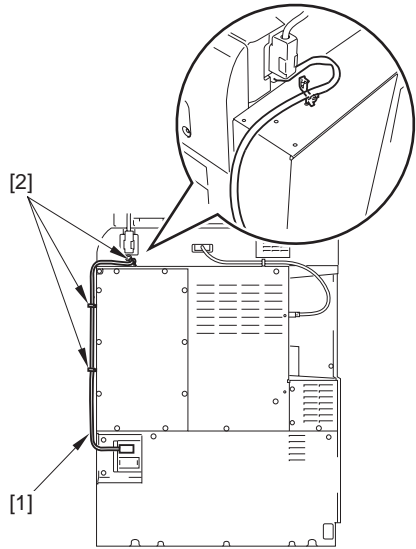
F-2-25

⚠ Adjustment of the Slack of the Cable
Fix the reader power supply cable [1] in place on the 3 clamps [3] from the bottom to adjust the slack of the cable on the upper side of the machine.
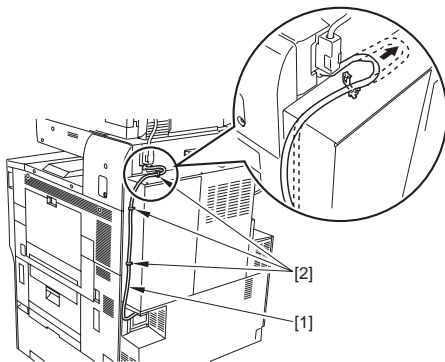
F-2-26

2.2.3 Mounting the Transfer Cleaning Unit

1) Open the front cover.
2) Remove the tape, and turn the intermediate transfer unit release lever [1] in the direction of the arrow.
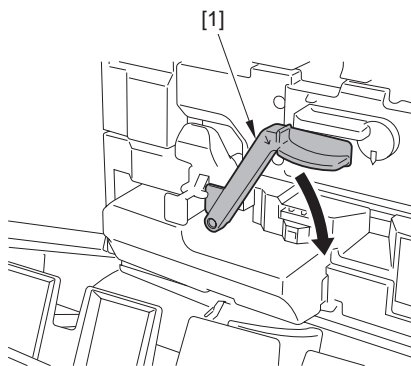
F-2-27

3) Remove the waste toner container [1].
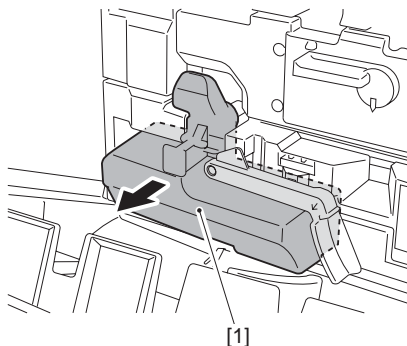
F-2-28

4) Remove the dummy transfer cleaning unit [1].
   - 1 screw [2]
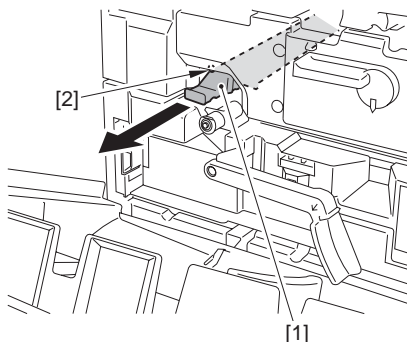
F-2-29

⚠

Be sure to store away the removed dummy transfer cleaning unit.

MEMO;
Measures against condensation
When transferring the body from the site in low temperature to in mild temperature, implement this mode before automatic graduation adjustment.

⚠

- Toner cartridge and drum unit should be removed before implementing this mode.
- Dummy transfer cleaning unit should be installed.

- Working time of this mode is six to eighteen minutes, varying due to its circumstances ("OK" is displayed if normally completed).
Service mode;
COPIER > FUNCTION > INSTALL > DRY-RT

5) Take out the included transfer cleaning unit from its packaging bag, and remove the packing material (cardboard).

⚠

Do not touch the tip of the transfer cleaning unit blade. The area is coated with lubricant.

6) Fit the included transfer cleaning unit [1] using the screw [2] removed in step 4).
(Match the boss [4] found at the top of the waste toner feedscrew case against the groove [3] in the transfer cleaning unit base.)
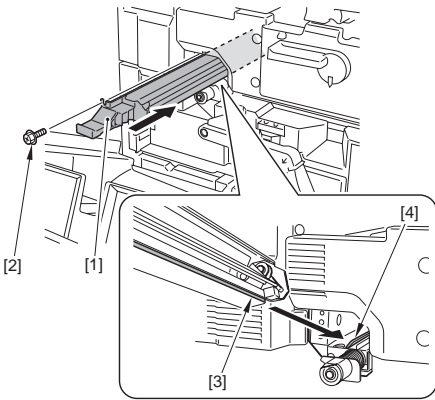
F-2-30

⚠

Be sure that the front cover rib [2] is not in contact with the edge [1] of the transfer cleaning unit blade.
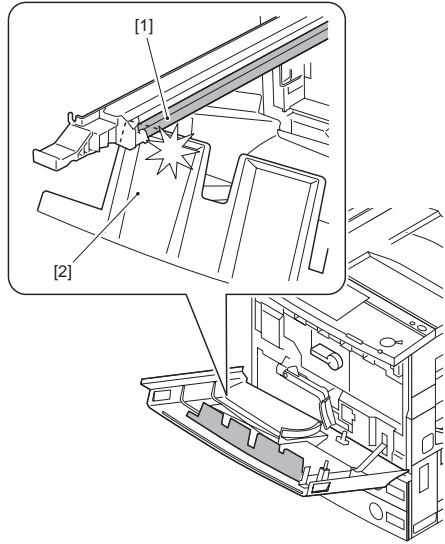
F-2-31

7) While holding the waste toner box down, shift the intermediate transfer unit release lever back to its initial position.
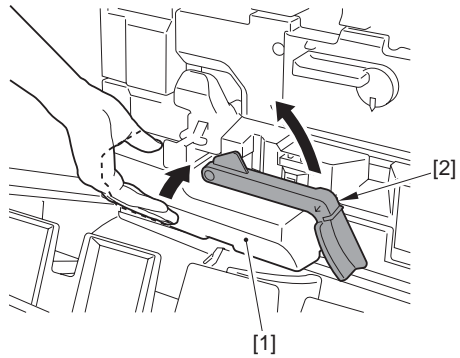
F-2-32

2.2.4 Fitting the Toner Container in Place

⚠

The toner containers must be fitted in their own places (viewing from the control panel side and starting at the left, Y, M, C, and Bk). Do not force any container.

1) Fully shift the fixing lever [1] of the toner container (Y).

[1]
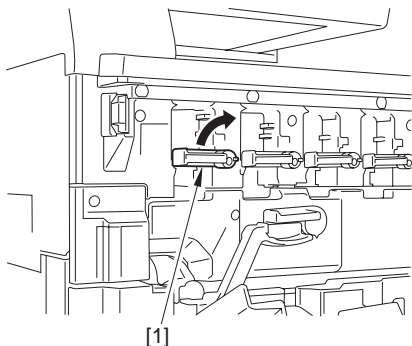
F-2-33

2) When mounting the toner container, be sure to fully turn the fixing lever [2] in the direction of the arrow while forcing the white member [1] toward the rear of the machine.

[1]   [2]
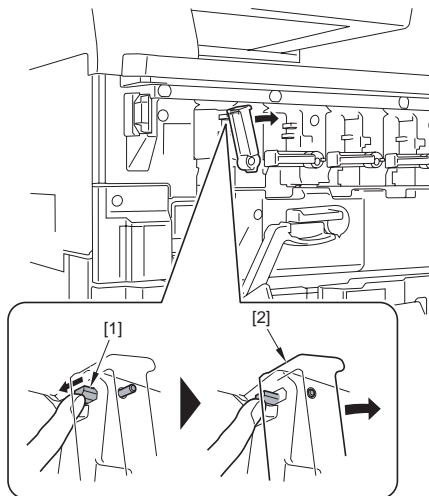
F-2-34

3) Take out the toner container (Y) from the packaging box.
4) Take out the toner container (Y) from the packaging bag.
5) Hold the toner container (Y) [1] with both hands, and shake it several times as if to rotate it.

[1]
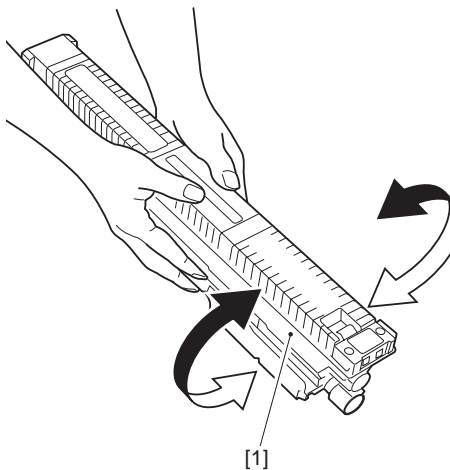
F-2-35

6) Push in the toner container [1] in the direction of the arrow.
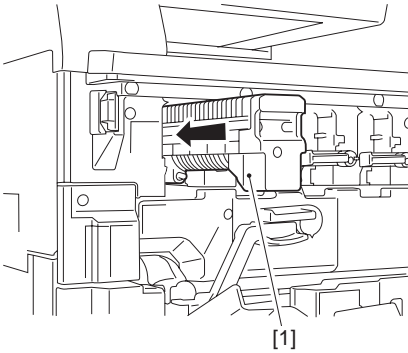
F-2-36

7) Shift the fixing lever of the toner container (Y) back into its initial position (90 deg in counterclockwise direction).
8) Fit the remaining containers (M, C, Bk) in the same way.

2.2.5 Fitting the Drum Unit in Place

1) Take out the drum unit (Y) from its packaging box.
2)

⚠

Do not remove the protective cover [1] since it will serve as a rail later.

Take out the drum unit (Y) [1] from its packaging bag, and remove the drying agent [2].
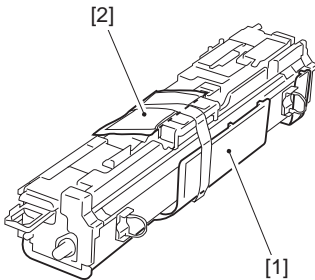
F-2-37

3) Pull out the front and rear pressure release hooks [1] in the direction of the arrow.

⚠

Be sure to remove the pressure release hooks [1].
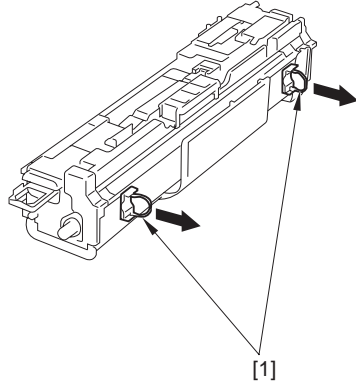
F-2-38

4) Push down the anti-interference member [1] in the direction of the arrow, and pull it out.
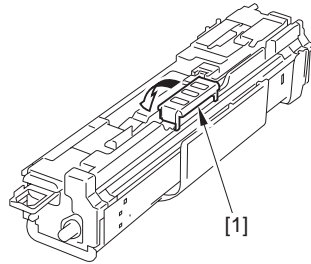
F-2-39

5) Turn the intermediate transfer unit release lever [1] in the direction of the arrow.
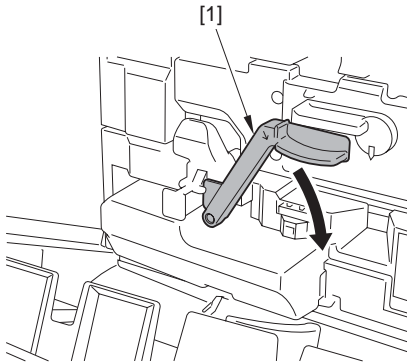
F-2-40

6) Turn the open/close lever [1] of the drum unit cover to the left by 90 deg to open the drum unit cover [2].
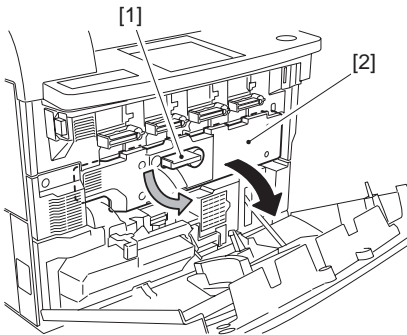
F-2-41

7) Match the bulge [2] found on the bottom of the protective cover against the dent [1] found in the back of the drum unit cover of the host machine.
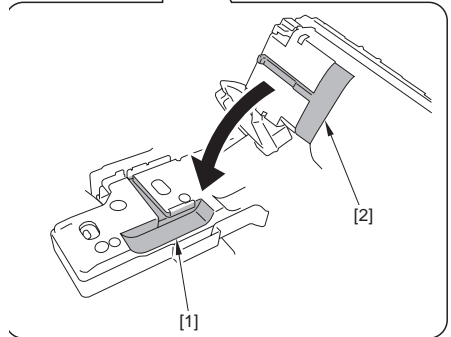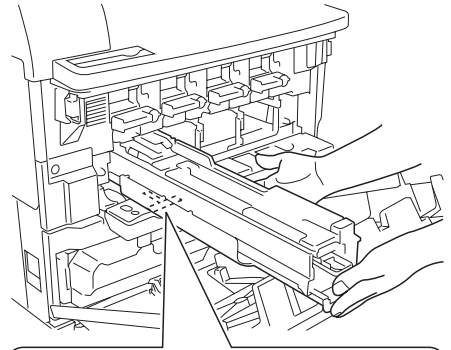
F-2-42

8) Hold the protective cover [2] horizontally, and push in the drum unit (Y) [2]. (starting from the left, Y, M, C, and Bk)

⚠

Store away the protective cover [1], as it will be used when fitting the drum unit in place.

[2]   [1]
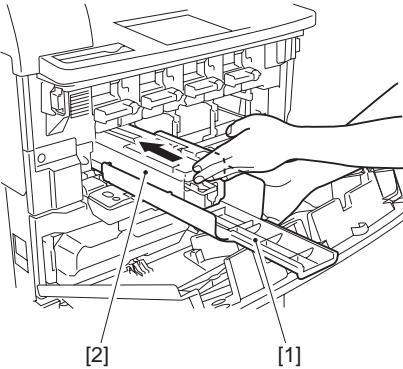
F-2-43

9) Pull out the sealing tape [1].

⚠

When pulling out the sealing tape [1], be sure to hold the drum unit in place to avoid inadvertently sliding out the drum unit.

[1]

F-2-44

10) Fit the remaining drum units in the same way (M, C, Bk).
11) Close the drum unit cover; then, turn the open/close lever to the right by 90 deg to fix it in place.

12) Holding the waste toner box in place, shift the intermediate transfer unit release lever back into its initial position.

[2]

[1]
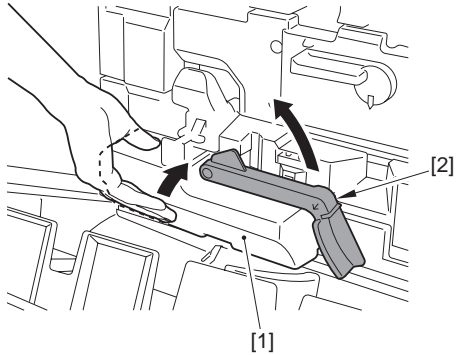
F-2-45

13) Close the front cover.

2.2.6 Fitting the Secondary Transfer Outside Roller Unit in Place

1) Take out the secondary transfer outside roller unit from the packaging box.

⚠

Do not touch the roller of the secondary transfer outside roller unit.

2) Pull on the fixing release lever [1] to fully slide out the fixing feeding unit [2].

[1]

[2]
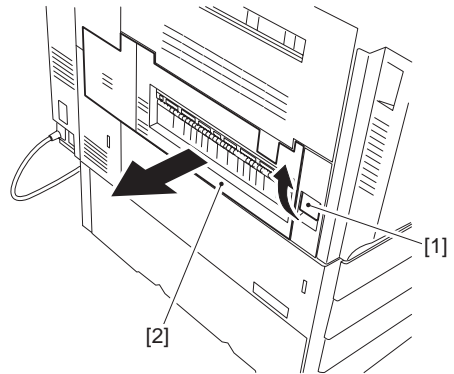
F-2-46

3) Hold the pick [1] of the secondary transfer outside roller, and place it on the secondary transfer unit

[2] found inside the fixing feeding unit by matching it against the left and right grooves.

⚠

Do not touch the roller of the secondary transfer outside roller unit.
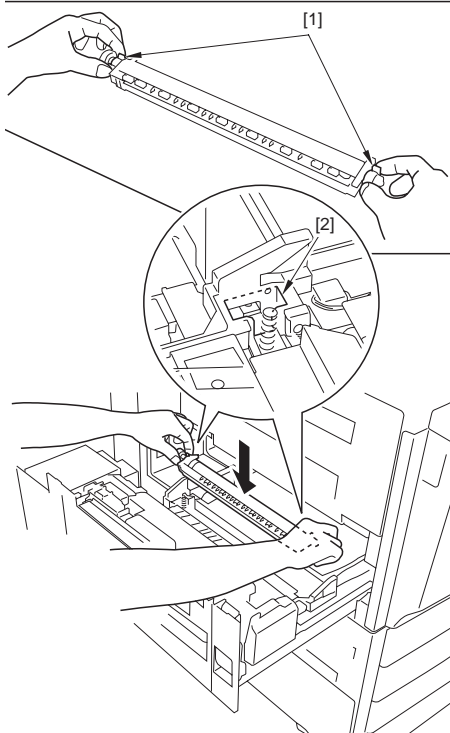
F-2-47

4) Push both ends [1] of the secondary transfer unit to fit it in place. (Be sure it is securely in place.)
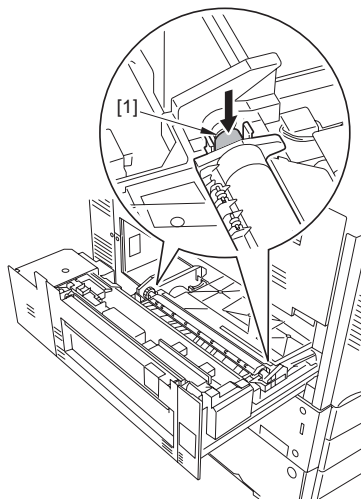
F-2-48

⚠ **Making Checks After the Work**
Check to be sure that the gear [A] of the secondary transfer roller unit rotates properly.
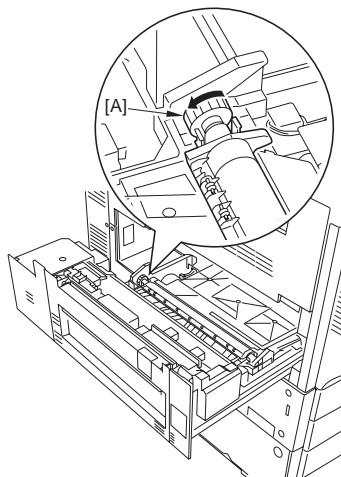
F-2-49

5) Close the fixing feeding unit.

2.2.7 Cassette Setup

1) Pull out the upper cassette, and remove the tape and the lifting plate retainers [1]. (Do the same to the lower cassette.)

F-2-50

2) Check the type of paper a user will use, and adjust the slide guide [1] of each cassette to the paper size.

F-2-51

3) Adjust the side guide plate [1] and the end plate [2] to the scale of the paper size.

F-2-52

4) Attach the cassette size label [2] to the cassette size plate [1].

F-2-53

5) Deposit paper in each cassette, and set it to the main body.

2.2.8 Other Work

< Shut-Down Caution Label> (Included in the main body)
1) ttach the Shut-Down Caution Label [1] whose text is in the appropriate language within the frame of the rear right cover.
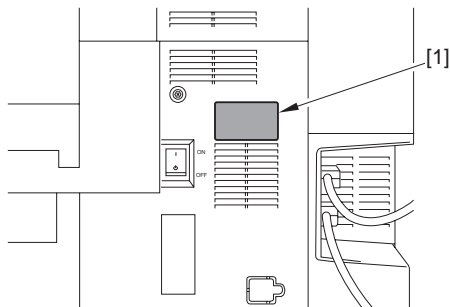
F-2-54

<Original Size Label> (Included in the reader)
1) Attach the Original Size Label [1] whose text is in the appropriate language while positioning it as shown on the ADF open/close cover.

MEMO;
Do not use it to the Color Image Reader E1.
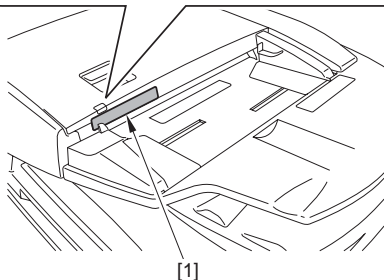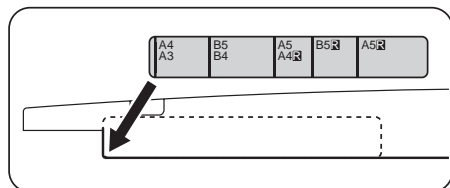
F-2-55

<Cleaning Position Label> (Included in the reader)

1) Attach the Cleaning Position Label [1] whose text is in the appropriate language while positioning it as shown on the front cover.
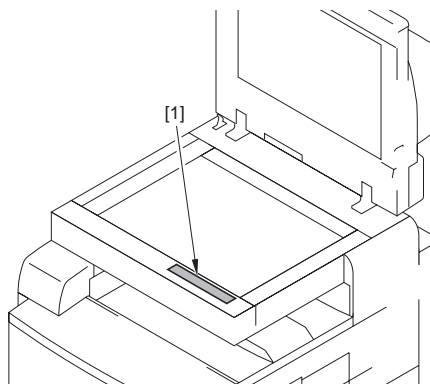
F-2-56

<Do Not Copy Label> (Included in the reader)
1) Attach the Do Not Copy Label [1] whose text is in the appropriate language while positioning it as shown on the front cover.
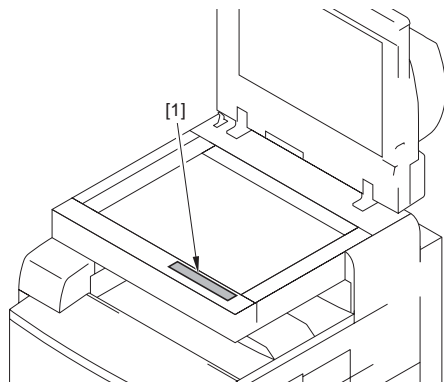
F-2-57

2.2.9 Dealing with power code mount

Use the power cord mount only if you are not installing the plain pedestal/2-cassette pedestal.

1) Free the reader communication cable [1] and the reader power cable [2] from the 4 clamps [3]; and disconnect the connector [4].
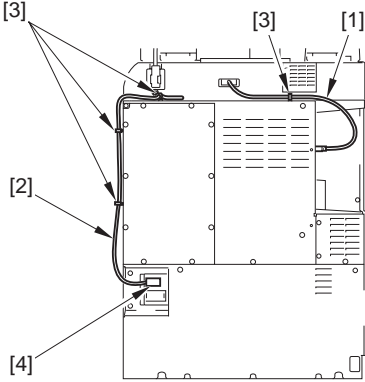
F-2-58

2) Remove the rear cover [1] of the host machine.
   - 10 screw [2] (Remove.)
   - 2 screws [3] (Loosen.)
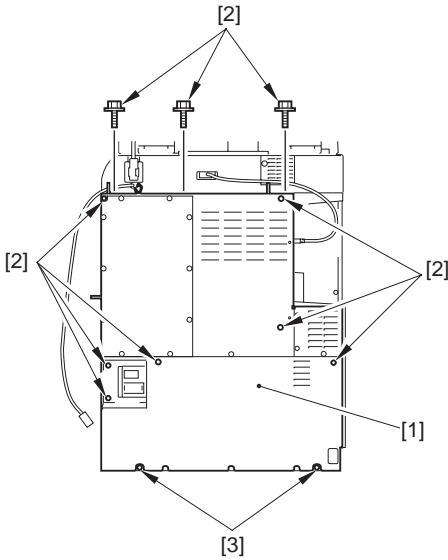
F-2-59

3) Remove the rear left cover [1] of the host machine.
   - 2 screws [2]
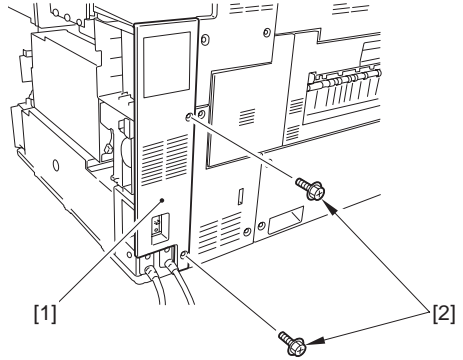
F-2-60

4) Disconnect the 4 connectors [1], and remove the 3 clamps [2] and the 4 screws [3].

⚠️

Take care not to drop the screw.
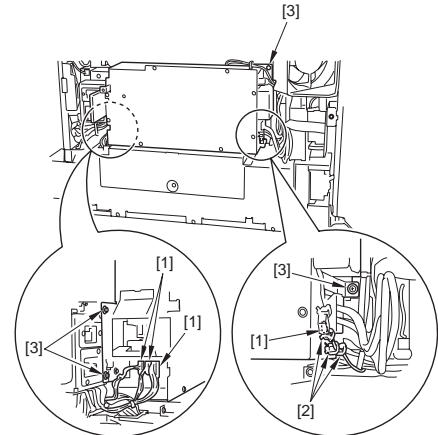
F-2-61

5) Slid the IH power supply unit [1] slightly in the direction of the arrow, and remove the clamp [2] and disconnect the 2 connectors [3].

6) Remove the IH power unit [1].

F-2-62
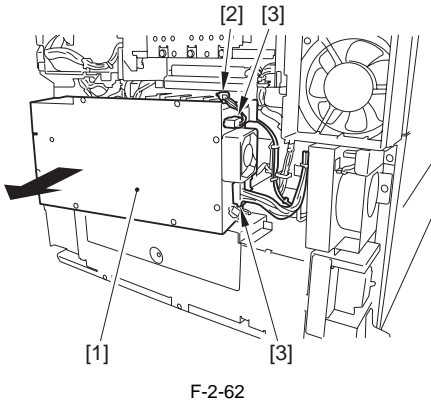
7) Remove the 4 screws [1], and slide the DC power supply unit [2] slightly toward the front.

F-2-63
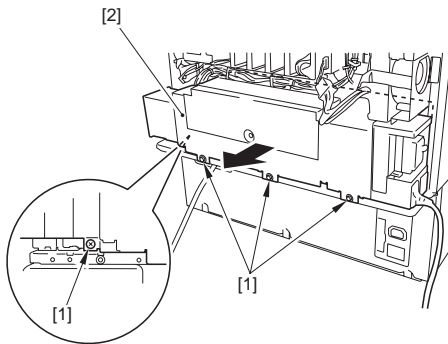
8) Remove the 3 screws [1], and pull out the power supply cord mount slightly to the front.

F-2-64
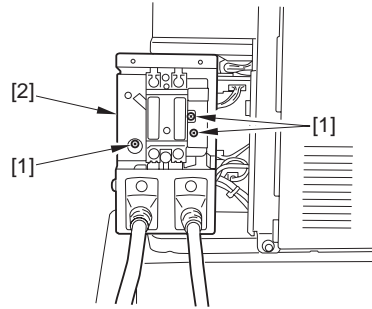
9) Disconnect the 2 connectors [1], and detach the power cord mount [2].

F-2-65
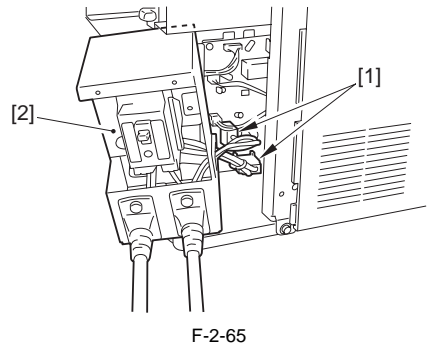
10) Remove the screw [1], and open the 2 clamps [2].

F-2-66

2-23
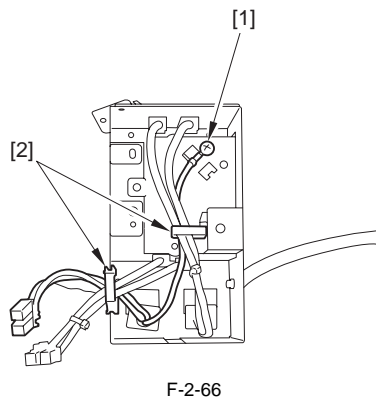
11) Remove the screw [1], and disconnect the power cord [2].
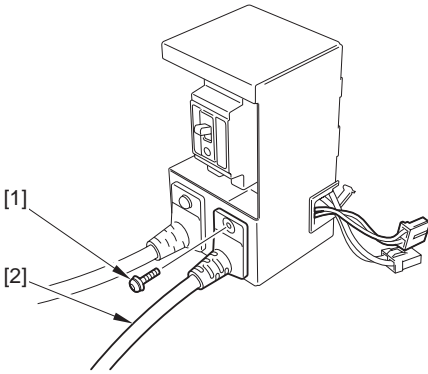
F-2-67

12) Fix the power cord face plate in place using the screw [1] removed in step 11).
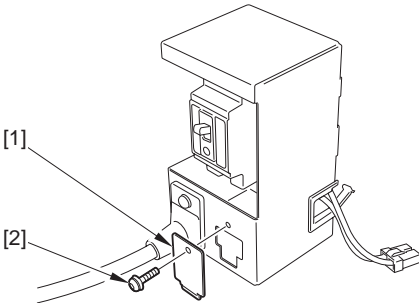
F-2-68

13) Fit the power cord mount, DC power supply unit, IH power supply unit, and covers in reverse order.

2.2.10 Connecting the Power Cord

1) Connect the one side of the power cable to the inlet of the main body, and connect the other side to the outlet.

2.2.11 Adjustment of Fixing Assembly

1. Turning Off the Host Machine

⚠ **How to Turn Off the Host Machine**
When turning off the host machine, be sure to go through the following steps to protect the hard disk:
1) Hold down the control panel power switch for 3 sec or more.

2) Operate as instructed in the shut-down sequence screen (so that the main power switch will go off automatically).
3) Disconnect the power cable (for the power outlet).

2. Adjustment of Fixing Assembly

1) **Enter the Service mode.**
Select COPIER > FUNCTION > FIXING > FX-UHP-S > OK
2) Check that 'FX-UHP-S is OK (It will take for about 5 minutes.)

3) **Enter the Service mode.**
Select COPIER > FUNCTION > FIXING > FX-LHP-S > OK
4) Check that 'FX- LHP -S is OK (It will take for about 5 minutes.)

2.2.12 Checking the Image Margin

1) Place the test chart on the copyboard glass, make a copy by picking up paper from the cassette (1,2), and check the image.
(When the two-cassette pedestal is installed, pick up paper from the cassette 3, 4 and check the image.)
- Check to be sure that there is no unusual sound.
- Check the image quality every standard magnification.
- Check to be sure that the operation for specified number of sheets is performed correctly.
- Check to be sure that the image on the paper picked up from each cassette meets the specification.
Specification values should be as follows.
If the figure is out of the spec, see 'Adjustment of Left Margin of Image' and 'Adjustment of Margin along Leading Edge of Image'.
- Standard value for the left margin of image: L2 = 2.0 +/-1.5 mm
- Standard value for the margin along leading edge of image: L1 = 2.5 +/-1.5 mm

After the adjustment of left margin of image / margin along leading edge of image, if the margin is out of specification, be sure to make an adjustment of the image area (non-image area).

2.2.13 Adjustment of Left Margin of Image

- Check to be sure that the margin of the side of the paper is L2 = 2.0 +/-1.5 mm when the paper is picked up from each cassette.

1) Pull out the cassette 1 and 2.
(Open the cassette 3 and 4 too if the two-cassette pedestal is installed.)
2) Open the pickup vertical path cover [1] and pull out the manual feed unit [2].

(Open the pickup vertical path cover of the two-cassette pedestal, when it is installed.)
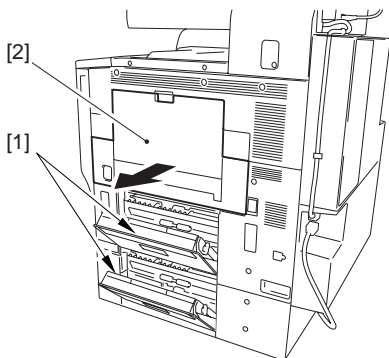
F-2-69

3) Detach the front right cover [1].
   - 2 screws [2]
   (Perform the same step when the two-cassette pedestal is installed.)

F-2-70
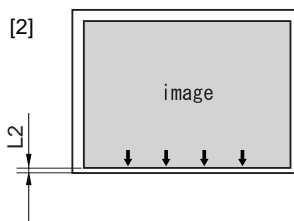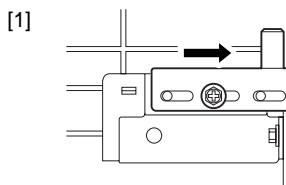
<Adjustment of the Cassette 1>
4) Insert the blade of the screwdriver into the hole of the front right stay and loosen the screw [1] to make an adjustment of the position of the adjusting plate [2].
(Perform the same step to the cassette 3 and 4.)

F-2-71

F-2-72

[1] If the adjusting plate is moved to the right,
[2] the margin of the front edge of the paper narrows.

<Adjustment of the Cassette 2>
5) Lift the 2 claws [1] slightly and slide out the grip [2] (front right).
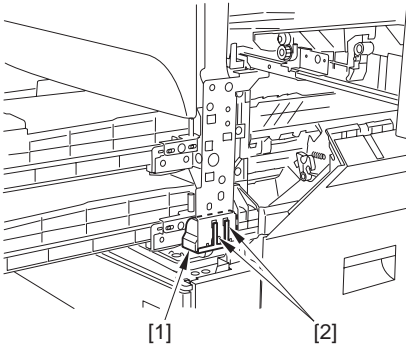
F-2-73

6) Insert the blade of the screwdriver into the hole of the front right stay and loosen the screw [1] to make an adjustment of the position of the adjusting plate [2].
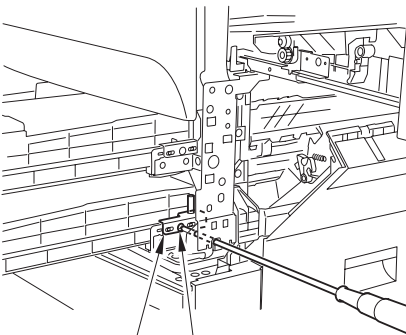
F-2-74
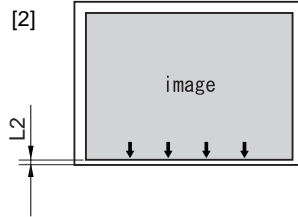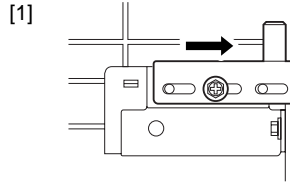
F-2-75

[1] If the adjusting plate is moved to the right,
[2] the margin of the front edge of the paper narrows.

7) Attach the cover etc., by the reverse procedure to detach them.
- handle
- front right cover
- pickup vertical path cover
- cassette

2.2.14 Adjustment of the Margin along Leading Edge of Image

- -Check to see that the margin along leading edge of image is within the range of L1=2.5 -/+ 1.5mm.

1) Enter the Service mode.
2) Select: COPIER > ADJUST > FEED-ADJ > REGIST
3) Change the setting value to adjust
(0.1mm shift by each 1 setting value. By setting greater value, the image shifts in the direction of the leading edge)

[1]
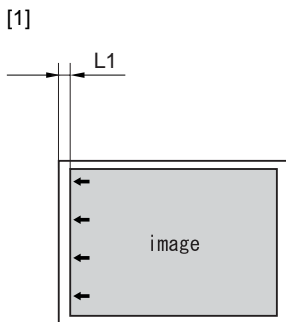
F-2-76

[1] By setting greater REGIST value, the image shifts in the direction of leading edge of the paper.

2.2.15 Adjustment of the Image Area (non-image width)

1) Enter the Service mode.
2) Select: COPIER > ADJUST > BLANK > BLANK_T/L/B/R
3) Change the setting value to adjust (Increase of setting value by 24 increases the non-image width by ca.1mm. Setting range: 0 ~ 1000)

2.2.16 Setting the Auto Gradation Adjustment

The Auto Gradation Adjustment (Full Adjust) for 'plain' and 'Heavy' must be executed by following the procedures described below.

1) Clean up the reading glass on the machine's copyboard.
2) Put A4 plain paper in Cassette 1.
3) Put A4 Heavy paper in Cassette 2.
4) Press [Registration].
5) Select [Common Settings] > [Register Paper Type] of > [Cassette 1] > [Plain] .
6) Select [Common Settings] > [Register Paper Type] of > [Cassette 2] > or [Heavy].
7) **Service Mode;**

Select COPIER > OPTION > BODY > PASCAL.
8) Check that the setup value is '1'.
9) Press [RESET] twice and get out from the service mode.
10) Press [Registration].
11) Select [Adjustment / Cleaning] > [Automatic Gradation Adjustment] > [Plain]or [Heavy] > [Full Adjust] > [Test Print 1].
In a response, test print 1 will be printed.
12) Place the test print 1 on the reading glass by following the operation screen.
13) Press [Start Scan].
In a response, test print 1 will be read.
14) Remove the test print 1 when 'Remove Test Print' is displayed.
15) Press [Test Print 2].
In a response, test print 2 will be printed.
16) Place the test print 2 on the reading glass by following the operation screen.
17) Press [Start Scan].
In a response, test print 2 will be read.
18) Remove the test print 2 when 'Remove Test Print' is displayed.
19) Press [Test Print 3].
In a response, test print 3 will be printed.
20) Place the test print 3 on the reading glass by following the operation screen.
21) Press [Start Scan].
In a response, test print 3 will be read.
22) Remove the test print 3 when 'Remove Test Print' is displayed.
23) Press [Reset] and get out from Registration.
24) Open the front cover and remove the front inside cover [1].
- Screw [2]: 1
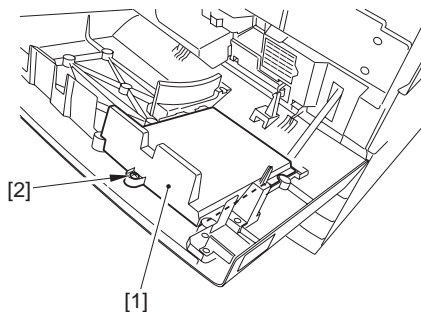
F-2-77

25) Put sheets of paper to be used in each cassette.
26) Write down necessary items in the Service Book.
27) Close the front cover.

2.3 Checking the Connection to the Network

2.3.1 Summary

Perform the following procedures only when connecting the machine to the network.
When the network environment of the user is TCP/IP, use the Ping function to check to be sure that the network configuration is performed correctly.
When the network environment of the user is IPX/SPX or Apple Talk, it is not necessary to check the above.

2.3.2 Checking the Network Connection

⚠

Perform the following procedures only when connecting the machine to the network.

1) Turn off the main power supply switch by following the shut-down sequence.
2) Connect the network cable to the machine and turn on the main power supply switch.
3) Report the completion of the installation to the user's system administrator and ask the machine's network configuration.

⚠

The following item 'Initial Setup / Register' must be 'ON' to perform the network configuration.
Initial Setup / Register > System Administration Settings > Network Settings > Change of Network Settings / Connection Check Display.

4) Turn off the main power supply switch by following the shut-down sequence.
5) Turn on the main power supply switch.

2.3.3 Ping Operation

1) Select Initial Registration > System Settings > Network Settings > TCP/IP Settings > PING Command.
2) Execute the PING command to the machines connected to the network. Enter the IP address using the numeric keypad and press [OK] key.
   If the Ping succeeds, 'response from the host' is displayed. If it fails, 'no response from the host' is displayed.
   If the message is 'no response from the host', enter 127.0.0.1 in the Ping and check to be sure that a response from the host has come.

If it fails to get a response from the host, ask the user's system administrator to check the network environment.
If there is a response from the host, the network function of the machine works normally.

2.4 Troubleshooting the Network

2.4.1 Summary

Perform the following procedures only when connecting the machine to the network.
When connecting to the network fails, the possible causes are as follows:

- Fault of the machine's TCP/IP settings.
- User Network fault.

The following is the detailed checking procedure.

2.4.2 Checking the Connection of Network Cable

1) Check to be sure if the network cable is correctly connected to the Ether port.
If the connection is wrong, correct it, and run a check once again using the remote host address.

2.4.3 Making a Check Using a Loopback Address

The loopback address comes back before reaching the network PCB. By executing the PING command using the address, you can find out whether the machine's TCP/IP settings are correct.
1) Enter the loopback address (127.0.0.1) to the PING command.
   - If the message is 'no response from the host', check the machine's TCP/IP settings and execute the PING command once again.
   - If the message is 'response from the host', make the next check.

2.4.4 Making a Check Using a Local Host Address

The 'local host address' is the IP address of the machine, and the address comes back after reaching the network PCB. By executing the PING command using the address, you can find out whether the network PCB is free of a fault.

1) Enter the machine's IP address to the PING command.
   If the message is 'no response from the host' go through the following, and execute the PING command once again.
   - The machine's IP address may be wrong: Check the machine's IP address settings, and check with the system administrator to see if the assigned IP

address is a valid one.
- The connection of the network PCB may be wrong: Check the connection of the network PCB once again.
- The network PCB may be faulty: Try replacing it.

If the message is 'response from the host', suspect a problem in the user's network environment. Report to the system administrator for appropriate action.

2.5 Installing the Copy Tray

2.5.1 Checking the Attachments (Copy Tray-N1)
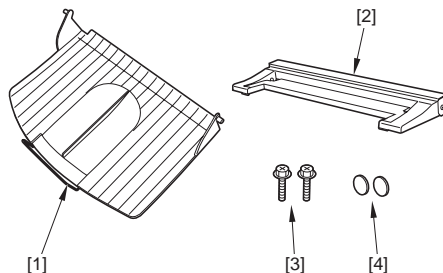
F-2-78

[1]	Delivery tray	1 pc.
[2]	Copy tray base	1 pc.
[3]	Screw (RS tightening; M4X16)	2 pc.
[4]	Face sticker	2 pc.

2.5.2 Turning Off the Host Machine

⚠ **How to Turn Off the Host Machine**
When turning off the host machine, be sure to go through the following steps to protect the hard disk:
1) Hold down the control panel power switch for 3 sec or more.
2) Operate as instructed in the shut-down sequence screen (so that the main power switch will go off automatically).
3) Disconnect the power cable (for the power outlet).

2.5.3 Installation Procedure

1) Remove the mounting screw [2] from the card reader cover [1] of the host machine. (The removed screw will no longer be used.)
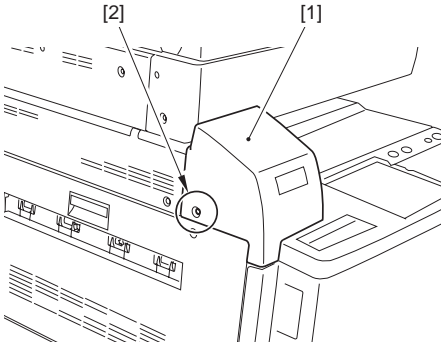
F-2-79

2) Bend the top [1] of the tray base in the direction of the arrow; then, hold it as shown, and fit the screw (RS tightening; M4X16) [2] in the hole on the left side.

⚠

The copy tray base (hereafter, "tray base") is under appreciable force by a spring. Be sure it remains bent and fixed in place. Unless it is firmly in place, you can get your hand trapped or the tray can fall out, possibly causing injuries.
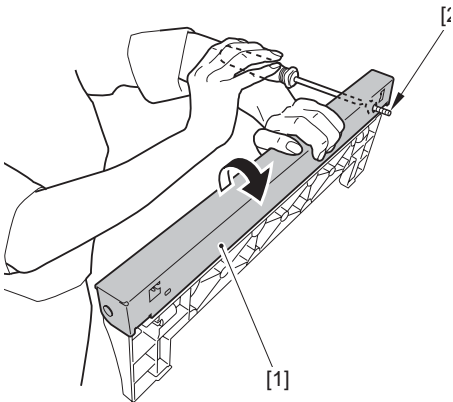
F-2-80

3) With the screw [2] fitted in the tray base [1], fit it to the host machine using the other screw (RS tightening; M4X16) [3]. (The screws are found at [A] and [B].)
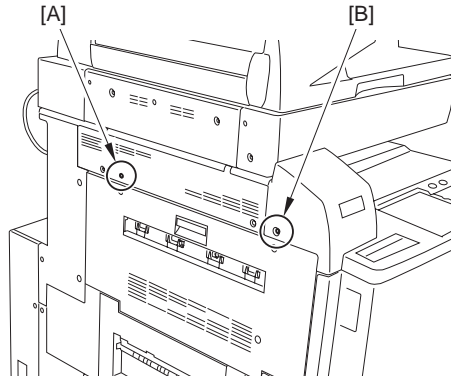
F-2-81
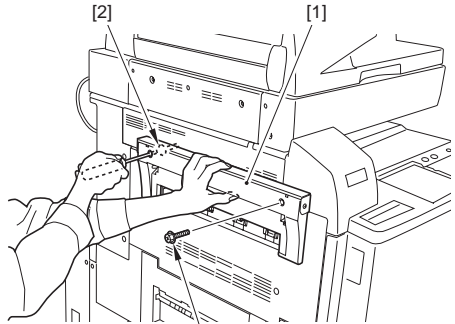
F-2-82

4) While moving down the tray base [1] slightly, match the protrusion [2] on either side of the delivery tray against the hole [3] in the tray base, and fix it in place.
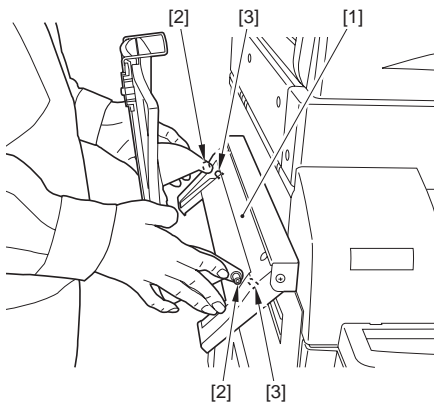
F-2-83

5) Lower the mounted delivery tray, and attach the 2 face stickers [1] over the screws.
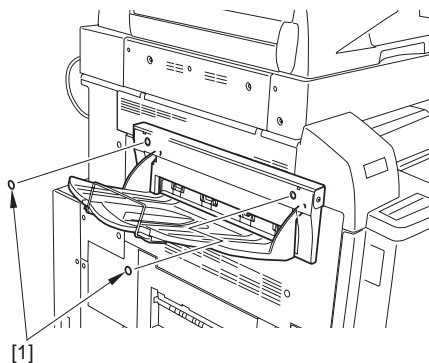
F-2-84

⚠

When detaching the delivery tray, be sure to do so while keeping the tray up. Otherwise, the force of the spring will snap up the tray base, possibly causing injuries.

2.6 Installing the Card Reader

2.6.1 Checking Contents (Card Reader-D1)
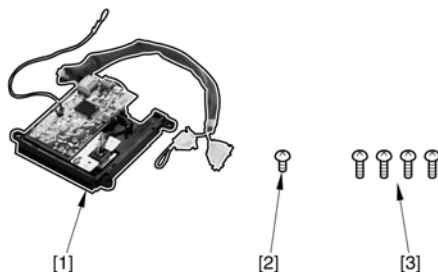
F-2-85

[1]	Card Reader	1 pc.
[2]	panhead screw (small)	1 pc.
[3]	screw (B tightening; M3X10)	4 pc.

2.6.2 Installation Procedures

1) Remove the face cap [1] and the 2 screws [2], and then detach the card reader cover [3].
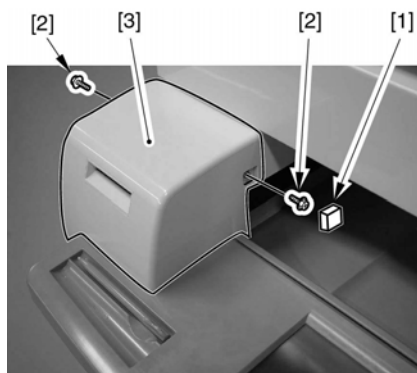
F-2-86

2) Detach the inside cover [2] by removing the 3 screws [1] on the back side of the upper left small cover, and then attach it by changing its direction as shown in the figure.

F-2-87

F-2-88

3) Attach the card reader [2] onto the inside cover with 4 truss head screws included in the package.

⚠
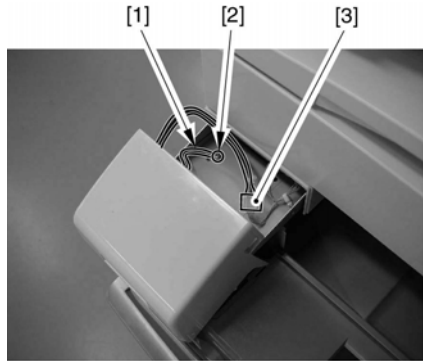
When attaching the card reader, be sure to attach it with its label indicating the direction to insert the card on the surface.

F-2-89

4) Attach the grounding wire [1] with the truss head screw [2] included in the package, and then connect the card reader connector [3] with the main body connector.

F-2-90

5) Attach the card reader cover with the screws removed in the step 1.
6) Turn ON the main power.
7) Enter the Service mode.
8) Select: COPIER > FUNCTION > INSTALL > CARD, and then enter a given number from 1 to 2001 (first number of the customer's user card)
9) Press [Reset] to exit from the service mode.
10) Turn OFF the power supply following the shut-down sequence.
11) Turn On the main power switch.

2.6.3 Installation Procedure in the imageWARE Accounting Manager (henceforth: iWAM) environment

1) Check to see that 'ID00000001 to ID00001000' have been created in '[Initial Settings / Registration] > [System Administration Settings] > [Department ID management] > [Count Management]' (In the case of entering '1' as the first number in 'Service mode > COPIER > FUNCTION > INSTALL > CARD')
2) Press [Reset] to exit from [Initial Settings/ Registration].
3) Select: [Initial Settings / Registration] > [System Administration Settings] > [Network Settings] > [TCP/IP Settings] > [IP Address], and make settings of [IP Address], [Gateway Address], and [Subnet Mask] suitable for the user's environment.
4) Press [Reset] to exit from [Initial Settings / Registration].
5)

⚠

Be sure that without selecting: [Initial Settings / Registration] > [System Administration Settings] > [System Administrator Information Settings] and then registering [System Administration Department ID] and [System Administration Password], 'Card Registration to the Device' cannot be executed in the iWAM settings.

Select: [Initial Settings / Registration] > [System Administration Settings] > [System Administrator Information Settings], and then enter given numbers for [System Administration Department ID] and [System Administration Password].
6) Press [Reset] to exit from [Initial Settings / Registration].
7) Turn OFF the power supply following the shut-down sequence.

2.7 Installing the Original Tray

2.7.1 Checking Contents (Document Tray-J1)
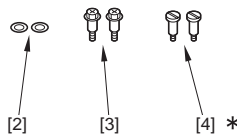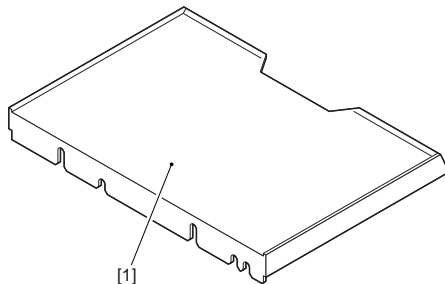
F-2-91

[1]	Document Tray-J1	1 pc.
[2]	Washer	2 pc.
[3]	Stepped screw (M4)	2 pc.
[4]*	Stepped screw	2 pc.

* Not use for the machine.

2.7.2 Installation Procedures

1) Remove the 2 face rubbers [1].
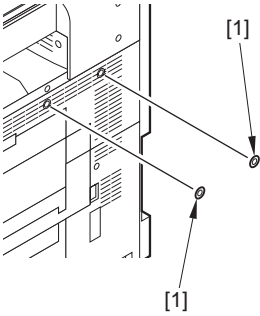
F-2-92

2) Attach 2 washers [1] and 2 stepped screws [2] to the upper right cover of the machine.
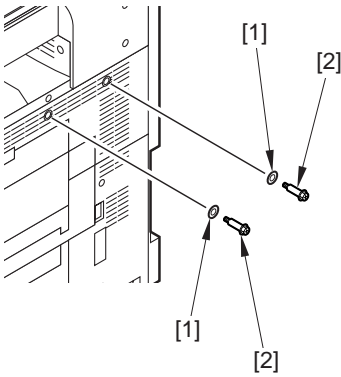
F-2-93

3) Attach the cut-off [2] of the reinforcement plate of the original holder [1] to the attached stepped screws [3].
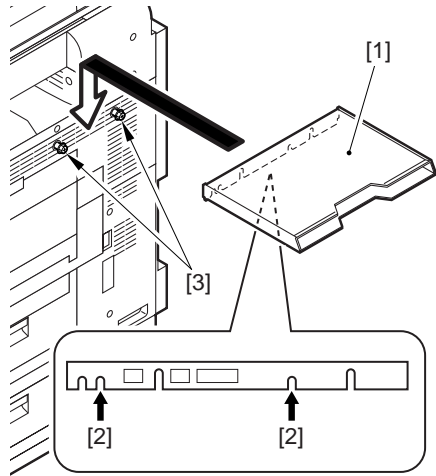
F-2-94

2.8 Installing the Key Switch Unit

2.8.1 Checking Contents (Key Switch Unit-A2)
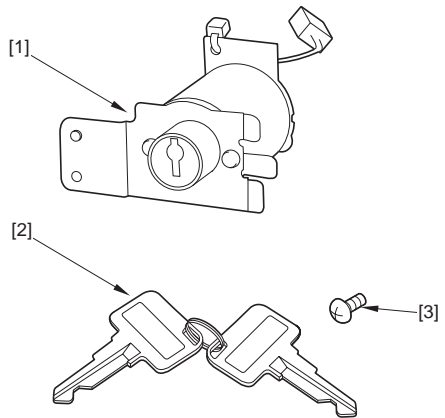
F-2-95

[1]	Key Switch Unit	1 pc.
[2]	Control Key	1 pc.
[3]	Screw (binding,; M4x6)	1 pc.

2.8.2 Installation Procedures

1) Detach the center copy tray [1].
   - 2 screws [2]

F-2-96
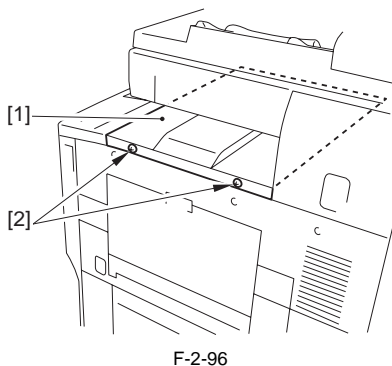
2) Slide the manual feeding tray out, and detach the center right cover [1].
   - 1 screw [2]

F-2-97
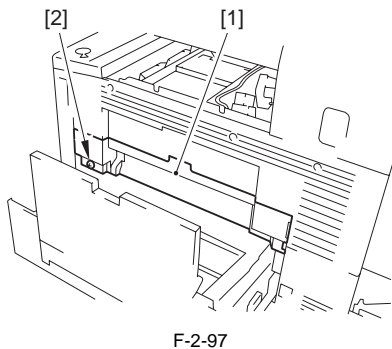
3) Detach the upper right cover [1]
   - 2 screws [2]

F-2-98
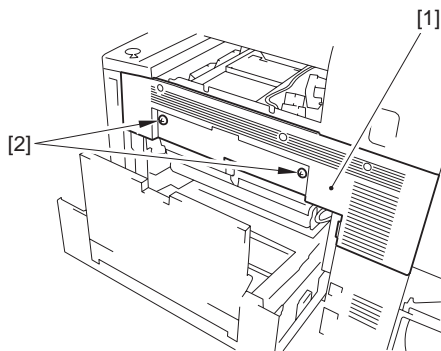
4) Cut off the [A] area of the upper right cover detached in the step 3 using nippers etc,.

F-2-99
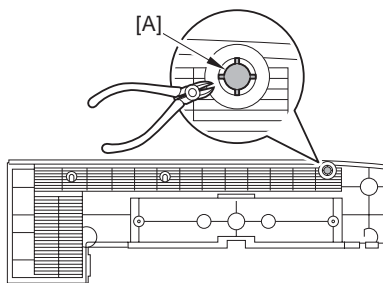
5) Attach the key switch unit to the cut-off of the upper right stay in the direction of the arrow.

F-2-100
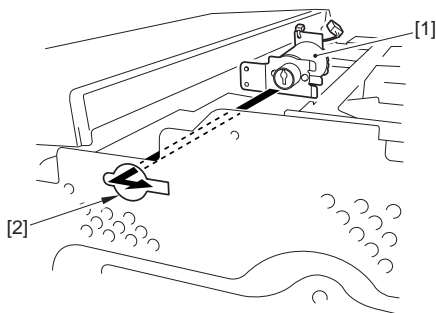
6) Fix the key switch unit [1] with the screw (binding; M4x6) [2], and connect the connector [3].
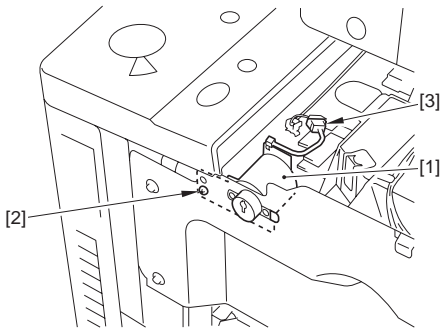
F-2-101

7) Attach the removed parts.
   - Upper right cover
   - Middle right cover
   - Center copy tray

8) Return the manual feeding tray.

2.8.3 Checking After the Installation

1) Enter the Service mode.
2) Select COPIER > FUNCTION > INSTALL > KEY, and enter '1'.
3) Turn off the power supply switch by following the shut-down sequence.
4) Turn on the main power supply switch.
5) Check that the message 'Set the control key' is displayed on the control panel screen.
6) Insert the Control Key and check that making a copy is possible.

2.9 Installing the Voice Guidance Kit

2.9.1 Checking Contents (Voice Guidance Kit-A2)
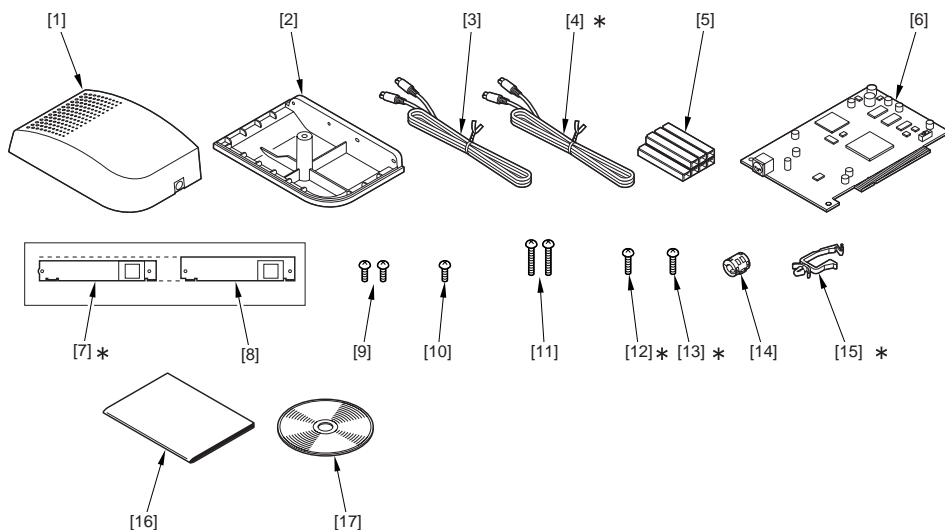
F-2-102

[1]	Speaker unit (upper)	1 pc.
[2]	Speaker unit (lower)	1 pc.
[3]	Cable (1,300 mm)	1 pc.
[4]*	Cable (1,850 mm)	1 pc.
[5]	Cord guide (Use 4 in this machine)	7 pc.
[6]	Voice board	1 pc.
[7]*	Voice board face plate	1 pc.
[8]	Voice board face plate	1 pc.
[9]	Screw (Binding; M3X6)	2 pc.
[10]	Screw (Binding; M4X6)	1 pc.
[11]	Screw (Binding; M4X40)	2 pc.
[12]*	Screw (Binding; M3X16)	1 pc.
[13]*	Screw (Binding; M4X16)	1 pc.
[14]	Ferrite core	1 pc.
[15]*	Clamp	1 pc.
[16]	User's Guide	1 pc.
[17]	17 User Manual CD-ROM	1 pc.

* Not used in this machine.

2.9.2 Turning off the Host Machine

⚠ **How to Turn Off the Host Machine**

When turning off the host machine, be sure to go through the following steps to protect the hard disk:
1) Hold down the control panel power switch for 3 sec or more.
2) Operate as instructed in the shut-down sequence screen (so that the main power switch will go off automatically).
3) Disconnect the power cable (for the power outlet).

2.9.3 Installation Procedures

1. Points to note when installing the voice guidance kit
1) Free the reader communication cable [1], reader power supply cable [2] from the 4 clamps [3], and then disconnect the connector [4].
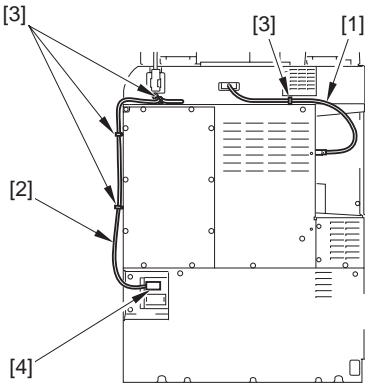
F-2-103

2) Detach the rear upper cover [1].
   - 10 screws [2]
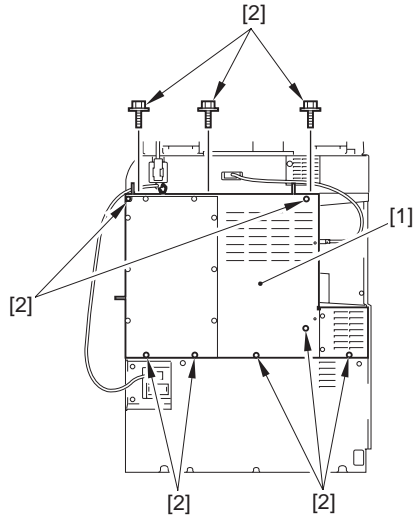
F-2-104

3) Free the cable [1] from the 2 clamps [2].
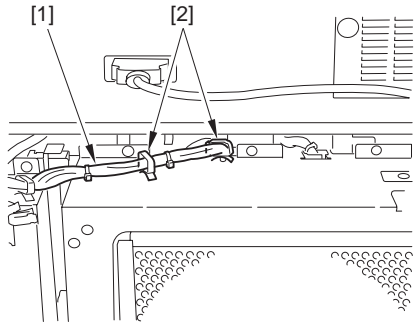
F-2-105

4) Detach the controller box cover [1].
 - 14 screws [2]

⚠

Do not drop the screws.
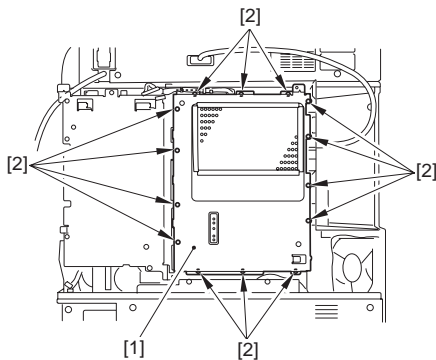
F-2-106

5) Mount the voice board face plate [2] to the voice board [1] with the 2 screws (Binding; M3X6) [3].
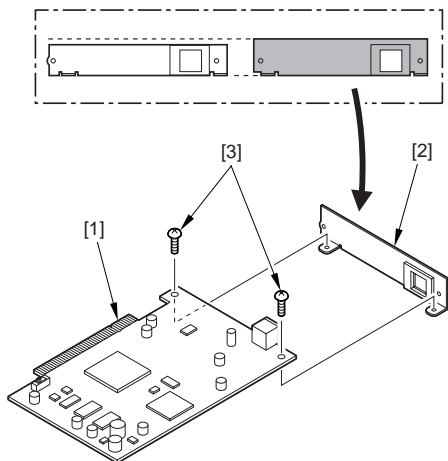
F-2-107

6) Slide the slide switch SW1 on the voice board to 66MHz from 33MHz of the factory setting.
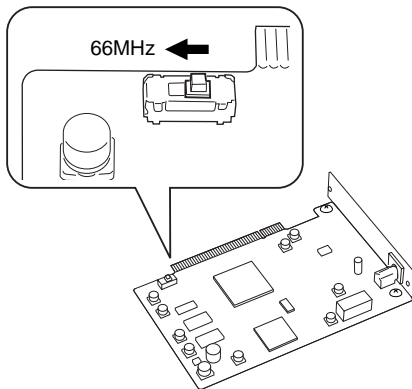
F-2-108

⚠

The slide switch SW1 on the voice board is mounted to switch between 33MHz and 66MHz in accordance with the transfer speed of PCI bus.
If the position of the switch does not match the transfer speed, the voice is not correctly played such as the interruption.
If you move the switch by mistake, be sure to return it to the correct position.
In this machine, the switch should be positioned at 66MHz.
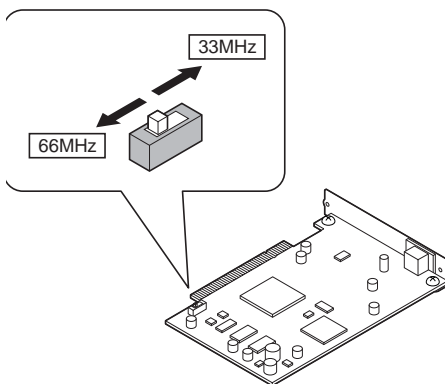
F-2-109

7) Remove the 2 screws [1] and detach the blanking plate [2].
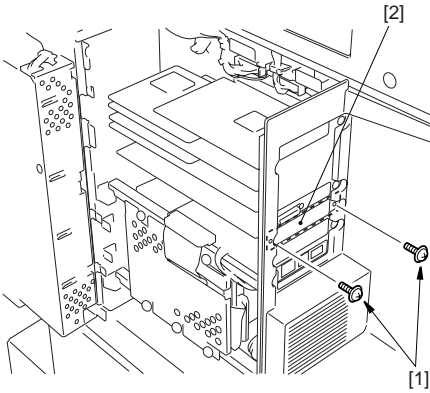
F-2-110

8) Insert the voice board [1] into the connector (J1052) of the main controller PCB and secure it with the 2 screws [2] that have been removed in step 7).

⚠
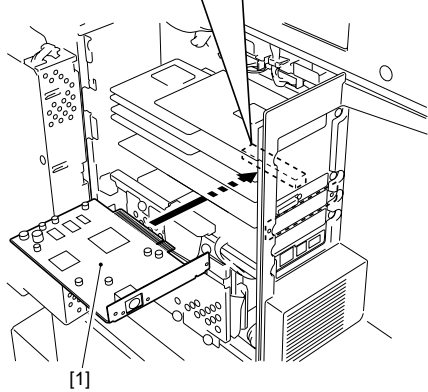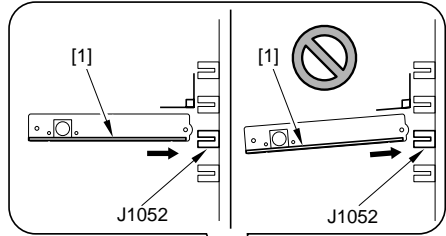
When inserting the voice board into the connector, be sure that the voice board is vertical against the connector.

F-2-111
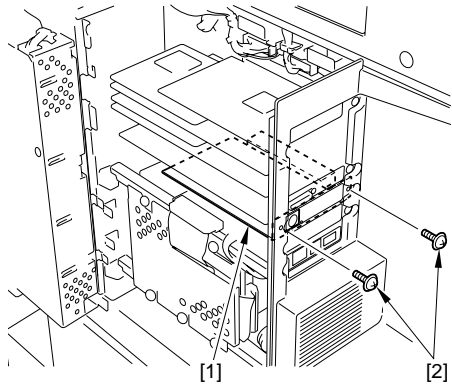
F-2-112

9) Go through the following steps to attach the removed parts.
   - Controller box cover
   - Rear upper cover

10) Fix the reader communication cable with the clamp.

11) Connect the reader power supply cable and then fix it with the clamp.
12) Remove the blanking labels [1] of the host machine.
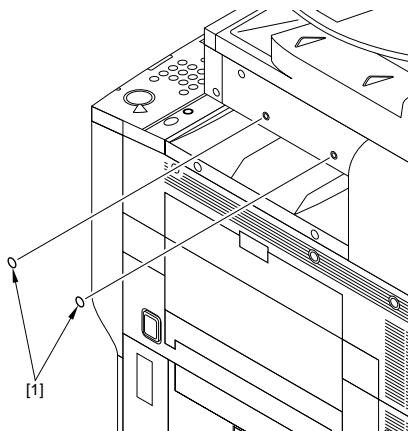
F-2-113

13) Mount the speaker unit (lower) [1] on the upper right cover of the host machine with the 2 screws (Binding; M4X40) [2].
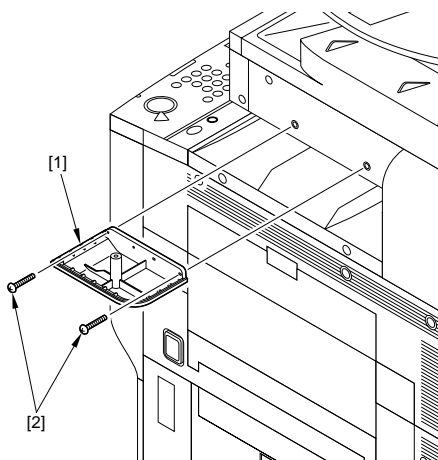
F-2-114

14) Mount the speaker unit (upper) [1] on the speaker unit (lower) that has been mounted in step 13, and fix them with the screw (Binding; M4X6) [2] from underneath.
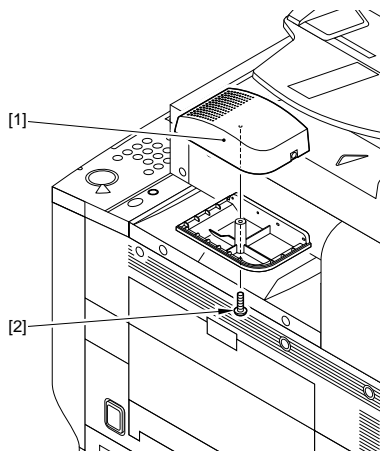
F-2-115

15) Slide out the cord guide cover [1].
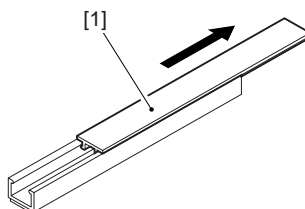
F-2-116

16) Remove the released paper from the cord guide [1] and attach the guide to the host machine as shown in the figure.

⚠️

Be careful not to cover the screw hole [2] entirely or partially with the cord guide [1].

On the right ... 1 location
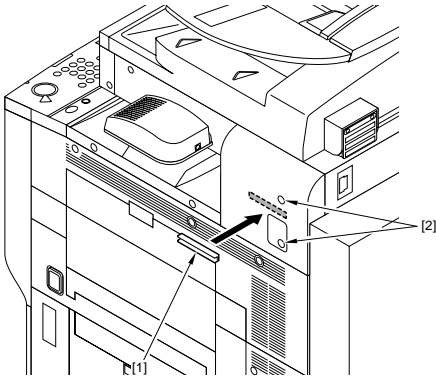
F-2-117

⚠

Be careful not to cover the screw hole [2] entirely or partially with the cord guide [1].

On the back ... 3 locations
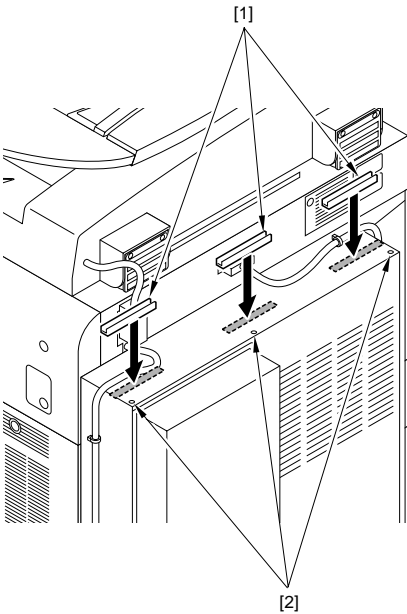
F-2-118

17) Plug the cable [2] into the speaker unit.
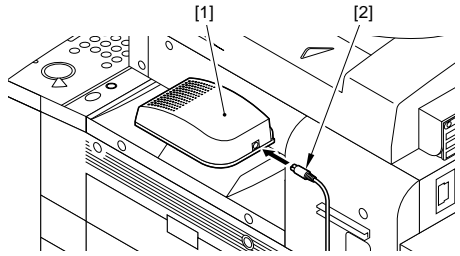
F-2-119

18) Route the cable [1] through the cord guide [2] and slide in the cord guide cover [3].
   On the right ... 1 location
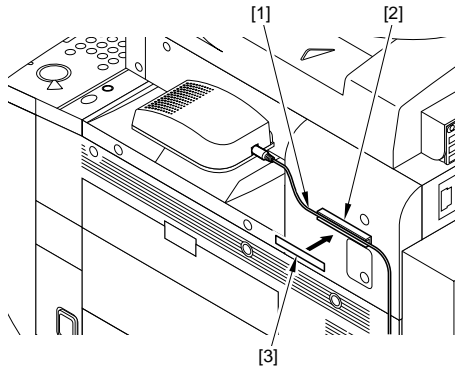
F-2-120

⚠

Put the cable through under the reader power supply cable [4].

On the back ... 3 locations
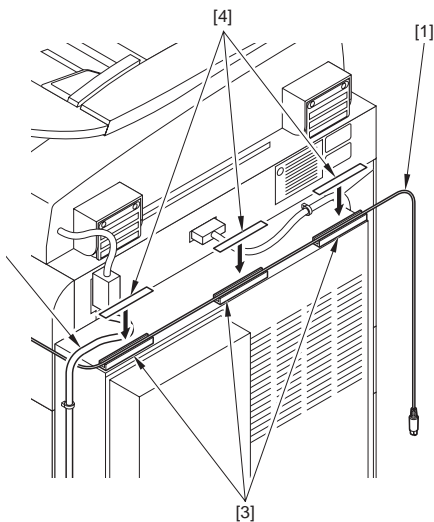
F-2-121

19) Attach the ferrite core [1] to the cable.
Be sure that the length [2] is 50 mm or shorter.
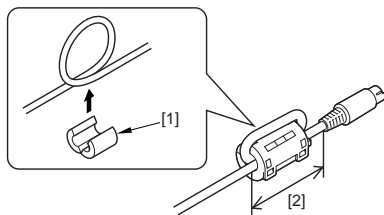
F-2-122

20) Connect the cable [1] to the terminal [2] of the voice board.
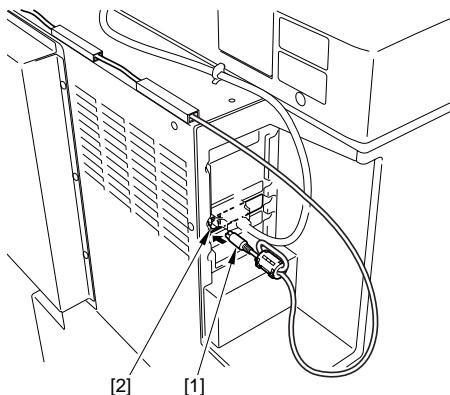
F-2-123

21) Plug the power cable (for socket) of the host machine into the outlet.
22) Turn on the main power switch.
23) Check to be sure that the voice board is recognized.
24) Enter the Service mode.
25) Select COPIER > DISPLAY > ACC-STS > PCI1. If "Voice Board" is displayed, that means that the voice board is correctly recognized.

3. Setting after the installation
To use the voice guidance kit-A2 after power-on, it is necessary to set the followings.
1) Select Initial Registration > System Setting > Voice Guide Management Settings > Use Voice Guide.
2) Select 'ON' key.
3) Press 'OK' key.
Default: OFF

4. Checking the Operation
- When using the voice guidance
  1) Press 'Reset' key for 3 sec or longer.
  2) When the display of the number of copy is enclosed with red lines on the screen, "Voice Guidance" becomes enabled.
- When stopping the usage
  1) Press 'Reset' key for 3 sec or longer

Chapter 3

BASIC OPERATION

Contents

3.1 Construction

3.1.1 Functional Construction

The machine can roughly be divided into the following functional blocks:
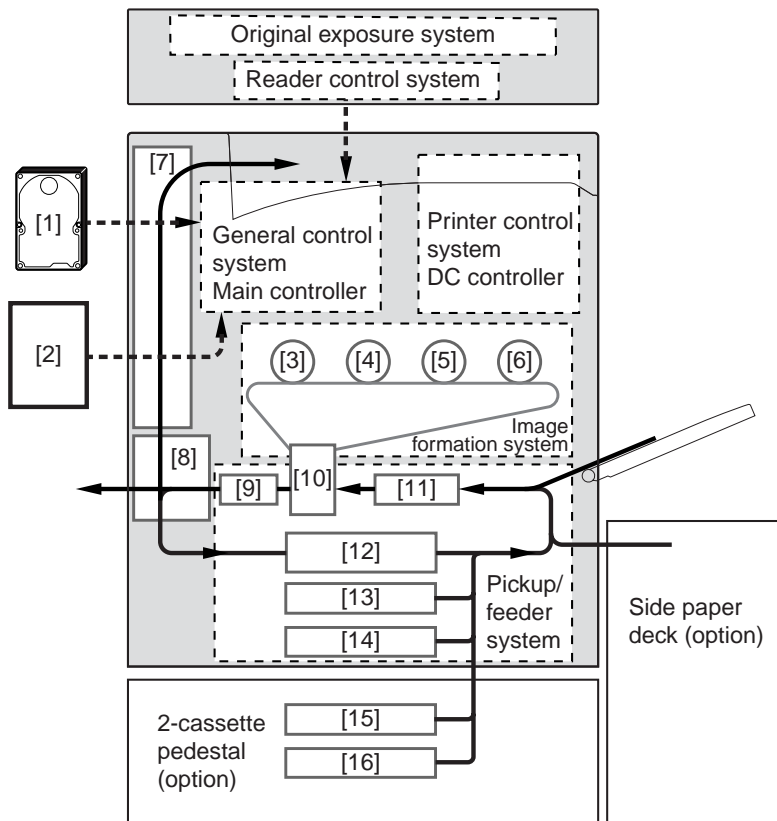
F-3-1

T-3-1

[1] HDD	[9] Feeding system
[2] Option boards	[10] Transfer system
[3] Photosensitive drum (Y)	[11] Pickup control
[4] Photosensitive drum (M)	[12] Duplex/feeder
[5] Photosensitive drum (C)	[13] Cassette 1
[6] Photosensitive drum (Bk)	[14] Cassette 2
[7] Delivery system	[15] Cassette 3
[8] Fixing system	[16] Cassette 4

3.2 Basic Sequence

3.2.1 Basic Sequence When the Power Is ON

T-3-2

Interval Name	Definition of Interval
SREDY(Scanner Ready)	An interval in which the shading correction is executed after the Start key is pressed.
SSTBY(Scanner Standby)	An interval between the completion of the shading correction and switching the Start key ON / turning the main power OFF.
WMUP(Warm-up)	An interval in which the drive system stops, and it ends when the completion requirements of the fixing assembly startup is fulfilled.
WMUPR(Warm-up Rotation)	An interval in which the drive system starts, and the bias adjustment is executed.
PSTBY(Printer Standby)	An interval in which the copy/print request signal can be accepted.

Main power switch ON

Reader

	SREADY	STBY
Reader Motor	Forwarding Backwarding	Backwarding Forwarding
Scanning Lamp		
HP Sensor		

Shift shading
Fixing shading
White plate dust detection control
Shading correction

Optical unit position

HP (Shading position)　　　　　HP (Shading position)

Gain correction
Offset correction

In the iR C5180 and 230 U-model, it starts when the main power switch is turned ON.

Standby state
(The fixing belt and the pressure belt fulfill the target temperature and the lapsed time.)

Printer Unit　Main power switch ON

	WMUP	WMUPR	PSTBY
IH Heater (H1)	90℃		
Pressure Heater (H2)			
Developing Cylinder			
Drum ITB Motor (M1)			
Fixing Motor (M24)			
Automatic Adjustment			

In case of a new cartridge, rotates for 20 sec.
In other cases, rotates for 0.3 sec.

Depending on the fixing roller surface temperature at the time of the main power ON, execute the following control.
- When the temperature is under 100 deg C.
  1. Discharging current control
  2. ATVC control
  3. ATR control
  4. SALT-Dmax control
  5. Image positioning correction
  6. SALT-Dhalf control
- When the temperature is above 100 deg C.
  1. Discharging current control
  2. ATVC control
  3. Image positioning correction

F-3-2

3.2.2 Basic Sequence of Operations

1. Full color
Full color, A4, 2 prints (continuous), 1-to-1 copy, cassette 1 pickup

T-3-3

Interval Name	Definition of Interval
SREDY(Scanner Ready)	An interval in which the shading correction is executed after the Start key is pressed.
SSTBY(Scanner Standby)	An interval between the completion of the shading correction and switching the Start key ON / turning the main power OFF.
PSTBY(Print Standby State)	An interval in which the copy/print request signal can be accepted.
PINTR(Printer Initial Rotation)	An interval between the reception of the print request signal and the state the image signal is sent.
PRINT	An interval in which all toner is transferred on the paper, and the paper is delivered.
LSTR(Last Rotation)	An interval between the completion of the paper delivery and the stop of all drives.

Start Key
ON
▽

	STBY	SREADY	SCRW	SCFW	STBY
Reader Motor		Forwarding Backwarding	Backwarding Forwarding	Forwarding Forwarding Backwarding Forwarding	
Scanning Lamp					
HP Sensor	CONT		ON		
Optical unit position		△	△	△	△

HP (Shading)   Stream reading position   End of the image   HP (Shading)

Start Key   Image forming
ON   possible timing

Interval for stabilizing the rotation
(iRC5180:1.65, iRC4560/3880:1.45)

Printer Unit

	PSTBY	PINTR	PRINT	LSTR	PSTBY
Laser Scanner Motor (M2~M5)(Y,M,C,Bk)					
ITOP Signal					
Laser Lighting					
Toner Container Motor (M20~23)(Y,M,C,Bk)					
Developing Assembly Motor (M12~15)(Y,M,C,Bk)					
Developing Bias					
Primary Charging Roller					
Drum ITB Motor(M1)					
Cassette 1 Pickup Motor (M6)					
Cassette 1 Pickup Solenoid (SL3)					
Pre-registration Motor(M9)					
Registration Motor(M8)					
Fixing Motor(M24)					
IH Heater(H1)		*1			
Pressure Heater(H2)					

Executing the acceleration/half-speed/
normal speed control (In order to
synchronize the transfer timing
and the process speed.)

*1: iRC5180,iRC4580/3880(230V)only

F-3-3

1. Monochrome
monochrome, A4, 2 copies continuous, 100%, cassette 1

T-3-4

Interval Name	Definition of Interval
SREDY(Scanner Ready)	An interval in which the shading correction is executed after the Start key is pressed.
SSTBY(Scanner Standby)	An interval between the completion of the shading correction and switching the Start key ON / turning the main power OFF.
PSTBY(Print Standby State)	An interval in which the copy/print request signal can be accepted.
PINTR(Printer Initial Rotation)	An interval between the reception of the print request signal and the state the image signal is sent.
PRINT	An interval in which all toner is transferred on the paper, and the paper is delivered.
LSTR(Last Rotation)	An interval between the completion of the paper delivery and the stop of all drives.

Start Key
ON

	STBY	SREADY	SCRW	SCFW	STBY
Reader Motor		Forwarding Backwarding	Forwarding Backwarding Backwarding	Forwarding Forwarding Backwarding Forwarding	
Scanning Lamp					
HP Sensor	CONT		ON		
Optical unit position					

HP (Shading)　　　Stream reading position　　　End of the image　　　HP (Shading)

Start Key Image forming
ON　　possible timing

Interval for stabilizing the rotation
(iRC5180:1.65, iRC4560/3880:1.45)

Printer Unit

	PSTBY	PINTR	PRINT	LSTR	PSTBY
Laser Scanner Motor (Bk) (M5)					
ITOP Signal					
Laser Lighting					
Toner Container Motor (Bk) (M23)					
Developing Assembly Motor (Bk) (M15)					
Developing Bias					
Primary Charging Roller					
Drum ITB Motor(M1)					
Cassette 1 Pickup Motor (M6)					
Cassette 1 Pickup Solenoid (SL3)					
Pre-registration Motor(M9)					
Registration Motor(M8)					
Fixing Motor(M24)					
IH Heater(H1)					
Pressure Heater(H2)					

Executing the acceleration/half-speed/
normal speed control
(In order to synchronize the
transfer timing and the process speed.)

F-3-4

3-7

Chapter 4

BASIC OPERATIONS
(AS A PRINTER)

Contents

4.1 Construction of the Electrical Circuitry

4.1.1 Configuration of Main PCBs

F-4-1

[1] Main Controller PCB (main)

[2] DC Controller PCB 1 (IMG)

[3] DC Controller PCB 2 (MAISY)

[4] Mount

[5] AC Driver PCB

[6] Relay PCB

[7] All Night Power PCB

[8] Main Power PCB

[9] IH Power PCB

[10] DC/DC Converter PCB (12/5/3.3V)

[11] DC/DC Converter PCB (38V) 1

[12] DC/DC Converter PCB (38V) 2

[13] HV1 Mount (Y)

[14] HV1 Mount (M)

[15] HV1 Mount (C)

[16] HV1 Mount (Bk)

[17] HV1_SUB PCB

[18] HV2 PCB

[19] HV2_SUB PCB

[20] HV3 PCB

[21] HV4 PCB (Y, M)

[22] HV4 PCB (C, Bk)

[23] Control Panel CPU PCB

[24] Laser Driver PCB (Y)

[25] Laser Driver PCB (M)

[26] Laser Driver PCB (C)

[27] Laser Driver PCB (Bk)

[28] BD Detection PCB (Y)

[29] BD Detection PCB (Y)

[30] BD Detection PCB (Y)

[31] BD Detection PCB (Y)

⚠️

The symbol <=> in the figure indicates the main connections between PCBs, not the signal direction.

4.1.2 DC Controller PCB 1 (IMG)

The main IC functions of the DC controller PCB 1 (IMG) is shown below.
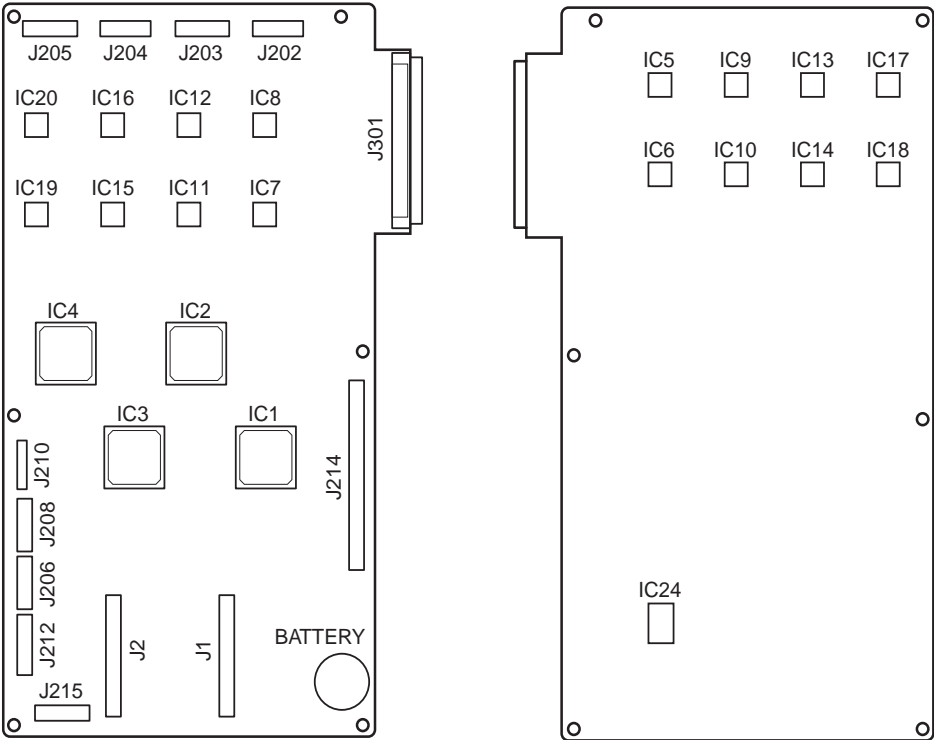
F-4-2

T-4-1

IC No.	ASIC Name	Main Function
IC1	IMG(Y)	1. Image processing
IC2	IMG(M)	Receives the image data from the controller.
IC3	IMG(C)	Send the image data to the PM1100 (PWMIC).
IC4	IMG(K)	Setup each image setting (e.g., laser write start timing, flame) via PM110 (PWMIC). 2. Laser Scanner Motor Control 3. Laser Driver Control
IC5 to 8	PWM(Y)	Execute the pulse width modulation depending on the density of the image data that is received in parallel, and output. 5 to 8: For A to D beams of the Y laser. 9 to 12: For A to D beams of the M laser. 13 to 16: For A to D beams of the C laser. 17 to 20: For A to D beams of the K laser.
IC9 to 12	PWM(M)	
IC13 to 16	PWM(C)	
IC17 to 20	PWM(K)	
IC21	CPU	-
IC22	EEPROM	Embedded startup program. (BOOT is embedded.)
IC23	SRAM	Retain the setup data of the service mode.
IC24	FLASH ROM	Store the firmware.

4.1.3 DC Controller PCB 2 (MAISY)

The main IC functions of the DC controller PCB 2 (MAISY) is shown below.

J106   J103   J107   J105

J110

J104

J108

J102

IC1

J109

J112

IC2   IC3

J113

J116

IC4

J101

J114

J115

J119

J117

J100   J120   J118
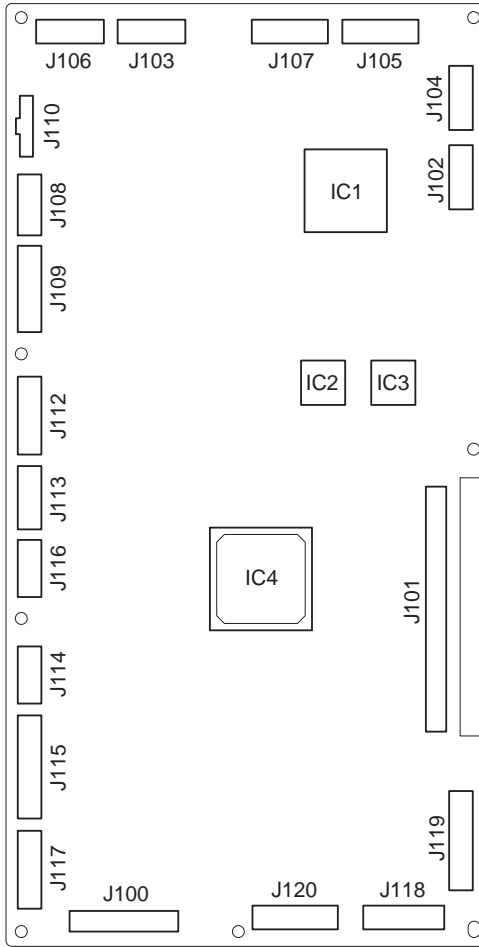
F-4-3

T-4-2

IC No.	ASIC Name	Main Function
IC1	TREAD	IH Control, Halogen Heater Control, AD Control (Thermistor temperature, temperature sensor), Stepping Motor Control (fixing), Cartridge Memory Control, Fixing Motor Control, Safety Circuit of the Fixing Assembly, I/O (mainly Fan Motor Control)
IC2	-	I/O (Everything that can be controlled with the digital values.)
IC3	-	Input of each sensor, Fan Motor Control, Solenoid/Clutch Control, High-Voltage Control (Excludes the analog value.)
IC4	MAISY	1. Stepping Motor Control (Pickup Motor, Pre-registration Motor, Registration Motor, Duplexing Motor, Developing Assembly Motor (Y/M/C/K) 2. Toner Container Motor (Y/M/C/K) Control 3. High-Voltage Clock Generation 4. Drum ITB Motor Drive Clock Generation 5. Registration Sensor 6. DA Control (for high-voltage control)

4.2 Basic Sequence

4.2.1 Basic Sequence of Operations

T-4-3

Interval Name	Definition of Interval
WMUP(Warm-up)	An interval in which the drive system stops, and it ends when the completion requirements of the fixing assembly startup is fulfilled.
WMUPR(Warm-up Rotation)	An interval in which the drive system starts, and the bias adjustment is executed.
PSTBY(Printer Standby)	An interval in which the copy/print request signal can be accepted.

F-4-4

4.2.2 Basic Sequence of Operations

1. Full color
Full color, A4, 2 prints (continuous), 1-to-1 copy, cassette 1 pickup

T-4-4

Interval Name	Definition of Interval
PSTBY(Print Standby State)	An interval in which the copy/print request signal can be accepted.
PINTR(Printer Initial Rotation)	An interval between the reception of the print request signal and the state the image signal is sent.
PRINT	An interval in which all toner is transferred on the paper, and the paper is delivered.
LSTR(Last Rotation)	An interval between the completion of the paper delivery and the stop of all drives.

F-4-5

1. Monochrome
monochrome, A4, 2 copies continuous, 100%, cassette 1

T-4-5

Interval Name	Definition of Interval
PSTBY(Print Standby State)	An interval in which the copy/print request signal can be accepted.
PINTR(Printer Initial Rotation)	An interval between the reception of the print request signal and the state the image signal is sent.
PRINT	An interval in which all toner is transferred on the paper, and the paper is delivered.
LSTR(Last Rotation)	An interval between the completion of the paper delivery and the stop of all drives.

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Chapter 5

MAIN CONTROLLER

Contents

5.1 Construction

5.1.1 Configuration/Functions

The Main Controller primarily has the following configuration and functions.

T-5-1

	PC Board Name	**Function**
[1]	Main Controller Circuit Board (MAIN)	System control, memory control, and printer output image processing control
[2]	Main Controller Circuit Board (SUB R-A)	Color space conversion, rotation for electronic sorting, binarization, resolution conversion
[3]	Main Controller Circuit Board (SUB PDRM-EF-A)	Image processing for printer output (color space compression, under color removal, log conversion, direct mapping, color balance, fine zoom adjustment, gradation conversion, screen processing, trimming, add-on)
[4]	Main Controller Circuit Board (SUB SJ-A)	Scanner interface, scanner image processing (resolution conversion, image rotation, compression/decompression)
[5]	Main Controller Circuit Board (SUB LAN-bar-A)	LAN connection, HDD controller, HDD power supply
[6]	BOOT ROM	ROM memory storing the boot program
[7]	SRAM Circuit Board	SRAM mounting
[8]	DDR-SDRAM	Program-related data save, image data save
[9]	Main Controller Circuit Board (SUB RB-A)	Transform 1200dpi PDL image data with character spacing information equivalent to 1200dpi into image data equivalent to 600dpi.
HDD	HDD	System software storage, image data storage, image data save for BOX/FAX function
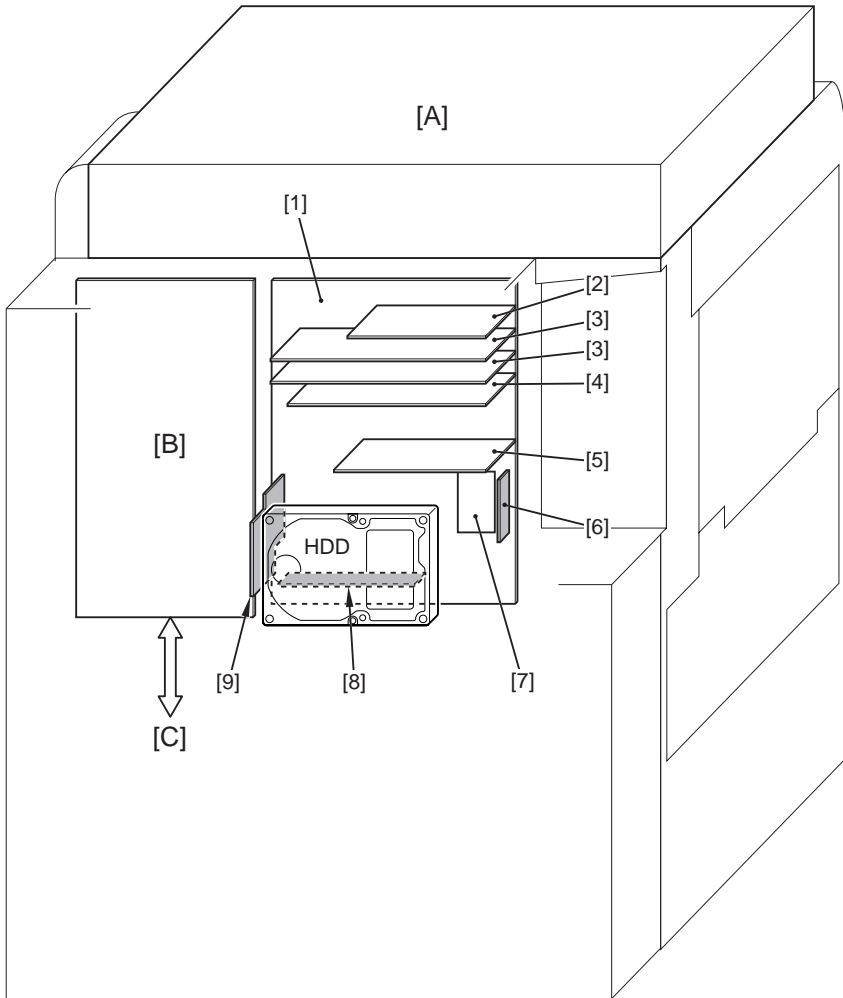
F-5-1

[A]   Reader Unit

[B]   DC controller Circuit Board

[C]   Printer Unit

5.2 Construction of the Electrical Circuitry

5.2.1 Main Controller Circuit Board (MAIN)

The main jacks of the Main Controller Circuit Board (MAIN) are shown below.
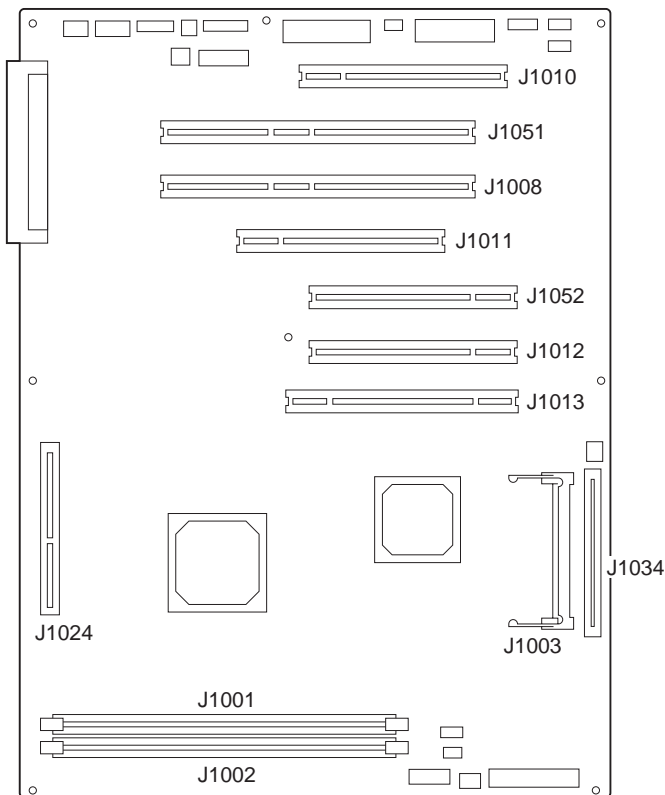
F-5-2

T-5-2

J No.	Function
J1001	Image memory (1GB DDR-SDRAM standard)
J1002	Image memory (512 MB DDR-SDRAM) *1
J1003	SRAM circuit board connector slot
J1008	Main Controller Circuit Board (SUB PDRM-EF-A) connector slot
J1010	Main Controller Circuit Board (SUB R-A) connector slot
J1011	Main Controller Circuit Board (SUB SJ-A) connector slot
J1012	Option board connector slot (Security expansion board)

J No.	Function
J1013	Main Controller Circuit Board (SUB LAN-bar-A) connector slot
J1024	Main Controller Circuit Board (SUB RB-A) connector slot *1
J1034	BOOTROM connector slot
J1051	Main Controller Circuit Board (SUB PDRM-EF-A) connector slot
J1052	Option board connector slot (Voice guidance board)

*1 This may be optional due to the model.

5.2.2 SRAM Circuit Board

Primary control of the SRAM Circuit Board is shown below for each IC.

Front
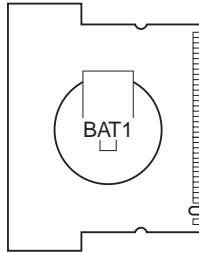
F-5-3

Back
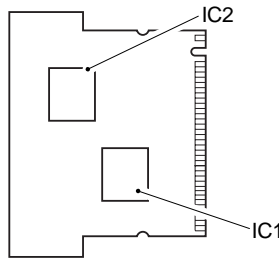
F-5-4

T-5-3

IC No.	Function
IC1,2(SRAM)	Saves image data management information, service mode settings data, and user mode settings data saved on the HDD

5.3 Start-Up Sequence

5.3.1 Overview

The system software used to control the operation of the machine is stored on the HDD.
When the machine is started up, the CPU on the main controller PCB reads the system software from the HDD into the image memory (DDR-SDRAM) of the main controller PCB for use as instructed by the boot program of the boot ROM.
The following screen remains on the control panel white the CPU is reading the system memory from the HDD into the image memory (DDR-SDRAM), with the bar indicating the progress of the startup sequence.
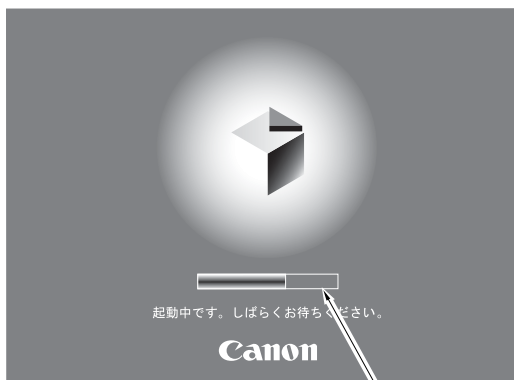
Progress bar

F-5-5

⚠ Never turn off the main power while the progress bar is indicated. The CPU is accessing the HDD, and turning off the power can cause a fault (E602) on the HDD.

5.3.2 Start-Up Sequence

Start-Up Sequence
<Boot Program Area>

-Boot Program (interval 1)

The boot program is executed by the CPU on the main controller PCB when the main power switch is turned on, making checks on the image memory (DDR-SDRAM) and the HDD condition.

An error code will be indicated if a fault is detected. If the check ends normally, the control program is read from the HDD to the memory.

<Control Program Area>
-Control Program 1 (interval 2)

1.The individual devices (i.e., hardware components on the controller PCB) are checked and initialized.
2.If the engine was not previously turned off appropriately (i.e., by performing its shut-down sequence), the system files are repaired as necessary. (The engine may need an extra time when starting up.)
3.The individual program modules are initialized.

-Control Program 2 (interval 3)

1. The individual software modules are initialized, and the printer and screen configurations are established.
2. The start-up sequence ends when the printer and scanner are correctly recognized. Otherwise, an error code (E732/E733) will be indicated at the end of a connection time-out.

The engine becomes ready to accept a job when the start-up sequence ends normally. (Its control panel displays the control screen, and the Start key LED changes from red to green.)

F-5-6
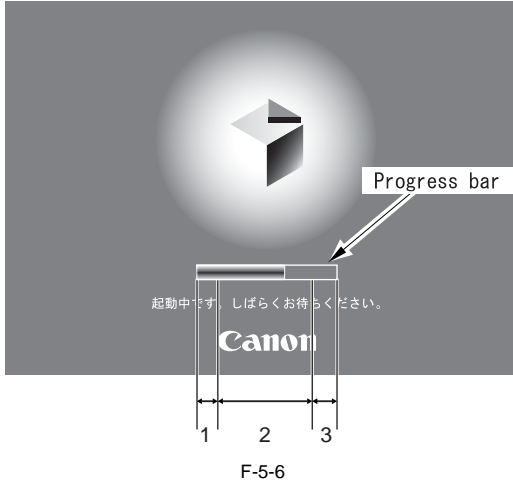
-When Executing the Boot Program

Image memory (DDR-SDRAM)

System area

Image data area

CPU

System software

HDD

Self diagnostic program

Boot program

BootROM

Main controller PCB (main)
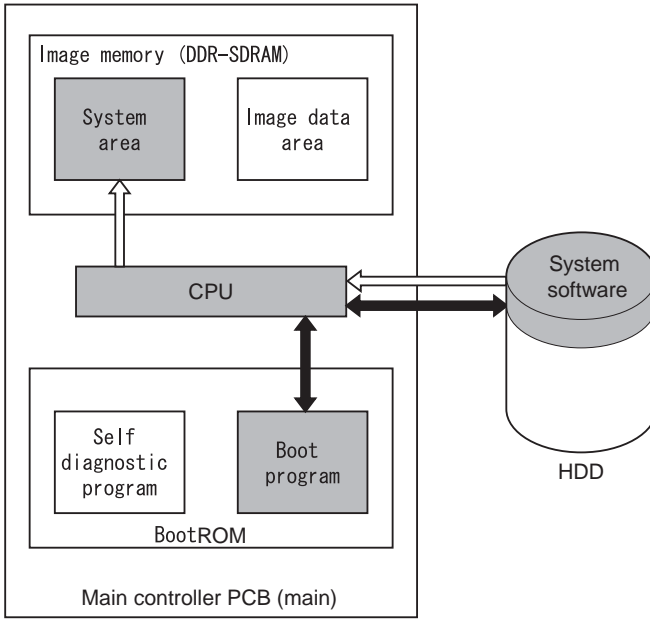
◄───► : access to the program at time of execution.
◄═══ : flow of system program operations.

F-5-7

-When Executing the Control Program

mage memory (DDR-SDRAM)

System area

Image data area

CPU

Self diagnostic program

Boot program

BootROM

Main controller PCB (main)

HDD
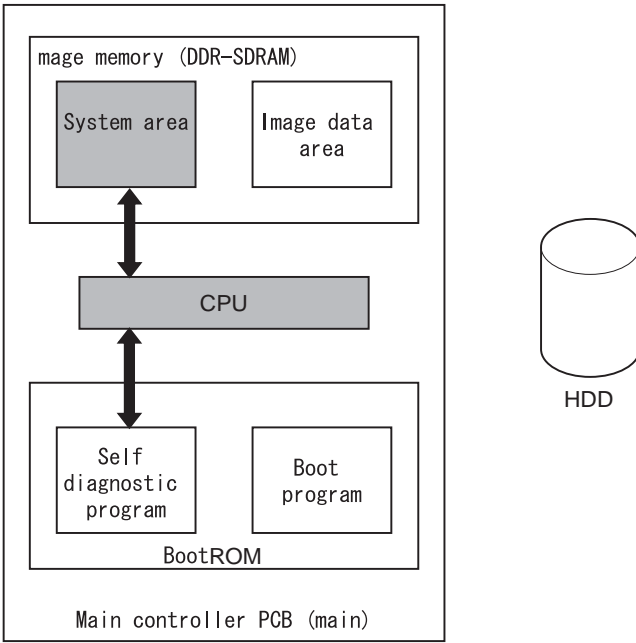
: access to the program at time of execution.

F-5-8

5.4 Actions when HDD Error

5.4.1 E602 Details

E602-XXYY

- When XX=00
*1
CHK-TYPE = COPIER>FUNCTION>SYSTEM>CHK-TYPE
   (Specifies the partitions to be formatted by HD-CLEAR)
HD-CHECK = COPIER>FUNCTION>SYSTEM>HD-CHECK
   (Performs Write Abort repairs for the entire HDD when CHK-TYPE = 0)
HD-CLEAR = COPIER>FUNCTION>SYSTEM>HD-CLEAR
   (Formats the partitions specified by CHK-TYPE)

T-5-4

XX	YY	Description	Remedy
00	01	HDD cannot be recognized. Boot partition (BOOTDEV) not found during startup.	1. Turn the Main Power Switch OFF and check the HDD cable connection. After confirmation, turn the Main Power Switch ON. 2. After turning the Main Power Switch ON, check that the HDD spins up and that 5 V/12 V power is being supplied. 3. If the above does not correct the problem, replace the HDD and reinstall the system. If this doesn't work, replace the main board.
	02	No system for main CPU	1. Start the system in Safe Mode (1+7), perform a full format using SST, reinstall the system (System, Lang, RUI), and turn the Main Power Switch OFF and then ON again. 2. If the above does not correct the problem, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.
	03	WriteAbort detected for Boot Device	1. Perform Write Abort Sector detect and repair. <When a monochrome-related Error Code is displayed> 1-1. Since Service Mode cannot be entered, perform the following procedure. 1-2. Turn the power OFF. Turn the power ON again while holding down the 1 and 9 keys. This will automatically start the Write Abort Sector repair routine, causing the screen to go completely black. 1-3. Progress status will appear after a short time as this routine takes about 40 to 50 minutes to execute. Execution is done when the screen goes completely white. <When wrench mark (normal indication) is displayed> 1-1. Set CHK-TYPE = 0, execute HD-CHECK (takes 40 to 50 minutes), and turn the Main Power Switch OFF and then ON again. 2. If the above does not correct the problem, start up in Safe Mode, perform a full format using SST, reinstall the system (System, Lang, RUI), and turn the Main Power Switch OFF and then ON again. 3. If the problem is still not corrected, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.
	06	No system for sub-CPU	1. Start the system in Safe Mode (1+7), perform a full format using SST, reinstall the system (System, Lang, RUI), and turn the Main Power Switch OFF and then ON again. 2. If the above does not correct the problem, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.
	07	No ICCProfile	1. Start the system in Safe Mode (1+7), perform a full format using SST, reinstall the system (System, Lang, RUI), and turn the Main Power Switch OFF and then ON again. 2. If the above does not correct the problem, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.

- When XX=01 - FF

T-5-5

XX				YY					HDD Format		
XX	CHK-TYPE	Corresponding Partition	Contents	YY=03	YY=05	YY=00,01,02,04	YY=11,21	YY=13,25	YY=10,12,14,22,23,24			
				Generated at Startup			During Normal Operation					
				Remedy	Remedy	Remedy	Remedy	Remedy	Remedy	Typical Items Deleted	HDD Format during HD-CLEAR	HDD Format during Normal Mode+SST	HDD format during Safe Mode +SST
1	1	FSTDEV	Image date save area (BOX, etc.)	#1	#5	#9	#10	#11	#12	All accumulated image data, such as BOX, etc.	Possible (3 partitions at once)	Specify FSTDEV (3 partitions at once)	-
2		IMG_MNG	Image management data, etc	#1	#5	#9	#10	#11	#12				
3		FSTCDEV	Image data save area (for Chasing)	#1	#5	#9	#10	#11	#12				
4		THUMDEV	Thumbnail	#1	#5	#9	#10	#11	#12				
5	2	APL_GEN	General-purpose data save area	#1	#5	#9	#10	#11	#12	General	Possible (4 partitions at once)	Specify APL_GEN (4 partitions at once)	
6		TMP_GEN	General-purpose data save data (temporary files)	#1	#5	#9	#10	#11	#12	General			
7		TMP_FAX	FAX (temporary files)	#1	#5	#9	#10	#11	#12	FAX			
8		TMP_PSS	PSS (temporary files)	#1	#5	#9	#10	#11	#12	PSS			
9	3	PDLDEV	PDL-related file save area (fonts, registration forms, color correction information file for ICCProfile-PDL function)	#1	#5	#9	#10	#11	#12	UserFont IccProfile	Possible	Specify PDLDEV	

10	4	BOOTDEV	Firmware save area (Bootable, MEAP, key, ID, PDF dictionary, RUI contents, audio dictionary (ICC profile, PS test data))	#3	#8	#9	#10	#11	#12	System	Impossible	Impossible	
11	5	APL_MEAP	MEAP	#1	#5	#9	#10	#11	#12	MEAP	Possible	Possible	
12	6	APL_SEND	Address book, filter	#2	#5	#9	#10	#11	#12	SEND	Impossible	Impossible	
13	7	APL_KEEP	MEAP save data	#3	#8	#9	#10	#11	#12	System	Impossible	Impossible	
14	8	APL_LOG	System log save area	#1	#5	#9	#10	#11	#12	Log	Possible	Possible	
FF	0	Cannot be identified	Overall HDD fault sector check and restore	#4	#7	#9	#10	#11	#12	-	-	-	

	YY	Contents	Remedy
#1	03	Write Abort (during startup)	1. Enter CHK-TYPE for the partition, execute HDD-CHECK (may take anywhere from several minutes to several tens of minutes), and then turn the power OFF and then ON again. 2. If the above does not restore the system, enter CHK-TYPE for the partition, execute HDD-CLEAR, and turn the Main Power Switch OFF and then ON again.
#2	03	Write Abort (during startup)	1. If possible, have the user pull up address log data by remote UI. 2. Enter CHK-TYPE for the partition, execute HDD-CHECK (may take anywhere from several minutes to several tens of minutes), and then turn the power OFF and then ON again. 3. If the above does not restore the system, enter Download Mode, perform a full format using SST, reinstall the system (System, Lang, RUI), and turn the Main Power Switch OFF and then ON again.
#3	03	Write Abort (during startup)	Repair operations in the boot partition can only be performed when using SST in Safe Mode. 1. Set CHK-TYPE = 0, execute HDD-CHECK (may take several tens of minutes), and then turn the power OFF and then ON again. 2. If the above does not restore the system, enter Download Mode, perform a full format using SST, reinstall the system (System, Lang, RUI), and turn the Main Power Switch OFF and then ON again.
#4	03	Write Abort (during startup)	1. Set CHK-TYPE = 0, execute HDD-CHECK (may take several tens of minutes), and then turn the power OFF and then ON again. 2. If the above does not restore the system, execute HDD-CLEAR for CHK-TYPE = 1, 2, 3, 5, and then turn the power OFF and then ON again.
#5	05	File system error	1. Enter CHK-TYPE for the partition, execute HDD-CLEAR, and turn the Main Power Switch OFF and then ON again. 2. If the above does not correct the problem, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.

	YY	Contents	Remedy
#6	05	File system error	To prevent the mistaken erasure of information in this partition such as address logs and filter data, HDD-CLEAR cannot be executed in Service Mode. 1. If possible, have the user pull up address log data by remote UI. 2. From Service Mode, enter Download Mode, perform a full format using SST, reinstall the system (System, Lang, RUI), and turn the Main Power Switch OFF and then ON again.
#7	05	File system error	This error is not usually generated. 1. Execute HDD-CLEAR for CHK-TYPE = 1, 2, 3, 5, and then turn the power OFF and then ON again. 2. If the above does not correct the problem, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.
#8	05	File system error	Repair operations in the boot partition can only be performed when using SST in Safe Mode. 1. Start the system in Safe Mode, perform a full format using SST, reinstall the system (System, Lang, RUI), and turn the Main Power Switch OFF and then ON again. 2. If the above does not correct the problem, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.
#9	00,01, 02,04	Faulty HDD connection or v x Works system error	1. 0Check cables and connectors. 2. If the above does not correct the problem, start the system in Safe Mode, perform a full format using SST, reinstall the system (System, Lang, RUI), and turn the Main Power Switch OFF and then ON again. 3. If the above still does not correct the problem, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.
#10	11,21	Faulty HDD connection or similar problem	This error is not usually generated at the read/write level. 1. Check cables and connectors. 2. If the above does not correct the problem, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.
#11	13,25	WriteAbort	There is a high likelihood that document data such as BOX on the HDD is damaged. 1. Enter the CHK-TYPE for the partition, execute HDD-CHECK (may take anywhere from several minutes to several tens of minutes), and then turn the power OFF and then ON again. 2. If the above does not restore the system, enter CHK-TYPE for the partition, execute HDD-CLEAR, and turn the Main Power Switch OFF and then ON again. (For the BOOTDEV, BOOTDEV2, and APL_SEND partitions, reformat and reinstall using SST.) 3. If the above still does not correct the problem, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.
#12	10,12, 14 22,23, 24	System error or packet data error	This error is generated due to invalid data or software bug. 1. Start the system in Safe Mode, perform a full format using SST, reinstall the system (System, Lang, RUI), and turn the Main Power Switch OFF and then ON again. 2. If the above does not correct the problem, the HDD may be assumed to be damaged, so replace the HDD and reinstall the system.

5.5 Image Processing

5.5.1 Overview of the Flow of Image Data

Original

Other iR machine

Copy   Scan

A

Print output

Image data

- SEND
- FAX
- PullScan
- E-Mail
- BOX
- PDL Print

PC
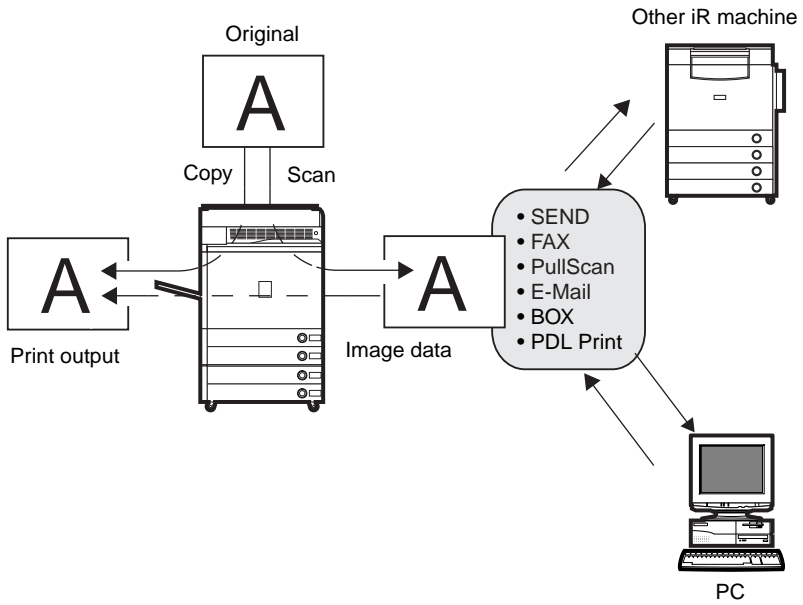
F-5-9

5.5.2 Reader Input Image Processing

The image data (RGB data) collected by the CCD is processed by the main controller PCB (sub SJ-A, sub R-A, sub PDRM-PE-A).

```
┌──────────────────────────────────┐
│           Reader unit            │
└──────────────────────────────────┘
         RGB  ╲  24
```

Main controller PCB
(sub SJ-A, sub R-A,
sub PDRM-PE-A)

Processing taking the place of conventional masking. Executes color correction for the CCD RGB filters.

- RGB phase correction
- Input gamma correction
- Input direct mapping
- Edge enhancement
- Smoothing

If mono-color mode, only Bk signals hereafter.

- See-though prevention (BE)
- Bk generation (mono-color mode)

- Framing
- Blanking
- Frame erasing

CMYK

Main controller PCB (main)

F-5-10

5.5.3 Printer Output Image Processing

The main controller processes the image data arriving from the reader unit for output to the printer unit.

```
┌─────────────────────────────────────────┐
│ Reader unit                              │
└─────────────────────────────────────────┘
                    RGB │ 24
┌─────────────────────────────────────────┐
│ Main controller PCB                      │
│ (main + sub (R-A)/                       │
│ (sub PDRM-PE-A)                          │
│                                          │
│          RGB │ 24        Image area      │
│                              signal      │
│    ┌───────────────────────────┐         │
│    │ - Background removal       │◄──      │
│    │ - Bk generation            │         │
│    ├───────────────────────────┤         │
│    │ RGB->CMY conversion        │         │
│    ├───────────────────────────┤         │
│    │ Output direct mapping      │◄──      │
│    └──────────┬CMYK─────────────┘         │
│    │ - F value adjustment       │◄──      │
│    │ - Color balance correction │         │
│    ├───────────────────────────┤         │
│    │ Output gamma correction    │         │
│    ├───────────────────────────┤         │
│    │ Optimum screen selection   │◄──      │
│    ├───────────────────────────┤         │
│    │ Smoothing                  │         │
│    ├───────────────────────────┤         │
│    │ - Framing                  │         │
│    │ - Blanking                 │         │
│    └───────────────────────────┘         │
│        CMYK │ 32         Image area      │
│                              signal      │
│    ┌───────────────────────────┐         │
│    │ - Image data               │         │
│    │   serial/parallel conversion│        │
│    │ - Video count              │         │
│    └───────────────────────────┘         │
└─────────────────────────────────────────┘
```

Here, the Bk signal is generated if an ACS session identifies the original as being black-and-white. (Otherwise, it is let through.)

In color mode, the Bk signal is generated here.

For the text area, UCR processing is executed.

A correction LUT is prepared as part of PASCAL control.

To DC controller PCB ◄── Y,M,C,Bk

F-5-11

5.5.4 Compression, Decompression, and Edit Processing Blocks

The main controller PCB processes data for compression, decompression, and editing.
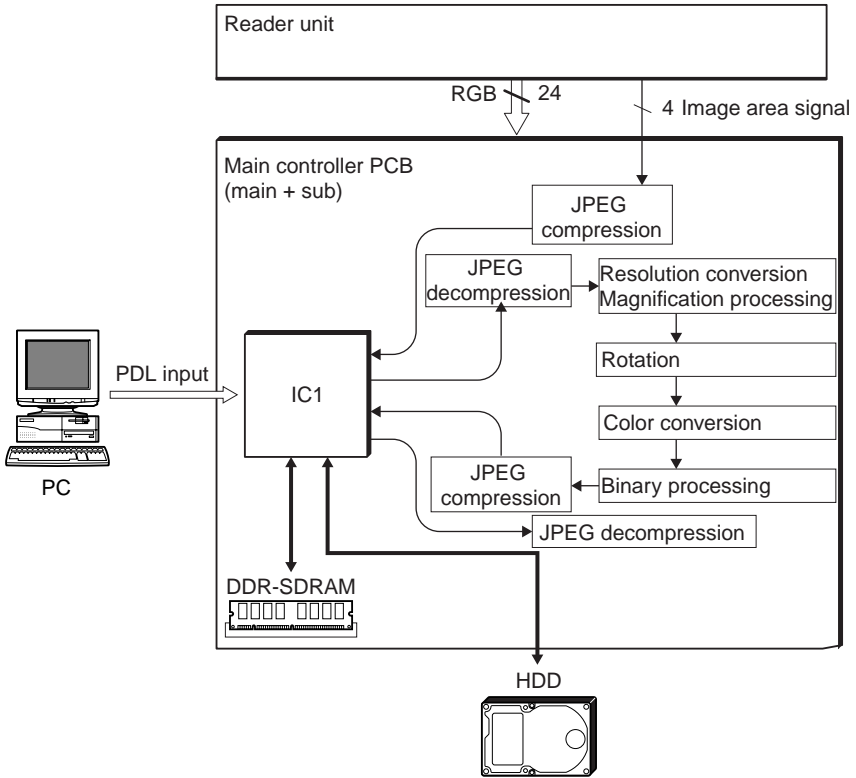
F-5-12

5.6 Flow of Image Data

5.6.1 Flow of Image Data for Copier Functions

The following shows the flow of image data when a copier function is being used:
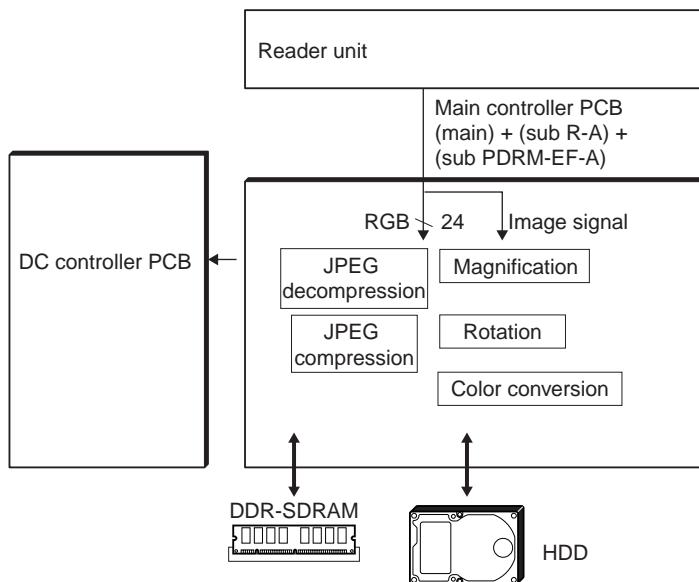
F-5-13

5.6.2 Flow of Image Data for Box Functions

The following shows the flow of image data when a Box function is being used:
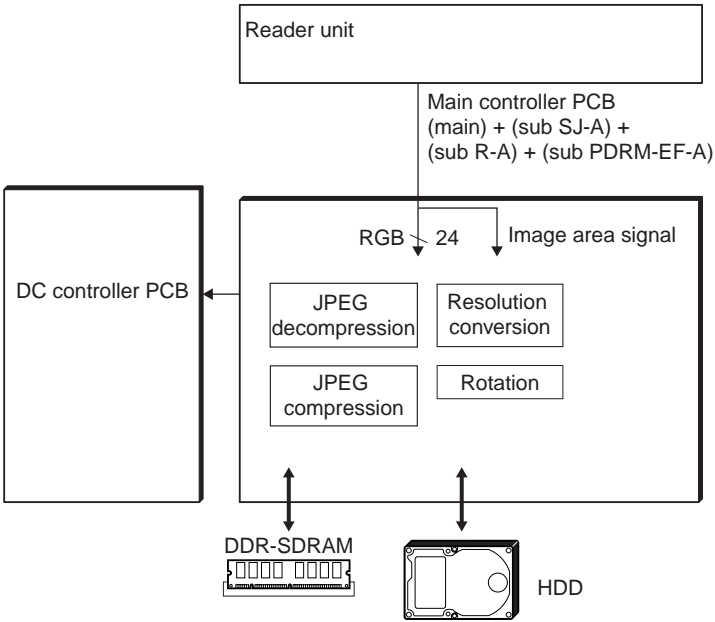
F-5-14

5.6.3 Flow of Image Data for SEND Functions

The following shows the flow of image data when a SEND function is used:
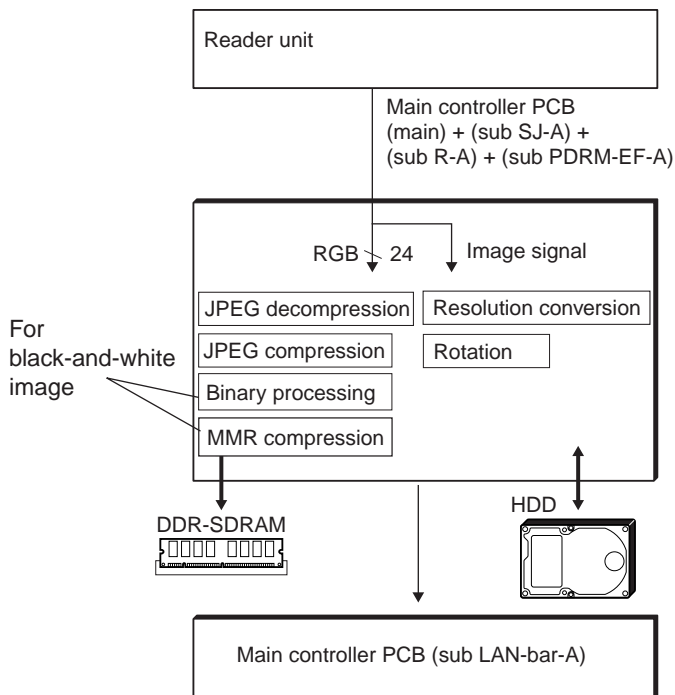
F-5-15

5.6.4 Flow of Image Data for Fax Transmission Functions

The following shows the flow of image data when a fax transmission function is being used:

```
┌─────────────────────────────────────────────┐
│ Reader unit                                  │
│                                              │
└─────────────────────────────────────────────┘
                    │
                    │  Main controller PCB
                    │  (main) + (sub SJ-A) +
                    │  (sub R-A) + (sub PE-A)
                    │
┌─────────────────────────────────────────────┐
│         RGB ↓      │  ↓ Image area signal    │
│  ┌─────────────────┐ ┌─────────────────────┐ │
│  │JPEG compression │ │Resolution conversion│ │
│  └─────────────────┘ └─────────────────────┘ │
│  ┌─────────────────┐ ┌─────────────────────┐ │
│  │JPEG decompression│ │Rotation            │ │
│  └─────────────────┘ └─────────────────────┘ │
│  ┌─────────────────┐ ┌─────────────────────┐ │
│  │MMR compression  │ │Binary processing   │ │
│  └─────────────────┘ └─────────────────────┘ │
└─────────────────────────────────────────────┘
      ↕               │              HDD  ↓
   SDRAM              │
                      ↓
┌─────────────────────────────────────────────┐
│ Fax unit                                     │
│                                              │
└─────────────────────────────────────────────┘
```
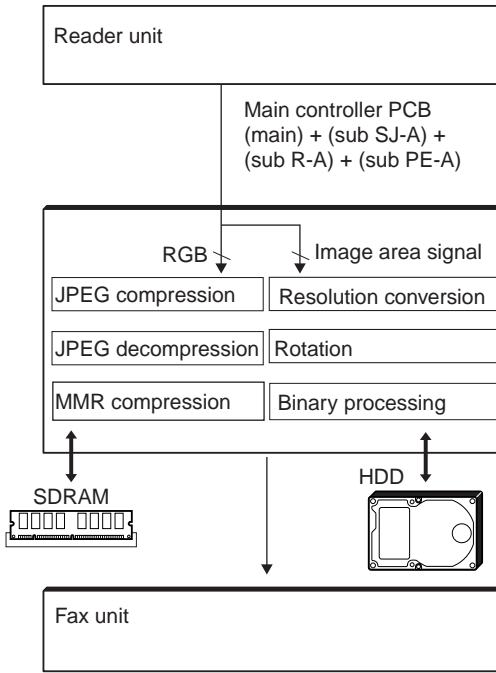
F-5-16

5.6.5 Flow of Image Data for Fax Reception Functions

The following shows the flow of image data when a fax reception function is being used:
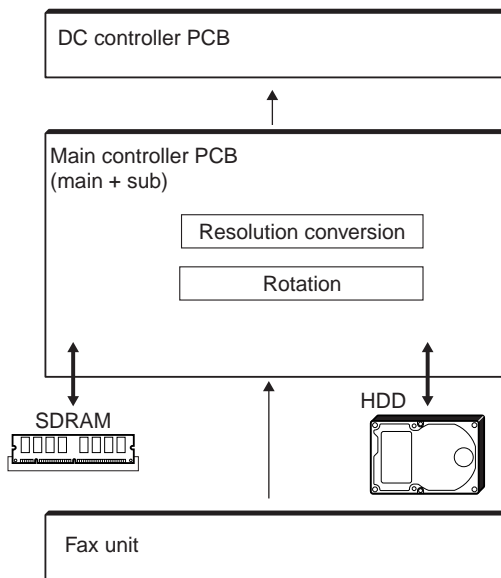
F-5-17

5.6.6 Flow of Image Data for PDL Functions

The following shows the flow of image data when a PDL function is being used:
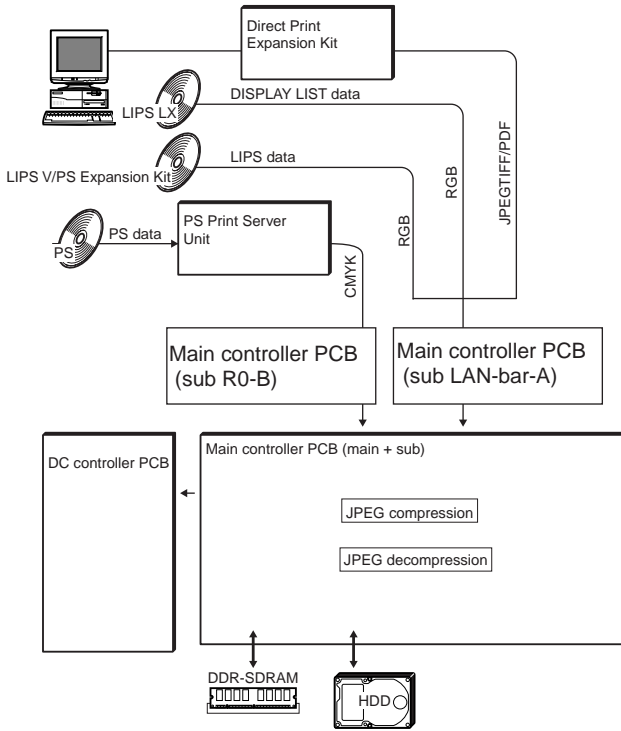
F-5-18

5.7 Parts Replacement Procedure

5.7.1 Main Controller Box

5.7.1.1 Preparation for Removing the Main Controller Box

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]

5.7.1.2 Removing the Main Controller Box

1) Remove the main controller box cover [3].
   - 1 harness (free from wire saddle [1])
   - 15 screws [2]
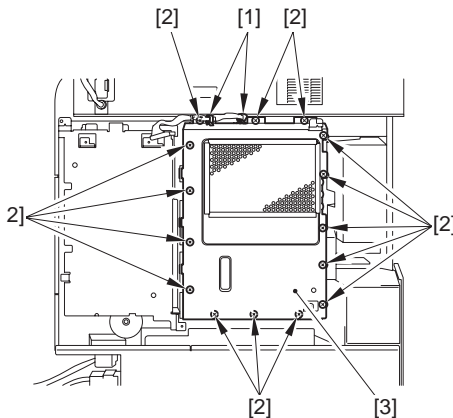
F-5-19

2) Remove the main controller box [3].
   - 13 connectors (on PCB)
   - 6 clamps [1]
   - 6 screws [2]
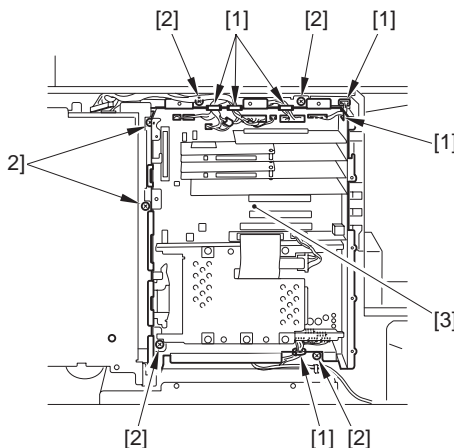
F-5-20

5.7.2 Main Controller PCB (main)

5.7.2.1 Preparation for Removing the Main Controller PCB (main)

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
4) Remove the main controller box.

5.7.2.2 Removing the Main Controller PCB (main)

1) Remove the main controller PCB (sub R-A) [3] together with its mounting plate.
   - 2 screws [1]
   - 1 connector [2]
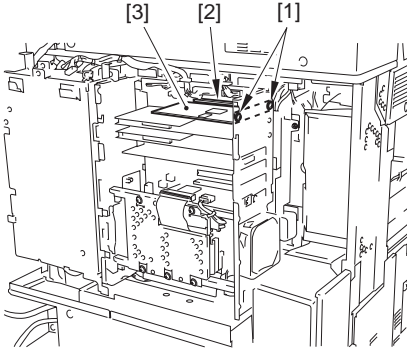
F-5-21

2) Remove the main controller PCB (sub PDRM-A) [3] together with its mounting plate.
   - 2 screws [1]
   - 1 connectors [2]
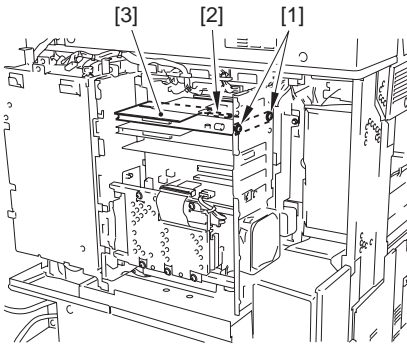
F-5-22

3) Remove the main controller PCB (sub SJ-A) [3] together with its mounting plate.
   - 2 screws [1]
   - 1 connector [2]
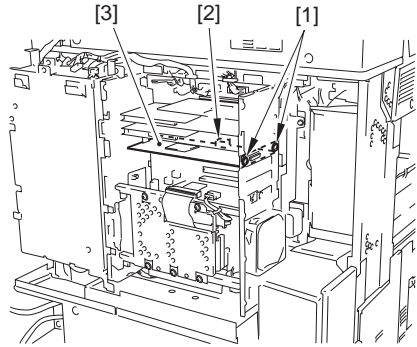
F-5-23

4) Remove the main controller PCB (sub LAN-A) [4] together with its mounting plate.
   - 2 connectors [1]
   - 2 screws [2]
   - 1 connector [3]
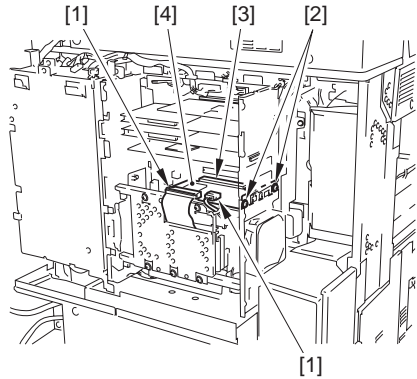
F-5-24

⚠ Points to Note When Removing the HDD
Take care to avoid static damage when removing the HDD.
It is also important to protect the HDD from impact.

5) Remove the HDD [3].
- 1 clamp [1]
- 6 screws [2]
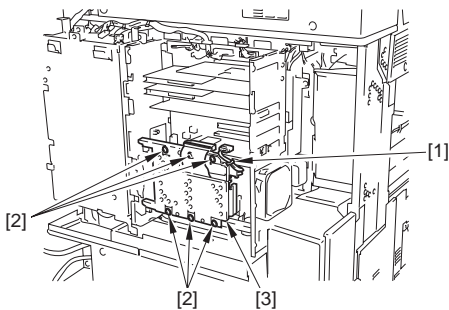
F-5-25

6) Remove the 2 HDD mounting plates [2].
- 2 screws each [1]
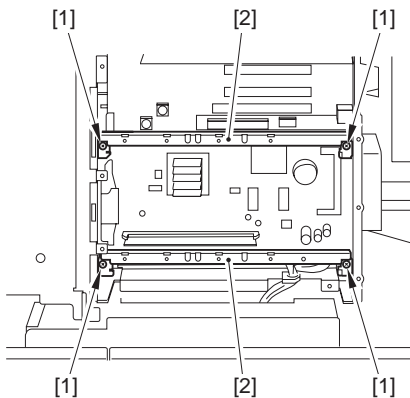
F-5-26

7) Remove the main controller PCB (sub RB-A) [4].

⚠️ Skip this step if there is no main controller PCB (sub RB-A).

- 2 screws [1]
- 1 mounting plate [2]
- 1 connector [3]
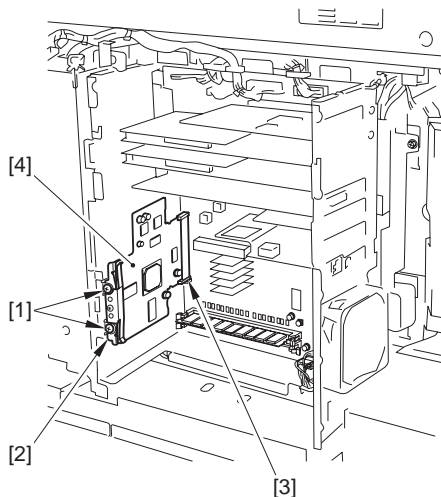
F-5-27

⚠️**Points to Note When Mounting the Main Controller PCB (sub RB-A)**
Check to be sure that the PCB [3] is between the mounting plate [1] and the leaf spring [2].
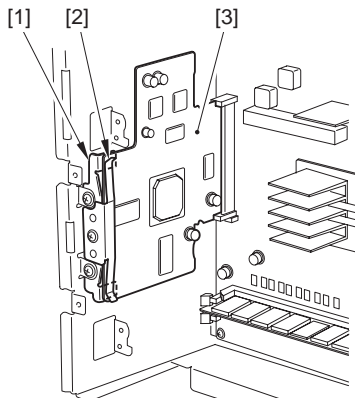
F-5-28

8) Remove the image memory (SDRAM) [1].

F-5-29

F-5-30

9) Press the PCB release button [1] to detach the boot ROM PCB [2].
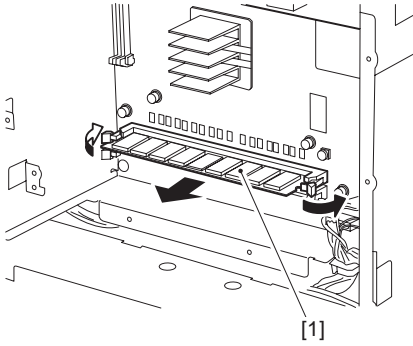
F-5-31

10) Remove the SRAM PCB [1].
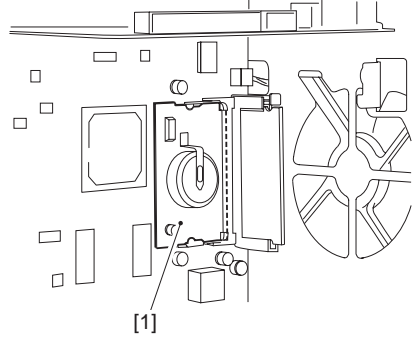
F-5-32
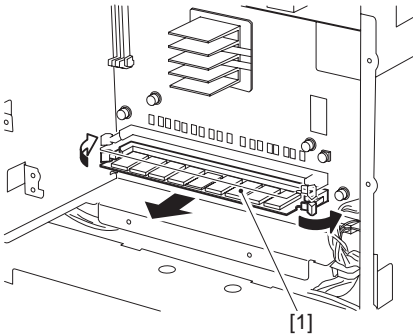
11) Remove the main controller PCB (main) [3].
   - 8 screws [1]
   - 1 connector [2]
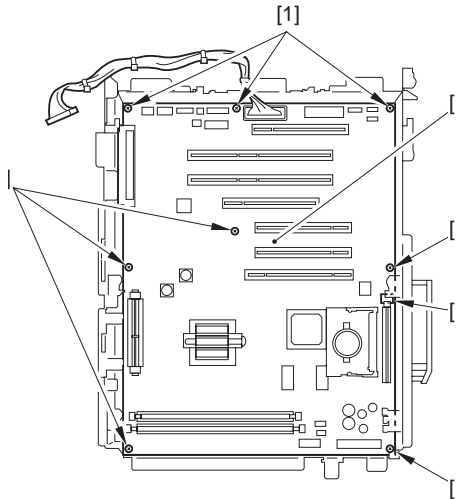
F-5-33
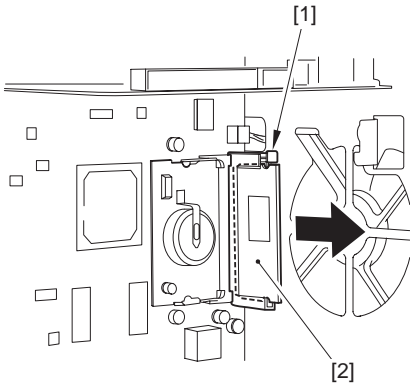
5.7.3 Main Controller PCB (sub R-A)

5.7.3.1 Preparation for Removing the Main Controller PCB (sub R-A)

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]

5.7.3.2 Removing the Main Controller PCB (sub R-A)

1) Remove the main controller box cover [3].
   - 1 harness (free from wire saddle [1])
   - 15 screws [2]
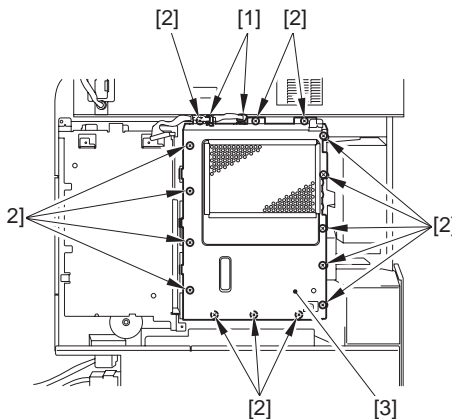
F-5-34

2) Remove the main controller PCB (sub R-A) [3] together with its mounting plate.
   - 2 screws [1]
   - 1 connector [2]
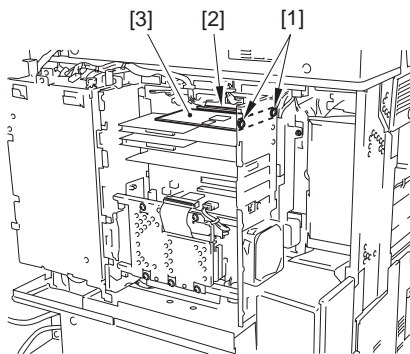
F-5-35

3) Remove the main controller PCB (sub R-A) [3] from the mounting plate [2].
   - 2 screws [1]
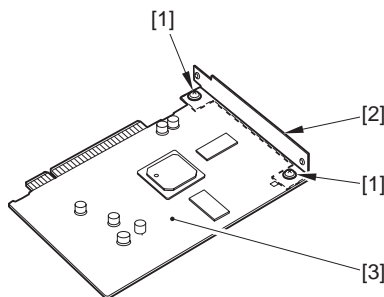
F-5-36

5.7.4 Main Controller PCB (sub PDRM-A)

5.7.4.1 Preparation for Removing the Main Controller PCB (sub PDRM-A)

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]

5.7.4.2 Removing the Main Controller PCB (sub PDRM-A)

1) Remove the main controller box cover [3].
(Referring to Procedure 5.7.3.2)
2) Remove the main controller PCB (sub PDRM-A) [3] together with its mounting plate.

Note:
There are 2 main controller PCBs (sub PDRM-A), and they may be removed in the same way.

- 2 screws [1]
- 1 connector [2]
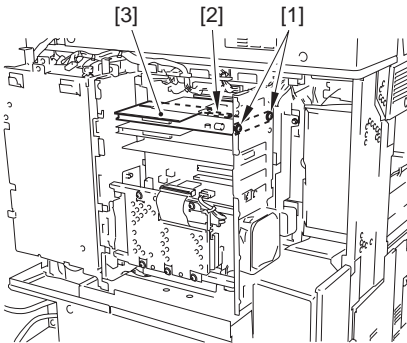
F-5-37

3) Remove the main controller PCB (sub PDRM-A) [3] from the mounting plate [2].
- 2 screws [1]
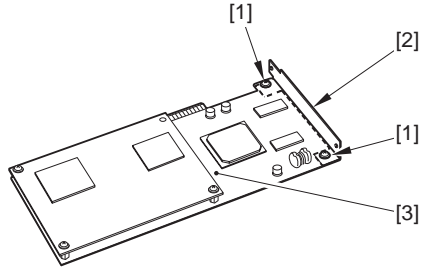
F-5-38

5.7.5 Main Controller PCB (sub SJ-A)

5.7.5.1 Preparation for Removing the Main Controller PCB (sub SJ-A)

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]

5.7.5.2 Removing the Main Controller PCB (sub SJ-A)

1) Remove the main controller box cover [3].
(Referring to Procedure 5.7.3.2)
2) Remove the main controller PCB (sub SJ-A) [3] together with its mounting plate.
3) Remove the main controller PCB (sub SJ-A) [3] connected to the mounting plate [2].
- 2 screws [1]
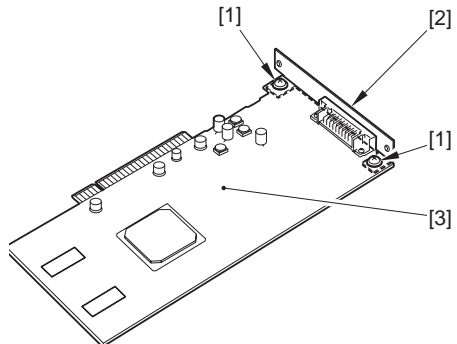
F-5-39

5.7.6 Main Controller PCB (sub LAN-A)

5.7.6.1 Preparation for Removing the Main Controller PCB (sub LAN-A)

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]

5.7.6.2 Removing the Main Controller PCB (sub LAN-A)

1) Remove the main controller box cover [3].
(Referring to Procedure 5.7.3.2)
2) Remove the main controller PCB (sub LAN-A) [4] together with its mounting plate.
   - 2 connectors [1]
   - 2 screws [2]
   - 1 connector [3]
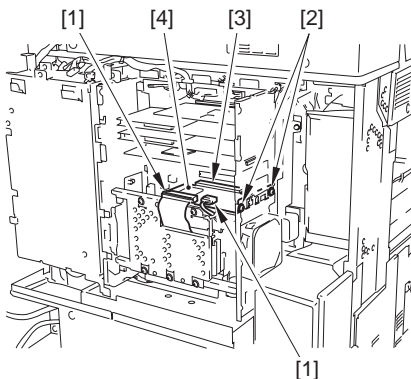
F-5-40

3) Remove the main controller PCB (sub LAN-A) [3] from the mounting plate [2].
   - 2 screws [1]
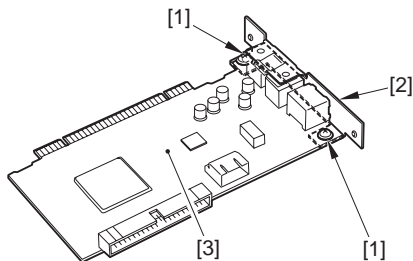
F-5-41

5.7.7 Main Controller PCB (sub RB-A)

5.7.7.1 Preparation for Removing the Main Controller PCB (sub RB-A)

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]

5.7.7.2 Removing the Main Controller PCB (sub RB-A)

1) Remove the main controller box cover [3].
(Referring to Procedure 5.7.3.2)

⚠ Points to Note When Removing the HDD
Take care to avoid static damage when removing the HDD.
It is also important to protect the HDD from impact.

2) Remove the HDD [4].
- 1 clamp [1]
- 2 connectors [2]
- 6 screws [3]
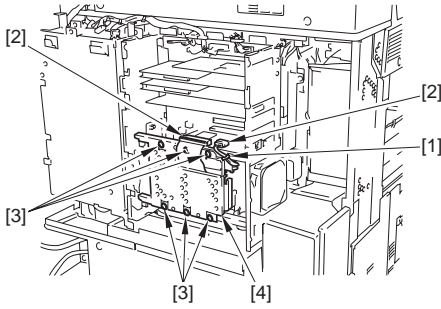
F-5-42

3) Remove the 2 HDD mounting plates [2].
- 2 screws each [1]
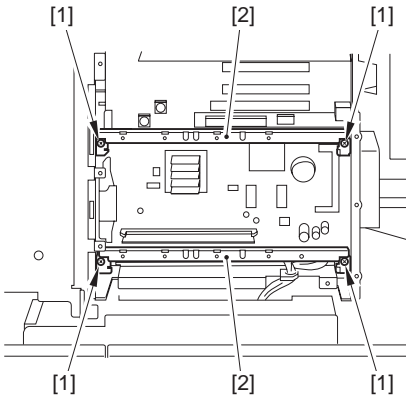
F-5-43

4) Remove the main controller PCB (sub RB-A) [4].

⚠️

Skip this step if there is no main controller PCB (sub RB-A).

- 2 screws [1]
- 1 mounting plate [2]
- 1 connector [3]
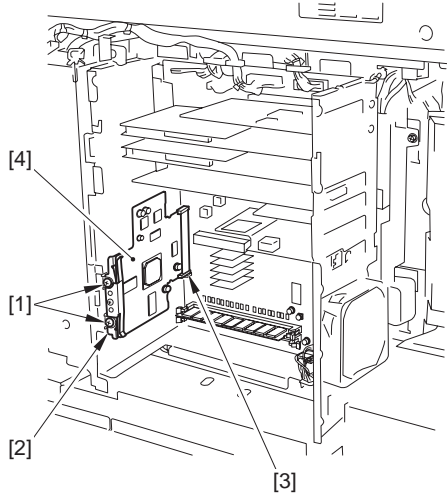
F-5-44

⚠️ **Points to Note When Mounting the Main Controller PCB (sub RB-A)**
Check to be sure that the PCB [3] is between the mounting plate [1] and the leaf spring.
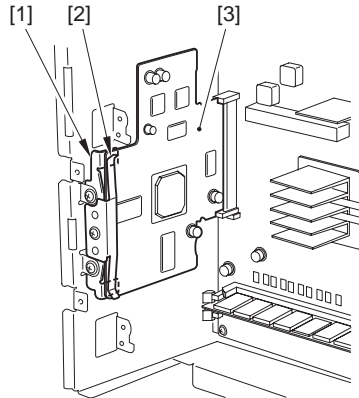
F-5-45

5.7.8 SRAM PCB

5.7.8.1 Preparation for Removing the SRAM PCB

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]

5.7.8.2 Removing the SRAM PCB

1) Remove the main controller box cover [3].
(Referring to Procedure 5.7.3.2)

⚠ **Points to Note When Removing the HDD**
Take care to avoid static damage when removing the HDD.
It is also important to protect the HDD from impact.

2) Remove the HDD [4].
(Referring to Procedure 5.7.11)
3) Remove the 2 HDD mounting plates [2].
(Referring to Procedure 5.7.7.2)
4) Remove the SRAM PCB [1].

[1]
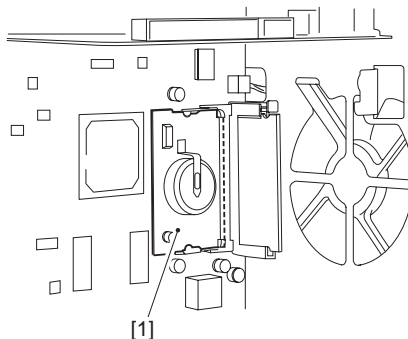
F-5-46

5.7.8.3 When Replacing the SRAM PCB

⚠

When the SRAM PCB is replaced, all data in its memory will be lost (file-related, user mode-related, service mode-related, history-related files). There will be no error operation, and initialization will take place automatically.Å@
If you pull out the SRAM PCB from machine B and mount it to machine A, the PCB will be initialized and be rendered useless for machine A or B. Take full care.

1) When you turn on the power after replacing the SRAM PCB, the machine will perform automatic initialization and will indicate a message on its panel to the effect that you are to turn off and then on the power switch found on its right side. Follow the message and turn off and then on the machine.
2) Using service mode, initialize the RAM.
COPIER>FUNCTION>CLEAR>MN-CON

⚠

Inform the user that the following steps will result in the loss of all image data in the Box before starting the work.

5.7.9 Boot ROM PCB

5.7.9.1 Preparation for Removing the Boot ROM PCB

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]

5.7.9.2 Removing the Boot ROM PCB

1) Remove the main controller box cover [3].
(Referring to Procedure 5.7.3.2)

⚠ **Points to Note When Removing the HDD**
Take care to avoid static damage when removing the HDD.
It is also important to protect the HDD from impact.

2) Remove the HDD [4].
(Referring to Procedure 5.7.11)
3) Remove the 2 HDD mounting plates [2].
(Referring to Procedure 5.7.7.2)
4) Press the PCB release button [1] to detach the boot ROM PCB [2].
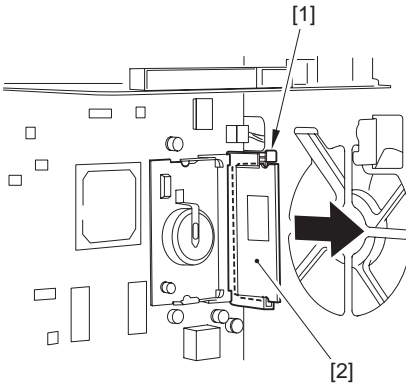
F-5-47

5.7.10 Image Memory (SDRAM)

5.7.10.1 Preparation for Removing the Image Memory (SDRAM)

5.7.10.2 Removing the Image Memory (SDRAM) PCB

1) Remove the main controller box cover [3].
(Referring to Procedure 5.7.3.2)

⚠ **Points to Note When Removing the HDD**
Take care to avoid static damage when removing the HDD.
It is also important to protect the HDD from impact.

2) Remove the HDD [4].
(Referring to Procedure 5.7.11)
3) Remove the 2 HDD mounting plates [2].
(Referring to Procedure 5.7.7.2)
4) Open the fixing member in the direction of the arrow, and detach the image memory (SDARAM) PCB [1].

⚠

If there are 2 image memory (SDRAM) PCBs, be sure to remove both of them.
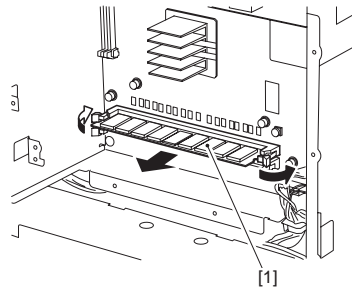
F-5-48
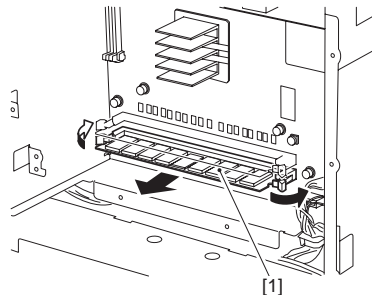
F-5-49

5.7.11 HDD

5.7.11.1 Preparation for Removing the HDD

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]

5.7.11.2 Removing the HDD

1) Remove the main controller box cover [3]. (Referring to Procedure 5.7.3.2)

⚠ **Points to Note When Removing the HDD**
Take care to avoid static damage when removing the HDD.
It is also important to protect the HDD from impact.

2) Remove the HDD [4].
  - 1 clamp [1]
  - 2 connectors [2]
  - 6 screws [3]
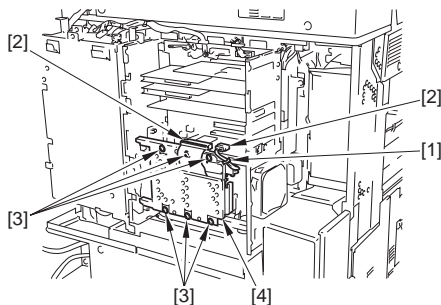
F-5-50

5.7.11.3 When Replacing the HDD

1. If NetSpot Accountant (NSA) Is Not Used
1) Formatting the HDD
  While holding down the 2 and 8 keys on the control panel, turn on the power to start up. Using the HD formatting function of the SST, format all partitions.
2) Downloading the Software
  Using the SST, download the various software (system, language, RUI). The machine will take about 10 min to start up after downloading.

2. If NetSpot Accountant (NSA) Is Used Together with a Card Reader
The card ID used by the NSA resides on the HDD. If you have replaced the HDD, therefore, you will have to newly download the card data from NSA to enable the statistical operations of NSA. After going through steps 1) and 2) above, perform the following:
1) Set the following in service mode:
  Select the following : COPIER >FUNCTION >INSTALL >CARD; then, enter the number of the first card, and press [OK].
  (For instance, if cards No. 1 through No. 1000 are used for group control, enter '1')
2) Turn off and then on the machine; when the machine has started up, perform the following in user mode:
  Select the following : user mode >system control settings >group ID control >count control; then, check that IDs from 00000001 through 00001000 have been prepared.
  Select the following : user mode >system control settings >network settings >TCP/IP settings >IP address; then, set up 'IP address' 'gateway address' and 'subnet mask'
  Select the following : user mode >system administrator setup; then, fill in 'system control group ID' and 'system control ID No.' thereafter, turn off and then on the machine.
  If you leave out 'system control group ID' and 'system control ID No.' the service engineer will not be able to 'register card to device' as part of setup work for NSA.
3) With the machine in standby state, download the card ID to be used from NSA.
4) When the card data has been downloaded from NSA, check that the ID data has correctly been downloaded on the screen brought up by making the following selections:
  user mode>system control settings>group ID control
  (Only the downloaded ID data must be indicated.)
5) Make copies using a user card registered with NSA, and check that statistical operations are made for the device in question.

5.7.12 Controller Fan

5.7.12.1 Preparation for Removing the Controller Fan

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]

5.7.12.2 Removing the Controller Fan

1) Remove the controller fan [3].
   - 1 connector [1]
   - 2 screws [2]
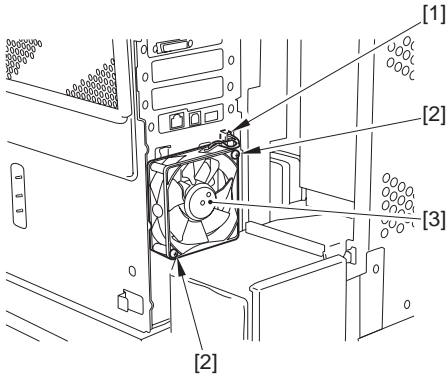
Chapter 6

ORIGINAL EXPOSURE SYSTEM

Contents

6.1 Construction

6.1.1 Specifications, Control Mechanisms, and Functions

The following shows major specifications, control mechanisms, and functions of the machine's original exposure system:

T-6-1

Item	Description
Scanning lamp	xenon lamp (white)
scanning	book mode: by moving optical unit
	ADF mode: by moving original
Reading resolution	600 (main scanning) x 600 (sub scanning) dpi
Halftone	256 gradations
Scanner position detection	scanner HP sensor (PS501)
Lens	single-focus, fixed
Magnification	50%, 100% or digital variable reproduction ratio mode (25 to 400 %)
	50%, 100% or digital variable reproduction ratio mode (25 to 400 %)
	main scanning direction: image processing by controller block
	sub scanning direction: image processing by controller block
Scanner drive control	No. 1/No. 2 mirror base: by pulse motor (M501)
Original scanning lamp	[1]activation control by inverter circuit
	[2]error detection control
Original size detection	[1]book mode
	sub scanning direction: by reflection type sensor
	main scanning direction: by CCD
	[2]w/ ADF in use
	main scanning direction: by slide guide in ADF
	sub scanning direction: by photo sensor in ADF

6.1.2 Major Components

The original exposure system consists of the following major components:

T-6-2

Item	NotationDescription	Description
Scanning lamp	LA1	xenon lamp: 77.500 lx
Scanner motor	M501	2-phase pulse motor: pulse control
Reader Cooling fan	FM13	cools the reader assembly.
Scanner HP sensor	PS501	detects the home position of the scanner.
ADF open/closed sensor 1	PS502	detects the state (open/closed) of the ADF using the ADF open/closed sensor (5 deg).
ADF open/closed sensor 2	PS503	detects the size with the ADF at 25 deg or less.
Original size sensor (AB-configuration)	---	detects the size in sub scanning direction (AB-configuration)
Original size sensor (inch-configuration)	---	detects the size in sub scanning direction (inch-configuration)
Mirror	---	No. 1, No. 2, No. 3, mirror

F-6-1

Image HP
leading edge

Stream reading position
(start position)

HP

Size detection

Original

Copyboard glass

No. 2 mirror

No. 1 mirror base

Original scanning lamp

No. 1 mirror

Lens

CCD

No. 2 mirror base

No. 3 mirror

F-6-2

Scanner motor

Light-blocking plate

Scanner HP
sensor

(forward)

Original scanning
lamp

(reverse)

No. 2 mirror base

No. 1 mirror base
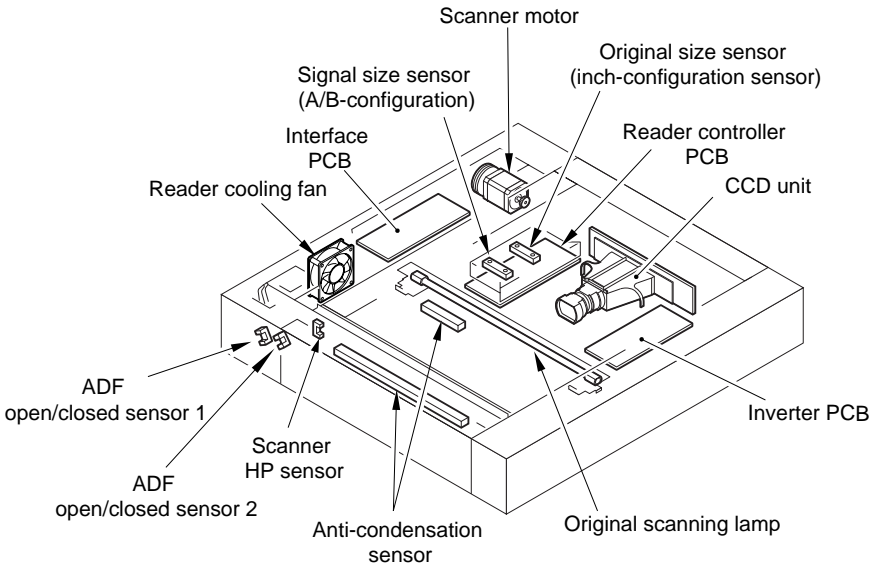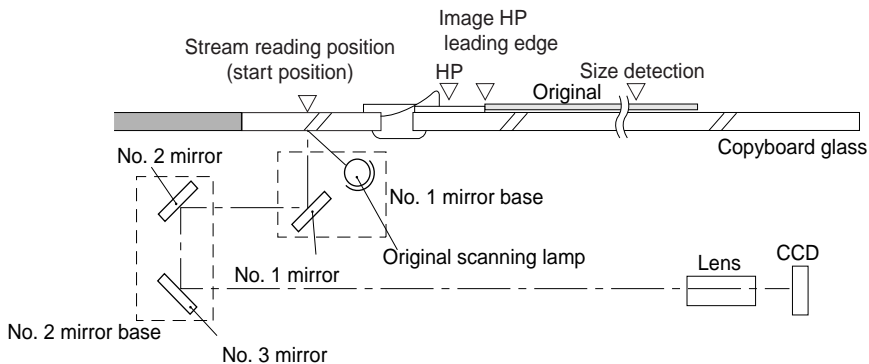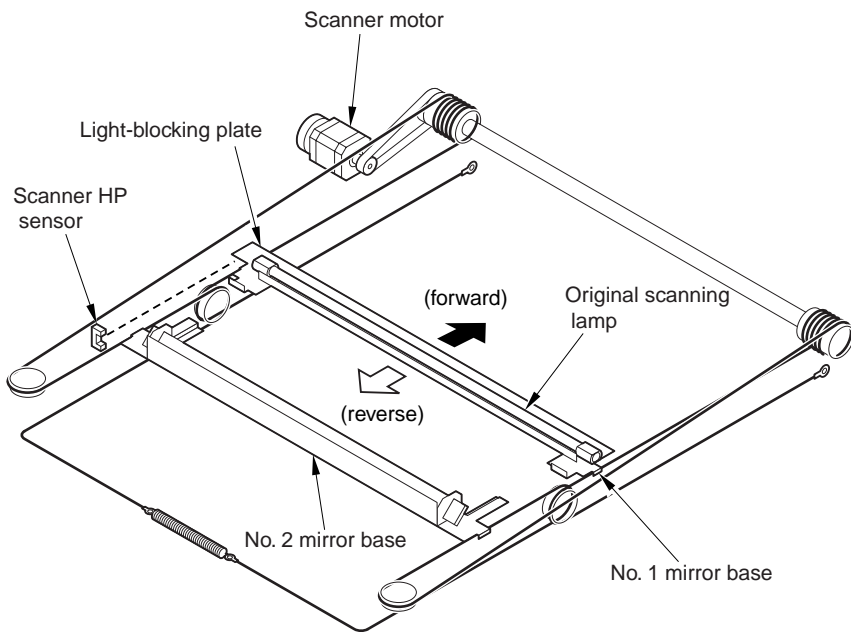
F-6-3

6.1.3 Construction of the Control System

The following shows the construction of the control system of the original exposure system:

Scanner motor drive control

Scanner motor

To ADF

Reader controller PCB

Interface PCB

To printer (main controller)

CCD unit

Reader cocling FAN

ADF open/closed sensor 1

Scanner HP sensor

ADF open/closed sensor 2

Original scanning lamp

Inverter PCB

Original scanning lamp activation control
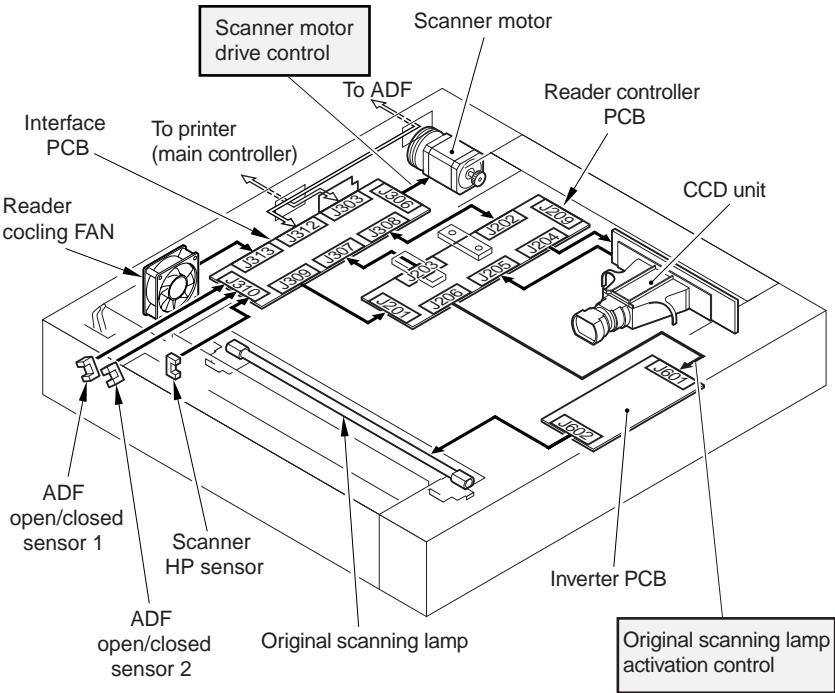
F-6-4

6.1.4 Reader Controller PCB

The following shows the functional construction of the reader controller PCB:
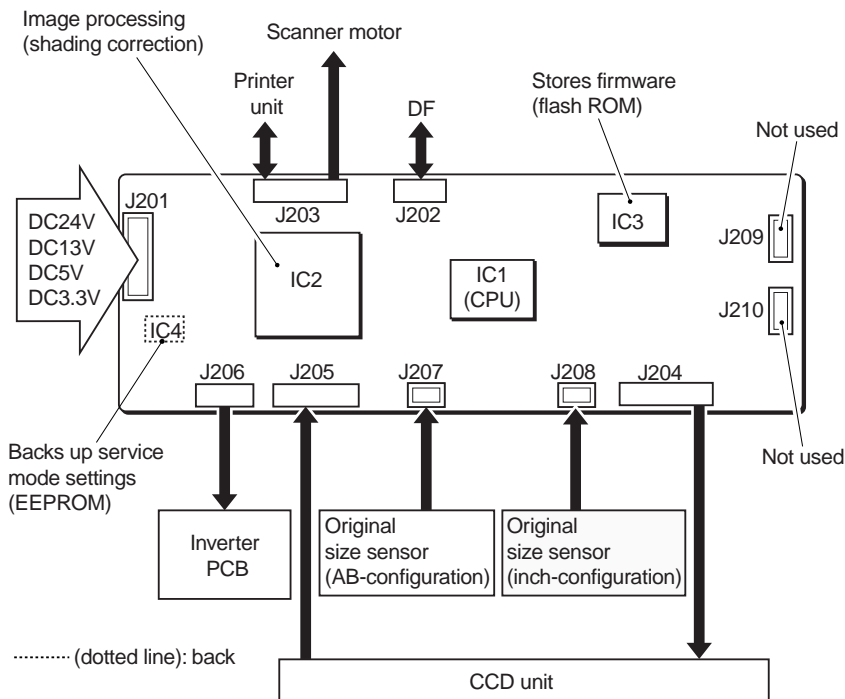
F-6-5

Jack No	Description
J201	used for the power from the machine (printer unit).
J202	For communication with ADF (for communication with sensor signal input, fan control, scanner motor control, and controller)
J203	used for communications with the printer unit (connection with the scanner motor). used for communications with the ADF (image signal input).
J204	used for connection with the CCD unit.
J205	used for connection with the CCD unit.
J206	used for connection with the inverter PCB.
J207	used for connection with the original size sensor (AB-configuration).
J208	used for connection with the original size sensor (inch-configuration).
J209	not used
J210	not used

T-6-3

IC	Description
IC1	CPU (stores boot program)
IC2	ASCI (built-in RAM)
IC3	flash RAM (stores firmware)
IC4	EEPROM (backs up service mode settings)

6.2 Basic Sequence

6.2.1 Basic Sequence of Operation at Power-On
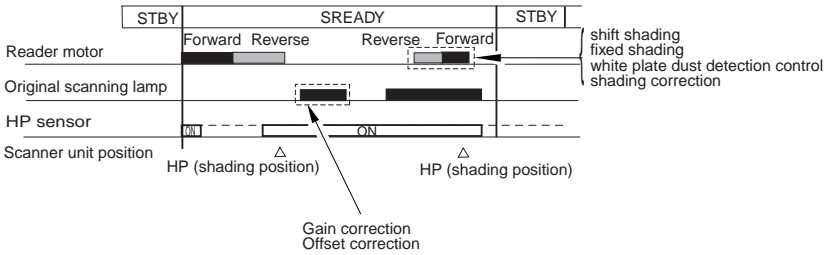
F-6-6
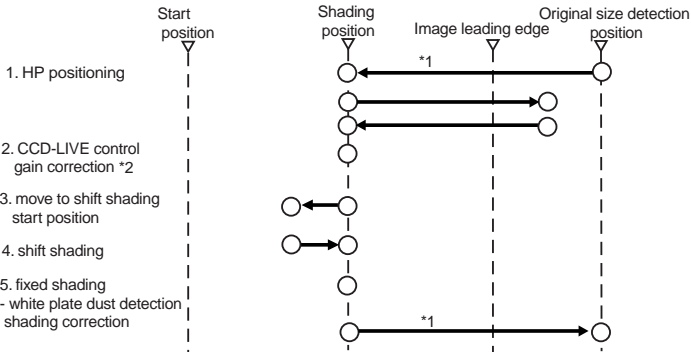
*1: shifts only if the copyboard (ADF) is open.
*2: controls by turning on/off the power of the CCD and the circuitry around it for power saving and for protection against overheating.

F-6-7

6.2.2 Basic Sequence of Operation in Response to a Press on the Start Key

1. Basic Sequence of Operation in Response to a Press on the Start Key (book mode; 1 original)
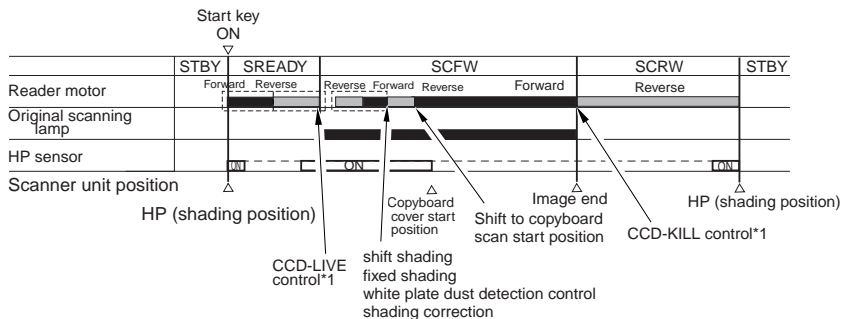
*1: controls by turning on/off the power of the CCD and the circuitry around it for power saving and for protection against overheating.

F-6-8

*1: shifts only if the copyboard cover (ADF) is open.
*2: executed only if 1 min or more (power off) has passed from the previous session.
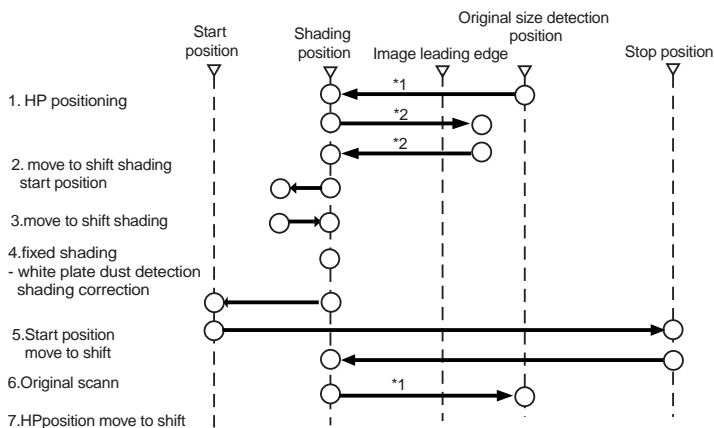
F-6-9

2. Basic Sequence of Operation in Response to a Press on the Start Key (ADF mode; 1 original)

Start key
ON
▽

Not executed if 1 min or less (power off) from previous session.

| | STBY | SREADY | | SCRW | SCFW | STBY |

Reader motor — Forward _ Reverse _ Reverse _ Forward _ Reverse ... Forward _ _ Forward _ _ Reverse _ Forward

Original scanning lamp

HP sensor — ON ... ON

Scanner unit position

HP (shading)

CCD-KILL control*1

Stream reading position

Stream reading shift position

ADF Dust

Image end

shift shading
fixed shading
white plate dust detection control
shading correction

shading
shift position

HP (shading)

shift shading
fixed shading
white plate dust detection
control shading correction

CCD-KILL control*1

*1: controls by turning on/off the power of the CCD and the circuitry around it for power saving and for protection against overheating.

F-6-10

Stream reading position | Shading position | Image leading edge | Original size detection position | Stop position

1. HP positioning
   *1
   *2
   *2

2. move to shift shading start position

3. shift shading

4. fixed shading
   - white plate dust detection shading correction

5. stream reading position to shift

6. original stream reading scan

7. shifts to point of dust detection

8. shifts to point of stand by position

9. moves to shift shading start position

10. shift shading
    *1

11. fixed shading
    - white plate dust detection shading correction

*1: shifts only if the copyboard cover (ADF) is open
*2: executed only if 1 min (power ON) or more has passed from the previous session.

F-6-11

6.3 Various Control Mechanisms

6.3.1 Controlling the Scanner Drive System

6.3.1.1 Overview

The following shows the arrangement of the components associated with the drive of the scanner:
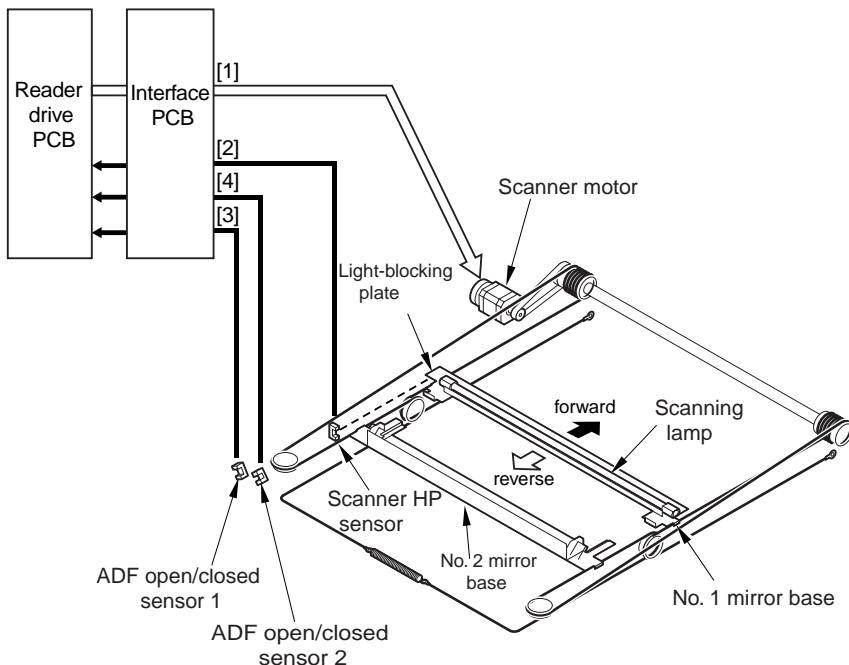
F-6-12

[1] Scanner Motor M501 Drive Signal
   controls the activation/deactivation of the motor and the direction and speed of the motor.
[2] Scanner HP Sensor PS501 Detection Signal
   used in reference to the detection of the No. 1 mirror base at its home position.
[3] ADF Open/Closed Sensor 1 PS502 Detection Signal
   used in reference to the detection of the state (open/closed) of the ADF.
[4] ADF Open/Closed Sensor 2 PS503 Detection Signal
   used in reference to the detection of the state (open/closed) of the ADF.

6.3.1.2 Controlling the Scanner Motor

The following shows the construction of the mechanisms used to control the scanner motor.
The motor driver on the interface PCB controls the rotation (activation/deactivation) of the scanner motor and its direction and speed of rotation according to the signals from the CPU.
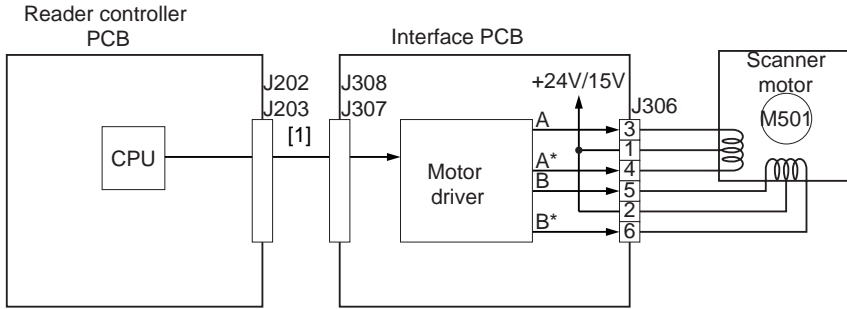
1 Scanner motor control signal

F-6-13

- Moving the Scanner in Reverse After an Image Scan
  After an image scan, the No. 1 mirror base is moved in reverse to shading position at 234 mm/sec regardless of the selected color mode.

- Moving the Scanner Forward for an Image Scan
  When making an image scan, the No. 1 mirror base unit is moved by controlling the motor as follows:
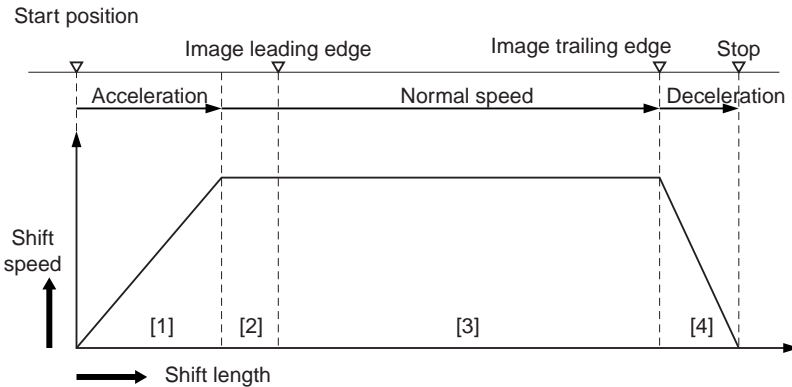
1. Acceleration Zone: accelerates to suit the selected mode
2. Approach Zone: moves for speed stabilization.
3. Image Read Zone: reads the image at a specific speed.
                    (if black-and-white/SEND mode, twice as fast as in full-color mode)
4. Deceleration Zone: past the image trailing edge, immediately decelerates and stops.

F-6-14

The machine uses the following scanning speeds to suit different modes;

T-6-4

Function	Mode	Scanning speed
Copier	black-and-white	234 mm/sec
	full-color	234 mm/sec
SEND	black-and-white	468 mm/sec
	full-color	234 mm/sec(600dpi)
		468 mm/sec(300dpi)

6.3.2 Enlargement/Reduction

6.3.2.1 Changing the Magnification in Main Scanning Direction

For main scanning direction in both copyboard and ADF modes, the image is read at 100%, and the magnification is varied by the main controller block.

6.3.2.2 Changing the Magnification in Sub Scanning Direction

For sub scanning direction in both copyboard and ADF modes, the image is read at 100%, and the magnification is changed by the main controller block.
In SEND mode, the reading size is switched between 100% and 50% depending on the selected resolution.

6.3.3 Controlling the Scanning Lamp

6.3.3.1 Overview

The scanning lamp is controlled for the following, with associated control mechanisms operating as follows:

1. Turning On and Off the Scanning Lamp
The scanning lamp is turned on or off by the drive signal (XE-ON) generated by the CPU of the reader controller PCB. When the signal is generated, the inverter PCB generates high-frequency high voltage using the activation control circuit from the drive voltage (+24V) supplied by the reader controller PCB, thus turning on the scanning lamp.

2. Detection Error Activation
The machine detects a fault in the intensity of the lamp as an activation error caused by a fault in the intensity of the lamp at time of initial activation (shading correction).

ERROR CODE:
E225
- the reader controller PCB is faulty
- the inverter PCB is faulty
- the scanning lamp (xenon tube) is faulty
- CCD is faulty
- flexible cable has poor contact
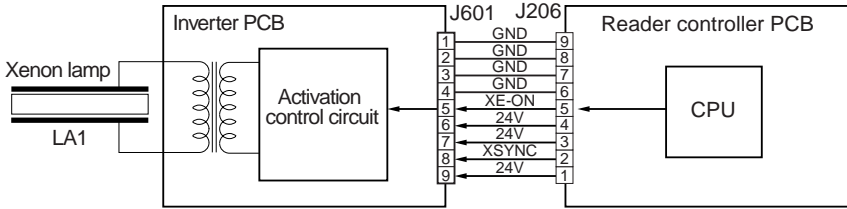
F-6-15

6.3.3.2 Scanning Lamp

The machine's scanning lamp is a xenon lamp, which uses xenon gas sealed inside. On the outside of the glass tube, 2 electrodes are arranged in parallel with the tube; the inside of the tube, on the other hand, is coated with fluorescent material. When a high-frequency high voltage is applied to the electrodes, the gas inside the tube starts to discharge, causing the fluorescent material to emit light.
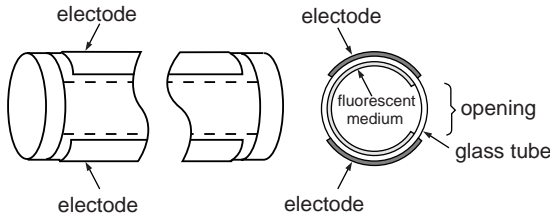
F-6-16

6.3.3.3 Turning On and Off the Scanning Lamp

The scanning lamp is turned on and off by the drive signal (LAMP_ON) generated by the CPU of the reader control PCB. When the signal is generated, the inverter PCB generates high-frequency high voltage in the activation control circuit using the drive voltage (+24 V) supplied by the reader controller PCB to turn on the xenon lamp.

ä÷òAÉGÉâÅ[ÉRÅ[ÉhÅF
Relevant Error Code:
E220 (Lamp ON fault when the power is ON.)
Inverter PCB fault, reader controller PCB fault, or scanning lamp fault.

6.3.4 Detecting the Size of Originals

6.3.4.1 Identifying the Size of Originals

The machine identifies the size of an original based on combinations of measurements taken of the light reflected by specific points (using a reflection type sensor and CCD). In consideration of possible displacement of the original when the ADF is closed, the machine uses a 2-point CCD check.
- Main Scanning Direction:
    by CCD (AB-configuration; 8-point measurement; inch-configuration, 6-point measurement)
- Sub Scanning Direction:
    reflection type photo sensor (AB-configuration: 1-point measurement; inch-configuration: 1-point measurement)

Specifically, the following takes place:
1) External Light Search (main scanning direction only)
   While keeping the scanning lamp off, the machine measures the level of the CCD at specific points in main scanning direction.
2) Sensor Output Level Detection
   The machine turns on the scanning lamp, and measures the sensor output at specific points. It then checks combinations of these measurement to find the size of the original.

6.3.4.2 Points of Measurement Used for Original Size Identification

For main scanning direction, the machine moves the No. 1 mirror base to the following points in relation to the location of the original to measure the levels of the CCD. For sub scanning direction, the machine checks the states of the sensors arranged as follows:
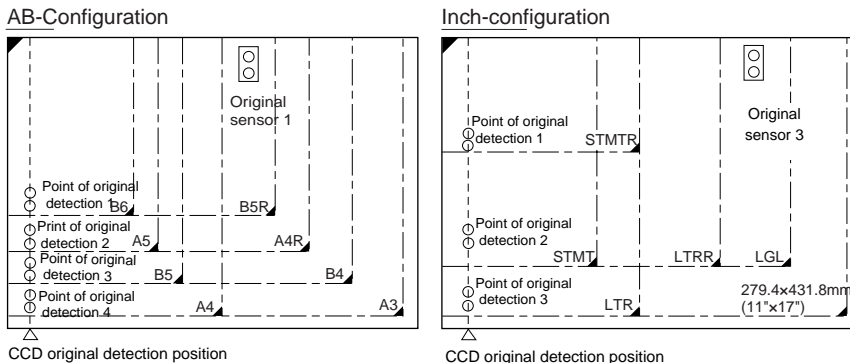
F-6-17

To raise the accuracy of original size identification (as when the original is displaced while the ADF is closed), the machine makes use of the following 2 types of mechanisms:

1. Presence/Absence of an Original at 2 Points (for each point of measurement)
   For each point of measurement in main scanning direction, the machine checks the presence/absence of an original with reference to the CCD output at 2 points near the point of measurement.
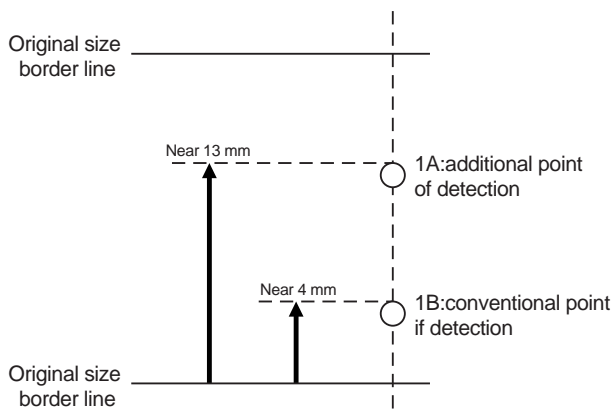
F-6-18

T-6-5

Result of measurement		Result of detection
A	B	
no	no	original absent
yes	yes	original present
no	yes	original present
yes	yes	original present

Note:
Changes in the Signal (from ADF open to close)
  change: no
  other: yes
The machine uses OR combinations for identification.

2. Priority on the Front Sensors
    When checking the measurements for main scanning direction, if the absence of an original is indicated at the rear while the presence of an original is indicated at the front, the machine will give priority to the indication at the front (i.e., presence of an original).

Document size sensor 1

Point of detection 1

Point of detection 2

Point of detection 3   B5

Point of detection 4
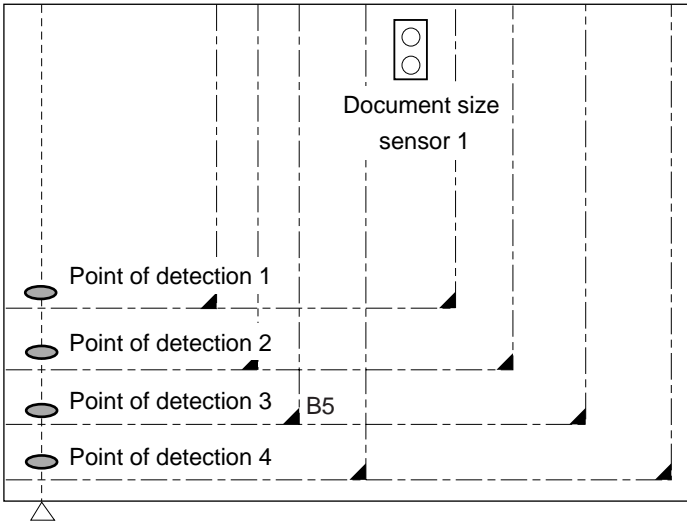
CCD original detection position

F-6-19

T-6-6

Point of detection	yes/no	Size identified
1	yes	yes
2	no	yes
3	yes	yes
4	no	no
Result		B5

Note:
Change in the Signal (ADF open to closed)
  change: no
  other: yes

6.3.4.3 Overview of Operation

1) Standby
    No.1 mirror base: shading position
    xenon lamp: off
    original sensor: off

Xenon lamp

Original sensor

ADF

Reader unit

Point of detection 1
Point of detection 2
Point of detection 3 Copyboard
Point of detection 4 glass

Original detection position

F-6-20
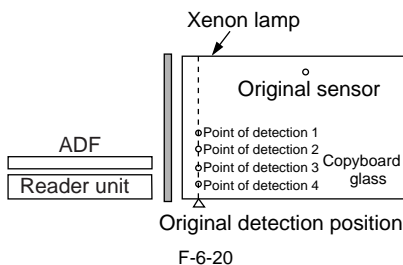
2) ADF Opened
    No.1 mirror base: moves to original detection position
    xenon tube: off
    original sensor: off

(external
light)

F-6-21
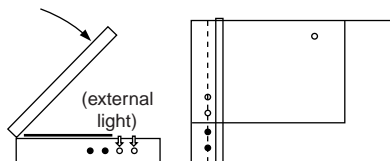
3) ADF Closed
3-1) When the ADF is brought to 25 deg, the area covered by an original will be blocked from external light; therefore, the machine will assume the absence of an original at points that detect external light (external search).
    The ADF open/closed sensor 2 identifies the condition as being "closed," and the machine starts original size identification.
    At this position, B5, B4, A4, and A3 are excluded from the list of possible sizes.
3-2) The machine executes an external light search: for main scanning direction, it turns on the xenon lamp to check its light (reflected) at 4 points using the CCD; for the sub scanning direction, the machine checks the state of the original sensor.

(external
light)

F-6-22
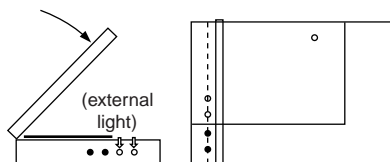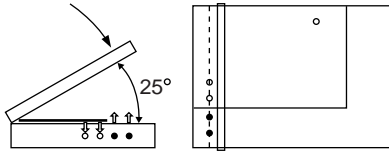
F-6-23

4) ADF Cover Fully Closed (5 deg or less).
   The machine checks for a change in the output levels of the sensors for 2 sec after the ADF open/closed sensor has identified the ADF as being "closed"; the machine assumes the absence of an original at points without a change.
   The machine then identifies the size of the original based on the combination of changes at 5 points.
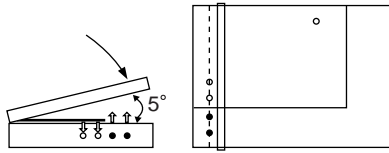
F-6-24

5) Standby (in wait for a press on the Start key)
   No. 1 mirror base: at point of original detection
   xenon lamp: off
   original sensor: off
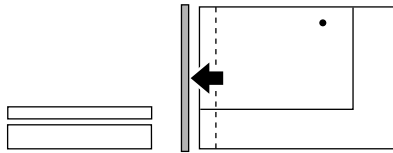
F-6-25

AB-Configuration

Original size	Point of CCD detection				Original sensor 1
	1 A B	2 A B	3 A B	4 A B	A B
A3	O O	O O	O O	O O	O O
B4	O O	O O	O O	● ●	O O
A4R	O O	O O	● ●	● ●	O O
A4	O O	O O	O O	O O	● ●
B5	O O	O O	O O	● ●	● ●
B5R	O O	● ●	● ●	● ●	O O
A5	O O	O O	● ●	● ●	● ●
B6	O O	● ●	● ●	● ●	● ●
absent	● ●	● ●	● ●	● ●	● ●

Inch-configuration

Original size	Point of CCD detection			Original sensor 3
	1 A B	2 A B	3 A B	A B
11"x17"	O O	O O	O O	O O
LGL	O O	O O	● ●	O O
LTRR	O O	O O	● ●	● ●
LTR	O O	O O	O O	● ●
STMTR	O O	● ●	● ●	● ●
STMT	O O	O O	● ●	● ●
absent	● ●	● ●	● ●	● ●

O:unchanged   ●:changed

F-6-26

6.3.5 Dirt Sensor Control

6.3.5.1 Stream Reading Dust Detection Control

The machine checks the stream reading glass and the ADF platen roller for the presence/absent of dust. It then changes the point of reading or executes image correction depending on the result of detection, thereby avoiding reproduction of dust particles in its output images. The machine executes the detection mechanism only when the ADF is used:

1. Timing of Detection
    (1) at the end of a job
    (2) between sheets (for every sheet read)

Start key
ON

| | 1st SCAN | | 2nd SCAN | |

Dust detection*   Dust detection   Dust detection

F-6-27
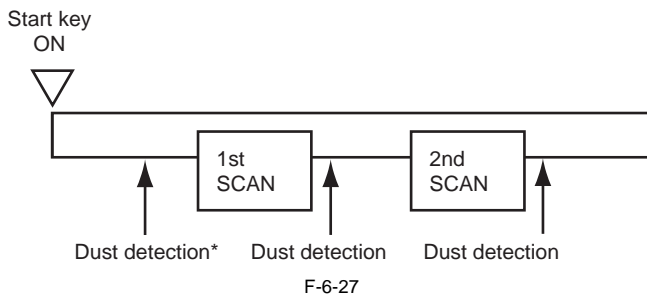
*Executed only if dust has been detected at all points, i.e., A, B, C, D, and E in the previous job. If so, the machine uses the point with least dust as the reading position and executes dust correction before starting reading operation.

2. Particulars of Control
    (1) at the end of a job (makes a change to the point of stream reading dust reading position)
        The machine checks the light reflected by the platen roller at the reading position to see if there is dust, moving to the next point if it finds dust (from A to B, C, D, and then to E; 5 points max.). It uses the first point that is free of dust as the reading point for the next job.
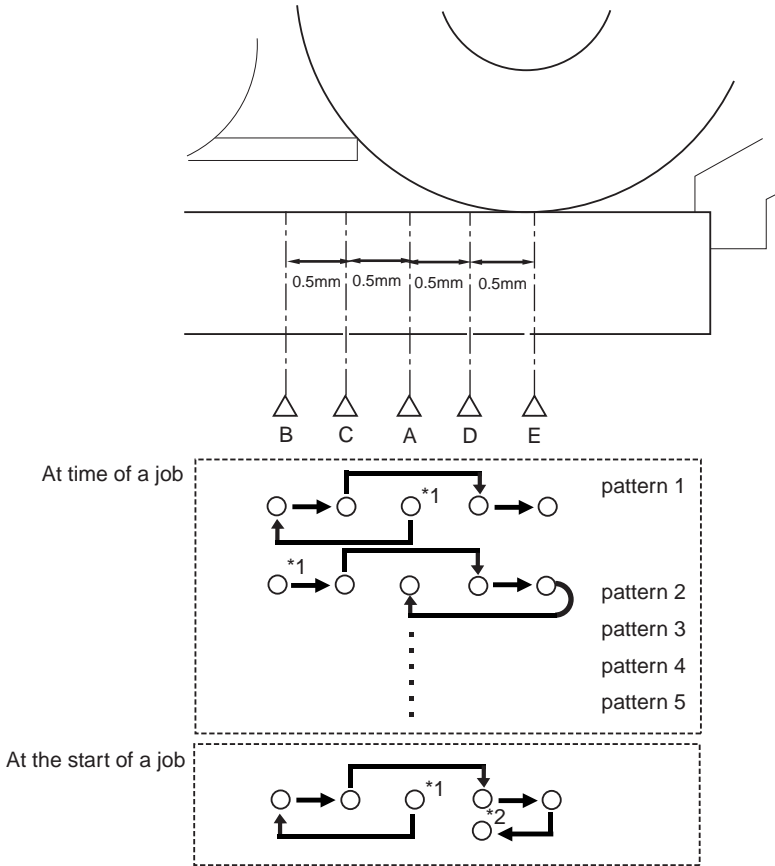
F-6-28

If it finds dust at all 5 points (A, B, C, D, E), then it will indicate an alarm when an original is placed in the ADF, prompting the user for cleaning. To reset, press [close].
 When it starts a job, it will run the session once again and use a point with no dust or little dust as the reading position.
*1: reading position at the end of the previous job.
*2: point with no dust or little dust.

T-6-7

A	reading reference position (1.0 mm to the left from the center of the platen roller)
B	1.0 mm to the left from the reference position
C	0.5 mm to the left from the reference position
D	0.5 mm to the right from the reference position
E	1.0 mm to the right from the reference position (center of the platen roller)

(2) between sheets (dust correction)
The machine does not move the xenon lamp for dust detection.
If dust is detected between sheets, the machine executes dust correction by making correction on the pixels on both sides of the area where dust is found.

MEMO:
COPIER > OPTION > BODY > DFDST-L1 (level 1)
 (adjustment of dust detection level between sheets)
COPIER > OPTION > BODY > DFDST-L2 (level 1)
 (adjustment of dust detection at job end)

6.3.5.2 White Plate Dust Detection Control

The machine uses a fan to cool the inside of the reader unit to prevent overheating otherwise caused by the xenon lamp in stream reading mode. The fact, however, can cause stray dust inside the reader unit to collect on the white plate, showing up as lines in output images.

1. Timing of Control
   (1) Before a Job
      (a) white plate dust detection
      (b) white plate dust correction
   (2) After a Job
      (a) white plate dust detection
      (b) white plate dust correction
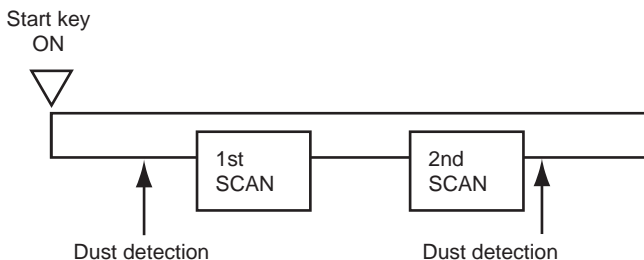
F-6-29

2. Particulars of Control
   (1) White Plate Dust Detection
   The machine compares the shading coefficient obtained from shift shading and the shading coefficient obtained from fixed shading to identify the presence/absence of dust and, if any, coordinates and width of the area.
   (2) White Plate Dust Correction
   If the machine detects dust as a result of white plate dust detection, it corrects the shading coefficient of the area using the shading coefficient of both sides so as to decrease the effects of the presence of dust. It executes shading correction using the coefficient it obtains after correction.
   If the result of white plate dust detection indicates the presence of dust, the shading coefficient of the area in question will be corrected by the coefficients of its adjacent areas during shading correction with the aim of reducing the effects of the presence of dust. Thereafter, shading correction will be executed using the corrected coefficient.

White plate

Detection Algorithm

Area
of dust

Computation of shading
coefficient
(shift shading to
reference area)

Computation of shading
coefficient
(from fixed shading to
shading correction position)

Comparison

Detection of coordinates of
start of dust and width

Correction Algorithm

Fixing shading position
Shading correction position

Correction of dust area
coefficient using data of both sides

Reference area
(Shading coefficient
computation area)

F-6-30

6.3.6 Image Processing

6.3.6.1 Overview

The following shows the major functions of the machine' s image processing system:
- CCD (image sensor)
  number of lines: 3 (RGB, 1 line each)
  number of pixels: 7350
  size of pixel: 9.3 x 9.3 ym
- Shading Correction   shading adjustment: in service mode
              shading correction: performed for every copy
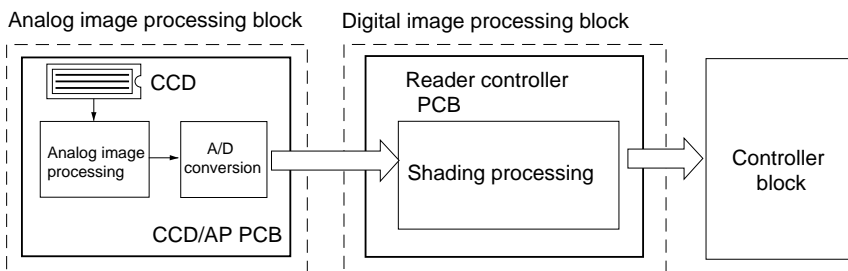
F-6-31

The following shows the functions of the PCBs associated with the image processing system:
CCD/AP PCB: CCD drive, analog image processing, A/D conversion
reader controller PCB: shading correction
The machine performs image processing for every RGB line using the reader controller PCB, and the major functions involved are as follows:
  (1) Analog Image processing
    (a) CCD drive
    (b) CCD output gain correction, offset correction
    (c) CCD output A/D conversion
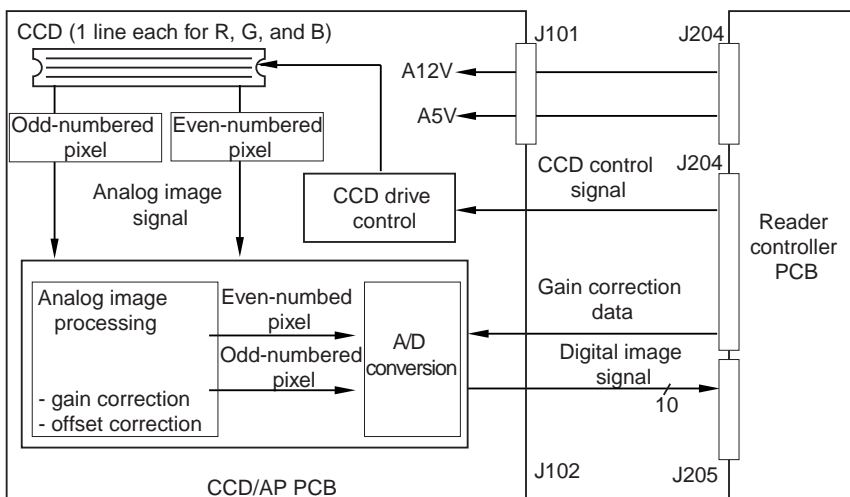
F-6-32

(2) Digital Image Processing
   (a) Shading Correction
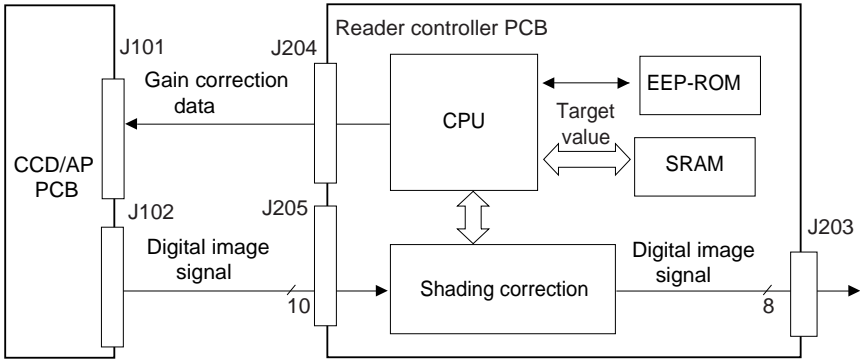
F-6-33

6.3.6.2 CCD Drive

The machine's CCD is a linear image sensor consisting of 3 lines (R, G, B, 1 line each), each line composed of 7350 photo cells. The signal that has been put through photo-conversion in the light-receiving segment is divided into 2 analog signals of 2 channels for output: even-numbered pixels (EVEN) and odd-numbered pixels (ODD).
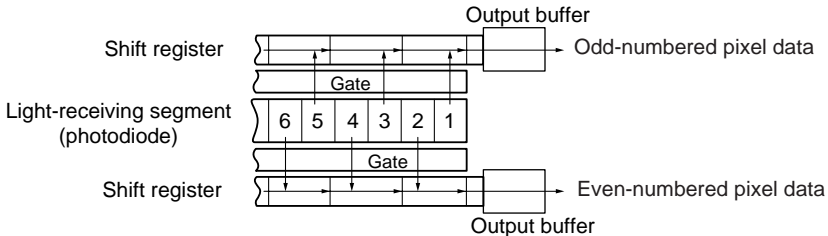
F-6-34

6.3.6.3 CCD Gain Correction, Offset Correction

The analog video signal from the CCD is processed so that the rate of amplification is even (gain correction); the output in the absence of incident light is also processed for a specific level (offset correction).

6.3.6.4 CCD Output A/D Conversion

The odd-numbered and even-numbered pixel analog video signals after the foregoing correction are then converted into 10-bit digital signals by the A/D converter according to their pixel voltage levels.

6.3.6.5 Outline of Shading Correction

The output of the CCD may not always be uniform because of the following reasons even when the density of the original in question is uniform:
   - variation in the sensitivity among individual pixels of the CCD.
   - difference in the level of transmission between the center and the edge of the lens.
   - difference in the intensity of light between the middle and the edges of the scanning lamp.
   - deterioration of the scanning lamp

The machine executes shading correction to even out the output of the CCD.

The machine executes either of the following 2 shading mechanisms: shading correction it carries out for every copy and shading adjustment for which the target value is set in service mode.

6.3.6.6 Shading Adjustment

The machine performs shading adjustment in response to a command made in service mode. The machine measures the density of blank white paper and that of the white plate to obtain density data; it then computes the data to produce the target value for use at time of shading correction.

6.3.6.7 Shading Correction

The machine executes shading correction each time it scans an original.
The machine directs the light from the scanning lamp against the standard white plate, and converts the reflected light into a digital signal by the analog image processing block on the CCD/AP PCB. The result (i.e., a digital signal representing the intensity of the reflected light) is sent to the shading correction circuit of the reader controller PCB as a shading coefficient. The shading correction circuit in turn compares the coefficient against the target value it holds, and offers the difference as the shading correction value.
 The machine uses the shading correction value to correct the variation that may exist among the individual pixels of the CCD, thereby keeping the image density to a specific level at all times.
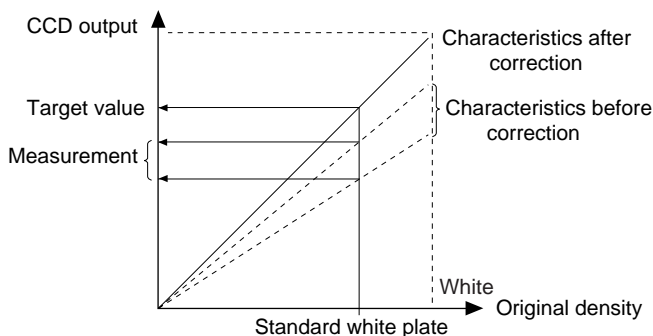
F-6-35

6.4 Parts Replacement Procedure

6.4.1 Copyboard Glass

6.4.1.1 Removing the Copyboard Glass

1) Open the ADF.
2) Remove the copyboard glass[3].
   - 2 screws[1]
   - right glass retainer[2]
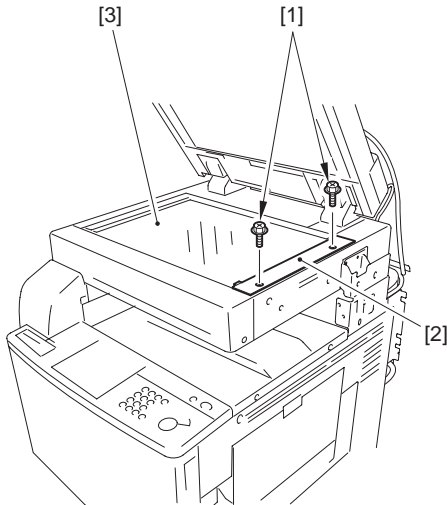
F-6-36

⚠

When removing the copyboard glass, take care not to touch the white plate attached to its back. (soiling can cause lines in the image) If soiled, clean it using lint-free paper moistened with alcohol.

6.4.2 Exposure Lamp

6.4.2.1 Preparation for Removing the Scanning Lamp

1) Remove Copyboard Glass.
2) Remove the Reader Right Cover.
3) Remove the Reader Left Cover.
4) Remove the Reader Front Cover.
5) Remove the Reader Rear Cover.
6) Remove the CCD unit cover [2].
(Referring to Procedure 6.4.6)

6.4.2.2 Removing the Scanning Lamp

1) Remove the cable [2] from the cable guide [3].
   - connector [1]
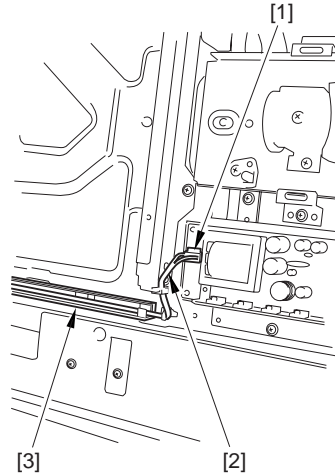
F-6-37

2) Move the No. 1 mirror base [1] to the right to match it against the cut-off [2] of the frame.

Reference:
When moving the No. 1 mirror base, be sure to hold it by the cut-up tab [A] of the mirror stay.
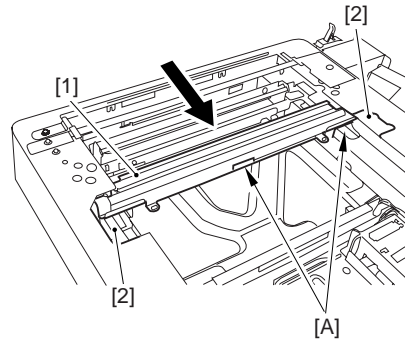
F-6-38

3) Remove the scanning lamp [2].
  - 2 screws [1]
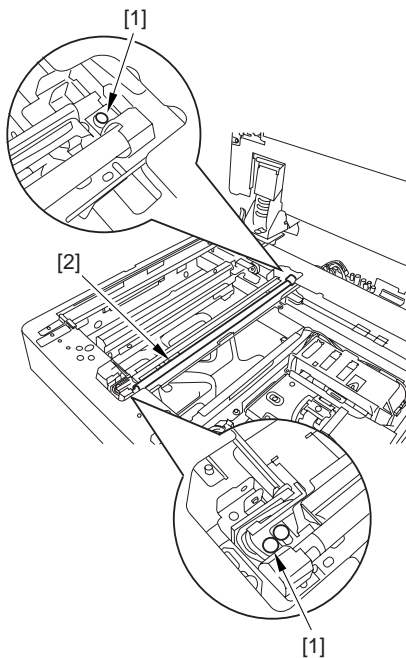
F-6-39

6.4.3 Reader Controller PCB

6.4.3.1 Preparation for Removing the Reader Controller PCB

⚠️

Be sure to print out the settings using P-PRINT before replacing the reader controller.

1) Remove the Copyboard Glass.
2) Remove the CCD unit cover [2].
(Referring to Procedure 6.4.6)
3) Remove the Original Size Sensor Unit.
3-1) Remove the original size detection unit [2].
    - 3 screws [1]
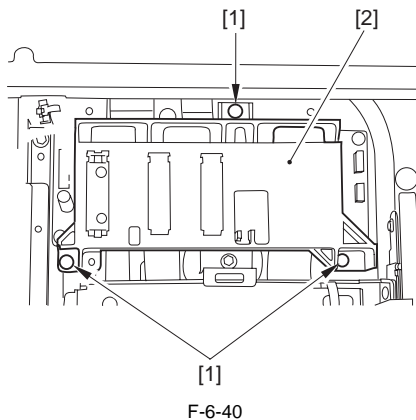
F-6-40

3-2) Remove the original size sensor unit [2].
  - connector [1]
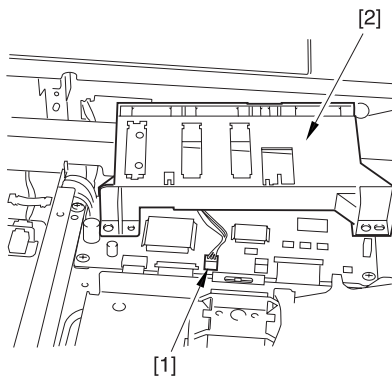
F-6-41

6.4.3.2 Removing the Reader Controller PCB

1) Remove the reader controller PCB [4].
   - 5 flat cables [1]
   - connector [2]
   - 4 screws [3]
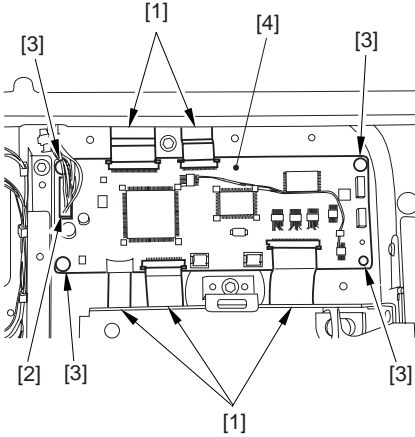
F-6-42

Reference: Disconnecting the Flat Cable
Slide the locking lever [1] in the direction of the arrow; then, disconnect the flat cable [2].
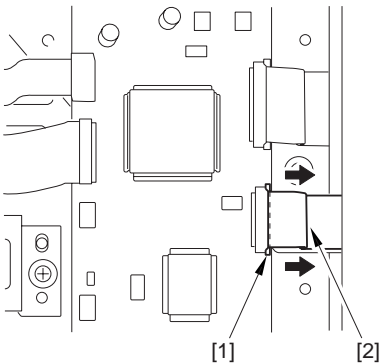
F-6-43

6.4.3.3 After Replacing the Reader Controller

⚠️

Initializing the RAM of the Reader Controller Without Replacing the PCB.Using the SST, upload the backup data of the reader controller; after you have initialized the RAM, download the backup data, thereby eliminating the need for the following adjustment work.

1. Reader Unit-Related Adjustment
1) Using the SST, download the latest system software (R-CON).
2) Make the following selections in service mode, and press the OK key to initialize the RAM:
   COPIER>FUNCTION>CLER>R-CON.
   Then, turn off and then on the main power.
3) Enter the following settings in service mode:
   (1) standard while plate white level data
      COPIER>ADJUST>CCD-W-PLATE-X,Y,Z
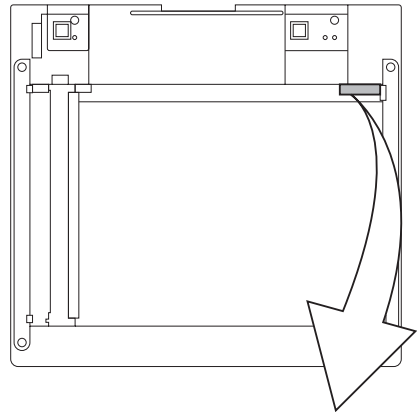
W-PLT-X   W-PLT-Y   W-PLT-Z

F-6-44

(2) service mode label record (behind reader front cover)
   (a) image read start position adjustment (x direction; for fixed position reading)
      COPIER>ADJUST>ADJ-XY>ADJ-X
   (b) image read start position adjustment (Y direction: for fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-Y
(c) shading position adjustment (for fixed reading)
        COPIER>ADJUST>ADJ-XY>ADJ-S
(d) feeder mode main scanning position adjustment
        COPIER>ADJUST>ADJ-XY>ADJ-Y-DF
(e) ADF stream reading CCD read position adjustment
        COPIER>ADJUST>ADJ-XY>STRD-POS
(f) CCD unit RG/GB sub scanning direction color displacement correction
        COPIER>ADJUST>CCD>CCDU-RG/GB
(g) factory default CD unit RG/GB sub scanning color displacement correction
        COPIER>ADJUST>CCD>FCCDU-RG/GB
(h) auto gradation correction target value
        COPIER>ADJUST>PASCAL>OFFSET-P-Y,M,C,K

b. ADF-Related Adjustment

⚠

The machine retains ADF-related service data in the RAM of its reader controller, calling for adjustment of the ADF if you have initialized its RAM.

1) In service mode, enter the settings indicated on the P-PRINT printout you have previously obtained:
    (1) original stop position adjustment
    FEEDER>ADJUST>DOCST
    (2) original feed speed (magnification) adjustment
    FEEDER>ADJUST>LA-SPEED
2) Make the following adjustments using the following service mode items:
    (1) ADF sensor sensitivity adjustment
    FEEDER>FUNCTION>SENS-IN
    (2) tray width adjustment
    FEEDER>FUNCTION>TRY-A4
    FEEDER>FUNCTION>TRY-A5R
    FEEDER>FUNCTION>TRY-LTR
    FEEDER>FUNCTION>TRY-LTRR
    (3) white level adjustment
    COPIER>FUNCTION>CCD>DF-WLVL1
    COPIER>FUNCTION>CCD>DF-WLVL2

When done, put the P-PRINT printout [1] in the service book case, disposing of the previous printout.

6.4.4 Interface PCB

6.4.4.1 Preparation for Removing the Interface PCB

1) Remove the reader rear cover.

6.4.4.2 Removing the Interface PCB

1) Remove the interface PCB cover [3].
    - 4 RS tightening screws [1]
    - 2 binding screws [2]
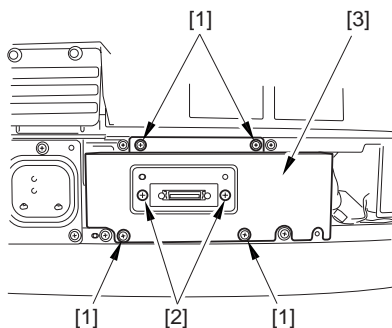
F-6-45

2) Remove the interface PCB unit [4].
    - 7 connectors [1]
    - 2 flat cables [2]
    - 5 screws [3]
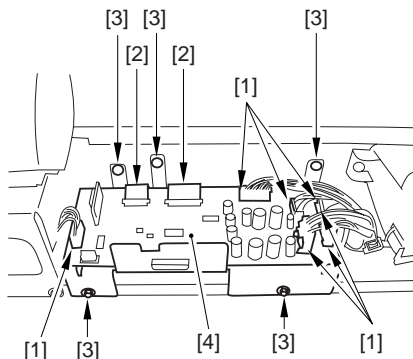
F-6-46

Reference: How to Remove the Flat Cable
Move the locking lever [1] in the direction of the arrow, and remove the flat cable [2].
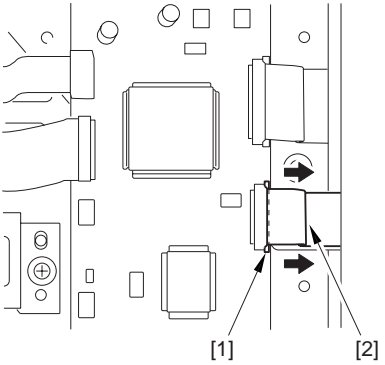
F-6-47

3) Remove the interface PCB [2].
   - 9 screws [1]
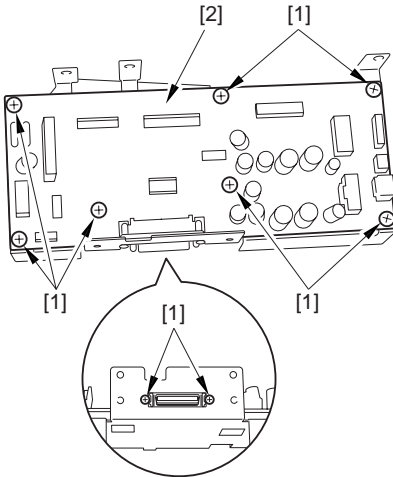
F-6-48

6.4.4.3 Points to Note When Attaching the Interface PCB

⚠

If the tie-wrap [1] of the scanner motor harness is closer to the motor than the wire guide [2], the harness will come into contact with the rotor and suffer damage. Be sure that the tie-wrap is closer to the interface PCB than the wire guide.
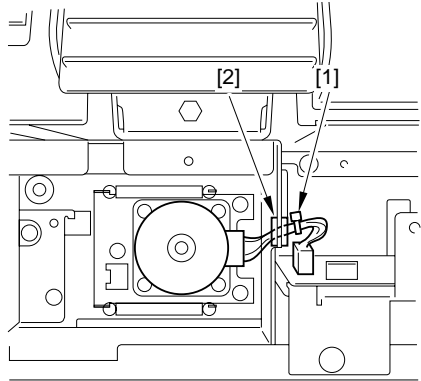
F-6-49

6.4.5 Inverter PCB

6.4.5.1 Preparation for Removing the Inverter PCB

1) Remove the Copyboard Glass.
2) Remove the CCD unit cover [2].
(Referring to Procedure 6.4.6)

6.4.5.2 Removing the Inverter PCB

1) Remove the 2 PCB supports [4], and remove the inverter PCB [5].
   - connector [1]
   - flat cable [2]
   - screw [3]
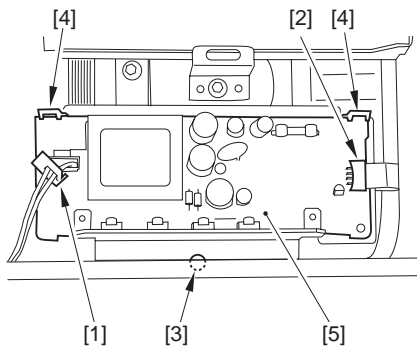
F-6-50

6.4.5.3 After Replacing the Inverter PCB

There is no special adjustment after replacing the inverter PCB.

6.4.6 CCD Unit

6.4.6.1 Preparation for Removing the CCD Unit

1) Remove the Copyboard Glass.
2) Remove the CCD unit cover [2].
   - 9 screws [1]
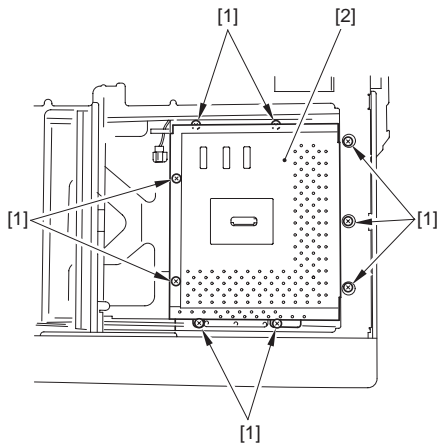
F-6-51

3) Remove the Original Size Sensor Unit.
(Referring to Procedure 6.4.10)

6.4.6.2 Removing the CCD Unit

1) Remove the CCD unit [4].
   - 2 flat cables [1] from the reader controller PCB
   - 2 screws [2]
   - 2 leaf springs [3]
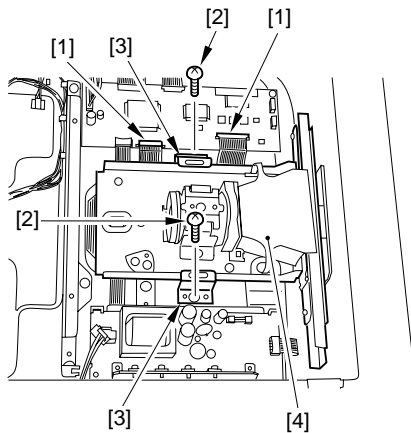
F-6-52

6.4.6.3 After Replacing the CCD Unit

If you have replaced the CCD unit, be sure to enter the settings indicated on the label attached to the CCD unit:

COPIER>ADJUST>CCD>CCDU-RG
(to enter the correction value for CCD-dependent RG color displacement in sub scanning direction)
COPIER>ADJUST>CCD>CCDU-GB
(to enter the correction value for CCD-dependent GB color displacement in sub scanning direction)

+2,-1,30524101

CCDU-GB
CCDU-RG
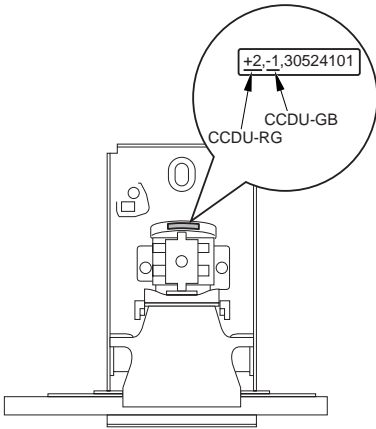
F-6-53

Moreover, be sure to update the settings indicated on the service label attached behind the reader unit front cover with the settings indicated on the label attached to the CCD unit.

6.4.7 Scanner Motor

6.4.7.1 Preparation for Removing the Scanner Motor

1) Remove the reader rear cover.

6.4.7.2 Removing the Scanner Motor

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

[1]

[2]

[1]
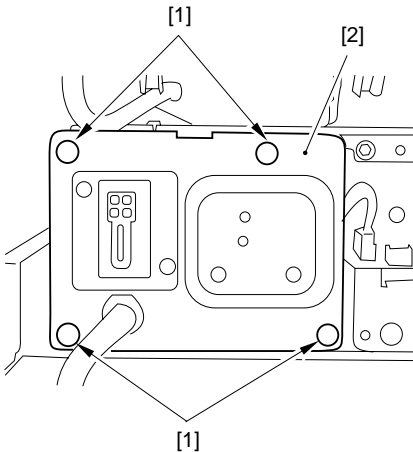
F-6-54

2) Remove the 2 harness retainers [2] from the back of the cover [1] to remove the cover.

[1]   [2]
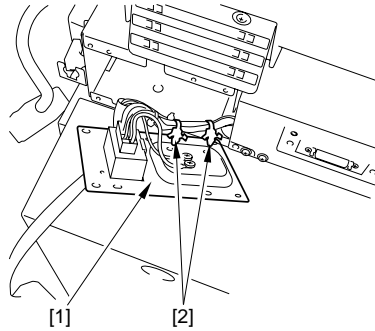
F-6-55

3) Move the scanner motor [3] in the direction of the arrow to remove.
   - 3 screws [1]
   - 2 springs [2]

[3]   [2]   [1]

[1]   [2]
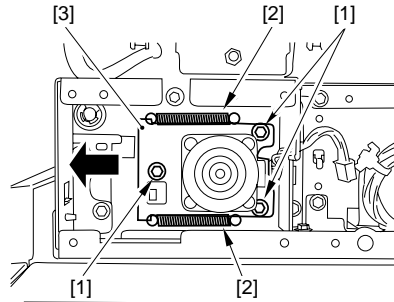
F-6-56

4) Remove the scanner motor [2].
   - connector [1]

[1]

[2]
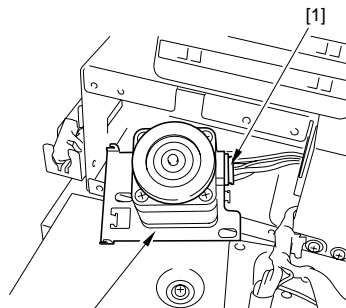
F-6-57

6.4.7.3 Attaching the Scanner Motor

When attaching the scanner motor, be sure that the timing belt [3] is securely attached to the scanner pulley [1] and the motor shaft [2].
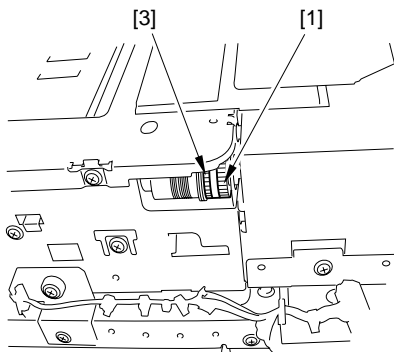
F-6-58
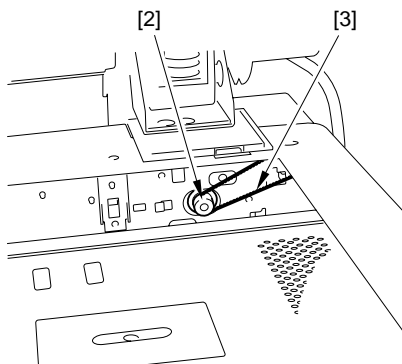
F-6-59

⚠
If the tie-wrap [1] of the scanner motor harness is closer to the motor side than the wire guide [2], the harness can come into contact with the rotor of the scanner motor and suffer damage. Be sure that the tie-wrap is closer to the interface PCB than the wire guide when mounting the scanner motor.
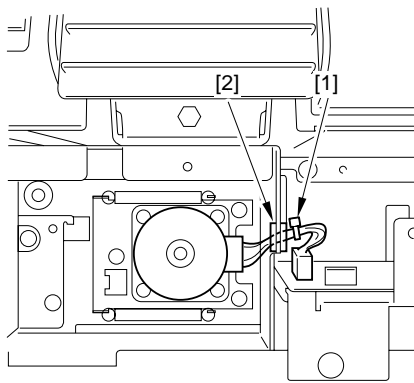
F-6-60

6.4.8 ADF Open/Close Sensor

6.4.8.1 Preparation for Removing the ADF Open /Close Sensor

1) Remove the reader rear cover.

6.4.8.2 Removing the ADF Open/Closed Sensor

1) Disconnect the connector [1] from the ADF open/closed sensor [2].
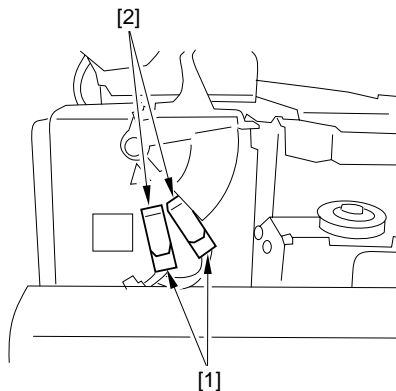
F-6-61

2) Remove the ADF open/closed sensor cover [2].
  - 4 screws [1]
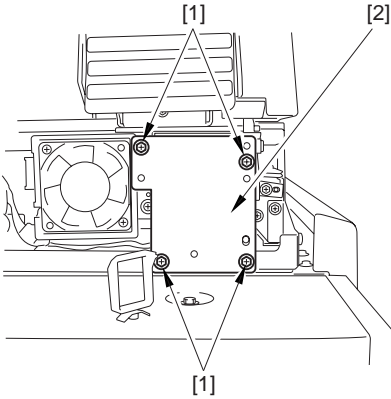
F-6-62

3) Remove the ADF open/closed sensor (1, 2).
  - hook [1]
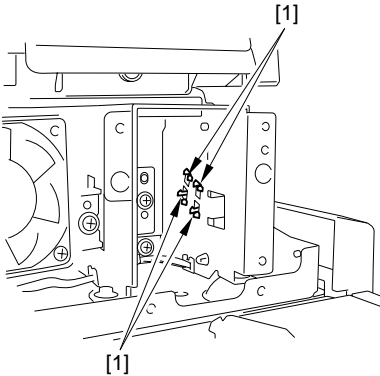
F-6-63

6.4.9 Scanner HP Sensor

6.4.9.1 Preparation for Removing the Mirror Base Home Position Sensor

1) Remove the reader rear cover.

6.4.9.2 Removing the Mirror Base Home Position Sensor

1) Remove the ADF open/closed sensor cover [2].
2) Remove the sensor mounting plate [2].
  - screw [1]
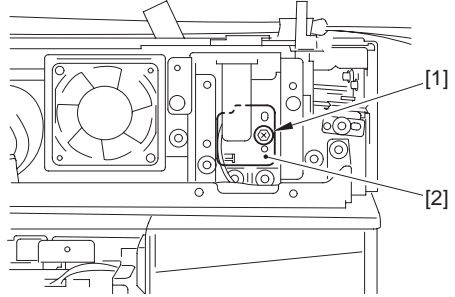
F-6-64

3) Remove the home position sensor [1].
  - connector [1]
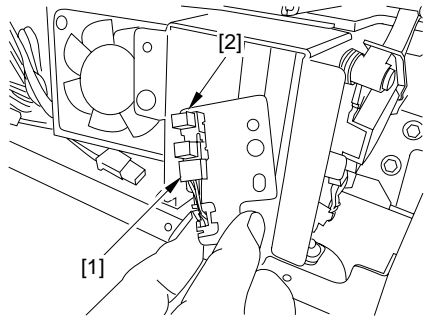
F-6-65

6.4.10 Original Sensor

6.4.10.1 Preparation for Removing the Original Size Sensor

1) Remove the Copyboard Glass.
2) Remove the CCD unit cover [2].
(Referring to Procedure 6.4.6)
3) Remove the Original Size Sensor Unit.
3-1) Remove the original size detection unit [2].
    - 3 screws [1]
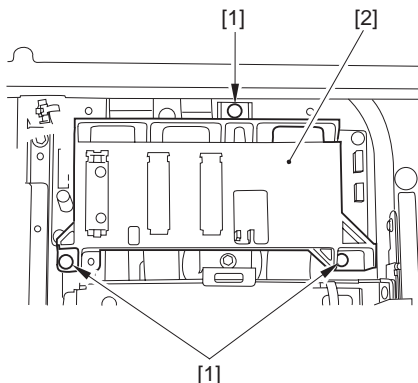
F-6-66

3-2) Remove the original size sensor unit [2].
    - connector [1]
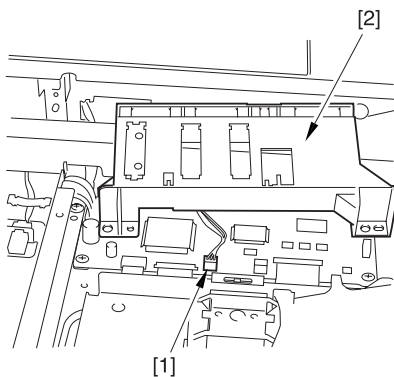
F-6-67

6.4.10.2 Removing the Original Size Sensor

1) While removing the claw at the edge, remove the original size sensor [1].
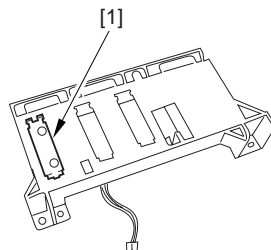
F-6-68

6.4.11 Cooling Fan

6.4.11.1 Preparation for Removing the Cooling Fan

1) Remove the Reader Rear Cover.

6.4.11.2 Removing the Cooling Fan

1) Remove the cooling fan [4].
    - 1 connector [2] (open the wire guide [1], and remove the cable)
    - 2 screws [3]
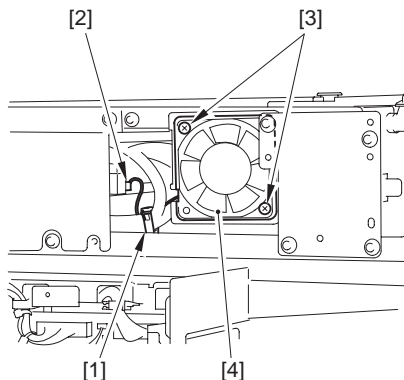
F-6-69

6.4.12 Scanner Drive Cable

6.4.12.1 Preparation for Removing the Scanner Drive Cable

Be sure to keep the following on hand when replacing the scanner drive cable:
- mirror positioning tool

1) Remove the Copyboard Glass.
2) Remove the Reader Right Cover.
3) Remove the Reader Left Cover.
4) Remove the Reader Front Cover.
5) Remove the ADF.
5-1) Remove the cable [1] of the ADF from the host machine.
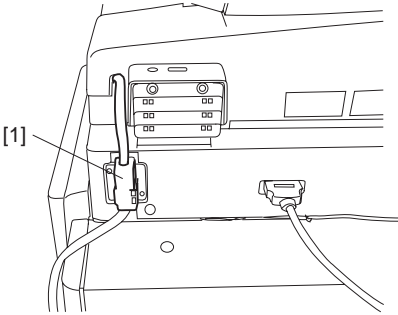
F-6-70

5-2) Bend up the edge of the rubber cover [1], and remove the 2 screws [2]; then, remove the angle guide plate [3].
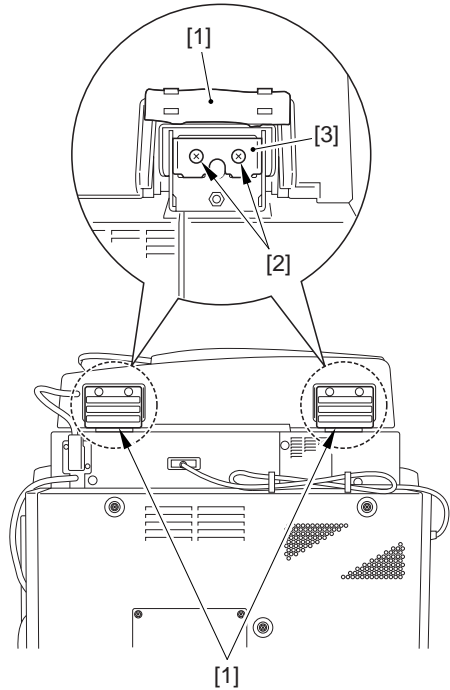
F-6-71

5-3) Remove the 3 knurled screws [1], and move the ADF toward the rear; then, lift it to detach.
    - 3 knurled screws [1]
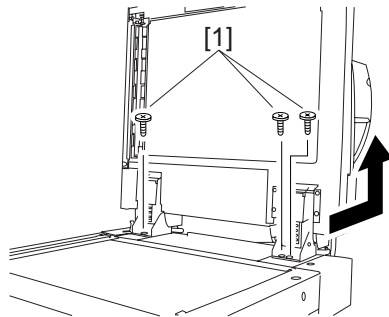
F-6-72

6.4.12.2 Removing the Scanner Drive Cable

1) Remove the 2 screws [1], and detach the reading glass left retainer [2].

⚠️

Take care so that the leaf spring will not come off when removing the reading glass left retainer.

2) Remove the reading glass [3].
3) Remove the 2 screws [4], and detach the right glass retainer [5].
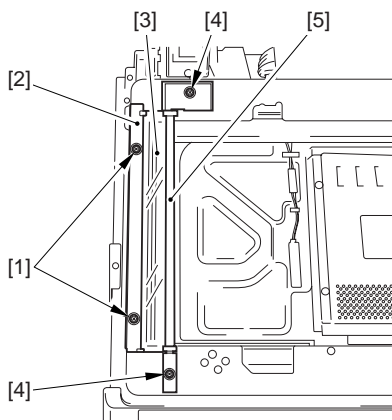
F-6-73
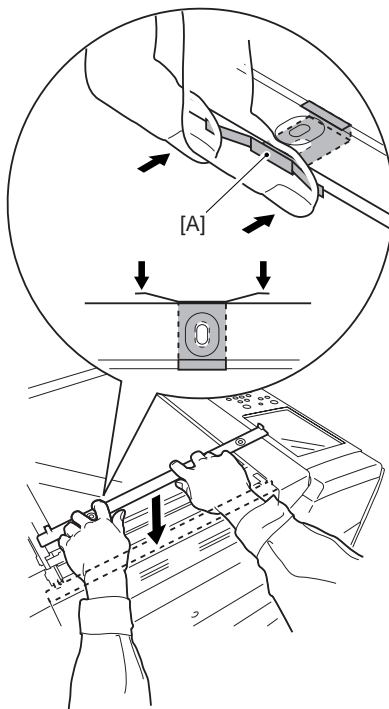
F-6-74

⚠️

When attaching it, be sure to hold down both ends of the leaf spring [A] with your fingers. (Take care not to bend the leaf spring.)
Be sure to attach it while forcing the left glass retainer [B] against the reading glass [C].
Check to make sure that the side of the reading glass and the leaf spring [D] of the left glass retainer are in firm contact.
Otherwise, dust from the reading glass can start to collect, causing lines in images.
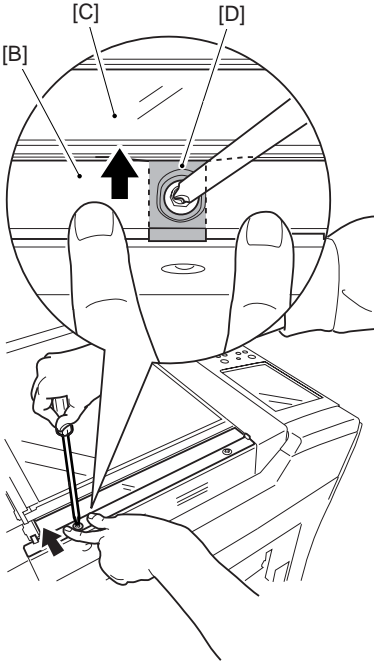
F-6-75

4) Remove the ADF right screw cover [2].
  -screw [1]
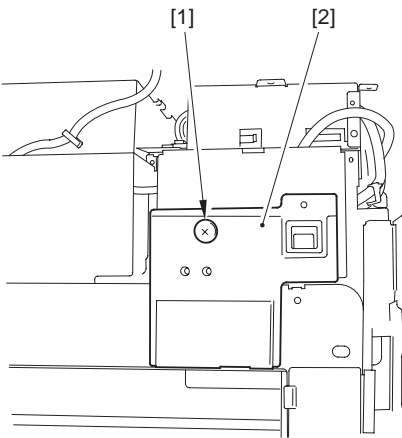
F-6-76

5) Remove the ADF left screw cover [2].
  -the screw[1]
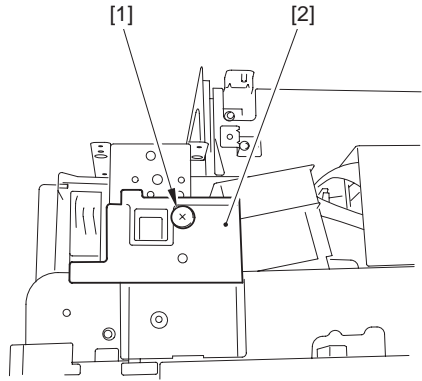
F-6-77

6) Remove the interface PCB cover [3].
  - 4 RS tightening screws [1]
  - 2 binding screws [2]
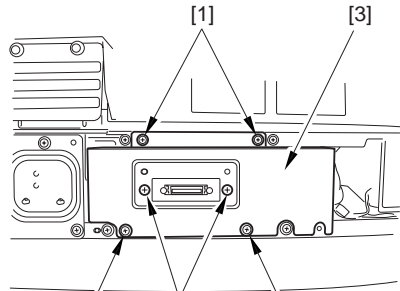
F-6-78

7) Remove the interface PCB unit [4].
   - 7 connectors [1]
   - 2 flat cables [2]
   - 5 screws [3]
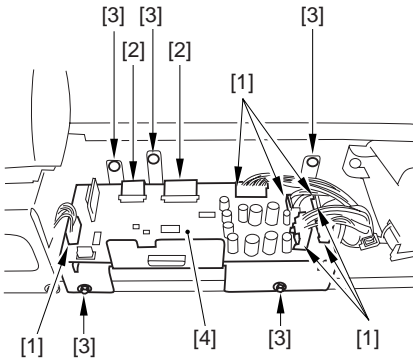
F-6-79

Reference:How to Remove the Flat Cable
Move the lock lever [1] in the direction of the arrow to release; then, detach the flat cable [2].
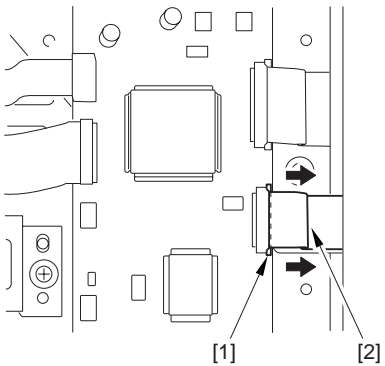
F-6-80

8) Remove the interface PCB [2].
   - 9 screws [1]
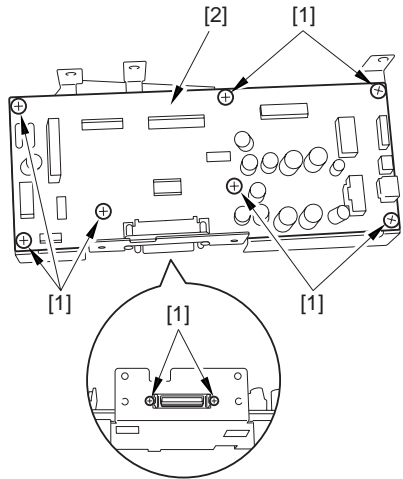
F-6-81

9) Disconnect the reader communication cable [1].
   - Open the 2 wire saddles [2].
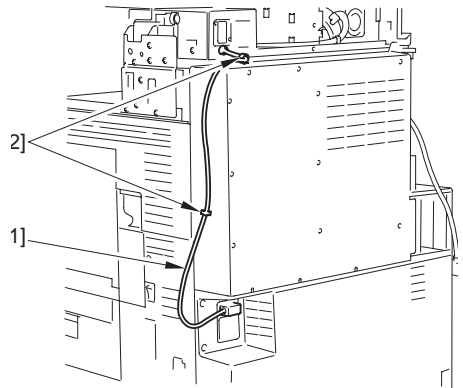
F-6-82

10) Open the 3 wire saddles [1], and disconnect the connector [2].

11) Remove the motor cover [4] together with the harness.
- 4 screws [3]
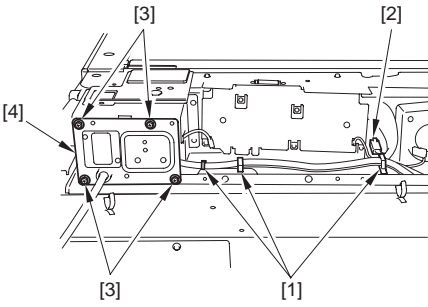
F-6-83

12) Remove the motor frame [3].
- 1 wire saddle [1] (Remove the harness)
- 6 screws [2]
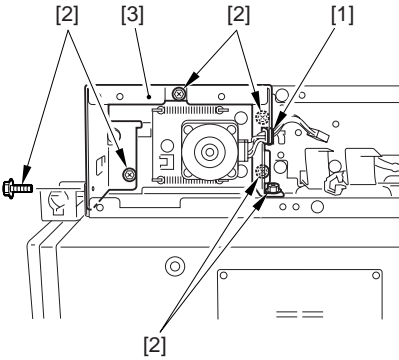
F-6-84

13) Remove the ADF open/closed sensor cover [2].
- 4 screws [1]
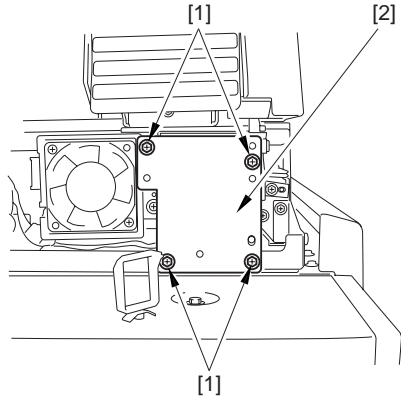
F-6-85

14) Remove the harness from the wire saddle [3].
- 2 connectors [1]
- snap-open band [2]
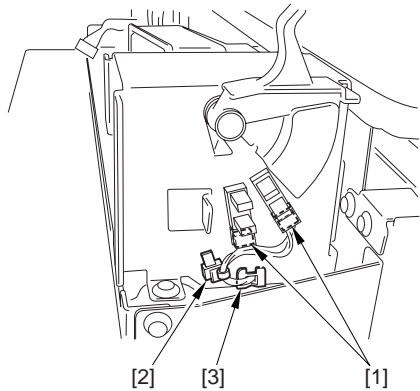
F-6-86

15) Remove the ADF open/closed sensor base [3].
   - harness [1] (From the wire saddle)
   - 6 screws [2]

F-6-87
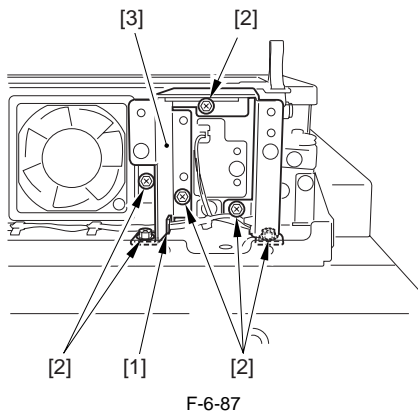
16) Remove the reader upper frame [2].
   - 24 screws [1]

F-6-88
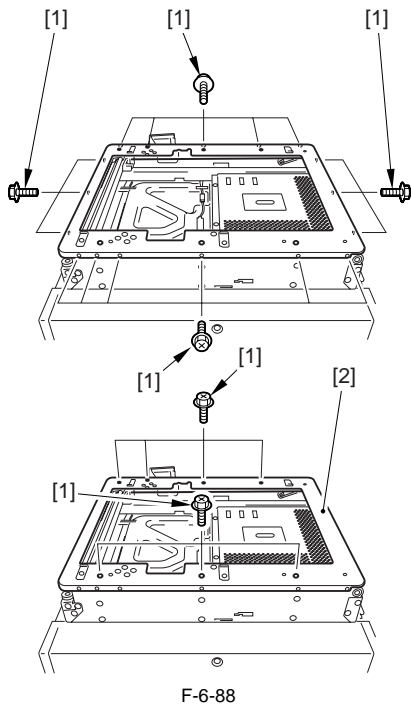
17) Remove the 2 cable fixing screws [2] of the No.
   1 mirror base [1].
18) Remove the spring [3] used to hold the cable in
   place.
19) Remove the 2 hooks of the cable from the right
   side of the reader frame.
20) Remove the cable from the pulleys.

F-6-89
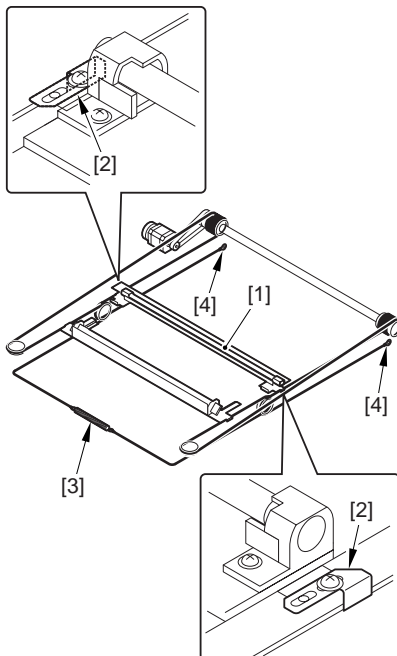
6.4.12.3 Attaching the Scanner Drive Cable

1) Attach the ball of the cable in the hole of the drive pulley [1], and wind the cable (4 times inside, 5 times outside); then, attach it using tape or the like. At this time, be sure that the cable fixing [2] is on the inside.
2) Engage the cable on the pulleys; then, engage one end of the cable on the hook [3] of the left side and the other end on the hook of the right side.
3) Temporarily fix the cable fixing plate [2] in place to the No. 1 mirror base [5].
4) Attach the reader upper frame.
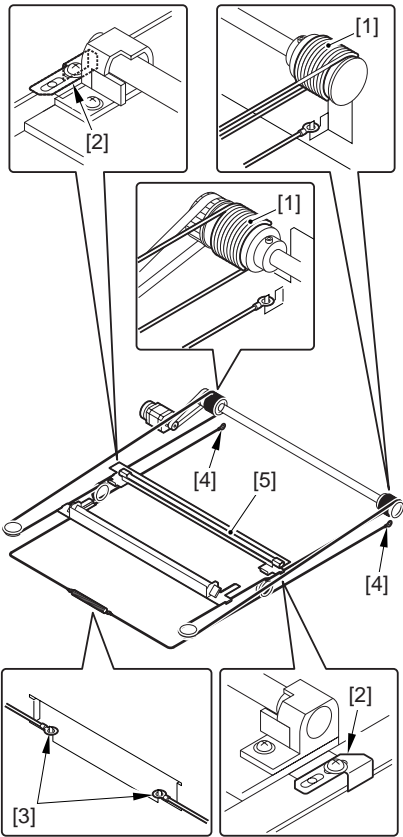
F-6-91

F-6-90
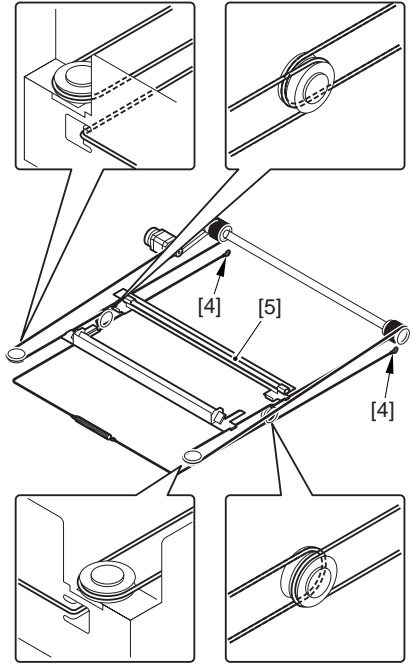
6.4.12.4 Adjusting the Position of the No. 1/No. 2 Mirror Base

1) Set the pins at the rear of the mirror positioning tool (FY9-3009-040) in such a way so that the tool may be used for the machine.
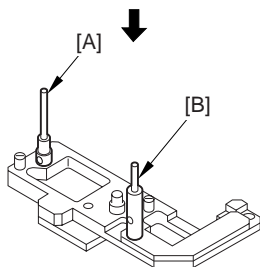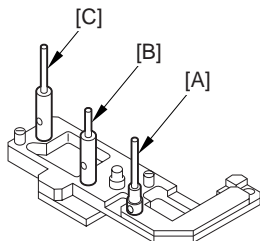
F-6-92

2) Set the pins at the front of the mirror positioning tool in such a way so that the tool may be used for the machine.
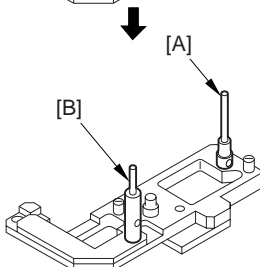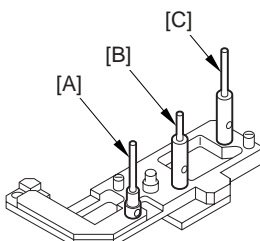
F-6-93

3) Insert the pins of the mirror positioning tool (front [2]; rear [3]) of the mirror positioning tool into the holes [1] of the No. 1 mirror base, No. 2 mirror base, and rail.
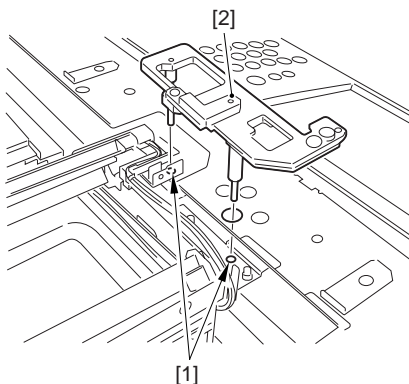
F-6-94
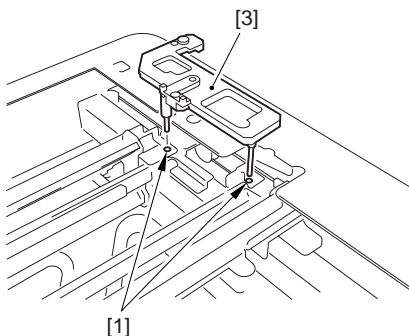
F-6-95

4) Fix the trailing rear edge of the wire, which was temporarily tightened to the hook of the reader flame, with the screw.
5) Tighten the screws of front/rear side of the wire fixing plate.
6) Remove the mirror positioning tool (front, rear).
7) Put back the parts by reversing the steps used to remove them

Chapter 7

IMAGE PROCESSING SYSTEM

Contents

7.1 Digital Image Processing

7.1.1 Overview

Digital image processing is performed at the reader controller PCB.
Major functions are as follows:
   (1) Shading correction
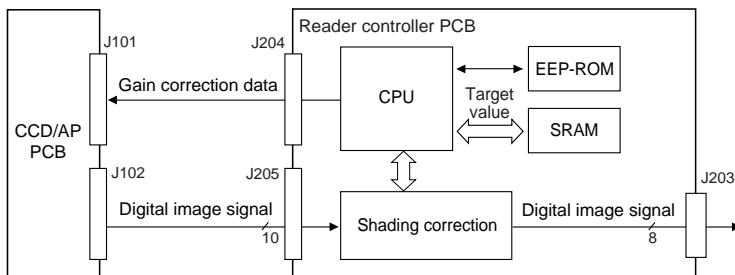
F-7-1

7.1.2 Shading Correction

Despite of the even original density, the CCD output will not always be even because of the following reasons:
   (1) Variation in sensitivity of pixels of CCD.
   (2) Difference of transmission light intensity between the center area and the peripheral area of the lens.
   (3) Difference of light intensity between the center area and the peripheral area of the scanning lamp.
   (4) Deterioration of the scanning lamp.
Shading correction is performed to correct unevenness of the CCD output.
Shading correction is performed by determining the target value at service mode and also by every scanning of the original.

1. Target value Correction
This correction is performed by measuring each level (R, G, B) with the standard white plate to store these density data. The memorized data is processed by computation to use as a target value at shading correction.

2. Shading Correction
This correction is performed at every scanning of the original. By measuring the density of the standard white plate to compare the measured value with the target value that is pre-stored at the shading correction circuit, set the difference as a shading correction value. Using this shading correction value, it corrects the variation in each element of the CCD at original scanning to even the density level.
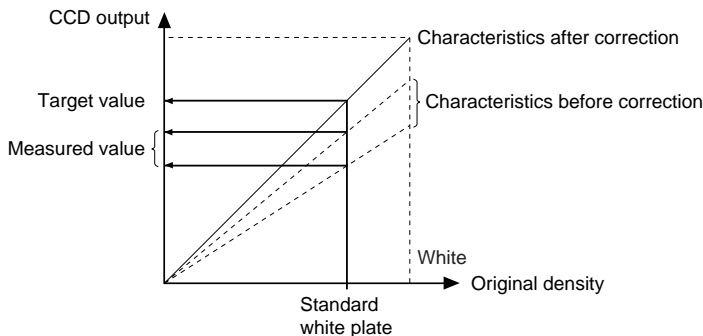
F-7-2

Chapter 8

LASER EXPOSURE

Contents

8.1 Construction

8.1.1 Specifications, Control Mechanisms, and Functions

T-8-1

Laser light	
Wave length	780 nm (infrared)
Output	5 mW
Number of laser beams	4 Beams

T-8-2

Scanner motor	
Type of motor	DC brush-less
Number of revolutions	iR C5180 : ca. 37000rpm
	iR C4580 : ca. 33000rpm
	iR C4080 : ca. 29000rpm
Type of bearing	Oil

T-8-3

Polygon mirror	
Number of facets	4 facets (f20)

T-8-4

Control mechanisms	
Sync control	main scanning direction
	sub scanning direction
Light intensity	APC control
	PWM control
Color displacement correction	reproduction ratio in main scanning direction
	displacement in main scanning direction
Others	scanner motor control
	Laser Scanner Motor Speed Change Control
	laser shutter control
	laser ON/OFF control

8.1.2 Major Components

T-8-5

Name	Description
Laser driver	generates laser light.
Polygon mirror	scans the laser beam in main scanning direction.
guide mirror	directs laser light in the direction of the drum.
Corrective lens	corrects displacement of laser light coming from the guide mirror in main scanning direction.
displacement correction motor	moves the corrective lens to correct displacement in main scanning direction.
BD detection PCB	detects laser light as a BD signal.
BD mirror	reflects the laser light in the direction of the BD detection PCB.
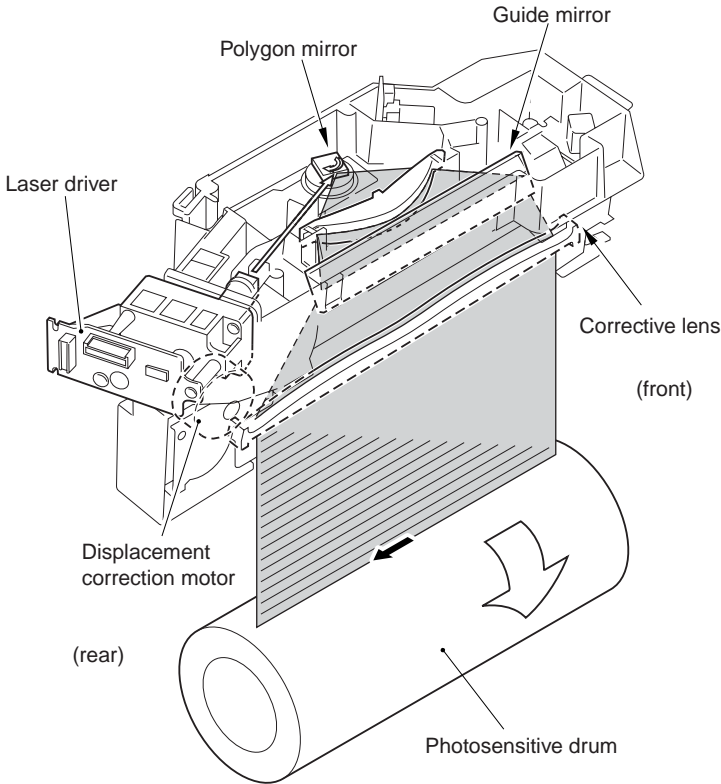
F-8-1
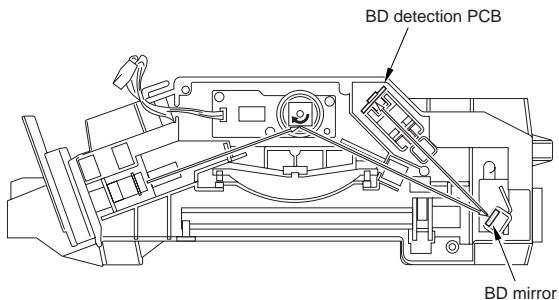
F-8-2

8.1.3 Construction of the Control System

The laser exposure system is controlled mainly by the DC controller PCB2(MAICY).
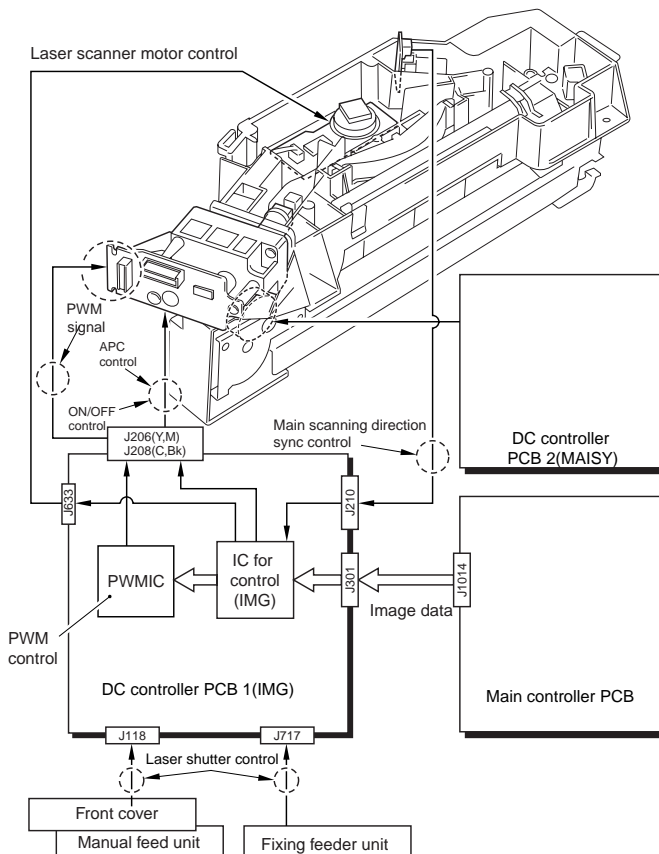
F-8-3

8.2 Basic Sequence

8.2.1 Basic sequence of operation

The laser scanner motor starts to rotate when the Start key is turned on (or, in response to the print request signal). Thereafter, when the rotation has stabilized, the printer unit becomes ready to form images, indicating the fact by its sync signal (PTOP).
The machine uses the signal to generate the sub scanning direction signals (Y-TOP, M-TOP, C-TOP, K-TOP) for individual colors, and turns on the lasers of the corresponding colors.
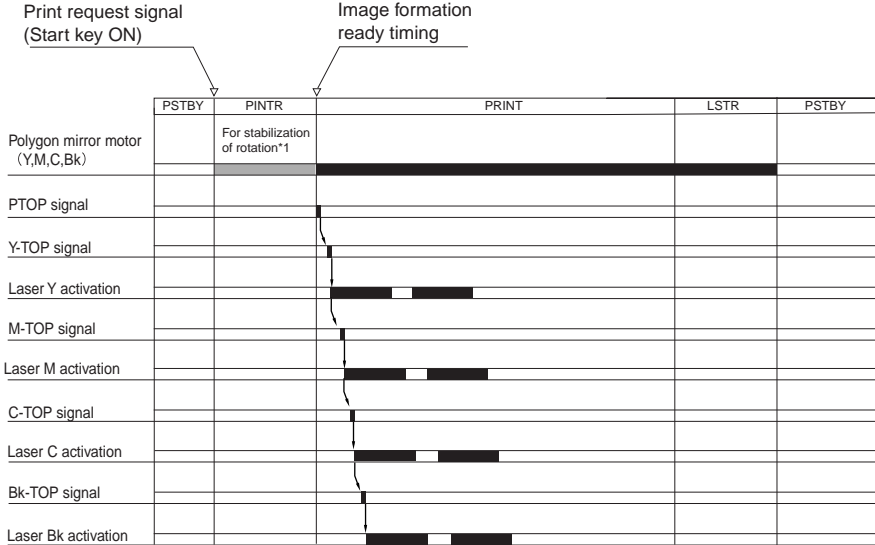
*1iRC5180:1.6s,IRC4580/3880:1,4s

F-8-4

8.3 Various Control

8.3.1 Controlling the Laser Activation Timing

8.3.1.1 ON/OFF Control

The 4 laser beams are turned on/off by the combination of control signals from the DC controller PCB 2.

T-8-6

CTRL 2_1	CTRL 1_1	CTRL 0_1	CTRL 2_2	CTRL 1_2	CTRL 0_2	LD_A	LD_B	LD_C	LD_D
0	0	0	0	0	0	DIS	DIS	DIS	DIS
0	1	0	0	1	1	APC	OFF	OFF	OFF
0	0	1	0	1	1	OFF	APC	OFF	OFF
0	1	1	0	0	1	OFF	OFF	APC	OFF
0	1	1	0	1	0	OFF	OFF	OFF	APC
0	1	1	0	1	1	OFF	OFF	OFF	OFF
1	1	1	1	1	1	DATA	DATA	DATA	DATA

DISK: off without retaining the level of voltage that corresponds to the intensity of laser light (in relation to APC; state of the machine at power-on).
OFF: off while retaining the level of voltage that corresponds to the intensity of laser light (short APC period; used for sequence light emission).
DATA: light emission in keeping with image data.

MEMO:
As many as 64 combinations are possible using 6 control signals. The combinations in the table are limited to those used in the said sequence.

CTRL 0_1
CTRL 1_1
CTRL 2_1
CTRL 0_2
CTRL 1_2
CTRL 2_2

J206A

Y:J206A
M:J206B
C:J208A
BK:J208B

DC controller
PCB 1(IMG)
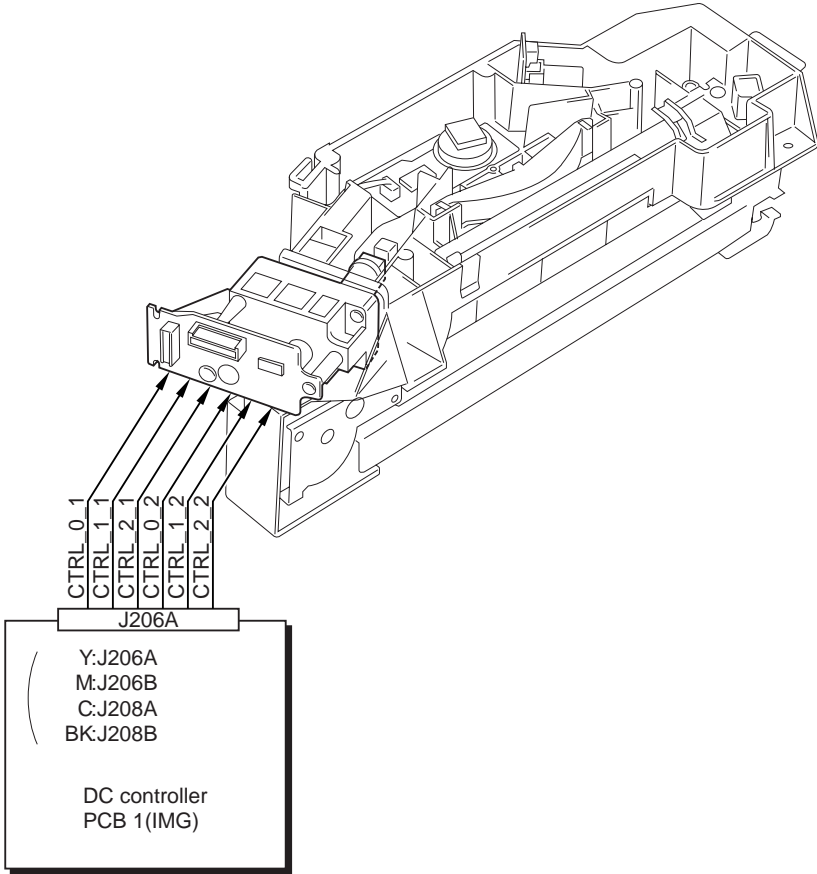
F-8-5
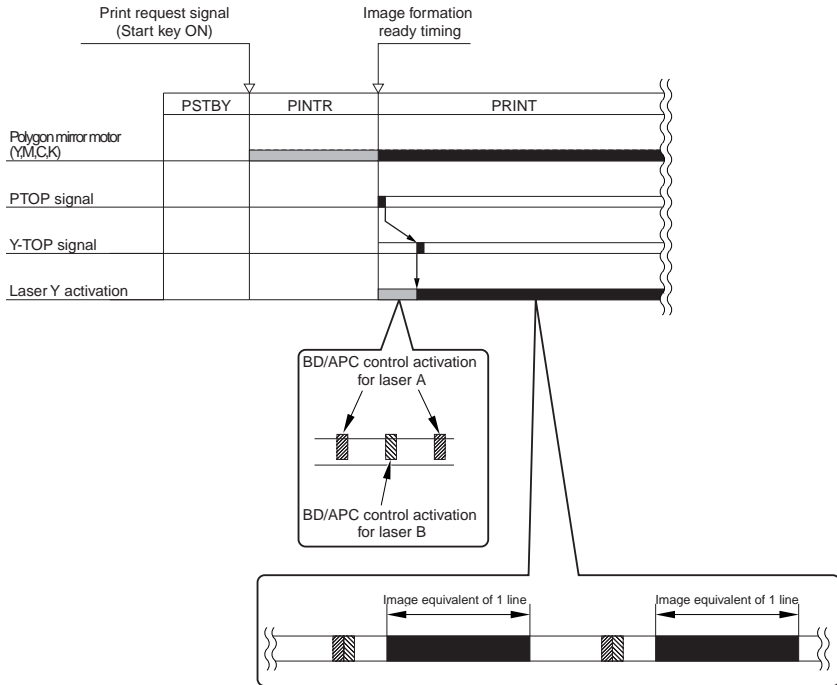
F-8-6

MEMO: Image processing at the main controller PCB (sub RB-A)
This machine switches over the resolution of both the main scanning direction and the sub scanning direction from 1200 dpi to 600 dpi by converting the image data to 600 dpi while the character interval information remained as 1200 dpi at the main controller PCB (sub RB-A).
It is resolved by exposing the same data by 2-dot for the main scanning direction, and by exposing the same data for A & B, and for C & D, of 4 beams for the sub scanning direction with the feeding speed remains.

[1]
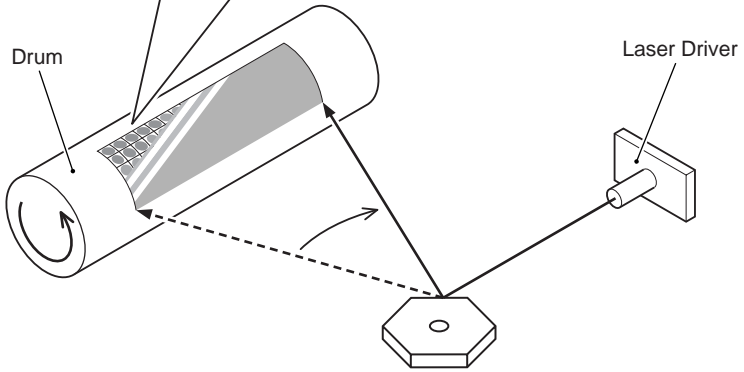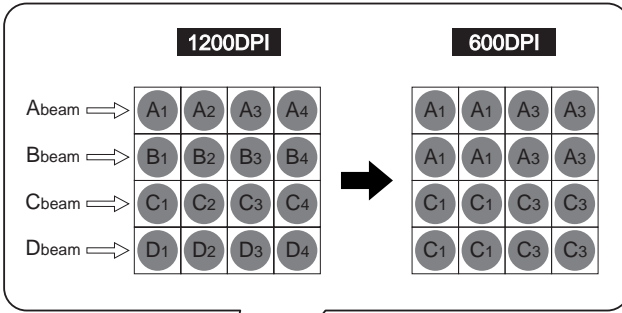
F-8-7

[1] 1 pixel

8.3.1.2 Controlling Synchronization in Main Scanning Direction

The control of synchronization in main scanning direction is based on the BD signal.

F-8-8
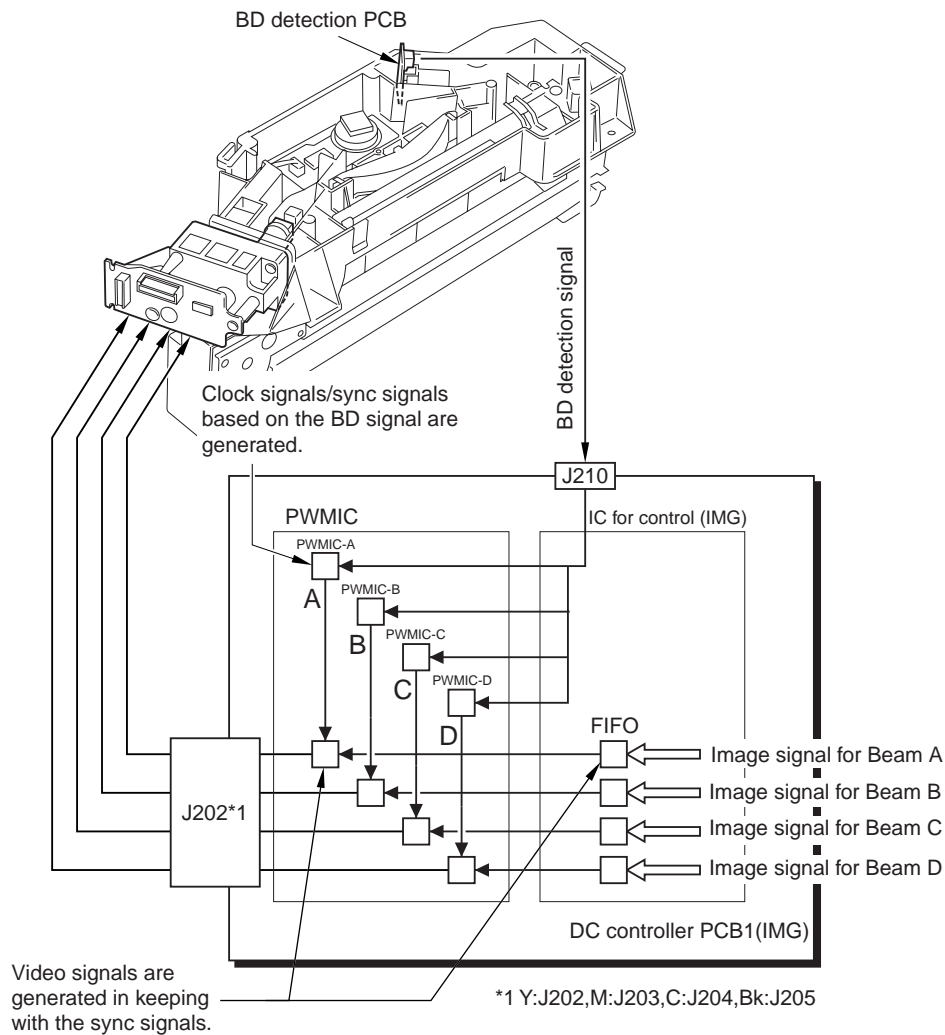
8.3.1.3 Controlling Synchronization in Sub Scanning Direction

- The synchronization in sub scanning direction is controlled with reference to the PTOP signal (image formation start signal).
- When the mechanism becomes ready for image formation, the PTOP signal (image formation start signal) is generated, turning on the individual lasers based on the signal.
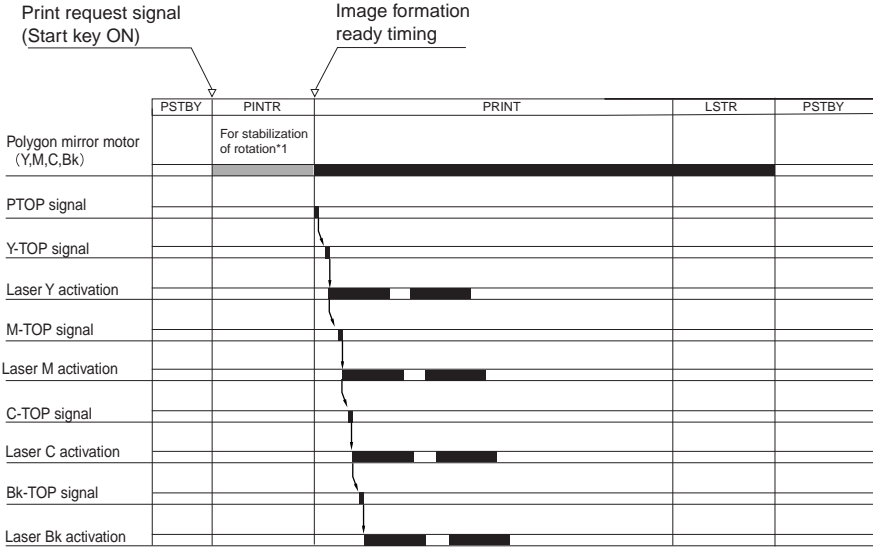
*1iRC5180:1.6s,IRC4580/3880:1,4s

F-8-9

8.3.2 Controlling the Intensity of Laser Light

8.3.2.1 APC Control

The machine uses the photodiode mounted on the laser driver PCB to monitor the intensify of laser light so as to ensure that it remains at a specific level.

8.3.2.2 PWM Control

- A single pixel is divided into 32, and a 16-level activation pattern is selected to suit the image data in question.
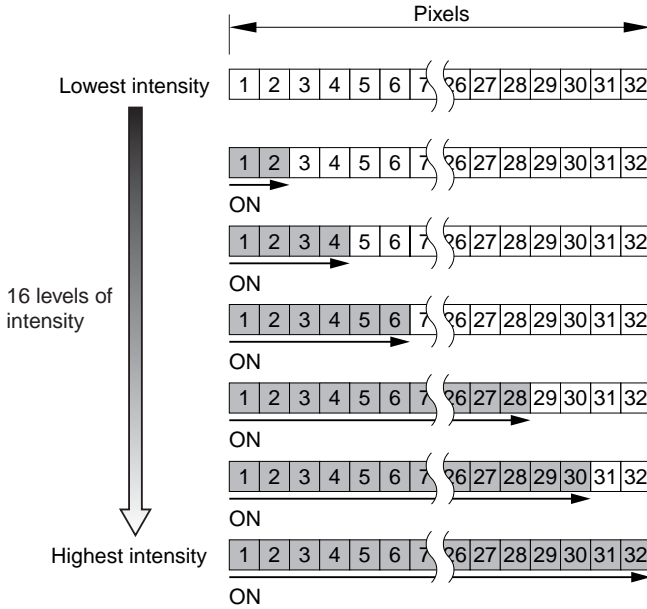
F-8-10

8.3.3 Controlling the Laser Scanner Motor

8.3.3.1 Laser scanner motor control

The machine uses the acceleration/deceleration signal to control the speed of rotation of the laser scanner motor so that the BD signal from individual laser units will be of the same phase as the reference signal (if the BD signal is behind the reference signal, accelerate; if ahead, decelerates).
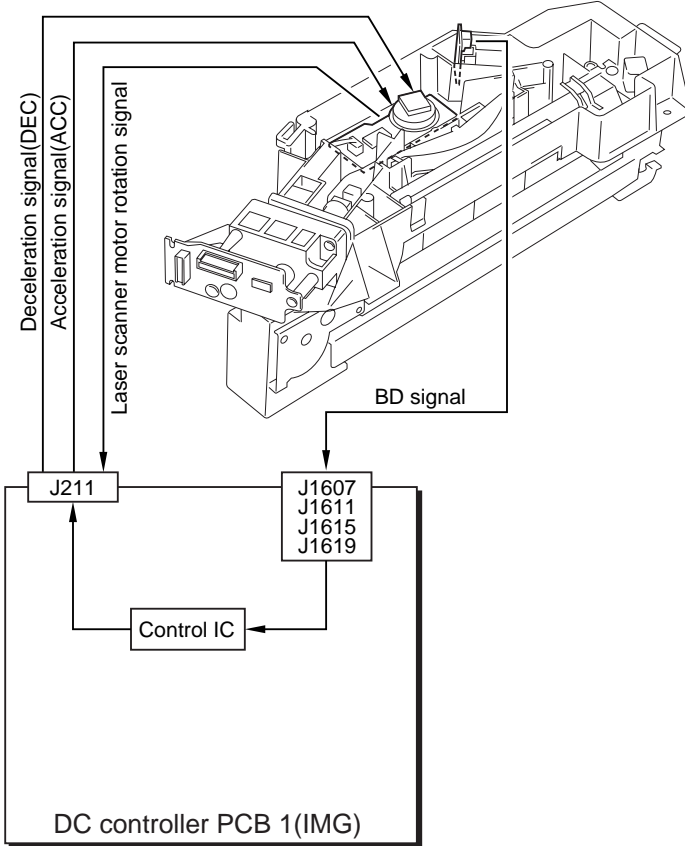
F-8-11

8.3.3.2 Laser Scanner Motor Speed Change Control

In the case of iRC4580/iRC4080, the Processing Speed varies among Mono, Color, and Transparency modes, ie., 185, 163, and 105 mm/sec. Because those Ratios are not Integer, the Polygon Motor Speed of those machines must be changed appropriately for their operation. These machines adopt Polygon Motor Speed Change for this reason.
(In 1/2 speed, with the ratio being an integer, lines drawn by laser beams may be skipped, e.g., by drawing every other line)

Polygon Motor Speed needs to be changed when Processing Speeds are switched to as shown in the Table below.

T-8-7

		Process speed after the speed change				
Process speed before the speed change		210	105	185	163	81.5
210	iRC5180 Constant Speed by		X	-	-	-
105	Constant Speed by iRC5180 or Transparency mode by iRC4580/4080	X		O	O	O
185	Bk Monochrome by iRC4580/4080	-	O		O	O
163	4C by iRC4580/4080	-	O	O		X
81.5	1/2 Speed by iRC4580/4080	-	O	O	X	

*1
O: Speed Changed
X: Speed Not Changed
-: Combinations that do not exist

The following table shows the printing speed according to mode, and the process control against process speed.

T-8-8

Mode	iRC5180		iRC4580		iRC4080	
	msec/ppm	Remedy	msec/ppm	Remedy	msec/ppm	Remedy
Normal speed mode	210	Normal operation	163(40*1)	Speed change control*2	163(36*1)	Speed change control*2
Bk high speed mode	-	-	185(45)	Speed change control*2	185(45)	Speed change control*2
Half speed mode	105 (25.5)	Thinning out of laser	81.5 (20)	Thinning out of laser	81.5 (20)	Thinning out of laser
Transparency mode	105 (11)*1	Thinning out of laser	105 (11)*1	Speed change control*2	105 (11)*1	Speed change control*2

*1 Adjust at paper interval
*2 Speed change control is needed when switching the process speed. If there is no switching, speed controls is not performed.

8.3.4 Controlling the Laser Shutter

8.3.4.1 Laser shutter control

When any of the following covers is opened (possibly causing leakage of laser light), the laser is turned off.
- front cover
- manual feeder unit
- fixing/feeding unit

When these covers (unit) are opened, the operating voltage (5 V) applied to the laser driver is turned off and, in addition, the laser control signal/image signal is also turned off.
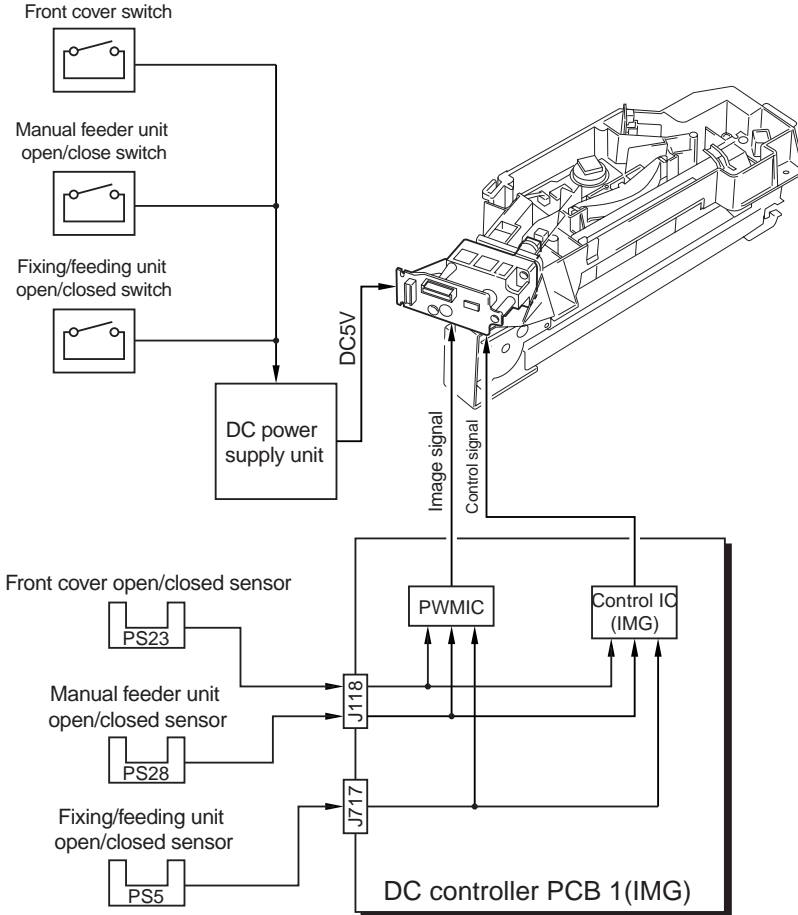
F-8-12

8.3.5 Correcting Image Displacement

8.3.5.1 Outline

The following factors can displace images of individual colors:
- displacement of the photosensitive drum caused by replacement of the drum unit/toner container
    ->displacement in sub scanning direction
- displacement of laser path caused by replacement of laser unit
    ->displacement/angle in main scanning direction
- displacement in laser path length caused by changes in temperature inside machine
    ->variation in magnification

To correct the discrepancies in images, the machine executes corrective control for image position; it detects displacement in color by forming a pattern of a specific color on the transfer belt and reading it against the correct position.

```
┌─────────────────────────────────┐
│ Detecting displacement in color  │
└─────────────────────────────────┘
```

• Forms an image position correction pattern on the transfer belt (direct transfer).

• Reads the individual pattern (of different colors) using the pattern reader photo sensors.

• Identifies displacement in color with reference to the pattern signals in the DC controller.

Displacement in sub scanning direction	→ corrects the write start position in sub scanning direction.
Displacement in main scanning direction	→ corrects the start position in main scanning direction.
Angle in main scanning direction	→ corrects the laser path inside the laser unit.
Discrepancy in reproduction ratio in main scanning direction	→ corrects image data generation timing in main scanning direction

F-8-13

F-8-14

8.3.5.2 Timing of Color Displacement Detection/Correction

The machine detects/corrects color displacement at the following timing:
- during warm-up after the main power switch is turned on
- during warm-up after jam clear
- during warm-up after return from sleep
- during warm-up after replacement of the drum unit (not when the toner container is replaced)
- during warm-up when low-power mode is turned on after opening/closing of the cover while the machine is in low-power mode
- 10 hr after the machine has been left alone in standby state
- during quick correction (auto gradation correction)
- after sheet-to-sheet auto correction when 300 sheets (small-size, equivalent in single-sided) have been fed continuously
- during last rotation auto correction at time of counter increments occurring after intermittent jobs of 300 pages (small-size, equivalent of single-sided)
- in response to changes in the environment
- when replacing the toner cartridge

8.3.5.3 Detecting/Correcting Color Displacement in Sub Scanning Direction

The Y pattern is used as the reference. The machine identifies the degree of color displacement in sub scanning direction with reference to the timing at which other color patterns are checked after a check on the Y pattern. If the timing is not correct, the machine corrects the laser write start timing in sub scanning direction.

For C

For Bk

rear

For C

For Bk

Correct position   Too early

front

F-8-15

Displacement in sub scanning direction
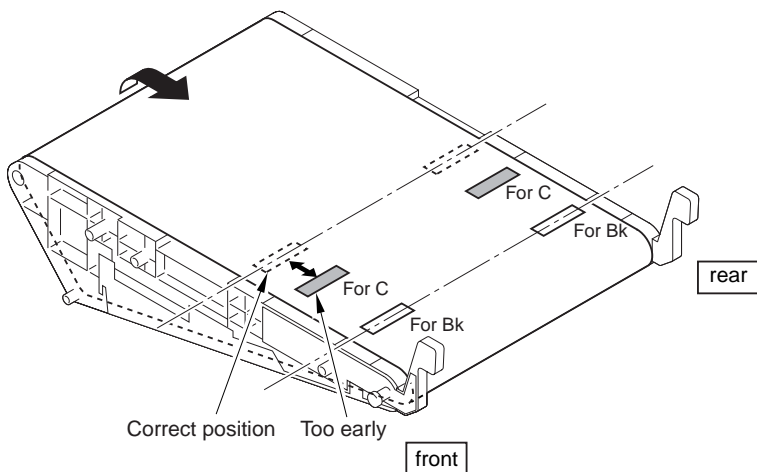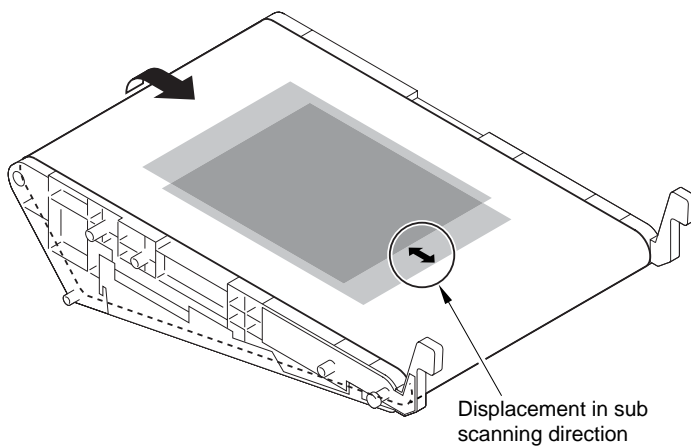
F-8-16

8.3.5.4 Detecting/Correcting the Angle in Main Scanning Direction

The Bk pattern is used as the reference. The machine identifies the angle in main scanning direction with reference to front/rear discrepancies of individual colors.

rear

Displacement

front
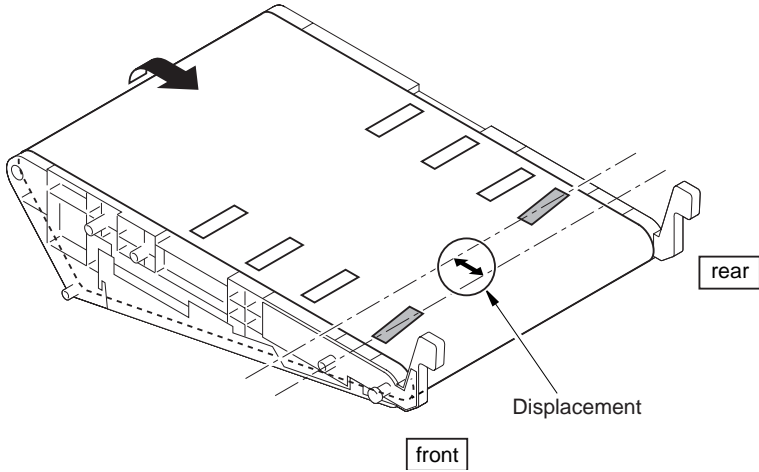
F-8-17
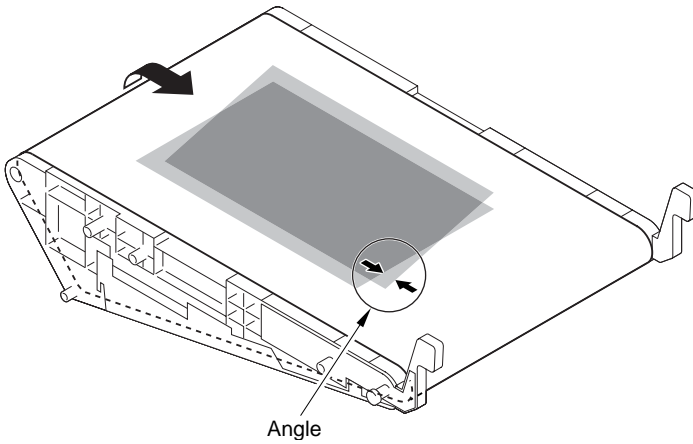
Angle

F-8-18

If the machine detects any angle, it turns on the main scanning direction angle correction motor located inside the laser unit.

Main scanning direction correction motor

Main scanning direction angle correction lens
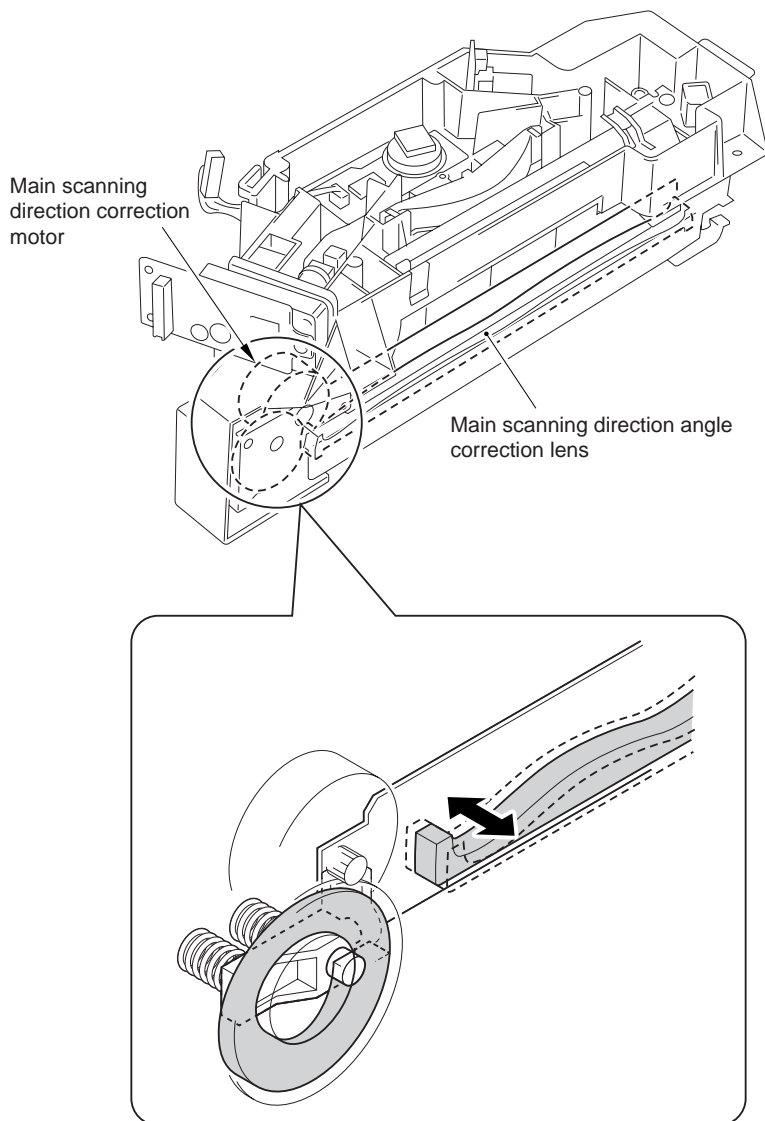
F-8-19

8.3.5.5 Detecting/Correcting Color Displacement in Main Scanning Direction

The Bk pattern is used as the reference. The machine compares the length of the center line of the Bk image position correction pattern (front) and the length of the center line of the image position correction pattern (front) of individual colors, and identifies the difference between the two as the degree of color displacement in main scanning direction.

When the machine detects color displacement, it corrects the timing at which the laser is started in main scanning direction.

Displacement in main scanning direction

F-8-20

| Bk | C | M | Y |
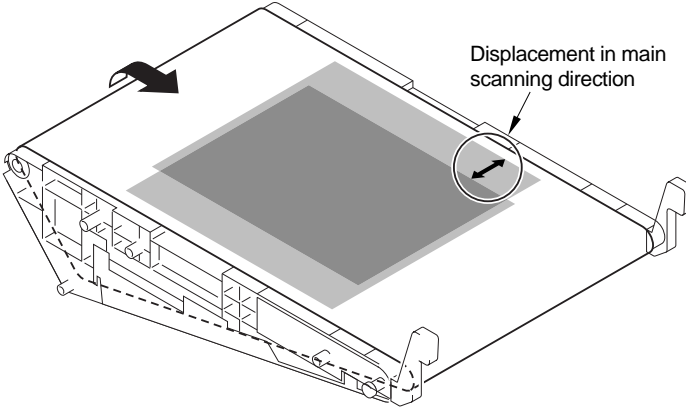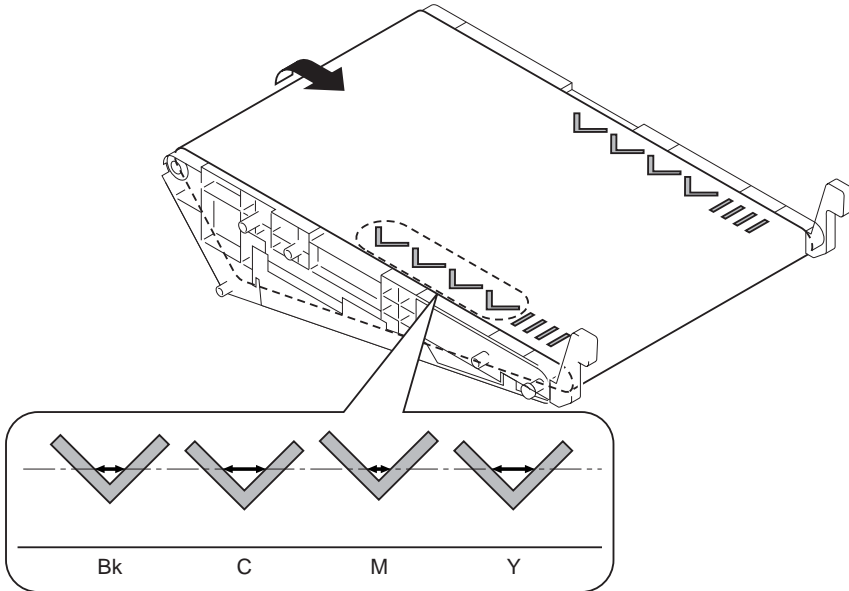
F-8-21

8.3.5.6 Detecting/Correcting Changes in the Reproduction Ratio in Main Scanning Direction

The Bk pattern is used as the reference. The machine copies the center line of the Bk image correction pattern (rear) and the center line of the individual image position correction patterns (rear), and identifies the difference between the two as the change in the reproduction ratio in main scanning direction.
When the machine detects any change, it corrects the timing at which the video signals are transferred to the laser unit.

F-8-22

Change in reproduction ratio in
main scanning direction

PWMIC

Video signal for laser A

Video signal for laser B

Video signal for laser C

Video signal for laser D

The machine changes the
frequency of the image clock
to change the reproduction
ratio in main scanning direction.

Frequency control block

DC controller PCB
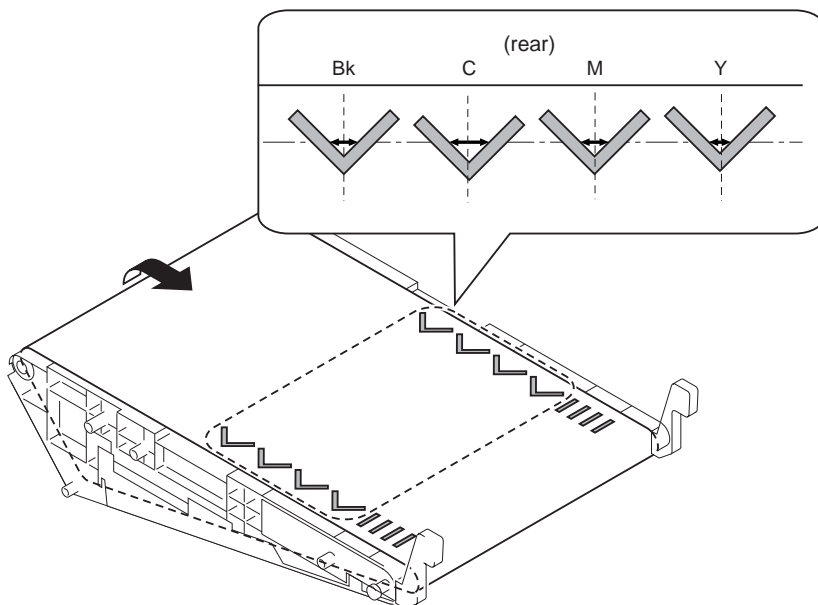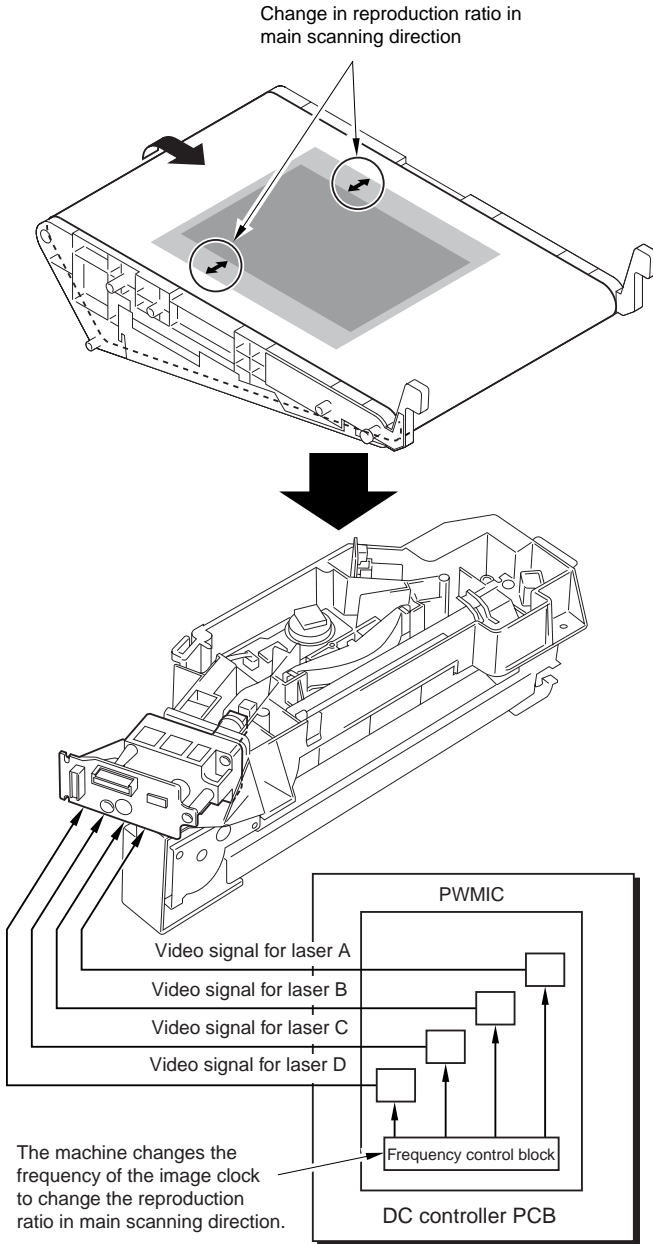
F-8-23

8.4 Parts Replacement Procedure

8.4.1 Laser Unit

8.4.1.1 Preparation for Removing the Laser Unit

1) Remove the center delivery tray [2].
   - 2 screws [1]
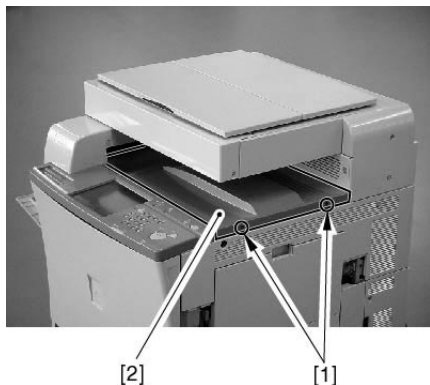
F-8-24

2) Remove the connectors [1], [2], and the wire guide [3].
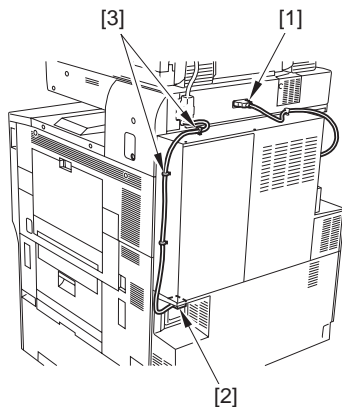
F-8-25

8.4.1.2 Removing the Laser Unit

1) Remove the reader link unit cover [2].
   - 2 screws [1]
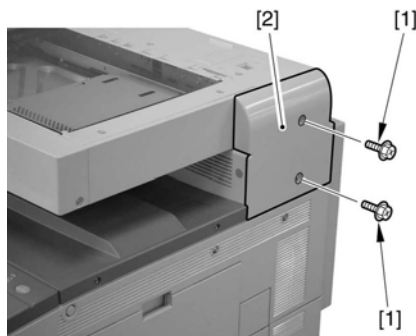
F-8-26

2) Remove the positioning pin [2] from the reader link unit.
   - 1 stepped screw [1]
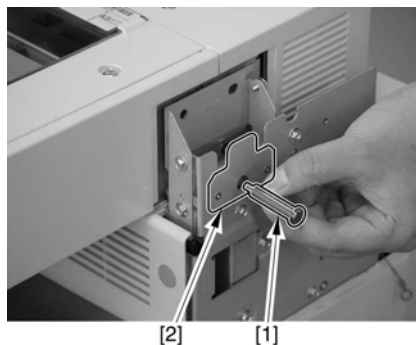
F-8-27

3) While lifting the rear reader unit [3] slightly, remove the upper inside cover [4].
   - 1 face cap [1]
   - 1 screw [2]

F-8-28

⚠️

When detaching the inside upper cover [2], push the top middle of the cover to free the hook [1].
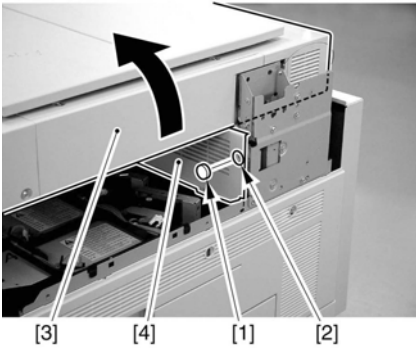
F-8-29

4) Shift the arm [1] of the reader link unit 90 deg to support the reader unit.
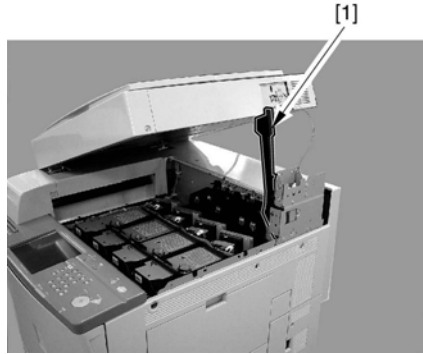
F-8-30

5) Remove the harness guide [2].
   - 8 connectors [1]

F-8-31
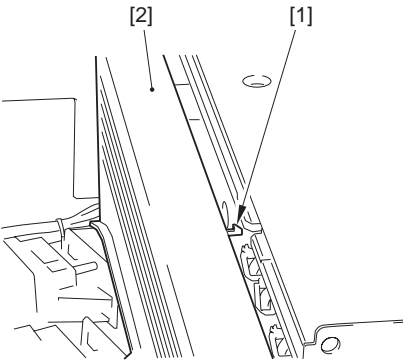
6) Remove the laser unit [3].
  - 2 connector[1]
  - 4 screws [2]
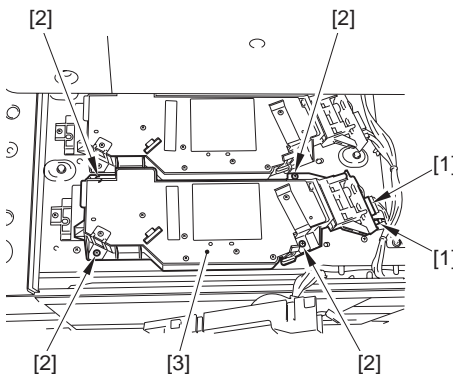
F-8-32

MEMO:
When attaching the laser unit, tighten the screws in diagonal sequence for proper balance.
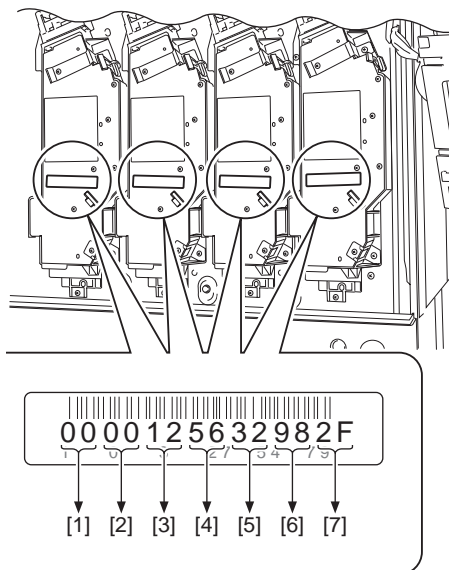
8.4.1.3 After Replacing the Laser Unit

When replacing the laser unit, enter the values indicated in the label attached on the upper surface of the new laser unit to the following Service Mode items.
Laser maker identification
[1] COPIER > ADJUST > LASER > LA-MK-Y/M/C/K
Laser magnification (Y)
[2] COPIER > ADJUST > LASER > LDADJ1-Y/M/C/K
[3] COPIER > ADJUST > LASER > LDADJ2-Y/M/C/K
[4] COPIER > ADJUST > LASER > LDADJ3-Y/M/C/K
Laser phase difference
[5] COPIER > ADJUST > LASER > LDADJ4-Y/M/C/K
[6] COPIER > ADJUST > LASER > LDADJ4-Y/M/C/K
[7] COPIER > ADJUST > LASER > LDADJ4-Y/M/C/K

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Chapter 9

IMAGE FORMATION

Contents

9.1 Construction

9.1.1 Specifications, Control Mechanisms, and Functions

T-9-1

	Photosensitive drum		
Drum unit (D-UNIT)	Type of drum	OPC	
	Diameter of drum	30.6 mm	
	Cleaning mechanism	Cleaner-less The residual toner after transfer is charged for collection by the developing assembly.	
	Process speed	Plain Paper*1	CiRC5180: 210mm/sec
			CiRC4580: Color 163mm/sec Black and White 185mm/sec
			CiRC4080: Color 163mm/sec Black and White 185mm/sec
		Thick Paper*1	CiRC5180:105mm/sec
			CiRC4580:81.5mm/sec
			CiRC4080:Color 81.5mm/sec
		OHP, Gloss Paper*1	CiRC4580/4080:105mm/sec *2

*1: Paper Types described above refers to the followings:
 Plain Paper: Plain Paper,Colored Paper, Recycled Paper, Bond Paper, Letterhead (except Thick Paper and OHP)
 Thick Paper: Thick Paper,, Postcard, Quadrouple Postcard, Envelope, Labe Paperl, Tab Paper, Intermediate Paper
 OHP: OHP, Gloss Paper
*2: iRC4580 and iRC4080 have the same Processing Speed, but different productivitiy due to their different Sheet-to-Sheet length.

T-9-2

Developing assembly	
Diameter of developing cylinder	16 mm
Method of development	dry, 2-component
Toner	non-magnetic, negative (S toner)
Detection of toner inside developing assembly	ATR sensor (magnetic sensor)
Starter	held by drum unit

T-9-3

Primary charging assembly

Method of charging	roller, contact charging
Diameter of charging roller	14 mm
Cleaning mechanism	cleaning sheet, in contact (reciprocating movement of 5 mm; cycle of 1.5 sec)

T-9-4

Auxiliary brush

Type of brush	fur brush
Intrusion of brush	1.3 mm (upstream) 1.3 mm (downstream)

T-9-5

Others

Items of control by internal memory	color of toner inside drum unit cumulative number of prints cumulative number of video counts data on life of drum unit data on toner supply control

T-9-6

Toner container	Detection of toner level	in reference to number of rotations made by toner feedscrew

	Toner volume	iRC5180 Y : 550g
		    M : 550g
		    C : 550g
		    Bk : 550g

		iRC4580 Y : 490g
		    M : 470g
		    C : 470g
		    Bk : 530g

		iRC4080 Y : 490g
		    M : 470g
		    C : 470g
		    Bk : 530g

T-9-7

Others

Items of control by internal memory	color of toner inside toner container data on life of toner container

T-9-8

Inter-mediate transfer unit	Intermediae transfer belt (ITB)	seamless
	Drive for belt	through gears from drum ITB motor
	Feeding speed	130 mm/sec (plain paper) 65 mm/sec (thick paper, special paper, transparency)
	Cleaning mechanism	cleaning blade

T-9-9

Image stabili-zation mecha-nism	Descharge current level control	to prevent image faults caused by changes in environment
	ATVC control	to ensure good transfer
	ATR control	to correct toner density (about)
	PASCAL control	to correct image gradation characteristics
	SALT-Dmax control	to correct development density (maximum density) characteristics
	SALT-Dhalf control	to correct development density (gradation) characteristics

9.1.2 Major Components of the Image Formation System

Toner container (Bk)

Developing cylinder

D-UNIT(Bk)

Developing
assembly

Primary
charging
roller

Intermediate
transfer belt

Auxiliary
brushes

Photosensitive drum

D-UNIT(Y)   D-UNIT(M)   D-UNIT(C)

Intermediate
transfer unit

Primary transfer rollers

Secondary transfer
internal roller
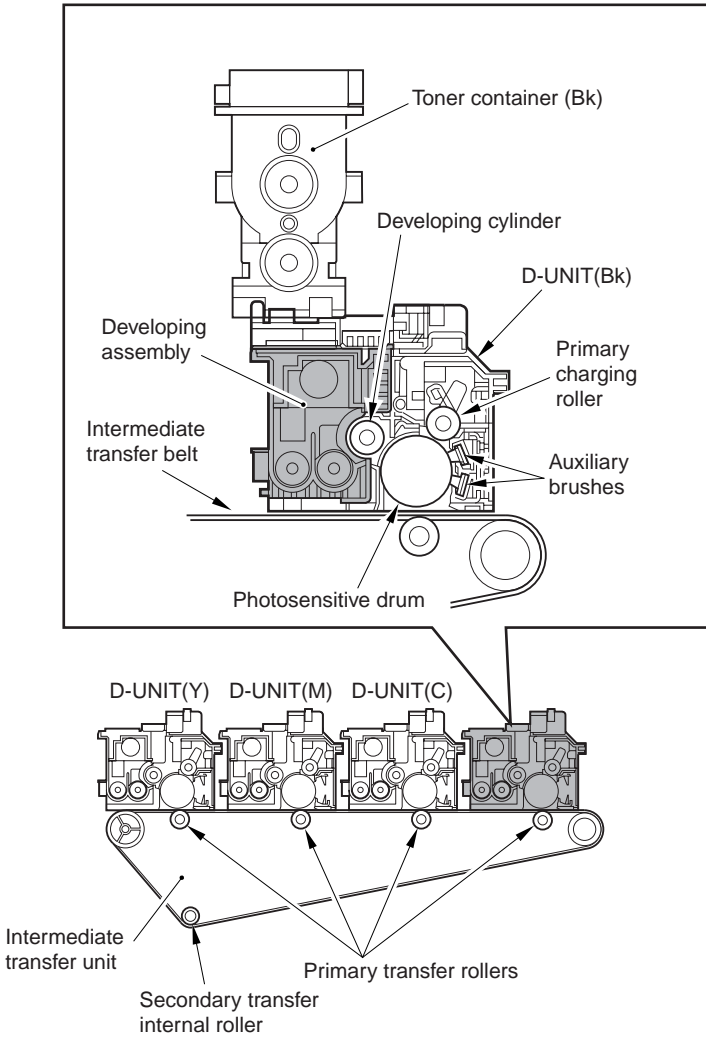
F-9-1

9.1.3 Charging Specifications

Drum unit (high voltage)

T-9-10

Photosensitive drum charging	
Method of primary charging	roller contact
AC component rating specifications range	1300 to 2000 Vp-p (standard: 1500 Vp-p)
DC component rating specifications range	-300 to -700 V (standard: -450 V)
AC component voltage correction factor	environment sensor
DC component voltage correction factor	environment sensor, SALT sensor

T-9-11

Auxiliary charging	
Method of charging	fur brush (upstream, downstream)
Upstream auxiliary brush AC component rating specifications range	200 Vp-p
Upstream auxiliary brush DC component rating specifications range	+200 to +300 V (standard: +250 V)
Downstream brush DC component rating specifications range	-700 to -850 V (standard: -750 V)
Voltage correction factor	environment sensor

T-9-12

Developing bias	
AC component standard value	1800 Vp-p (fixed)
DC component rating specifications range	-150 to -550 V (standard: -300 V)
Voltage correction factor	environment sensor, SALT sensor

Transfer unit specifications (high-voltage)

T-9-13

Primary transfer	
Method of transfer	Roller transfer
Object of transfer	Transfer belt (ITB)
DC component rating use range	0 to +1400 V
Voltage control factor	environment sensor, print mode*

T-9-14

Secondary transfer	
Method of transfer	roller
Object of transfer	paper (transfer media)

Secondary transfer

DC component rating use range	-2500 to +7000 V
Voltage correction factor	paper type, environment sensor reading, print mode*

*Full color or monochrome mode.

Developing cylinder

0V
-300V
1800Vp-p

Primary charging roller

0V
-450V
1500Vp-p

Downstream auxiliary brush

0V
-750V

Secondary transfer external roller

+2000V
0V

Primary transfer roller

+400V
0V

Upstream auxiliary brush

+250V
200Vp-p
0V
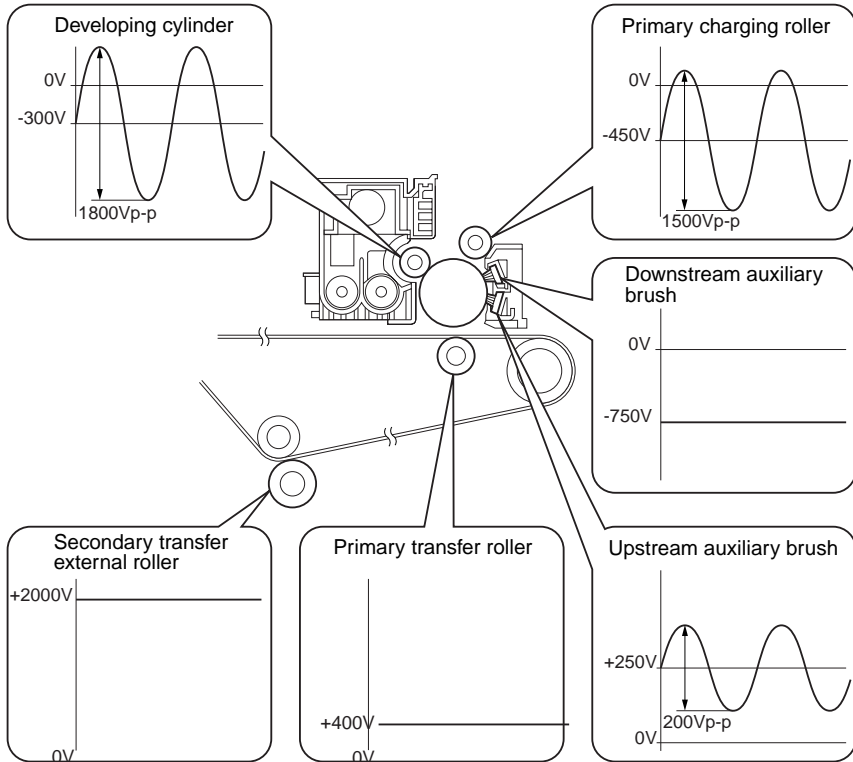
Full color, Plain paper, Normal temperature/humidify

F-9-2

9.2 Image Formation Process

9.2.1 Image Formation Process (general)

T-9-15

Functional block	STEP	Description
Electrostatic latent image formation block	1, 2	forms an electrostatic latent image on the photosensitive drum.
Development block	3	deposits toner over the electrostatic latent image, thereby turning it into a visible image.
Transfer block	4, 5, 6	moves the toner image to the ITB or paper.
Intermediate transfer belt (ITB) cleaning block	7	collects residual toner from the ITB.
Photosensitive drum cleaning block	8, 9, 10	collects residual toner from the photosensitive drum.
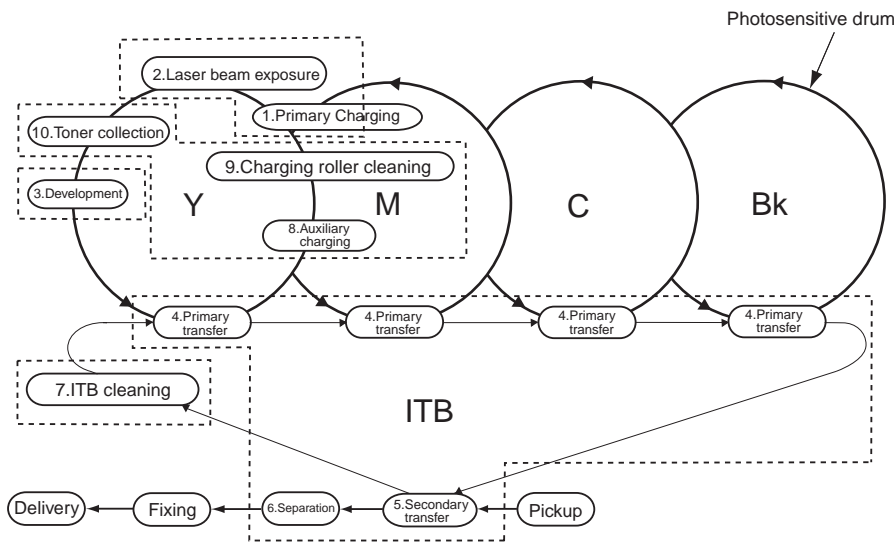
F-9-3

9.2.2 Image Formation Process (image formation)

Toner not charged to a negative
potential by the downstream brush

Photosensitive drum cleaning block

[6] Colled to the
developing assembly.

[5] Charging to a negative
potential by friction against
the cleaning sheet.

[4] Charging to a negative
potential by the downstream
auxiliary brush.*2

[1] Develop-
ment

[3] Charging to a positive
potential by the upstream
auxiliary brush.*1

Development block

Transfer residual toner*3

[2] Primary transfer

Primary transfer block

*1: reducing negative charges on toner (removal of charges)
*2: evening out charge to a specific level
*3: toner left behind from secondary transfer
    (mix of positive and negative charges)

F-9-4

9.2.3 Image Formation Process (transfer)

[3] Scraping off the toner by
the cleaning blade

[1] Moving the toner from the
photosensitive drum to the ITB

Y   M   C   Bk

Primary transfer block

ITB
cleaning
block

Transfer residual toner*

Waste tone container

Secondary
transfer
block

Paper

[2] Moving the toner image
from the ITB to paper
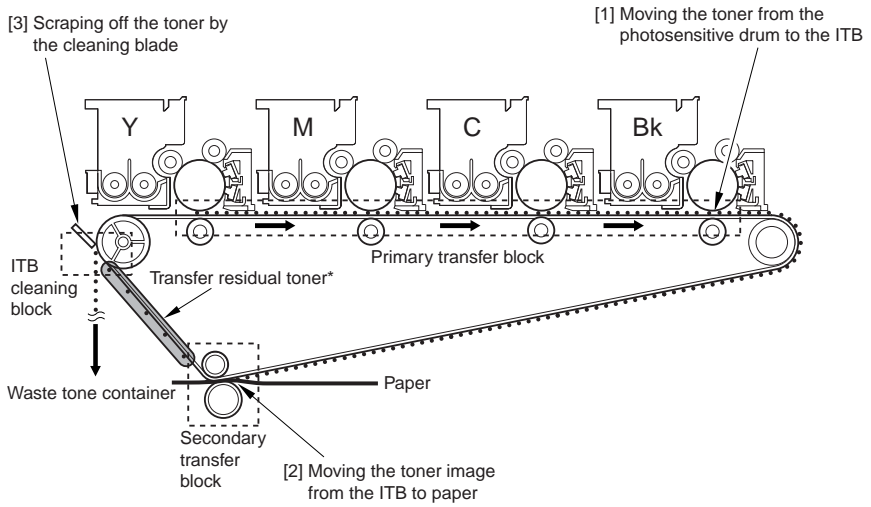
* Toner left behind from secondary transfer.

F-9-5

9.3 Basic Sequence

9.3.1 At Power-On (1)

If the main power switch is turned on while the surface temperature of the fixing roller is less than 100°C (e.g., first time in the morning or after a long period of no use),
Characteristics
- the same control timing is used for the Y, M, C, and Bk drum units.
- the machine takes about 300 to 360 sec before it enters PSTBY.

T-9-16

	iRC5180	iRC4580	iRC4080
100V	240sec	300sec	300sec
120V	240sec	270sec	270sec
230V	240sec	240sec	240sec

- the machine executes image stabilization control in the following order while it is warming up:
      discharge current level control
      ATVC control
      ATR control
      SALT-Dmax control
      image position control
      SALT-Dhalf control

Start-up sequence of the drum unit (Y; with surface temperature of fixing roller Less than 100°C).
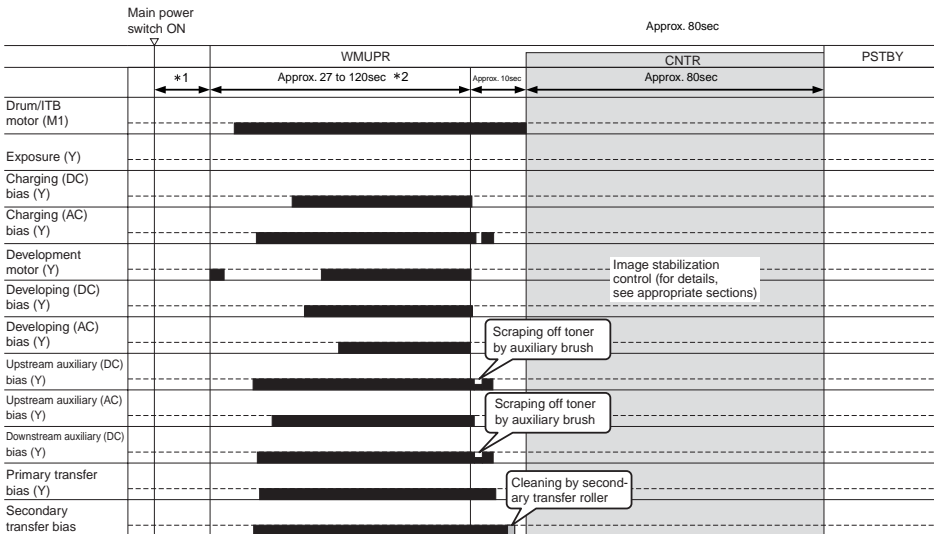
*1 : Time when it reaches temperature of target of the fixing unit. (iR C5180、iR C4580/2880 (230V) 0sec)
*2 : It changes according to the environment and installation features.
*3 : It is time for iRC5180.

F-9-6

9.3.2 At Power-On (2)

If the main power switch is turned on while the surface temperature of the fixing roller is 100°C or more (i.e., after it returns from jam recovery*, after it has been forced off and then on, or after its front cover has been opened and then closed while an imaged is made).
Characteristics
- the same control timing is used for the Y, M, C, and Bk drum units.
- the machine takes about 80 sec before it enters PSTBY.
- the machine executes image stabilization in the following order while it is warming up:
 discharge current level control
 ATVC control
 image position correction
*If the surface temperature of the fixing roller is less than 100°C after jam recovery, the machine uses the sequence it uses at power-on (1).

Start-up sequence of the drum unit (Y; with surface temperature of fixing roller at 100˚C or more).
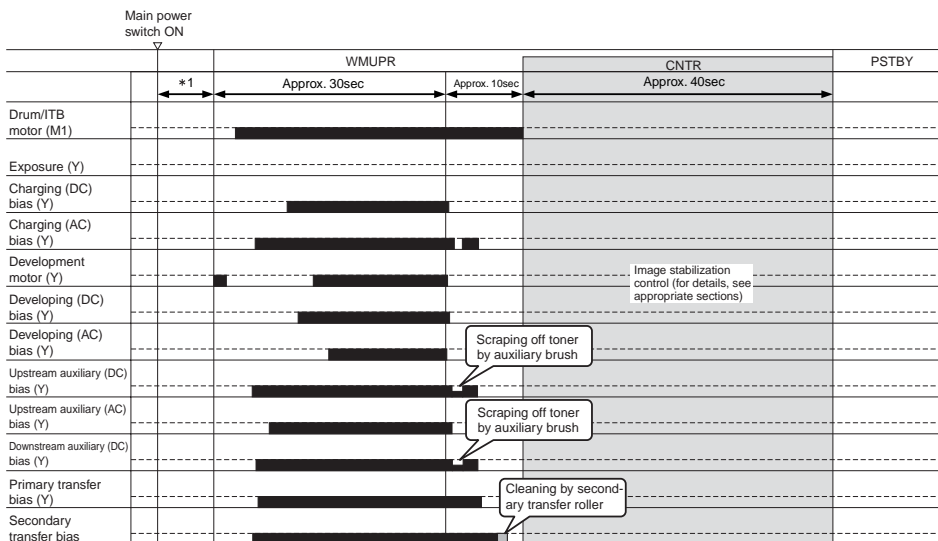
*1:Time when it reaches temperature of target of the fixing unit(iR C5180、iR C4580/2880 (230V): 0sec)
*2:It is time for iRC5180.

F-9-7

9.3.3 During Copying/Printing Operations (normal speed)

Full color, Plain paper, A4, 2 copies/prints, Y drum unit
Characteristics
- in response to a press on the Start key, the intermediate transfer belt (ITB) stars to rotate.
- the sequence of operations for drum units after exposure starts with a delay of 0.7 sec each
- the ITB continues to rotate after delivery of paper from the fixing unit (for post-imaging control)

Y Drum Unit Sequence of Image Formation (plain paper)
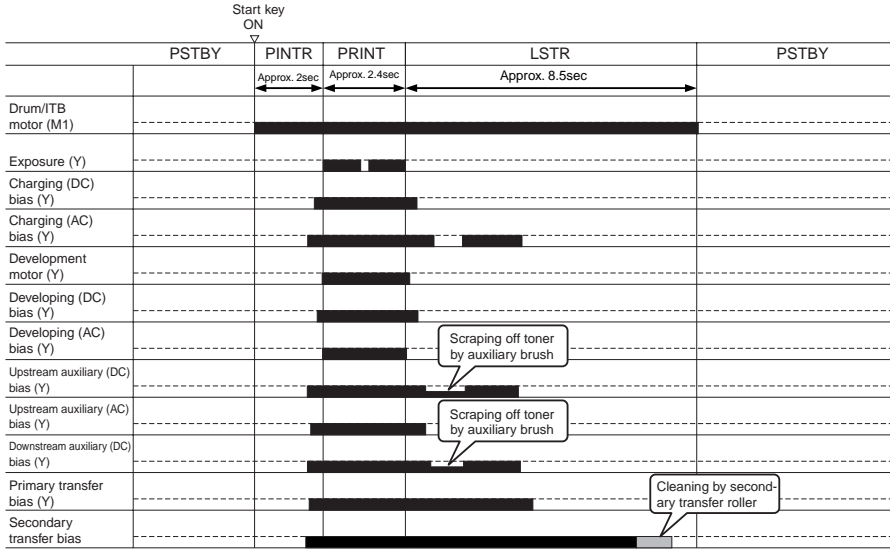
∗1：It is time for iRC5180.

F-9-8

When Making Y/M/C Monochrome Copies/Prints
    If not for Bk (i.e., for Y, M, C), a high voltage is applied for the 4 colors as for full-color output when making monochrome copies/prints. (Exposure is not executed for colors other than those in question.)
When Making Bk Monochrome Copies/Prints
    When making Bk monochrome copies/prints, no high voltage is applied for Y or M, and the developing motors for these colors are not driven.

9.3.4 Making Copies/Prints (half speed)

Full color, Thick paper/Special paper/Transparency, A4, 2 copies/prints, Y drum unit
Characteristics
- in response to a press on the Start key, the photosensitive drum and the intermediate transfer belt (ITB) start to rotate
- the sequence of operations of the drum units after exposure starts with a delay of 1.5 sec
- the photosensitive drum and the ITB continue to rotate after paper has been discharged from the fixing unit (for post-imaging control)

Y Drum Formation Sequence (thick paper/special paper/transparency)

	PSTBY	PINTR	PRINT	LSTR	PSTBY
		Approx. 8sec	Approx. 5.5sec	Approx. 18sec	
Drum/ITB motor (M1)					
Exposure (Y)					
Charging (DC) bias (Y)					
Charging (AC) bias (Y)					
Development motor (Y)					
Developing (DC) bias (Y)					
Developing (AC) bias (Y)					
Upstream auxiliary (DC) bias (Y)					
Upstream auxiliary (AC) bias (Y)					
Downstream auxiliary (DC) bias (Y)					
Primary transfer bias (Y)					
Secondary transfer bias					

Scraping off toner by auxiliary brush

Scraping off toner by auxiliary brush

Cleaning by secondary transfer roller

*1: It is time for iRC5180.

F-9-9

*1ÅFLSTR is done for the following conditions.
-cumulative output (number of pages) is 100 or more
-cumulative output (number of pages) is 100 or more from Image position correction
ÅEcumulative output (number of pages) is 100 or more from SALT- Dmax control

9.3.5 After Replacing the Drum Unit (D-UNIT)

When a new drum unit (D-UNIT) has been installed,
Characteristics
- when a drum unit is fitted and the machine's front cover is closed, the developing cylinder starts to rotate.*1
- so that the developing cylinder may be coated evenly with developer, the cylinder is rotated for 30 sec at the beginning
*1Whether it is a new drum unit is judged by the accumulated print number of memory tag in the drum unit. If not a new D-UNIT is set, this sequence is not executed.
- if the drum unit is not new, this sequence is not executed; the sequence used at power-on (1) or (2) is executed
- about 150 sec after the drum unit has been fitted, image stabilization control is executed in the following order
  discharge current level control
  ATVC control
  ATR control
  SALT-Dmax control
  image position correctionSALT-Dhalf control

Y Drum Unit Initialization Sequence
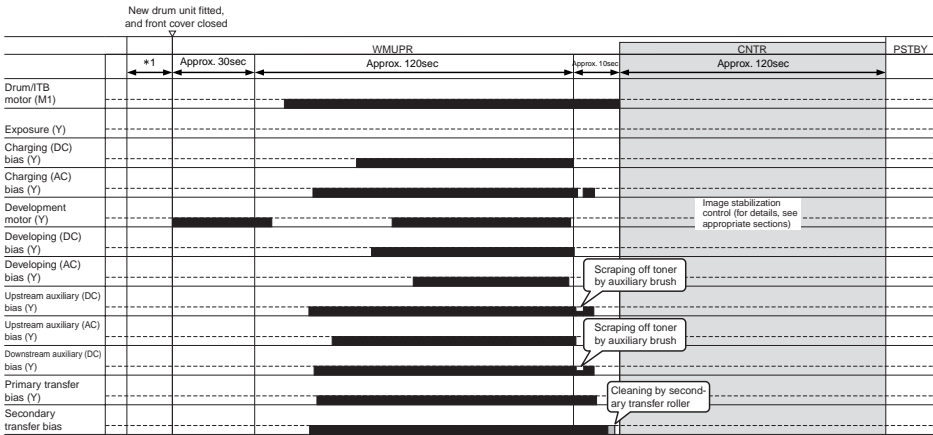
*1:Time when it reaches temperature of target of fixing unit.(iR C5180、iR C4580/2880 (230V):0sec)
*2:It is time for iR C5180.

F-9-10

9.3.6 Printing Originals Containing a Color Page

When making copies/prints of originals containing a color page, the machine uses the following sequence to avoid a drop in productivity:

T-9-17

color original: full-color mode sequence

monochrome original: for 4rd and subsequent copies/prints after color page, full-color mode
                       sequence for 5th and subsequent copies/prints after color page,
                       monochrome sequence

MEMO:
A switch-over from full-color mode to monochrome mode requires a sequence in which the high voltage of YMC must be lowered. By reducing the use of such a sequence, the machine avoids an appreciable drop in productivity.

9.4 Driving and Controlling the Image Formation System

9.4.1 Driving and Controlling the Image Formation System and the High-Voltage System

1.Drive Control

The image formation system is driven by the toner container motor, developing motor, and drum ITB motor through gears. (For details, see the appropriate sections.)
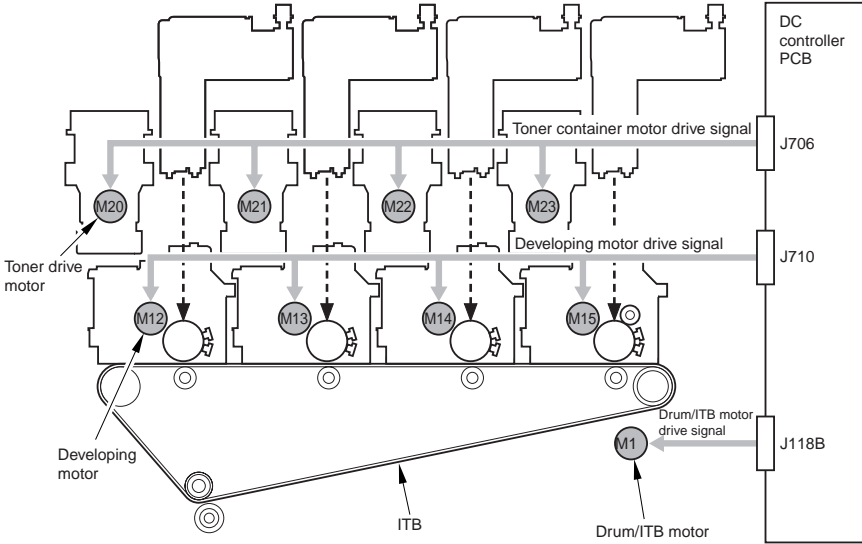
F-9-11

2.High-Voltage Control

The high-voltage unit is used to supply high voltage to each of the blocks in the image formation system. (For details, see the appropriate sections.)
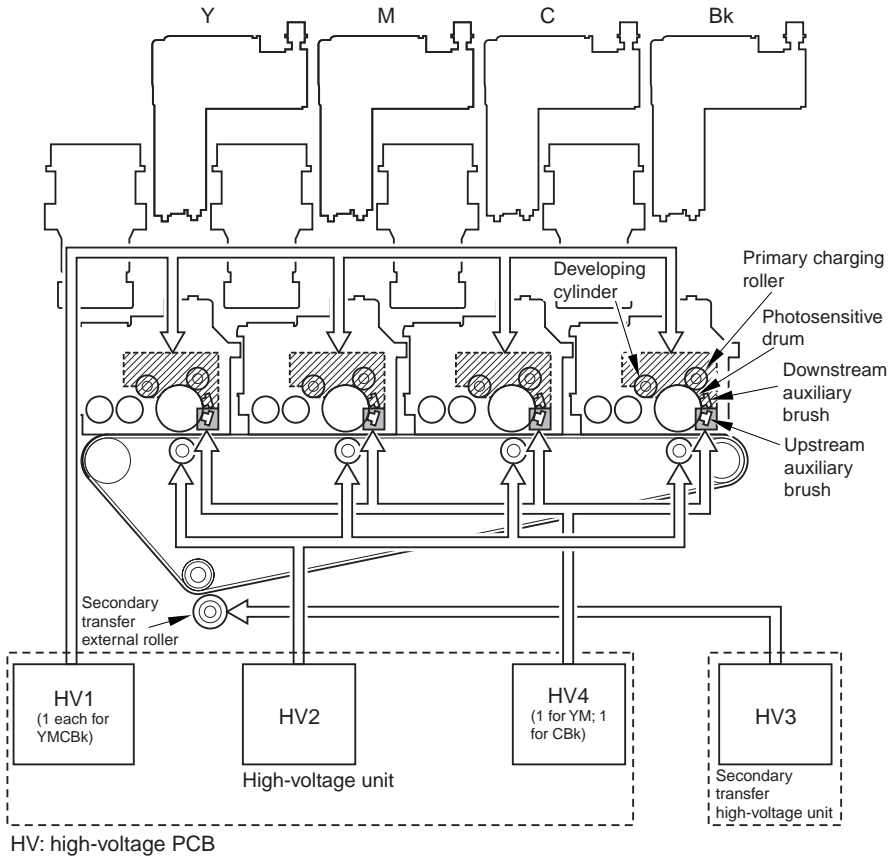
F-9-12

9.5 Image Stabilization Control

9.5.1 Outline of Image Quality Control

Changes in temperature/humidity or passage of time can cause the machine to produce images of varying quality. To ensure that the quality of images remain stable, the levels of voltage outputs and volumes of toner supply are corrected:

T-9-18

So that the machine's image reproduction remains stable, the following control mechanisms are used:

ATR Control	to suit changes in toner density/toner consumption
Discharge Current Level Control	to prevent faulty images in a high humidity environment (correction of charging AC bias)
ATVC Control	to ensure good transfer (correction of transfer bias level)
PASCAL Control/SALT Control	to suit changes in image density and gradation (correction of charging/developing/transfer bias; correction of image correction table)

9.5.2 Automated Image Stabilization Control

T-9-19

Operation	discharge current control	ATVC control	ATR control	SALT-Dmax control	image position correction	SALT-Dhalf control	time required [sec]
power introduction / jam recovery	When the fixing roller surface temperature is =/> 100 deg C						
	Yes	Yes			Yes		ca. 70 *6
	When the fixing roller surface temperature is < 100 deg C						
	Yes	Yes	Yes	Yes	Yes	Yes *11	ca. 180 *7
toner receptacle replacement	When the toner supply screw revolution reaches the threshold and the ATR sensor value is lower than specified. *8						
	Yes	Yes	Yes	Yes	Yes	Yes	ca. 170
	When the toner supply screw revolution reaches 100 % of the specified value. *8						
	Yes	Yes	Yes	Yes	Yes		ca. 130
drum unit replacement	Yes	Yes	Yes	Yes	Yes	Yes	ca. 220 *7

Operation	discharge current control	ATVC control	ATR control	SALT-Dmax control	image position correction	SALT-Dhalf control	time required [sec]
cover*1 open / close	When the fixing roller surface temperature is =/> 100 deg C *2						ca. 20
	When the fixing roller surface temperature is < 100 deg C						
	Yes	Yes	Yes	Yes	Yes	Yes	ca. 180 *7
specified number of sheet *10	4C counter *12: every cumulated output of 100 to under 200 sheets (last rotation) *3						
	Bk counter *12: every cumulated output of 200 to under 400 sheets (last rotation) *3, *13						
	Yes	Yes	Yes		(Yes: 300 sheets *9)		ca. 20 (30)
	4C counter *12: every cumulated output of 100 to under 200 sheets (initial rotation) *3						
	Bk counter *12: every cumulated output of 200 to under 400 sheets (initial rotation) *3						
	Yes	Yes					ca. 15
	4C counter *12: every 200 =/> sheets of cumulated output (interval) *3						
	Bk counter *12: every 400 =/> sheets of cumulated output (interval) *3, *12, *13						
	Yes	Yes	Yes		(Yes: 400 sheets *9)		ca. 30 (50)
	500 =/> sheets of cumulated output *3						
	Yes	Yes	Yes	Yes	Yes		ca. 45 (70)
at detection of significant environmental change after being left for 10 hours in STBY mode *3.	Yes	Yes	Yes	Yes	Yes	Yes	ca. 100
recovery from low-power mode	When there is no open / close of cover during low-power mode						ca. 20 *4
	When there is open / close of cover during low-power mode						
	Yes	Yes			Yes		ca. 70 *6

Operation	discharge current control	ATVC control	ATR control	SALT-Dmax control	image position correction	SALT-Dhalf control	time required [sec]
recovery from sleep mode	When the time for STBY + low-power mode is 1.9 h or longer before entering into sleep mode						
	Yes	Yes	Yes	Yes	Yes	Yes	ca. 180 *7
	When the time for STBY + low-power mode is shorter than 1.9 h before entering into sleep mode *5						
	Yes	Yes	(Yes)	(Yes)	Yes	(Yes)	ca. 70 *6 (ca. 180 *7)

*1:'Cover' includes all the cover.
*2:At open / close of the cover (fixing roller surface temperature =/> 100 deg C), open / close of cover before shifting into stand-by mode leads to execution of the sequence same as open / close of cover (fixing roller surface temperature < 100 deg C).
*3:See the corresponding service mode.
*4:Indicates the time it takes to make the fixing roller surface temperature ready for job start.
*5:Depends on the fixing roller surface temperature at recovery from the sleep mode.
*6:Indicates the time including the ca. 30 sec of operation before image stabilization control starts.
*7:Indicates the time including the ca. 120 sec of operation before image stabilization control starts.
*8:Indicates state in which the toner receptacle life is detected to be over.
*9:When the image position correction counter indicates =/> 300 sheets, image position correction is executed as well as the other image stabilization control.
*10:There are 3 sheet counters as shown below:
    - set of discharge current control, ATVC control, and ATR control
    - set of discharge current control, ATVC control, ATR control, and SALT-Dmax
    - image position correction
*11:Executed when the Dhalf control counter indicates =/> 1000 sheets.
    Control for each specified sheet number is carried out by the timings shown below:
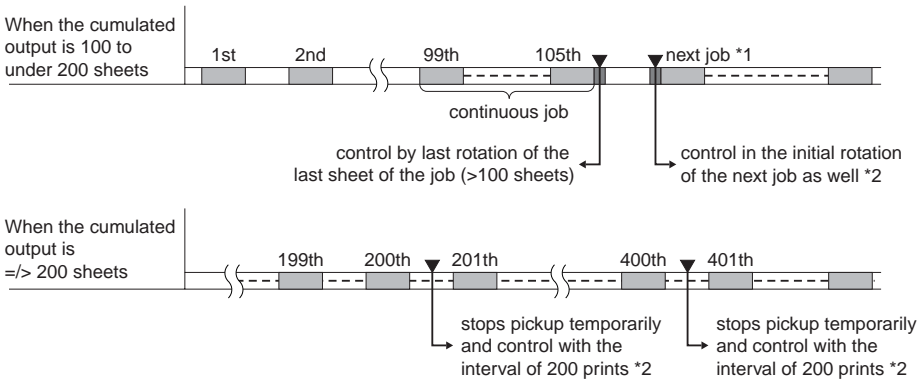
*1 : The job that follows the job of more than 100 prints
*2 : When the control operation is executed, the counter is reset to '0'.
▼ : Control starting point

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*12:In 4C counter, the count is increased by color copy / print. In Bk counter, the counter is increased by mono copy / print. Image stabilization control is carried out when either of the 4C or the Bk counter reaches the specified value. When the image stabilization control is carried out, the counter that reached the specified value is cleared.
    Also, if the 4C counter is higher than 80 % of the specified value when the Bk counter value reaches the

specified value and the image stabilization control is carried out as a result, both of the 4C and Bk counters are cleared.
Bk counter is increased when black-and-white or mono is selected on the control panel or driver screen.

Control Panel
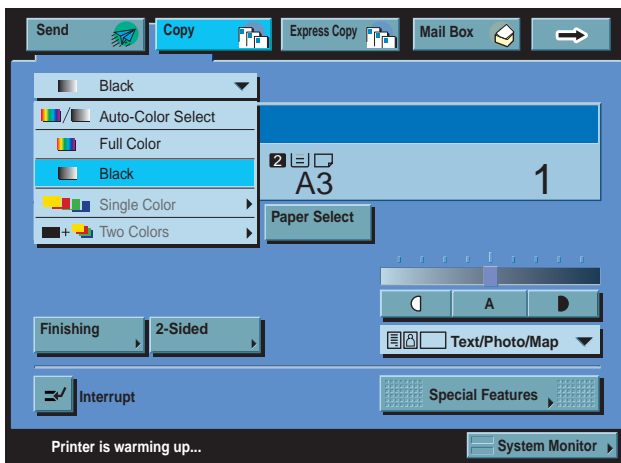
F-9-14

Driver Screen
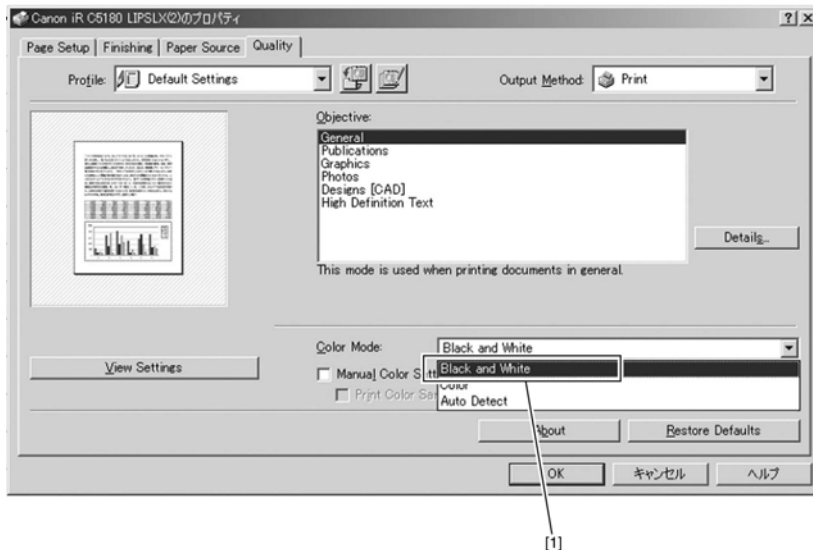
F-9-15

*13:When the image stabilization control is carried out as the Bk counter's count reached the specified value, image position correction is not carried out.

Service Mode:
COPIER > OPTION > BODY > INTROT-1
Use it to change the intervals between sessions of execution of image stabilization control (adjustment set-1) for initial/last rotation in terms of the number of pages.
Default (at shipment/upon RAM initialization): 100

COPIER > OPTION > BODY > INTROT-2
Use it to change the intervals between execution sessions of image stabilization control (adjustment set-2) for initial/last rotation in terms of the number of pages.
Default (at shipment/upon RAM initialization): 500

COPIER > OPTION > BODY > INTPPR-1
Use it to change the intervals of execution sessions (adjustment set-1) for image stabilization control between sheets in terms of the number of pages.
Default (at shipment/upon RAM initialization): 200

COPIER > OPTION > BODY > INTROT-T
Use it to change the intervals of execution sessions for image stabilization control for standby.
Default (at shipment/upon RAM initialization): 10

COPIER > OPTION > BODY > ADJ-LVL
Use it to change the execution mode settings for image stabilization control for a specific number of pages.
Default (at shipment/upon RAM initialization): 0

9.5.3 ATR Control

The machine executes ATR control to maintain a specific image density, which otherwise would change as more and more toner is used.
The machine measures the concentration of toner and adjusts its supply.
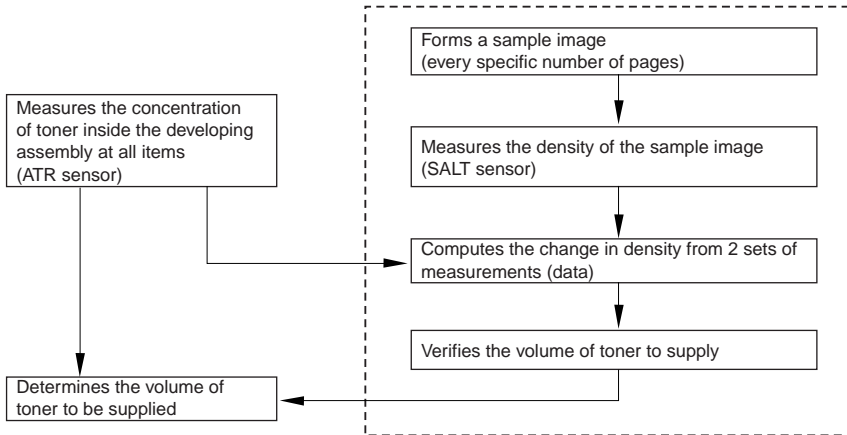
ATR control

F-9-16
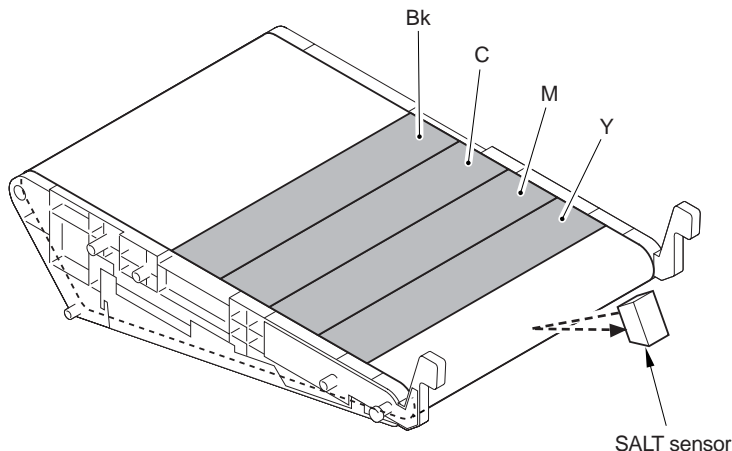
F-9-17

9.5.4 Discharge Current Level Control

- The machine controls the level of discharge current so as to ensure the optimum level in keeping with changes in temperature/humidify. (The term "discharge current"refers to the current that occurs between the primary charging roller and the photosensitive drum.) The current is controlled to a level that enables prevention of faulty images in a high humidity environment and, at the same time, permits collection of toner remaining from transfer to the developing assembly. Operation
1. An AC bias is applied to the primary charging assembly; the level of current occurring at the time is measured by the high-voltage PCB (HV1-SUB) and is sent to the CPU on the DC controller PCB as feedback.
2. The roller is charged using the AC charging bias corrected by the CPU.
- Frequency of AC Bias on Primary Corona Roller is adjustable by its Processing Speed

9.5.5 ATVC Control (transfer bias level correction)

The ATVC control mechanism is used to determine the optimum level of transfer voltage for transfer of images from the photosensitive drum to the ITB, and from the ITB to paper.
The level of transfer voltage is corrected in relation to changes in temperature/humidity, deterioration of rollers, and types of paper.
Description of Control
1. A reference voltage is applied to the transfer roller, and the level of current that occurs in response is checked by the high-voltage PCB and communicated to the CPU on the DC controller PCB as feedback.
2. The machine executes transfer using a transfer voltage which is the result of correction by the CPU.

T-9-20

Item	Description
Primary transfer	Applies a reference voltage to the primary charging roller.
	Uses the high-voltage PCB (HV-2) to check the level of current, and the result is fed back to the CPU for determination of the optimum level.
Secondary transfer	Applies a reference voltage to the secondary transfer external roller.
	Uses the high-voltage PCB (HV-3) to check the level of current, and the result is fed back to the CPU for determination of the optimum level.

9.5.6 PASCAL Control (image gradation)

The PASCAL control mechanism is used to stabilize gradation characteristics of images on paper.
It makes up for the changes in gradation occurring in response to changes in temperature/humidity or as the machine is used over time.
- PASCAL Control for Half-Speed
  The mechanism is used to correct the changes in the gradation characteristics that otherwise would occur when thick paper, special paper, or transparency is used. The test print used for the mechanism is the same as the test print used for plain paper.
Description of Control
      Start-up
         V
      Prints out the test pattern stored in the main controller (3 types).
         V
      Uses the scanner to read the test print (previously printed out) set in the reader.
         V
      Prepares the image correction table A (data processing).
         V
      End
Timing of Control
- Service Person Interaction
  The mechanism is executed when 'full correction'is executed while auto gradation correction is under way in user mode.

MEMO;
Differences Among 3 Test Patterns
  - Test Print 1
    It shows 64 gradations expressed by means of error diffusion processing, which is not subject to moire and, therefore, used in text/photo/map, print photo, and text mode.
  - Test Print 2
    It shows 64 gradations expressed by means of screening with a low number of lines, which is suitable for the expression of gradation and, therefore, is used for print film photo mode and when priority is placed on PDL.
  - Test Print 3
    It shows 64 gradations expressed by means of screening with a high number of lines, which is suitable for the achievement of a high resolution and is, therefore, used when priority is placed on PDL resolution.

Test Print

F-9-18

9.5.7 SALT-Dmax Control (development characteristics correction)

This mechanism is used to stabilize the maximum resolution on the intermediate transfer belt (ITB).
It is used to make up for changes in the maximum density (Dmax), changes in response to deterioration in developer or the drum, changes in temperature/humidity, or changes occurring as the machine is used over time.
Description of Control

Start-up
V
Measures the light reflected by the surface of the ITB (background measurement).
V
Forms a sample patch of the maximum solid density stored in the DC controller.
V
Uses the SALT sensor to take the reading.
V
Converts density (performs computation using the measurement taken).
V
Determines the charging DC bias, developing DC bias, and primary charging current level.
V
End

Timing of Control
- Service Person InteractionThe mechanism is executed when 'full correction' or 'quick correction' of auto gradation correction is under way in user mode.
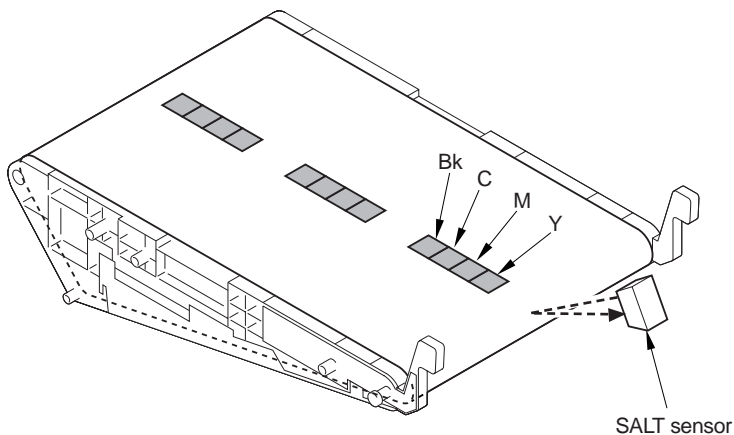
F-9-19

9.5.8 SALT-Dhalf Control (development characteristics correction)

The SALT-Dhalf control mechanism is used to stabilize the gradation of images on the ITB.
It makes up for the changes in gradation characteristics that occur in response to the deterioration in developer or photopositive drum, changes in temperature/humidity, and changes that occur as the machine is used over time.
Gradation Density Control for Half Speed
  The control mechanism is used to make up for the changes in the gradation in images when thick paper, special paper, or transparency is used.
  When the mechanism is enabled in service mode, it is activated when auto control is executed.
  The time it takes is about double the time taken when plain paper is used.
Description of Control
    Start-up*
      V
    Measures the light reflected by the surface of the ITB (background measurement).
      V
    Forms a sample patch of a gradation pattern stored in the main controller on the ITB.
      V
    Uses the SALT sensor to take a reading.
      V
    Performs density conversion (performs computation using the measurement taken).
      V
    Prepares an image correction table B/C (data processing).
      V
    End
- Non-AutomaticThe mechanism is executed when 'full correction'or 'quick correction' is under way in user mode.

COPIER>OPTION>BODY>CAL-SW
  Use it to change the conditions that initiate automatic control.
  default: 0 (disable gradation density control for half speed)
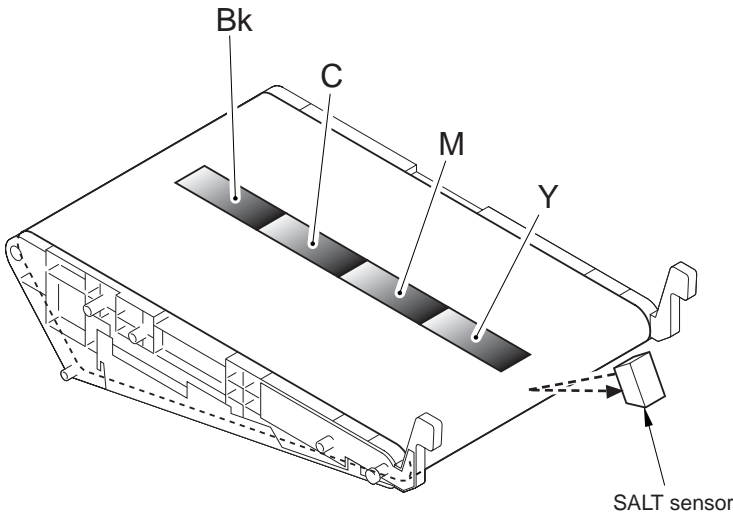
F-9-20

9.5.9 Auto Gradation Control

Outline
The auto gradation control mechanism is used to correct image gradation by correcting the laser output so as to obtain ideal gradation characteristics.
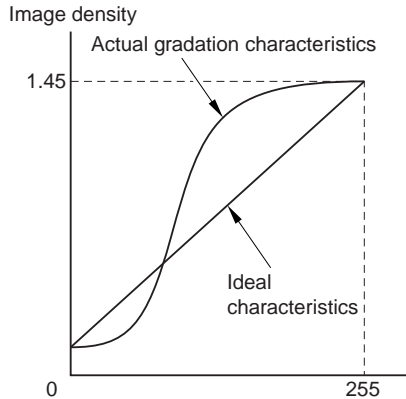
Relationship between laser output
and image density

F-9-21

T-9-21

| Full Correction: | The machine knows the actual gradation characteristics based on the 64-gradation density data collected from the scanner. |
| Quick Correction: | The machine knows the actual gradation characteristics based on the 9-gradation density data. |

User Mode
The machine uses 2 types of auto gradation correction mechanisms, combining the best mechanisms to suit individual requirements.

T-9-22

	Full correction	Quick correction
Description	Start up	Start up
	v	v
	SALT-Dmax control (determines developing DC, charging DC, primary current levels)	SALT-Dmax control (determines developing DC, charging DC, and primary transfer levels)
	v		
	PASCAL control (prepares image correction table A)		
	v	v

	Full correction	**Quick correction**
	Image position correction	Image position correction
	|	|
	v	v
	SALT-Dhalf control (prepares image correction table B)	SALT-Dhalf control (prepares image correction table C)
	|	|
	v	v
	End	End

T-9-23

Image correction table for use at time of image formation	Image correction table A	Table prepared by the result of including the contents of the table A to the result of compari-son between image correction tables B and C

T-9-24

Characteristics	A test print must be printed and read by the machine.	The machine does not use (print) a test print.

9.6 Drum Unit

9.6.1 Outline of the Drum Unit

9.6.1.1 Outline of the Drum Unit

The drum unit consists of the developing assembly, photosensitive drum, auxiliary brush, and charging mechanism.
As many as 4 units are used (Y, M, C, Bk), and all of them have the same construction.
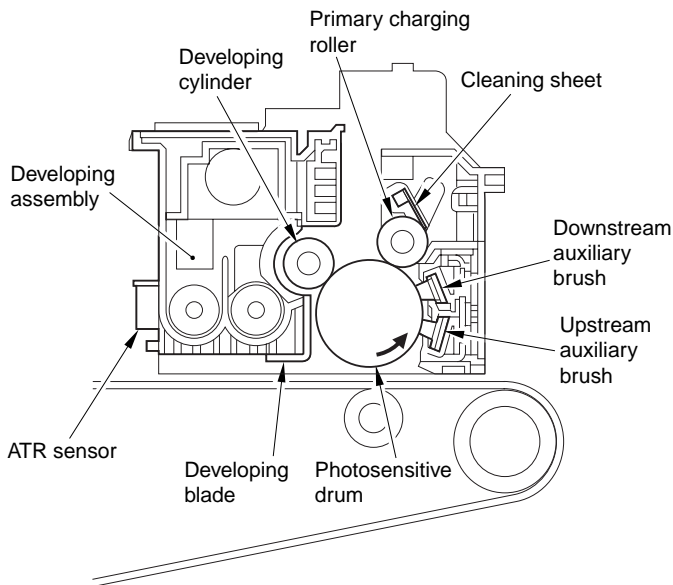
F-9-22

9.6.1.2 Drum Receptacle Presence / Absence Detection

Drum unit presence / absence detection
Drum presence / absence is detected by measuring the current on the primary charging roller.
The current on the primary charging roller (i) is detected by the HV1 PCB, and voltage is calculated by I/V conversion of the current value.
By rectifying this voltage using the HV1-SUB PCB and by A/D conversion using the DC controller PCB, the detected voltage V is calculated.
The detected voltage V and the specified voltage v are compared to detect the presence / absence of the drum unit.

- In the case the drum unit is present
  Detected voltage V < specified voltage v

- In the case the drum unit is absent
  Detected voltage V > specified voltage v
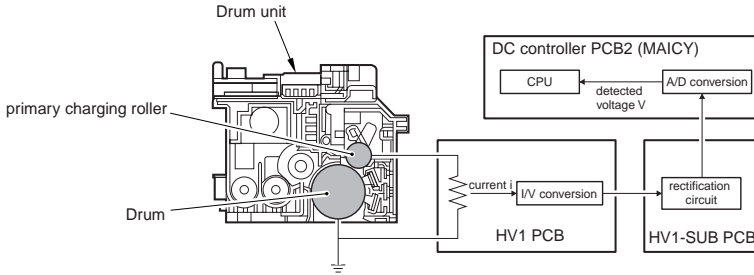
F-9-23

9.6.1.3 Drum Unit (D-UNIT) Drive Control

T-9-25

parts name	drive	remarks
developing cylinder	developing motor (M12 to 15)	driven via the gear
toner stirring screw	developing motor (M12 to 15)	driven via the gear
primary charging roller	follows the photosensitive drum	
photosensitive drum	drum ITB motor (M1)	driven via the gear
auxiliary brush, cleaning sheet	drum ITB motor (M1)	(reciprocate in the direction of the drum shaft)
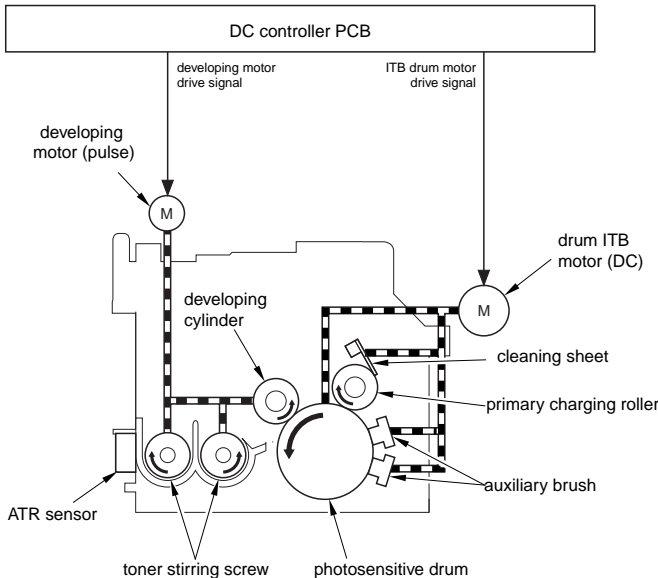
F-9-24

9.6.2 Developing Assembly

9.6.2.1 Construction of the Developing Assembly

Outline and Uses

1. turning latent static image into visible image (development)
2. collecting residual toner from photosensitive drum
- eliminates the need for a cleaning mechanism for the photosensitive drum

T-9-26

Component	
Developing cylinder	- deposits toner on the photosensitive drum.
	- collects toner from the photosensitive drum coming from upstream
Developing blade	- serves to coat the developing cylinder with a uniform layer of developerserves to coat the developing cylinder with a uniform layer of developer
Toner stirring screw	- stirs the toner and the developer inside the developing assembly (thus, charging the toner to a negative potential).
ATR sensor	- detects the amount (concentration of toner) inside the developing assembly.
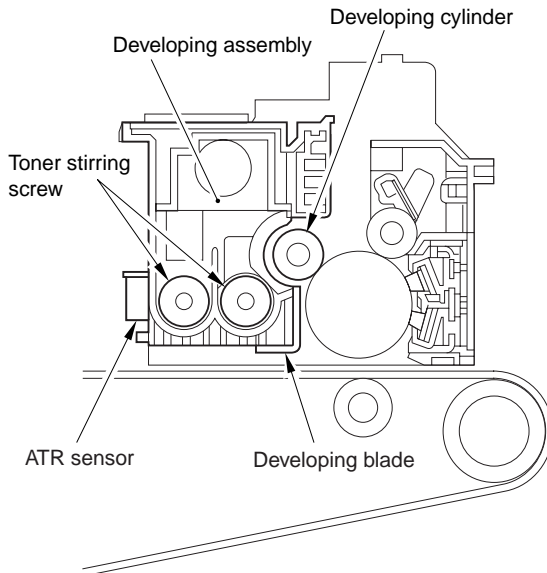
F-9-25

9.6.2.2 Controlling the Developing Bias

1) AC Component
   fixed; used to increase the density of output images.
2) DC Component
   output suited to the reading of the environment sensor/SALT sensor;
   changes the median voltage of the AC bias to adjust the image density

a-1. Route of the Developing Bias
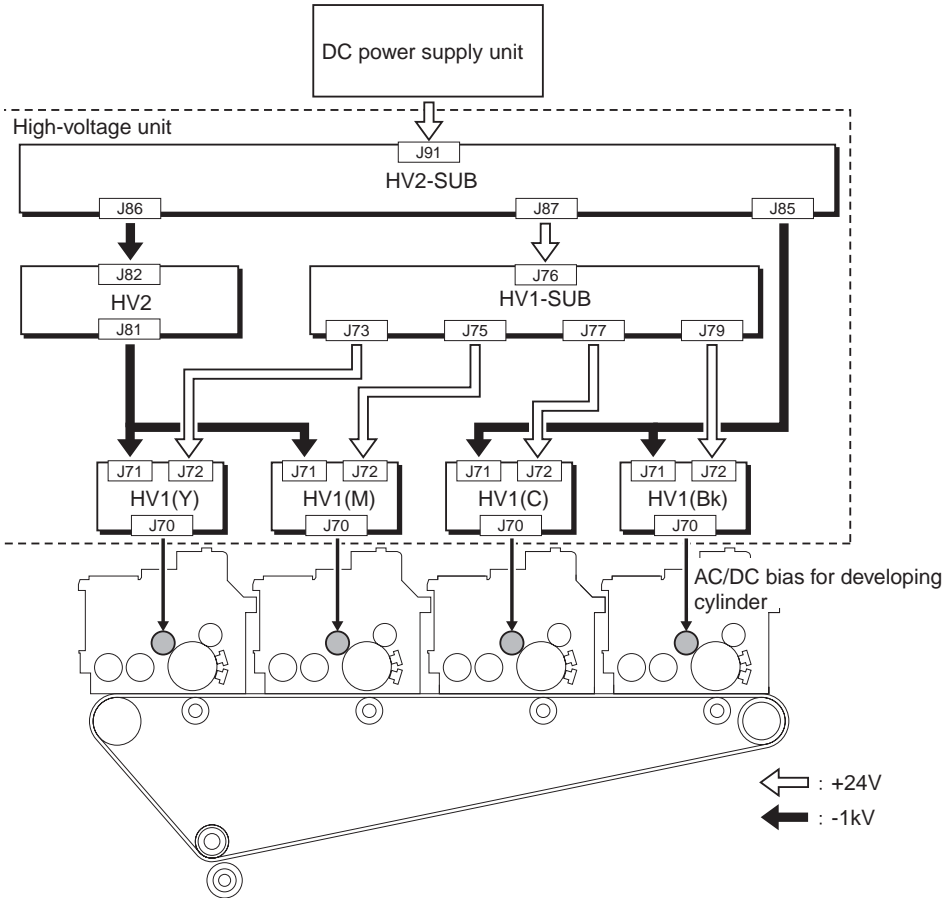
F-9-26

a-2. Route of the Developing Cylinder Control Signal
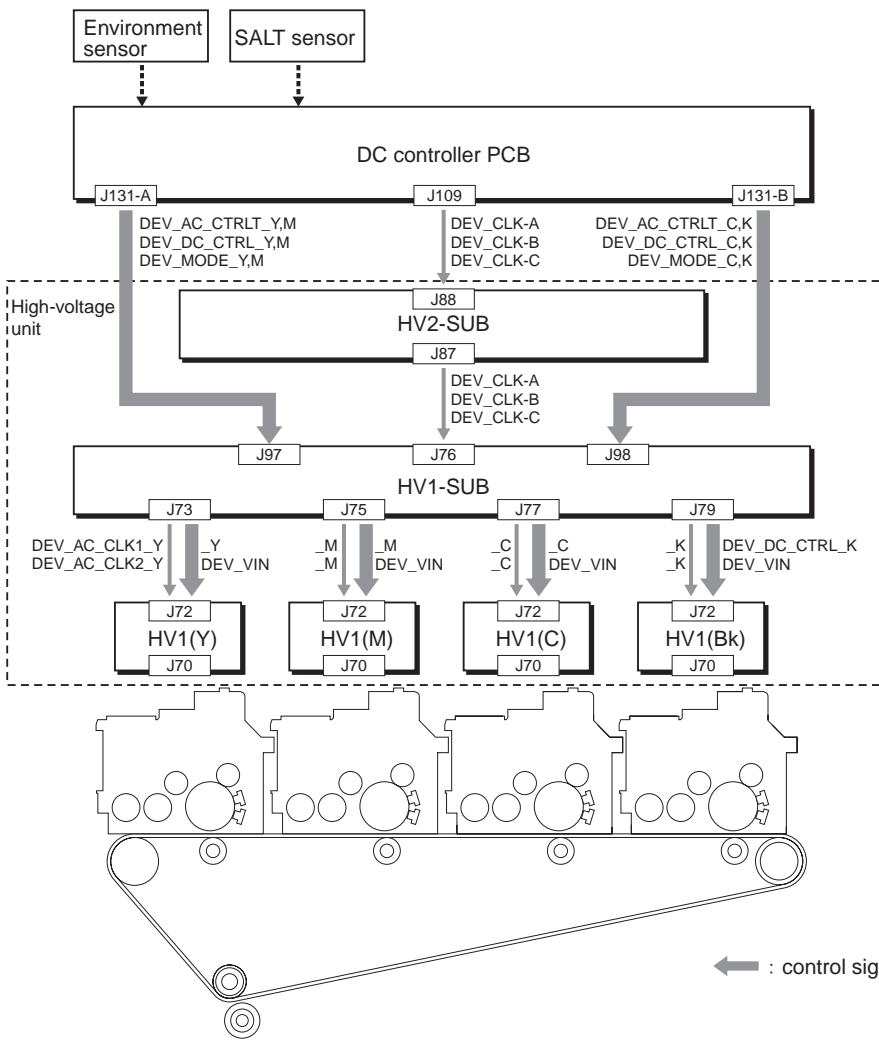
F-9-27

9.6.3 Auxiliary Brush

9.6.3.1 Construction of the Auxiliary Brush

Outline and Uses
1. removes charges from the photosensitive drum; charges residual toner
2. controls the polarity of residual toner
- thereby preventing adhesion of toner to the primary charging roller
- thereby eliminating the need for a cleaning mechanism for the photosensitive drum

T-9-27

Component	
Upstream auxiliary brush	- removes charge from the photosensitive drum. (in preparation for the next image formation session, the latent static image from the previous session is removed)
	- charges the residual toner to a positive potential. (to increase the effects of charging by the downstream brush as part of the upcoming operation)
Downstream auxiliary brush	- charges the photosensitive drum to a negative potential.
	- charges the residual toner to a negative potential. (to facilitate collection by the developing assembly)

Downstream auxiliary brush

Upstream auxiliary brush
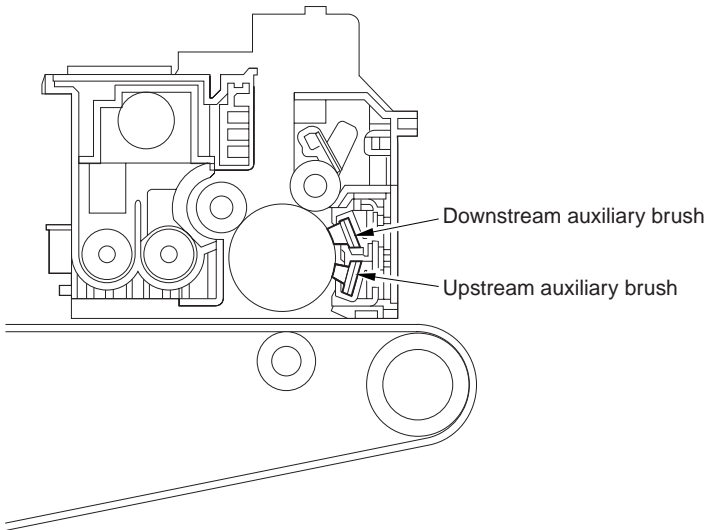
F-9-28

9.6.3.2 Controlling the Auxiliary Bias

T-9-28

AC Component:	level of output suited to the reading of the environment sensor. (upstream auxiliary brush)
DC Component:	level of output suited to the reading of the environment sensor. (upstream/downstream auxiliary brush)

b-1. Route of the Upstream Auxiliary Brush Bias
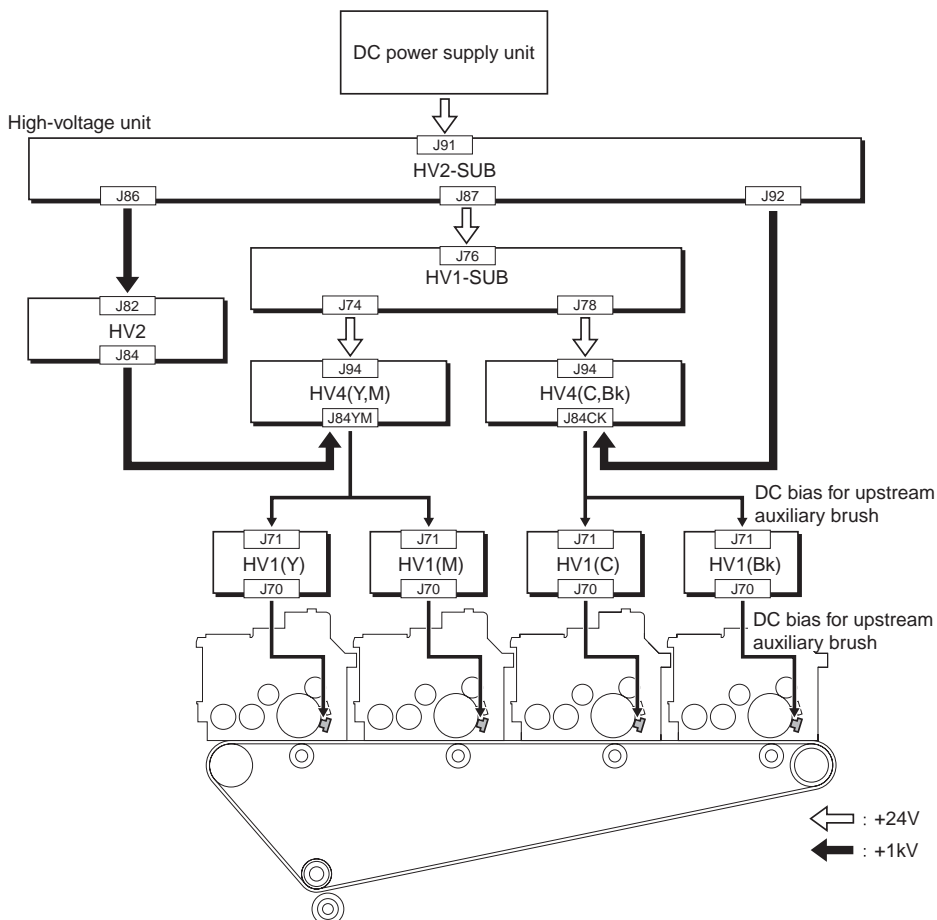
F-9-29

b-2. Route of the Upstream Auxiliary Brush Bias Control Signal
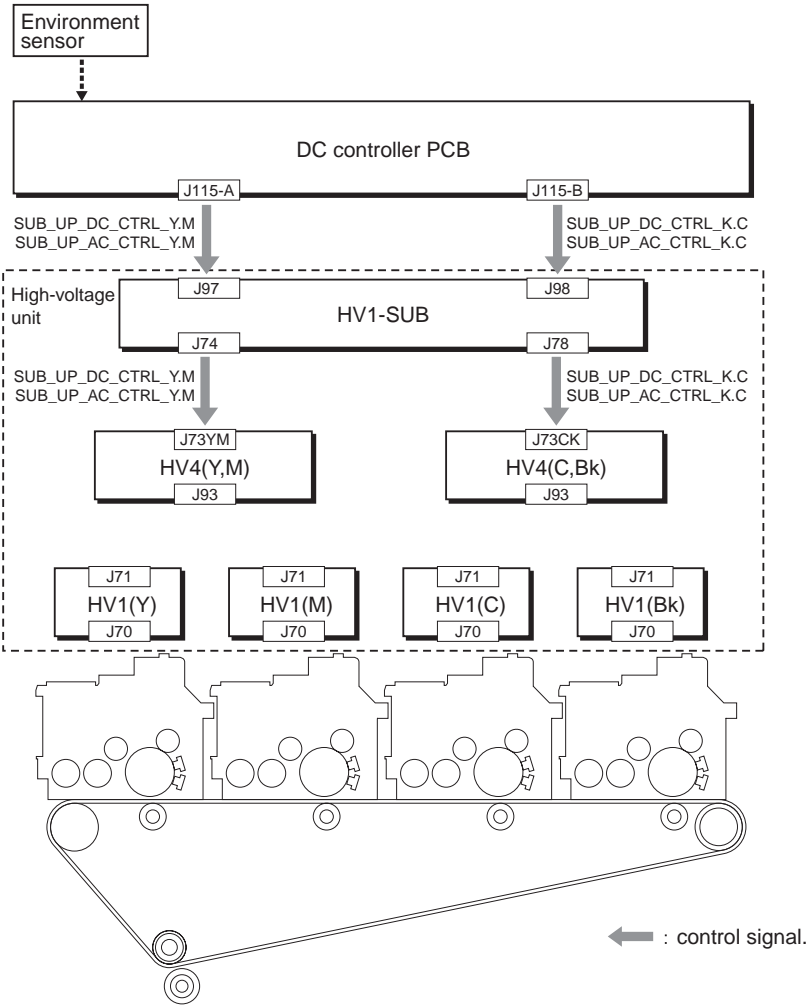
F-9-30

c-1. Route of the Downstream Auxiliary Brush Bias
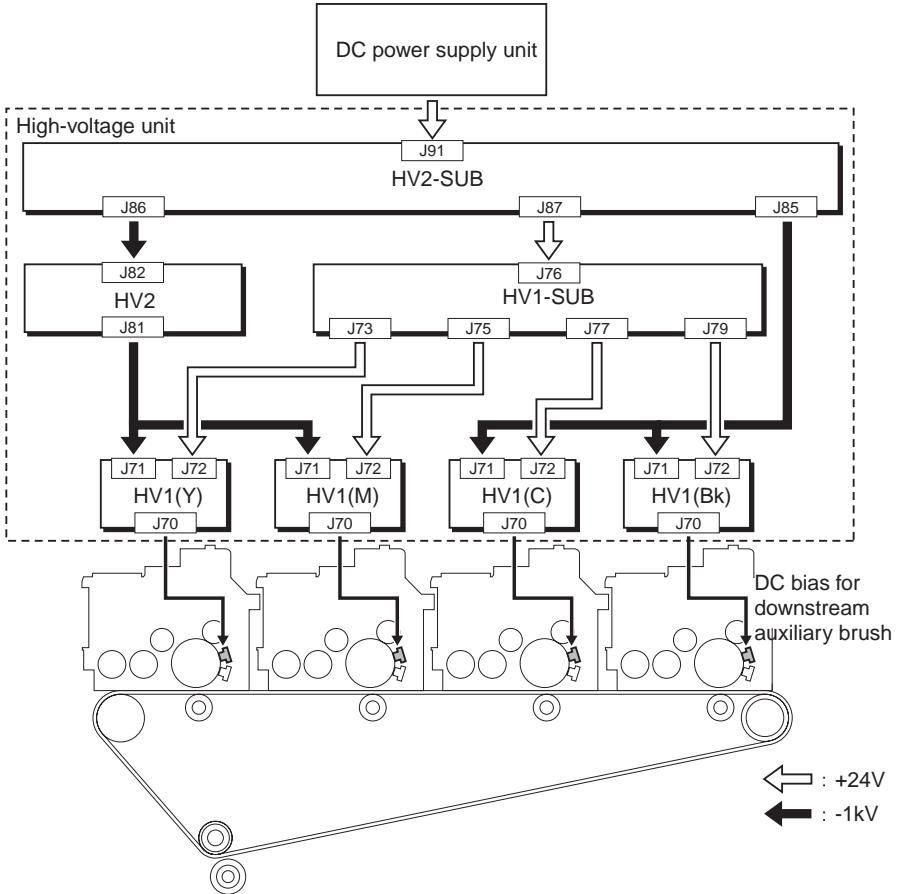
F-9-31

c-2. Route for the Downstream Auxiliary Brush Bias Control Signal
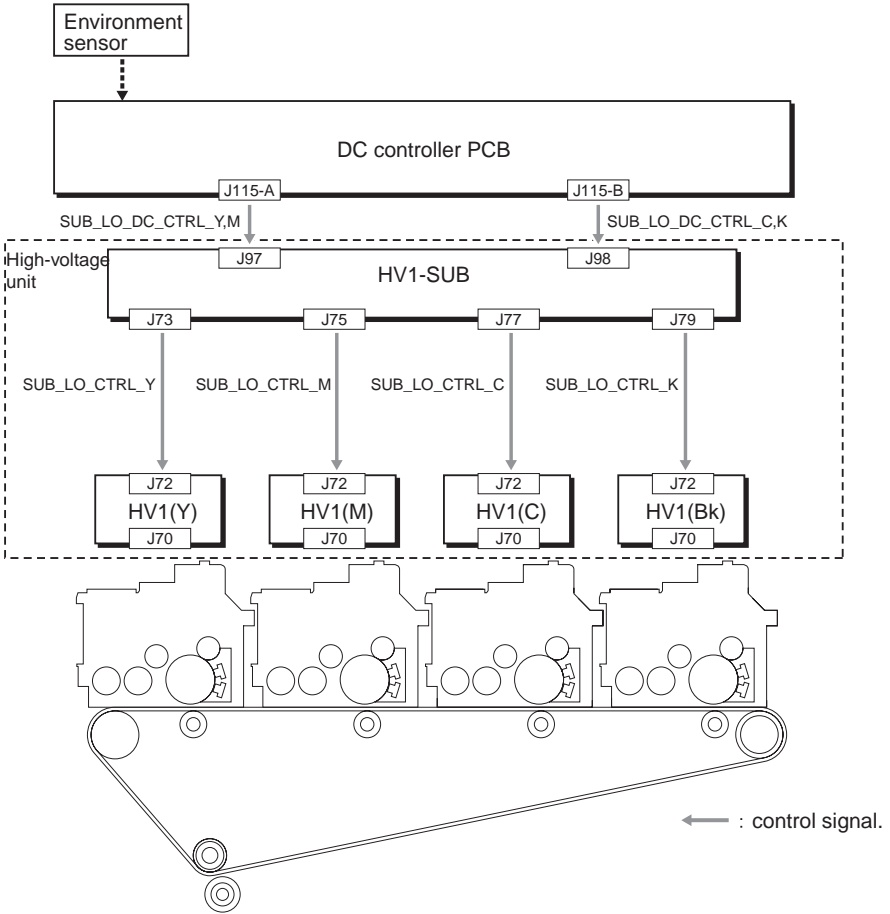
F-9-32

9.6.4 Charging Mechanism

9.6.4.1 Construction of the Charging Mechanism

Outline and Uses
1. charging the photosensitive drum
2. controlling the polarity of residual toner by the cleaning sheet

T-9-29

thus preventing the adhesion of toner to the primary changing roller

thus eliminating the need for a cleaning mechanism for the photosensitive drum

Component	
Primary charging roller	1. in preparation for the next image formation session, the photosensitive drum is evenly charged to a negative potential.
	2. returns the toner changed to a negative potential to the photosensitive drum (for collection in the developing assembly).
Primary charging roller cleaning sheet	charges residual toner to a negative potential by friction
	(thereby returning the toner to the photosensitive drum).

Primary Charging roller   Cleaning sheet
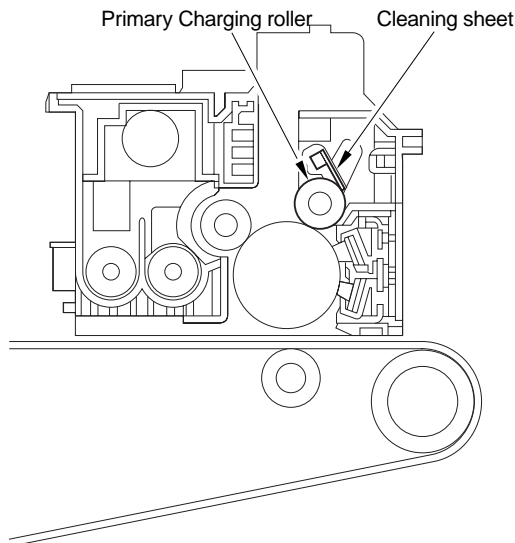
F-9-33

9.6.4.2 Controlling the Charging Bias

T-9-30

| AC Component: | level of output suited to discharge current control |
| DC Component: | level of output suited to the reading of the environment sensor/SALT sensor |

d-1. Route of the Primary Charging Bias
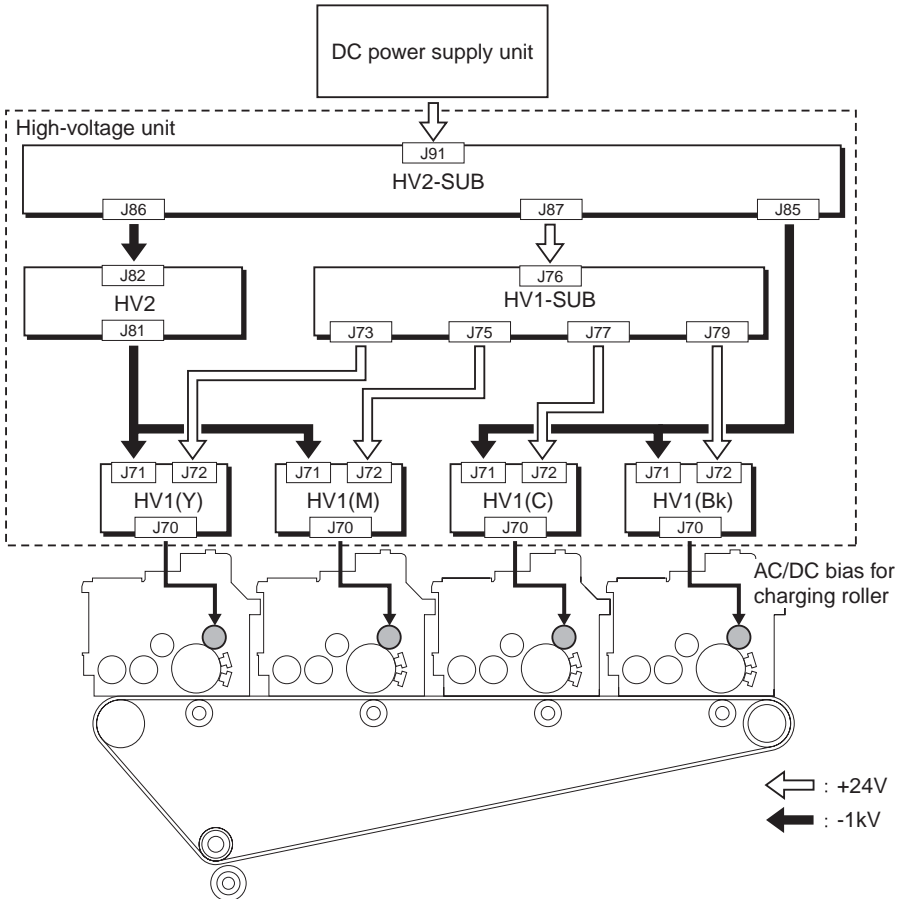
F-9-34

d-2. Route for the Primary Charging Bias Control Signal
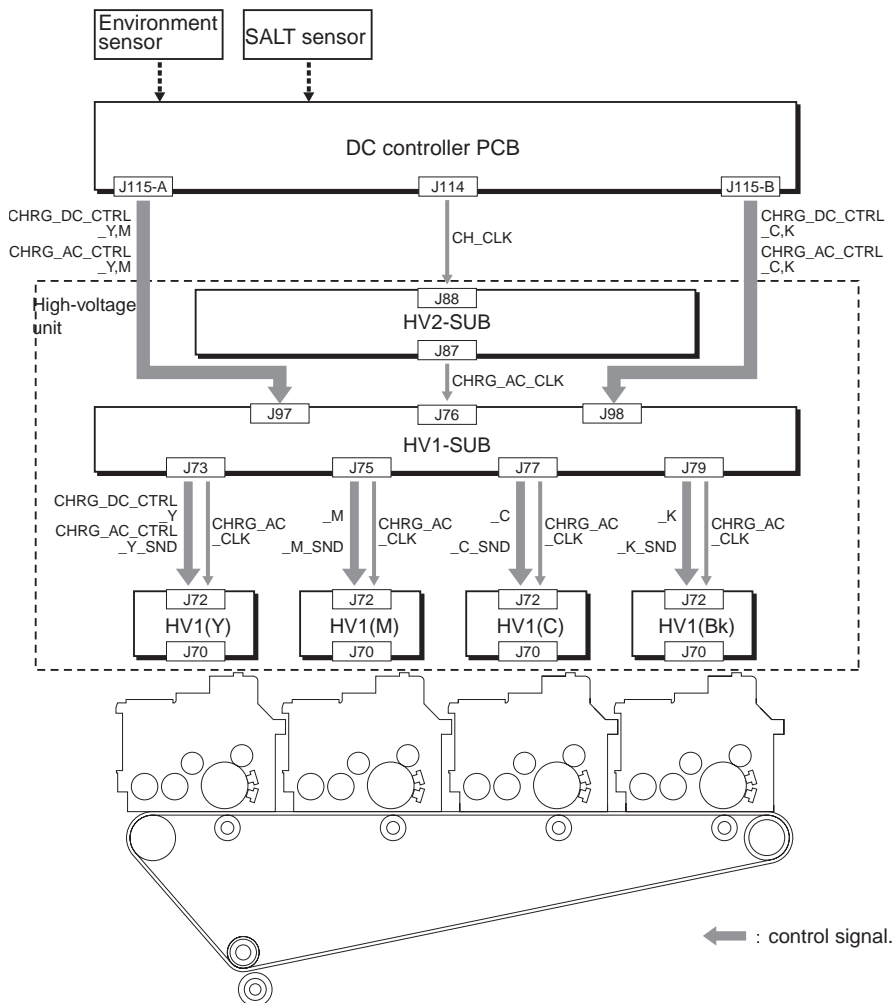
F-9-35

9.7 Toner Container

9.7.1 Outline of the Toner Container

The toner container consists of toner, stirring blade, and toner feedscrew;
as many as 4 containers are used (Y, M, C, Bk), and all of them are of the same construction.

Stirring blade

Toner

Toner feedscrew
(supplies toner from the container
to the developing assembly)
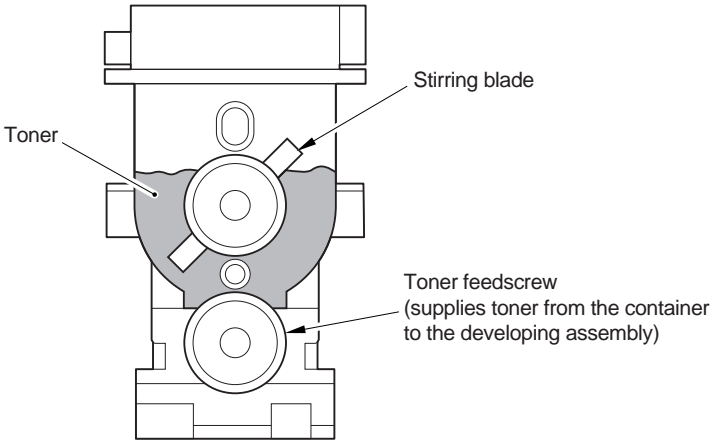
F-9-36

9.7.2 Toner Receptacle Presence / Absence Detection

Toner Receptacle Presence / Absence Detection
There is no software mechanism to detect the toner receptacle presence / absence.
When there is no toner receptacle, releasing lever cannot be locked, and therefore the machine cannot be started.

9.7.3 Controlling the Toner Container Drive

T-9-31

Part	Source of drive	Remarks
Stirring blade	Toner container motor (M20 to 23)	driven through gars
Toner feedscrew	Toner container motor (M20 to 23)	driven through gears
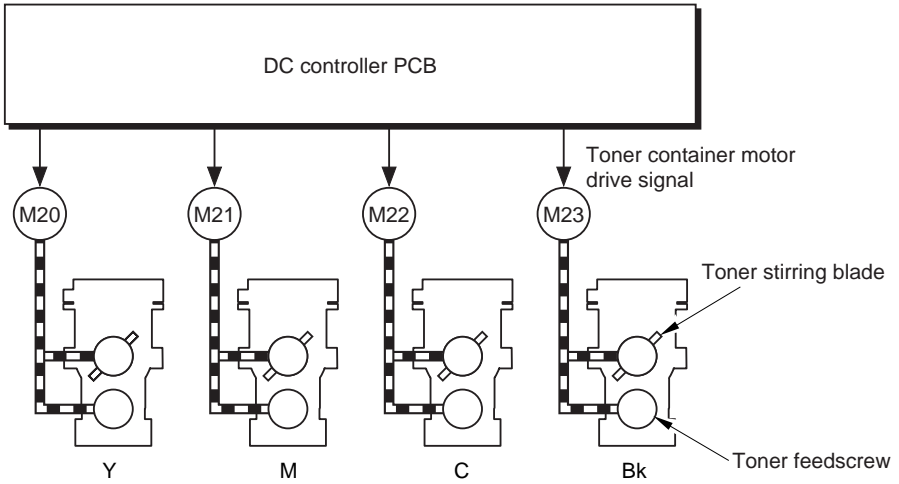
F-9-37

9.7.4 Checking the Level of Toner

The machine checks the level of toner using the following sensors:

T-9-32

Developing assembly	**ATR sensor**
	magnetic sensor
	Description
	checks the concentration of toner inside the developing assembly.
	relies on the fact that a change in the ratio between carrier (magnetic) and toner (non-magnetic) changes the force of magnetism.
	detects changes to identify the level of toner.
	SALT Sensor
	photo sensor
	Description
	checks the sample toner formed on the intermediate transfer belt (ITB) at such times as programmed.
	checks the density of the toner image after development.
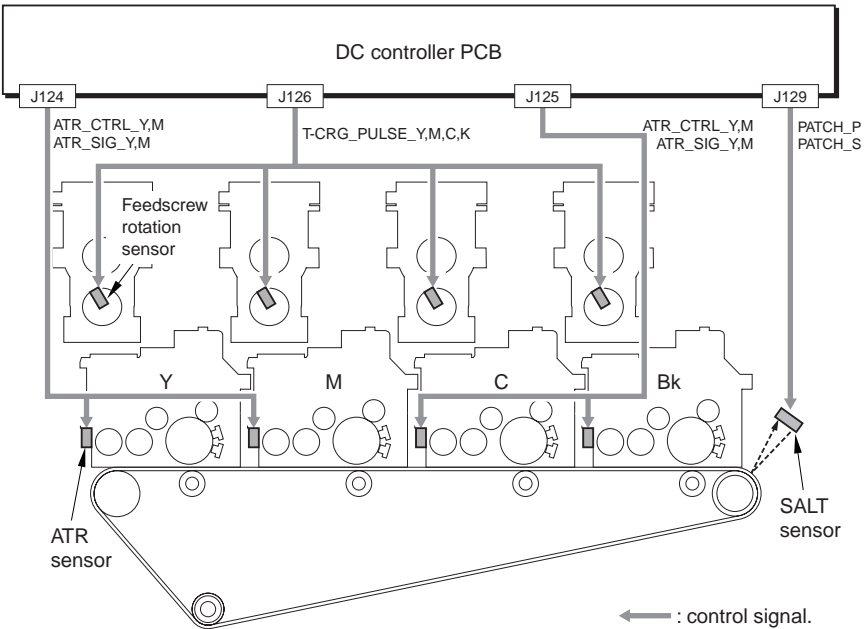
F-9-38

9.7.5 Controlling the Supply of Toner

1. Developing Assembly

When the ATR sensor detects the low toner level within the developing assembly, toner supply control from the toner receptacle to the developing assembly is carried out.

The toner supply level is determined by detecting the revolution of the toner supply screw using the toner supply screw revolution sensor inside the toner receptacle.

Toner supply level to the developing assembly per 1 revolution of the screw is constant. Therefore, the toner level is calculated by cumulated revolution number.
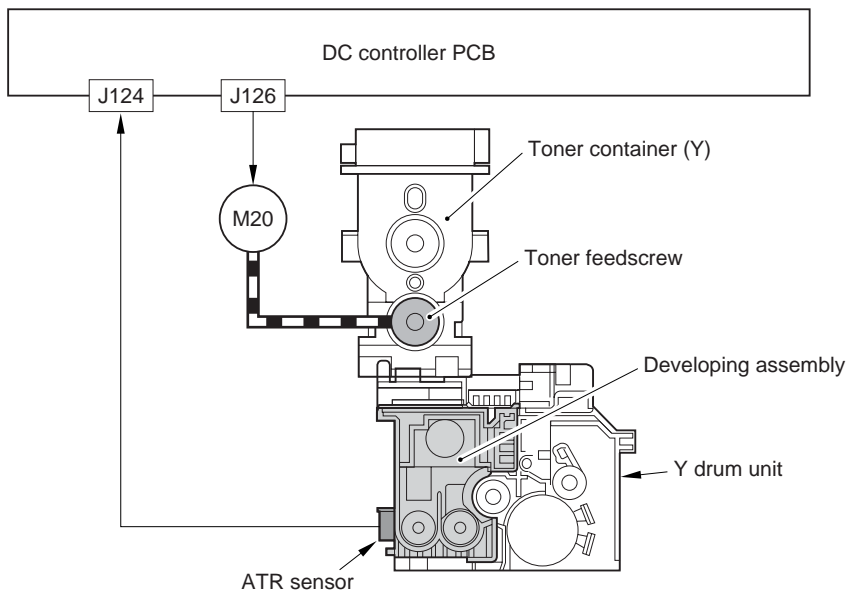
F-9-39

9.8 Transfer Unit

9.8.1 Outline of the Transfer Unit

9.8.1.1 Outline of the Transfer Unit

The transfer unit consists of 2 units: intermediate transfer unit and secondary transfer unit:
Intermediate Transfer Unit
    intermediate transfer belt (ITB)
    primary transfer roller (1 pc. each for Y, M, C, and Bk)
    ITB cleaning blade
    secondary transfer internal roller
Secondary Transfer Unit
    secondary transfer external roller
    static eliminator
    feed guide
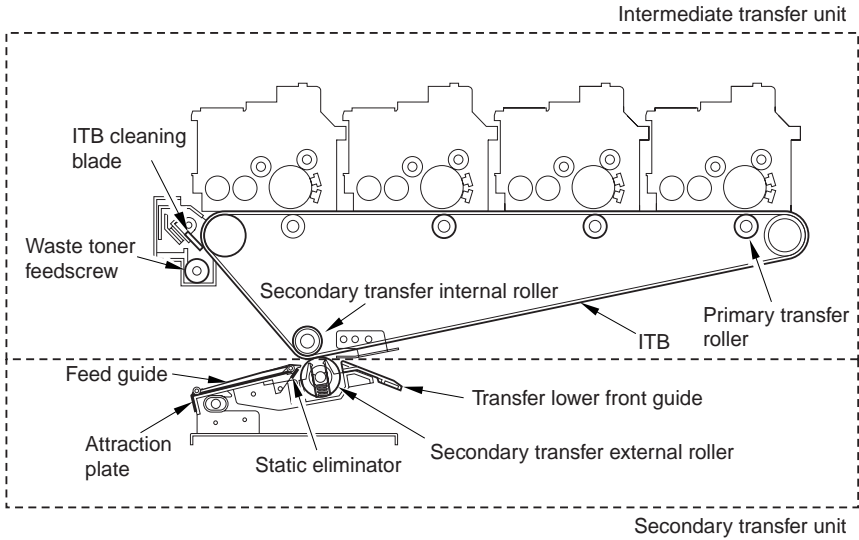
F-9-40

9.8.1.2 Transfer Unit Drive Control

T-9-33

parts	drive	remarks
drive roller	drum ITB motor (M1)	
intermediate transfer belt (ITB)	follows the drive roller	
primary transfer roller	follows the ITB	
secondary transfer inside roller	follows the ITB	
secondary transfer outside roller	secondary transfer inside roller	driven via the gear
tension roller	follows the ITB	
waste toner feeding screw	tension roller	driven via the gear
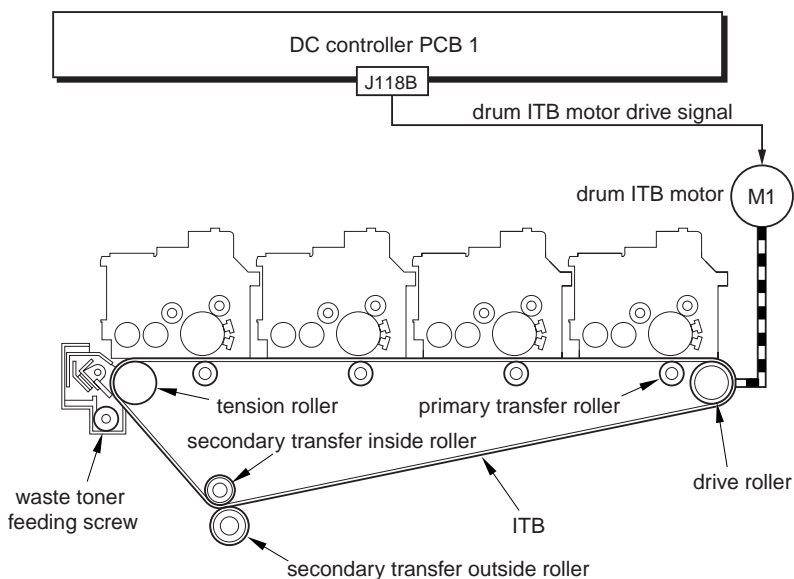
F-9-41

9.8.2 Controlling the Transfer Bias

9.8.2.1 Transfer Bias Control

(1) Primary transfer bias: output according to the environmental sensor, color mode, and ATVC control
(2) Secondary transfer bias: output according to the paper type, environmental sensor, color mode (full / mono), and ATVC control

e. Primary transfer bias / bias control signal flow path
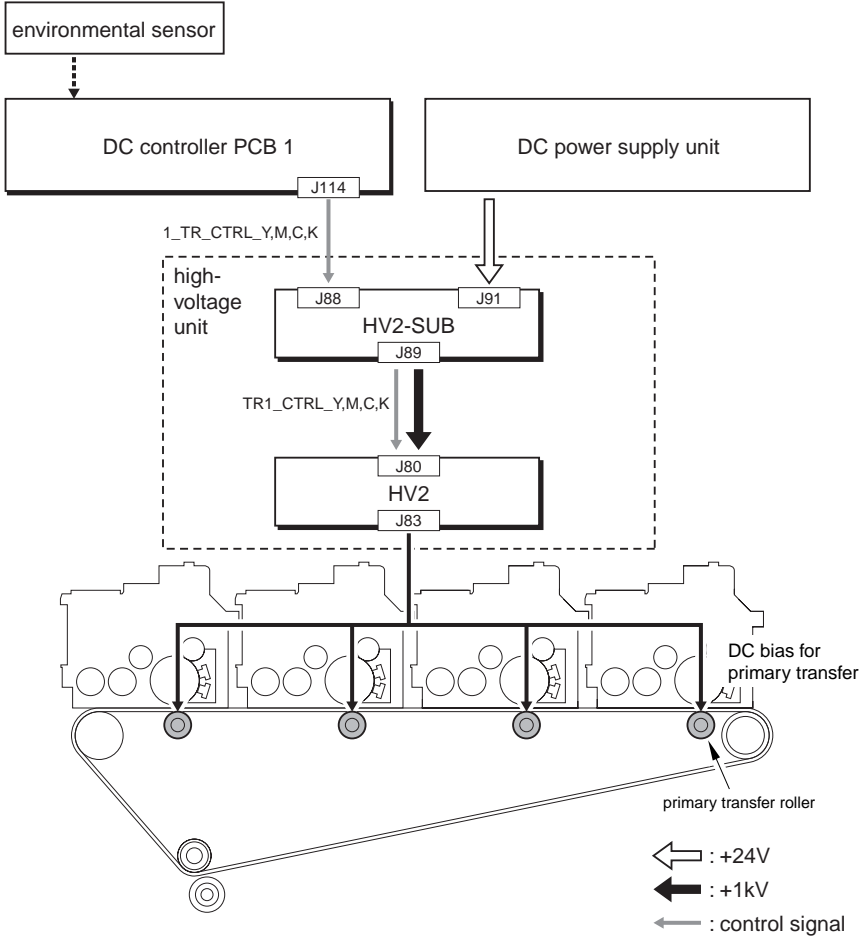
F-9-42

f. Secondary transfer bias / bias control signal flow path
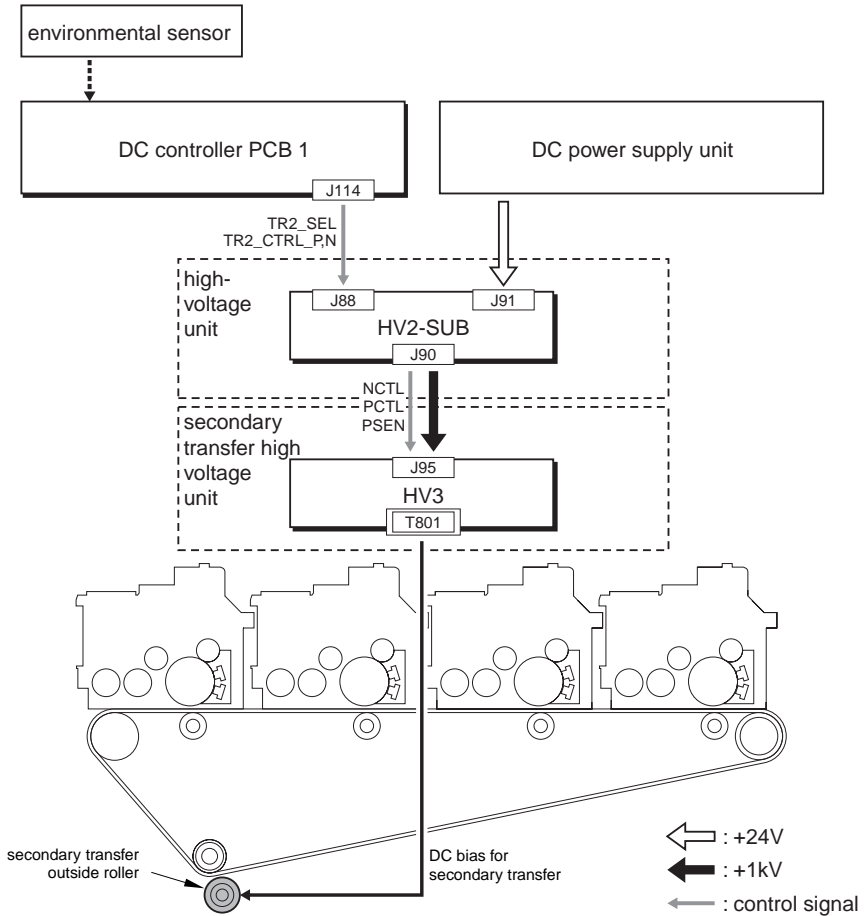
F-9-43

9.8.3 Cleaning

9.8.3.1 Intermediate Transfer Belt (ITB)

The machine uses a cleaning blade to clean the intermediate transfer belt (ITB).

T-9-34

Cleaning belt:	remains in contact with the ITB at all times, and used to scrape off toner from the ITB.
Scoop-up sheet:	used to prevent fall of toner.
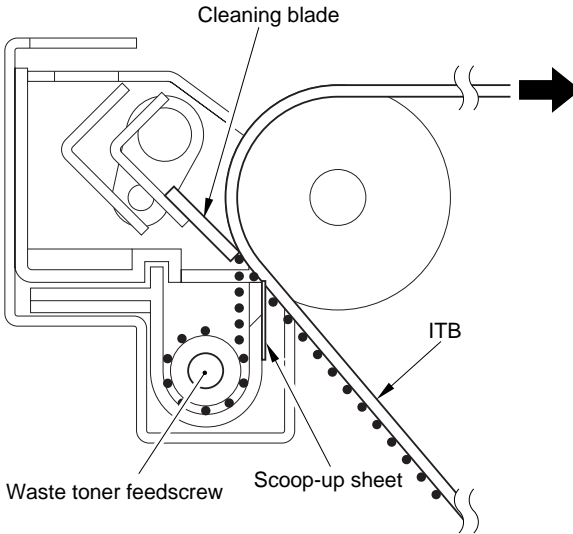
F-9-44

9.8.3.2 Secondary External Roller

The secondary transfer external roller is cleaned electrostatically.
Description of Control
    A bias is applied to the secondary transfer external roller alternately using the polarity used for image formation and the polarity opposite it for longer than the time it takes the roller to make a single rotation, thereby returning the toner remaining on the roller to the ITB.
Timing of Control
1. when a copy/print job ends.
2. after recovery from a jam.
3. when a sample image (or test pattern) is formed as part of image stabilization control.

9.8.3.3 Waste Toner Collection Mechanism

Waste toner is collected by the following mechanisms:
- waste toner
    scraped by the cleaning blade and fed to the waste toner box by the waste toner feeding screw.

- waste toner box full detection
    detected by the waste toner sensor composed of the LED (light emission) and the photo-transister (light reception).
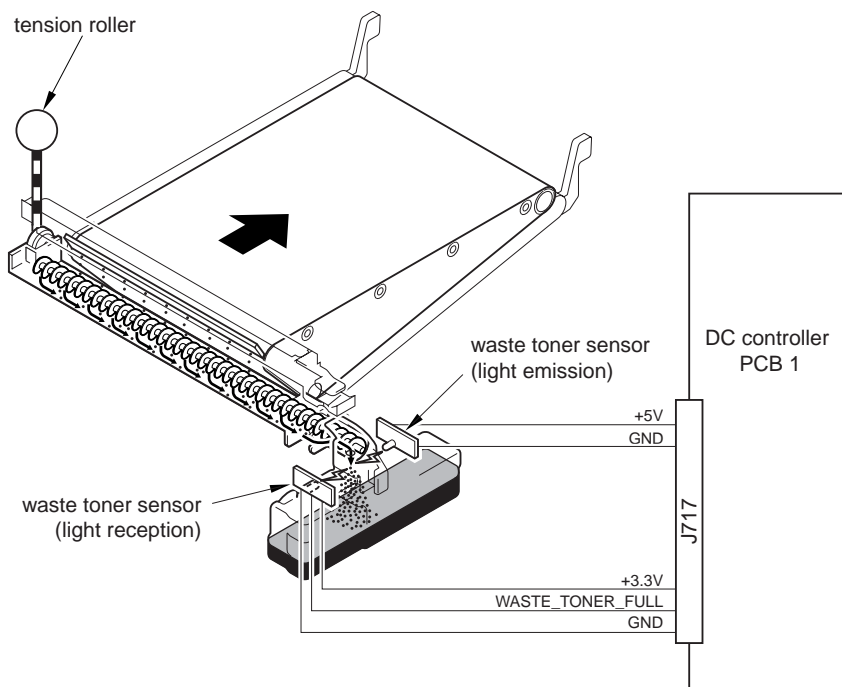
F-9-45

9.8.4 Separation Mechanism

9.8.4.1 Separation

The machine uses the following mechanism to separate paper:

T-9-35

1. Separation	- Curvature (mechanical)
	- Static Eliminator (static electricity)
	It is grounded to lower the potential occurring on the back of paper, thus facilitating the separation of paper from the ITB.

T-9-36

2. Separate Auxiliary Mechanism	- Feed Guide
	It is used to prevent increases in the potential occurring on the back of paper because of friction used when it is moved to the fixing assembly.
	It is used to prevent image faults caused by contact with the attraction plate.
	- Attraction Plate
	It is grounded, and is used to draw paper.

The eccentric arrangement of the 2 rollers causes the paper to separate by taking advantage of the rigidity of paper (curvature separation).

ITB

Paper

Feed guide

Attraction plate

Secondary transfer external roller

Feed guide

Attraction plate

Static eliminator
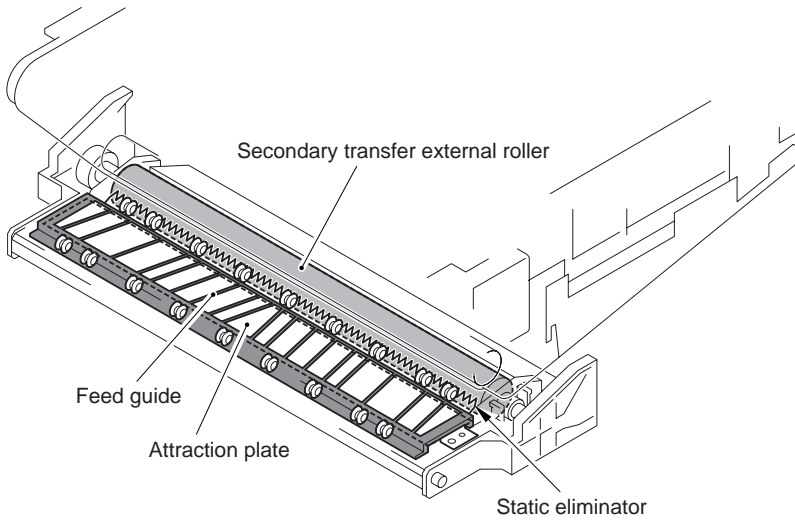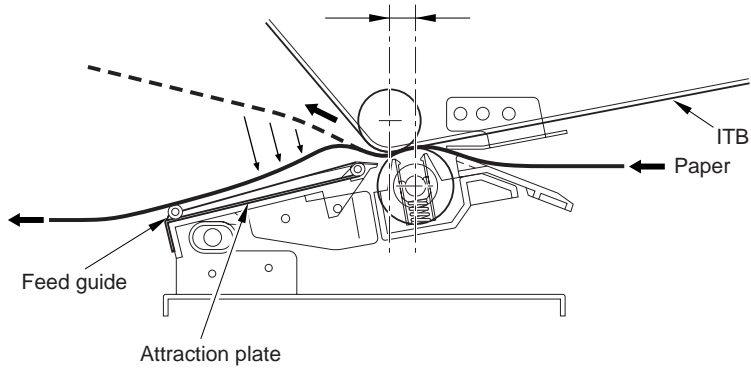
F-9-46

9.9 Parts Replacement Procedure

9.9.1 Drum ITB Motor

9.9.1.1 Preparation for Removing the Drum ITB Motor

1) Open the front cover and pull out the drum unit.(page 12-20)Reference[Removing the Front Cover]
2) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
3) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
4) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
5) Remove the DC controller box 2. (page 12-31)Reference[Removing the DC Controller Box2]
6) Remove the DC controller box 1.(page 12-32)Reference[Removing the DC Controller Box1]
7) Remove the IH power supply unit. (page 12-29)Reference[Removing the IH Power Supply Unit]
8) Remove the lattice connector mount [4].
   - 2 clamps [1]
   - 1 screw [2]
   - 6 connectors [1]
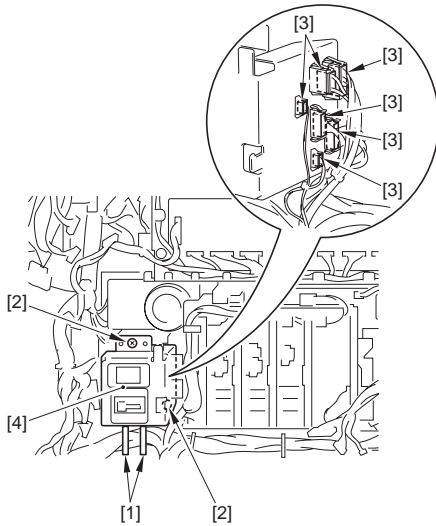
F-9-47

9) Remove the high-voltage unit 2.(page 12-28)Reference[Removing the High-Voltage Unit 2]

⚠ **Points to Note When Removing the Drum ITB Motor Mounting**

To remove, put your hand into the inside where you have slid out the manual feed unit; then, while holding down the swing plate [1] found to the rear of the drum drive unit, remove from the machine's rear side plate.
The drum drive unit is hooked on the protrusion from the rear side plate; lift it slightly to remove.

[1]

F-9-48

10) Remove the drum ITB motor base [3].
    - 2 connectors [1]
    - 3 screws [2]
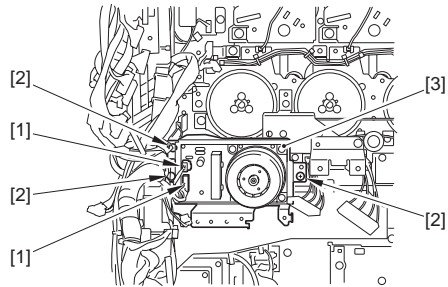
F-9-49

9.9.1.2 Removing the Drum ITB Motor

1) Remove the drum ITB motor [2].
  - 4 screws [1]
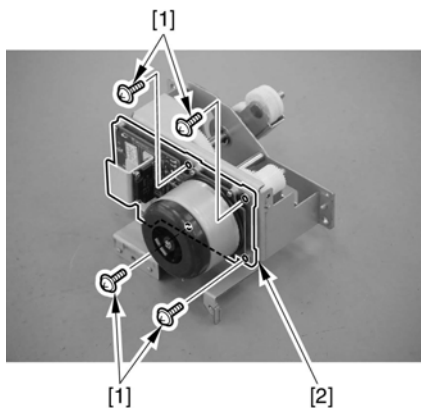
F-9-50

9.9.2 Drum Drive Unit

9.9.2.1 Preparation for Removing the Drum Drive Unit

1) Open the front cover and pull out the drum unit.(page 12-20)Reference[Removing the Front Cover]
2) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
3) emove the upper rear cover.(page 12-22)Reference[Removing the Rear Upper Cover]
4) Remove the lower rear cover.(page 12-23)Reference[Removing the Rear Lower Cover]
5) Remove the rear left cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
6) Remove the left rear cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
7) Remove the main controller cover.(page 5-23)Reference[Removing the Main Controller Box]
8) Remove the DC controller box 2.(page 12-31)Reference[Removing the DC Controller Box2]
9) Remove the DC controller box 1.(page 12-32)Reference[Removing the DC Controller Box1]
10) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]
11) Remove the high-voltage unit 1.(page 12-27)Reference[Removing the High-Voltage Unit1]

12) Remove the mount [3].
  - 19 connectors
  - 7 clamps [1]
  - 4 screws [2]
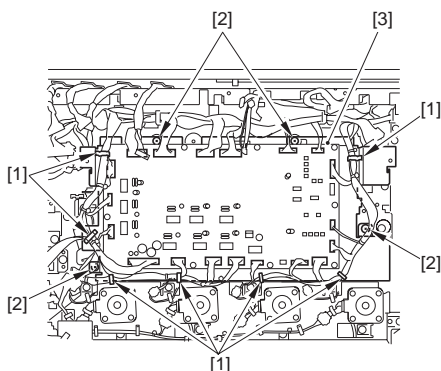
F-9-51

13) Remove the lattice connector mount [4].
  - 2 clamps [1]
  - 2 screws [2]
  - 6 connectors [3]
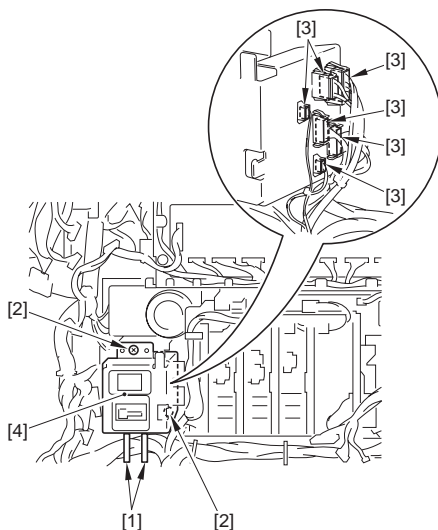
F-9-52

14) Remove the high-voltage unit 2.(page 12-28)Reference[Removing the High-Voltage Unit 2]

⚠ Points to Note When Removing the Drum ITB Motor Mounting

To remove, put your hand into the inside where you have slid out the manual feed unit; then, while holding down the swing plate [1] found to the rear of the drum drive unit, remove from the machine's rear side plate.

The drum drive unit is hooked on the protrusion from the rear side plate; lift it slightly to remove.

[1]

F-9-53

15) Remove the drum ITB motor base [3].
   - 2 connectors [1]
   - 3 screws [2]
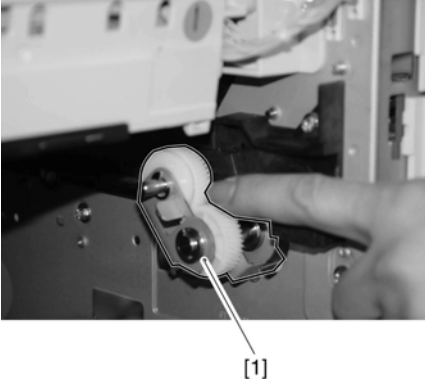
F-9-54

16) Remove the developing drive unit [4].
   - 6 wire saddles [1]
   - 1 connector [2]
   - 7 screws [3]
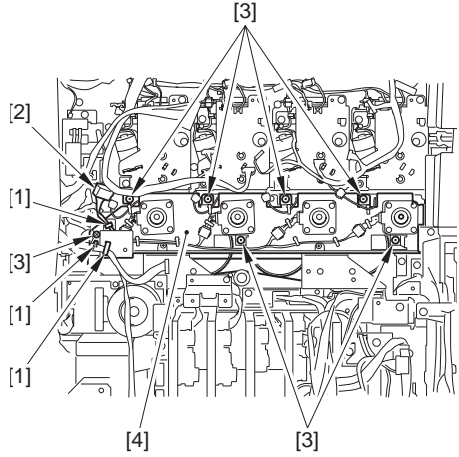
F-9-55

9.9.2.2 Removing the Drum Drive Unit

1) Remove the drum drive unit [3].
   - 6 connectors [1]
   - 7 screws [2]
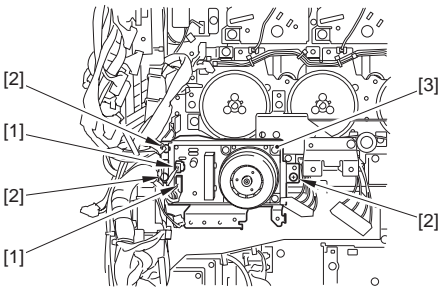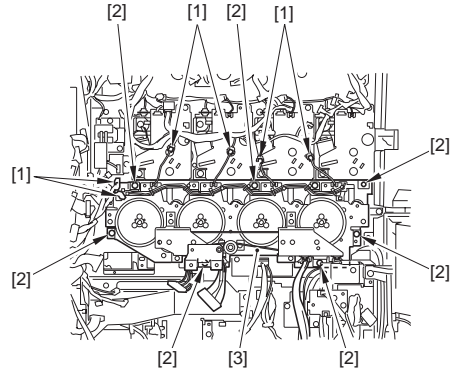
F-9-56

9.9.3 Drive Roller

9.9.3.1 Preparation for Removing the Drive Roller

1) Slide out the manual feed unit.
2) Removing the intermediate transfer unit. (page 9-60)Reference[Removing the Intermediate Transfer Unit]
3) Remove the intermediate transfer belt. (page 9-63)Reference[Removing the Intermediate Transfer Belt]

9.9.3.2 Removing the Drive Roller

⚠ **Point to note when removing the drive roller**
- The spring found at the front is under pressure; thus, starting at the front can cause the spring to snap out. Be sure to start at the rear.
- When removing the gear, be sure to take care not to lose the parallel pin.

At the rear, remove the following: E-ring [1], washer [2], bearing [3], E-ring [4], gear [5], parallel pin [6], gear butting spacer [7], bearing [8], and 2 E-rings [9].

1) At the rear, remove the following: E-ring [1], washer [2], bearing [3], E-ring [4], gear [5], parallel pin [6], gear butting spacer [7], bearing [8], and 2 E-rings [9].
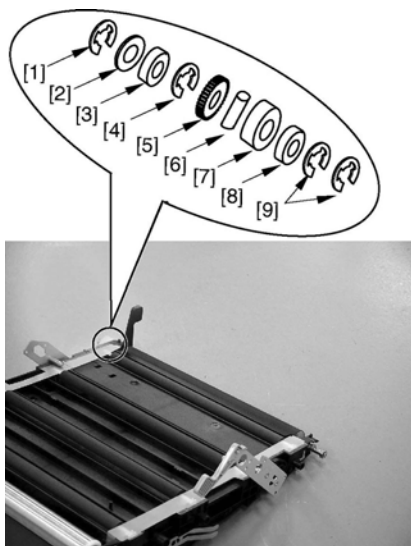
F-9-57

2) At the front, remove the following: E-ring [1], washer [2], bearing [3], E-ring [4], washer [5], spring [6], washer [7], bearing [8], grounding plate [9].
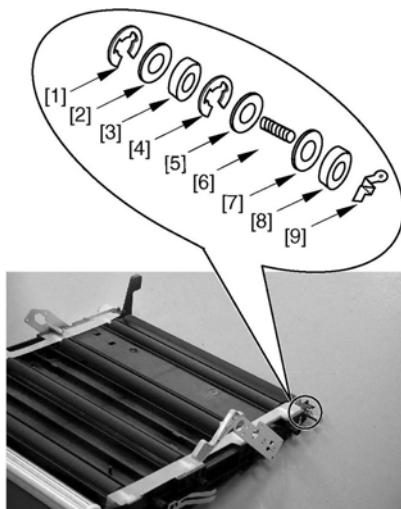
F-9-58

3) Remove the drive roller [2] from the cut-off [A] of the frame found at the front.
   - 1 bearing [1] found at the rear
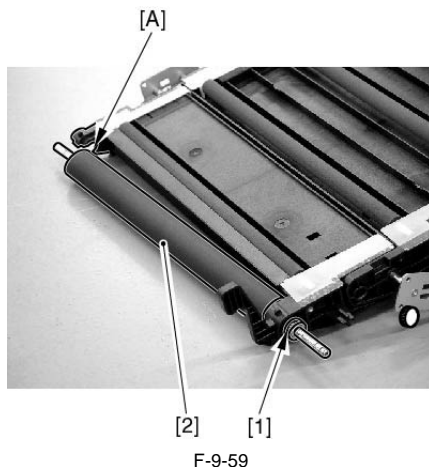
F-9-59

⚠ **Point to note when attaching the drive roller**
When attaching the washer, spring, and washer at the
front, be sure to fit the E-ring after forcing down the
spring together with the washer until the E-ring
groove [A] of the drive roller shaft is in view.
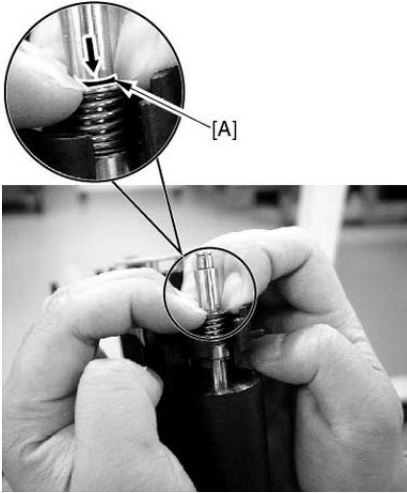
F-9-60

9.9.4 Developing Motor (Bk/Y/M/C)

9.9.4.1 Preparation for Removing the Developing Motor

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the upper rear cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
4) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
5) Remove the main controller box. (page 5-23)Reference[Removing the Main Controller Box]
6) Remove the DC controller box 2. (page 12-31)Reference[Removing the DC Controller Box2]
7) Remove the DC controller box 1. (page 12-32)Reference[Removing the DC Controller Box1]
8) Remove the high-voltage unit 1. (page 12-27)Reference[Removing the High-Voltage Unit1]

9.9.4.2 Removing the Developing Motor

⚠

There are 4 developing motors (Bk, Y, M, C). The
steps to remove are the same for those 4 (Bk, Y, M,
C).
MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be
removed in the same way.

1) Remove the developing drive unit [4].
 - 6 wire saddles [1]
 - 1 connector [2]
 - 7 screws [3]
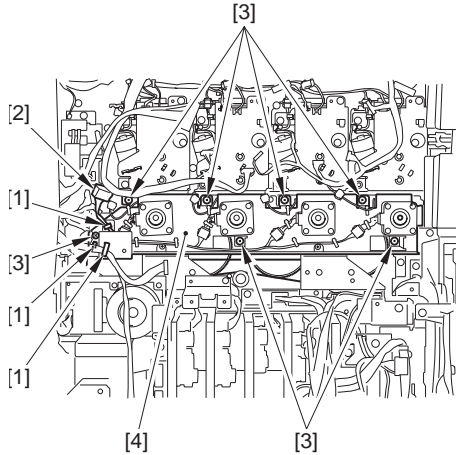
F-9-61

2) Remove the wire saddle [1] and connector [2].
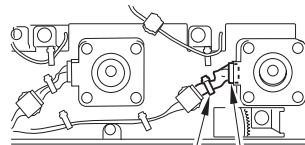
F-9-62

3) Remove the developing motor [4].
   - 1 E-ring [1]
   - 1 gear [2]
   - 2 screws [3]
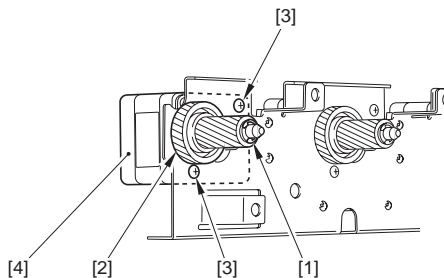
F-9-63

9.9.5 Secondary Transfer Unit

9.9.5.1 Preparation for Removing the Secondary Transfer Unit

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]
3) Lift the duplexing open/close guide [3] in the direction of [A] and shift it in the direction of [B]. Then, remove it.
   - 1 connector [2] (Open sheet [1].)
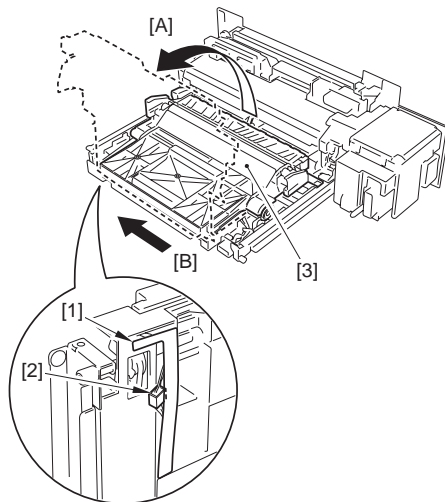
F-9-64

9.9.5.2 Removing the Secondary Transfer Unit

1) Remove the secondary transfer unit retainer [2].
   - 1 screw [1] at the front
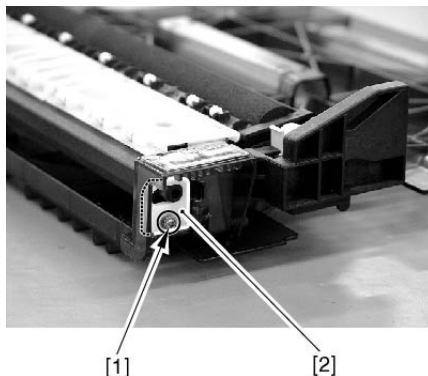
F-9-65

⚠️

When removing the secondary transfer unit, be sure to take care not to lose the tension spring [1] found behind it.
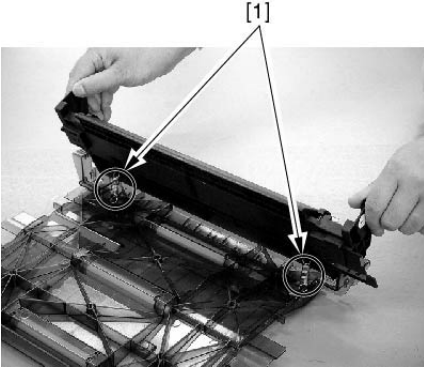
F-9-66

2) Hold the grips at the front and the rear, and move the front side to the right to pull out the secondary transfer unit [1].
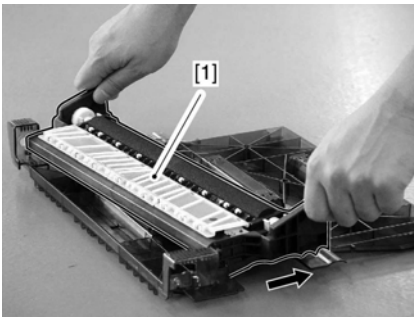
F-9-67

9.9.6 Intermediate Transfer Unit

9.9.6.1 Preparation for Removing the Intermediate Transfer Unit

1) Slide out the manual feed unit.

9.9.6.2 Removing the Intermediate Transfer Unit

1) Pressure release of the intermediate transfer unit.
1-1) Open the front cover, and turn the intermediate transfer unit releasing lever[1] to unlock it.

F-9-68

1-2) Remove the middle right cover [2].
- 1 screw [1]
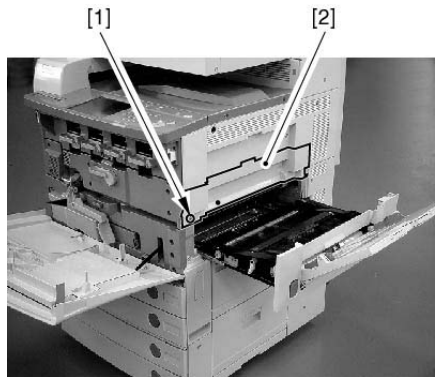
F-9-69

1-3) Release the U-turn lever [1], and fix it with the tape [2], etc.

⚠

Unless the pressure release lever is fixed, the release lever will fall down, which may cause a flaw on ITB.
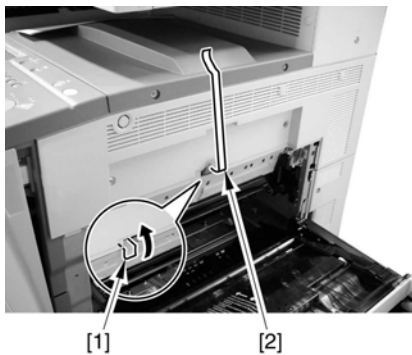
F-9-70

⚠

When removing the intermediate transfer unit, be careful to keep the upper side from contact with the main unit.

F-9-71

2) While picking the tabs at the front and the rear, slide out the intermediate transfer unit [1]; then, remove it by holding it by the indicated area [2].
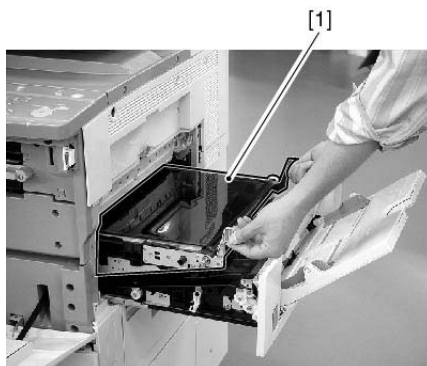
F-9-72
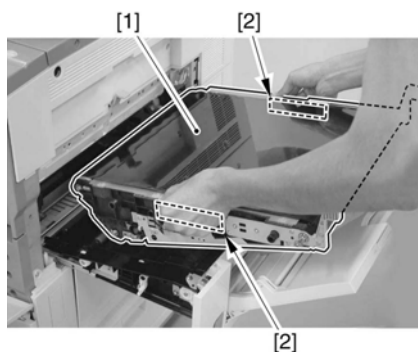
F-9-73

9.9.7 Transfer Cleaning Unit

9.9.7.1 Preparation for Removing the Transfer Cleaning Unit

1) Open the front cover, and turn the intermediate transfer unit releasing lever [1].
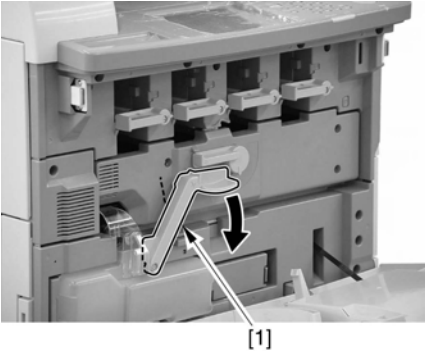
F-9-74

2) Remove the waste toner container [1].
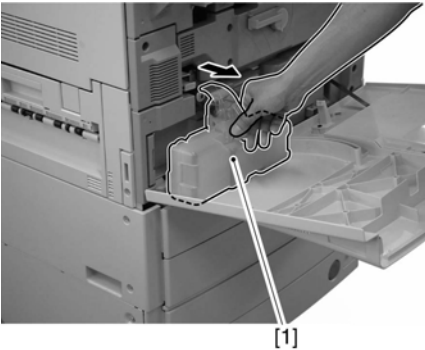
F-9-75

9.9.7.2 Removing the Transfer Cleaning Unit

1) Remove the transfer cleaning unit [2].
   - 1 screw [1]
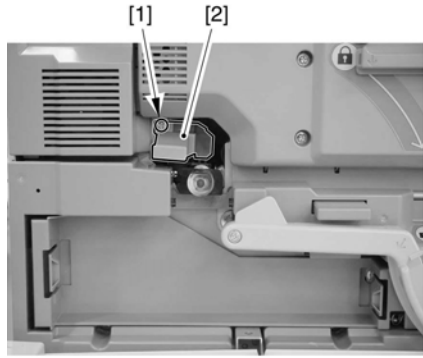
F-9-76

9.9.8 Intermediate Transfer Belt

9.9.8.1 Preparation for Removing the Intermediate Transfer Belt

1) Slide out the manual feed unit.
2) Removing the intermediate transfer unit. Reference[Removing the Intermediate Transfer Unit]

9.9.8.2 Removing the Intermediate Transfer Belt

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

⚠

When removing the belt cover [2], be careful not to make flaws on the intermediate transfer belt.
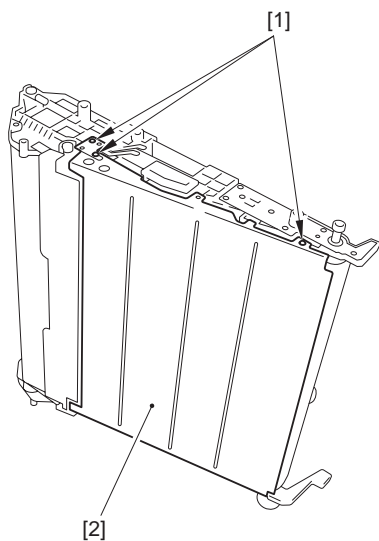
F-9-77

2) Remove the varistor [2].
   - screw [1]
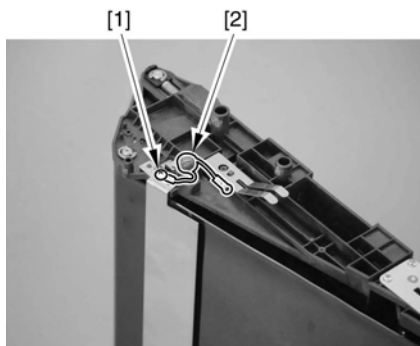
F-9-78

3) Remove the transfer guide plate [2].
   - screw [1]

⚠

When removing the transfer guide plate [2], be careful not to make flaws on the intermediate transfer belt.
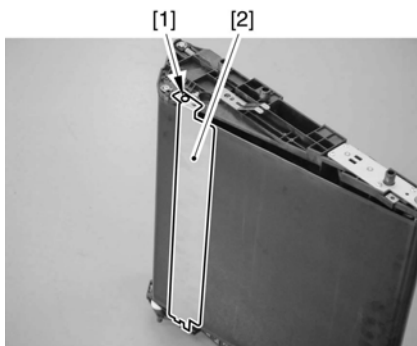
F-9-79

4) Pull out the link plate (rear) [2].
   - 4 screws [1] at the rear
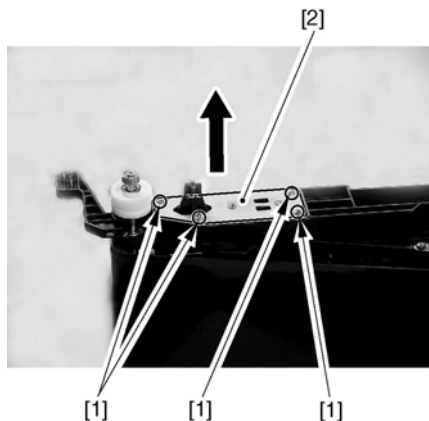
F-9-80

⚠

Be sure to fix the connecting plate (rear) with screws while pressing the transfer frame in the direction shown by the arrows.
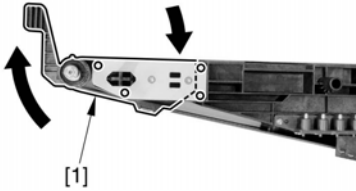
F-9-81

5) Fit the boss [1] on the frame at the rear into the recess [A] in the middle right cover so that the unit is upright.
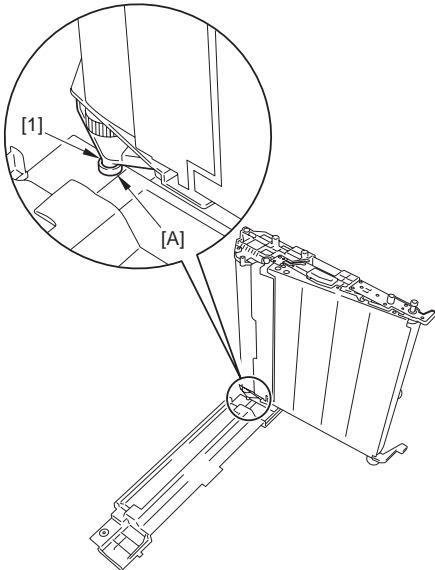
F-9-82

6) Be sure that the rear link plate [1] is on the opposite of the middle right cover so that the intermediate transfer unit will not fall down.
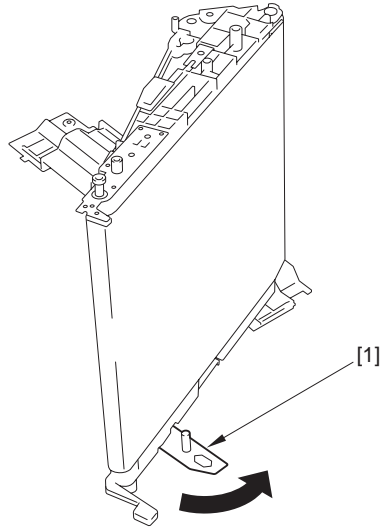
F-9-83

7) Remove the 4 screws at the rear [1], and pull out the link plate (front) [2]; then, rotate it 180 deg.
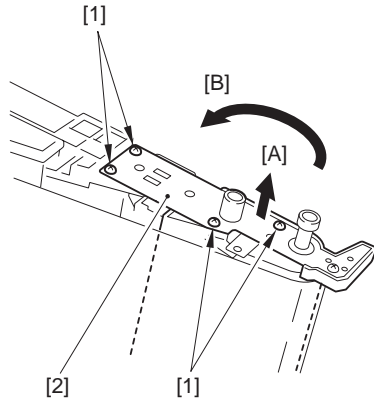
F-9-84

⚠

Be sure to fix the connecting plate (front) with screws while pressing the transfer frame in the direction shown by the arrows.
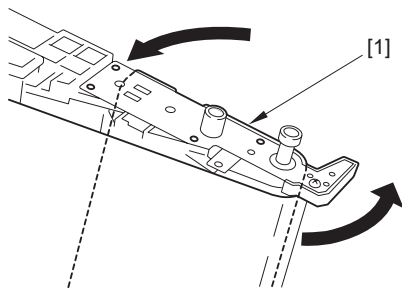
F-9-85

8) After bending the transfer frame, pull out the transfer belt [1] upward.
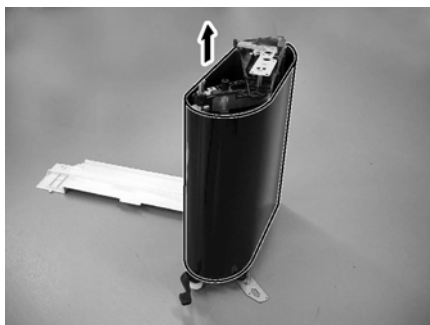
F-9-86

⚠️
When pulling out the belt, be careful not to break it by pressing it against the unit.
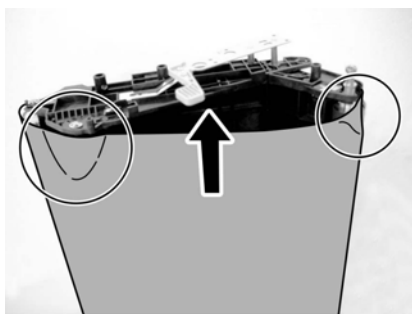
F-9-87

⚠️
After removing the belt, set it up to prevent damage, or place it on a paper.

⚠️
Check that there is no dirt on the secondary transfer internal roller. When it is dirty, clean it with alcohol.

⚠️**Cautions in attaching the intermediate transfer belt**

1) Attach it so that the red mark on the intermediate transfer belt rib is placed in the rear side.
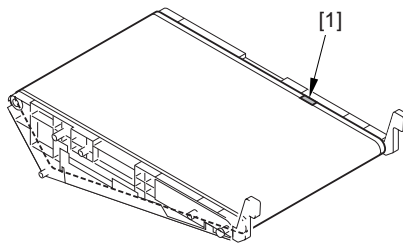
F-9-88

2) When attaching the belt, place the unit at a low level so that the belt can be inserted straight from the upper level.

F-9-89

3) Be careful so that the rib [2] in the belt [1] does not run into the tension roller [3].
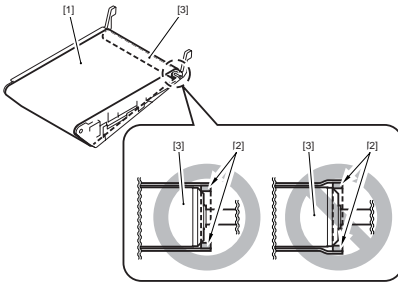
F-9-90

9.9.9 Intermediate Transfer Belt Tension Roller

9.9.9.1 Preparation for Removing the Intermediate Transfer Belt Tension Roller

1) Pull out the manual feeder unit.
2) Remove the intermediate transfer unit. (page 9-60)Reference[Removing the Intermediate Transfer Unit]
3) Remove the intermediate transfer belt. (page 9-63)Reference[Removing the Intermediate Transfer Belt]

9.9.9.2 Removing the Intermediate Transfer Belt Tension Roller

1) Remove the intermediate transfer belt tension roller [6].
   - 3 E-rings [1]
   - 2 washers [2]
   - 1 gear [3]
   - 2 bearings [4]
   - 2 screws [5]
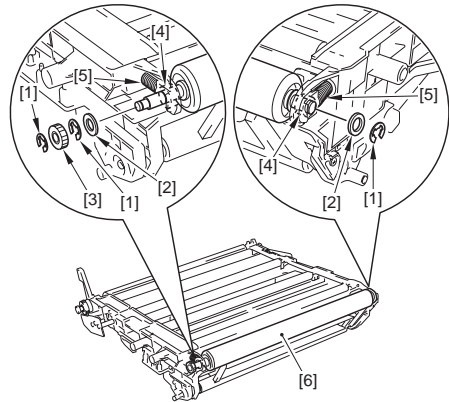
F-9-91

9.9.10 Primary Transfer Roller

9.9.10.1 Preparation for Removing the Primary Transfer Roller

1) Slide out the manual feed unit.
2) Removing the intermediate transfer unit. (page 9-60)Reference[Removing the Intermediate Transfer Unit]
3) Remove the intermediate transfer belt. (page 9-63)Reference[Removing the Intermediate Transfer Belt]

9.9.10.2 Removing the Primary Transfer Roller

1) Bend over the edge of the sheet [1] at the rear; while picking the edge [3] of the primary transfer roller[2], remove it upward.
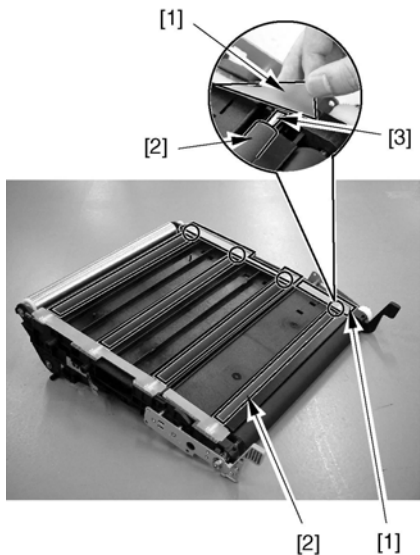
F-9-92

⚠ **Points to Note When Attaching the Primary Transfer Roller**
1) Bend over the edge of the sheet [1] at the front, and fit the edge [2] of the roller and then fit its rear side.
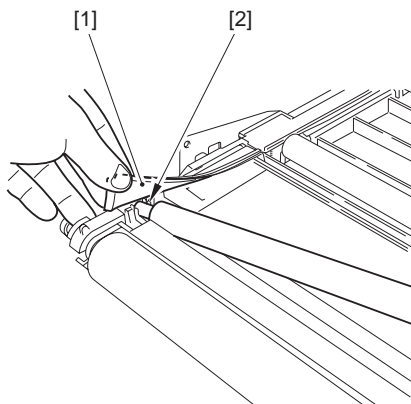
F-9-93

2) Check that the edge of the sheet [1] is on the inner side of the rib [2].
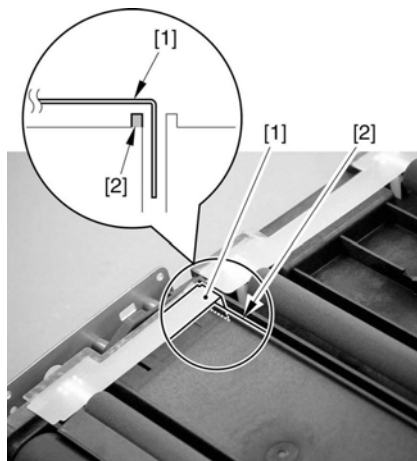
F-9-94

9.9.11 Secondary Transfer External Roller

9.9.11.1 Preparation for Removing the Secondary Transfer External Roller

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]

9.9.11.2 Removing the Secondary Transfer External Roller

⚠

Take care not to touch the surface of the secondary transfer external roller.

1) Holding the tabs [A] at both ends, remove the secondary transfer roller [2].
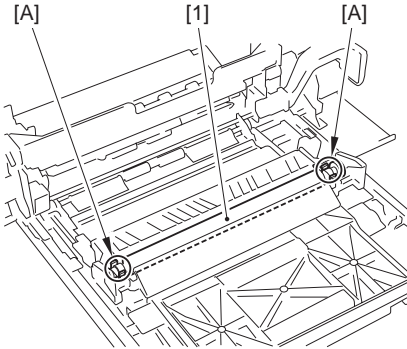
F-9-95

⚠ **Points to Note When Attaching the Secondary Transfer Roller**

1) If the white spacer [2] of the secondary transfer roller [1] becomes soiled with toner or the like, the roller can fail to rotate, causing lines. Be sure to check that the spacer moves.
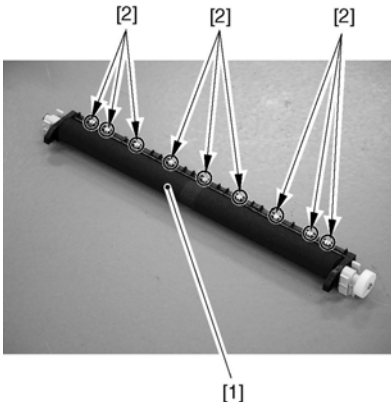
F-9-96

2) When attaching the roller [1], be sure that the edge of the leaf spring [2] found at the rear and used for electrical continuity is not bent over.
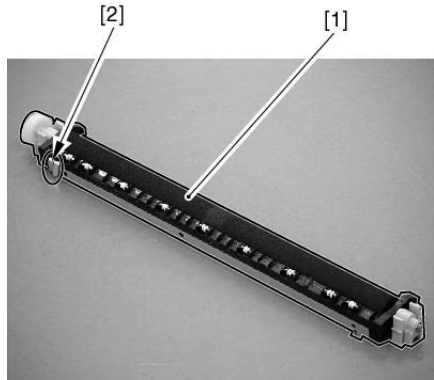
F-9-97

3) Be sure that the spring [1] is securely fitted to the back of the tab used to remove/attach the roller. Pay attention to the orientation of the spring, as different types are used between front and rear.
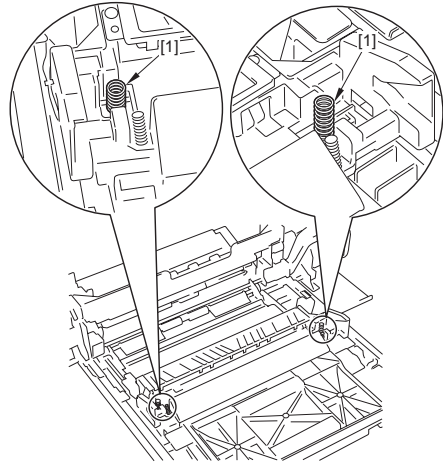
F-9-98

9.9.12 Secondary Transfer Internal Roller

9.9.12.1 Preparation for Removing the Secondary Transfer Internal Roller

1) Slide out the manual feed unit.
2) Removing the intermediate transfer unit. (page 9-60)Reference[Removing the Intermediate Transfer Unit]
3) Remove the intermediate transfer belt. (page 9-63)Reference[Removing the Intermediate Transfer Belt]

9.9.12.2 Removing the Secondary Transfer Internal Roller

1) Extend the belt frame, and fit the link plate at both front and rear.
2) Remove the positioning block [2] at the rear.
   - 2 screws [1]
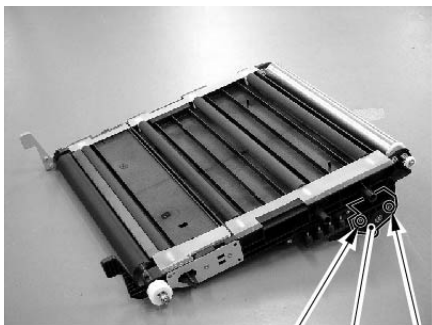
F-9-99

3) Remove the E-ring [1], gear [2], and bushing [3].
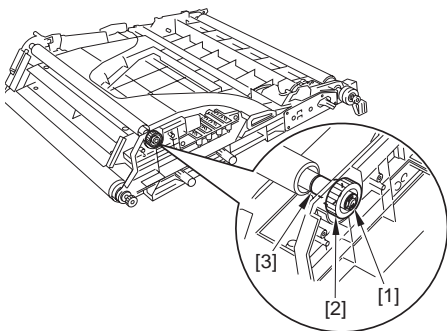
F-9-100

4) Remove the secondary transfer internal roller [3].
   - 1 E-ring [1]
   - 1 bushing [2] at the front
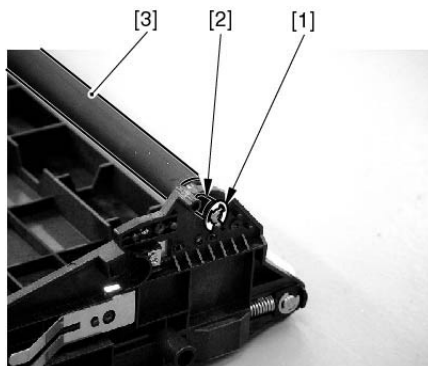
F-9-101

⚠ Points to Note When Attacing the Secondary Transfer Internal Roller
When Attaching the bushing at the front, be sure to fit the bushing [2] while avoiding the spring [1] found on the inner side of the frame.
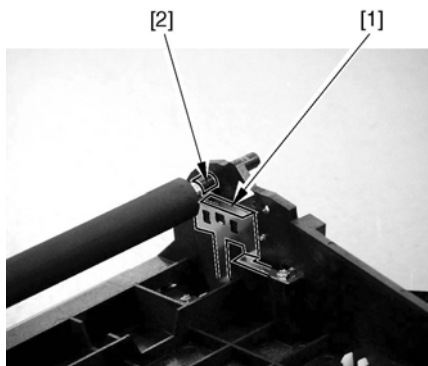
F-9-102

9.9.13 Toner Container Drive Unit

9.9.13.1 Preparation for Removing the Toner Container Drive Unit

1) Remove the waste toner container.
1-1) Open the front cover, and turn the intermediate transfer unit releasing lever [1].

F-9-103

1-2) Remove the waste toner container [2].

F-9-104

2) Remove the rear fan cover. (page 12-22)Reference[Removing the Rear Fan Cover]
3) Remove the rear upper cover. (page 12-22)Reference[Removing the Rear Upper Cover]
4) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
5) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
6) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
7) Remove the main controller box. (page 5-23)Reference[Removing the Main Controller Box]
8) Remove the DC controller box 2.(page 12-31)Reference[Removing the DC Controller Box2]
9) Remove the DC controller box 1.(page 12-32)Reference[Removing the DC Controller Box1]
10) Remove the high-voltage unit 1.(page 12-27)Reference[Removing the High-Voltage Unit1]
11) Remove the mount [3].
   - 19 connectors attached to the mount
   - 7 clamps [1] (Remove the harness of the developing motor.)
   - 4 screws [2]

F-9-105

9.9.13.2 Removing the Toner Container Drive Unit

1) Remove the toner container drive unit [3].
   - 2 connectors [1]
   - 3 screws [2]

F-9-106

9.9.14 Waste Toner Detection PCB

9.9.14.1 Preparation for Removing the Waste Toner Detection PCB

1) Remove the waste toner container.
1-1) Open the front cover, and turn the intermediate transfer unit releasing lever [1].

F-9-107
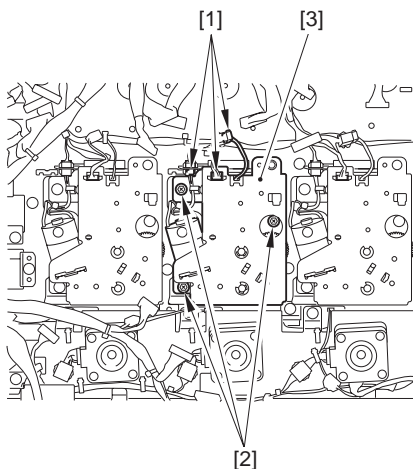
1-2) Remove the waste toner container [2].
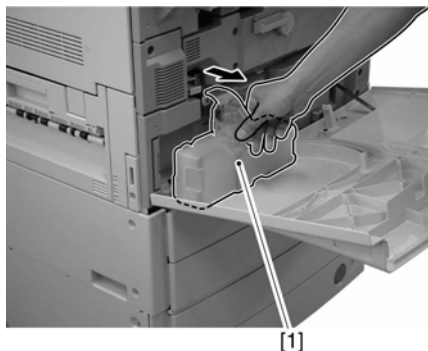
F-9-108

2) Remove the front cover. (page 12-20)Reference[Removing the Front Cover]
3) Remove the intermediate transfer unit releasing lever [2].
   - 1 screw [1]

F-9-109
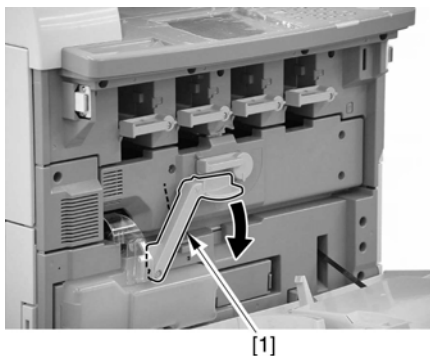
4) Removing the cleaner fan cover [2].
 - 1 screw [1]
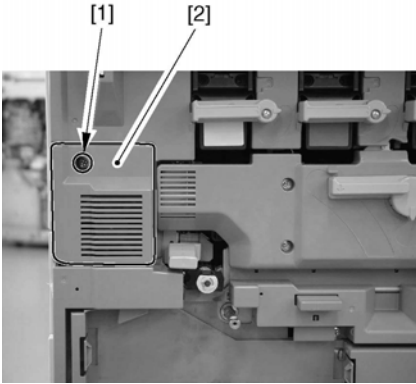
F-9-110

5) Remove the inside cover (lower) [3].
 - 1 connector [1]
 - 5 screws [2]
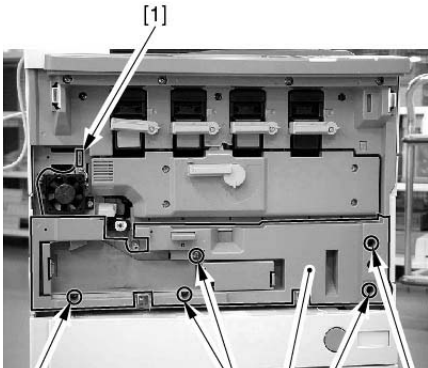
F-9-111

9.9.14.2 Removing the Waste Toner Detection PCB

1) Remove the waste toner detection PCB cover [2].
 - 2 screws [1] found behind the fixing/feeder unit
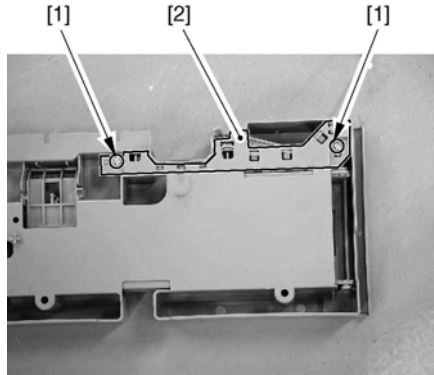
F-9-112

2) Remove the waste toner detection PCB [1] from the cover, and remove the connector [2] for replacement.
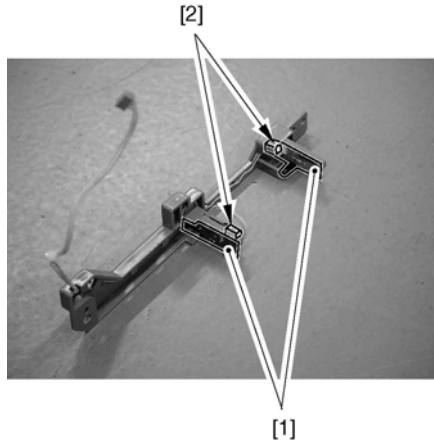
F-9-113

9.9.15 Feedscrew Rotation Sensor

9.9.15.1 Preparation for Removing the Feedscrew Rotation Sensor
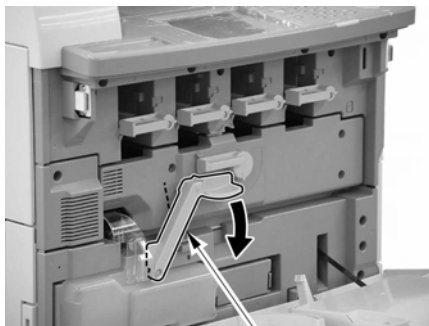
1) Remove the waste toner container.
1-1) Open the front cover, and turn the intermediate transfer unit releasing lever [1].

F-9-114

1-2) Remove the waste toner container [2].

F-9-115

2) Remove the rear fan cover. (page 12-22)Reference[Removing the Rear Fan Cover]
3) Remove the rear upper cover. (page 12-22)Reference[Removing the Rear Upper Cover]
4) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
5) Remove the rear left cover (upper). (page 12-23)Reference[Removing the Rear Left Cover (Upper)]
6) Remove the left rear cover (upper). (page 12-21)Reference[Removing the Left Rear Cover (Upper)]
7) Remove the main controller box. (page 5-23)Reference[Removing the Main Controller Box]
8) Remove the DC controller box 2. (page 12-31)Reference[Removing the DC Controller Box2]
9) Remove the DC controller box 1. (page 12-32)Reference[Removing the DC Controller Box1]
10) Remove the high-voltage unit 1.(page 12-27)Reference[Removing the High-Voltage Unit1]
11) Remove the mount [3].
   - 19 connectors attached to the mount
   - 7 clamps [1] (Remove the harness of the developing motor.)
   - 4 screws [2]

F-9-116

12) Remove the toner container drive unit.(page 9-71)Reference[Removing the Toner Container Drive Unit]
13) Remove the toner container drive assembly top plate [7].
   - screw [1]
   - 2 E-rings [2]
   - 2 bushings [3]
   - harness from the edge saddle [4]
   - harness [5] of the toner container motor from the cord clamp [6]

F-9-117

⚠ **Points to Note When Attaching the Toner Container Drive Assembly Upper Plate**
When attaching the top plate, check to attach the edge of the idler gear [1] after matching it against the hole [2] in the top plate and the hole [3] in the bottom plate.

F-9-118

F-9-119

F-9-120

9.9.15.2 Removing the Feedscrew Rotation Sensor

1) Remove the feedscrew rotation sensor [2].
   - 1 connector [1]
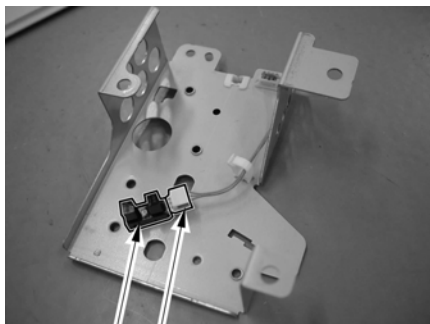
F-9-121

9.9.16 Tone Container Motor

9.9.16.1 Preparation for Removing the Toner Container Motor
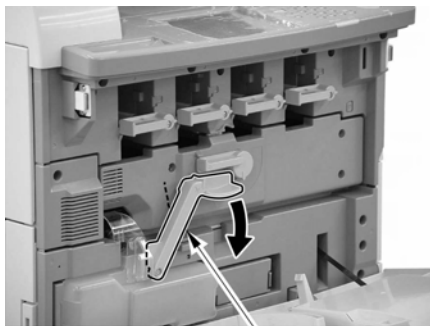
1) Remove the waste toner container.
1-1) Open the front cover, and turn the intermediate transfer unit releasing lever [1].

F-9-122

1-2) Remove the waste toner container [2].

F-9-123

2) Remove the rear fan cover. (page 12-22)Reference[Removing the Rear Fan Cover]
3) Remove the rear upper cover. (page 12-22)Reference[Removing the Rear Upper Cover]
4) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
5) Remove the rear left cover (upper). (page 12-23)Reference[Removing the Rear Left Cover (Upper)]
6) Remove the left rear cover (upper). (page 12-21)Reference[Removing the Left Rear Cover (Upper)]
7) Remove the main controller box. (page 5-23)Reference[Removing the Main Controller Box]
8) Remove the DC controller box 2. (page 12-31)Reference[Removing the DC Controller Box2]
9) Remove the DC controller box 1. (page 12-32)Reference[Removing the DC Controller Box1]
10) Remove the high-voltage unit 1.(page 12-27)Reference[Removing the High-Voltage Unit1]
11) Remove the mount [3].
   - 19 connectors attached to the mount
   - 7 clamps [1] (Remove the harness of the developing motor.)
   - 4 screws [2]

F-9-124

12) Remove the toner container drive unit.(page 9-71)Reference[Removing the Toner Container Drive Unit]

13) Remove the toner container drive assembly top plate [7].
   - screw [1]
   - 2 E-rings [2]
   - 2 bushings [3]
   - harness from the edge saddle [4]
   - harness [5] of the toner container motor from the cord clamp [6]

F-9-125

⚠ **Points to Note When Attaching the Toner Container Drive Assembly Upper Plate**
When attaching the top plate, check to attach the edge of the idler gear [1] after matching it against the hole [2] in the top plate and the hole [3] in the bottom plate.
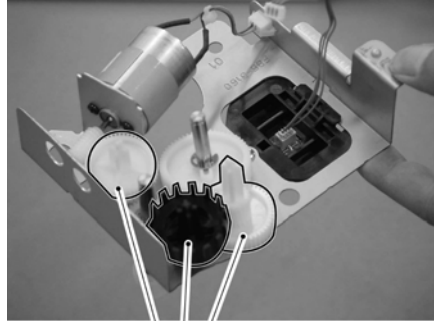
F-9-126
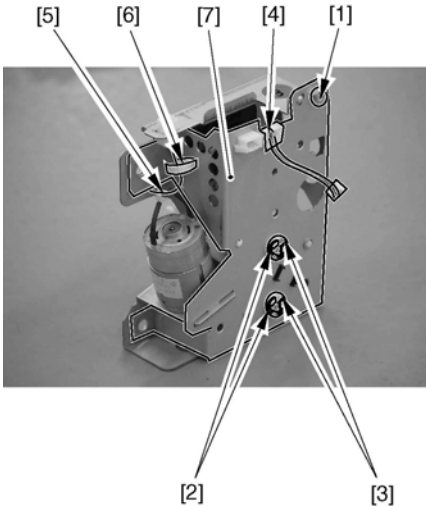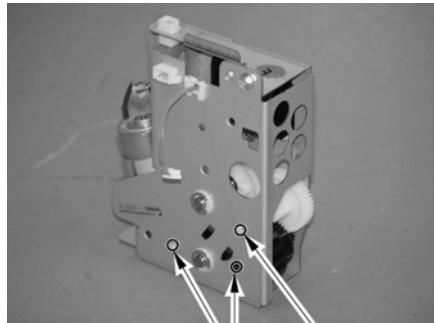
F-9-127
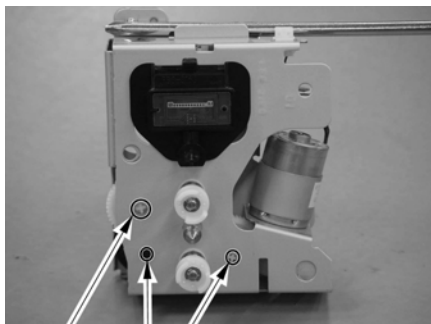
F-9-128

9.9.16.2 Removing the Toner Container Motor

1) Remove the gear [2] that is engaged with the gear [1] found at the tip of the toner container motor.
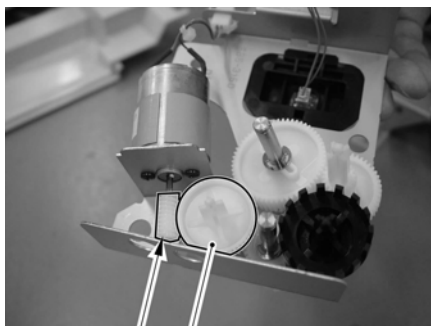
[1]   [2]

F-9-129

2) Remove the toner container motor [3].
   - 2 screws [1]
   - connector [2]
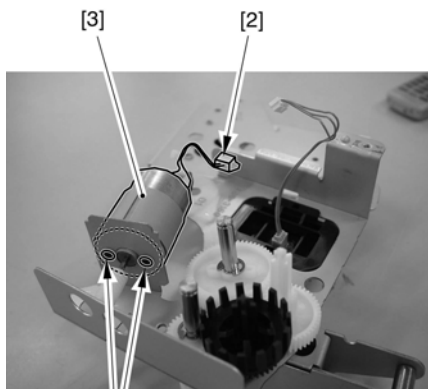
F-9-130

9.9.17 Waste Toner Feedscrew Case

9.9.17.1 Preparation for Removing the Waste Toner Feedscrew Case

1) Remove the waste toner container.
1-1) Open the front cover, and turn the intermediate transfer unit releasing lever [1].
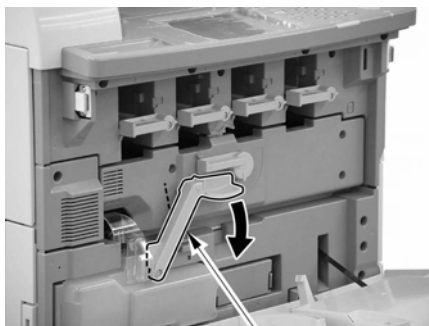
[1]

F-9-131

1-2) Remove the waste toner container [1].
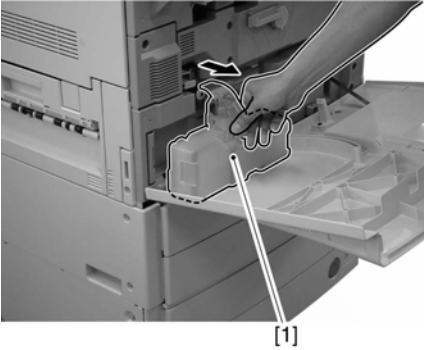
F-9-132

2) Remove the transfer cleaning unit [2].
   - 1 screw [1]
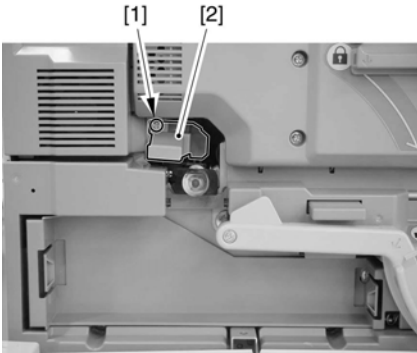
F-9-133

9.9.17.2 Removing the Waste Toner Feedscrew Case

⚠ **Points to Note When Removing the Waste Toner Feedscrew Case**
Remove the waste toner feedscrew only when a jam has occurred and the sheet [1] attached to the feedscrew has become damaged or bent (rendered useless).

F-9-134

1) Turn the intermediate transfer unit releasing lever [1] slightly counterclockwise, and remove the screw [2]; then, remove the waste toner feedscrew case[3].
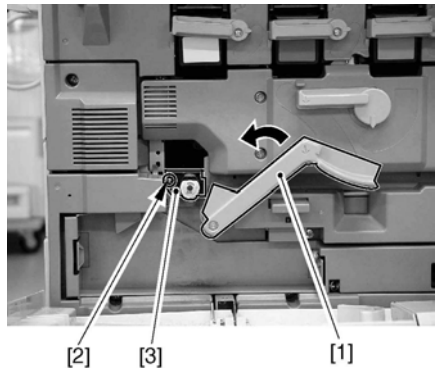
F-9-135

9.9.18 Pattern Reader Unit

9.9.18.1 Preparation for Removing the Pattern Reader Unit

1) Slide out the manual feed unit.
2) Removing the intermediate transfer unit. (page 9-60)Reference[Removing the Intermediate Transfer Unit]
3) Remove the upper right cover. (page 12-20)Reference[Removing the Upper Right Cover]

9.9.18.2 Removing the Pattern Reader Unit

1) Remove the pattern reader unit [5].
   - 2 connectors [1]
   - 1 screw [2]
   - 1 plate [4] from the hook of the upper right stay [3]
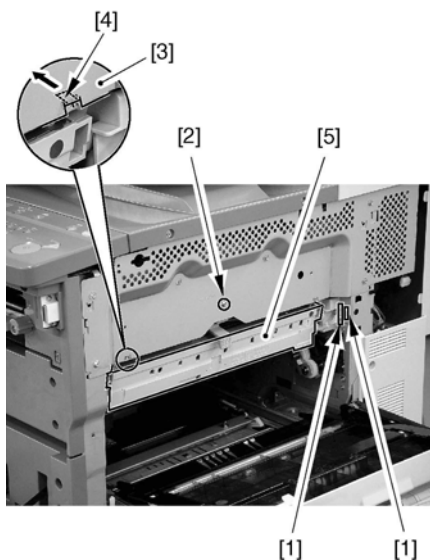
F-9-136

⚠ **Point to Note When Attaching the Pattern Reader Unit**
Attaching to the Machine
1) Match the boss [1] with the rail [2].
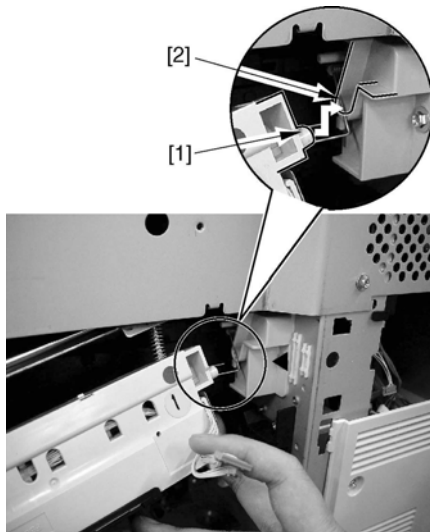
F-9-137

2) While pushing the cleaning member [1] to the right, fit it in while taking care so that it will not hit the slide rail [2] of the intermediate transfer unit on the side of the machine's side plate.
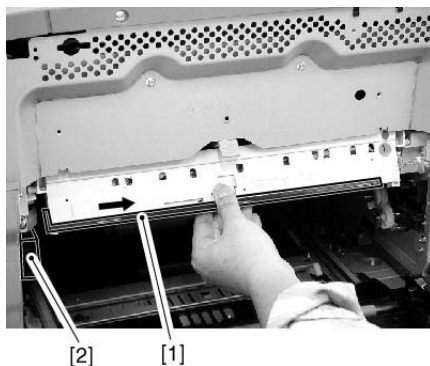
F-9-138

3) Connect the connector [1]; then, while pulling the escape lever [2] toward the front, hook the plate [3] on the left/right claw [4], and secure it in place with a screw [5] over the screw hole.

F-9-139

9.9.19 Auto Registration Sensor PCB

9.9.19.1 Preparation for Removing the Auto Registration Sensor PCB

1) Slide out the manual feed unit.
2) Removing the intermediate transfer unit. (page 9-60)Reference[Removing the Intermediate Transfer Unit]
3) Remove the upper right cover. (page 12-20)Reference[Removing the Upper Right Cover]
4) Remove the pattern reader unit. (page 9-79)Reference[Removing the Pattern Reader Unit]

9.9.19.2 Removing the Auto Registration Sensor PCB

1) Remove the plate found to the rear of the pattern reader unit [2].
   - 3 screws [1]
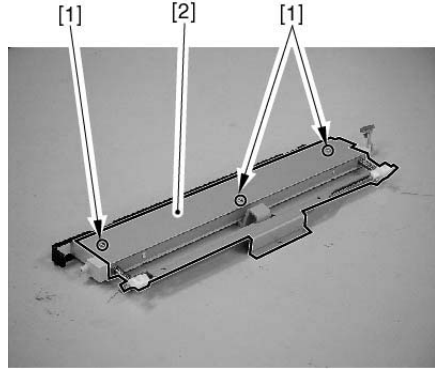
F-9-140

2) Remove the auto registration sensor PCB (front) [3].
   - 2 screws [1]
   - 2 connectors [2]

MEMO:
The auto registration sensor PCB (rear) is also removed in the same way.
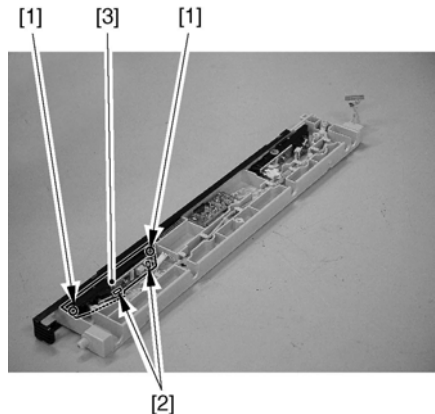
F-9-141

⚠ Points to Note When Attaching the Auto Registration Sensor PCB
When Attaching the plate [1], be sure that its edge is farther on the inner side than the cleaning member [2].
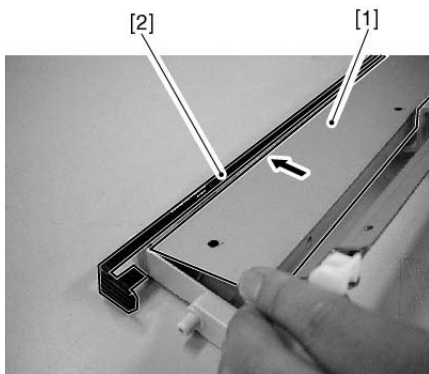
F-9-142

9.9.20 SALT Sensor

9.9.20.1 Preparation for Removing the SALT Sensor

1) Slide out the manual feed unit.
2) Removing the intermediate transfer unit. (page 9-60)Reference[Removing the Intermediate Transfer Unit]
3) Remove the upper right cover. (page 12-20)Reference[Removing the Upper Right Cover]
4) Remove the pattern reader unit. (page 9-79)Reference[Removing the Pattern Reader Unit]

9.9.20.2 Removing the SALT Sensor

1) Remove the plate from the rear of the pattern reader unit [2].
   - 3 screws [1]
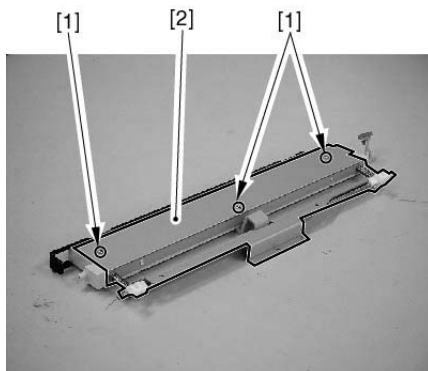
F-9-143

2) Remove the SALT sensor [3].
   - 2 screws [1]
   - 1 connector [2]
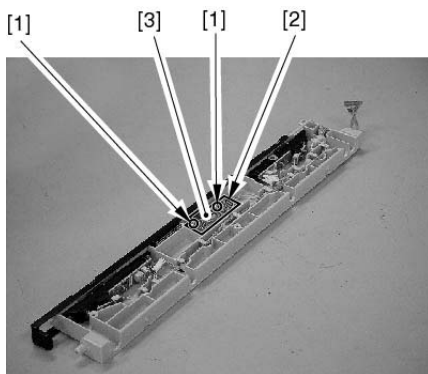
F-9-144

⚠ **Points to Note When Attaching the Plate**
When Attaching the plate [1], be sure to position it so
that it is farther on the inner side than the cleaning
member [2].
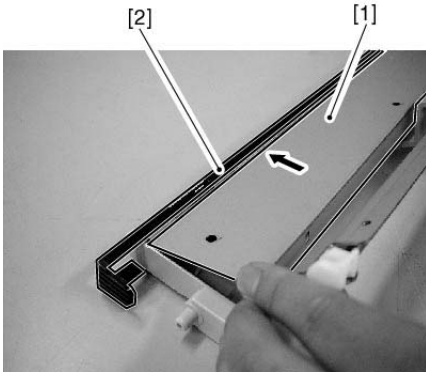
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Chapter 10

PICKUP/FEEDING SYSTEM

Contents

10.1 Construction

10.1.1 Specifications, Control Mechanisms, and Functions

The major specifications, control mechanisms, and functions of the pickup feeder system are as follows:

T-10-1

Item	Description	
Method of paper accommodation	Front loading	
Method of pickup	Separation retard	
Paper feed reference	Center	
Size of paper accommodation	Cassette 1/2	550 sheets (80 g/m2)
	Manual feed tray	100 sheets (80 g/m2)
Size of paper	Cassette 1/2	A3, A4, A4R, B4, B5, B5R, A5R, 12x18, 11x17, LGL, LTR, LTRR, STMTR
	Manual feed tray	98 to 320 mm (main scanning direction)
		148 to 457.2 mm (sub scanning direction)
Type of paper	Plain , Heavy, transparency	64 g/m2 to 209 g/m2 (from cassette)
		64 g/m2 to 253 g/m2 (from manual feeder)
Paper size switching	Cassette 1/2	by user
	Manual feed tray	by user
Duplex print	Through path	

10.1.2 Arrangement of the Units
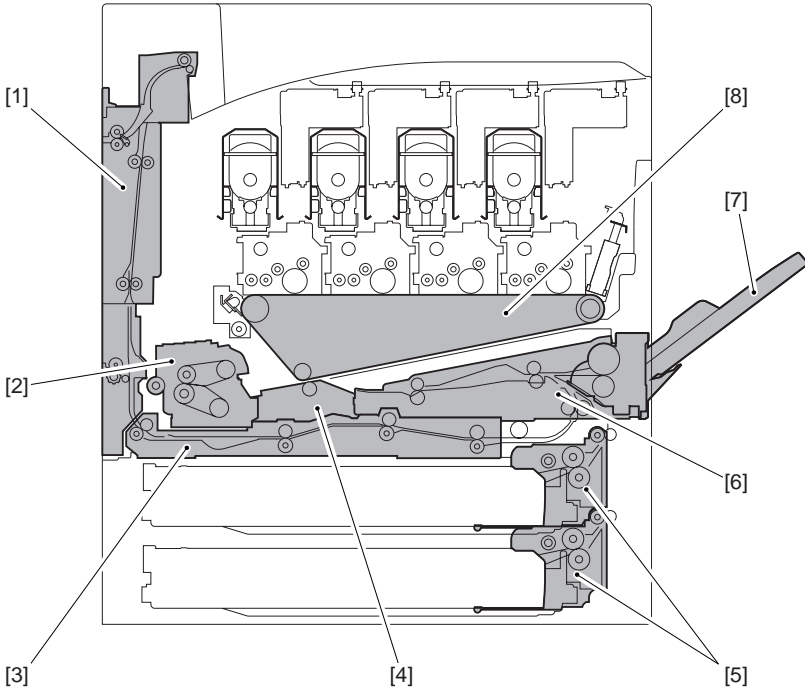
F-10-1

T-10-2

[1] Delivery assembly   [5] Pickup unit
[2] Fixing unit   [6] Registration unit
[3] Duplex unit   [7] Manual feed unit
[4] Secondary transfer unit   [8] Intermediate transfer unit

10.1.3 Arrangement of Rollers
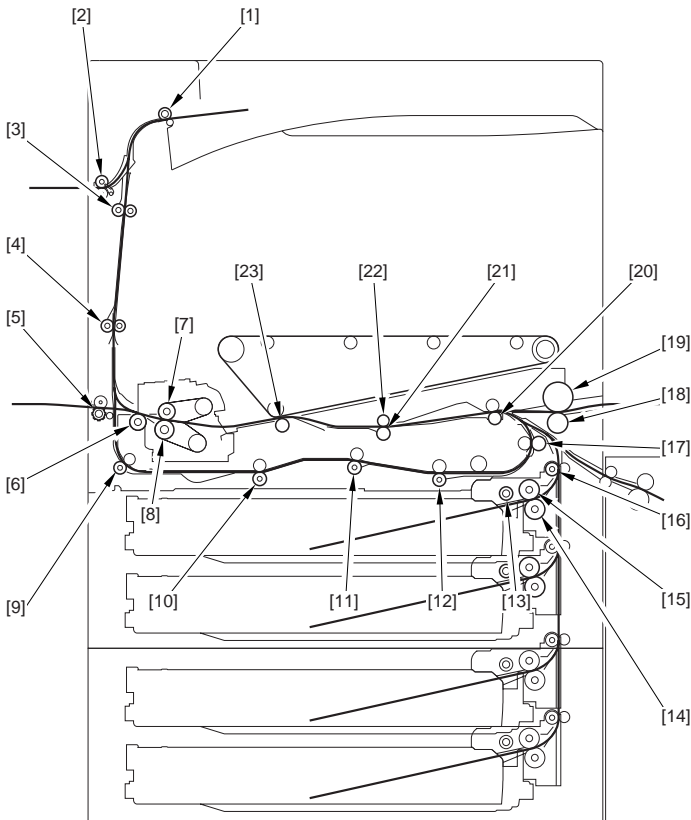
F-10-2

T-10-3

[1] Face-down delivery roller 1
[2] Face-down delivery roller 2
[3] Delivery vertical path roller 1
[4] Delivery vertical path roller 2
[5] Face-up delivery roller
[6] Internal delivery roller
[7] Fixing roller (fixing upper roller)
[8] Pressure roller (fixing lower roller)
[9] Duplex roller 1
[10] Duplex roller 2
[11] Duplex roller 3
[12] Duplex roller 4

[13] Pickup roller
[14] Separation roller
[15] Feed roller
[16] Pickup vertical path roller
[17] Re-pickup roller
[18] Manual feed separation roller
[19] Manual feed roller
[20] Pre-registration roller
[21] Lower registration roller
[22] Upper registration roller
[23] secondary transfer outside roller

10.1.4 Diagram of the Paper Paths

Face-down delivery
(center delivery tray)

Face-down
delivery
(copy tray)

Pickup from
manual feeder

Face-up delivery
(side delivery tray)

Pickup from cassette 1

Pickup from
paper deck

Pickup from cassette 2

Pickup from cassette 3

Pickup from cassette 4
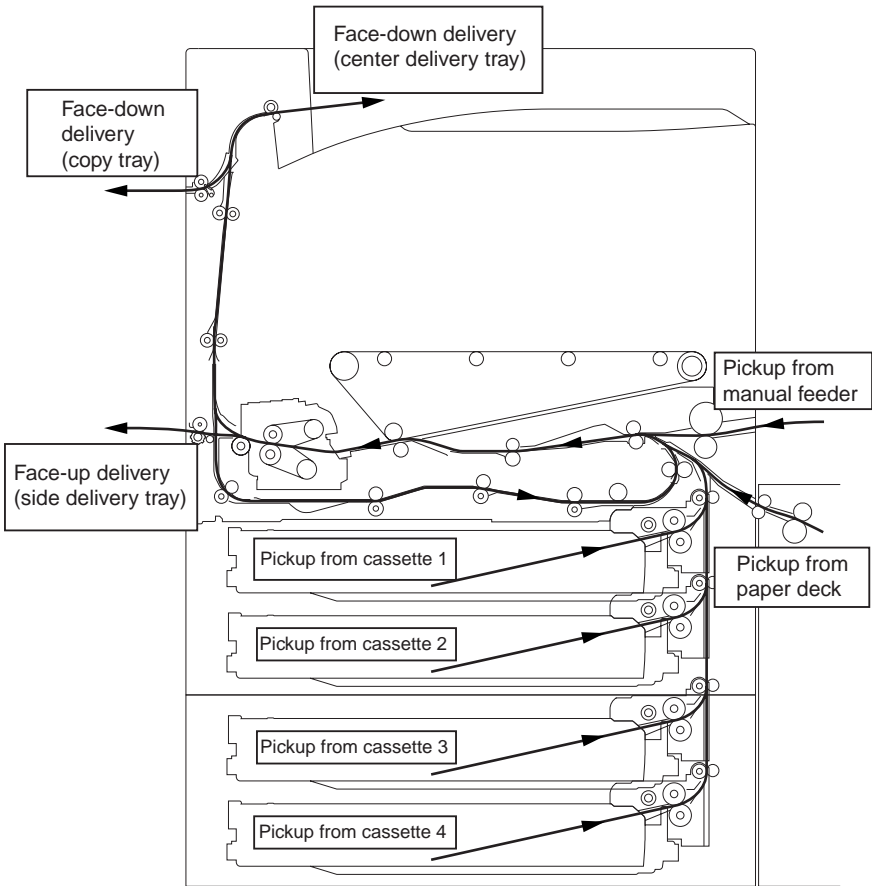
F-10-3

10.1.5 Arrangement of Sensors
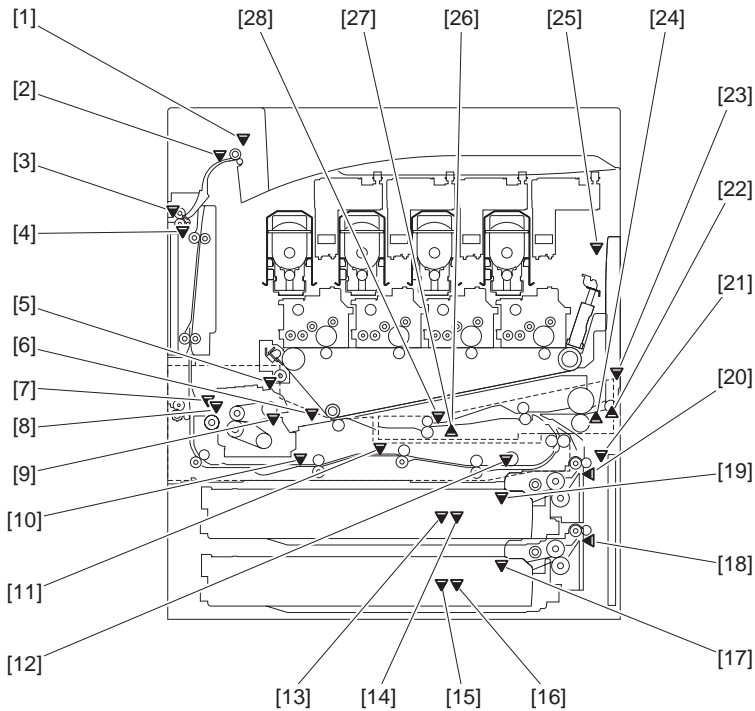
F-10-4

T-10-4

[1] Center delivery tray full sensor (PS8)

[2] Face-down delivery sensor 1 (PS12)

[3] Face-down delivery sensor 2 (PS6)

[4] Delivery vertical path cover open/closed sensor (PS13)

[5] Fixing feeder unit open/closed sensor   (PS5)

[6] Fixing arch sensorÅiPS47Åj

[7] Fixing delivery sensor (PS25)

[8]fixing wrap sensor ÅiPS29Åj

[9] Fixing inlet sensor (PS27)

[10] Duplex registration sensor (PS21)

[11] Duplex horizontal registration sensor (PS22)

[12] Duplex pick sensor (PS24)

[13] Cassette 1 paper level sensor (B; PS15)

[14] Cassette 1 paper level sensor (A; PS14)

[15] Cassette 2 paper level sensor (B; PS18)

[16] Cassette 2 paper level sensor (A; PS20)

[17] Cassette 2 paper sensor (PS19)

[18] Cassette 2 retry paper sensor (PS17)

[19] Caste 1 paper sensor (PS7)

[20] Cassette 1 retry paper sensor (PS16)

[21] Pickup vertical path cover open/closed sensor (PS11)

[22] Manual feed last paper sensor (PS9)

[23] Manual fed unit open/closed sensor   (PS28)

[24] Manual feed paper sensor (PS10)

[25] Front cover open/closed sensor (PS23)

[26] Transparency sensor (front; OHP1)

[27] Transparency sensor (rear; OHP2)

[28] Registration sensor (PS26)

10.1.6 Arrangement of the Clutches and Solenoids
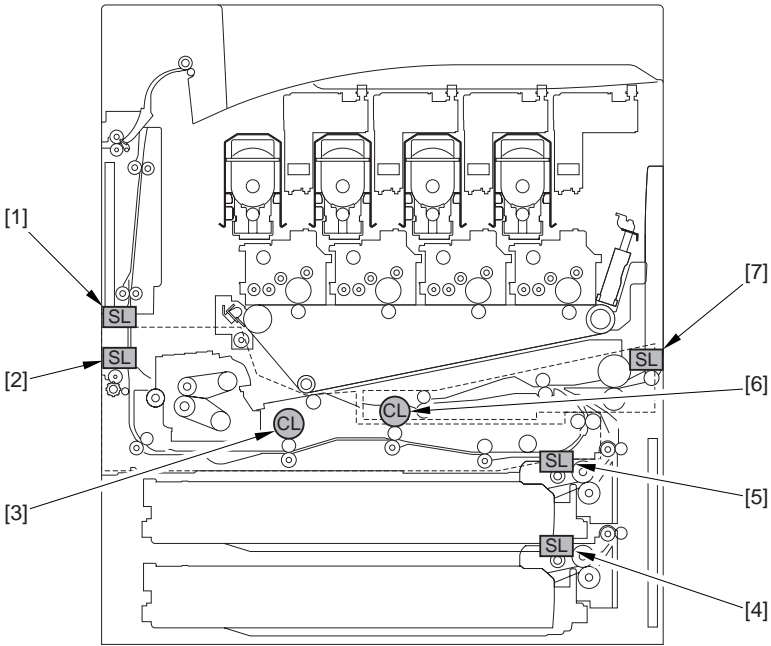
F-10-5

T-10-5

[1] Delivery path switching solenoid 1 (SL2)

[2] Delivery path switching solenoid 2 (SL5)

[3] Duplex registration clutch (CL1)

[4] Cassette 2 pickup solenoid (SL4)

[5] Cassette 1 pickup solenoid (SL3)

[6] Duplex pickup solenoid (CL2)

[7] manual feed pickup solenoid (SL1)

10.1.7 Route of Dive
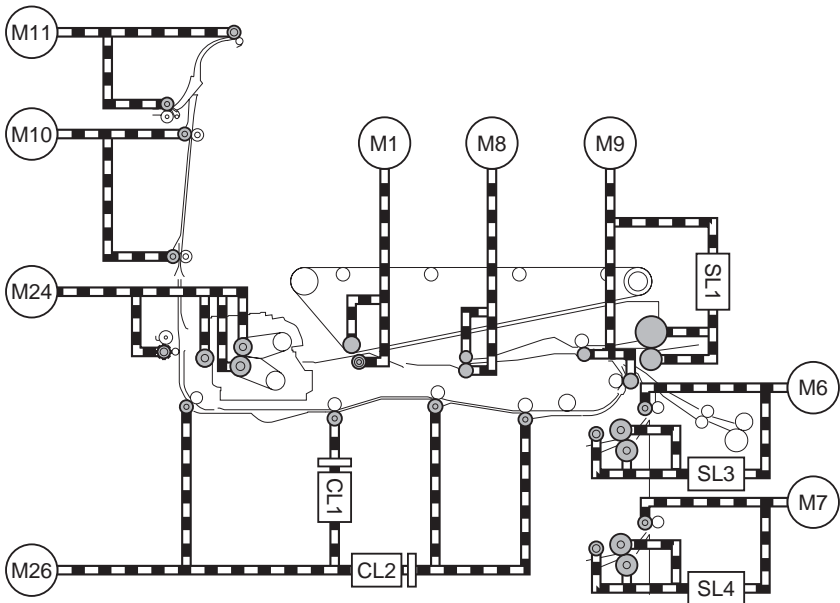
F-10-6

T-10-6

CL1	duplex registration clutch	M10	delivery vertical path motor
CL2	duplex pickup clutch	M11	face-down delivery motor
M1	drum ITB motor	M24	fixing motor
M6	cassette 1 pickup motor	M26	duplex feeder motor
M7	caste 2 pickup motor	SL1	manual feed pickup solenoid
M8	registration motor	SL3	caste 1 pickup solenoid
M9	pre-registration motor	SL4	cassette 2 pickup solenoid

10.2 Basic Sequence

10.2.1 Basic Sequence of Operations at Power-On

Main power switch ON

Printer unit | WMUP | WMUPR | PSTBY

360 sec (approx.)

Drum ITB motor (M1)
Cassette 1 pickup motor (M6) *1
Cassette 2 pickup motor (M7) *1
Registration motor (M8) *1
Pre-registration motor (M9) *1
Delivery vertical path motor (M10) *1
Face-down delivery motor (M11) *1
Fixing motor (M24)
Duplex feeder motor (M26) *1
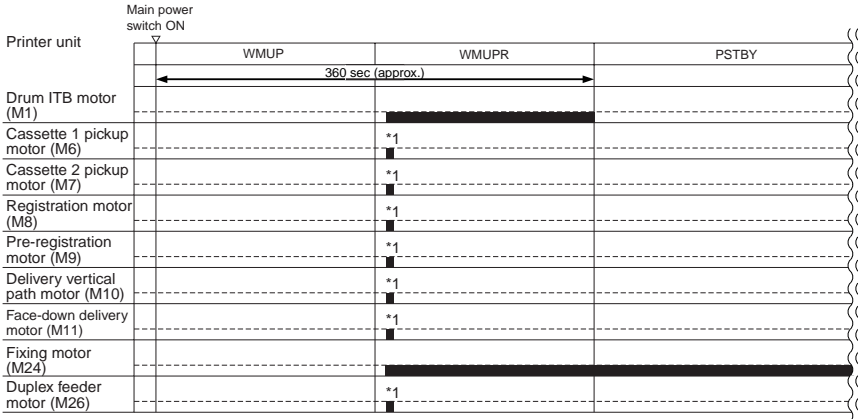
*1: rotates for about 4.0 sec; a stationary jam will be identified if the sensor goes ON during the period.

F-10-7

10.2.2 Basic Sequence of Operations in Response to a Press on the Start Key

Print start

PRINT | LSTR

2.76sec (approx.)

1.3sec (approx.)

Cassette pickup solenoid (SL3)
Cassette 1 pickup motor (M6)
Cassette retry paper sensor (PS16)
Registration sensor (PS26)
Pre-registration sensor (M9)
Registration motor (M8)
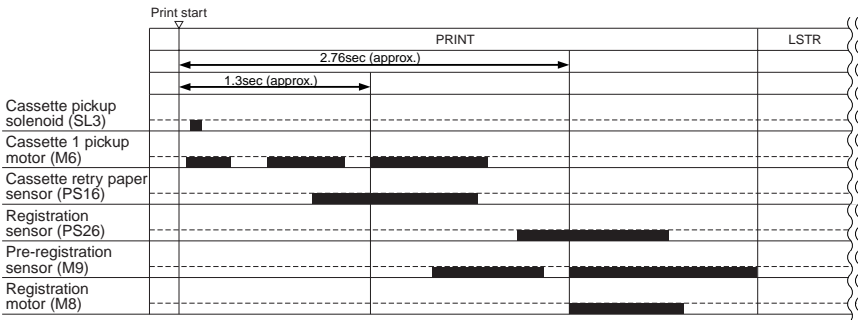
F-10-8

10.3 Detecting Jams

10.3.1 Delay Jams

10.3.1.1 Delay Jam in the Cassette Pickup Assembly

The leading edge of paper is not at the sensor within a specific period of time (for feeding) after the motor has gone ON.

[1]: specific feed time.
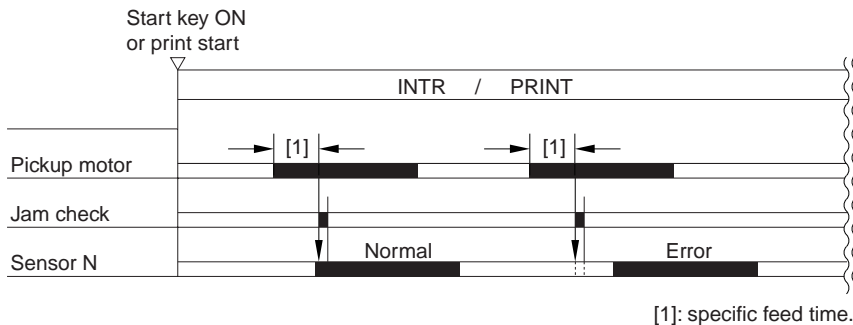
F-10-9

T-10-7

Source	Motor	Sensor
Cassette 1	Pickup motor (M6)	Cassette 1 retry paper sensor (PS16)
Cassette 2	Pickup motor (M7)	Cassette 2 retry paper sensor (PS17)

10.3.1.2 Delay Jam Outside the Cassette Pickup Assembly

A delay jam occurring outside the cassette pickup assembly is identified at the following timing:
The period of time during which paper is moved form the sensor N-1 to the delay jam sensor N in question is controlled, and a delay jam will be identified if the delay jam sensor N in question does not go ON within a specific period of time after the sensor N-1 has gone ON.

[1]: specific period of feed.

F-10-10

T-10-8
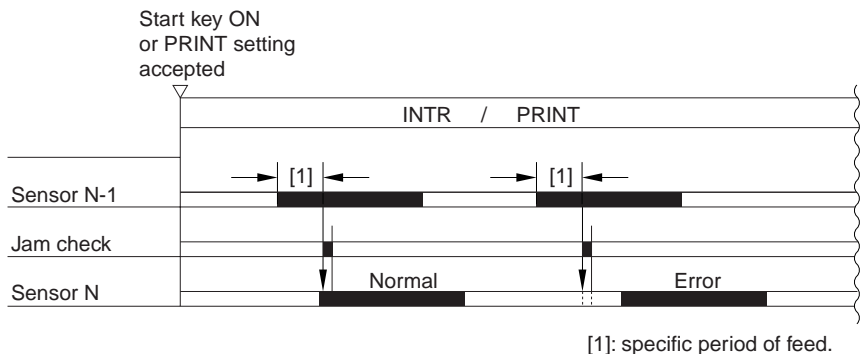
Sensor

Registration sensor (PS26)

Fixing delivery sensor (PS25)

Face-down delivery sensor 1 (PS12)

Face-down delivery sensor 2 (PS6)

Duplex registration sensor (PS21)

Duplex pickup sensor (PS24)

10.3.2 Stationary Jams

10.3.2.1 Stationary Jams

A stationary jam will be identified if the sensor N does not go OFF within a specific period of tie after the sensor N has gone ON.
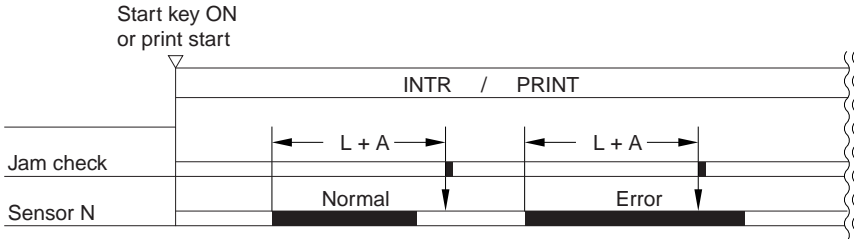
(L = paper length feed distance; A = specific feed distance)

F-10-11

T-10-9

Sensor

Cassette 1 retry paper sensor (PS16)

Caste 2 retry paper sensor (PS17)

Registration sensor (PS26)

Fixing delivery sensor (PS25)

Fixing inlet sensor (PS27)

Face-down delivery sensor 1 (PS12)

Face-down deliver y sensor 2 (PS6)

Duplex registration sensor (PS21)

Duplex pickup sensor (PS24)

Fixing wrap sensor ÅiPS29Åj

10.3.2.2 Stationary Jams at Power-On

The machine checks the absence of paper over the following sensors before it starts initial multiple rotations at power-on:

T-10-10

Sensor

Caste 1 retry paper sensor (PS16)

Cassette 2 retry paper sensor (PS17)

Registration sensor (PS26)

Fixing delivery sensor (PS25)

Face-down delivery sensor 1 (PS12)

Face-down delivery sensor 2 (PS6)

Duplex registration sensor (PS21)

Duplex pickup sensor (PS24)

Fixing inlet sensor (PS27)

Fixing wrap sensor ÅiPS29Åj

Fixing arch sensorÅiPS47Åj

10.4 Cassette

10.4.1 Identifying the Paper Size

The machine identifies the size of paper into the cassette with reference to the slide guide (15 settings) of the cassette. The 4-in-a-row actuator designed for the identification of the cassette size found on the machine side goes ON/OFF according to the position of the slide guide, permitting the machine to identify 15 settings. In the absence of a cassette, all 4 actuators will go OFF.

F-10-12
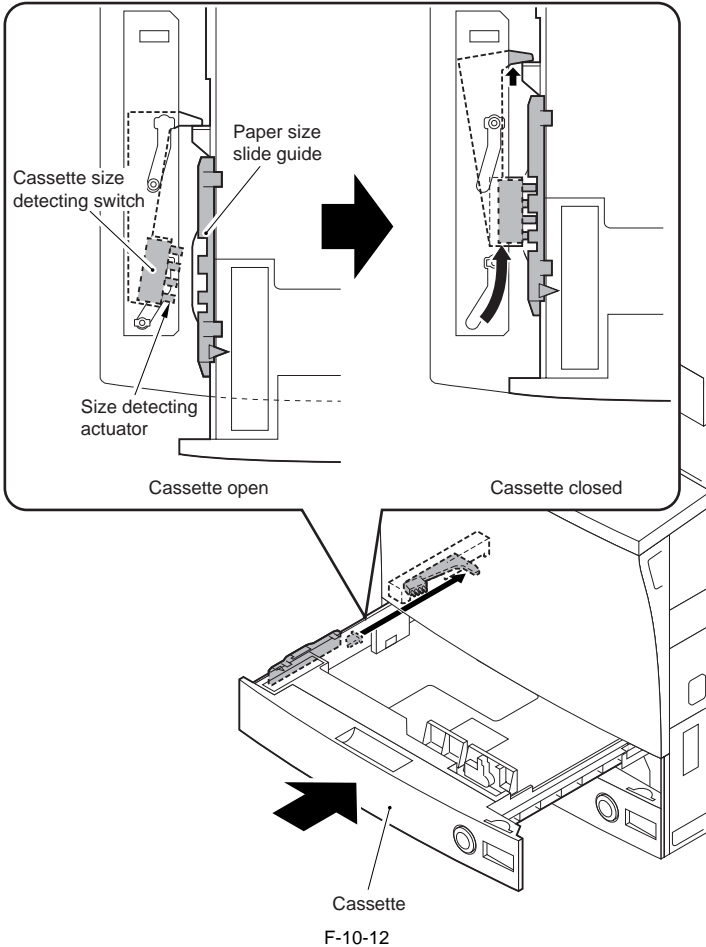
T-10-11

4-in-a-row actuator

	Paper size	Rear Bit3	Bit2	Bit1	Front Bit0
1	STMT R	ON			
2	LTR		ON		
3	LTR R	ON		ON	
4	LGL		ON		ON
5	11X17*1			ON	
6	A5 R	ON			ON
7	A4	ON	ON		
8	A4 R		ON	ON	
9	A3	ON		ON	ON
10	B5	ON	ON		ON
11	B5 R	ON	ON	ON	
12	B4	ON	ON	ON	ON
13	12X18*2		ON	ON	ON
14	U1			ON	ON
15	U2				ON
16	no cassette				

ON: actuator pressed (i.e... '0'in reference to a check in I/O mode).

*1:279 x 431.8[mm]
*2:305 x 457[mm]

10.4.2 Detecting the Level of Paper

The level of paper inside the cassette is detected using the following three sensors:
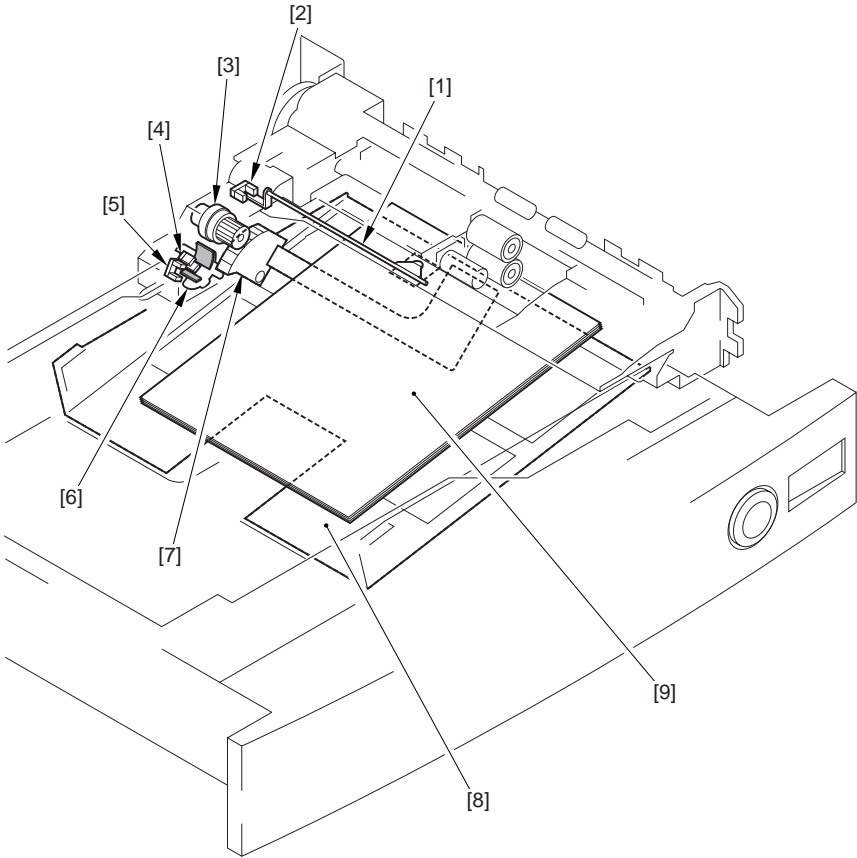
F-10-13

T-10-12

[1] Flag	[6] Paper level sensor flag
[2] Cassette paper sensor	[7] Lifter gear
[3] Gear	[8] Tray
[4] Cassette paper level sensor (A)	[9] Paper
[5] Cassette paper level sensor (B)	

View from the Front of the Machine

If the cassette is full of paper

Cassette paper level sensor (B) Cassette paper level sensor (A)
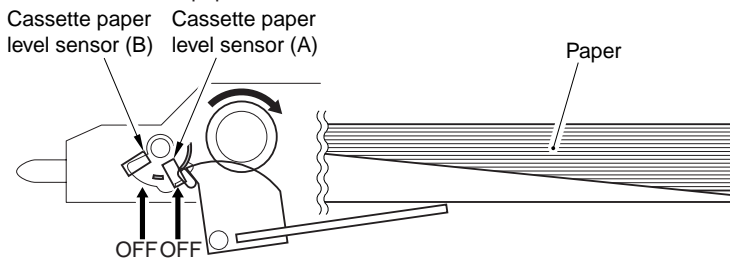
Paper

OFF OFF

If the cassette is half full of paper

Cassette paper level sensor (B) Cassette paper level sensor (A)

Paper

OFF ON
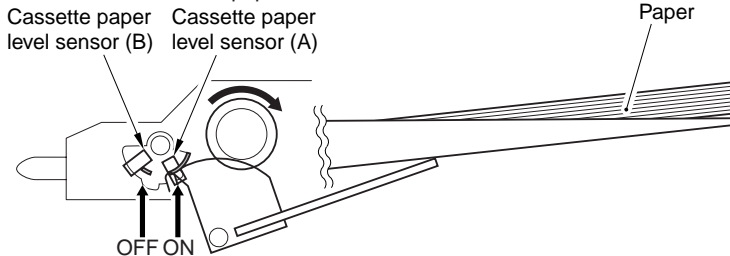
If the cassette has little paper

Cassette paper level sensor (B) Cassette paper level sensor (A)

Paper

ON ON

Cassette paper sensor Flag

Paper tray
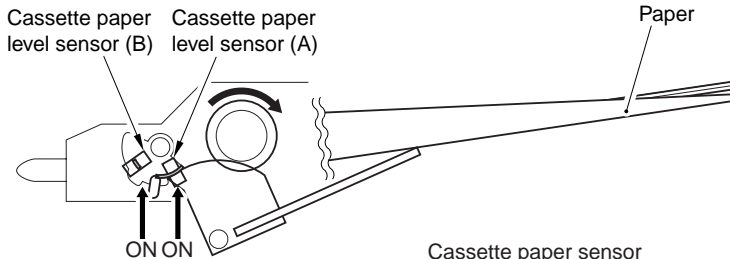
If the cassette has no paper
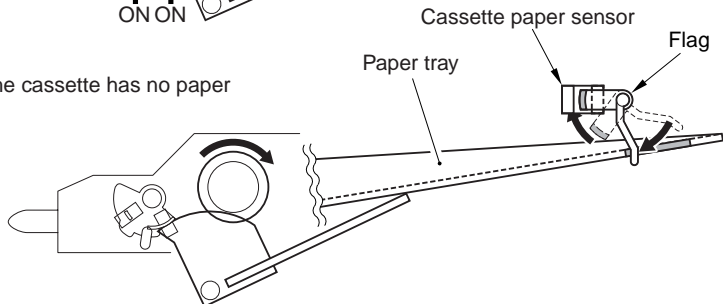
F-10-14

T-10-13

Paper level sensor (A)	Paper level sensor (B)	Paper sensor	Level of paper	Indication on control panel
off	off	off	100% to 50% of capacity	
ON	off	off	about 50% to about 50 sheets	
ON	ON	off	About 50 sheets or less	
---	---	ON	No paper	

10.5 Cassette Pick-Up Unit

10.5.1 Outline

The paper inside the cassette is held up by the lifter plate, and the pickup roller is borught down to the paper for pickup.
The feed roller and the srpaton roller are used to make sure that no more than a single sheet of paper is moved to the feeing assembly; the pickup vertical path roller/pre-registration roller is then used to move the paper a fara as the kegistatoin roller (upper, lower).
The pickup vertical path roller and the pre-registration roller are each driven by the pickup 1 motor and the pre-registration motor, respectively.
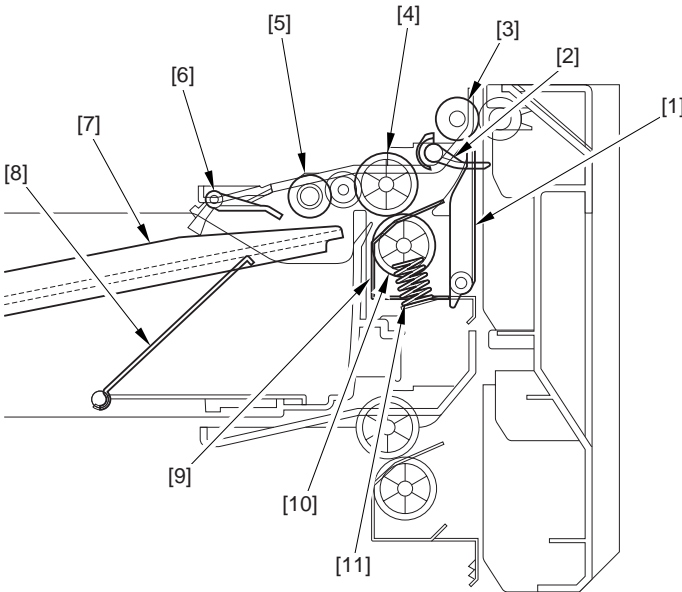
F-10-15

T-10-14

[1] Vertical path guide

[2] Caste retray paper sensor

[3] Pickup vertical path roller

[4] Feed roller (roller B)

[5] Pickup roller (roller A)

[6] Cassette paper sensor

[7] Holding plate

[8] Lifter plate

[9] Retard guide

[10] Separation ton roller (roller C)

[11] Retard spring

10.5.2 Basci Sequence of Operations
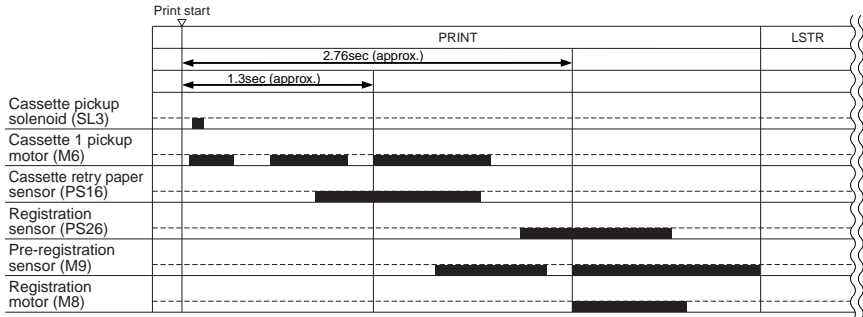
F-10-16

10.6 Manual Feed Pickup Unit

10.6.1 Outline

The paper in the manual feed pickup unit is forced against the pickup feeder roller as the lifter moves up, an a single sheet of paper is separed and moved ahead by the work of the pickup feeder roller and the separation roller.
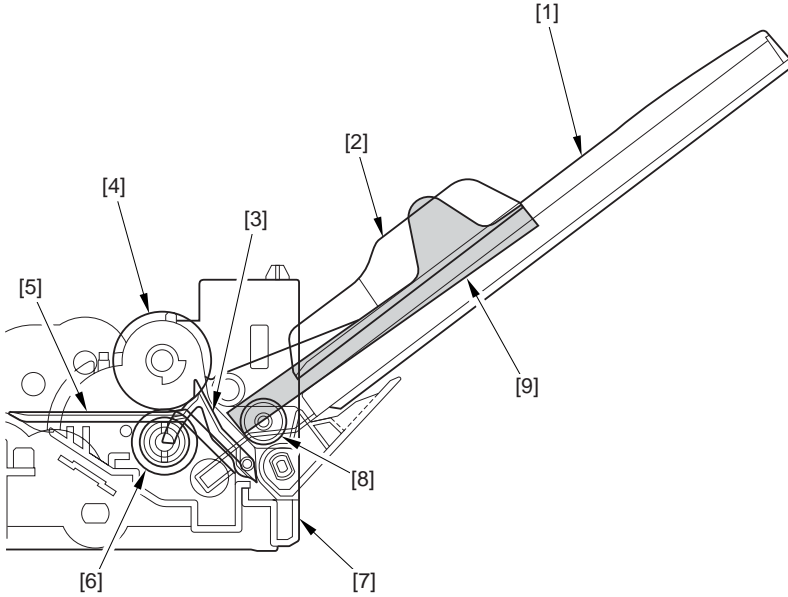
F-10-17

T-10-15

[1] Paper tray

[2] Side guide plate

[3] Paper flag

[4] Manual feed feeder roller

[5] Pickup guide plate

[6] Manual feeder separation roller

[7] Registration multi frame

[8] Last paper pick roll

[9] Lifter

10.6.2 Basic Sequence of Operations
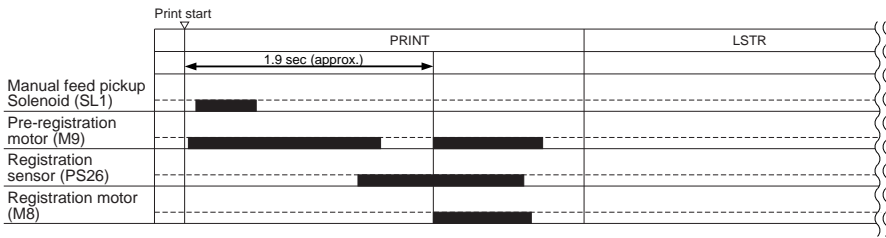
F-10-18

10.6.3 Identifying the Size of Paper

The machine checks the widht of paper in reference to the level of output ffrom the variable resistor operating in conjunction with the movemetn of the side guide epatle. The side guide plate on the manual feed tray is set by the user when he/she deposit paper.
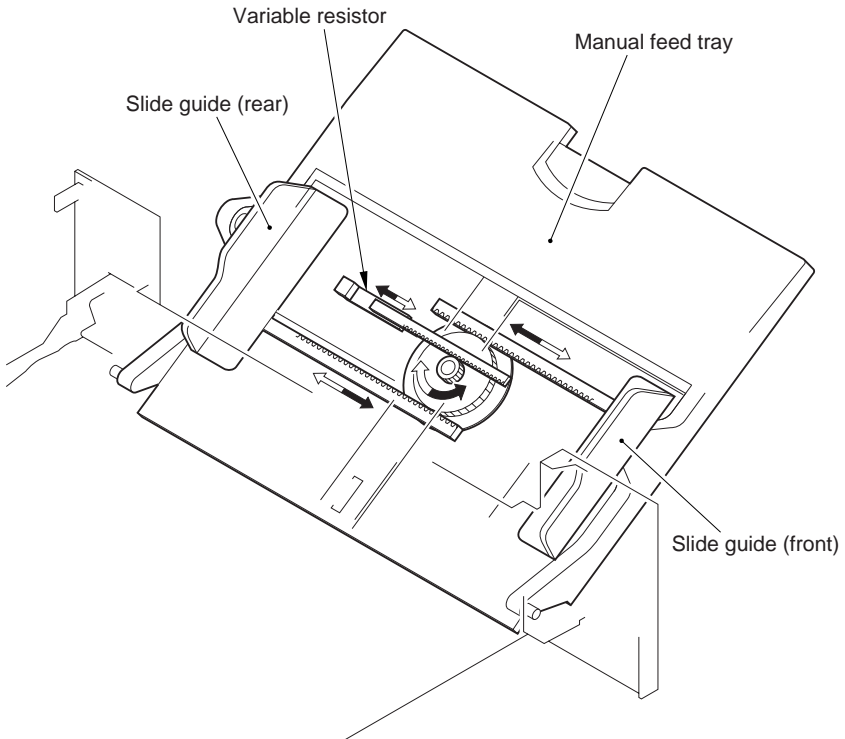
F-10-19

10.6.4 Detecting the Presence/Absence of Paper

When paper is placed, its weight pushes down the paper detecting flag, thus enabling the manual feed paper sensor (PS10) to detect the presence of paper.
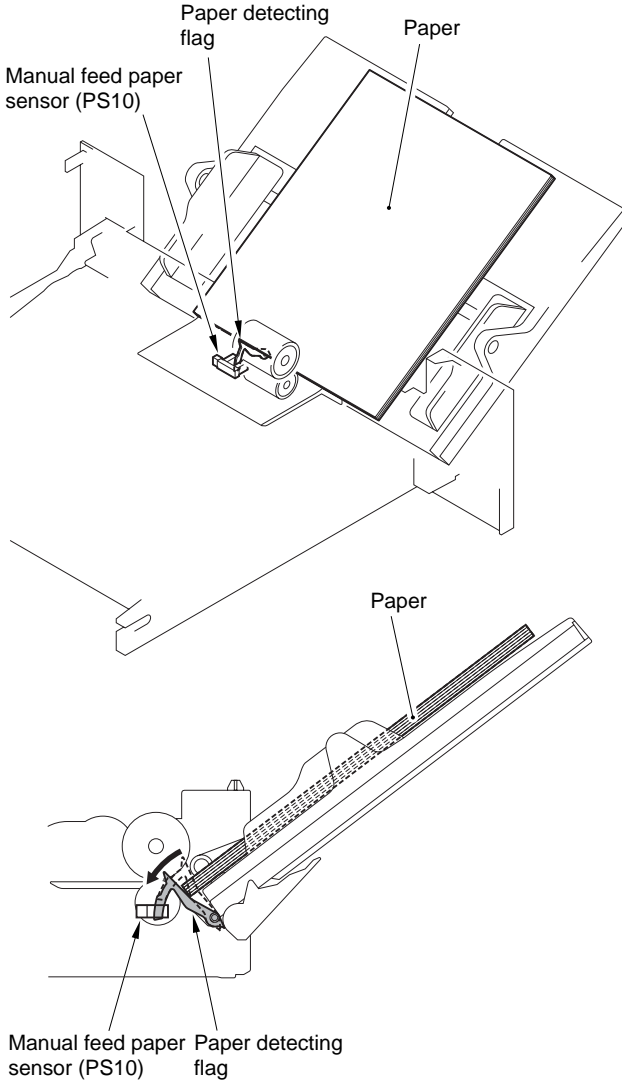
F-10-20

10.6.5 Detecting the Last paper

When the last paper pickup roll rotates, the slit in the roll cuses the output of the last paper sensor (PS9) to beocme wave-form pusles. The last paper roll rotates only when the last paper is picked up; otherwise, it remains still. The machine will identify the paper to be the last paper if it detects 4 or more output pules form the lat paper sensor.
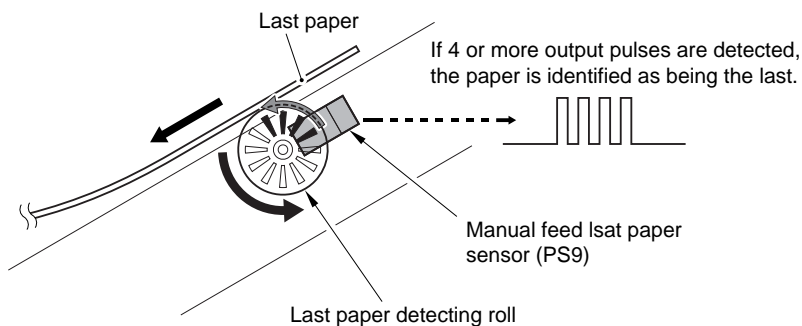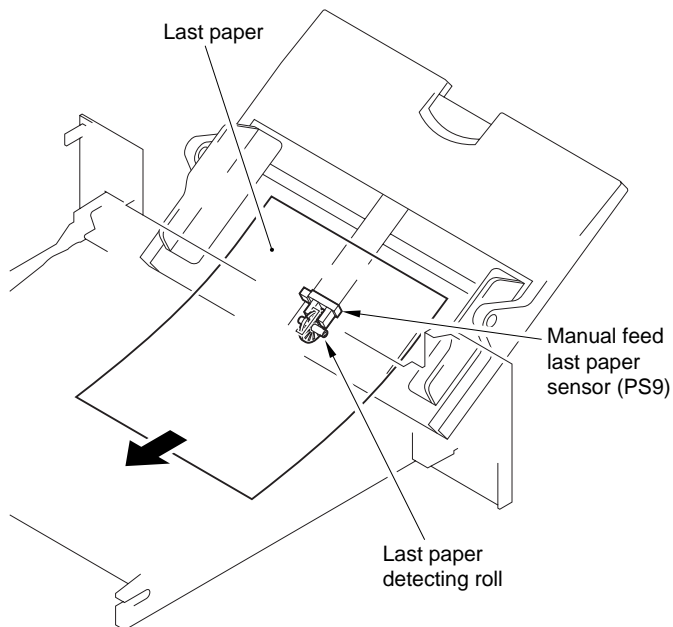
F-10-21

10.7 Registration Unit

10.7.1 Outline

The upper registraont roller an the lower registration roller are dreiven by the registration motor (M8), and are used to make user aht the paper an the image on the intermediate transfer rbelt mach at a specific position. The upper guide locking arm latches in place when the unit is fitted to the machine.

When fitted to the machine

Upper registration roller

Area of upper guide to be locked in place

Upper guide locking arm

Lower registration roller

Machine rail

Upper guide preasure spring

Mobile rail

When the multi upper guide is shifted up

Registration Nip Released
The shape of the cam causes the registration upper roller to move up by 1.5 mm during rotation, releasing the nip where paper moves.

Registration multi upper guide

Area of upper guide to be locked in place

Upper guide locking arm open (unlocked)

Machine rail

Upper guide pressure spring

Mobile rail

F-10-22

Registration motor (M8) Pre-registration motor (M9) Manual feed pickup solenoid Manual feed control gear

Upper registration roller Lower registration roller Pre-registration roller Duplex roller shaft Manual feed roller shaft

F-10-23

10.8 Duplex Feeding Unit

10.8.1 Outline

The duplex nit is drivn by the duplex motor (M26), and is sued when making double-sided prints.

F-10-24
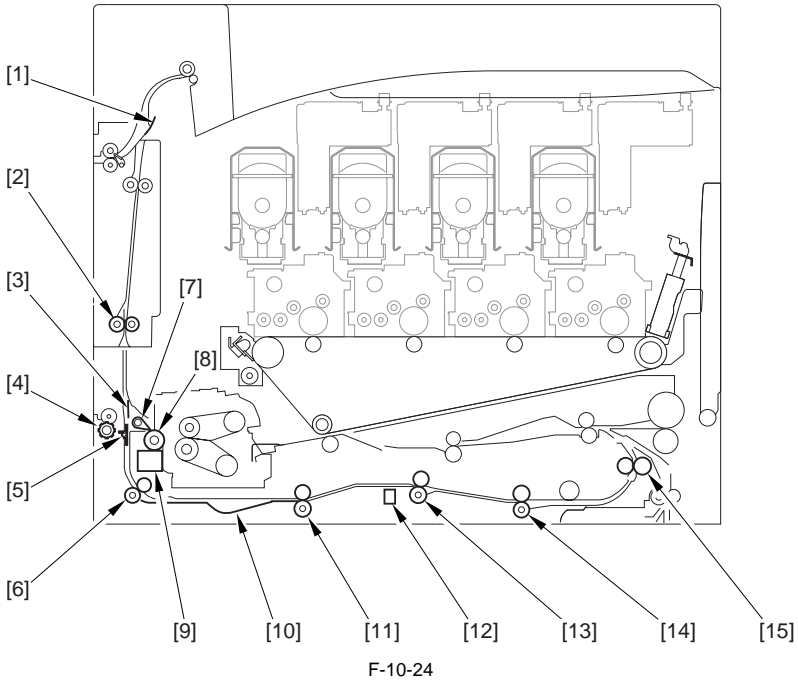
T-10-16

[1] Reversing sheet	[9] Delivery cooling duct
[2] Reversing rollre	[10] Arching assembly
[3] Reversing sheet	[11] Duplex roller 2
[4] Face-up delivery roller	[12] Duplex horizontal registration sensor (PS22)
[5] Cross path flapper	[13] Duplex roller 3
[6] Duple roller 1	[14] Duplex roller 4
[7] FU/FD swtycing flapper	[15] Re-pickup roller
[8] Internal delivery roller	

10.8.2 Controling Horizontal Registration

When in duplexing mode, the machine executes horizontal registration detection for paper coming from the duplex feed assembly to see if there is any discrepancy in main scanning direction (front-rear direction), thus adjusting the point of laser exposure.

T-10-17

Detecting of paper position:	duplex horizontal registration sensor (PS22)
Timing of detection:	starts a specifi peirrod of time after pasage over the duplex registraont neosr (PS21)
Dive	horizontal registration motor (M25)
Identifiaotin of position:	with refenced to the pulse form the horizontal registration motor
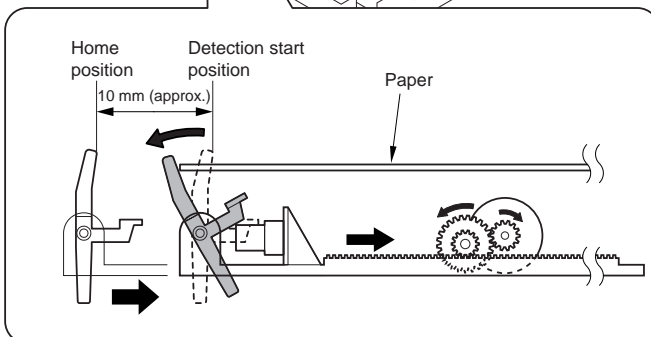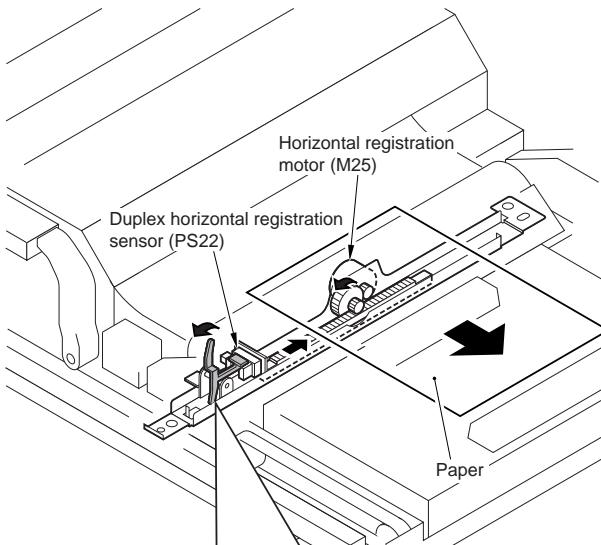
F-10-25

10.8.3 Face-Down Delivery, A4, 5 Sheets in Circulation

The number on a white backgoudn and the nbuer on a black background indicated the 1s side and the 2nd side, respse3ctively.

(1)

(2)

F-10-26

(3)

(4)

F-10-27

(5)

(6) with 2 sheets inside duplex unit

F-10-28

(7)

(8)

F-10-29

(9)

(10)

thereafter, repeats (7) through (10)

F-10-30

(11)

(12)

F-10-31

(13)　　　　　　　(14)
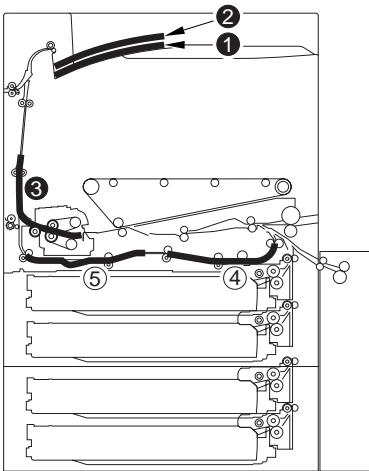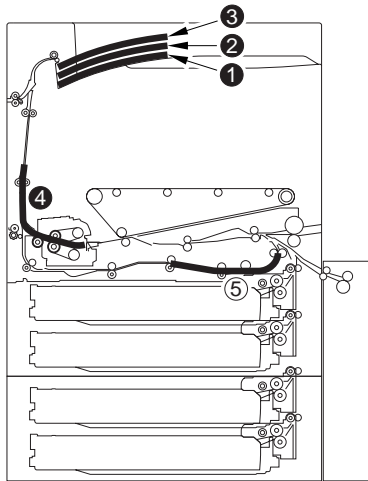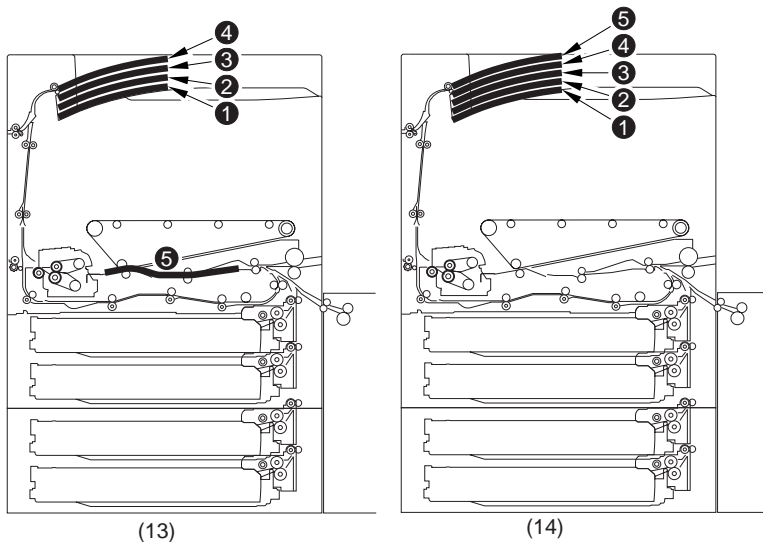
F-10-32

10.8.4 Face-Down Delivery, A3, 3 Sheets in Cirucilation

The nbuemr on a white background and the nbuemr on a black backgrdoun indicated the 1st side and he 2nd side, respectively.

① point of reversal

(1)　　　　　　　(2)

F-10-33

(3) (4)

F-10-34

① duplex pre-registration

① check on horizontal registration

(5) (6)

F-10-35

② point of reversal

② ① in wait for re-pickup

①

(5)

(6)

① in wait for re-pickup

② point of reversal

F-10-36

(9)

(10)
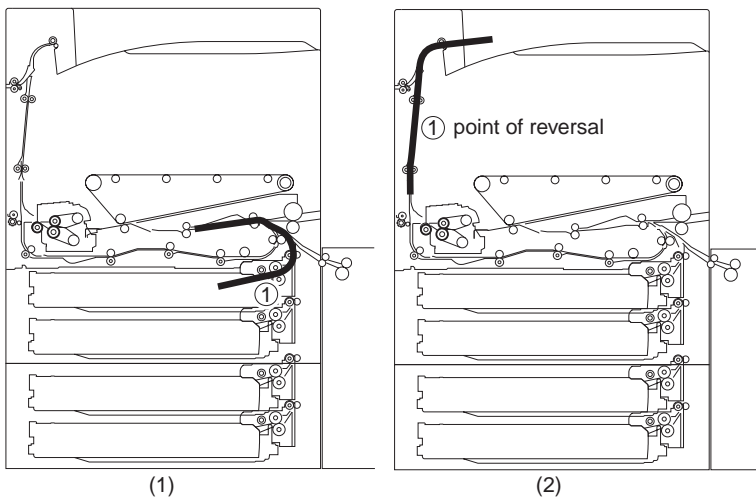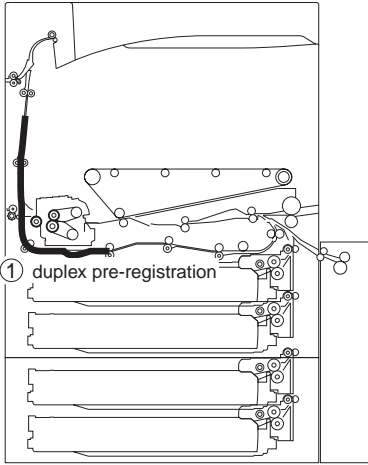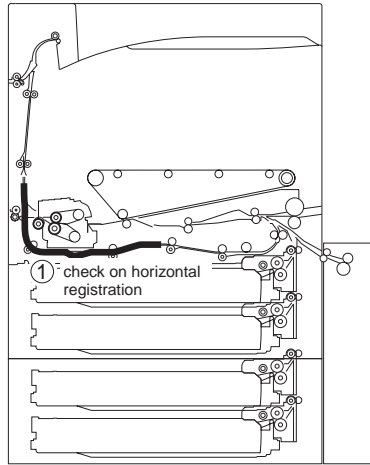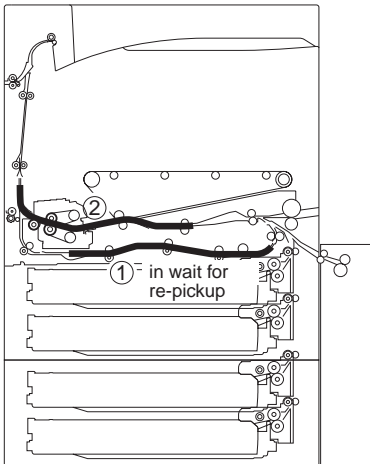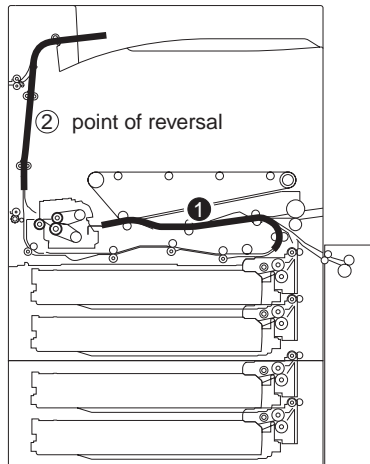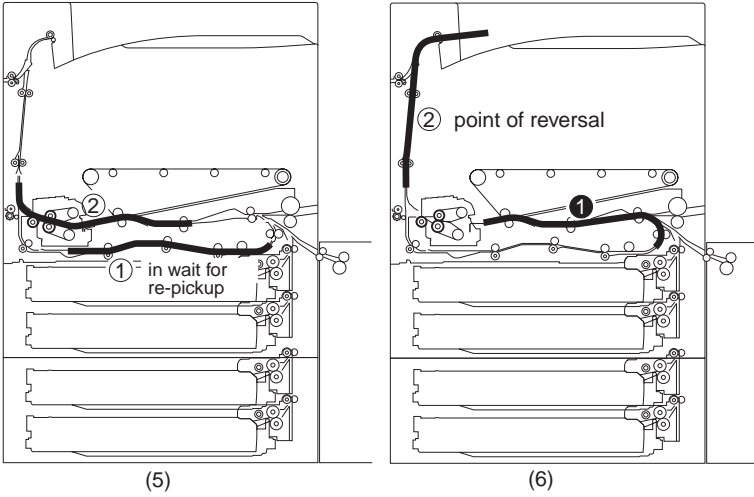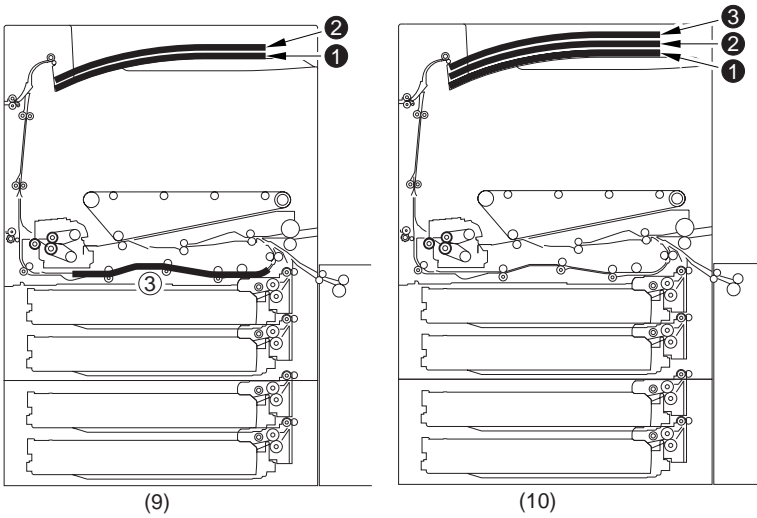
F-10-37

10.9 Delivery

10.9.1 Delivery

The machine uses any of the following 3 types of delivery (paper apths):
face-deown delivery (center delivery tray)
face-down delivery (copy tray)
face-up device r(side delivery tray)

Face-down delivery
(center delivery tray)

Face-down delivery
(copy tray)

Face-up delivery
(side delivery tray)
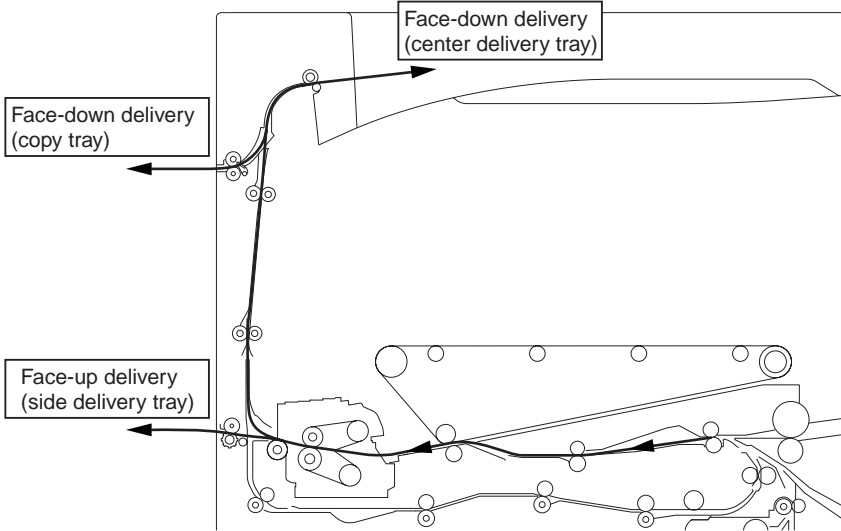
F-10-38

10.9.2 Movement in the Direction of Face-Down Delivery

After moving thtough the fixing unit, the paper moves along the FU/FD switching flapper now facing downawar; it then pushes down the plastic sheet to move to the vertical path diecoint for face-down delivery.

Plastic sheet

FU/FD
switching
flapper
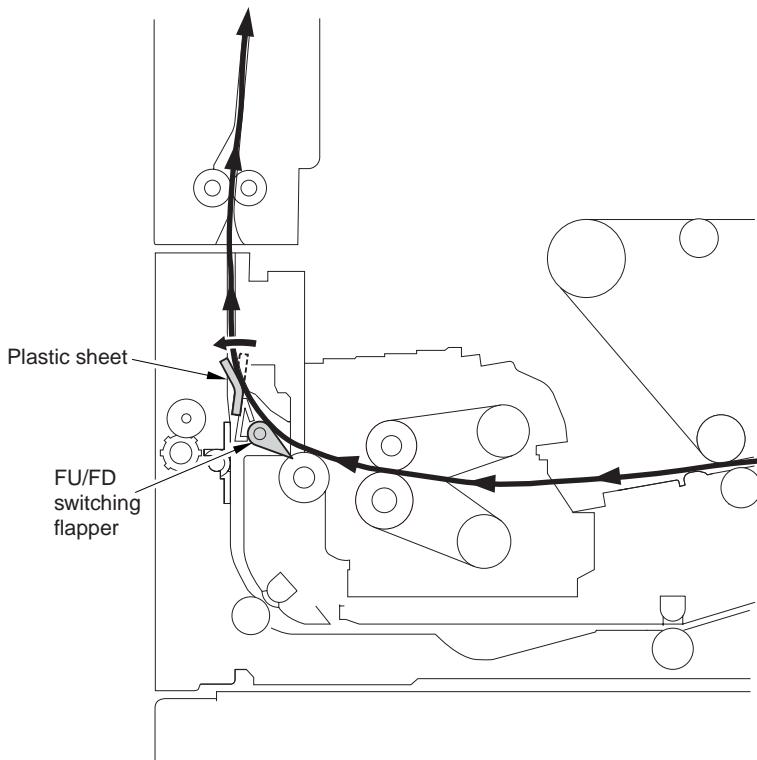
F-10-39

10.9.3 Movement in the Direction of Face-Up Delivery

After moving through he fixing unit, the paper moves uder the FU/FD swtichign flapper, which has been shfited up by the delivery path switching solenoid (SL2); at this time the cross path flapper is also siwtched over by the work of the delivery path switching solenoid 2 (SL5), thus guding the paper into the direction of face-up delivery.

FU/FD
switching
flapper

Face-up delivery
(side delivery tray)

Cross path
flapper
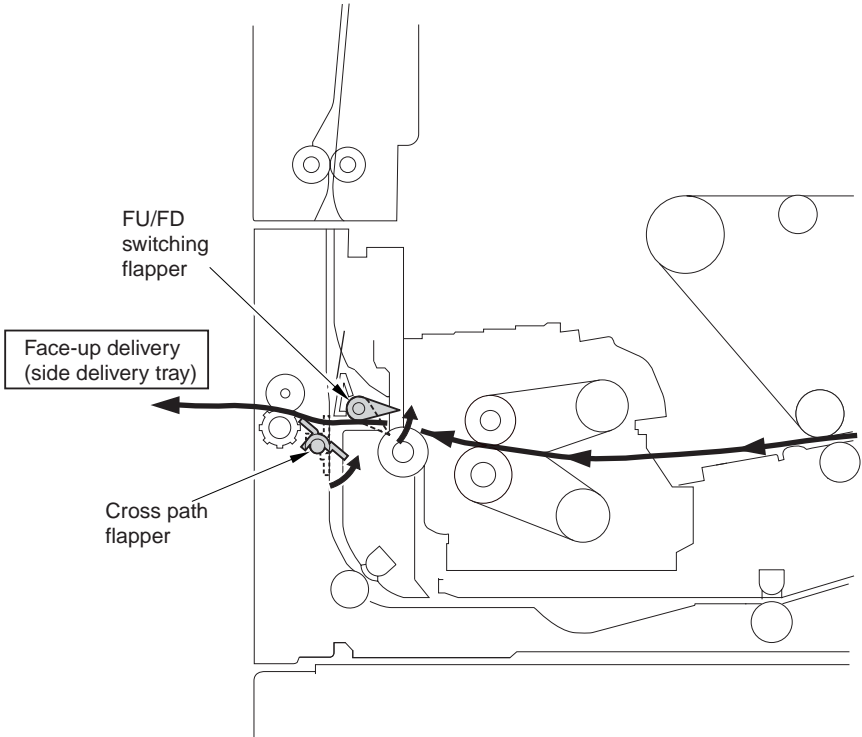
F-10-40

10.9.4 Movement for CenterTray delivery

The paper moves while pushing down the plastic sheet, and then moves ahead for center tray delivery.

Paper

Center tray delivery
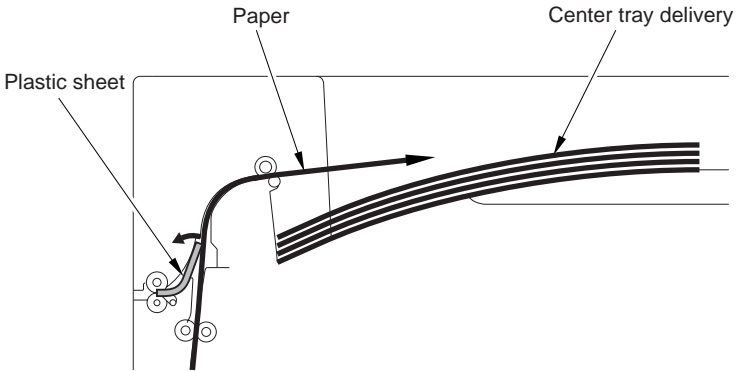
Plastic sheet

F-10-41

10.9.5 Moement for Copy Tray Dievyer

The paper meos while pushign down the plastic sheet, and then moves ahead in the direction of the centra tray. Immeiately after the trailig edge of the paper moves past the palstc film the momevement stops, at which time the movmeent rverses so that the paper moves along the plastic sheet in the direction of the copy tray.

Paper

Copy tray delivery

Plastic sheet

Paper

Copy tray delivery

Paper movement reverse

Plastic sheet
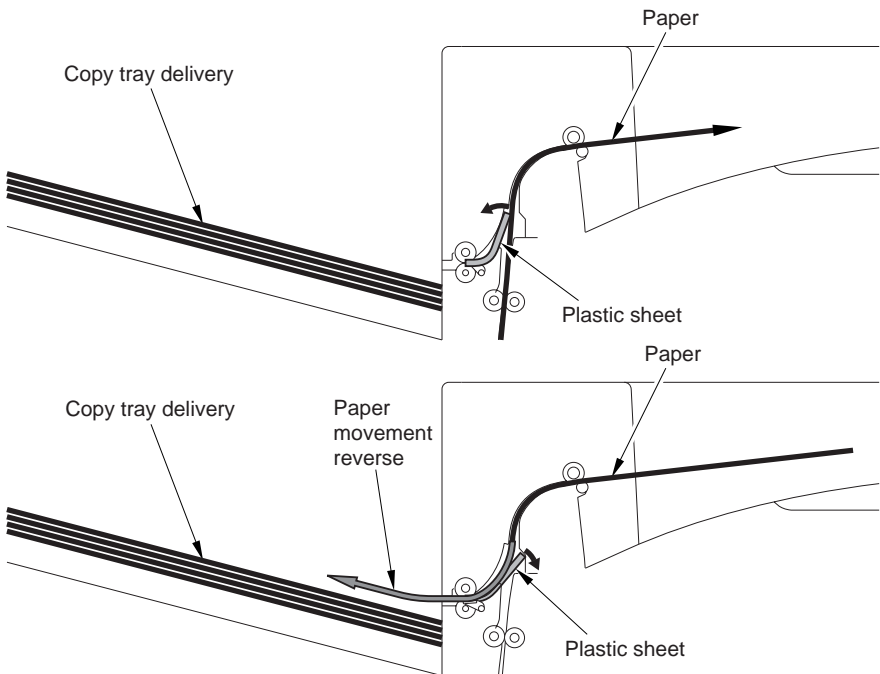
F-10-42

10.10 **Parts Replacement Procedure**

10.10.1 Cassette Pickup Unit

10.10.1.1 Preparatipon for Removing the Pickup Unit

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1) Slide out the cassette.
2) Remove the front right cover. (page 12-22)Reference[Removing the Right Front Cover]
3) Remove the rear right cover. (page 12-22)Reference[Removing of the Right Rear Cover]
4) Remove the pickup vertical path cover [3].
  - screw [2] (remove the pickup vertical path lower cover [1])

⚠

If the machine is equipped with a pedestal, remove the pedestal right cover; then, detach the pickup vertical path lower cover in advance.
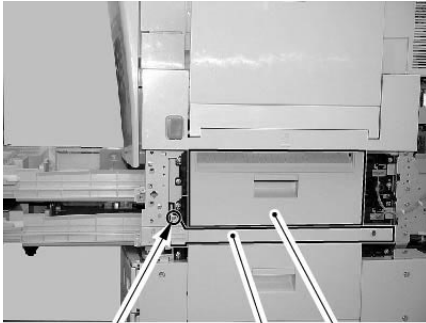
F-10-43

10.10.1.2 Removing the Pickup Unit

1) Remove the pickup unit [3].
  - connector [1]
  - 4 screws [2]
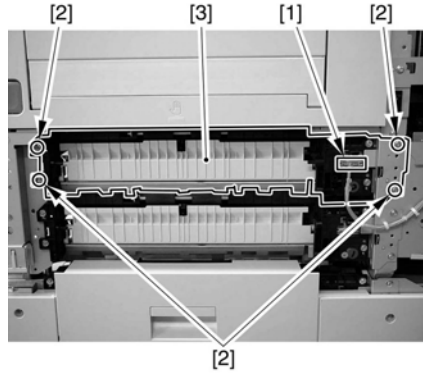
F-10-44

10.10.2 Cassette Size Detection Unit

10.10.2.1 Preparation for Removing the Cassette Size Detection Unit

1) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1-1) Slide out the cassette.

10.10.2.2 Removing the Cassette Size Detection Unit

1) Remove the machine's lower left cover [2].
   - 4 screws [1]
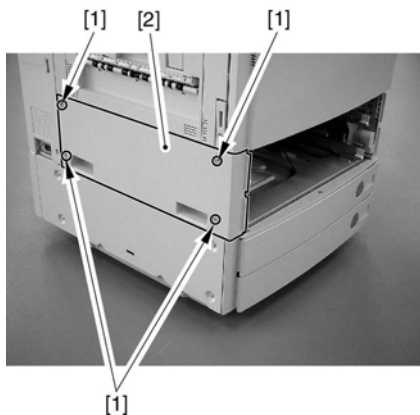
F-10-45

2) Push the protrusion [A] from the left to release the lock; then, remove the cassette size detection unit [2] for the machine's front.
   - connector [1]
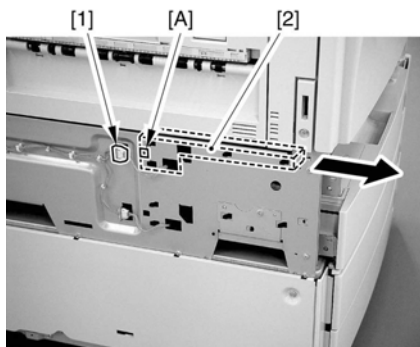
F-10-46

MEMO:
When attaching the cassette size detection unit, try pushing the 4 protrusions into the holes of the machine's stay.

10.10.3 Pre-registration Roller

10.10.3.1 Preparation for Removing the Pre-registration Roller

1) Remove the manual feeder unit. (page 10-52)Reference[Removing the Manual Feed Unit]
2) Remove the manual feeder unit cover. (page 12-28)Reference[Removing the Manual Feed Unit Cover]
3) Remove the motor cover.
3-1) Remove the motor cover [2] found at the rear.
   - 1 screw [1]
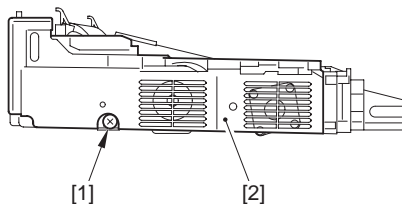
F-10-47

4) Remove the motor mounting plate.
   - 3 clamps [1]
   - 3 connectors [2]
   - 3 screws [3]

10.10.3.2 Removing the Pre-registration Roller

1) Remove the pre-registration roller.
1-1) Remove the 2 E-rings [1], 1 gear [2], 1 parallel pin [3], and 1 bearing [4].
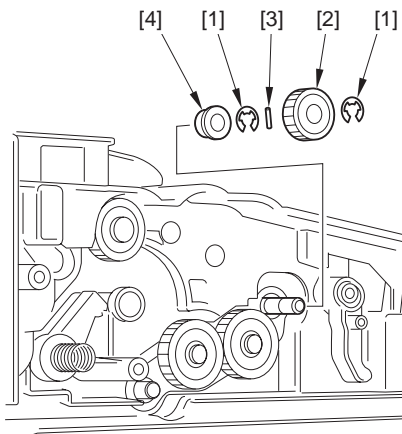
F-10-48

1-2) Remove the bearing [1]; then, move the pre-registration roller [2] in the direction of the arrow to detach.
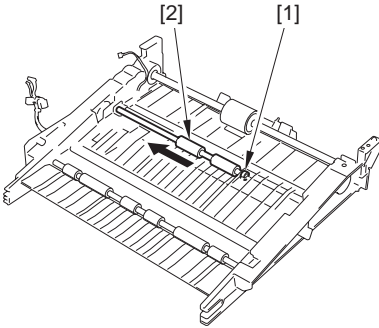
F-10-49

10.10.4 Registration Upper Roller

10.10.4.1 Preparation for Removing the Registration Lower Roller

1) Remove the manual feeder unit. (page 10-52)Reference[Removing the Manual Feed Unit]
2) Remove the manual feeder unit cover. (page 12-28)Reference[Removing the Manual Feed Unit Cover]
3) Remove the motor cover.
3-1) Remove the motor cover [2] found at the rear.
   - 1 screw [1]
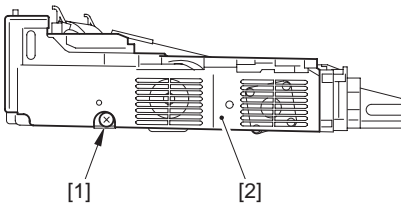
F-10-50

4) Remove the motor mounting plate.
   - 3 clamps [1]
   - 3 connectors [2]
   - 3 screws [3]

10.10.4.2 Remove the Registration Lower Roller

1) Remove the belt [1]ÅAwasher [2]ÅAE-rings [3]ÅAgear [4] found at the rear.
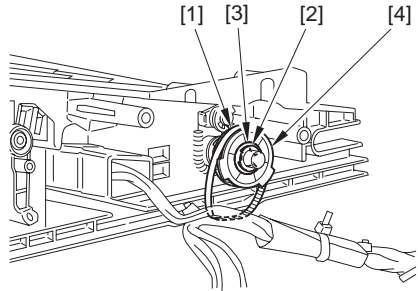
F-10-51

2) Remove the 2 E-rings [1], spring [2], and bearings [3] [4] found at the rear.
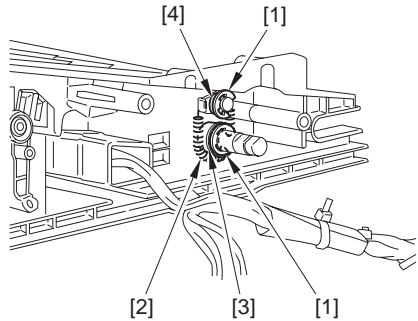
F-10-52

3) Remove the 2 gears [1] found at the front.
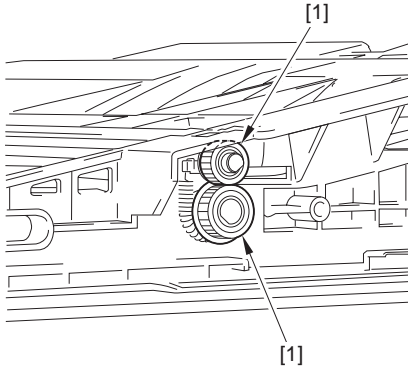
F-10-53

4) Remove the 2 E-rings [1], spring [2], and bearings [3] [4] found at the front.
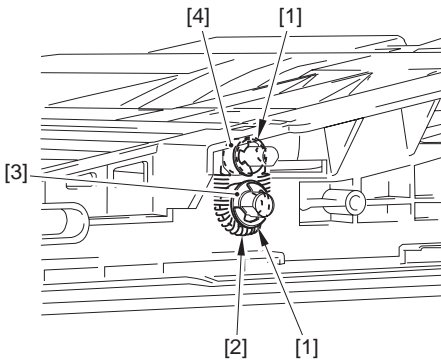
F-10-54

5) Remove the shaft [1], and detach the guide [2].
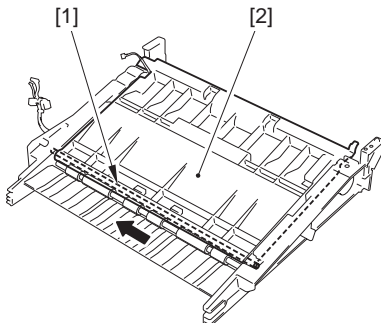
F-10-55

6) Remove the registration lower roller [1].
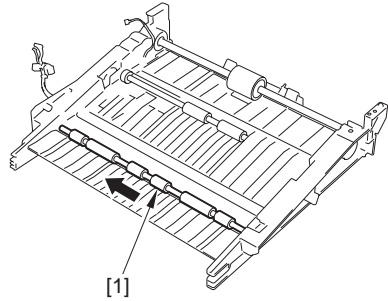
F-10-56

10.10.5 Re-pickup Roller

10.10.5.1 Preparation for Removing the Re-pickup Roller

1) Remove the manual feeder unit. (page 10-52)Reference[Removing the Manual Feed Unit]
2) Remove the manual feeder unit cover. (page 12-28)Reference[Removing the Manual Feed Unit Cover]
3) Remove the motor cover.
3-1) Remove the motor cover [2] found at the rear.
   -1 screw [1]
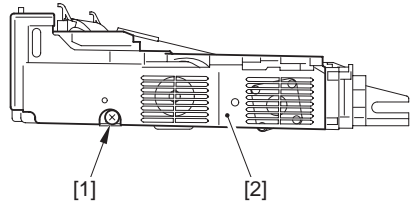
F-10-57

4) Remove the motor mounting plate.
   -3 clamps [1]
   -3 connectors [2]
   -3 screws [3]

10.10.5.2 Removing the Re-pickup Roller

1) Remove the 2 E-rings [1], gear [2], parallel pin [3], and bearing [4] found at the rear.

[4] [1] [3] [2] [1]
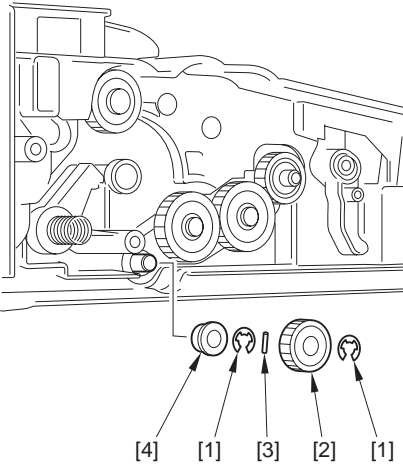
F-10-58

2) Remove the 3 screws [1], and detach the guide [2].

[1]   [1]

[2]
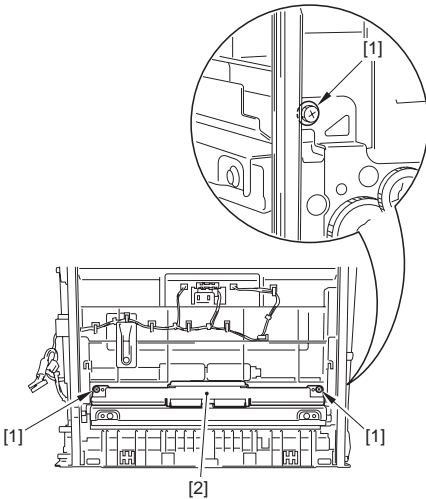
F-10-59

3) Remove the 2 screws [1], and detach the guide [2].

[1]   [2]   [1]
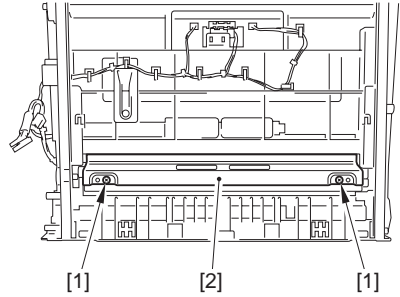
F-10-60

4) Remove the bearing [1]; then, move the roller [2] in the direction of the arrow to detach.

[1]

[2]
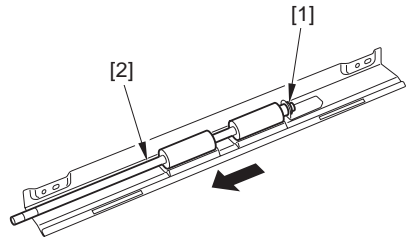
F-10-61

10.10.6 Pickup Roller

10.10.6.1 Preparation for Removing the Pickup Roller

1) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1-1) Slide out the cassette.

10.10.6.2 Removing the Pickup Roller

1) Put your hand through the machine's front; then, pick the tab [A] of the pickup roller [1], and pull it out.
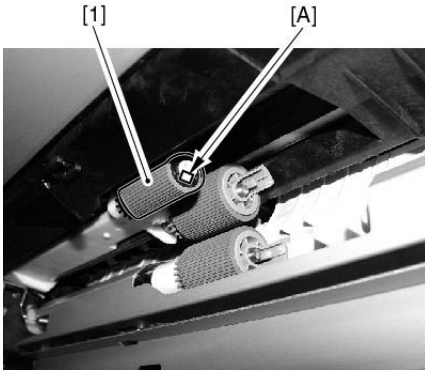
F-10-62

10.10.7 Feed Roller

10.10.7.1 Preparation for Removing the Feeding Roller

1) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1-1) Slide out the cassette.

10.10.7.2 Removing the Feeding Roller

1) Put your hand through the machine's front; then, pick the tab [A] of the feed roller, and pull it out.
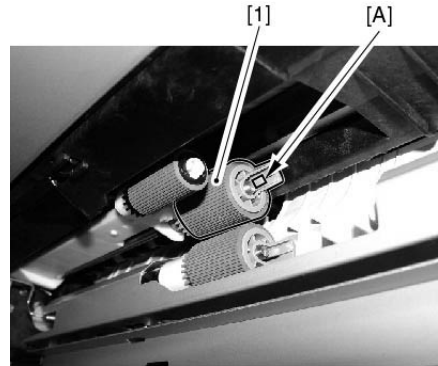
F-10-63

10.10.8 Separation Roller

10.10.8.1 Preparation for Removing the Separation Roller

1) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1-1) Slide out the cassette.

10.10.8.2 Removing the Separation Roller

1) Put your hand through the front of the machine; then, pick the tab [A] of the separation roller [1], and pull it out.
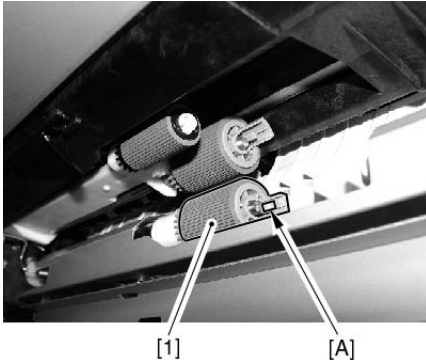
F-10-64

10.10.9 Cassette Pickup Motor

10.10.9.1 Preparation for Removing the Cassette Pickup Motor

1) Remove the rear fan cover.(page 12-25)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-25)Reference[Removing the Rear Upper Cover]
3) Remove the rear lower cover.(page 12-25)Reference[Removing the Rear Lower Cover]
4) Remove the IH power supply unit.(page 12-32)Reference[Removing the IH Power Supply Unit]
5) Remove the DC power supply unit.(page 12-32)Reference[Removing the DC Power Supply Unit]

10.10.9.2 Removing the Cassette Pickup Motor

1) Remove the cassette pickup motor mounting plate [3].
   -2 connectors [1]
   -4 screws [2]
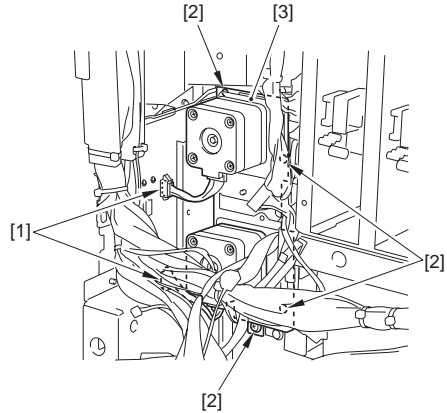
F-10-65

2) Remove the cassette pickup motor [2] together with its mounting plate.
   -4 screws [1]
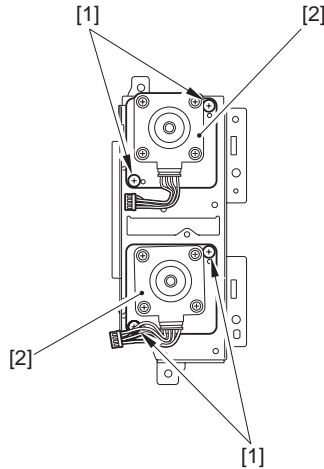
F-10-66

⚠ Å@**Points to Note When Mounting the Pickup Motor**
Be sure that the belt [2] is fitted on the gear [1] of the motor.
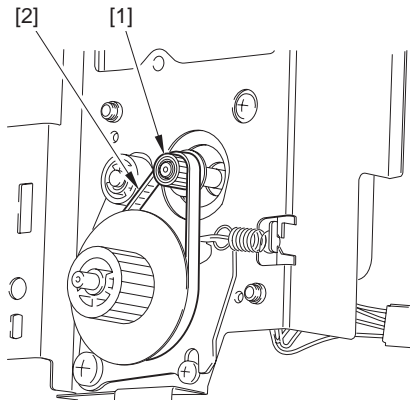
F-10-67
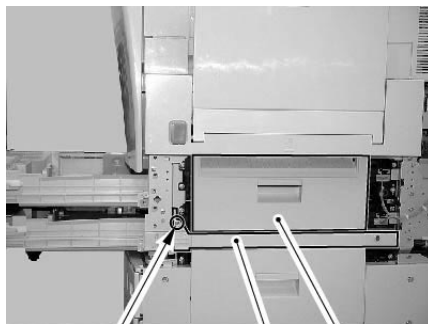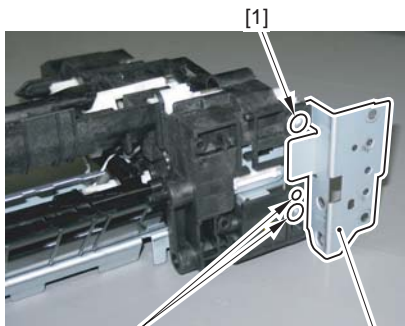
10.10.10 Cassette Retry Paper Sensor

10.10.10.1 Preparation for Removing the Cassette Retry Paper Sensor

1) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1-1) Slide out the cassette.
2) Remove the front right cover. Reference[Removing the Right Front Cover]
3) Remove the rear right cover. Reference[Removing of the Right Rear Cover]

4) Remove the pickup vertical path cover [3].
   - 1 screw [2] (remove the pickup vertical path lower cover [1])

F-10-68

5) Remove the pickup unit. Reference[Removing the Pickup Unit]
6) Remove the pick-up system sensor mounting plate.
6-1) Remove the bracket [2].
   - 2 screws [1] at the rear

F-10-69

6-2) Remove the sensor mounting plate [5].
   - connector [1]
   - screw [2]
   - cassette pickup solenoid [3]
   - 5 screws [4]

⚠ **Points to Note When Mounting the Sensor Mounting Plate**
Any of the gears can drop off. When attaching the sensor mounting plate, be sure that the pickup unit will not face downward.

[4]   [4] [2]   [1] [4]

[4]   [5]   [3]

F-10-70

10.10.10.2 Removing the Cassette Retry Paper Sensor

1) Remove the cassette retry paper sensor [2].
   - connector [1]

[1]   [2]
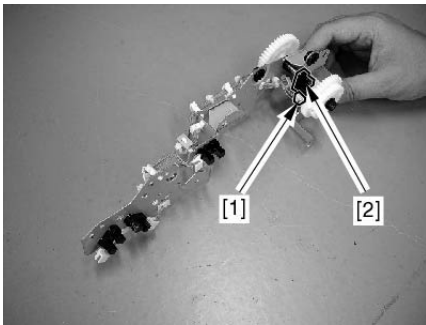
F-10-71

10.10.10.3 Points to Note When Mounting the Pickup System Sensor Mounting Plate

⚠ Points to Note When Mounting the Sensor Mounting Plate
Any of the gears can drop off. When attaching the sensor mounting plate, be sure that the pickup unit will not face downward.

1) Remove the E-ring and the gear [1].

[2]   [1]
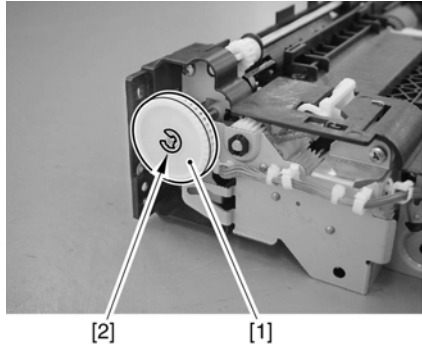
F-10-72

2) Attach the bushing [1] to the frame; then, attach the gear shaft [2].

[2]   [1]
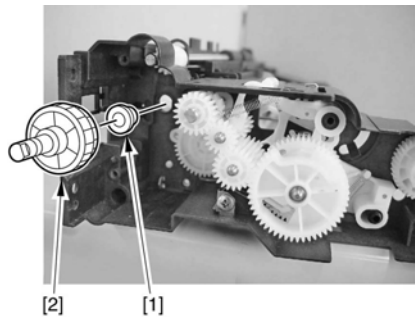
F-10-73

3) Fit the 6 locations [A] indicated in the figure firmly into the holes of the mounting plate; then, secure the sensor mounting plate [2] in place.
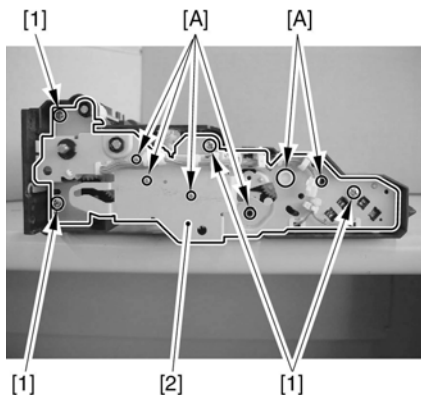
F-10-74

4) Attach the gear [1] and the E-ring [2].
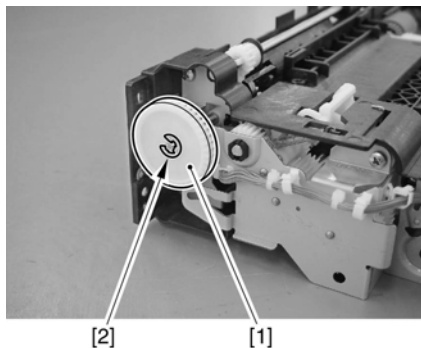
F-10-75

5) Turn the gears to see that the movement is smooth.

10.10.11 Cassette Paper Sensor

10.10.11.1 Preparation for Removing the Cassette Paper Sensor

1) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1-1) Slide out the cassette.
2) Remove the front right cover. **(page 12-22)**Reference[Removing the Right Front Cover]
3) Remove the rear right cover. **(page 12-22)**Reference[Removing of the Right Rear Cover]
4) Remove the pickup vertical path cover [3].
  - 1 screw [2] (remove the pickup vertical path lower cover [1])
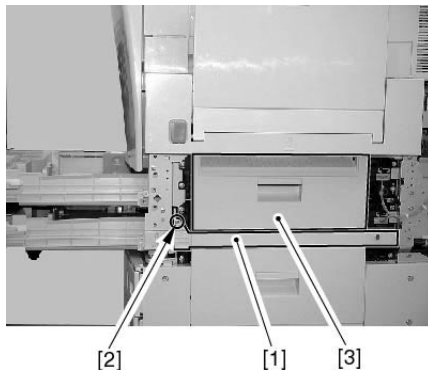
F-10-76

5) Remove the pickup unit. **(page 10-36)**Reference[Removing the Pickup Unit]

6) Remove the pick-up system sensor mounting plate.

6-1) Remove the bracket [2].
 - 2 screws [1] at the rear
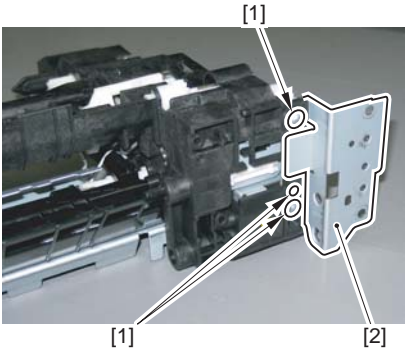
F-10-77

6-2) Remove the sensor mounting plate [5].
 - connector [1]
 - screw [2]
 - cassette pickup solenoid [3]
 - 5 screws [4]

⚠**Points to Note When Mounting the Sensor Mounting Plate**
Any of the gears can drop off. When attaching the sensor mounting plate, be sure that the pickup unit will not face downward.

F-10-78

10.10.11.2 Removing the Cassette Paper Sensor

1) Remove the cassette paper sensor [2].
 - connector [1]
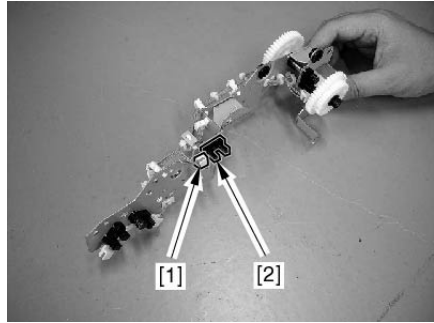
F-10-79

10.10.11.3 Points to Note When Mounting the Pickup System Sensor Mounting Plate

⚠**Points to Note When Mounting the Sensor Mounting Plate**
Any of the gears can drop off. When attaching the sensor mounting plate, be sure that the pickup unit will not face downward.

1) Remove the E-ring and the gear [1].
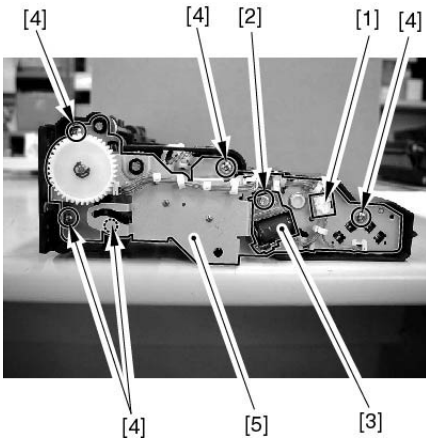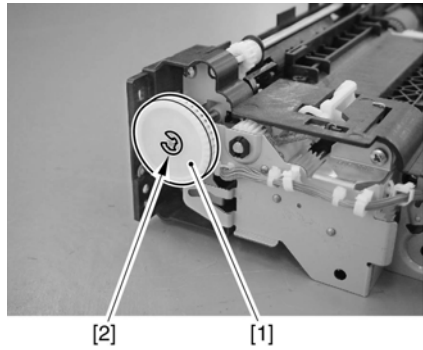
F-10-80

2) Attach the bushing [1] to the frame; then, attach the gear shaft [2].
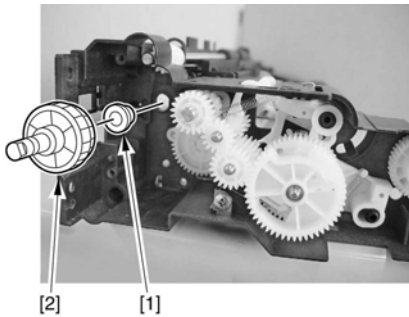
F-10-81

3) Fit the 6 locations [A] indicated in the figure firmly into the holes of the mounting plate; then, secure the sensor mounting plate [2] in place.
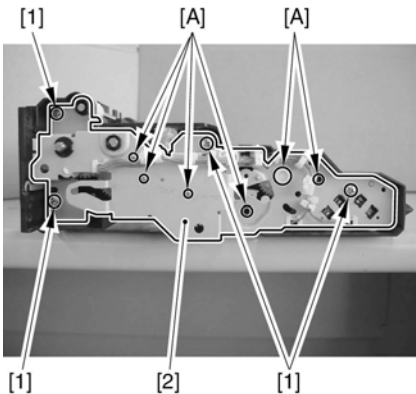
F-10-82

4) Attach the gear [1] and the E-ring [2].
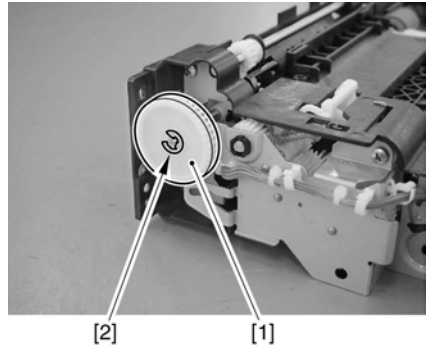
F-10-83

5) Turn the gears to see that the movement is smooth.

10.10.12 Cassette Paper Level Sensor (A/B)

10.10.12.1 Preparation for Removing the Cassette Paper Level Sensor (A/B)

1) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1-1) Slide out the cassette.
2) Remove the front right cover. (page 12-22)Reference[Removing the Right Front Cover]
3) Remove the rear right cover. (page 12-22)Reference[Removing of the Right Rear Cover]

4) Remove the pickup vertical path cover [3].
- 1 screw [2] (remove the pickup vertical path lower cover [1])

[2]   [1]   [3]

F-10-84

5) Remove the pickup unit. (page 10-36)Reference[Removing the Pickup Unit]
6) Remove the pick-up system sensor mounting plate.
6-1) Remove the bracket [2].
- 2 screws [1] at the rear

[1]

[1]   [2]

F-10-85

6-2) Remove the sensor mounting plate [5].
- connector [1]
- screw [2]
- cassette pickup solenoid [3]
- 5 screws [4]

⚠**Points to Note When Mounting the Sensor Mounting Plate**
Any of the gears can drop off. When attaching the sensor mounting plate, be sure that the pickup unit will not face downward.

[4]   [4]   [2]   [1] [4]

[4]   [5]   [3]

F-10-86

10.10.12.2 Removing the Cassette Paper Level Sensor (A/B)

1) Remove the cassette paper sensor (A/B) [2].
- connector [1]
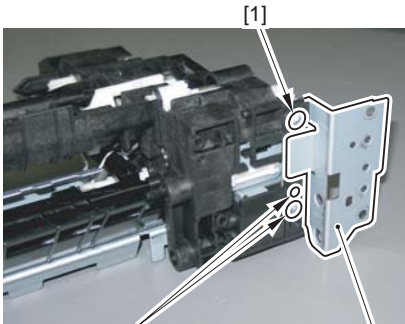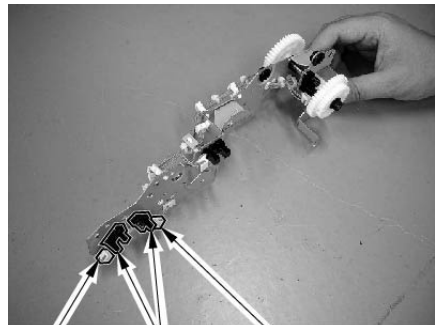
[1]   [2]   [1]

F-10-87

10.10.12.3 Points to Note When Mounting the Pickup System Sensor Mounting Plate

⚠**Points to Note When Mounting the Sensor Mounting Plate**
Any of the gears can drop off. When attaching the sensor mounting plate, be sure that the pickup unit will not face downward.

1) Remove the E-ring and the gear [1].

F-10-88

2) Attach the bushing [1] to the frame; then, attach the gear shaft [2].
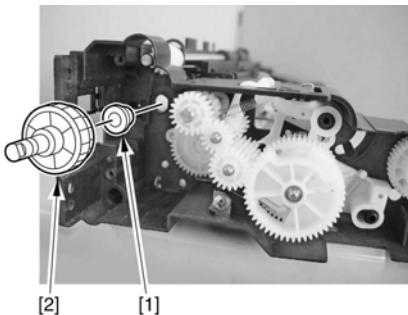
F-10-89

3) Fit the 6 locations [A] indicated in the figure firmly into the holes of the mounting plate; then, secure the sensor mounting plate [2] in place.
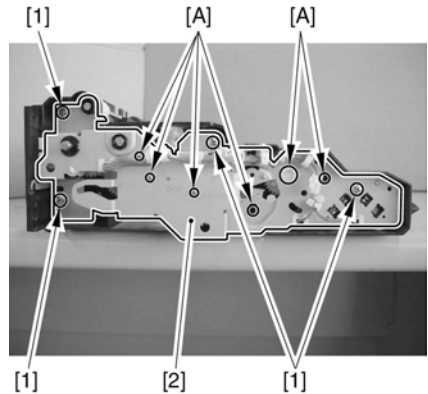
F-10-90

4) Attach the gear [1] and the E-ring [2].
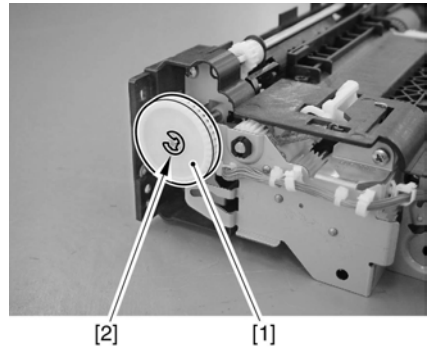
F-10-91

5) Turn the gears to see that the movement is smooth.

10.10.13 Slide Resistor

10.10.13.1 Preparation for Removing the Slide Resistor

1) Remove the manual feed unit.(page 10-52)Reference[Removing the Manual Feed Unit]
2) Removing the manual feed tray unit.(page 10-52)Reference[Removing the Manual Feed Tray Unit]
3) Remove the manual feed tray upper cover/lower cover.
3-1) Spread the side guide [1] of the manual feed tray unit, and remove the upper cover [2].
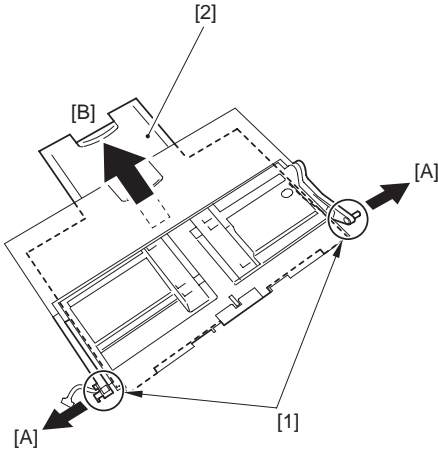
F-10-92

MEMO:
When attaching the upper cover [1] and the lower cover [2], match the markings [A] found on the side, and move them into place.
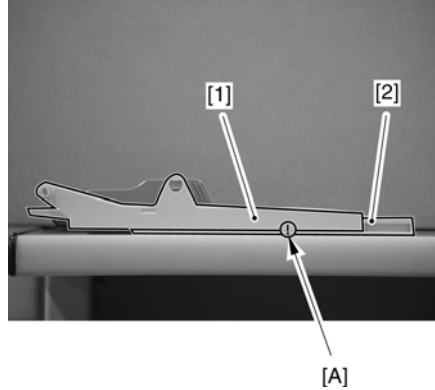
F-10-93

10.10.13.2 Removing the Slide Resistor

⚠**Points to Note Removing the Slide Resistor**
When removing the slide resistor, do not apply excess force when spreading the claw of the lower cover; otherwise, the claw can break.
When attaching the slide resistor, take care not to touch the connector [1] at the edge of the slide resistor. Try to match the black protrusion [A] behind the slide resistor against the hole [A] in the tray.
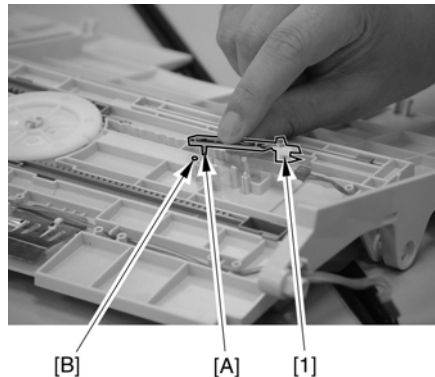
F-10-94

1) Spread the claw [A], and detach the slide resistor [2].
   - connector [1] on the lower cover side

F-10-95
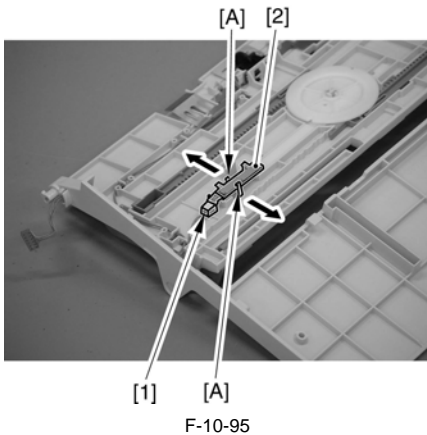
10.10.14 Cassette Pickup Solenoid

10.10.14.1 Preparation for Removing the Cassette Pickup Solenoid

1) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1-1) Slide out the cassette.
2) Remove the front right cover. (page 12-22)Reference[Removing the Right Front Cover]
3) Remove the rear right cover. (page 12-22)Reference[Removing of the Right Rear Cover]

4) Remove the pickup vertical path cover [3].
   - 1 screw [2] (remove the pickup vertical path lower cover [1])

F-10-96
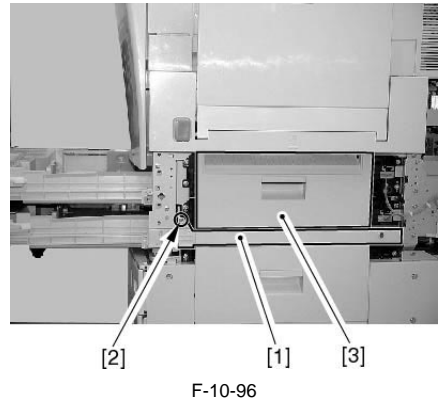
5) Remove the pickup unit. (page 10-36)Reference[Removing the Pickup Unit]

10.10.14.2 Removing the Cassette Pickup Solenoid

1) Remove the cassette pickup solenoid [3].
   - connector [1]
   - 2 screws [2]

F-10-97
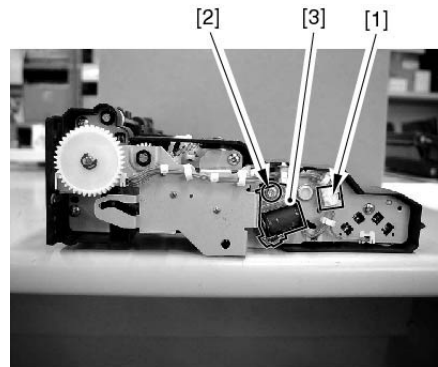
10.10.15 Manual Feed Tray Unit

10.10.15.1 Preparation for Removing the Manual Feed Tray Unit

1) Remove the manual feed unit. **(page 10-52)**Reference[Removing the Manual Feed Unit]
1-2) Remove the manual feed unit cover. **(page 12-28)**Reference[Removing the Manual Feed Unit Cover]

10.10.15.2 Removing the Manual Feed Tray Unit

1) Remove the base [2].
   - 3 screws [1]
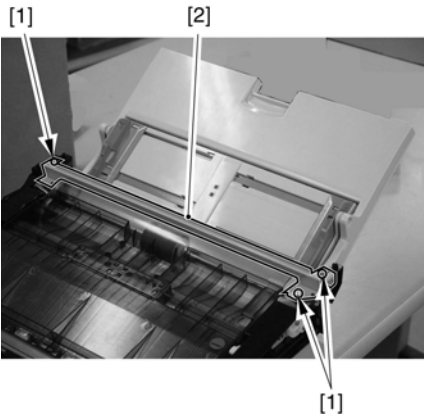
F-10-98

2) Remove the motor cover [2].
   - 1 screw [1]
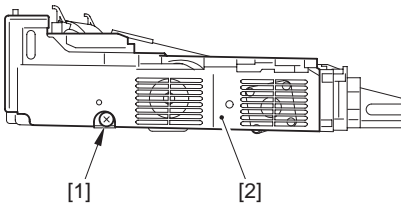
F-10-99

3) While opening the face plate [2], shift the manual feed tray [3] 90 deg or more to detach it upward.
   - 1 connector [1] at the rear

When detaching the face plate, take care not to lose the spring attached to the front.
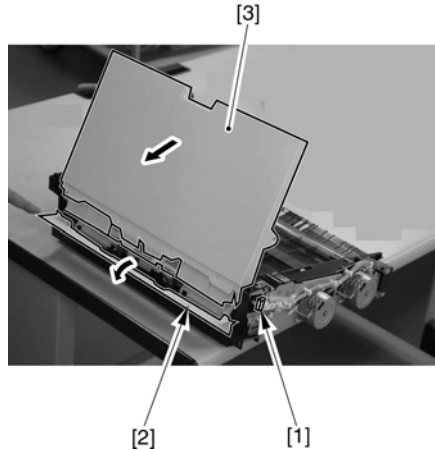
F-10-100

10.10.16 Manual Feed Unit

10.10.16.1 Removing the Manual Feed Unit

1) Press the release button [1] on the machine's right side to slide out the manual feed unit [2].
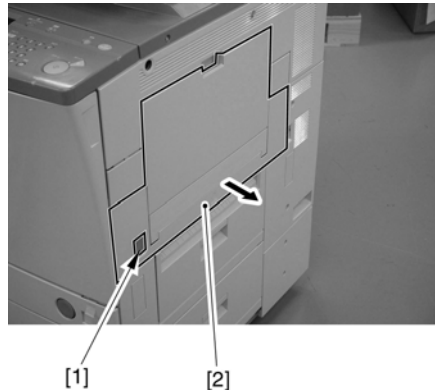
F-10-101

2) Remove the manual feed unit [3].
- screw [1]
- stopper plate [2]

F-10-102

10.10.17 Manual Feed Roller

10.10.17.1 Preparation for Removing the Manual Feed Roller

1) Remove the manual feed unit. Reference[Removing the Manual Feed Unit]
2) Remove the manual feed unit cover. Reference[Removing the Manual Feed Unit Cover]

10.10.17.2 Removing the Manual Feed Roller

1) Remove the mounting plate [2].
- 3 screws [1]
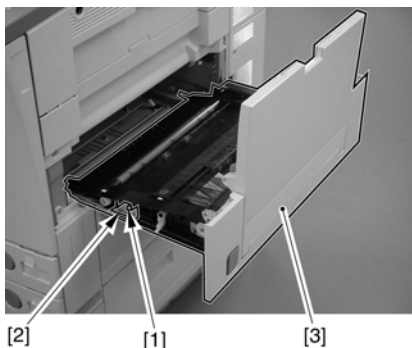
F-10-103

2) Remove the bushing [2].
- gear [1] at the front
(For both gear and the bushing, free the claw fitted in the groove of the roller for detachment.)
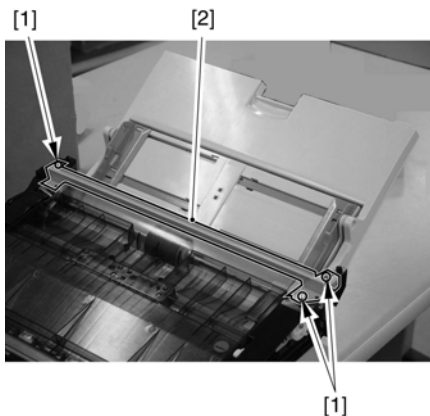
F-10-104

3) Push in the bearing [1] found at the rear to detach.
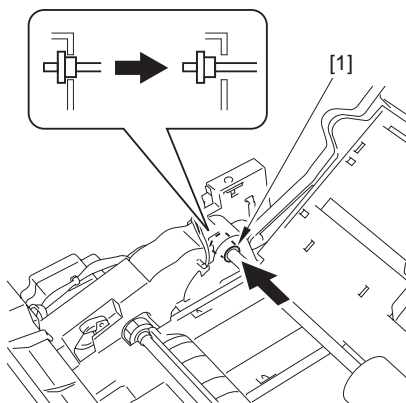
F-10-105

4) Pull out the manual feed roller [2].
   - resin clamp [1]

⚠

When attaching the manual feed roller, be sure that the groove of the parallel pin is toward the rear.
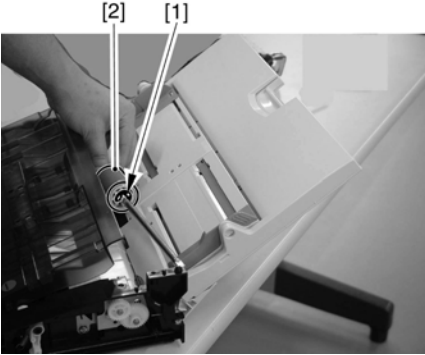
F-10-106

⚠

When attaching the bushing and the gear at the front, check to be sure that the claw is hooked on the groove of the roller.
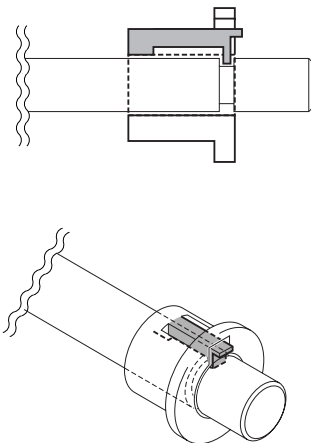
F-10-107

10.10.18 Manual Feed Separation Roller

10.10.18.1 Preparation for Removing the Manual Feed Separation Roller

1) Remove the manual feed unit. **(page 10-52)**Reference[Removing the Manual Feed Unit]
2) Remove the manual feed unit cover. **(page 12-28)**Reference[Removing the Manual Feed Unit Cover]
3) Remove the motor cover.
3-1) Remove the motor cover [2] at the rear.
   - 1 screw [1]
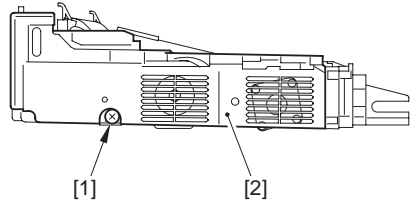
F-10-108

4) Remove the manual feed roller. **(page 10-53)**Reference[Removing the Manual Feed Roller]
5) Remove the manual feed tray unit. **(page 10-52)**Reference[Removing the Manual Feed Tray Unit]

10.10.18.2 Removing the Manual Feed Separation Roller

1) Remove the face plate [1].

⚠

Take care not to lose the spring found at the front when removing the face plate.
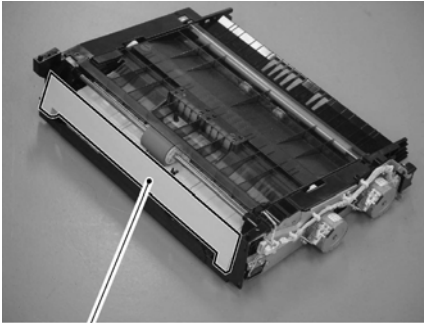
[1]

F-10-109

⚠

When attaching the face plate, be sure that the spring [2] fits into the hole [1] found on the front side of the arm.
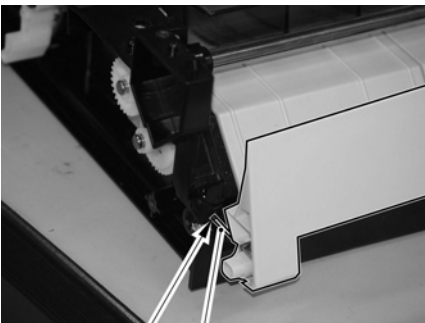
[1]   [2]

F-10-110

2) Remove the rear guide [1] and the middle guide [2]. (Free the snap-in claw.)
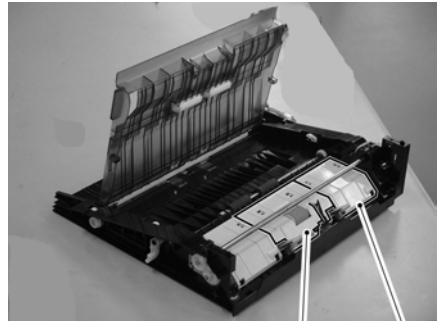
[2]   [1]

F-10-111

3) Pick the tab [A] of the manual feed separation roller [2], and pull it out in the direction of the arrow.
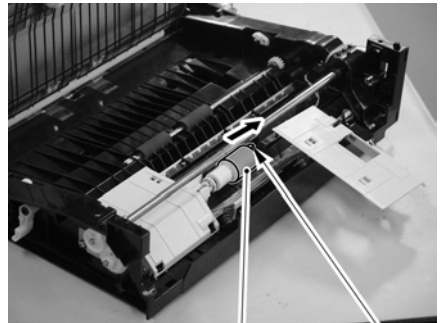
[1]   [A]

F-10-112

10.10.19 Manual Feed Last Paper Sensor

10.10.19.1 Preparation for Removing the Manual Feed Last Paper Sensor

1) Remove the manual feed unit. (page 10-52)Reference[Removing the Manual Feed Unit]
2) Remove the manual feed unit cover. (page 12-28)Reference[Removing the Manual Feed Unit Cover]
3) Removing the manual feed tray unit. (page 10-52)Reference[Removing the Manual Feed Tray Unit]
4) Remove the manual feed tray upper cover/lower cover.
4-1) Spread the side guide [1] of the manual feed tray unit, and separate it into the upper cover [2] and the lower cover [3] (for detachment).

F-10-113

MEMO:
When attaching the upper cover [1] and the lower cover [2], match the markings [A] found on the side, and move them into place.
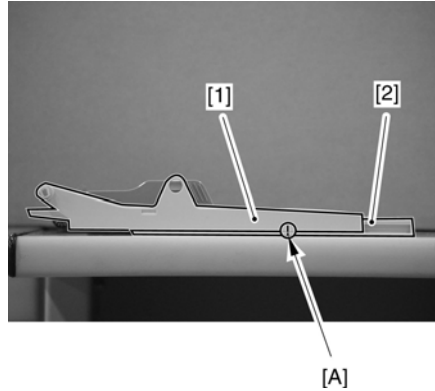
F-10-114

10.10.19.2 Removing the Manual Feed Last Paper Sensor

1) Rremove the detecting roll [1].
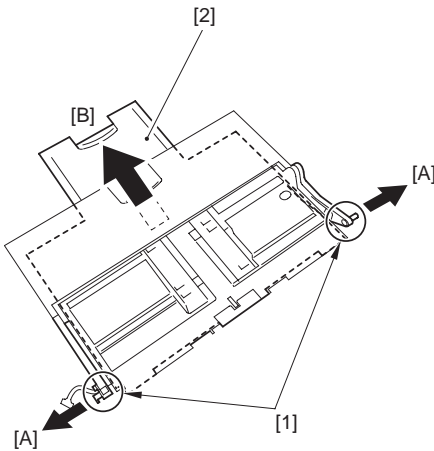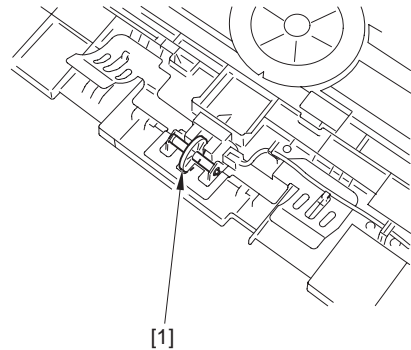
F-10-115

2) Remove the manual feed last paper sensor [2].
   - connector [1]
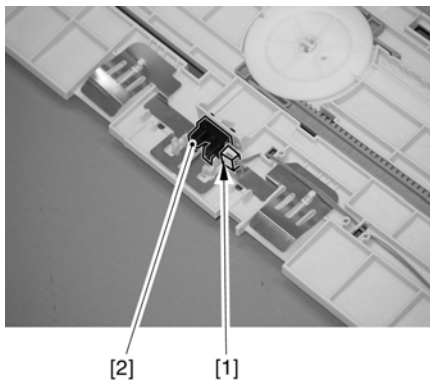
F-10-116

10.10.20 Manual Feed Sensor

10.10.20.1 Preparation for Removing the Manual Feed sensor

1) Remove the manual feed unit. (page 10-52)Reference[Removing the Manual Feed Unit]
2) Remove the manual feed unit cover. (page 12-28)Reference[Removing the Manual Feed Unit Cover]
3) Remove the manual feed roller. (page 10-53)Reference[Removing the Manual Feed Roller]
4) Remove the motor cover.
4-1) Remove the motor cover [2] at the rear.
  - screw [1]
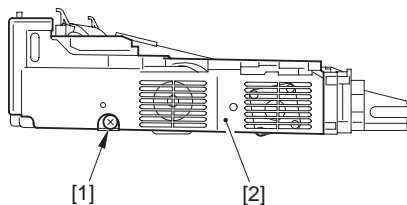
F-10-117

5) Remove the manual feeder tray unit.(page 10-52)Reference[Removing the Manual Feed Tray Unit]

10.10.20.2 Removing the Manual Feed sensor

1) Remove the face plate [1].
(Referring to procedure 10.10.18)
2) Remove the rear guide [1] and the middle guide [2]. (Free the snap-in claw.)
(Referring to procedure 10.10.18)
3) Remove the sensor flag [2] attached to the middle guide [1].
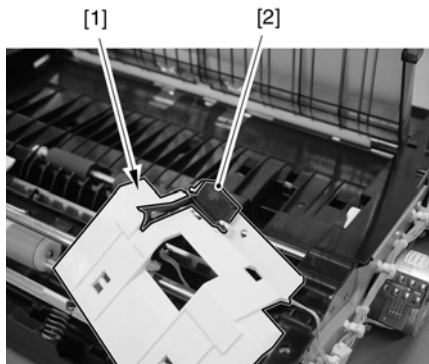
F-10-118

4) Remove the manual feed paper sensor [2].
  - connector [1] from behind the middle guide
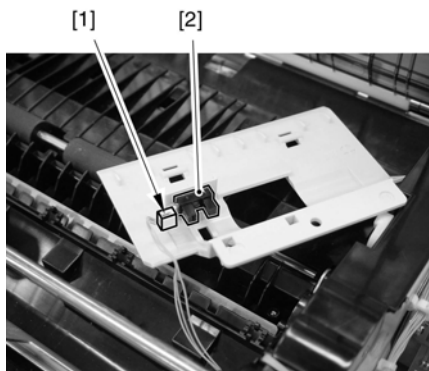
F-10-119

10.10.21 Transparency Sensor (Front/Rear)

10.10.21.1 Preparation for Removing the Transparency Sensor (front/rear)

1) Remove the manual feed unit. (page 10-52)Reference[Removing the Manual Feed Unit]
2) Remove the transparency sensor mounting Plate.
2-1) Remove the sensor base [3] found at the bottom.
   - 3 connectors [1]
   - 2 screws [2]

[2]   [3]   [1]   [2]
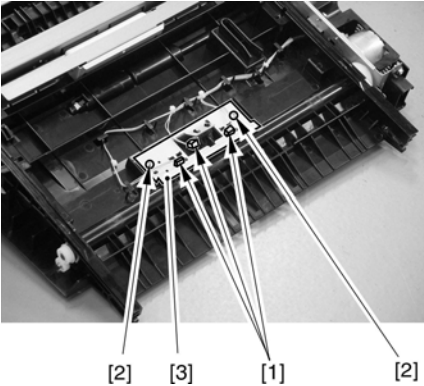
F-10-120

10.10.21.2 Removing the Transparency Sensor (front/rear)

1) While taking care not to touch the light-emitting face, remove the transparency sensor [1].

[2]   [1]
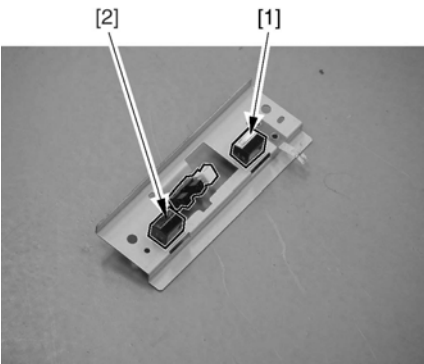
F-10-121

10.10.22 Manual Feed Pickup Solenoid

10.10.22.1 Preparation for Removing the Manual Feed Pickup Solenoid

1) Remove the manual feed unit. (page 10-52)Reference[Removing the Manual Feed Unit]
2) Remove the manual feed unit cover. (page 12-28)Reference[Removing the Manual Feed Unit Cover]
3) Remove the motor cover.
3-1) Remove the motor cover [2] at the rear.
   - screw [1]

[1]   [2]
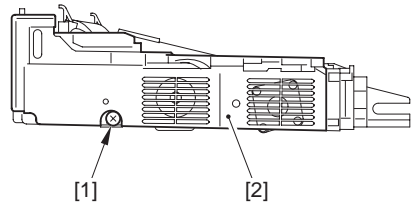
F-10-122

10.10.22.2 Removing the Manual Feed Pickup Solenoid

1) Remove the manual feed pickup solenoid [3].
   - connector [1]
   - screw [2]

[1]
[2]
[3]
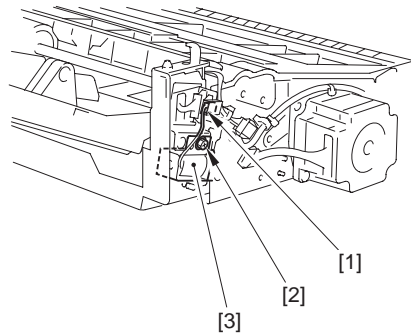
F-10-123

⚠ Points to Note When Attaching the Manual Feed Pickup Solenoid
When attaching the solenoid [1], be sure to hook the flapper [A] on the claw [B] of the gear [2].

[A]

[1]   [B]   [2]
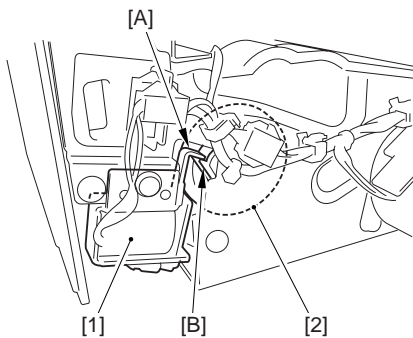
F-10-124

10.10.23 Registration Motor

10.10.23.1 Preparation for Removing the Registration Motor

1) Remove the manual feed unit. (page 10-52)Reference[Removing the Manual Feed Unit]
2) Remove the manual feed unit cover. (page 12-28)Reference[Removing the Manual Feed Unit Cover]
3) Remove the motor cover.
3-1) Remove the motor cover [2] at the rear.
   - screw [1]

[1]   [2]
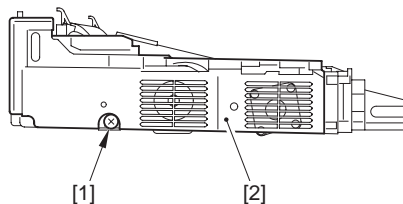
F-10-125

10.10.23.2 Removing the Registration Motor

1) Remove the registration motor [3].
   - connector [1]
   - 2 screws [2]

[2]

[1]   [3]   [2]
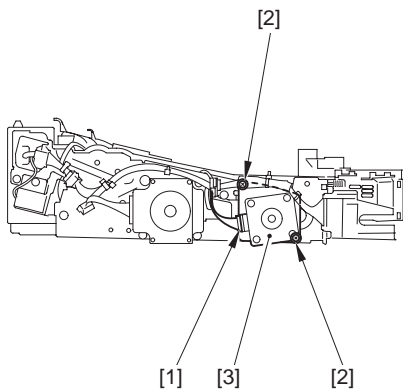
F-10-126

⚠

When mounting the registration motor, be sure that the belt is fitted to the gear of the motor shaft.

10.10.24 Pre-Registration Motor

10.10.24.1 Preparation for Removing the Pre-Registration Motor

1) Remove the manual feed unit. (page 10-52)Reference[Removing the Manual Feed Unit]
2) Remove the manual feed unit cover. (page 12-28)Reference[Removing the Manual Feed Unit Cover]
3) Remove the motor cover.
3-1) Remove the motor cover [2] at the rear.
   - screw [1]
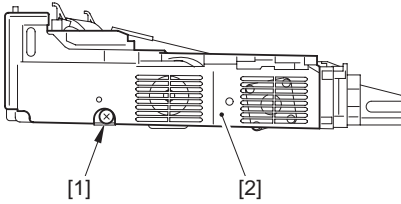
F-10-127

10.10.24.2 Removing the Pre-Registration Motor

1) Remove the pre-registration motor [3].
   - connector [1]
   - 2 screws [2]

F-10-128

⚠ When mounting the registration motor, be sure that the belt is fitted to the gear of the motor shaft.
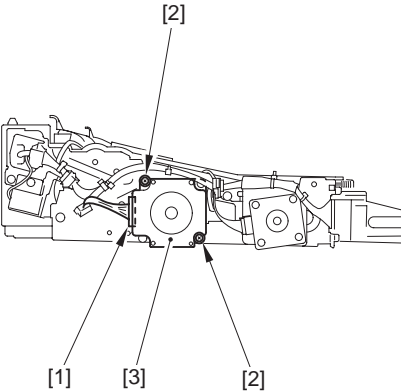
10.10.25 Horizontal Registration Motor

10.10.25.1 Preparatiuon for Removing the Horizontal Registration Motor

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]
3) Lift the duplexing open/close guide [3] in the direction of [A] and shift it in the direction of [B]. Then, remove it.
   - 1 connector [2] (Open sheet [1].)

F-10-129

4) Remove the fixing/feeder assembly back sheet.
4-1) Stand it so that the fixing feeder unit cover is at the bottom.

⚠
- When placing the fixing feeder unit upright, be sure to use paper to prevent dirt from collecting.
- If you forgot to use paper, make a double-sided test copy before ending the work.
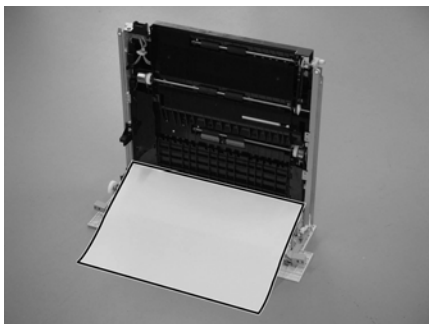
F-10-130

4-2) Remove the sheet [1] from behind the fixing feeder assembly.
   - 6 snap-ons [A]
   - 3 hooks [B]
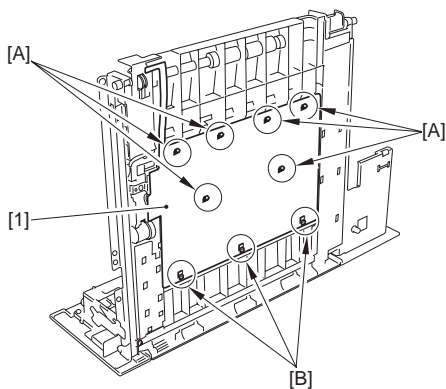
F-10-131

5) Remove the horizontal registration motor support plate [3].
   - connector [1]
   - 2 screws [2]
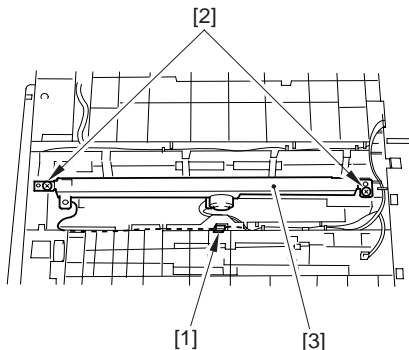
F-10-132

⚠
- When mounting to the horizontal registration motor support plate [1], be sure that the area [A] of the horizontal registration motor support plate is in firm contact with the ground spring [2] found at the bottom of the guide plate.
- After replacement, check to make sure that the sensor flag moves smoothly.
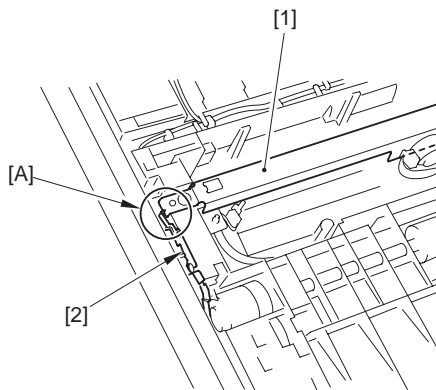
F-10-133

10.10.25.2 Removing the Horizontal Registration Motor

1) Remove the horizontal registration motor [3].
   - connector [1]
   - 2 screws [2]

F-10-134

10.10.26 Registration Sensor

10.10.26.1 Preparation for Removing the Registration Sensor

1) Remove the manual feed unit. (page 10-52)Reference[Removing the Manual Feed Unit]
2) Remove the transparency sensor mounting Plate.
2-1) Remove the sensor base [3] found at the bottom.
   - 3 connectors [1]
   - 2 screws [2]
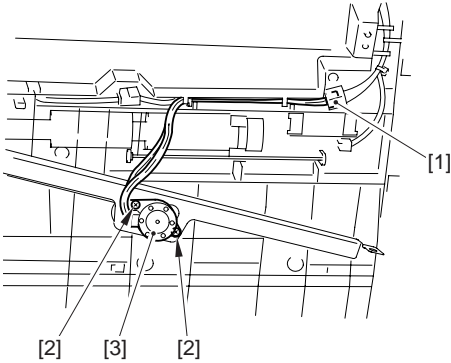
F-10-135

10.10.26.2 Removing the Registration Sensor

1) While taking care not to touch the light-emitting face of the transparency sensor [1], remove the registration sensor [2].
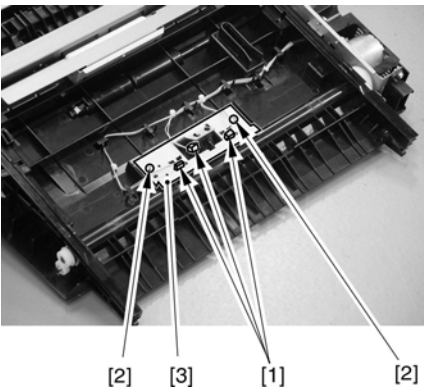
F-10-136

10.10.27 Fixing/Feeder Unit

10.10.27.1 Preparation for Removing the Fixing/Feeder Unit

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]

10.10.27.2 Removing the Fixing/Feeder Unit

1) Remove the fixing/feeder unit [2].
   - 2 stoppers [1]
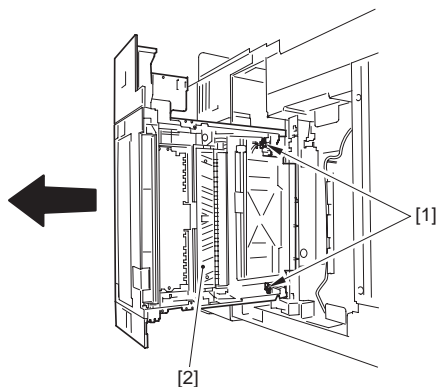
F-10-137

10.10.28 Pickup Vertical Path Roller

10.10.28.1 Preparation for Removing the Vertical Path Roller

1) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1-1) Slide out the cassette.
2) Remove the front right cover. (page 12-22)Reference[Removing the Right Front Cover]
3) Remove the rear right cover. (page 12-22)Reference[Removing of the Right Rear Cover]

4) Remove the pickup vertical path cover [3].
   - 1 screw [2] (remove the pickup vertical path lower cover [1])
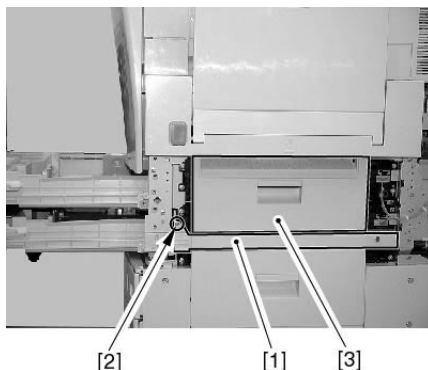
F-10-138

5) Remove the pickup unit. (page 10-36)Reference[Removing the Pickup Unit]
6) Remove the pick-up system sensor mounting plate.
6-1) Remove the bracket [2].
   - 3 screws [1] at the rear
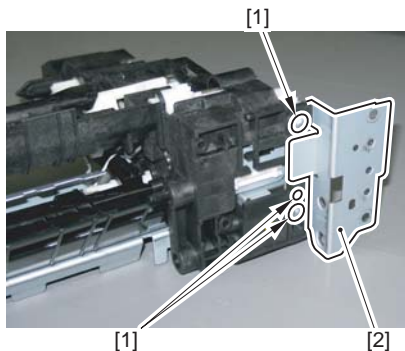
F-10-139

6-2) Remove the sensor mounting plate [5].
   - connector [1]
   - screw [2]
   - cassette pickup solenoid [3]
   - 5 screws [4]

⚠**Points to Note When Mounting the Sensor Mounting Plate**
Any of the gears can drop off. When attaching the sensor mounting plate, be sure that the pickup unit will not face downward.
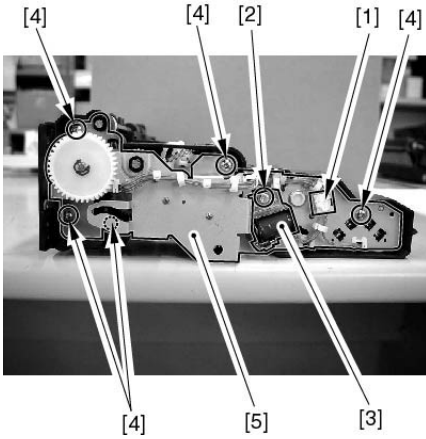
F-10-140

10.10.28.2 Removing the Vertical Path Roller

1) Free the claw [A] of the gear [1] at the rear, and remove the gear and the bushing [2].
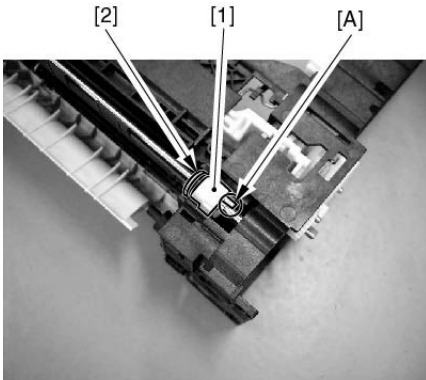
F-10-141

2) Free the claw [A] of the bushing [1] at the front; move the vertical path roller [2] to the rear and then pull it upward to remove.
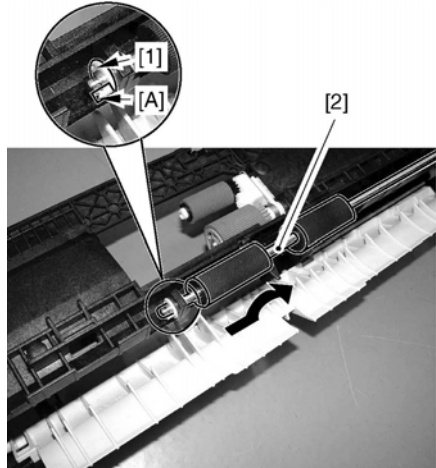
F-10-142

10.10.28.3 Points to Note When Mounting the Pickup System Sensor Mounting Plate

Points to Note When Mounting the Sensor Mounting Plate
Any of the gears can drop off. When attaching the sensor mounting plate, be sure that the pickup unit will not face downward.

1) Remove the E-ring and the gear [1].
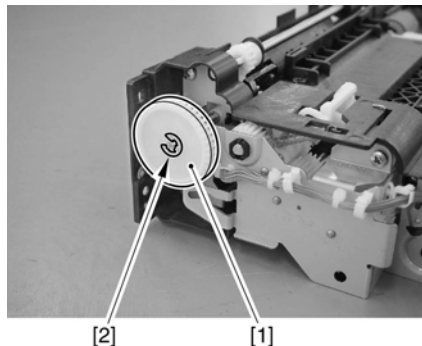
F-10-143

2) Attach the bushing [1] to the frame; then, attach the gear shaft [2].
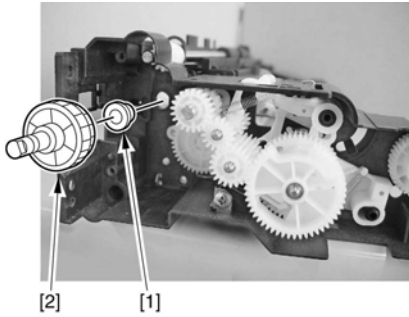
F-10-144

3) Fit the 6 locations [A] indicated in the figure firmly into the holes of the mounting plate; then, secure the sensor mounting plate [2] in place.
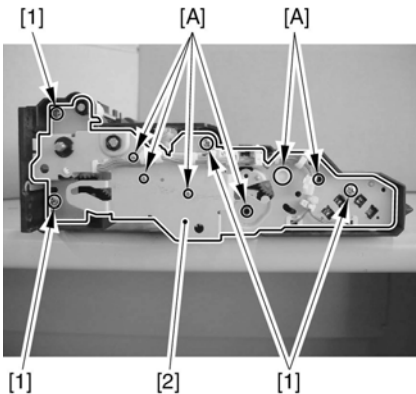
F-10-145

4) Attach the gear [1] and the E-ring [2].
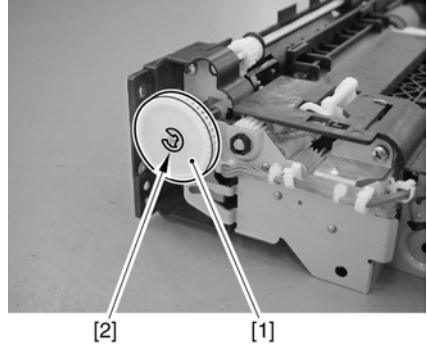
F-10-146

5) Turn the gears to see that the movement is smooth.

10.10.29 Inside Delivery Roller

10.10.29.1 Preparation for Removing the Inside Delivery Roller

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]

10.10.29.2 Removing the Inside Delivery Roller

1) Open the fixing feeder unit cover.

[1]
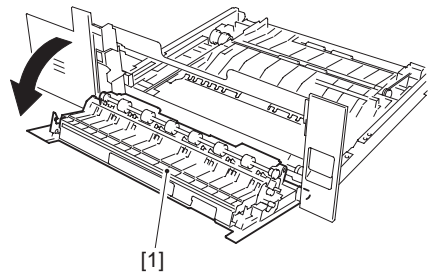
F-10-147

2) Remove the E-ring[1] and the bushing [2] at the front; then, remove the gear [3] and the bushing [4] at the rear.
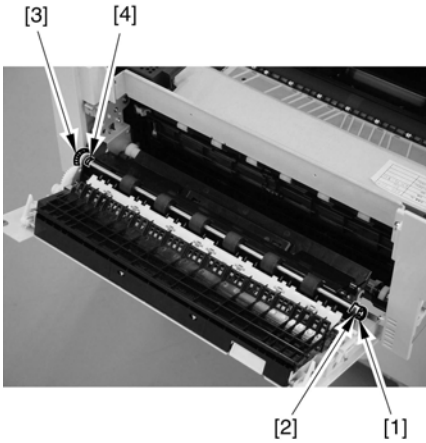
F-10-148

3) Free the internal delivery roller [1] from the cut-off of the frame at the front; then, remove it.
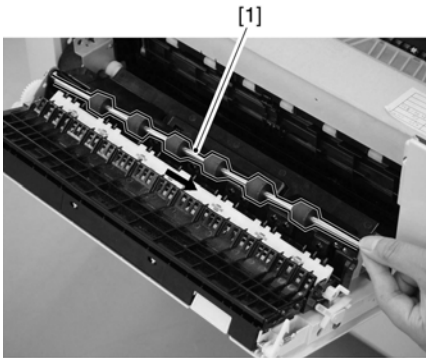
F-10-149

10.10.30 Fixing/Feeder Unit Open/ Closed Sensor

10.10.30.1 Preparation for Removing the Fixing/Feeder Unit Open/Closed Sensor

1) Remove the upper left cover. (page 12-23)Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
   - 2 screws [1]
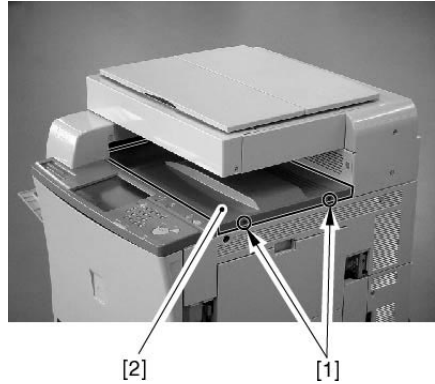
F-10-150

3) Remove the delivery vertical path unit (New). (page 10-93)Reference[Removing the Delivery Vertical Path Unit]
4) Remove the fixing/feeder unit open/closed sensor mounting plate.

⚠

Before removing the fixing/feeder unit, be sure to mark its position using a scriber.
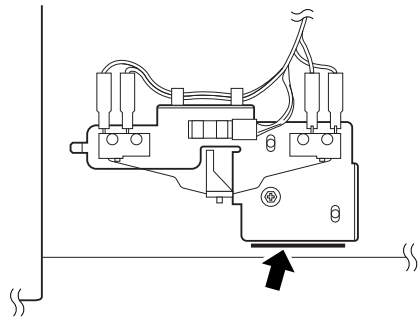
F-10-151

4-1) Remove the fixing/feeder unit open/closed sensor mounting plate [4].
   - 1 connector [1]
   - 1 screw [3]
   - 4 terminals [2]
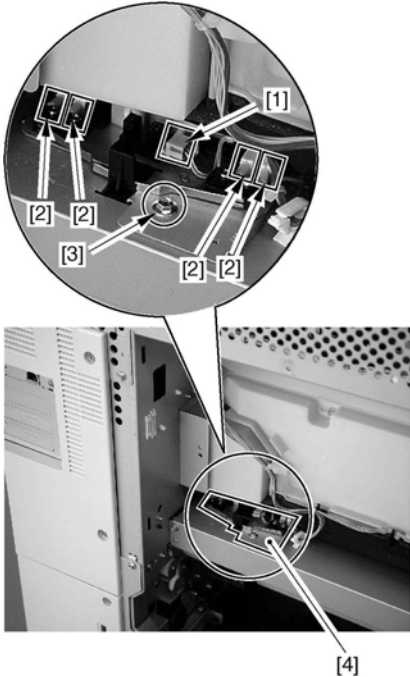
F-10-152

10.10.30.2 Removing the Fixing/Feeder Unit Open/Closed Sensor

1) Remove the fixing/feeder open/closed sensor [1].
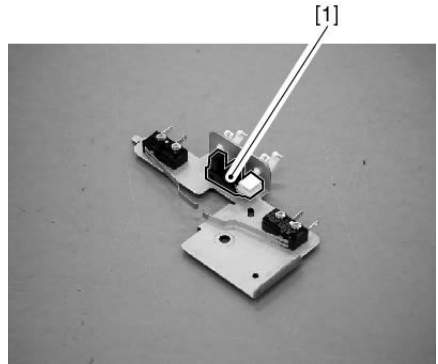
F-10-153

10.10.30.3 Preparation for Removing the Fixing Feeding Unit Open/Closed Sensor 2

1) Remove the waste toner container.
1-1) Open the front cover, and turn the intermediate transfer unit release lever [1] to disengage.
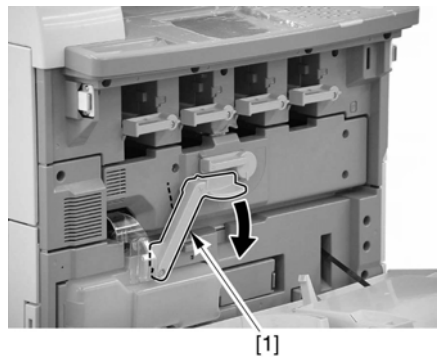
F-10-154

1-2) Remove the waste toner container [1].
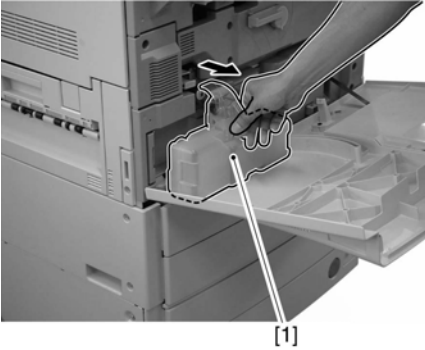
F-10-155

2) Remove the front cover. **(page 12-22)**Reference[Removing the Front Cover]
3) Remove the intermediate transfer unit releasing lever [2].
   - 1 screw [1]
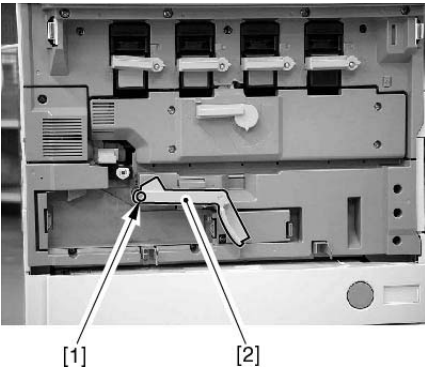
F-10-156

4) Remove the cleaner fan cover [2].
   - 1 screw [1]
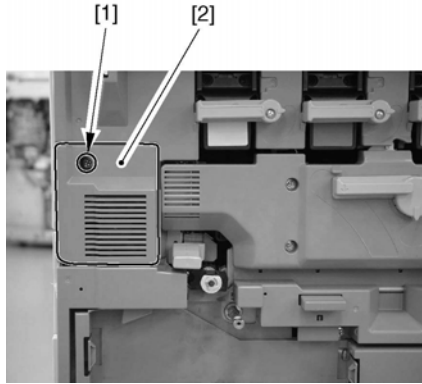
F-10-157

5) Remove the inside cover (lower) [3].
   - 1 connector [1]
   - 5 screws [2]
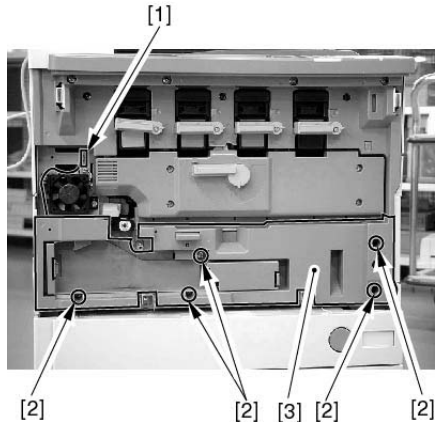
F-10-158

10.10.30.4 Removing the Fixing Feeding Unit Open/Closed Sensor 2

1) Remove the fixing feeding unit open/closed sensor 2 mounting plate [4].
   - 1 edge saddle [1]
   - 1 connector [2]
   - 2 screws [3]
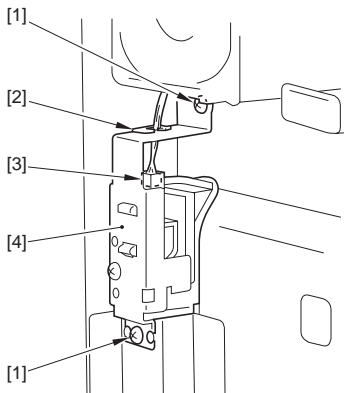
F-10-159

⚠ **Points to Note When Removing the Sensor Cover**
When removing the sensor cover, be sure to take care so that the sensor flag and the spring found on the inside the sensor cover will not snap out.

2) Remove the sensor cover [2].
   - 1 screw [1]
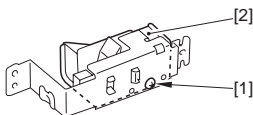
F-10-160

3) Remove the fixing feeding unit open/close sensor 2 [1].
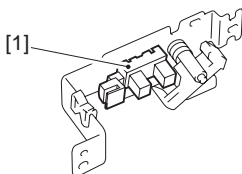
F-10-161

10.10.31 Fixing Arching Sensor

10.10.31.1 Preparation for Removing the Fixing Arching Sensor

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]

10.10.31.2 Removing the Fixing Aching Sensor

1) Lift the secondary transfer unit [1], and remove the fixing arching sensor mounting plate [4].
   -Å@1 connector [1]
   -Å@1 screw [2]
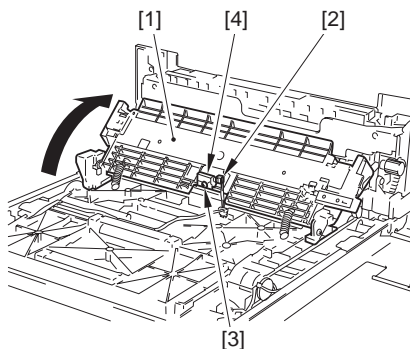
F-10-162

2) Remove the Fixing Arching Sensor.
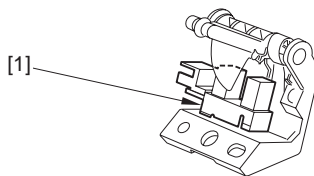
F-10-163

10.10.32 Pickup Vertical Path Cover Open/Closed Sensor

10.10.32.1 Preparation for Removing the Pickup Vertical Path Cover Open/Closed Sensor

1) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

1-1) Slide out the cassette.
2) Remove the front right cover. (page 12-22)Reference[Removing the Right Front Cover]
3) Remove the rear right cover. (page 12-22)Reference[Removing of the Right Rear Cover]
4) Remove the pickup vertical path cover [3].
   - 1 screw [2] (remove the pickup vertical path lower cover [1])
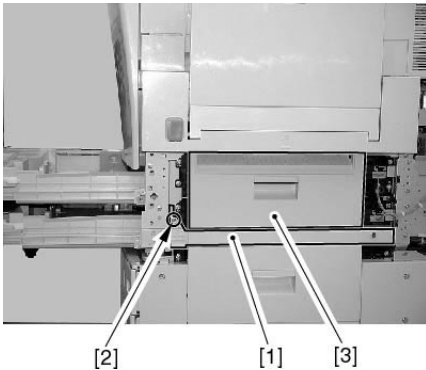
F-10-164

5) Remove the pickup unit [3]. (page 10-36)Reference[Removing the Pickup Unit]

10.10.32.2 Removing the Pickup Vertical Path Cover Open/Closed Sensor

1) Remove the sensor mounting plate [3].
   - connector [1]
   - screw [2]
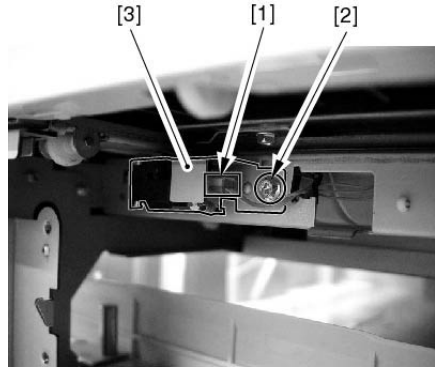
F-10-165

2) Remove the sensor flag [2].
   - spring [1]
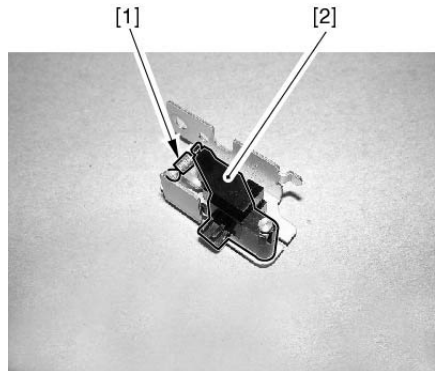
F-10-166

3) Remove the pickup vertical path cover open/
closed sensor [1].
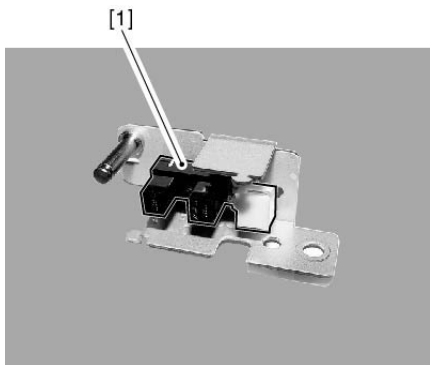
[1]
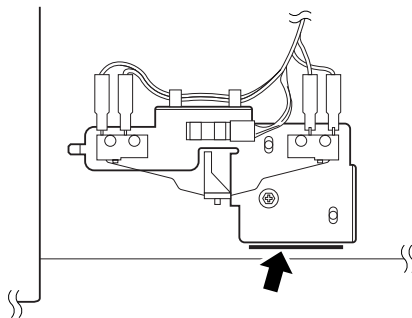
F-10-167

10.10.33 Fixing/Feeder Unit Open/
Closed Detecting Switch

10.10.33.1 Preparation for Removing the
Fixing/Feeder Unit Open/Closed
Detecting Switch

1) Remove the upper left cover. (page 12-
23)Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
   - 2 screws [1]

[2]   [1]

F-10-168

3) Remove the delivery vertical path unit (New).
(page 10-93)Reference[Removing the Delivery
Vertical Path Unit]
4) Remove the fixing/feeder unit open/closed sensor
mounting plate.

⚠

Before removing the fixing/feeder unit, be sure to
mark its position using a scriber.

F-10-169

4-1) Remove the fixing/feeder unit open/closed
sensor mounting plate [4].
   - 1 connector [1]
   - 1 screw [3]
   - 4 terminals [2]

[1]

[2] [2]

[3]

[2] [2]

[4]
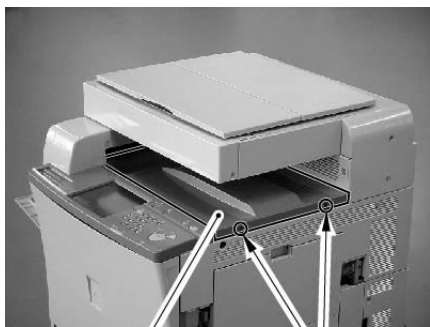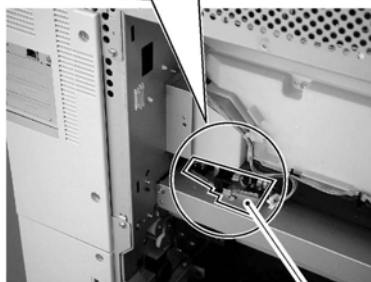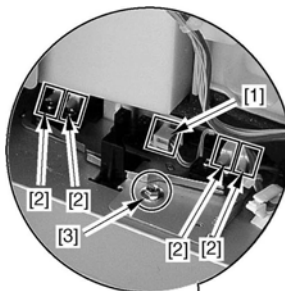
F-10-170

10.10.33.2 Removing the Fixing/Feeder Unit Open/Closed Detecting Switch

MEMO:
The fixing/feeder unit open/closed switches 1 and 2 may be removed in the same way.

1) Remove the fixing/feeder open/closed sensor [2].
   - 2 screws [1]
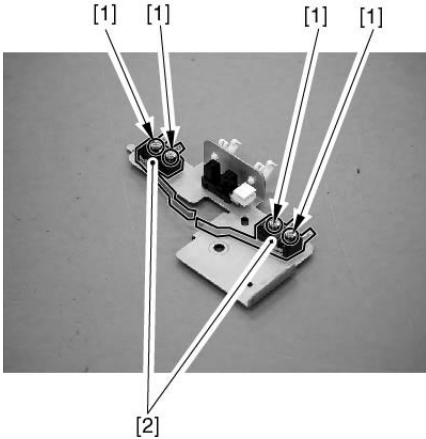
F-10-171

10.10.34 Drawer Connector (manual feed unit)

10.10.34.1 Preparation for Removing the Disconnecting the Drawer Connector (manual feed unit)

1) Remove the manual feed unit. <u>(page 10-52)</u>Reference[Removing the Manual Feed Unit]

10.10.34.2 Removing the Disconnecting the Drawer Connector (manual feed unit)

1) Slide out the drawer connector [2].
   - 2 screws [1]
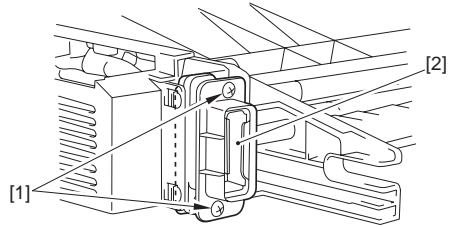
F-10-172

2) Remove the drawer connector [2].
   - 2 connectors [1] from behind
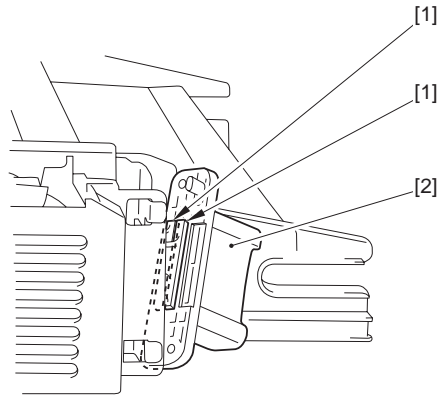
F-10-173

10.10.35 Drawer Connector (fixing/feeder unit)

10.10.35.1 Preparation for Removing the Drawer Connector (fixing feeder unit)

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.<u>(page 11-38)</u>Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.<u>(page 10-63)</u>Reference[Removing the Fixing/Feeder Unit]

10.10.35.2 Removing the Drawer Connector (fixing feeder unit)

1) Remove the connector base [5].
   - harness [2] from the cable clamp [1]
   - 2 connectors [3]
   - 2 screws [4]
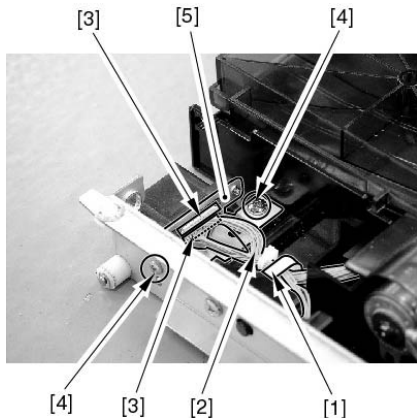
F-10-174

2) Remove the drawer connector [2].
   - 2 screws [1]
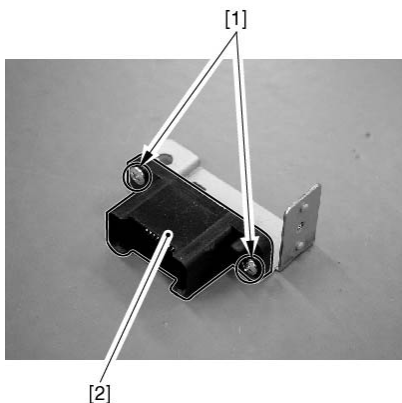
F-10-175

10.10.36 Duplex Roller 1

10.10.36.1 Preparation for Removing the Duplex Roller 1

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]

10.10.36.2 Removing the Duplex Roller 1

1) Open the cover of the fixing feeder unit [1].
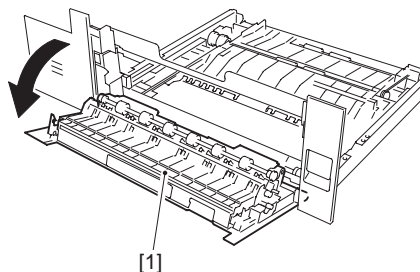
F-10-176

2) Remove the duct [2].
   - 2 screws [1]
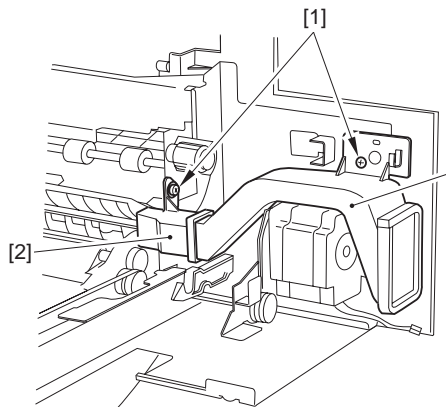
F-10-177

3) Remove the fixing feeding unit cover.
3-1) Release the link [4].
- screw [1] at the rear
- 1 grounding wire [2]
- 1 E-ring [3]
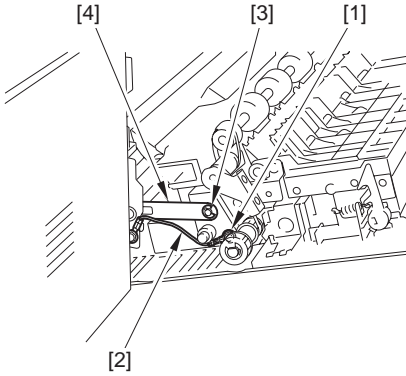
F-10-178

3-2) Remove the fixing feeding unit cover.
- 1 screw [1] at the front
- 1 cover fixing pin [2]
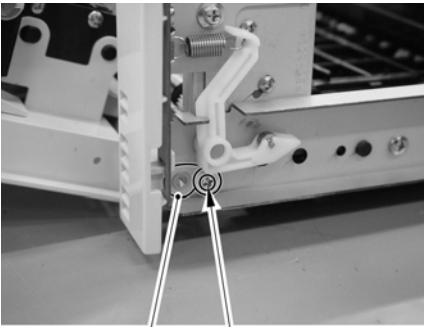
F-10-179

4) Remove the gear mounting plate.
4-1) Remove the fixing stay found at the rear.
- 3 screws [1]
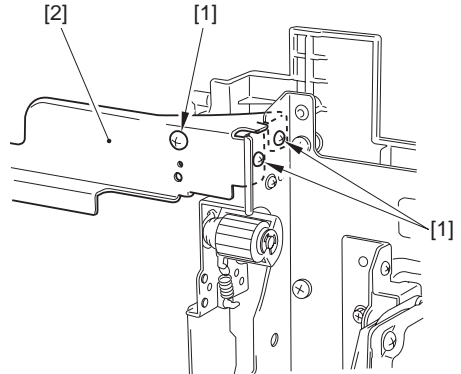
F-10-180

4-2) Remove the gear mounting plate [2].
- 2 screws [1]
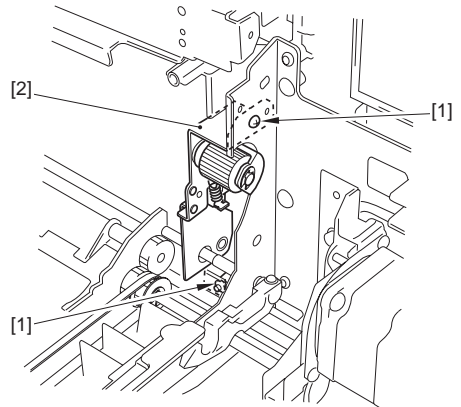
F-10-181

5) Remove the motor mounting plate [2], and move the gear [3].
   - 2 screws [1]

⚠️

When moving the motor mounting plate, take care so that the belt [4] will not slip off the gear [3].
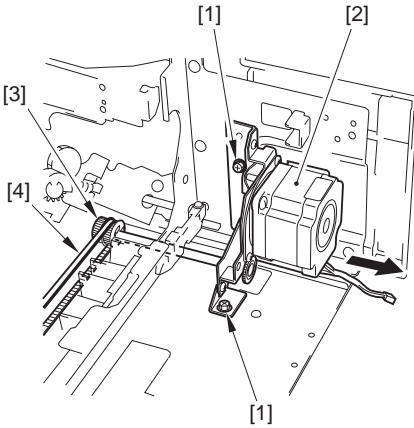
F-10-182

6) Remove the gear [1] and the bearing [2] at the rear.
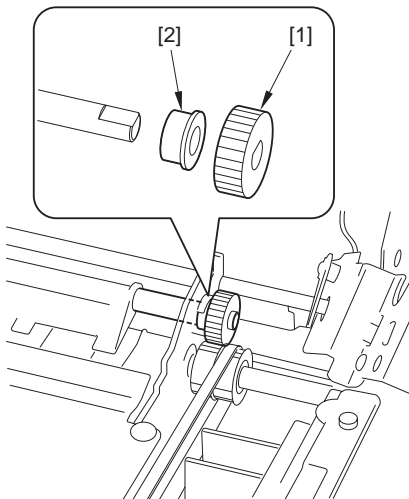
F-10-183

7) Remove the 2 duplex auxiliary guides [1] of the duplex roller.
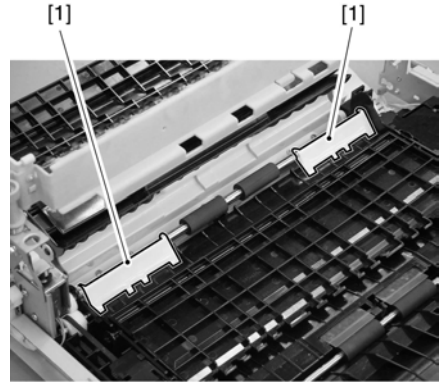
F-10-184

8) Remove the delivery path switching solenoid 2 [3] together with the base.
   - screw [1]
   - connector [2]
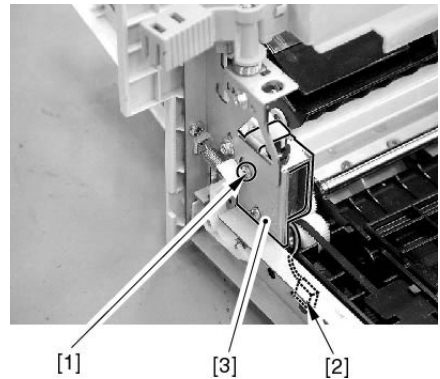
F-10-185

10-75

9) Free the claw of the gear [1] at the front; then, move the roller [3] to the rear, and remove the gear [1] and the bearing [2].
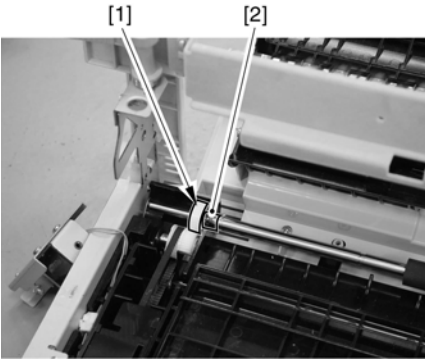
F-10-186

10) Remove the duplexing roller [1].
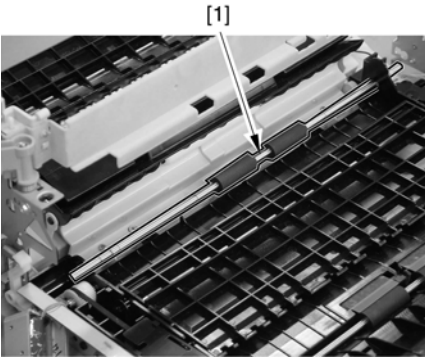
F-10-187

⚠Points to Note When Attaching the Duplex Roller
(1) Be sure that the longer side [A] of the D-cut in the roller shaft [1] is toward the front.
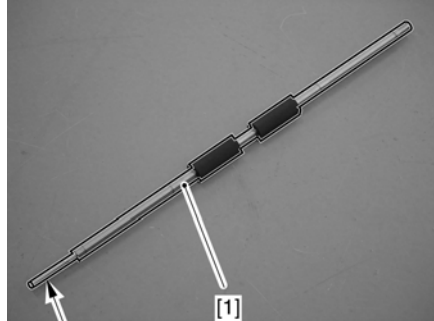
F-10-188

(2) When attaching, be sure that the front tip of the roller shaft is in contact with the grounding plate [A].

F-10-189

10.10.37 Duplex Roller 2

10.10.37.1 Preparation for Removing the Duplex Roller 2

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]
3) Lift the duplexing open/close guide [3] in the direction of [A] and shift it in the direction of [B]. Then, remove it.
  - 1 connector [2] (Open sheet [1].)
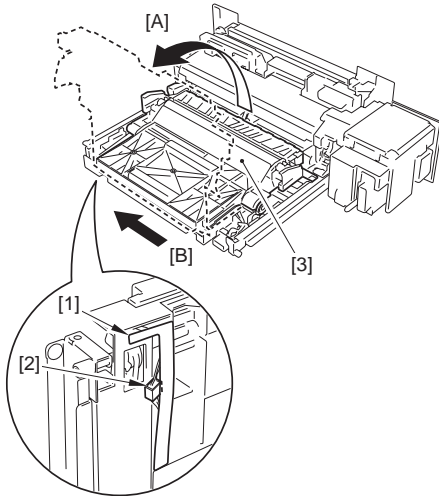
F-10-190

10.10.37.2 Removing the Duplex Roller 2

1) Remove the 2 E-rings [1].
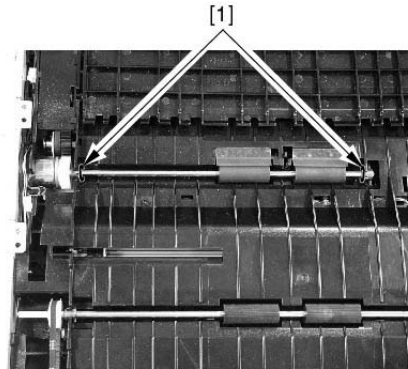
F-10-191

2) Move the bearing [1] to release the duplexing roller 2 [2].
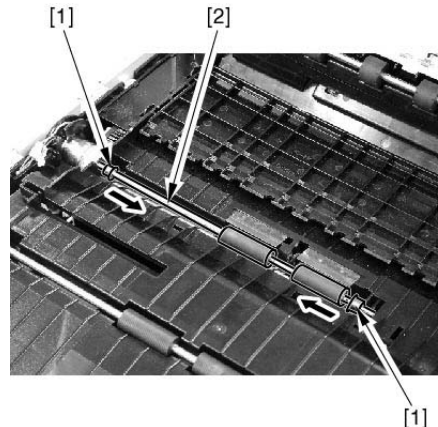
F-10-192

⚠️

When mounting it, fit it while turning the duplexing roller 2 [2] so that the sheet [1] of the duplexing guide plate will not bend.
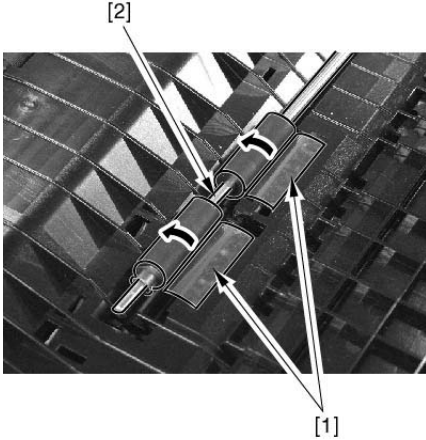
F-10-193

3) Detach the duplexing registration clutch [3] in the upward direction, and detach it together with the roller shaft.
   - 1 connector [1]
   - 1 clutch stop [2]
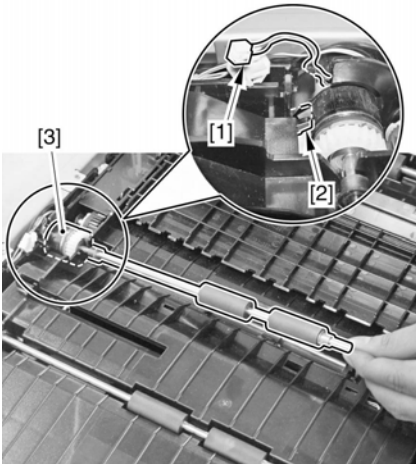
F-10-194

4) Remove the duplexing roller 2 [4].
   - 1 E-ring [1]
   - 1 clutch [2]
   - 2 bearings [3]
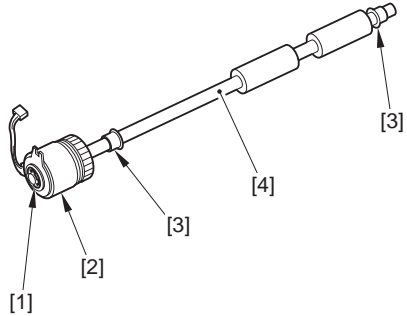
F-10-195

10.10.38 Duplex Roller 3

10.10.38.1 Preparation for Removing the Duplex Roller 3

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]
3) Lift the duplexing open/close guide [3] in the direction of [A] and shift it in the direction of [B]. Then, remove it.
   - 1 connector [2] (Open sheet [1].)
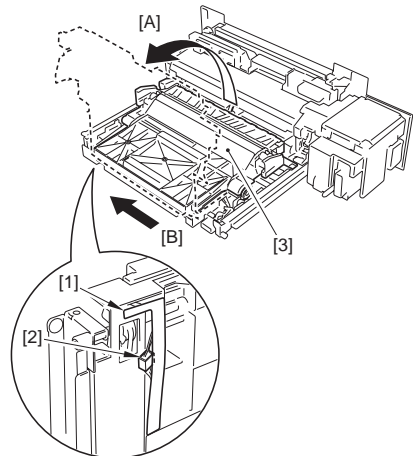
F-10-196

10.10.38.2 Removing the Duplex Roller 3

1) Remove the 2 E-rings [1].
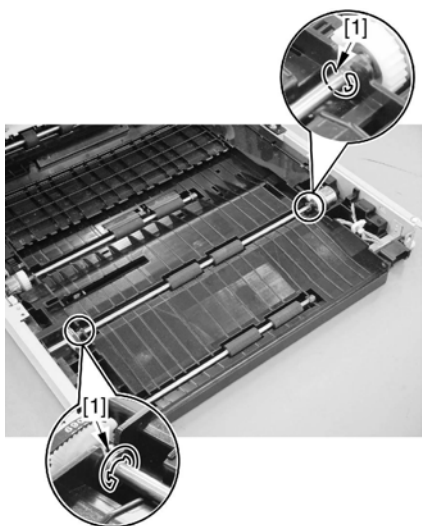
F-10-197

2) Move the bearing [1] toward the inside of the duplexing feeding guide.
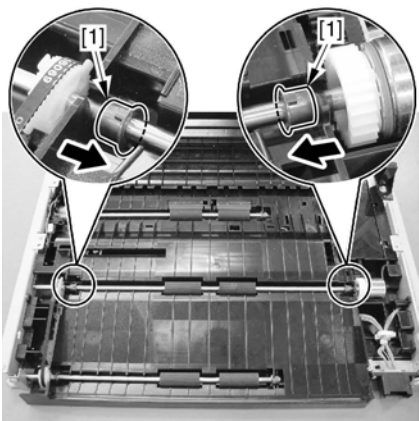
F-10-198

3) Disconnect the connector of the duplexing pickup clutch.
3-1) Bend the frame [2] in the direction of the arrow slightly, and route the connectors [3] between the frame and the guide.
   - 3 screws [1]

3-2) Disconnect the connector [3].
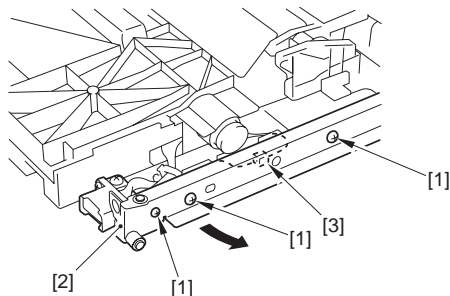
F-10-199

4) Remove the duplexing roller 3 together with the duplexing pickup clutch and the roller shaft.
5) Remove the duplexing roller 3 [5].
   - 1 E-ring [1]
   - 1 clutch [2]
   - 2 bearings [3]
   - 1 gear [4]
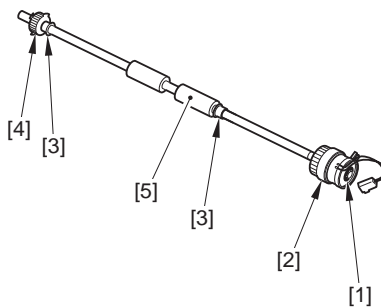
F-10-200

⚠

When mounting it, be sure to orient it so that the clutch stop [A] is at the bottommost.
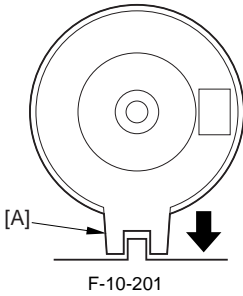
F-10-201

⚠

Be sure to mount it so that the front side of the roller shaft is in contact with the leaf spring [1].
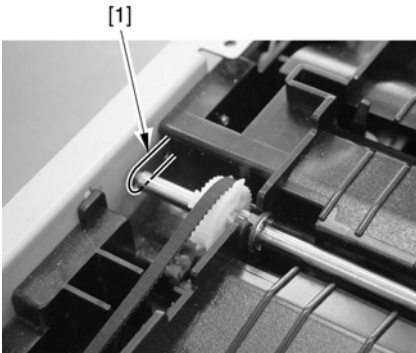
F-10-202

10.10.39 Duplex Roller 4

10.10.39.1 Preparation for Removing the Duplex Roller 4

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]
3) Lift the duplexing open/close guide [3] in the direction of [A] and shift it in the direction of [B]. Then, remove it.
   - 1 connector [2] (Open sheet [1].)
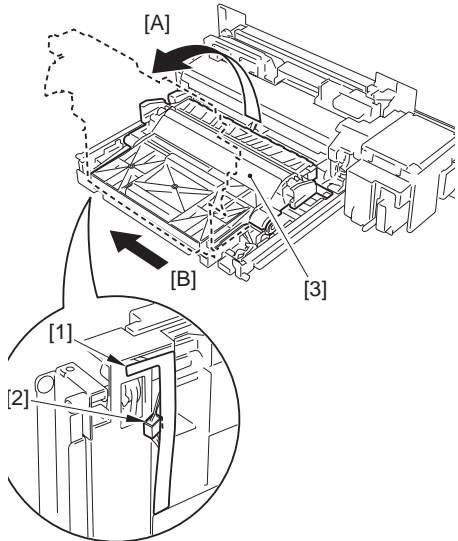
F-10-203

10.10.39.2 Removing of Duplexing Roller 4

1) Remove the duplexing roller 4 [3].
   - 3 E-ring [1]
   - 2 Bearing [2]
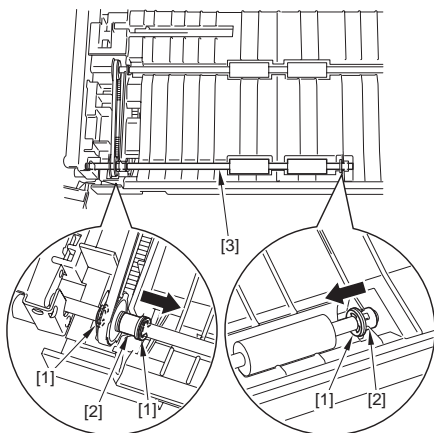
F-10-204

When mounting the roller, the roller shaft [2] must contact to the leaf spring [1] located in the front side.
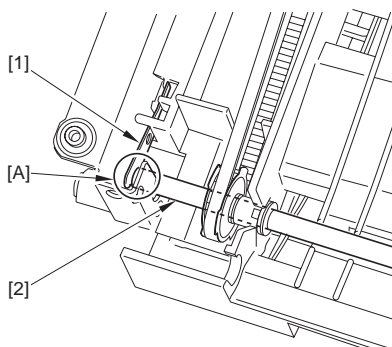
F-10-205

10.10.40 Duplex Feed Motor

10.10.40.1 Preparation for Removing the Duplex Feed Motor

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]

10.10.40.2 Removing the Duplex Feed Motor

0012-4550
 / Color iR C5180i / Color iR C5180 / / Color iR C4580G / / Color iR C4580i / Color iR C4580 / Color iR C4080G / Color iR C4080i / Color iR C4080 / / / Color Image Reader-F1 / Color Image Reader-E1 / Duplex Color Image Reader-G1

1) Remove the screw [1], then remove the duct [2].
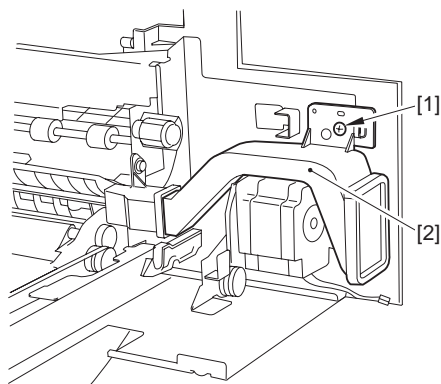
F-10-206

2) Remove the duplex feeder motor [2].
 - Screws[1]2
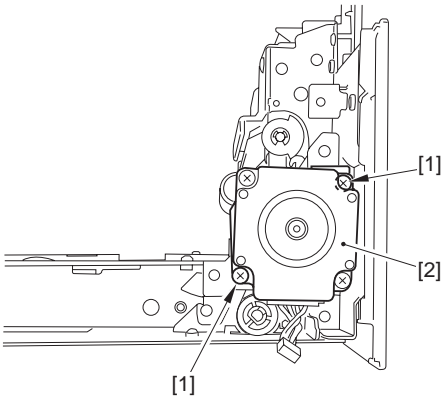
F-10-207

⚠️**Points to Note When Attaching the Duplex Feed Motor**
(1) Be sure that the connector area is at the bottom.
(2) When mounting the motor, check to be sure that the belt [2] is hooked on to the gear [1].
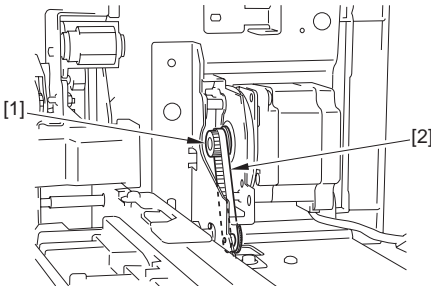
F-10-208

10.10.41 Duplex Registration Sensor

10.10.41.1 Preparation for Removing the Duplex Registration Sensor

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]
3) Remove the fixing/feeder assembly back sheet.

⚠️
- When placing the fixing feeder unit upright, be sure to use paper to prevent dirt from collecting.
- If you forgot to use paper, make a double-sided test copy before ending the work.
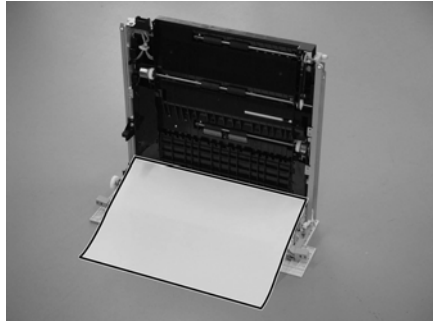
F-10-209

3-1) Stand it so that the fixing feeder unit cover is at the bottom.

3-2) Remove the sheet [1] from behind the fixing
feeder assembly.
- 6 snap-ons [A]
- 3 hooks [B]
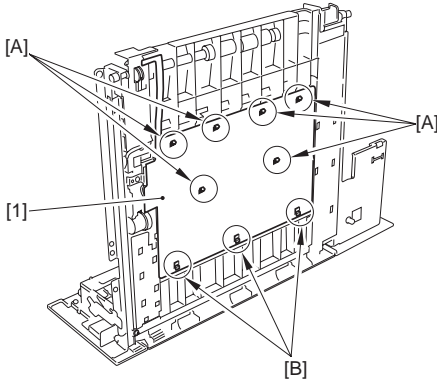
F-10-210

10.10.41.2 Removing the Duplex Registration Sensor

1) Remove the duplex registration sensor [4].
- connector [1]
- 2 claws [2]
- sensor base [3]
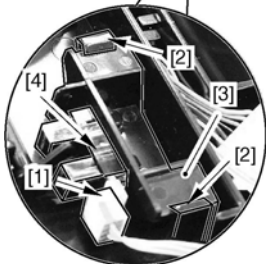
F-10-211

10.10.42 Duplex Horizontal Registration Sensor

10.10.42.1 Preparation for Removing the Duplex Horizontal Registration Sensor

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]
3) Remove the fixing/feeder assembly back sheet.

⚠

- When placing the fixing feeder unit upright, be sure to use paper to prevent dirt from collecting.
- If you forgot to use paper, make a double-sided test copy before ending the work.
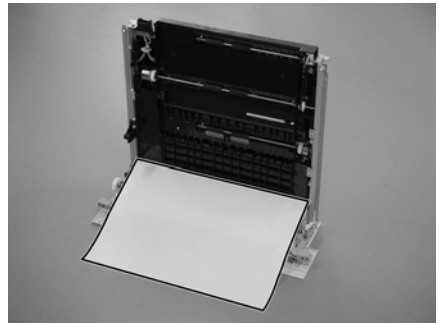
F-10-212

3-1) Stand it so that the fixing feeder unit cover is at the bottom.

3-2) Remove the sheet [1] from behind the fixing feeder assembly.
  - 6 snap-ons [A]
  - 3 hooks [B]
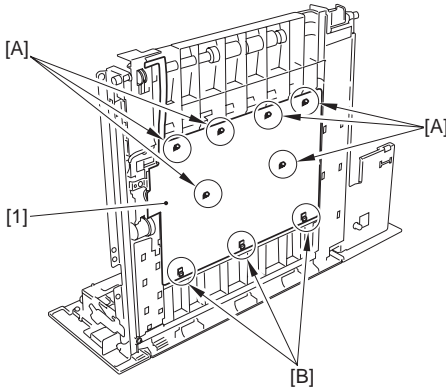
F-10-213

4) Remove the horizontal registration motor support plate [3].
  - connector [1]
  - 2 screws [2]
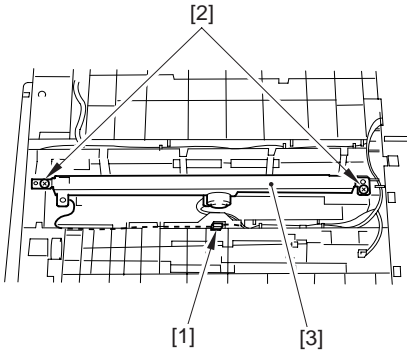
F-10-214

⚠

- When attaching the horizontal registration motor support plate [1], be sure to bring the horizontal registration motor support plate firmly in contact with the grounding lead spring [2] found under the guide plate.
- After replacement, check that the sensor flag moves smoothly.
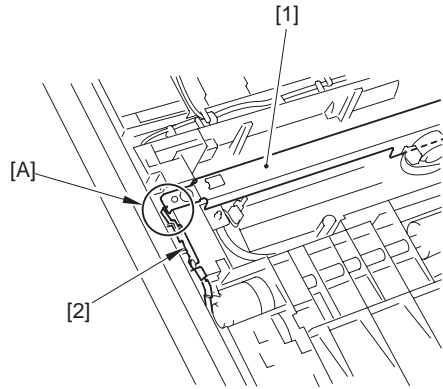
F-10-215

10.10.42.2 Removing the Duplex Horizontal Registration Sensor

1) Remove the duplex horizontal registration sensor [2].
   - connector [1]
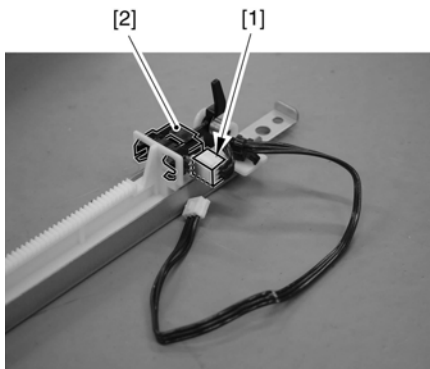
F-10-216

⚠

Be sure to mach the protrusion [B] of the harness guide found behind the guide plate against the area [A] marked on the flat cable [1] coming from the duplex horizontal registration sensor.
(if you twist it inadvertently, the loop area will not move smoothly.)
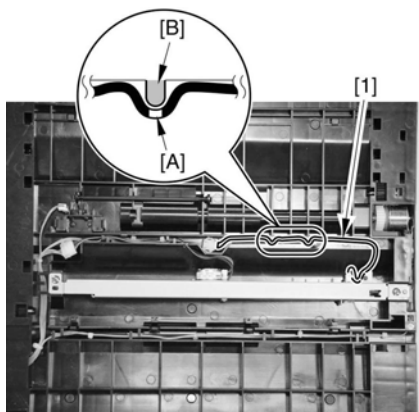
F-10-217

After replacement, check that the sensor flag moves smoothly.

10.10.43 Duplex Pickup Sensor

10.10.43.1 Preparation for Removing the Duplex Pickup Sensor

1) Remove the cleaner fan cover.
1-1) Open the front cover.
1-2) Remove the cleaner fan cover [2].
      - 1 screw [1]
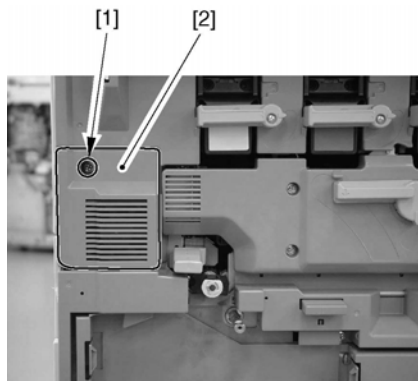
F-10-218

2) Remove the intermediate transfer unit releasing lever [2].
   - screw [1]
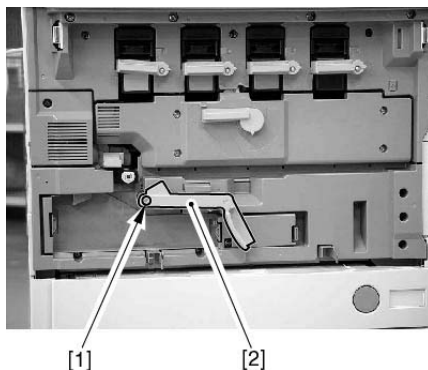
F-10-219

3) Remove the inside cover (lower) [3].
- 1 connector [1]
- 4 screws [2]
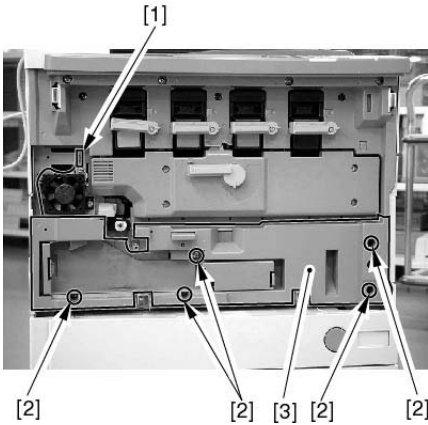
F-10-220

4) Remove the cassette.

MEMO:
The cassette 1/2 and the pick-up unit 1/2 may also be removed in the same way.

4-1) Slide out the cassette.
5) Remove the manual feed unit. (page 10-52)Reference[Removing the Manual Feed Unit]
6) Remove the front cover. (page 12-22)Reference[Removing the Front Cover]
7) Remove the rear right cover. (page 12-22)Reference[Removing of the Right Rear Cover]
8) Pull out the pickup cassette and open the pickup vertical path cover; then, remove the front right cover.
- 2 Screws

9) Remove the pickup vertical path cover [3].
- screws [2](Remove the pickup vertical path lower cover [1])
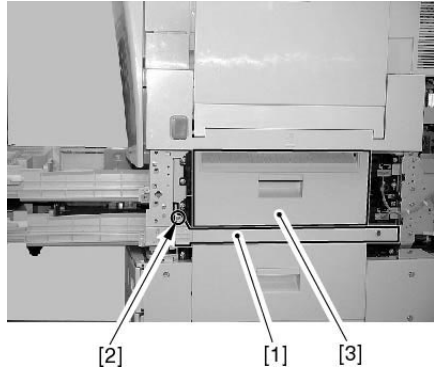
F-10-221

10) Remove the pickup unit. (page 10-36)Reference[Removing the Pickup Unit]
11) Remove the rear fan cover. (page 12-25)Reference[Removing the Rear Fan Cover]
12) Remove the rear upper cover. (page 12-25)Reference[Removing the Rear Upper Cover]
13) Remove the rear lower cover. (page 12-25)Reference[Removing the Rear Lower Cover]
14) Remove the DC controller box 2. (page 12-35)Reference[Removing the DC Controller Box2]
15) Remove the DC controller box 1. (page 12-36)Reference[Removing the DC Controller Box1]
16) Remove the IH power supply unit. (page 12-32)Reference[Removing the IH Power Supply Unit]
17) Remove the lattice connector mount [4].
- 2 Clamps [1]
- 2 Screws [2]
- 6 Connectors [3]
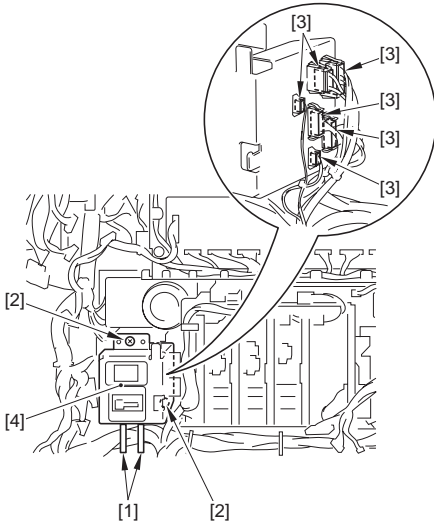
F-10-222

18) Remove the high-voltage unit 2. (page 12-30)Reference[Removing the High-Voltage Unit 2]

19) Remove the drum ITB motor mount.
   - 2 Connectors [1]
   - 3 Screws [2]
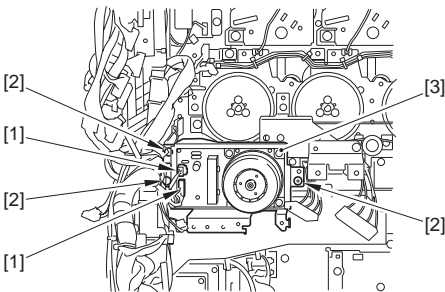
F-10-223

⚠️ **Points to note when removing the drum ITB motor mount**

When removing it, insert a hand from the inside of the pulled out manual feed unit. Then remove it from the rear side plate while pressing the swing plate [1] located in the read side of the drum drive unit.

The drum drive unit is hung from a boss attached to the rear side plate, so lift up the unit when removing it.

F-10-224

20) Remove the manual feed cooling fan duct [4] including the fan.
   - 2 Wire saddle [1]
   - 1 Connectors [2]
   - 3 Screws [3]
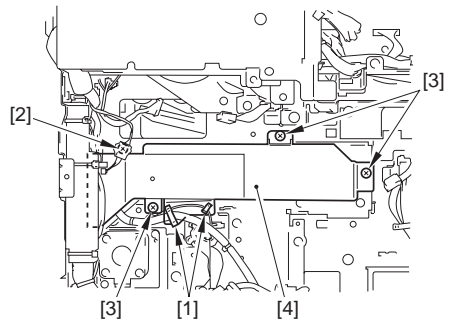
F-10-225

21) Remove the duplexing driver PCB [2].
   - 4 Screws [1]
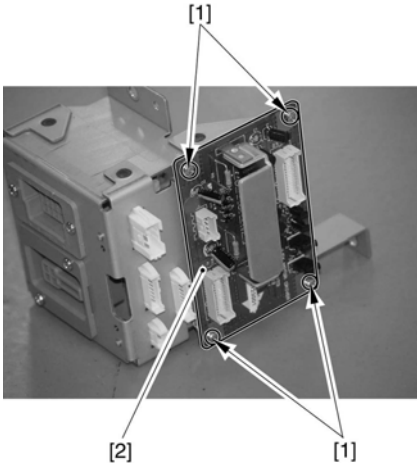
F-10-226

10.10.43.2 Removing the Duplex Pickup Sensor

1) Remove the rail support plate [2] of the manual feed unit.
   - 2 screws [1] from the rear side plate side
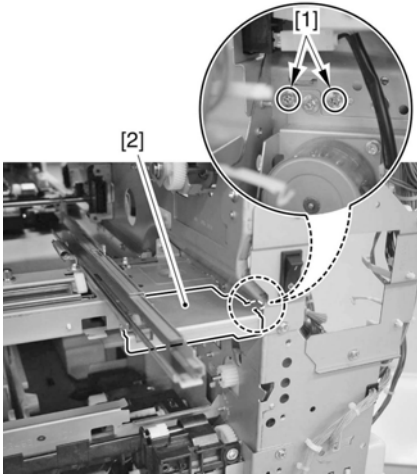
F-10-227

2) Remove the rail guide [3] of the manual feed unit as shown.
   - 3 screws [1] from the side of the rear side plate
   - 3 screws [2] from the side of the front side plate
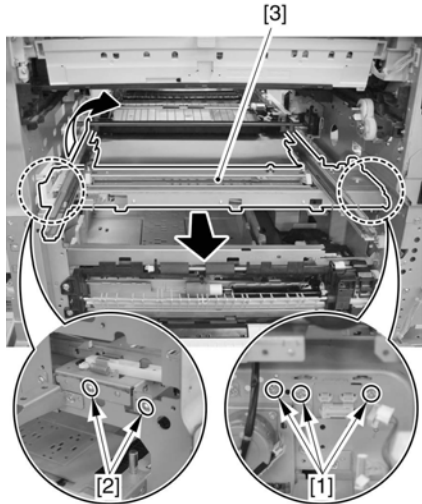
F-10-228

3) Remove the drawer connector support plate [2].
   - 2 screws [1]
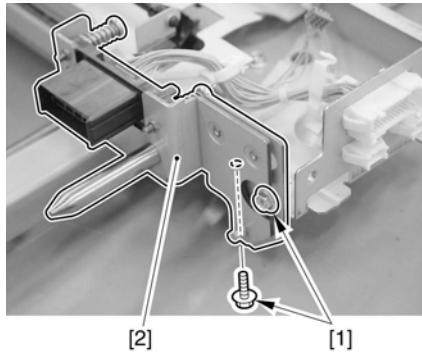
F-10-229

4) Remove the lower guide plate [2].
   - 2 screws [1]
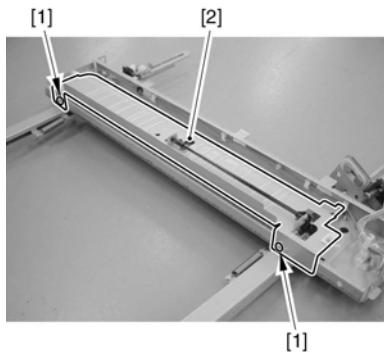
F-10-230

5) Remove the sensor support plate [3].
   - connector [1]
   - screw [2]
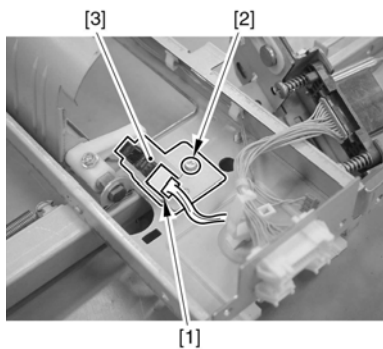
F-10-231

6) Remove the duplex pickup sensor [1].
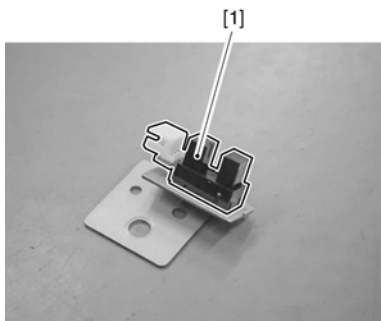
F-10-232

10.10.44 Duplex Registration Clutch

10.10.44.1 Preparation for Removing the Duplex Registration Clutch

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]
3) Lift the duplexing open/close guide [3] in the direction of [A] and shift it in the direction of [B]. Then, remove it.
   - 1 connector [2] (Open sheet [1].)
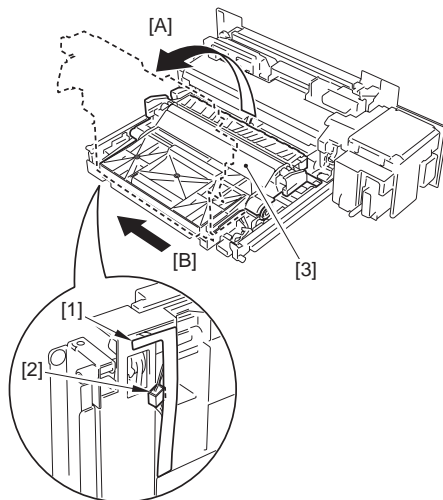
F-10-233

10.10.44.2 Removing the Duplex Registration Clutch

1) Remove the 2 E-rings [1].
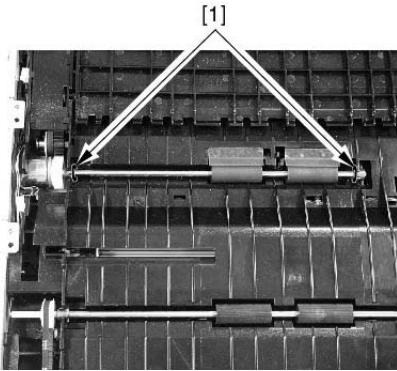
F-10-234

2) Move the bushing [1] to free the duplex roller 2 [2].
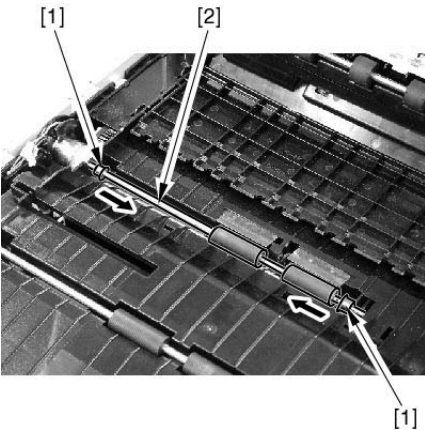
F-10-235

⚠

When attaching it, fit it while turning the duplex roller 2 [2] so as not to bend the sheet [1] of the duplex guide plate. (Do not shift up the sheet by hand.)
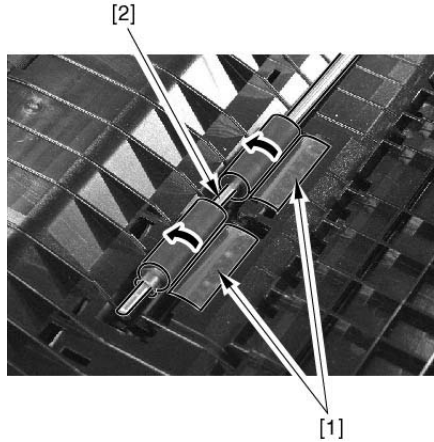
F-10-236

3) Pull the duplex registration clutch [3] upward to remove.
   - 1 connector [1]
   - 1 clutch stop [2]
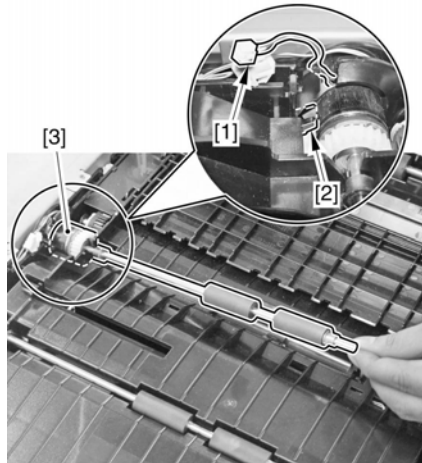
F-10-237

4) Remove the duplex registration clutch [2].
- 1 E-ring [1]
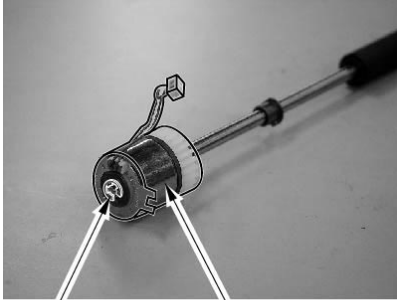
F-10-238

10.10.45 Duplex Pickup Clutch

10.10.45.1 Preparation for Removing the Duplex Pickup Clutch

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]
3) Lift the duplexing open/close guide [3] in the direction of [A] and shift it in the direction of [B]. Then, remove it.
- 1 connector [2] (Open sheet [1].)
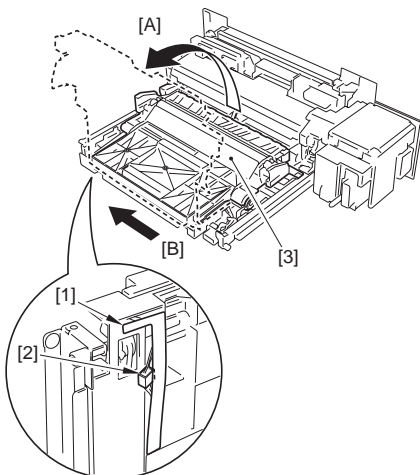
F-10-239

10.10.45.2 Removing the Duplex Pickup Clutch
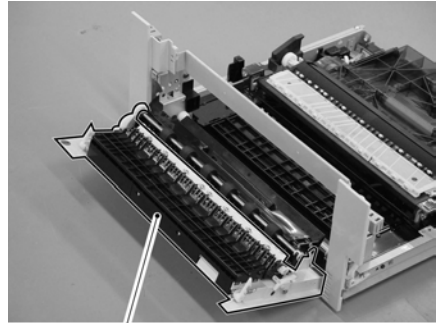
1) Open the cover of the fixing feeder unit [1].

F-10-240

2) Remove the 2 E-rings [1].
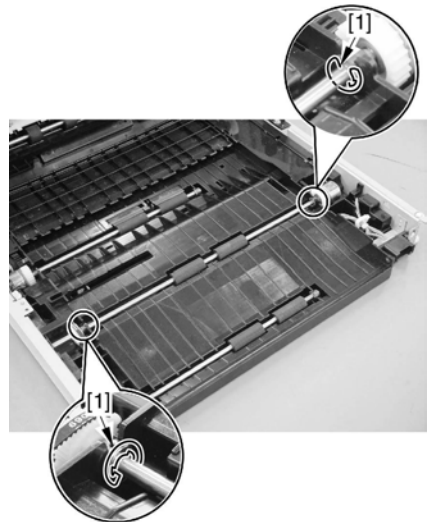
F-10-241

10-91

3) Move the bushing [1] to the inside of the duplex
feeder guide.

F-10-242

4) Remove the connector of the duplex pickup
clutch.
4-1) Remove the 3 screws [1].
4-2) Pull the plate [2] in the direction of the arrow,
and pull out the connector [3] located the inner
of the plate.
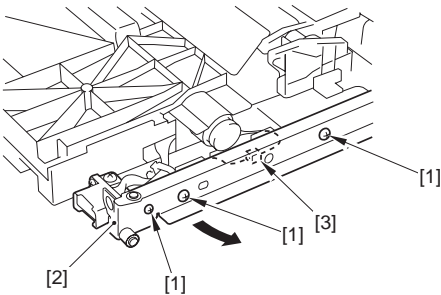
F-10-243

4-3) Remove the connector [3].
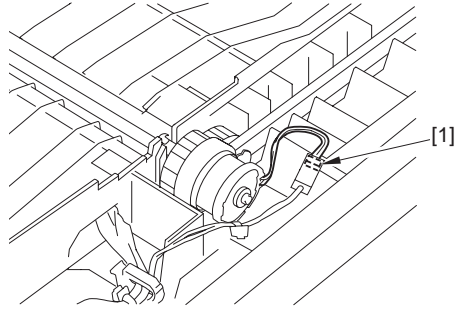
F-10-244

5) Remove the duplex pickup clutch [2].
- 1 roller shaft
- 1 E-ring [1]
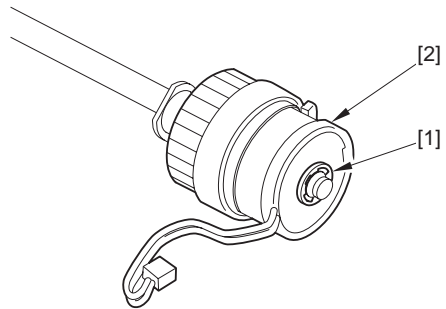
F-10-245

⚠

When attaching, be sure that the stop [A] of the
clutch is at the bottommost.
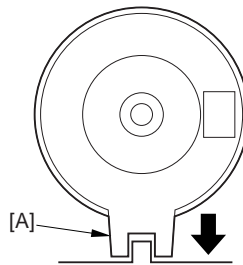
F-10-246

⚠

Make sure that the front side of the roller shaft is in contact with the leaf spring [1].
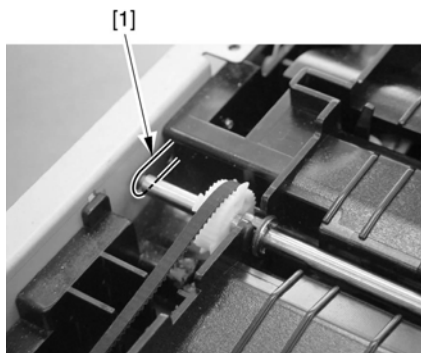
F-10-247

10.10.46 Delivery Vertical Path Unit

10.10.46.1 Preparation for Removing the Delivery Vertical Path Unit

1) Remove the center delivery tray [2].
(Referring to procedure 10.10.54)
2) Remove the upper left cover. (page 12-23)Reference[Removing the Upper Left Cover]

10.10.46.2 Removing the Delivery Vertical Path Unit

⚠

For the new delivery vertical path unit to function, the version of the DC controller must be 3.06 or later. Be sure to check its version in service mode: COPIER>DISPLAY>VERSION>D-CON.

1) Slide out the fixing/feeding unit.

2) Remove the delivery vertical path cover [3].
   - 1 screw [1]
   - 1 delivery inside cover [2]
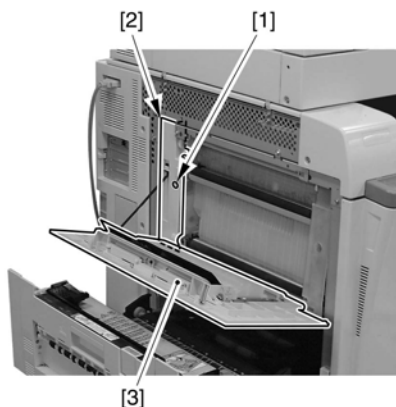
F-10-248

3) Remove the delivery path vertical unit [4].
   - 2 concoctors [1]
   - 1 concoctors [3]
   - 4 screws [2]

⚠

To remove the delivery vertical path unit, lift the unit and then pull it out toward the front.
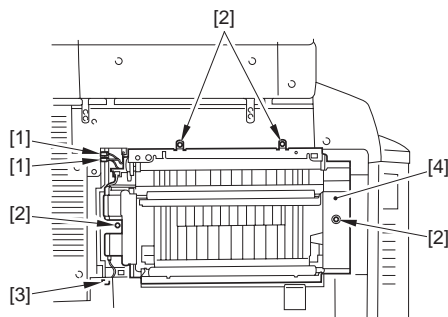
F-10-249

10.10.46.3 Removing the Delivery Vertical Path Cover

1) Using a flat-blade screwdriver, remove the slip-stop [2] from the delivery vertical path cover [1]; then, remove the strap [3] from the delivery inside cover.
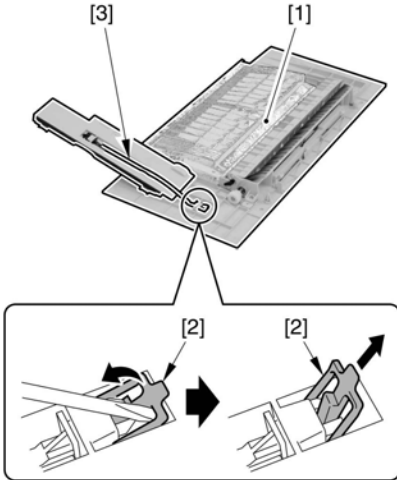
F-10-250

2) Attach the strap [1] found on the delivery inside cover to the new delivery vertical path cover [2]; then, fix it in place using the slip-stop [3].
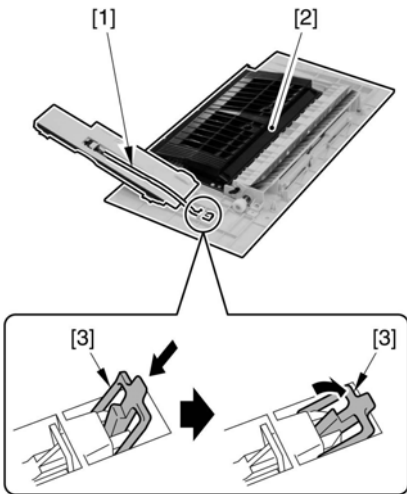
F-10-251

10.10.46.4 Points to note when mouting the delivery vertical path unit

1) Attach the top [1] of the delivery vertical path inside of the machine plate [2].

⚠

When attaching the delivery vertical path unit, be sure to lift it once before setting it in place.

Engage the left and right hooks [3] on the machine plate [4] so as to attach the new delivery vertical path unit.
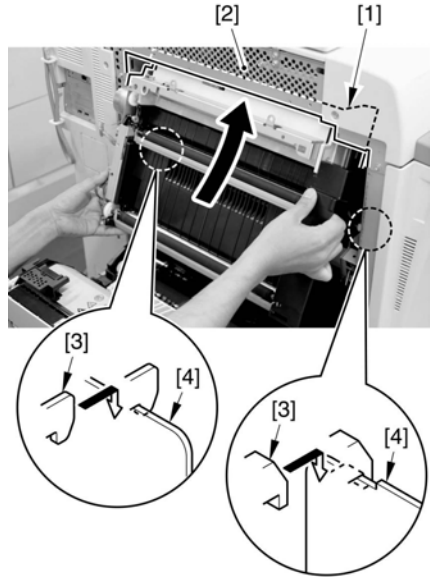
F-10-252

2) Using 4 screws, secure the delivery vertical path unit [3] in place; then, connect the 3 connectors. At this time, check that the machine positioner [4] is properly in place.
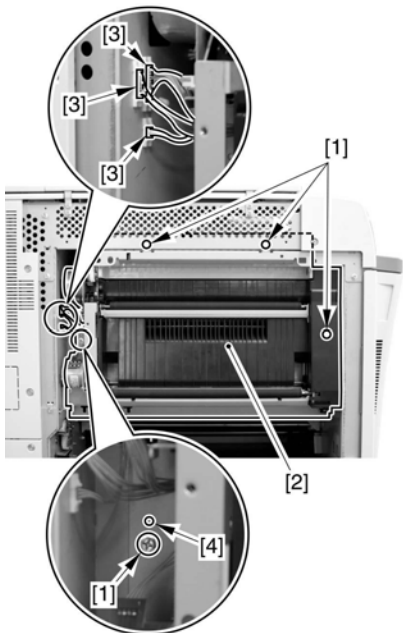
F-10-253

3) Attach the delivery vertical path cover [1] to the machine; then, fix the delivery inside cover [2] in place using a screw [3].
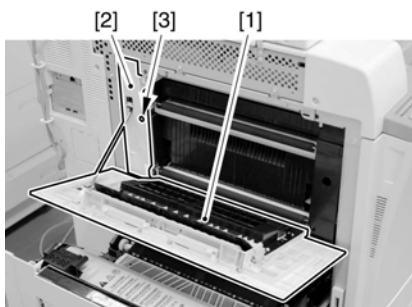
F-10-254

4) Attach the upper left cover [1] using 2 screws [2]; then, close the delivery vertical path cover [3], and put the fixing/feeding unit back in its initial position.
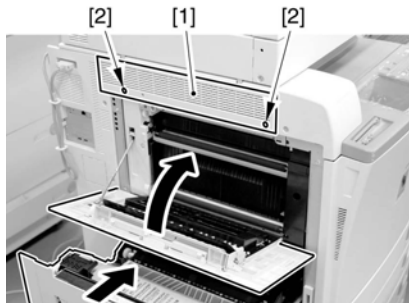
F-10-255

10.10.47 Face-Down Delivery Roller 1

10.10.47.1 Preparation for Removing the Face-Down Delivery Roller 1

1) Remove the upper left cover. (page 12-23)Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
(Referring to procedure 10.10.54)
3) Remove the delivery vertical path unit. (page 10-93)Reference[Removing the Delivery Vertical Path Unit]
4) Remove the delivery sensor mounting plate.
4-1) Remove the sensor mounting plate [2].
    - 1 screw [1]

F-10-256

10-95
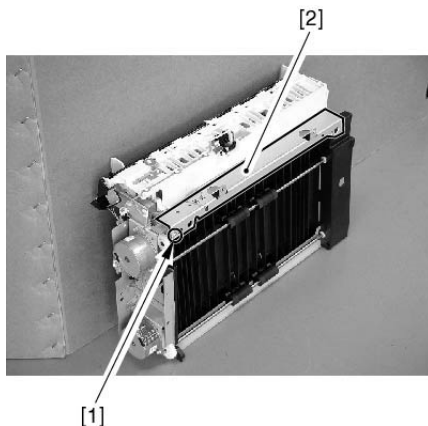
⚠️**Points to Note When Attaching the Delivery Sensor Mounting Plate**
When attaching the sensor mounting plate, secure it in place with screws first and then route the wire to facilitate the work.

5) Remove the face-down delivery sensor flag.
5-1) Shift up the sensor flag [1] of the face-down delivery sensor 1, and pull it upward to remove.
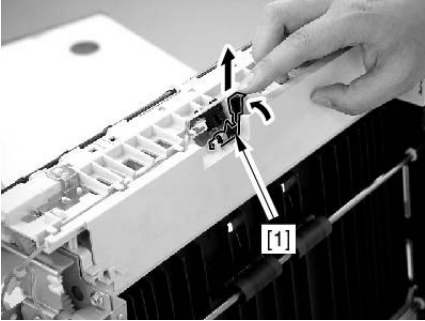
F-10-257

MEMO:
The edge of the sensor flag is cut to an I-shape, permitting it to be removed upward.
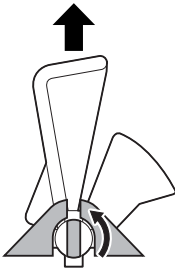
F-10-258

⚠️**Points to Note When Attaching the Sensor Flag**
When attaching the sensor flag, be sure to match the L-shaped area [A] of the spring against the groove [B] of the face-down delivery sub frame.
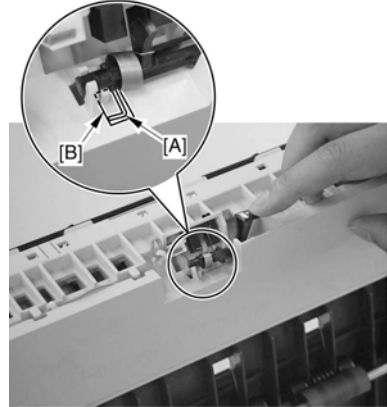
F-10-259

10.10.47.2 Removing the Face-Down Delivery Roller 1

1) Shift up the grounding leaf spring [1] using a flat-blade screwdriver, and remove the 2 claws.
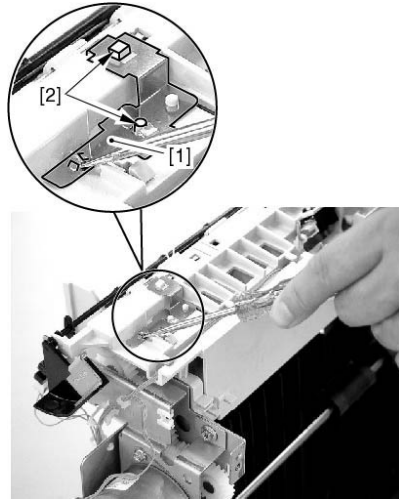
F-10-260

2) Remove the face-down delivery sub frame [4].
   - connector [1]
   - sensor cable [2] from the face-down delivery sub frame
   - flag [3] of the face-down delivery sensor 1

F-10-261

⚠ Points to Note When Attaching the grounding Leaf Spring
When attaching, shape the grounding leaf plate removed in 3) into a half-loop, and work so that the frame plate [1] and the grounding leaf spring [2] are in contact.
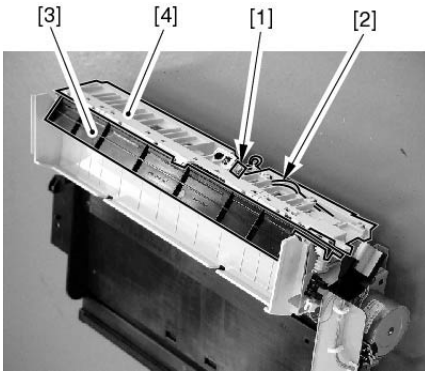
F-10-262

3) Remove the face-down delivery roller 1 [5].
   - E-ring [1]
   - bushing [2]
   - 1 gear [3]
   - 1 bushing [4] found to the rear of the face-down delivery roller 1
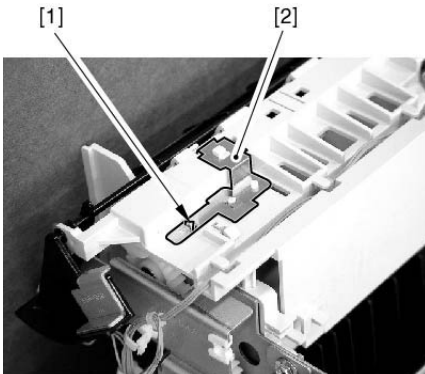
F-10-263

10.10.48 Face-Up Delivery Roller

10.10.48.1 Preparation for Removing the Face-Up Delivery Roller

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]
3) Remove the fixing/feeder unit cover.
3-1) Release the link [4].
   - 1 screw [1] at the rear
   - 1 grounding wire [2]
   - 1 E-ring [3]
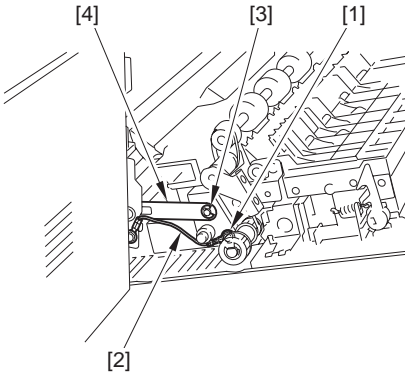
F-10-264

3-2) Remove the fixing/feeder unit cover[3].
   - screw [1] at the front
   - cover fixing pin [2]
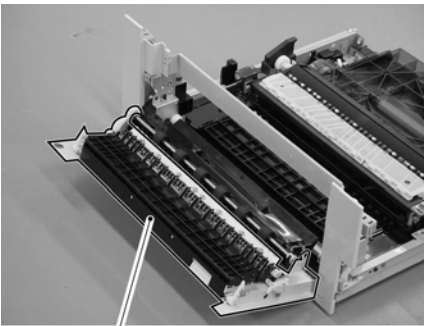
F-10-265
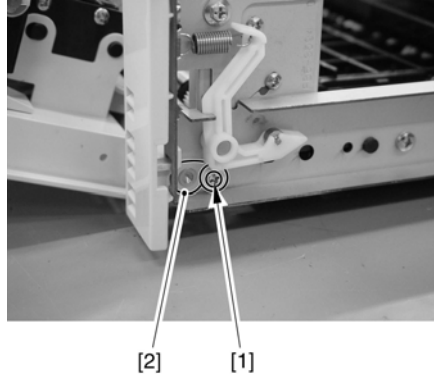
F-10-266

4) Remove the inside delivery roller.
4-1) Remove the E-ring[1] and the bushing [2] at the front; then, remove the gear [3] and the bushing [4] at the rear.
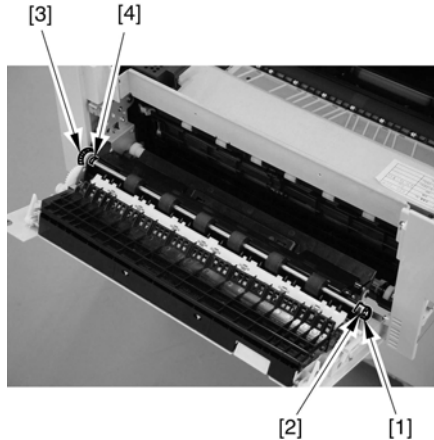
F-10-267

4-2) Free the internal delivery roller [1] from the cut-off of the frame at the front; then, remove it.

F-10-268

10.10.48.2 Removing the Face-Up Delivery Roller

1) Remove the lower guide 2 [2].
   - 2 screws [1]
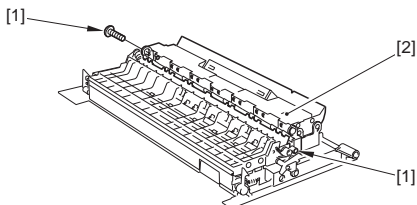
F-10-269

2) Remove the gear [3].
   - 1 Screw [1]
   - 1 Gear mount [2]
   - 2 Belt [4]

F-10-270

3) Remove the upper guide [3].
- screw [1] of the gear mounting plate [2]

F-10-271

⚠
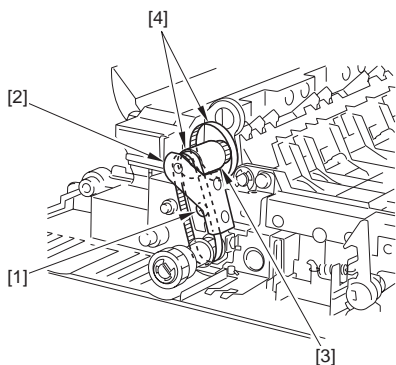
The spring [1] hooked on the flapper of the upper guide is small and can easily be lost. Remove it in advance.
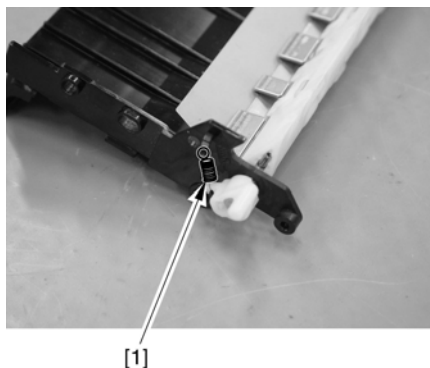
F-10-272

4) Remove the lower guide [2].
  - 3 screws [1]
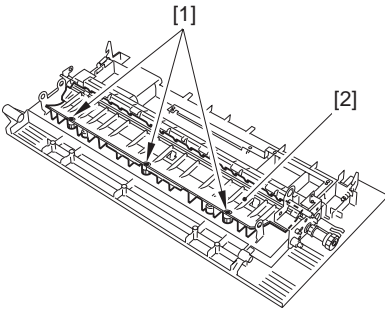
F-10-273

5) Remove the 3 E-rings [1], gear [2], bushing [4], and gear mounting plate [5] at the rear.
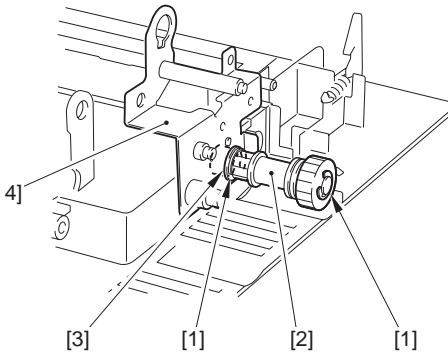
F-10-274

6) Remove the face-up delivery roller [3].
  - 1 E-ring [1]
  - 1 bushing [2] at the front
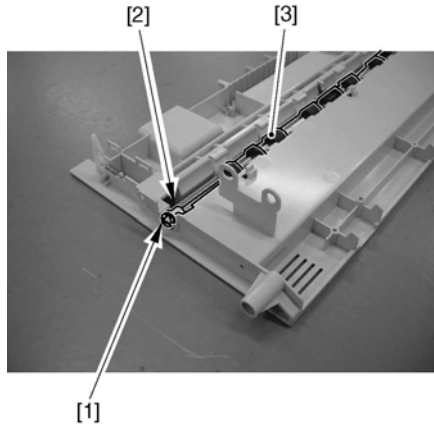
F-10-275

10.10.49 Delivery Vertical Path Roller 1

10.10.49.1 Preparation for Removing the Delivery Vertical Path Roller 1

1) Remove the upper left cover. (page 12-23)Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
(Referring to procedure 10.10.54)
3) Remove the delivery vertical path unit. (page 10-93)Reference[Removing the Delivery Vertical Path Unit]
4) Remove the face-down delivery Motor. (page 10-102)Reference[Removing the Face-Down Delivery Motor]
5) Remove the delivery vertical path motor. (page 10-103)Reference[Removing the Delivery Vertical Path Motor]
6) Remove the motor mount [2].
  - 4 Screws [1]
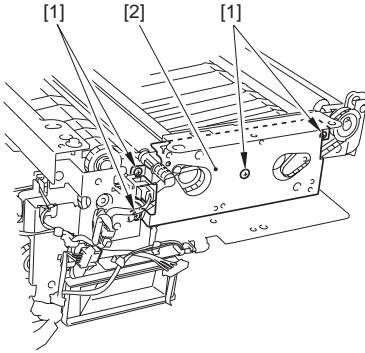
F-10-276

10.10.49.2 Removing the Delivery Vertical Path Roller 1

1) Remove the delivery vertical path roller 1 [6].
   - 1 E-ring [1]
   - 1 bushing [2] at the front
   - 1 Crossmember [1]
   - 1 gear [3]
   - 1 belt [4]
   - 1 bushing [5]
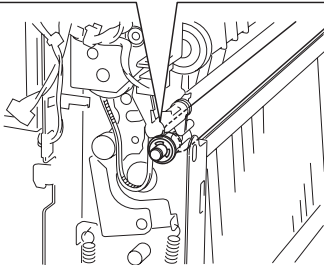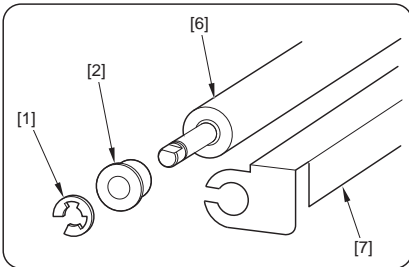
F-10-277
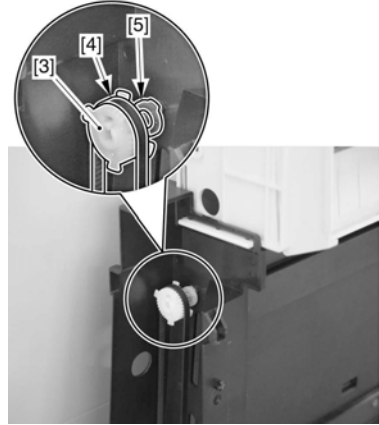
F-10-278

10.10.50 Delivery Vertical Path Roller 2

10.10.50.1 Preparation for Removing the Delivery Vertical Path Roller 2

1) Remove the upper left cover. (page 12-23)Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
(Referring to procedure 10.10.54)
3) Remove the delivery vertical path unit. (page 10-93)Reference[Removing the Delivery Vertical Path Unit]
4) Remove the face-down delivery motor. (page 10-102)Reference[Removing the Face-Down Delivery Motor]
5) Remove the delivery vertical path motor. (page 10-103)Reference[Removing the Delivery Vertical Path Motor]
6) Remove the motor mount [2].
   - 4 Screws [1]
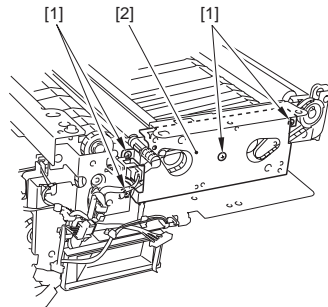
F-10-279

10.10.50.2 Removing the Delivery Vertical Path Roller 2

1) Remove the gear [1], the belt [2] and the bushing [3].
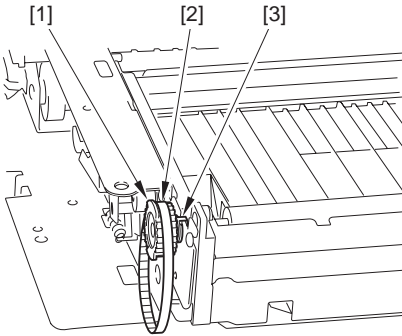
F-10-280

2) Remove the delivery vertical roller 2 [4].
   - gear [1]
   - belt [2] at the rear
   - bushing [3]
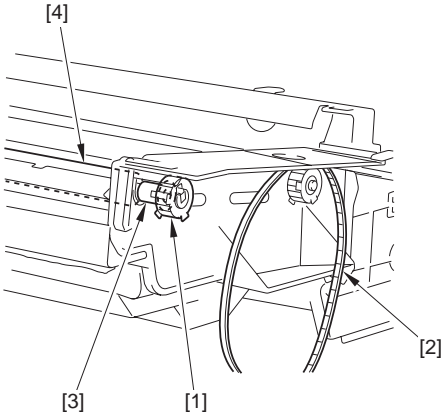
F-10-281

10.10.51 Face-Down Delivery Motor

10.10.51.1 Preparation for Removing the Face-Down Delivery Motor

1) Remove the upper left cover. (page 12-23)Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
(Referring to procedure 10.10.54)
3) Remove the delivery vertical path unit. (page 10-93)Reference[Removing the Delivery Vertical Path Unit]

10.10.51.2 Removing the Face-Down Delivery Motor

1) Remove the face-down delivery motor [5].
   - 1 Harness [2] (free from the wire saddle [1])
   - 1 Connector [3]
   - 2 Screw [4]
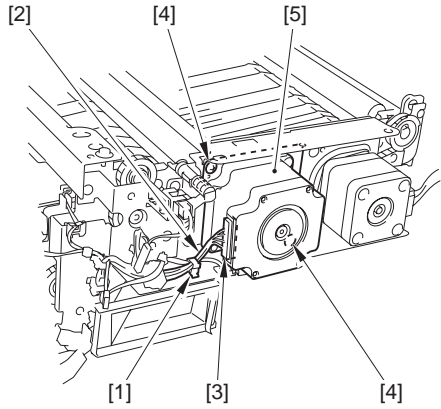
F-10-282

10.10.52 Delivery Vertical Path Motor

10.10.52.1 Preparation for Removing the Delivery Vertical Path Motor

1) Remove the upper left cover. (page 12-23)Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
(Referring to procedure 10.10.54)
3) Remove the delivery vertical path unit. (page 10-93)Reference[Removing the Delivery Vertical Path Unit]

10.10.52.2 Removing the Delivery Vertical Path Motor

1) Remove the delivery vertical path motor [2].
   - 2 screws [1]
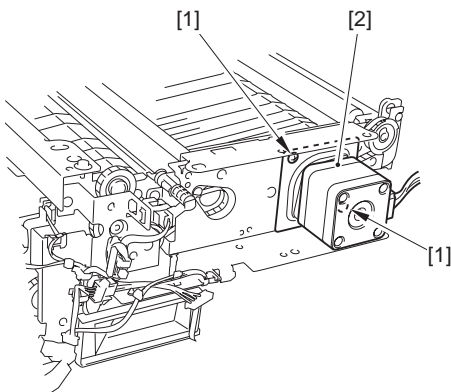
F-10-283

10.10.53 Face-Down Delivery Sensor 1

10.10.53.1 Preparation for Removing the Face-Down Delivery Sensor 1

1) Remove the upper left cover. <u>(page 12-23)</u>Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
(Referring to procedure 10.10.54)
3) Remove the delivery vertical path unit. <u>(page 10-93)</u>Reference[Removing the Delivery Vertical Path Unit]

10.10.53.2 Removing the Face-Down Delivery Sensor 1

1) Press down the flag retainer [1] in the direction of [A] and pull up the sensor flag [2] in the direction of [B]. Then, remove the sensor flag by pulling it in the direction of [C].
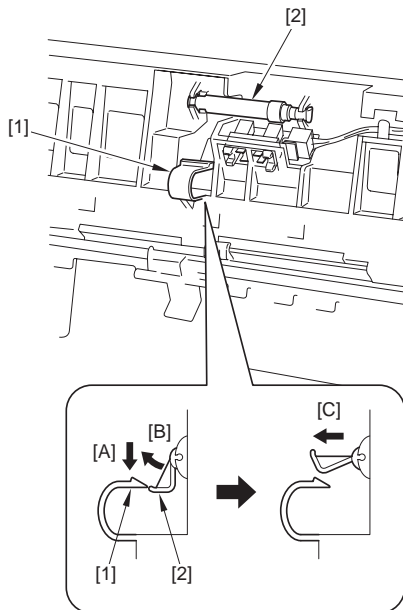
F-10-284

MEMO:
The edge of the sensor flag is cut to an I-shape, permitting it to be removed upward.
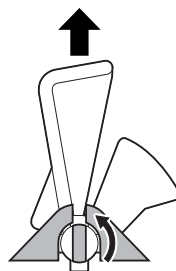
F-10-285

10-103

⚠️**Points to Note When Attaching the Sensor Flag**

When attaching the sensor flag, be sure to match the L-shaped area [A] of the spring against the groove [B] in the face-down delivery sub frame.
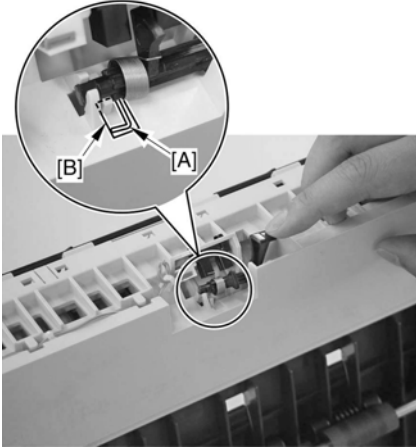
F-10-286

2) Remove the face-down delivery sensor 1 [2].
   - 1 connector [1]

F-10-287

10.10.54 Center Delivery Tray Full sensor

10.10.54.1 Preparaion for Removing the Center Delivery Tray Full sensor

1) Remove the upper left cover. **(page 12-23)**Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
   - 2 screws [1]
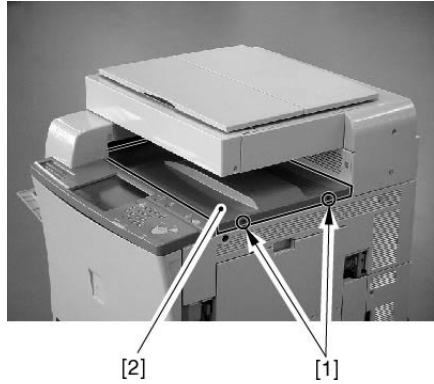
F-10-288

3) Remove the delivery vertical path unit. **(page 10-93)**Reference[Removing the Delivery Vertical Path Unit]

10.10.54.2 Removing the Center Delivery Tray Full sensor

1) Remove the center delivery tray full sensor [3].
   - 1 sensor flag [1]
   - 1 connector [2]
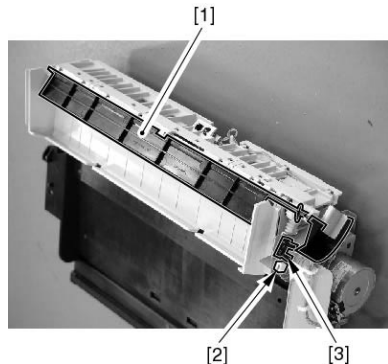
F-10-289

10.10.55 Face-Down Delivery Sensor 2

10.10.55.1 Removing the Face-Down Delivery Sensor 2

1) Remove the upper left cover. (page 12-23)Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2]. (Referring to procedure 10.10.54)
3) Remove the delivery vertical path unit. (page 10-93)Reference[Removing the Delivery Vertical Path Unit]

10.10.55.2 Removing the Face-Down Delivery Sensor 2

1) Remove the face-down delivery motor mounting plate. (page 10-102)Reference[Removing the Face-Down Delivery Motor]
2) Remove the delivery vertical path motor. (page 10-103)Reference[Removing the Delivery Vertical Path Motor]
3) Remove the motor mount [2].
   - 4 Screws [1]
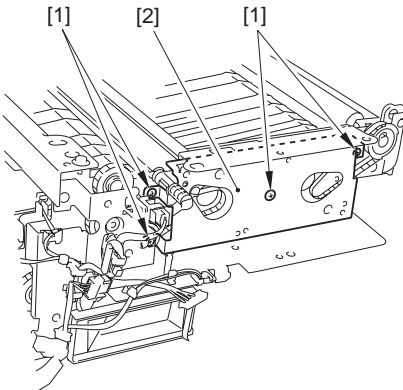
F-10-290

4) Remove the face-down delivery sensor 2 [3].
   - 1 Sensor plug [1]
   - 1 Connector [2]
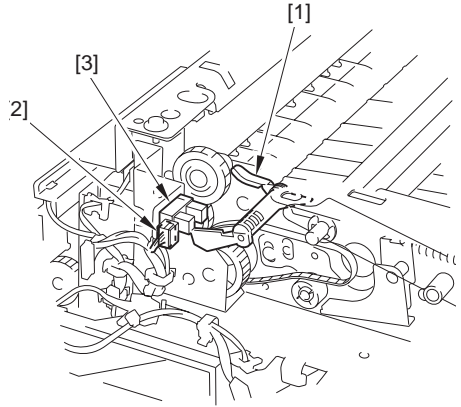
F-10-291

⚠ **Points to Note When Attaching the Sensor Flag**
When attaching the sensor flag [1], hook one end of the inside spring [2] and hook the other end on the flag.
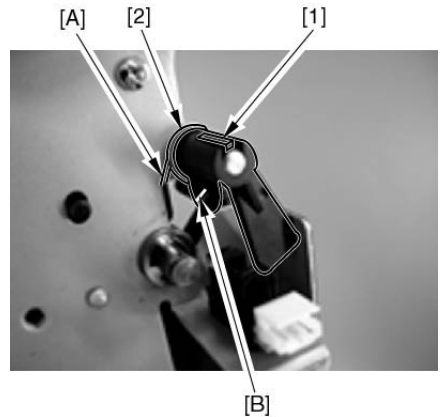
F-10-292

10.10.56 Delivery Vertical Path Cover Open/Closed Sensor

10.10.56.1 Preparation for Removing the Delivery Vertical Path Cover Open/ Closed Sensor

1) Remove the upper left cover. (page 12-23)Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
(Referring to procedure 10.10.54)
3) Remove the delivery vertical path unit. (page 10-93)Reference[Removing the Delivery Vertical Path Unit]

10.10.56.2 Removing the Delivery Vertical Path Cover Open/Closed Sensor

1) Remove the crossmember [1].
   - 1 Screw [2]
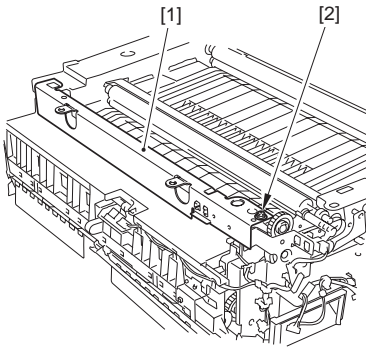
F-10-293

2) Remove the delivery vertical path cover open/ closed sensor [2].
   - 1 connector [1]
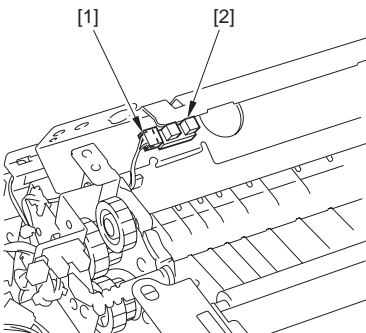
F-10-294

10.10.57 Delivery Path Switching Solenoid 1

10.10.57.1 Preparation for Removing the Delivery Path Switching Solenoid 1

1) Remove the upper left cover. (page 12-23)Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
(Referring to procedure 10.10.54)
3) Remove the delivery vertical path unit. (page 10-93)Reference[Removing the Delivery Vertical Path Unit]
4) Remove the cleaner fan cover.
5) Remove the cleaner fan [2].(page 12-59)Reference[Removing the Cleaner Fan]
Leave the 2 screws as they are, and disconnect the cable from the guide around the fan.

10.10.57.2 Removing the Delivery Path Switching Solenoid 1

1) Remove the delivery path switching solenoid 1 [3].
   - 1 connector [1]
   - 1 screw [2]
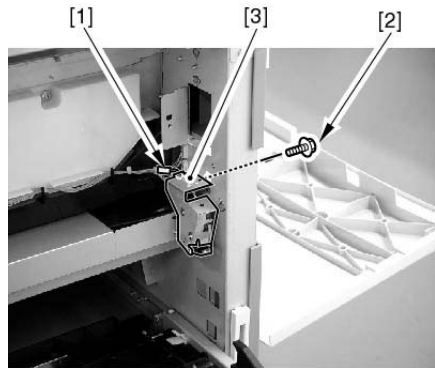
F-10-295

10.10.58 Delivery Path Switching Solenoid 2

10.10.58.1 Preparation for Removing the Delivery Path Switching Solenoid 2

1) Remove the fixing unit.
1-1) Remove the fixing drive unit.(page 11-38)Reference[Removing the Fixing Drive Unit]
1-2) Remove the fixing unit.
2) Remove the fixing/feeder unit.(page 10-63)Reference[Removing the Fixing/Feeder Unit]

10.10.58.2 Removing the Delivery Path Switching Solenoid 2

1) Open the fixing/feeder unit cover.
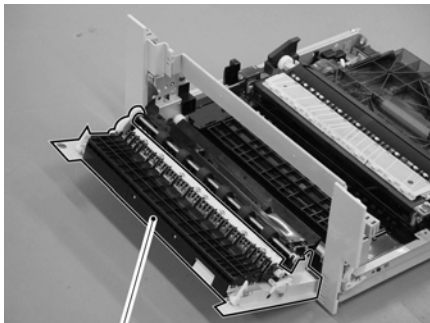
[1]

F-10-296

2) Pull the lever [2], and remove the delivery path switching solenoid 2 [4] with its mount.
   - 1 Connector [1]
   - 1 Screw [3]

[2]

[4]

[3]   [1]
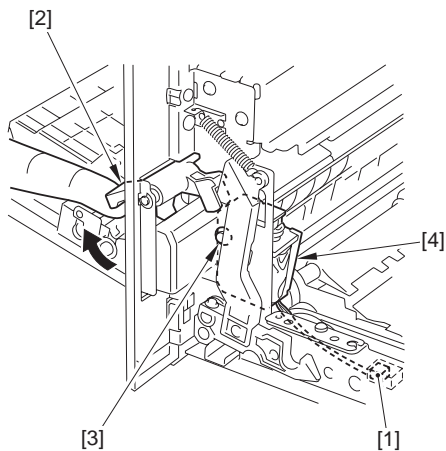
F-10-297

10.10.59 Face-Down Delivery Roller 1 Drive Belt

10.10.59.1 Preparation for Removing the Face-Down Delivery Roller 1 Drive Belt

1) Remove the upper left cover. Reference[Removing the Upper Left Cover]
2) Remove the center delivery tray [2].
(Referring to procedure 10.10.54)
3) Remove the delivery vertical path unit. Reference[Removing the Delivery Vertical Path Unit]

10.10.59.2 Removing the Face-Down Delivery Roller 1 Drive Belt

1) Free the protrusion [1] of the belt pulley (upper or lower) from the groove of the shaft, and move it; then, remove the belt [2].

[2]   [1]
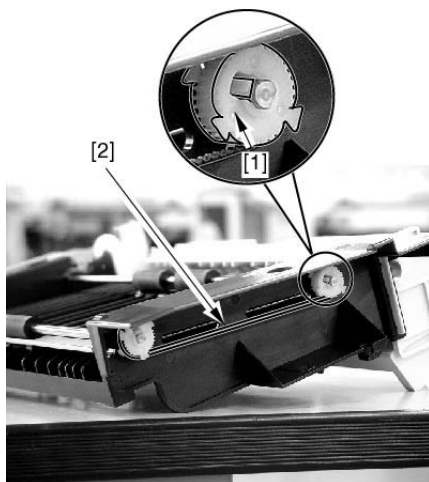
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Chapter 11

FIXING SYSTEM

Contents

11.1 Construction

11.1.1 Specifications, Control Mechanisms, and Functions

The fixing system has the following principal functions:

T-11-1

Item	Description
Fixing method	by twin belt
Fixing heater	IH heater
	pressure roller (1 pc.; halogen heater)
Control temperature	fixing belt: 200 deg C (in STBY) pressure belt: 140 deg c (in STBY)
Fixing drive control	fixing roller speed control (according to paper type/mode)
Fixing temperature detection	Upper Belt Unit - fixing main thermistor (contact) - fixing sub thermistor 1 (contact) - fixing sub thermistor 2 (contact)
	Lower Belt Unit - pressure main thermistor (non-contact) - pressure sub thermistor 1 (contact) - pressure sub thermistor 2 (contact)
Protective mechanism	A check is run for the following, thereby cutting the power to the fixing heater in the event of a fault:
	- thermistor temperature (TH1/TH2/TH3/TH4/TH5/TH6)

	- fixing thermal switch (TP1)
	  operating temperature: 242 +/-7 deg C
	- pressure thermal switch (TP2)
	  operating temperature: 170 +/-5 deg C

Separation claw	non-contact type (facilitates paper separation)

11.1.2 Major Components

T-11-2

Ref.	Component	Notation	Description
[A] Fixing Belt Unit			
[1]	Fixing belt		50 mm dia.
[2]	Fixing roller		center: 18.5 mm dia. ends: 18 mm dia.
[3]	Fixing belt tension roller		center: 22 mm dia. ends: 21.5 mm dia.
[4]	Fixing main thermistor	TH1	contact type (temperature control, overheating detection)
[5]	Fixing sub thermistor 1	TH2	contact type (overheating detection)
[6]	Fixing sub thermistor 2	TH3	contact type (overheating detection)
[7]	Fixing thermal switch	TP1	contact type
[8]	Fixing pad		nip area formation
[9]	Fixing cleaning felt		prevents intrusion of dust between fixing belt and sliding sheet
[10]	Fixing sliding sheet		limits wear on Fixing belt and Fixing pad
[B] Pressure Belt Unit			
[11]	Pressure belt		50 mm dia.
[12]	Pressure roller		center: 23.5 mm dia. ends: 18.5 mm dia.
[13]	Pressure belt tension roller		center: 21.5 mm dia. ends: 18.5 mm dia.
[14]	Pressure heater	H1	halogen heater: 300 W
[15]	Pressure main thermistor	TH4	non-contact type (temperature control, overheating detection)
[16]	Pressure sub thermistor	TH5	contact type (overheating detection)
[17]	Pressure sub thermistor 2	TH6	contact type (overheating detection)
[18]	Pressure thermal switch	TP3	non-contact type
[19]	Pressure pad		forms nip area
[20]	Pressure belt oil applying felt		prevents wear on pressure belt
[21]	Oil collecting felt		prevents oil from reaching belt surface
[22]	Pressure sliding sheet		limits wear on pressure belt and pressure pad
[C] IH unit			
[23]	IH coil		
[D] Fixing Drive System			
[24]	Fixing motor	M24	controls fixing/pressure
[25]	Fixing belt displacement control motor	M28	controls displacement of fixing belt
[26]	Pressure belt displacement control motor	M29	controls displacement of pressure belt

Ref.	Component	Notation	Description
[27]	Fixing pressure release motor	M27	controls engagement of pressure belt unit
[28]	Fixing belt position sensor 1	PS33	detects fixing belt position
[29]	Fixing belt position sensor 2	PS34	
[30]	Fixing belt position sensor 3	PS35	
[31]	Fixing belt HP sensor	PS31	detects fixing belt home position
[32]	Pressure belt position sensor 1	PS36	Detects pressure belt position
[33]	Pressure belt position sensor 2	PS37	
[34]	Pressure belt position sensor 3	PS38	
[35]	Pressure belt HP sensor	PS30	detects pressure belt home position
[36]	Fixing pressure release HP sensor	PS46	detects pressure belt engagement
[37]	Fixing inlet sensor	PS27	detects fixing inlet jams
[38]	Fixing outlet sensor	PS25	detects fixing outlet jams
[39]	Fixing wrap jam sensor	PS29	detects wrap jams

[A] : Fixing belt unit
[B] : Pressure belt unit
[C] : IH unit
[D] : Drive unit
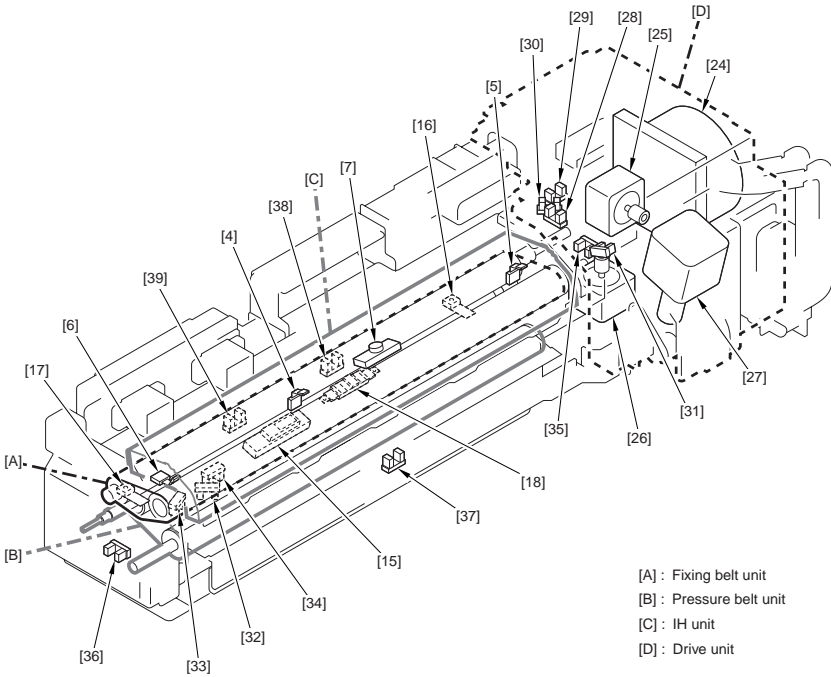
F-11-1
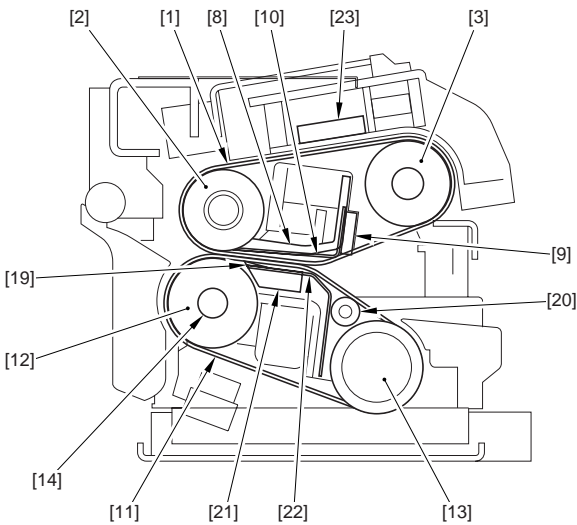
F-11-2

11.1.3 Control system composition

The following shows the major components of the fixing system:
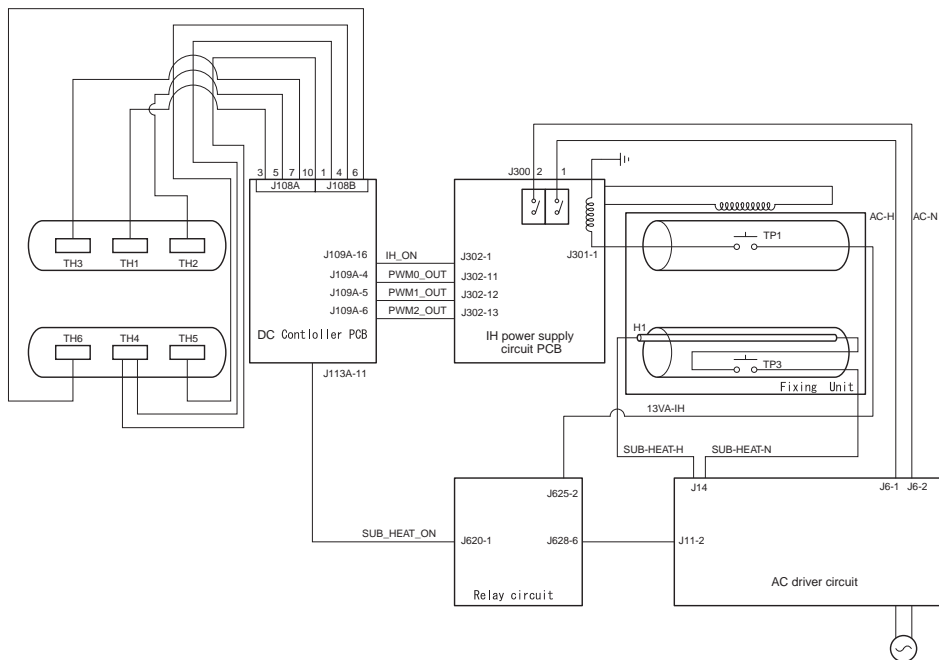
F-11-3

11.2 Various Control Mechanisms

11.2.1 Controlling the Speed of the Fixing Roller

11.2.1.1 Overview

The fixing drive motor (M24) is used to drive the fixing roller and the pressure motor, which in turn rotate the pressure belt.
The speed of the The fixing drive motor (M24) is varied to suit the type of paper being used.
-controlling the speed to suit paper types
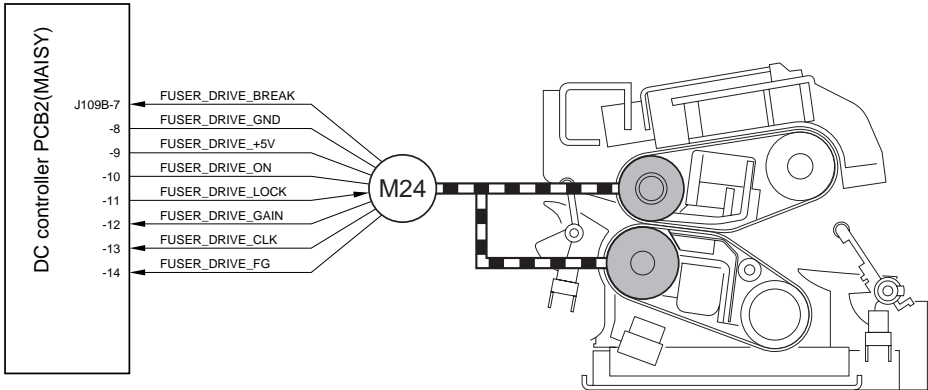
F-11-4

11.2.1.2 Controlling the Speed According to Paper Type

The machine controls the speed of the fixing roller according to the paper type .

T-11-3

Mode	Paper type	Productivity/fixing (process) speed		
		iR C5180	iR C4580	iR C4080
Normal speed mode	plain paper	51/210	40/163	40/163
1/2 speed	heavy paper*1	25.5/105	20/81.5	20/81.5
Bk high-speed mode	as set in service mode	-	45/185*2	45/185*2
Transparency mode	transparency, gloss paper	11/105	11/105	11/105

*1: The speed of the fixing roller is decreased (to 1/2) to ensure fixing on heavy paper and, in the case of full color mode, to ensure fixing of the color toner layer on the transparency.
*2: In the case of the Bk single-color mode, the speed is 45cpm, 185mm/sec, however in the case of the automatic selection job (ACS) of black and white/color (even the print of only Bk), the speed is 40cpm, 163mm/sec.
Once operates in the color mode (40cpm, 163mm/sec), it will not switch to the Bk single-color mode (45cpm, 185mm/sec) unless the standby stop of the printer.

11.2.1.3 Fixing Arch Control

Controlling Fixing Arch
The fixing arch control is the control for forming appropriate arching of paper.
The arching is formed with the difference of the speed between the fixing roller and the secondary transfer roller by reducing the feeding speed of the fixing driver motor (M24) just before a paper reaches to the nip of the fixing assembly.
When there is enough arching, the fixing arch sensor (PS47) turns OFF.
When the fixing arch sensor (PS47) goes OFF, the fixing drive motor (M24) increases its rotation speed.
By adjusting the speed of the fixing drive motor (M24), an appropriate arching can be always formed.
This control ends when the trailing edge of paper leaves the secondary transfer roller.

Flow of Control

[1] Starting to Monitor the Arching of Paper
    The machine starts to monitor the arching of paper as soon as its leading edge has fully reached a point +10 mm of the fixing nip (i.e., where the leading edge has fully reached the fixing assembly).

[2] Controlling the Speed of the Fixing Motor
    Paper is first moved to the fixing assembly at 99% of the process speed, which is then switched as follows:
    When the fixing arch sensor goes on [B],
    increases the fixing motor speed (to 103% of the process speed).
    When the fixing arch sensor goes off [C],
    decreases the fixing motor speed (to 99% of the process speed).

[3] The machine ends monitoring the arching when the trailing edge of paper leaves the secondary transfer roller.
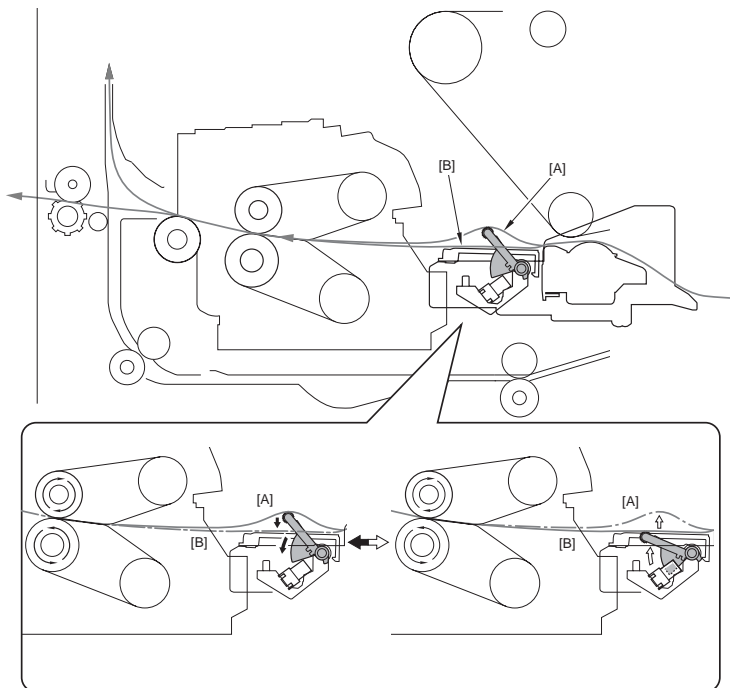
F-11-5

11.2.2 Controlling the Fixing Roller Temperature

11.2.2.1 Overview

The temperature control mechanism of the fixing roller is as follows:
See the next and subsequent pages for details of the temperature control mechanism for the following:
   (1) at power-on
   (2) in standby
   (3) during printing
   (4) in response to overheating of the ends
   (5) in response to overheating of the fixing tension roller
   (6) during recovery from low-power mode
   (6) during recovery from sleep mode

11.2.2.2 At Power-On(Fixing belt less than 100 deg C)

While the machine is starting up, the fixing start-up sequence is based on the mechanism used when the fixing belt temperature is less than 100 deg C.
In fixing start-up sequence, the fixing belt target temperature and the pressure target temperature are used as target temperatures while the machine starts up, supplying the IH heater with power to turn on the pressure heater until the start-up end condition*1 is satisfied, at which time the machine moves to standby sequence.
The machine also drives the fixing motor while it starts up to rotate the fixing belt and the pressure belt at 32 mm/sec. The pressure belt is not in contact with the fixing belt (i.e., away).

Note 1: The condition of setup completion varies depending on the environment and model (iR C5180, iR C4580, or iR C4080). See the following:
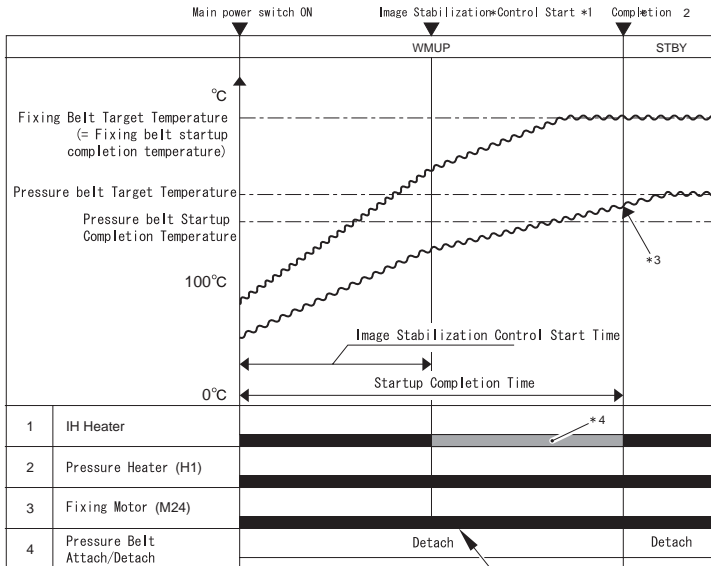
*1: In the iR C5180 and the 230V model of the iR C4580/C3880, the image stabilization control is executed from the beginning of the startup.
*2: When the startup requirements are fulfilled, it shifts to the standby mode.
*3: If it does not reach to the target temperature before the completion of the startup, heating is continued until it gets to the target temperature.
*4: In the 100/120V models of the iR C4580/C3880, the power consumption of the IH heater is decreased after 3 min / 2.5 min from the start of each model's startup. (It is not decreased in the iR C5180.)

F-11-6

1. Temperature Table (normal environment: 27 deg C > ROM temperature >/= 18 deg C)

T-11-4

		iR C5180	iR C4580/4080		
			100V	120V	230V
Target temperature	fixing belt(deg C)	200			
	pressure belt(deg C)	140			
Start-up end temperature (deg C)	fixing belt	200	200	200	200
	pressure belt	100	120	110	100
	WUT(sec)	240	300	270	240

2. Temperature Table (low-temperature environment: room temperature < 18 deg C)

T-11-5

		iR C5180	iR C4580/4080		
			100V	120V	230V
Target temperature (deg C)	fixing belt	210			
	pressure belt	140			
Start-up end temperature (deg C)	fixing belt	200	200	200	200
	pressure belt	100	120	110	100

3. Temperature Table (high-temperature environment: room temperature >/= 27 deg C)

T-11-6

		iR C5180	iR C4580/4080		
			100V	120V	230V
Target temperature	fixing belt(deg C)	200			
	pressure belt(deg C)	120			
Start-up end temperature (deg C)	fixing belt	200	200	200	200
	pressure belt	100	120	110	100
	WUT(sec)	240	300	270	240

11.2.2.3 At Power-On(Fixing belt 100deg C or more)

In fixing start-up sequence (fixing belt 100 deg C or more), turn on IH heater and pressure heater at power on, control the temperatures of the fixing/pressure belts so that they reach their target temperatures.
When the fixing/pressure belts reach their target temperature, the machine moves to the standby mode.
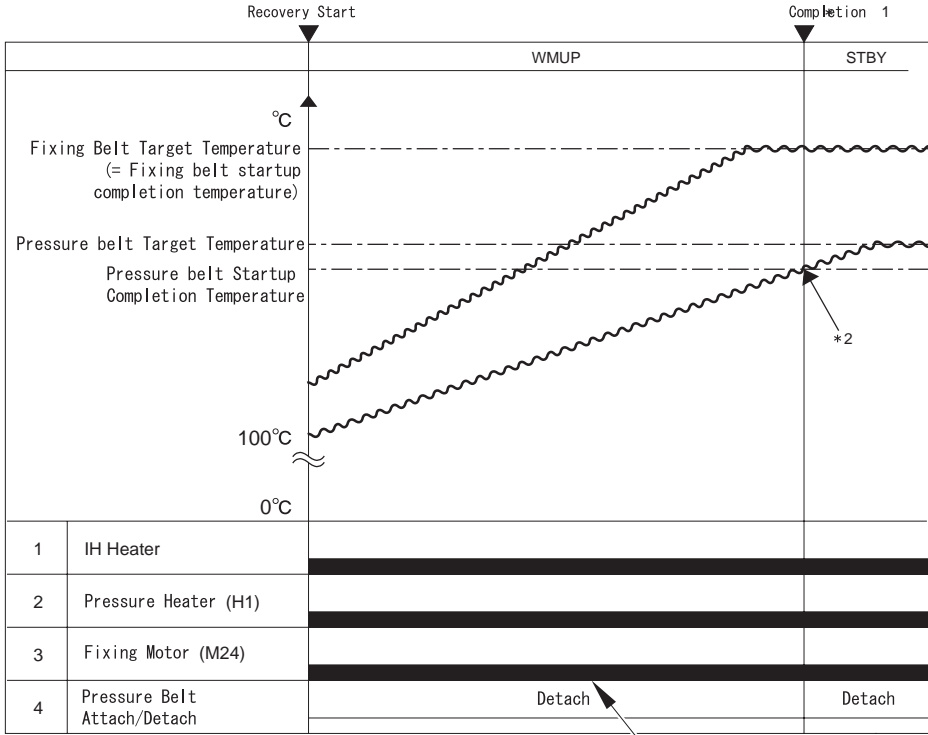
*1: When the startup requirements are fulfilled, it shifts to the standby mode.
*2: If it does not reach to the target temperature before the completion of the startup, heating is continued until it gets to the target temperature.

F-11-7

1. Temperature Table (normal environment: 27 deg C > ROM temperature >/= 18 deg C)

T-11-7

		iRC5180	iRC4580/4080		
			100V	**120V**	**230V**
Target temperature	Fixing belt (deg C)	200			
	Pressure belt (deg C)	140			
Start-up end condition	Fixing belt (deg C)	200	200	200	200
	Pressure belt (deg C)	100	120	110	100

2. Temperature Table (low-temperature environment: room temperature < 18 deg C)

T-11-8

		iRC5180	iRC4580/4080		
			100V	**120V**	**230V**
Target temperature	Fixing belt (deg C)	210			
	Pressure belt (deg C)	140			
Start-up end condition	Fixing belt (deg C)	200	200	200	200
	Pressure belt (deg C)	100	120	110	100

3. Temperature Table (high-temperature environment: room temperature >/= 27 deg C)

T-11-9

		iRC5180	iRC4580/4080		
			100V	**120V**	**230V**
Target temperature	Fixing belt (deg C)	200			
	Pressure beltPressuPressure belt (deg C)	120			
Start-up end condition	Fixing belt (deg C)	200	200	200	200
	Pressure belt (deg C)	100	120	110	100

11.2.2.4 Standby mode

After the system moves to standby mode, the temperatures of the fixing belt and pressure belt are controlled at each target temperature in a standby sequence. The fixing belt is driven and the fixing belt and the pressure belt are rotated in a speed of 32 mm/sec. The pressure belt remains "demounted". In addition, the pressure heater is ON during printing, except iRC5180 and 230V machine.
The standby sequence is continued until the system moves to low power mode or print mode.
The target temperatures of the fixing belt and the pressure belt in the standby sequence are shown in the following table.
1. Temperature Table (Normal: 27 deg C > Room temperature >/= 18 deg C)

T-11-10

		Time passed from 'ready' (sec) *1	
		0 to 899	900 to
iR C5180 Standby	Fixing belt	200 deg C	200 deg C
	Pressure belt	140 deg C	140 deg C
iR C4580/4080 Standby	Fixing belt	200 deg C	200 deg C
	Pressure belt	140 deg C	140 deg C

*1 incl. Job time
2. Temperature Table (Low temperature: Room temperature < 18 deg C)

T-11-11

		Time passed from 'ready' (sec) *1	
		0 to 899	900 to
iR C5180 Standby	Fixing belt	210 deg C	200 deg C
	Pressure belt	140 deg C	140 deg C
iR C4580/4080 Standby	Fixing belt	210 deg C	200 deg C
	Pressure belt	140 deg C	140 deg C

*1 incl. Job time
3. Temperature Table (High temperature: Room temperature >/= 27 deg C)

T-11-12

		Time passed from 'ready (sec) *1	
		0 to 899	900 to
iR C5180 Standby	Fixing belt	200 deg C	200 deg C
	Pressure belt	120 deg C	120 deg C
iR C4580/4080 Standby	Fixing belt	200 deg C	200 deg C
	Pressure belt	120 deg C	120 deg C

*1 incl. Job time

1 Lower the target temperature *1

		WMUP	STBY	
1	IH Heater			
2	Pressure Heater (H1)			
3	Fixing Motor (M24)			
4	Pressure Belt mounting/ dismounting	dismounting	dismounting	

*1 : 900 sec or longer after the machine moves to standby mode at the low temperature environment.

F-11-8

11.2.2.5 Print mode

In the fixing startup sequence, the room temperature is detected to set the target temperature at the start of printing.

At the start of printing, the IH heater is powered and the pressure heater is turned to off.

In addition, the fixing motor is stopped and the rotations of the fixing belt/the pressure belt are stopped. (It needs 0.5 sec to stop them completely.) At the same time, the fixing pressure motor is driven and the pressure belt is pressurized to the fixing belt.

When the fixing pressure HP sensor is turned to on (approx. 3 sec), the fixing pressure motor is stopped and the fixing motor is driven. And the IH heater is powered and the pressure heater is turned to on. *1: The target temperature of the fixing belt is lowered in stages between 10 and 50 sec after the print is started. (Refer to the following table.) The following table indicates in case of the plain paper.

When the fixing delivery sensor is turned to off after the last sheet passes, the power applied to the IH heater is stopped. At the same time, both the fixing motor and the fixing pressure motor are stopped and the pressure belt is freed (approx. 3 sec).

When the fixing pressure HP sensor is turned to off, the IH heater is powered again, the fixing motor is driven, and the fixing belt and the pressure belt are rotated in a speed of 32 mm/sec.

The system moves to standby mode.

*1: Only the iR C5180, iR C4580/4080 (230V)
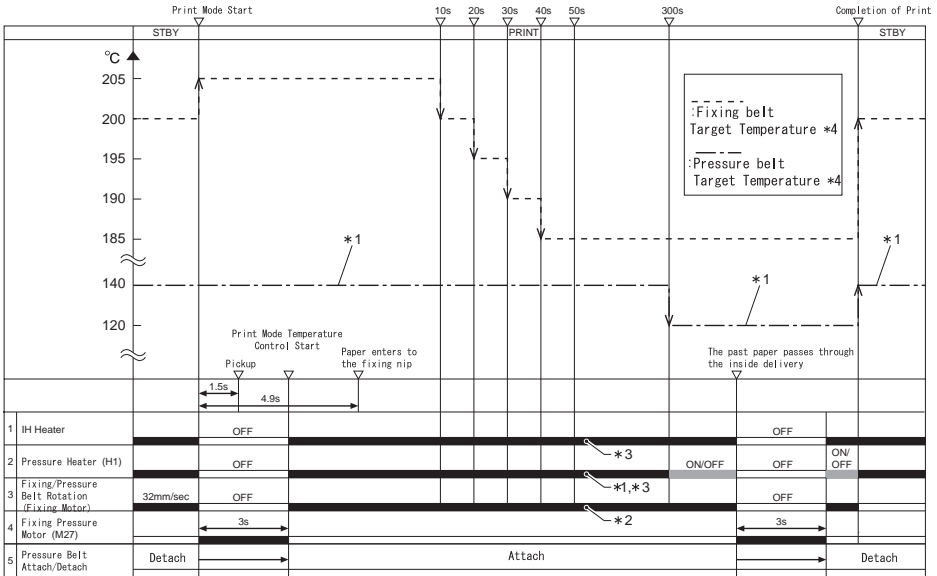
*1: Only the iR C5180 and the 230V model of the iR C4580/C3880, it is ON.
*2: The rotation speed of the belt varies depending on the paper type.
*3: The target temperature during printing varies depending on the environment.
*4: The indicated target temperature is for the iR C5180. (27 deg C > room temperature >/= 18 deg C)

F-11-9

1. Temperature Table (Normal: 27 deg C > Room temperature >/= 18 deg C)

T-11-13

		Time passed from Start of Printing						
		0 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to	300 to
iR C5180 Plain paper	Fixing belt	205 deg C	200 deg C	195 deg C	190 deg C	185 deg C	185 deg C	185 deg C
	Pressure belt	140 deg C						120 deg C
iR C4580/ 4080 Plain paper	Fixing belt	205 deg C	200 deg C	195 deg C	190 deg C	185 deg C	180 deg C	180 deg C
	Pressure belt	OFF						

2. Temperature Table (Low temperature: Room temperature < 18 deg C)
First in the morning (during 15 min after start-up): To 899 sec from 'ready'

T-11-14

		Time passed from Start of Printing						
		0 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to	300 to
iR C5180 Plain paper	Fixing belt	210 deg C	205 deg C	200 deg C	195 deg C	190 deg C	190 deg C	190 deg C
	Pressure belt	140 deg C						120 deg C
iR C4580/4080 Plain paper	Fixing belt	210 deg C	205 deg C	200 deg C	195 deg C	190 deg C	185 deg C	185 deg C
	Pressure belt	OFF						

STBY (15 min after start-up): 900 sec or later from 'ready'

T-11-15

		Time passed from Start of Printing						
		0 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to	300 to
iR C5180 Plain paper	Fixing belt	205 deg C	200 deg C	195 deg C	190 deg C	190 deg C	190 deg C	190 deg C
	Pressure belt	140 deg C						120 deg C
iR C4580/ 4080 Plain paper	Fixing belt	205 deg C	200 deg C	195 deg C	190 deg C	185 deg C	185 deg C	185 deg C
	Pressure belt	OFF						

3. Temperature Table (High temperature: Room temperature >/= 27 deg C)

T-11-16

		Time passed from Start of Printing						
		0 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to	300 to
iR C5180 Plain paper	Fixing belt	205 deg C	200 deg C	195 deg C	190 deg C	185 deg C	185 deg C	185 deg C
	Pressure belt	120 deg C						120 deg C
iR C4580/ 4080 Plain paper	Fixing belt	205 deg C	200 deg C	195 deg C	190 deg C	185 deg C	180 deg C	180 deg C
	Pressure belt	OFF						

11.2.2.6 Temperature rise at end

1. Temperature rise control at end of IH heater
[1] Step 1
If either the sub-thermistor 1 (TH2) or the sub-thermistor 2 (TH3) detects 215 deg C, the upper limit of power applied to the IH heater is lowered. (Power at print mode *1 -> 500W)
If both of the sub-thermistor 1 (TH2) and the sub-thermistor 2 (TH3) detect less than 215 deg C, the upper limit of power applied to the IH heater is returned to original. (500W -> Power at print mode)

[2] Step 2
If either the fixing sub-thermistor 1 (TH2) or the fixing sub-thermistor 2 (TH3) detects 220 deg C, the power applied to the IH heater becomes 0W.
If both of the fixing sub-thermistor 1 (TH2) and the fixing sub-thermistor 2 (TH3) detect less than 215 deg C, the system moves to step 1.

T-11-17

	IH Power at normal	IH Power Upper limit / Temperature 1 to change	IH Power Upper limit / Temperature 2 to change
IH Power Upper limit	1100 W	500 W	0 W
Fixing sub-thermistor 1/2	Less than 215 deg C	215 deg C	220 deg C

2. Temperature rise control at end of Pressure heater *1
If either the pressure sub-thermistor 1 (TH5) or the pressure sub-thermistor 2 (TH6) detects 215 deg C or higher, the pressure heater is turned to off.
If both the pressure sub-thermistor 1 (TH5) and the pressure sub-thermistor 2 (TH6) are less than 215 deg C, the temperature in print mode is controlled.
*1: Only for iR C5180 and iR C4580/4080 (230 V)

T-11-18

	Pressure heater forced off temperature
Pressure sub-thermistor 1/2	215 deg C

11.2.2.7 Measurements against heating of fixing tension roller

Objective
- To detect the high-temperature error by bringing fixing sub thermistor into contact with tension roller if the fixing belt becomes torn.
- To detect high-temperature error by fixing sub thermistor 2 as fixing tension roller (metal) temperature becomes higher than the inside of the belt at the time of start-up.
These operations against the heating of tension roller are conducted during warm-up, recovery mode, and stand-by.

[1] Step 1
The system lowers the electric power capacity on the IH heater when either of sub thermistor 1 (TH2) or sub thermistor 2 (TH3) detects the temperature higher than 215 deg C. (electric capacity *1 in the print mode -> 700W)
The system recovers the electric capacity when both of sub thermistor 1 (TH2) or sub thermistor 2 (TH3) detect the temperature lower than 215 deg C. (700W -> electric capacity *1 in the print mode)

[2] Step2
The system sets the electric power capacity on the IH heater 0W when either of sub thermistor 1 (TH2) or sub thermistor 2 (TH3) detects the temperature higher than 220 deg C.
The system goes to the step [1] when both of sub thermistor 1 (TH2) or sub thermistor 2 (TH3) detect the temperature lower than 215 deg C.

T-11-19

	temperature to change IH electric capacity 1	temperature to change IH electric capacity 2
IH electric capacity	700 W	0 W
Fixing sub-thermistor 1/2	215 deg C	220 deg C

11.2.2.8 In case of recovery from sleep-mode

The system starts the same temperature controlling as that of the Power-On (Fixing belt less than 100deg C) operation.

11.2.2.9 At Low-Power/Power Save Mode

This machine has the low power and power save mode for energy conservation.
Reducing energy consumption is possible by lowering the fixing belt temperature target and turning off the pressure heater, respectively.
The following are the fixing belt temperature control, pressure heater ON/OFF and recovery time at lower power/power save mode.

T-11-20

Mode	Item	Model		
		iRC 5180	iRC 4580	iRC 4080
Power save mode (-10%)	Fixing belt temperature control (deg C)	110/140*1	90/130*1	200
	Pressure heater	Off	Off	140*2
	Recovery time (sec)	170sec or less	230/200/ 170sec or less *3	-
Power save mode (-25%)	Fixing belt temperature control (deg C)	200	200	200
	Pressure heater	Off	Off	Off
	Recovery time (sec)	Approx. 30	Approx. 30	Approx. 30
Power save mode (-50%)	Fixing belt temperature control (deg C)	190	190	190
	Pressure heater	Off	Off	Off
	Recovery time (sec)	Approx. 30	Approx. 30	Approx. 30
Lower power mode	Fixing belt temperature control (deg C)	140	140	140
	Pressure heater	Off	Off	Off
	Recovery time (sec)	Approx. 80	Approx. 80	Approx. 80

*1: Copier/Multi-function copier
*2: 120 deg C for high-humidity environment (ROM temperature>/=27 deg C)
*3: 230/200/170sec are for 100V/120V/230V machines respectively.

11.2.2.10 The service mode regarding the fixing temperature control.

1.Fixing Belt Standby Temperature Change
[Mode name]
COPIER > OPTION > BODY > FX-U-STB
[Functional Description]
Change the standby temperature of the fixing belt.
[Setting Values]
0: Default
1: -5
2: -10
3: -15
4: -20
[Usage]
Depending on the installation site (environment) or the customers' way of using, change the temperature at the standby.
2.Pressure Belt Standby Temperature Change
[Mode name]
COPIER > OPTION > BODY > FX-L-STB
[Functional Description]
Change the standby temperature of the pressure belt.
[Setting Values]
0: Default
1: -5
2: -10
3: -15
4: -20
[Usage]
Depending on the installation site (environment) or the customers' way of using, change the temperature at the standby.

11.2.3 Detecting the Passage of Paper

11.2.3.1 Detection of paper passage

Paper passage detection components of the fixing unit are described as follows:
- Fixing inlet sensor(PS27)   Detects the passage of paper fed to the fixing unit
- Fixing delivery sensor(PS25)   Detects the paper delivered from the fixing unit
-Fixing wrap jam sensor (PS29) Detects wrap jams

F-11-10
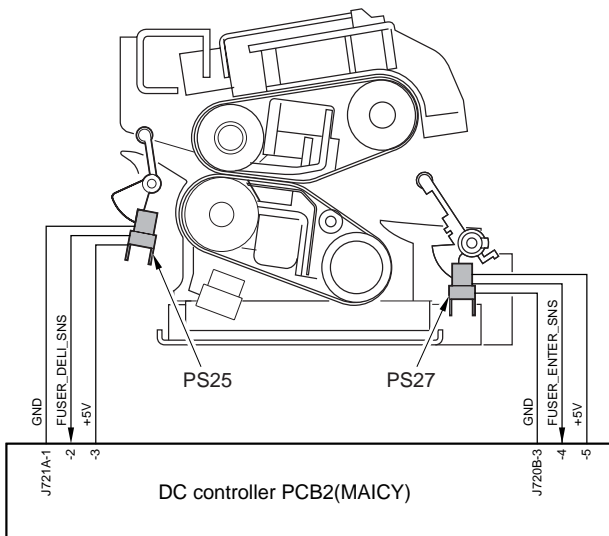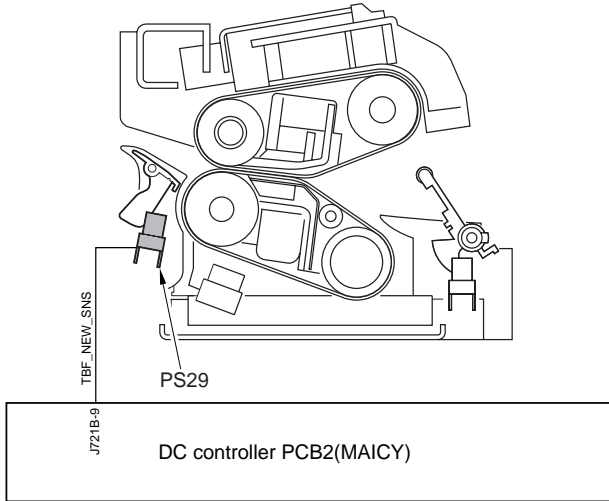
11.2.4 Belting inclined Control

11.2.4.1 Belt Displacement Control

Purpose
Control the fixing / pressure belt position in order to prevent the belt damage that is caused by the displacement of the fixing belt and the pressure belt to one side.

Description of Control
Control the fixing (pressure) belt [1] to be always at the center position (standard position). When it is moving toward the standard position (center), do not control.
The position of the fixing (pressure) belt is detected with the 3 fixing (pressure) belt position sensors (PS33/34/35, and PS36/37/38).
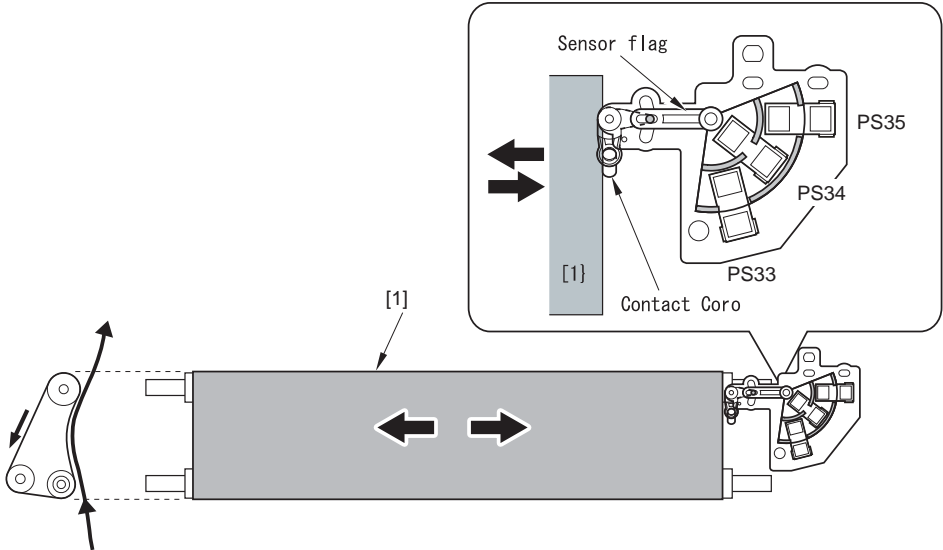
F-11-11

The figure shows the case of the fixing belt.
The position of the belt is detected with the fixing (pressure) belt position sensor, and the rotational directions of the fixing (pressure) displacement control motors (M28/M29) are determined by the detected position and the shifting direction of the belts.
By driving the fixing (pressure) displacement control motor (M28/M29), shift the position of the tension roller in the 5 levels. *1
If the belt shifts toward the front (getting away from the standard position), shift the belt to the center by rotating the fixing (pressure) displacement control motor in a clockwise direction and then shift the fixing (pressure) tension roller to upward (level 1 (upper) / level 2 (upper)).

On the other hand, if the belt shifts toward the rear (getting away from the standard position), shift the belt to the center by rotating the fixing (pressure) displacement control motor (M28/M29) in a counter clockwise direction and then shift the fixing (pressure) tension roller to downward (level 1 (lower) / level 2 (lower)).
By figuring out the HP with the belt HP sensor (PS31/PS30) and driving the fixing (pressure) displacement control motor (M28/M29) with the specified pulse from the HP, the position of the tension roller (5 levels) is remained constant.

If the tension roller does not shift to the center although setting it at the level 2 (upper or lower), it shifts to the belt full displacement temporary avoidance mode (see the belt temporary displacement avoidance mode).
*1: The composition of 5 levels is as follows: standard position, level 1 (lower), level 2 (lower), level 1 (upper), and level 2 (upper).
*1: The 5-level consists of the standard position, the level-1 (down), the level-2 (down), the level-1 (up), and the level-2 (up).
The figure shows the case of the fixing belt.
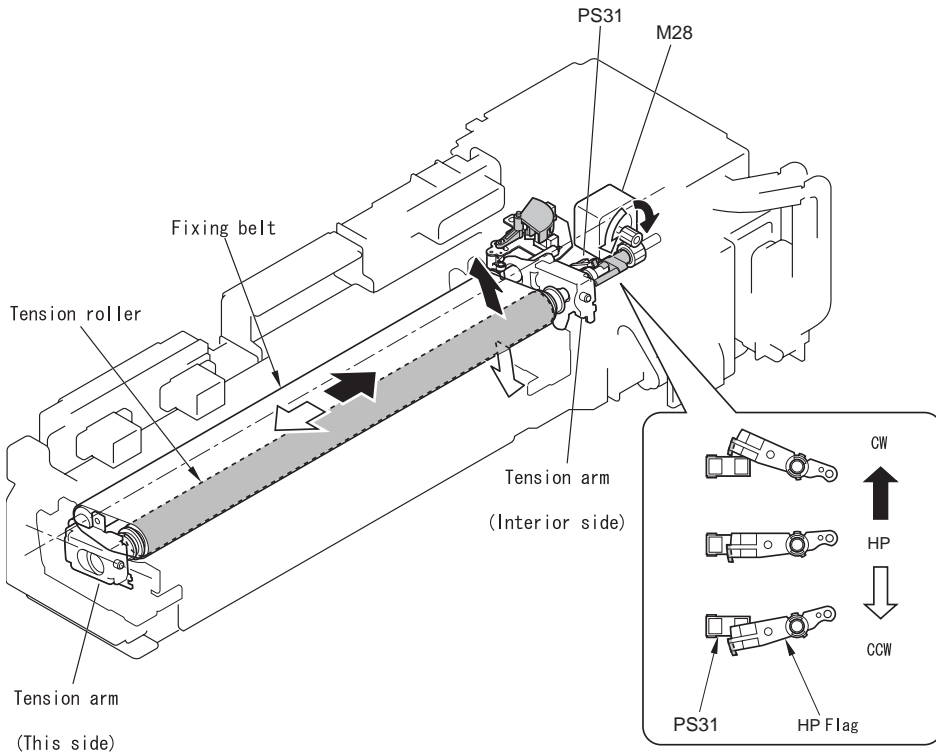
F-11-12

Example: A condition that the belt tilts toward front.

<0 to +1.5 Level 1 control ON> à it still tilts toward front.

<+1.5 to +2.5 Level 2 control ON> à the belt shifts toward the center.

<Sensor state changes from +2.5 to +1.5 No controlling>

<Sensor state changes from +1.5 to 0 No controlling> *1
*1: When passing the specified time after the value becomes 0, return the belt unit to the horizontal level.

<Sensor state changes from 0 to -1.5 Level 1 control at rear side ON>
*1: The standard position of the belt '0' does not mean that the belt level is horizontal. Thus, return the belt unit to the horizontal level when its standard position becomes '0'.

T-11-21

Position of the tension roller	Level 2 (upper)		Level 1 (upper)	Standard Position	Level 1 (lower)	Level 2 (lower)	
Belt position	Front	Å©	Å®	Center	Å©	Å®	Rear
Distance from the belt standard position	+4*1	2.5	1.5	0	-1.5	-2.5	-4*1
Belt position sensor 1 (PS33)	1*2	1	1	0	0	0	1
Belt position sensor 2 (PS34)	1	0	0	0	1	1	1
Belt position sensor 3 (PS35)	1	1	0	0	0	1	1
Tension roller HP sensor	0	0	0	1	1	1	1
Sensor position	áF	áE	áD	áC	áB	áA	á@
Displacement control motor	Stop	Clockwise rotation	Clockwise rotation	Stop	Counter clockwise rotation	Counter clockwise rotation	Stop
Tension roller position	--	0.5	0.25	0	-0.25	-0.5	--

*1: Displaying the error message E007.
*2: Light shielding: 1, Permeation: 0
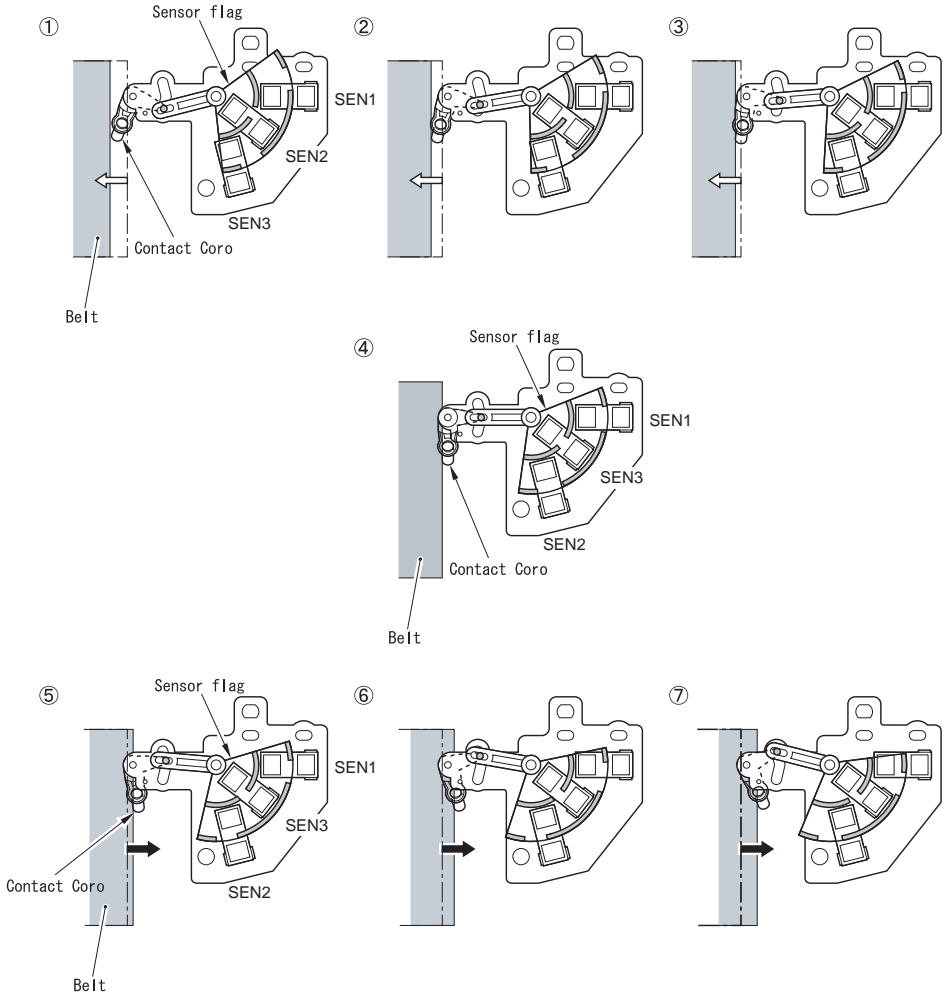
F-11-13
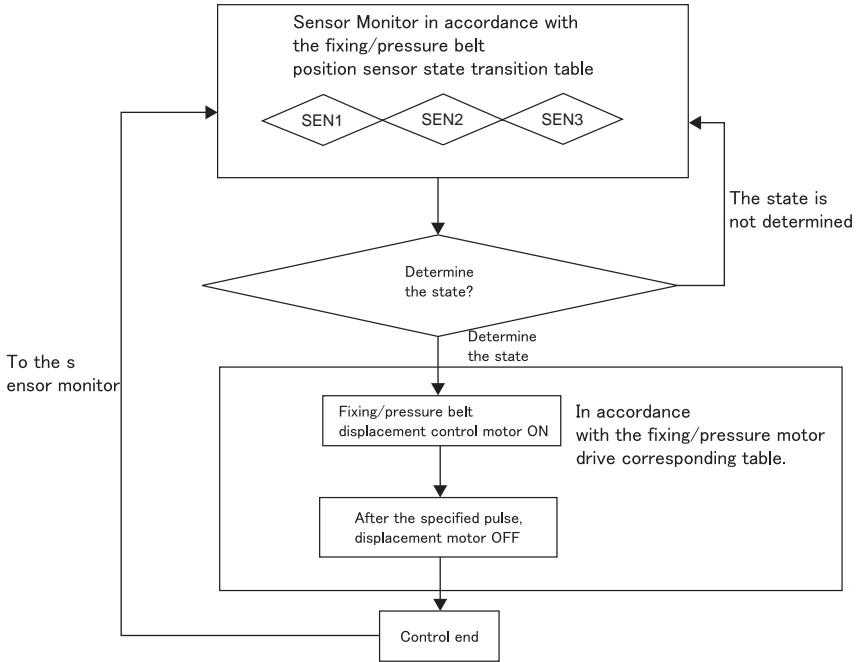
F-11-14

Error Codes Relevant to Fixing/Pressure Belt Displacement Control
E007 Fixing belt displacement error
 0001: Upper belt displacement fault. (Either the upper belt full displacement or the belt displacement sensor fault.)
 0002: Lower belt displacement fault. (Either the lower belt full displacement or the belt displacement sensor fault.)
 0101: Upper belt HP detection error.
 0102: Lower belt HP detection error.

Note:
Adjust the fixing/pressure unit HP with the following service mode at the installation or when replacing the fixing (pressure) belt.
COPIER > FUNCTION > FIXNG > FX-UHP-S
    > FX-LHP-S

⚠️Points to Note When Replacing Fixing Unit
By executing the service mode, the alarm code is closed and the total rotation time is cleared. Thus, this mode must be executed when replacing the fixing unit.
If the mode is not executed, the following symptoms will occur.
-The alarm code is not closed.
06-0002: Fixing unit life alarm (Caused by the belt displacement)
06-0004: Fixing unit life alarm (Caused by the torque up)
-Although the total rotation time of the replaced fixing assemble does not reach to the message threshold, the machine wrongly recognize that it reaches to the threshold and displays the message.
Be sure not to execute the mode except at the installation and the fixing unit replacement. If not, an error message may not be displayed when the fixing unit reaches to its life.

11.2.4.2 Belt Full Displacement Temporary Escape Mode

Purpose
In this machine, belt displacement control is performed to prevent full displacement of fixing belt.
However, belt displacement occasionally occurs. At full displacement, display E007-0001 or 0002 and stop the machine.
To eliminate downtime of the machine due to the error display, execute belt full displacement temporary escape mode.

Control contents
When the belt end reaches +2.5/-2.5 from the belt standard position, the displacement control motor is activated to move the position of the belt (tension roller) to the two-step position (See the belt displacement control).
When the belt end stays there (+2.5/-2.5 from the belt standard position) 10 seconds or more after moving the belt (tension roller) to two-step position, it is judged that the belt cannot be moved to the center, and full displacement temporary escape mode is executed.
Perform pressure release of the pressure belt for the full displacement temporary escape mode (While printing/copying, deliver papers at the machine first and perform this procedure).
When releasing pressure, the belt is moved to the center. If full displacement occurs after the pressure release, E007-0001 or 0002 is displayed and the machine is stopped.
'Printer in Preparation' is displayed on the control panel during this time.
When the belt returns to the center position, start-up sequence is performed, the pressure belt is pressured and printing is started again.
*1 The belt is displaced most when applying pressure to the pressure belt. So, it shifts to the center by releasing the pressure of the pressure belt at the 2 level positions.

```
          ┌─────────────────────────┐
   ┌──────│ Belt displacement control │◄──────┐
   │      └─────────────────────────┘         │
   │                   │                       │
   │                   ▼                       │
   │            ╱             ╲    No           │
   │          ╱  Stayed at belt  ╲──────┐       │
   │          ╲  NG position for  ╱      │       │
   │            ╲  10 seconds?   ╱       │       │
   │                  │ Yes              │       │
   │                  ▼                  │       │
   │            ╱             ╲    No     │       │
   │          ╱  Any paper in   ╲─────┐   │       │
   │          ╲  the passing area? ╱    │   │       │
   │                  │ Yes            │   │       │
   │                  ▼                │   │       │
   │      ┌───────────────────────┐   │   │       │
   │      │ Deliver the residual papers │  │   │       │
   │      └───────────────────────┘   │   │       │
   │                  │◄───────────────┘   │       │
   │                  ▼                     │       │
   │      ┌───────────────────────┐         │       │
   │      │ Release the pressure of │         │       │
   │      │ pressure belt to move    │         │       │
   │      │ the belt                 │         │       │
   │      └───────────────────────┘         │       │
   │                  │                     │       │
   │                  ▼                     │       │
   │            ╱             ╲    No   ┌────────────┐
   │          ╱ Move the belt  ╲───────►│ E007-0001  │
   │          ╲ to the center  ╱         │ E007-0002  │
   │                  │ Yes             └────────────┘
   │                  ▼
   │      ┌───────────────────────────┐
   │      │ Start-up sequence after the │
   │      │ belt moves to the center    │
   │      └───────────────────────────┘
   │                  │
   └──────────────────┘
```

Belt displacement escape mode*1
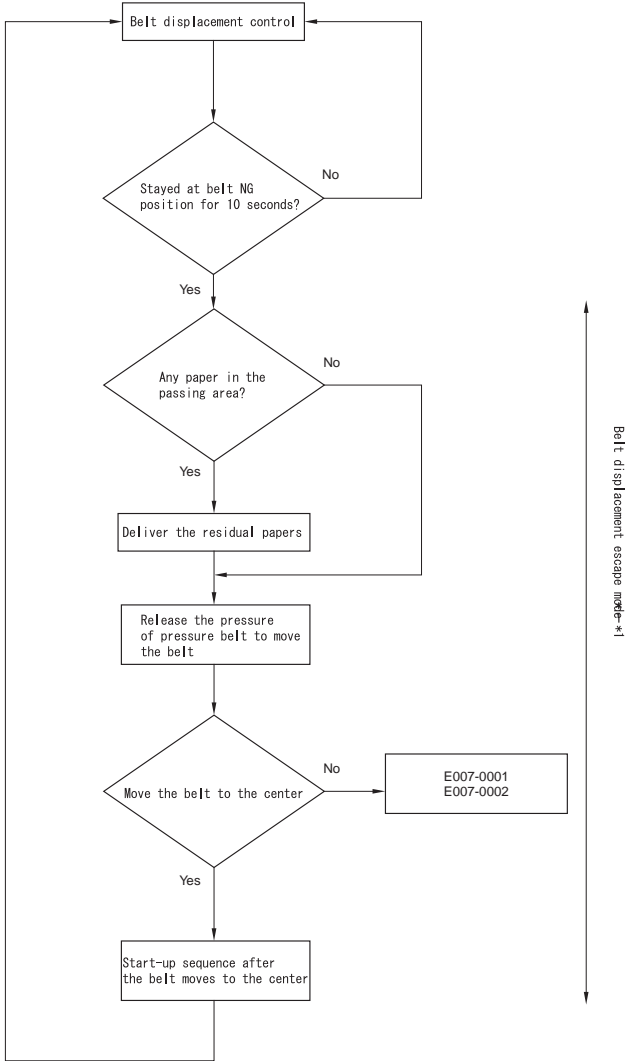
F-11-15

The fixing assembly activating the full displacement temporary escape mode is the one that is not correctly controlled (full displacement occurs). Display 'The fixing unit has little lifetime left. Please inform it to the responsible servicing person', which is the message when the fixing assembly reached its lifetime, to urge replacement.

The message displayed when the fixing assembly reaches its lifetime is same as the one displayed on the control panel when executing the full displacement temporary escape mode.

There is an alarm code to distinguish the above two cases.

06-0002 Fixing assembly belt lifetime alarm (Occurred when belt displacement occurred)

06-0004 Fixing assembly belt lifetime alarm (Occurred when torque was increased)

The cause can be identified by seeing Service Mode > COPIER > ALARM-2.

11.2.5 Checking Life

11.2.5.1 Lifetime Detection of Fixing Assembly Belt Unit

The lifetime of the fixing assembly is estimated by the following three values.
When the following three values reach their thresholds, message and E008-0001 are displayed.
The main cause of reducing the lifetime is torque increase of the fixing drive motor. It is mainly because the message is displayed by reading the current (torque) running through the fixing drive motor.
1.Current Value (Torque) Flowed Into the Fixing Drive Motor
By monitoring the current amount flowed into the fixing motor (M24), detect the life of the fixing unit.
As the fixing/pressure belt is worn, the amount of oil inside of the fixing/pressure belt decreases so that the frictional force inside of the belt becomes greater.
As the frictional force gets greater, the torque of the fixing motor becomes higher to rotate the drive roller; hence, the current amount (voltage) flown into the fixing motor also becomes higher. Monitor this current amount ((V1-V2)/É÷) and when it reaches to the specified level (warning level), the warning message is displayed on the control panel. As the fixing/pressure belt is worn further, the current amount reaches to the specified level (error level) and E008-0001 is displayed (a message is also displayed on the service mode initial screen.)
As a rough estimation, the decrease of the oil amount that determines the life of the fixing unit starts around 300,000 sheets (fixing delivered number). Hence, by checking the fixing delivered number with the service mode (COPIER > FUNCTION > DRBL-1 > FX-BLT-U), the occurrence timing of the warning and the error can be predicted to some extent.
The estimated number of copies from the warning message to the error is about 10,000 sheets.

Current value (torque)	Control panel display
Message display threshold	User display: Replace the fixing unit.
	Service mode: replace the fixing Unit
Error display threshold	E code display Display E008-0001

Fixing motor

Relay circuit board

38V

38V

GND

V2 $\omega \Omega$ V1

Voltage difference
detection circuit

DC controller
Circuit board 2
(MACSY)

Detection output
voltage

A/D

k(V1-V2)

CPU

Calculate current by software
Detection current=(V1-V2)/omega

DC controller
Circuit board 1
(IMG)
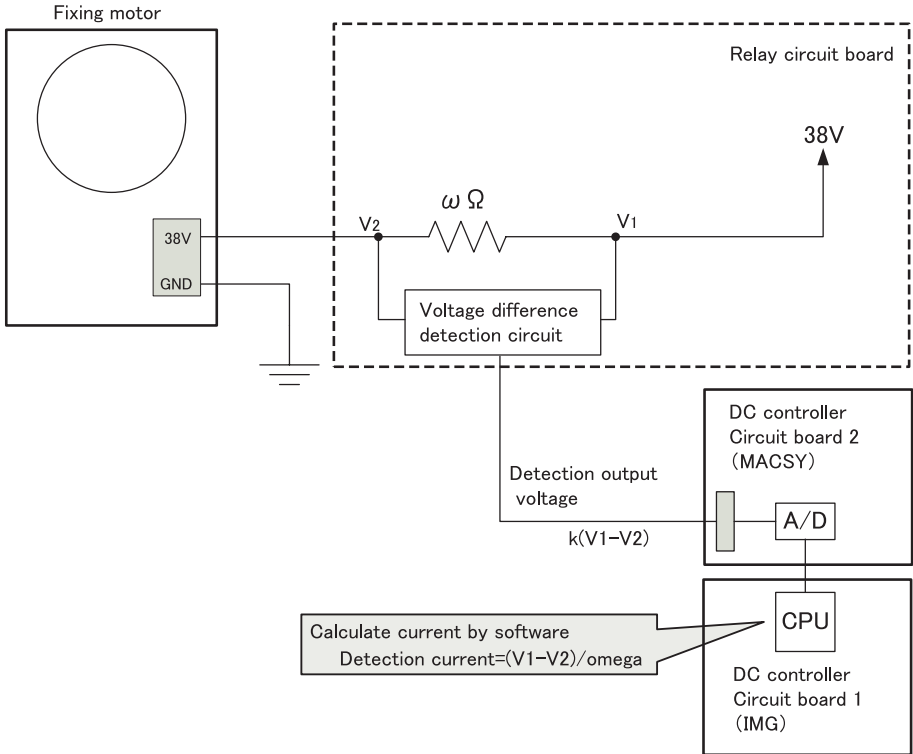
F-11-16

2. Total rotation time of the fixing assembly

When the pressure belt is separated and rotates for long period and at low speed (convenience store, etc), the lifetimes of thermistor and thermoswitch may end. Total rotation time should be included in the condition of the lifetime of the fixing unit.

Totaling displays E008-0001 when it will reach in 15,000 hours at the total rotation time.

The total rotation time includes the total time of standby mode (pressure belt detached), and print mode (pressure belt unit pressed).

The number of the paper that passed through the fixing unit can be checked from the service mode below. However, the count number shown by this service mode is not related to the life detection control. Still though, it is recommended to check the data using this service mode to figure out the life of the fixing unit as it varies depending on the idiosyncracy, or how it is used.

COPIER > COUNTER > DRBL-1 > FX-BLT-U

⚠Points to Note When Replacing Fixing Unit

The total rotation time of the fixing unit is cleared (closing the alarm code) when executing the following service mode.

COPIER > FUNCTION > FIXING > FX-UHP-S
> FX-LHP-S

If the mode is not executed, the following symptoms will occur.

-The alarm code is not closed.

06-0002: Fixing unit life alarm (Caused by the belt displacement)

06-0004: Fixing unit life alarm (Caused by the torque up)

-Although the total rotation time of the replaced fixing assemble does not reach to the message threshold, the machine wrongly recognize that it reaches to the threshold and displays the message.

Be sure not to execute the mode except at the installation and the fixing unit replacement. If not, an error message may not be displayed when the fixing unit reaches to its life.

11.3 Belt Pressurizing Mechanism

11.3.1 Pressurizing mechanism of pressure belt

Objective
The pressure roller is engaged only while printing is under way to prevent deformation of the fixing (pressure) belt. The pressure roller is engaged/disengaged as necessary.
Pressure belt releasing sequence
Pressure belt touches fixing belt only when printing is conducted to form a fixing nip.
Pressurizing / Releasing pressure motor is driven by fixing pressure release motor (M27).
When fixing pressure release motor (M27) rotates, pressure belt is pressurized. When rotated reversally, the pressure is released.
It takes 3 seconds from driving the fixing pressure release motor (M27) to change the pressure belt from released condition to pressurized condition, or from pressurized condition to released condition.
The released / pressurized condition of the pressure belt is detected by the fixing pressure release HP sensor (PS46) at the timing described below.
- When the main power is turned ON
- When opening/closing the front cover, manual feed tray, fixing feeding unit
- When recovering from sleep mode
Illustration to be inserted
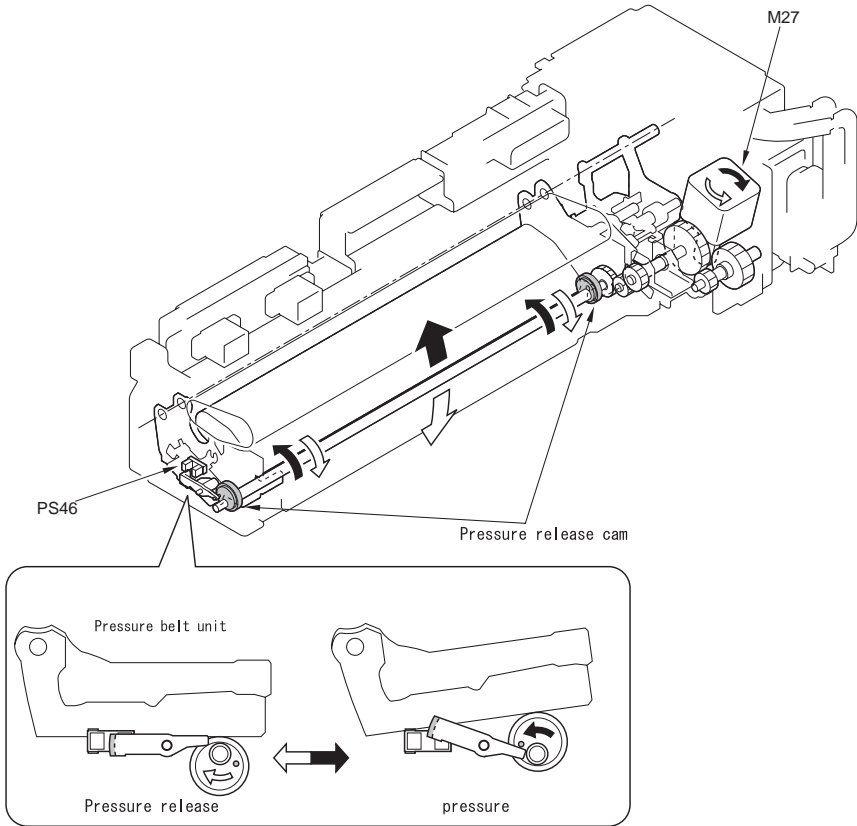
F-11-17

11.4 Protective Functions

11.4.1 Power break due to thermo-switch operation at unusual temperature rise.

⚠

The contact of thermo-switch does not recover once opened. Replace it instead of re-using it.

The machine is equipped with the following protective mechanisms to detect overheating of the fixing assembly, thus cutting off the power to the heater:
1.DC controller (CPU)

2.ASIC

3.thermal switch
(fixing thermal switch rated at 236 +/-8; pressure thermal switch rated at 238 +/-8)
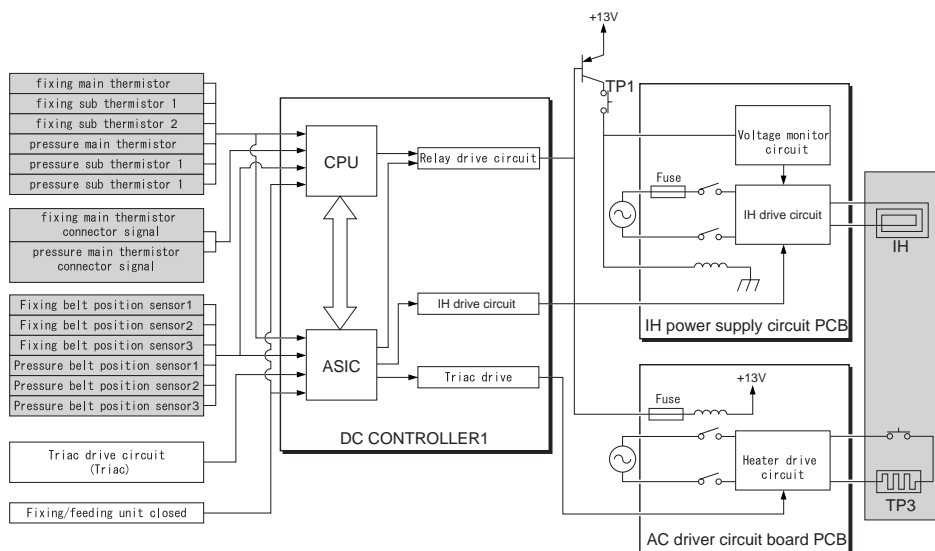
F-11-18

11.5 **Parts Replacement Procedure**

11.5.1 Fixing Drive Unit

11.5.1.1 Removing the Fixing Drive Unit

1) Slide out the fixing/feeding unit [1].
2) Remove the fixing drive cover [3].
   - 2 screws [2]
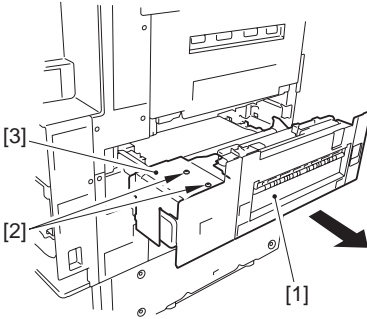
F-11-19

3) Move the joint plate [2] to the side to detach.
   - 2 resin E-rings [1](Use precision pliers.)
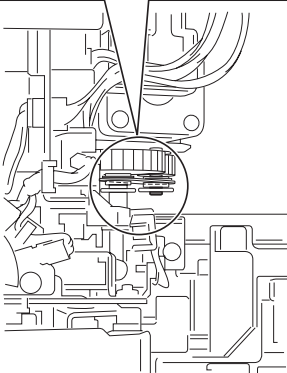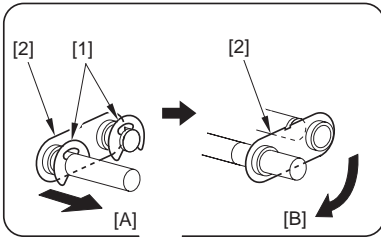
F-11-20

4) Remove the harness guide cover [1].
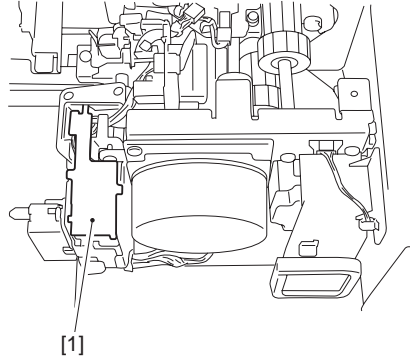
F-11-21

5) Disconnect the 4 connectors [1].
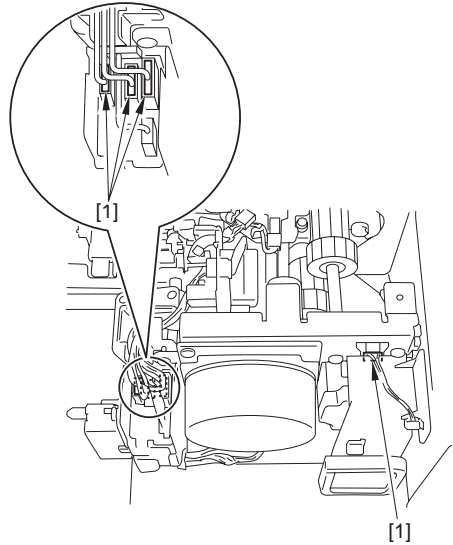
F-11-22

6) Remove the fixing drive unit [2].
 - 3 screws [1]
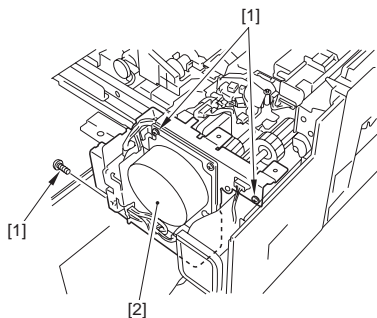
F-11-23

11.5.2 Fixing Assembly

11.5.2.1 Preparation for Removing the Fixing Assembly

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]

11.5.2.2 Removing the Fixing Assembly

1) Open the Fixing/Feeding unit cover [1].

⚠ **Points to Note When Removing the Fixing Assembly**
Hold the grips of the fixing assembly, and lift it slightly toward the host machine to detach it in the upward direction.

2) Remove the fixing assembly [3].
 - 2 screws [2]
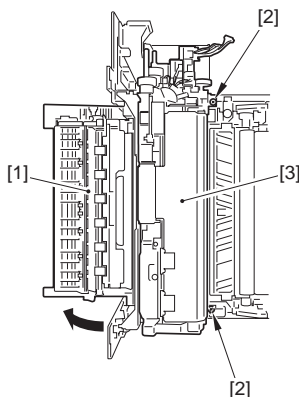
F-11-24

11.5.3 Fixing Unit

11.5.3.1 Preparation for Removing the Fixing Unit

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the IH unit.(page 11-40)Reference[Removing the IH Unit]

11.5.3.2 Removing the Fixing Unit

⚠ **Points to Note When Removing the Fixing Unit**
Do not remove the screws that are locked with red bond. If removing the bond-locked screw, it will cause the failed adjustment of the parts. These parts are adjusted in the factory and cannot be adjusted in the field.
Also, do not remove the screws that fix the steering [1]. If removing these screws, it will cause the mismatch with the fixing nip by failed adjustment, and the displacement control does not operate normally.
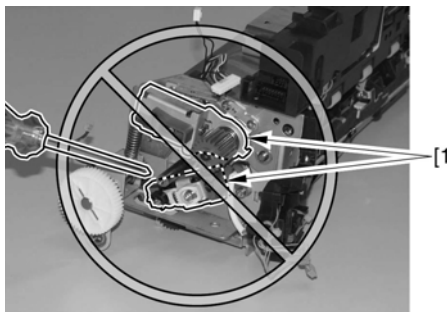
F-11-25
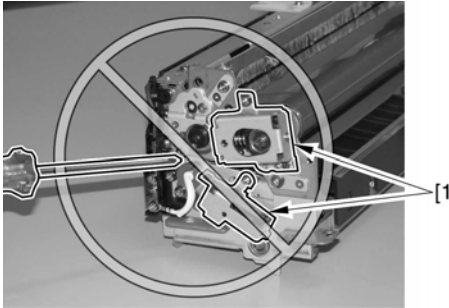
F-11-26
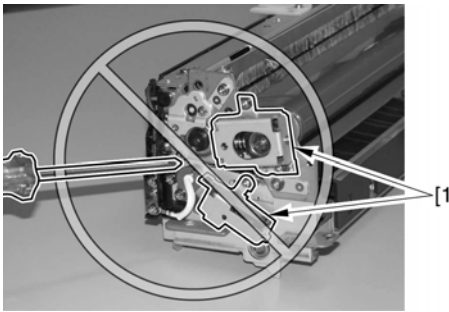
F-11-27

1) Move the harness guide [3].
   - 2 connectors [1]
   - 2 screws [2]
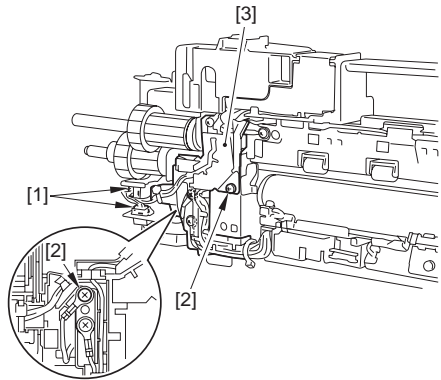
F-11-28

2) Remove the connector [1].
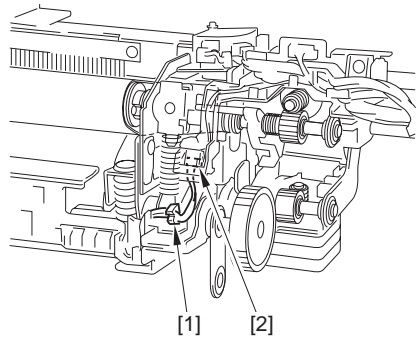
F-11-29

3) Free the harness from the harness guide [2].
   - 2 connectors [1]
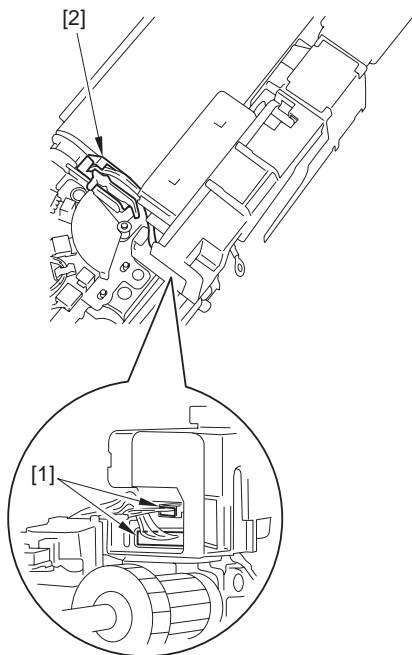
F-11-30

4) Remove the harness guide [1]ÅiMove it to the side, and detach it by freeing it from the pinÅj.
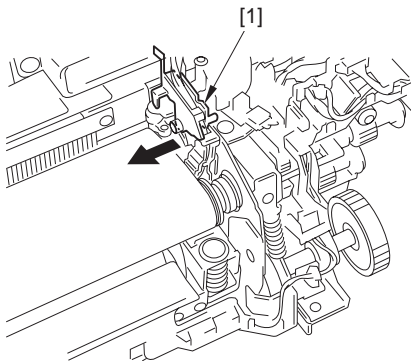
F-11-31

⚠

When moving the sensor unit, take care not to remove the screws glued in place.

5) Move the fixing belt position sensor unit [2].
   - 2 screws [1]
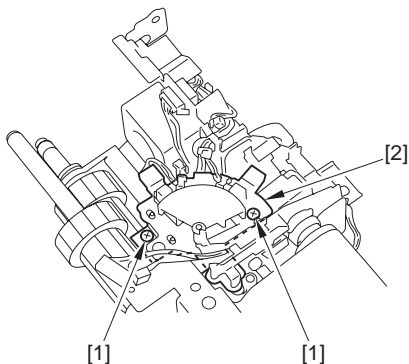
F-11-32

⚠ **Points to Note When Mounting the Sensor Flag**

Check to be sure that the sensor flag (bar) [2] is in contact with the edge of the belt [1].

F-11-33

11-35
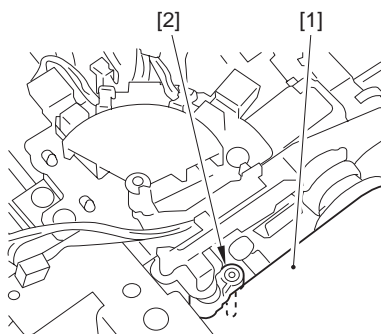
6) Remove the belt displacement control motor unit [3]. The component left behind is the fixing unit (service part).
- 1 spring [1]
- 4 screws [2]
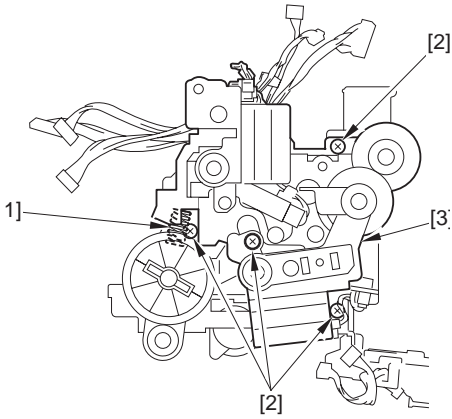
F-11-34

⚠ **Points to Note When Mounting the Belt Displacement Control Motor Unit**
Be sure that tip of the arms of the 2 sensor flags [1] [2] is positioned at the top [A] of the holder of the tensioners [3] [4].
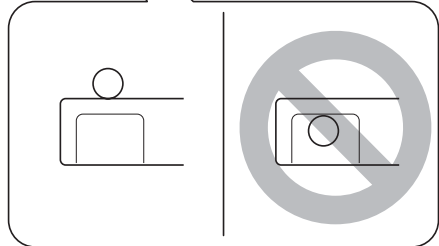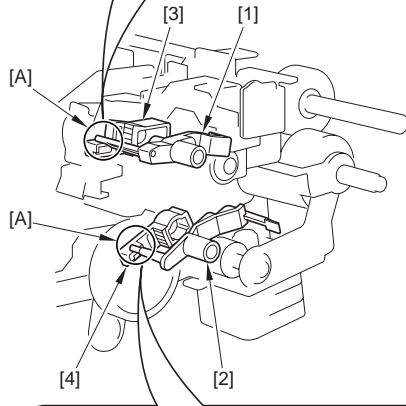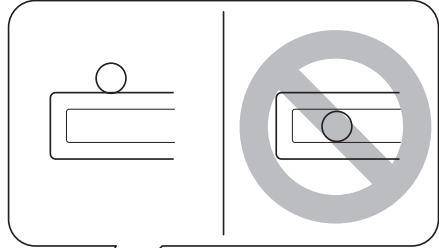
F-11-35

11.5.3.3 Replacing the Fixing Unit (Service Parts)

1) Remove the protective stay [2] from the fixing unit.
   - 2 screws [1]
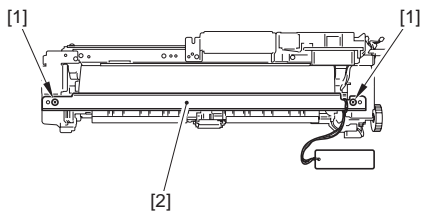
F-11-36

2) Remove the protective cover [2] on the front side of the fixing unit.
   - 3 screws [1]
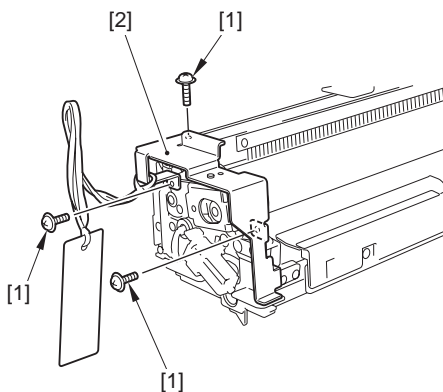
F-11-37

3) Remove the 2 screws [1]. The removed screws will be used during mounting work.
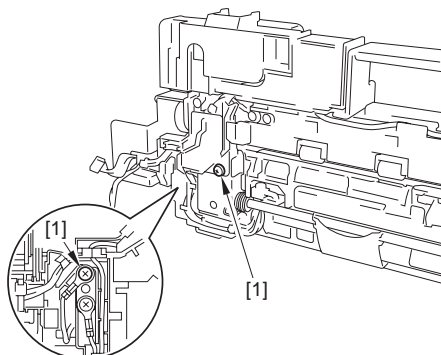
F-11-38

4) Remove the spring [1]. The removed spring will be used during mounting work.
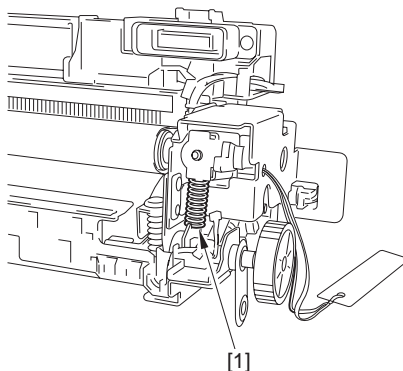
F-11-39

5) Remove the protective cover [2] on the rear side of the fixing unit.
- 3 screws [1]
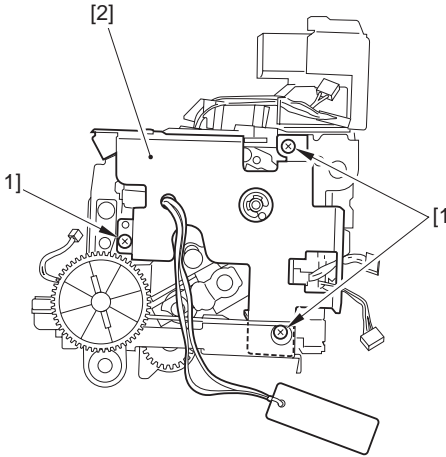
F-11-40

6) Remove the harness from the harness guide [2].
- 2 connectors [1]
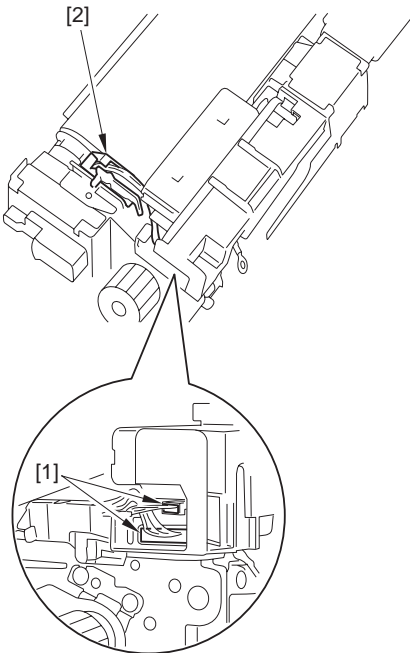
F-11-41

7) Remove the harness guide [1]. (Shift it to the side, and pull it off the pin to detach.) The removed harness guide will be used during mounting work.
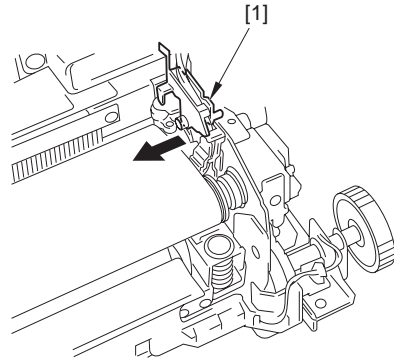
F-11-42

8) Mount the fixing unit using the steps used to remove it but in reverse.

⚠ **Points to Notes at Replacing/Disposing the Fixing Unit**
The heat pipe is used at the upper belt of the fixing unit to even the heat at the rear front direction. The heat pipe is a part that the small amount of liquid is vacuum-encapsulated in the airtight container. Thus, do not throw the heat pipe in the fire because it will burst. When disposing the fixing unit, be sure to shred.

11.5.3.4 Procedure at Replacing the Fixing Unit

⚠ **Points to Notes at Replacing/Disposing the Fixing Unit**

The heat pipe is used at the upper belt of the fixing unit to even the heat at the rear front direction. The heat pipe is a part that the small amount of liquid is vacuum-encapsulated in the airtight container. Thus, do not throw the heat pipe in the fire because it will burst. When disposing the fixing unit, be sure to shred.

1. Applying Grease to the Fixing Drive Unit/Belt Displacement Control Motor Unit

When replacing the fixing unit, apply SUPER LUBE GREASE (the standard tool: parts number FY9-6005-000, in tube) to the specified locations of the fixing drive unit and belt displacement control motor unit.

⚠ **Points to Note at Applying Grease**

Do not apply Super Lube Grease to the areas other than the specified areas. It may cause failure.

a. Applying Grease to the Fixing Drive Unit

The portions to apply grease are as follows.
- Apply approx. two soybean-size of grease to the center area [A] of the gear [1].
- Apply approx. one soybean-size of grease to the end [B] of the gear [1].
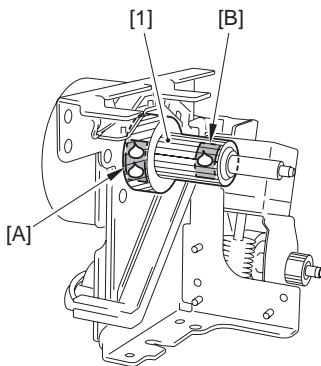
F-11-43

b. Apply Grease to the Belt Displacement Control Motor Unit

The portions to apply grease are as follows.
- Apply approx. one soybean-size of grease to the end [A] of the gear [1].
- Apply approx. one soybean-size of grease to the center area [B] (inside of the sheet metal [3]) of the gear [2].
- Apply approx. one soybean-size of grease to the end [C] of the gear [2].
- Apply approx. one soybean-size of grease to each end [D] [E] of the gear [4].
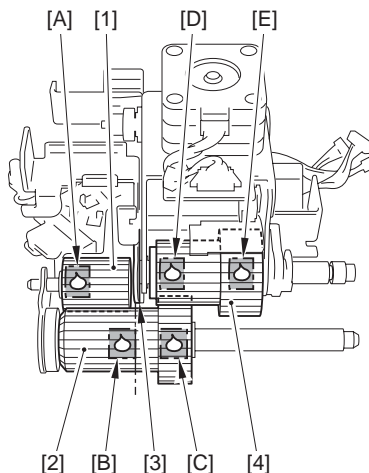
F-11-44

2. Executing the Service Mode After Replacing the Fixing Unit

When the fixing unit was replaced, be sure to perform the following procedure at the service mode.
- Clear the fixing delivery print counter
   COPIER > COUNTER > DRBL-1 > FX-BLU-U
- Execute the operation of HP search of the fixing belt and the pressure belt
   COPIER > FUNCTION > FIXING > FX-UHP-S
   COPIER > FUNCTION > FIXING > FX-LHP-S

⚠ **Points to Note When Replacing the Fixing Unit**

In the case of executing HP search operation of the fixing belt and the pressure belt, the alarm code is closed, and the total rotating time of the fixing assembly is cleared.
Thus, make sure to execute this mode when replacing the fixing unit otherwise it may cause the

following symptoms:
-The alarm code is not closed
06-0002: fixing unit life alarm (occurs by belt displacement)
06-0004: fixing unit life alarm (occurs by torque-up)
-The message is displayed for the machine misidentify that the total rotating time reaches the message threshold value although it does not.
Do not execute this mode other than when installing or when replacing the fixing unit. There may be no error indication although the fixing unit comes to the end of its life.

11.5.4 IH Unit

11.5.4.1 Preparation for Removing the IH Unit

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]

11.5.4.2 Removing the IH Unit

1) Remove the fixing front cover [3].
   - 1 screws, stepped [1]
   - 1 screws [2]
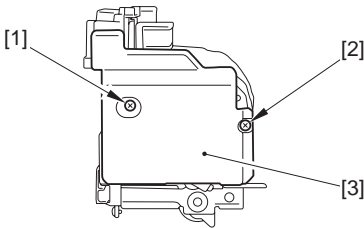
F-11-45

2) Remove the front drawer cover [2].
   - 1 screw [1]
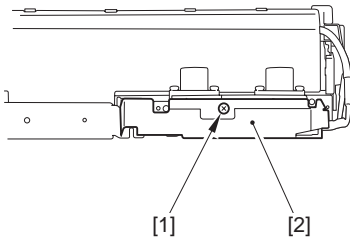
F-11-46

3) Remove the front drawer unit [2].
   - 2 screws [1]
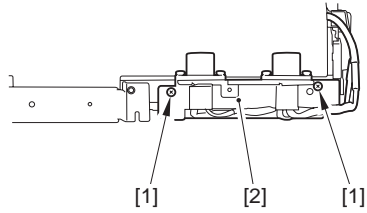
F-11-47

4) Move the small cover [1] in the direction of the arrow, and remove it.
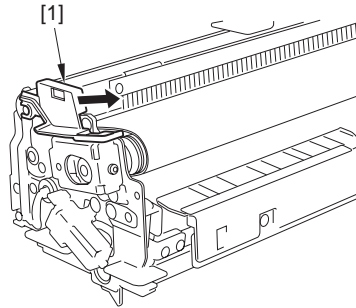
F-11-48

5) Slide the IH unit [2] to the front, and remove the IH fixing pin [3].
   - 1 screw [1]
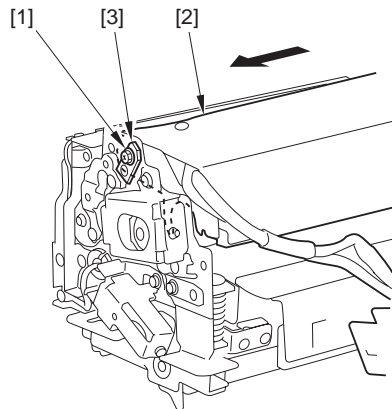
F-11-49

6) Turn the IH unit [1] slightly.

⚠️ **Points to Note When Removing the IH Unit**
Be sure to take care when turning the IH unit.
Turning it excessively can damage the fixing belt.
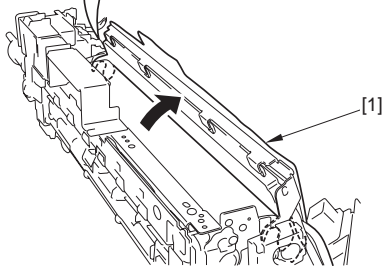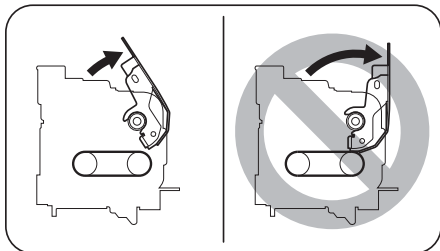
F-11-50

7) Move the IH unit [1] in the direction of the arrow [A], and free the cut-off from the bearing; then, detach it in the direction of the arrow [B].
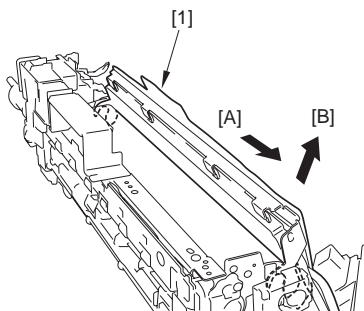
F-11-51

⚠️ **Points to Note When Mounting the IH Unit**
- Fit the cut-off [1] of the IH unit with the bearing [2].
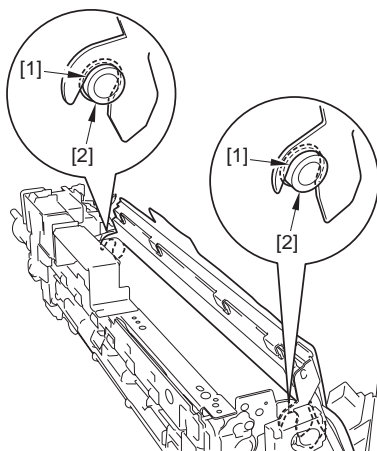
F-11-52

- Take care not to trap the felt extension [A] of the IH unit [1] in the gap between the IH unit and the fixing belt unit [2], making sure that the extension is on top of the belt unit.
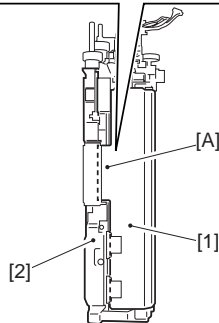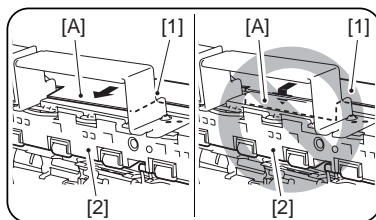
F-11-53

11.5.5 Fixing Displacement Drive Unit

11.5.5.1 Preparation for Removing the Belt Displacement Control Motor Unit

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the IH unit.(page 11-40)Reference[Removing the IH Unit]

11.5.5.2 Removing the Belt Displacement Control Motor Unit

1) Move the harness guide [3].
   - 2 connectors [1]
   - 2 screws [2]
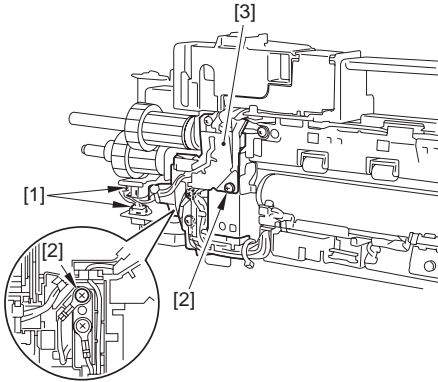
F-11-54

2) Remove the connector [1].
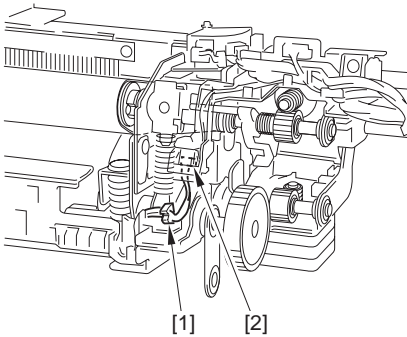
F-11-55

3) Free the harness from the harness guide [2].
   - 2 connectors [1]
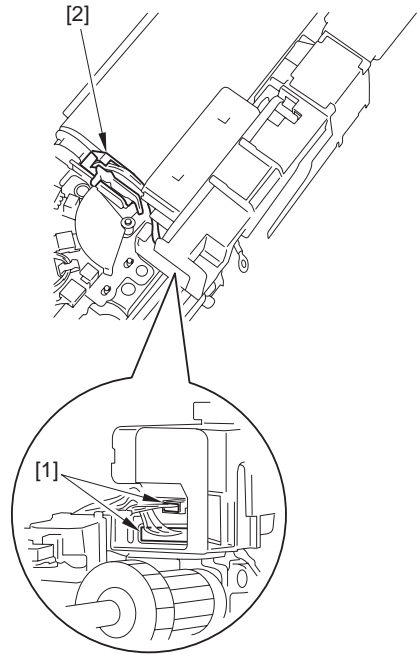
F-11-56

4) Remove the harness guide [1] (Move it to the side, and detach it by freeing it from the pin).

F-11-57

- 4 screws [2]

F-11-60

⚠️
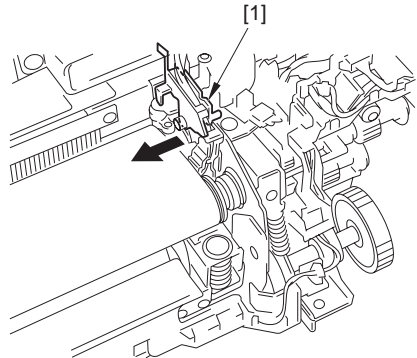
When moving the sensor unit, take care not to remove the screws glued in place.

5) Remove the fixing belt position sensor unit [2].
   - 2 screws [1]
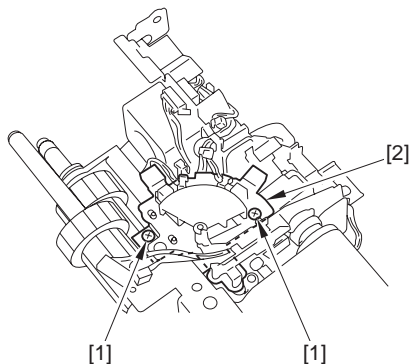
F-11-58
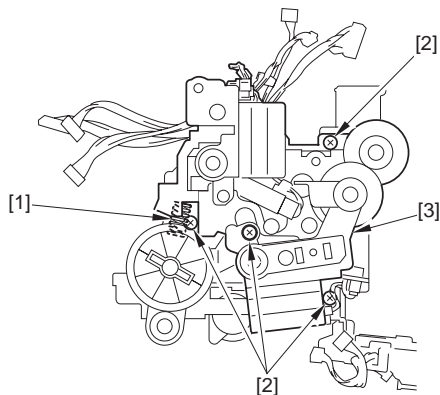
⚠️ **Points to Note When Mounting the Sensor Unit**

Make sure that the sensor flag (bar) [2] is in contact with the edge of the fixing belt]1].
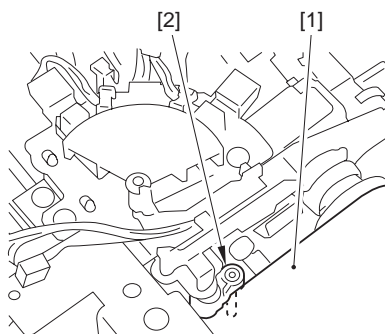
F-11-59

6) Remove the belt displacement control motor unit [3].
   - 1 spring [1]

⚠ Points to Note When Mounting the Belt Displacement Control Motor Unit

Be sure that tip of the arms of the 2 sensor flags [1] [2] is positioned at the top [A] of the holder of the tensioners [3] [4].
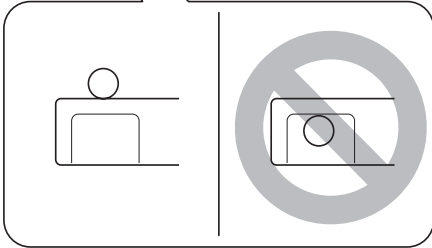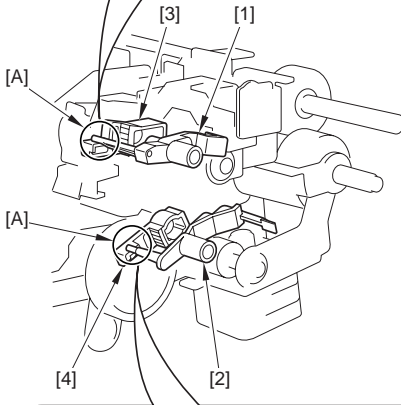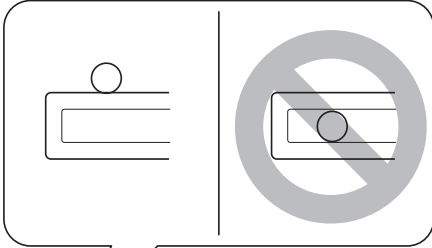
F-11-61

11.5.6 Fixing Delivery Lower Unit

11.5.6.1 Preparation for Removing the Fixing Delivery Lower Unit

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]

11.5.6.2 Removing the Fixing Delivery Lower Unit

1) Remove the fixing delivery lower unit [4].
   - 1 harness guide cover [1] (Open it.)
   - 1 connector [2]
   - 1 screw [3]
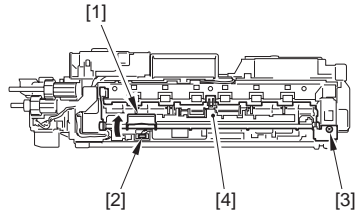
F-11-62

⚠ Points to Note When Mounting the Fixing Delivery Lower Unit

Be sure to match the end of the spring [1] fitted to the shaft at the rear against the cut-off [2] of the frame.
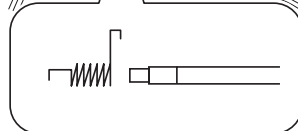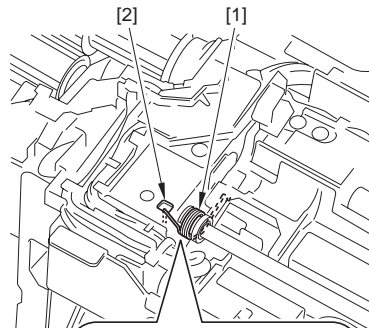
F-11-63

11.5.7 Fixing Delivery Upper Unit

11.5.7.1 Preparation for Removing the Fixing Delivery Upper Unit

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the IH unit.(page 11-40)Reference[Removing the IH Unit]
4) Remove the fixing delivery lower unit.(page 11-44)Reference[Removing the Fixing Delivery Lower Unit]

11.5.7.2 Removing the Fixing Delivery Upper Unit

1) Remove the 2 connectors [1], and the 3 screws [2].
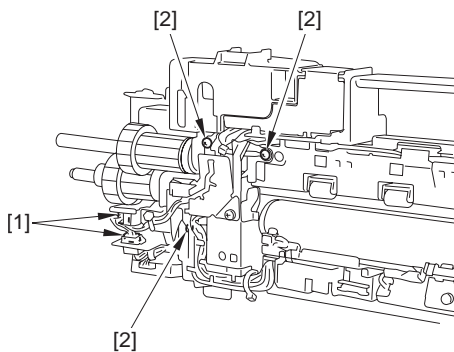
F-11-64

2) Open the harness guide cover [1] of the rear drawer.
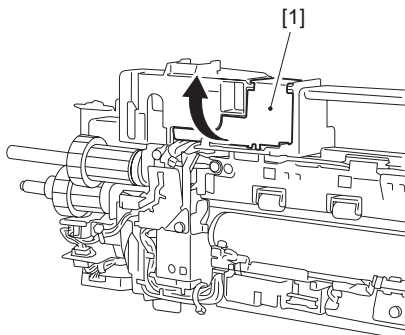
F-11-65

3) Remove the 2 connectors [1].
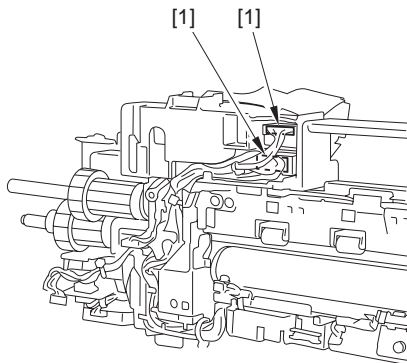
F-11-66

4) Remove the rear drawer [3].
   - 2 connectors [1] to the side of the rear drawer
   - 2 screws at the top of the rear drawer
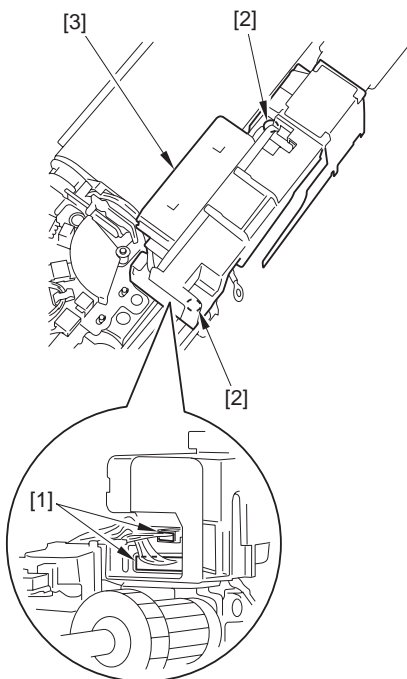
F-11-67

5) Remove the harness guide [2].
   - 3 screws [1]
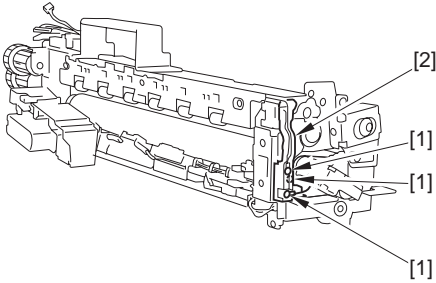
F-11-68

6) Remove the fixing delivery upper unit [3].
   - 2 screws, stepped [1]
   - 1 screw [2]

F-11-69

11.5.8 Pressure Heater

11.5.8.1 Preparation for Removing the Pressure Heater

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the IH unit.(page 11-40)Reference[Removing the IH Unit]
4) Remove the belt displacement control motor unit.(page 11-42)Reference[Removing the Belt Displacement Control Motor Unit]

11.5.8.2 Removing the Pressure Heater

1) Remove the pressure heater [3].
   - 3 screws [1]
   - 2 holders [2] of the pressure heater

F-11-70

⚠ **Points to Note When Mounting the Pressure Heater**
Be sure that the white wire is to the front of the machine and the black wire is to the rear.

11.5.9 Fixing Inlet Lower Guide

11.5.9.1 Preparation for Removing the Fixing Inlet Lower Guide

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]

11.5.9.2 Removing the Fixing Inlet Lower Guide

1) Remove the wire saddle [1], and remove the connector [2].
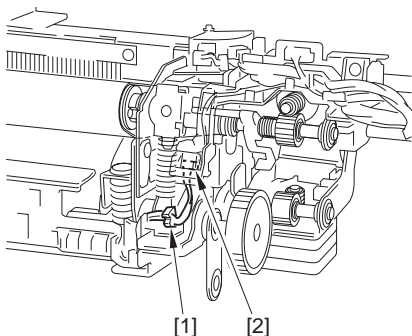
F-11-71

2) Remove the fixing inlet lower guide [2]. (Move it to the side to remove.)
   - 1 screw [1]
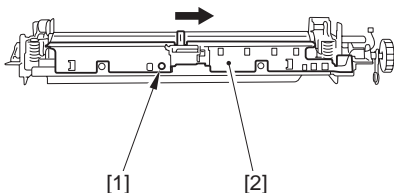
F-11-72

11.5.10 Fixing Inlet Sensor

11.5.10.1 Preparation for Removing the Fixing Inlet Sensor

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the fixing inlet lower guide.(page 11-47)Reference[Removing the Fixing Inlet Lower Guide]

11.5.10.2 Removing the Fixing Inlet Sensor

1) Remove the sensor flag [3] of the fixing inlet sensor from the fixing inlet lower guide.
   - 1 E-ring [1]
   - 1 shaft [2]

⚠️**Points to Note When Mounting the Sensor Flag**
Be sure that the spring [4] of the sensor is correctly mounted.
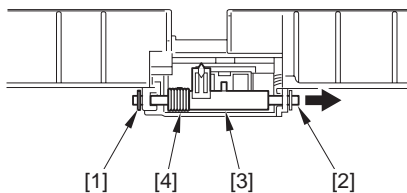
F-11-73

2) Remove the fixing inlet sensor [1].
   - 1 connector [2]
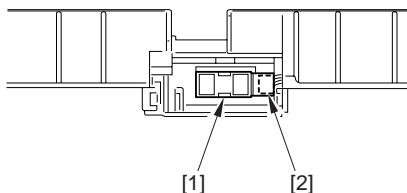
F-11-74

11.5.11 Fixing Delivery Sensor

11.5.11.1 Preparation for Removing the Fixing Delivery Sensor

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the fixing delivery lower unit.(page 11-44)Reference[Removing the Fixing Delivery Lower Unit]

11.5.11.2 Removing the Fixing Delivery Sensor

1) Remove the rod-shaped spring [1] from the fixing delivery lower unit. (Pull it off.)

⚠ **Points to Note When Mounting the Spring**
Be sure to fit the middle [A] of the spring and the bend of the spring end on the hook found in the fixing delivery lower unit.
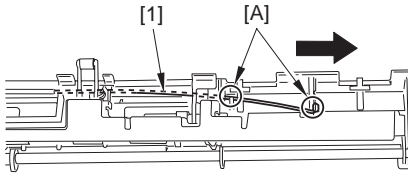
F-11-75

2) Remove the sensor cover from the fixing delivery lower unit. (Move it away.)
   - 4 screws [1]
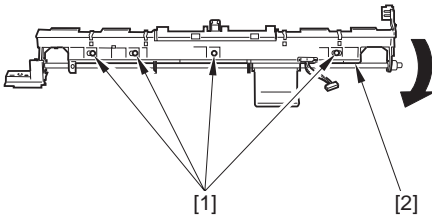
F-11-76

3) Remove the fixing delivery sensor [1].
   - 1 connector [2]
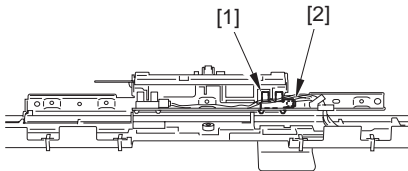
F-11-77

11.5.12 Fixing Belt Position Sensor Unit

11.5.12.1 Preparation for Removing the Fixing Belt Position Sensor Unit

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the IH unit.(page 11-40)Reference[Removing the IH Unit]

11.5.12.2 Removing the Fixing Belt Position Sensor Unit

1) Remove the harness from the harness guide [2].
   - 2 connectors [1]
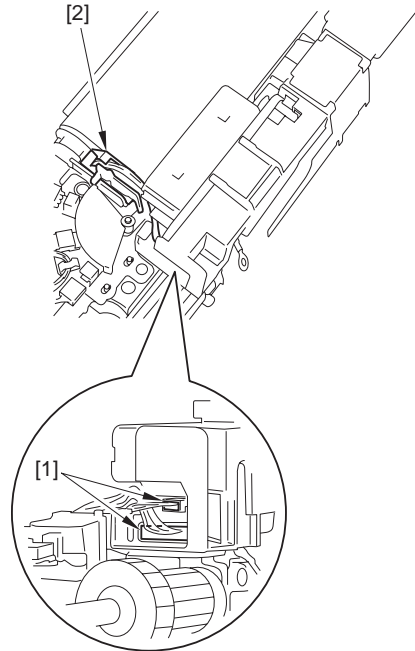
F-11-78

2) Remove the harness guide [1] (Move it to the side, and detach it by freeing it from the pin).
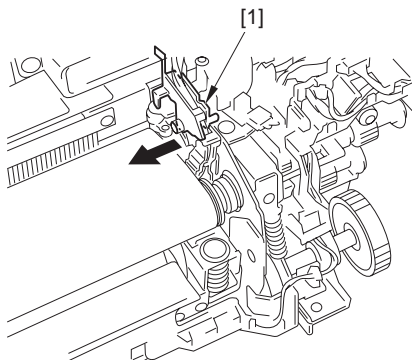
F-11-79

⚠️

When moving the sensor unit, take care not to remove the screws glued in place.

3) Remove the fixing belt position sensor unit [4].
   - 2 clamps [1]
   - 3 connectors [2]
   - 2 screws [3]
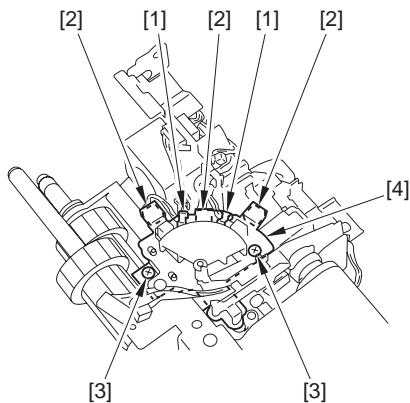
F-11-80

⚠️ **Points to Note When Mounting the Sensor Unit**

- Be sure that the sensor flag (rod) [2] is in contact with the edge of the fixing belt [1].
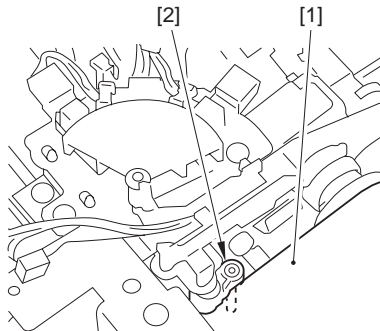
F-11-81

- When disconnecting the connector,Be sure to match the color of the connector to the color indicated by the marking on the sensor mounting plate (W being white [1]; K being black [2]; and B being blue [3]).
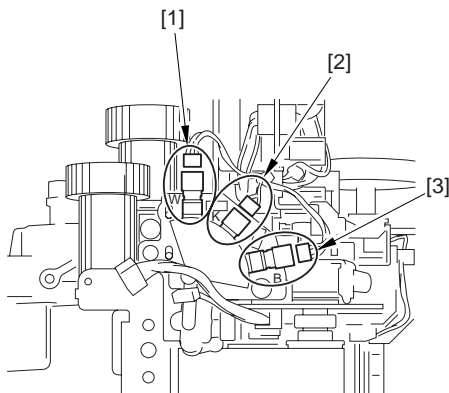
F-11-82

11.5.13 Fixing Releasing HP Sensor

11.5.13.1 Preparation for Removing the Fixing Release HP Sensor

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the fixing delivery lower unit.(page 11-44)Reference[Removing the Fixing Delivery Lower Unit]

11.5.13.2 Removing the Fixing Release HP Sensor

1) Remove the fixing release HP sensor [5].
   - 1 edge saddle [1]
   - 1 connector [2]
   - 1 screw [3]
   - 1 fixing release HP sensor mounting plate [4]
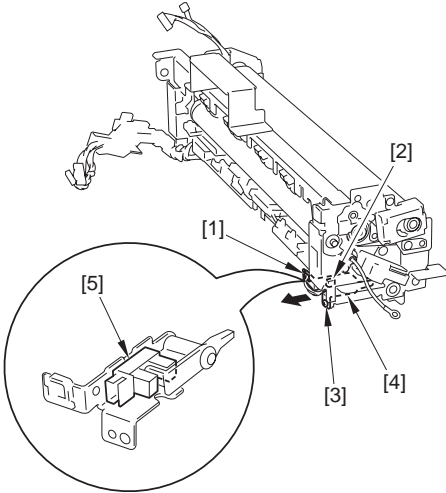
F-11-83

11.5.14 Fixing Wrap Sensor

11.5.14.1 Preparation for Removing the Fixing Wrap Sensor

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the fixing delivery lower unit.(page 11-44)Reference[Removing the Fixing Delivery Lower Unit]

11.5.14.2 Removing the Fixing Wrap Sensor

1) Remove the rod-shaped spring [1] connected to the fixing delivery lower unit. (Pull it out.)

⚠ Points to Note When Mounting the Spring
Be sure to fit the bend of the spring end and the middle [A] of the spring on the hook found in the fixing delivery lower unit.
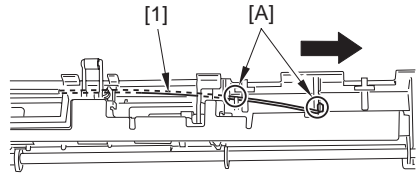
F-11-84

2) Remove the sensor cover from the fixing delivery lower unit. (Move it away.)
   - 4 screws, stepped [1]
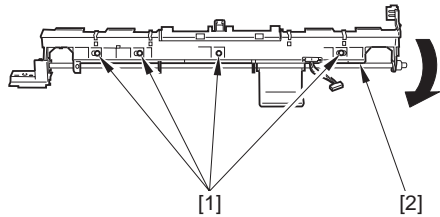
F-11-85

3) Remove the fixing wrap sensor [1].
   - 1 connector [2]
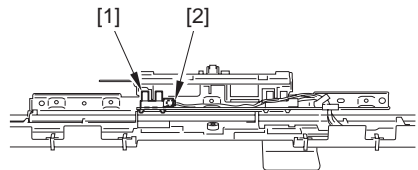
F-11-86

11.5.15 Fixing Motor Unit

11.5.15.1 Preparation for Removing the Fixing Motor Unit

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]

11.5.15.2 Removing the Fixing Motor Unit

1) Remove the fixing motor unit [3].
   - 2 connectors [1]
   - 3 screws [2]
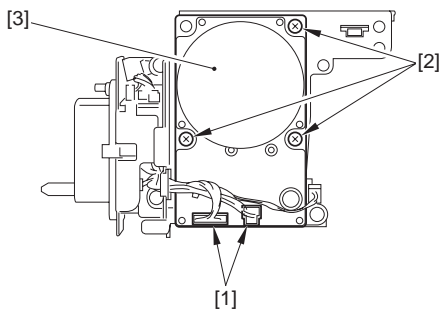
F-11-87

11.5.16 Fixing Pressure Motor Unit

11.5.16.1 Preparation for Removing the Fixing Pressure Motor Unit

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]

11.5.16.2 Removing the Fixing Pressure Motor Unit

1) Remove the fixing pressure motor unit [3].
   - 1 connector [1]
   - 3 screws [2]
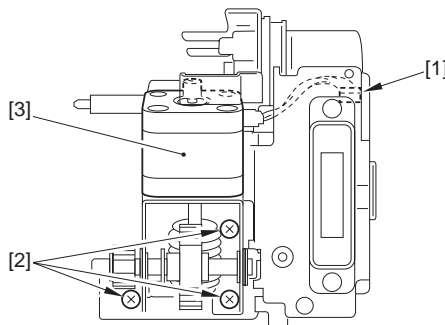
F-11-88

11.5.17 Fixing Belt Displacement Control Motor Unit

11.5.17.1 Preparation for Removing the Fixing Belt Displacement Control Motor Unit

1) Remove the fixing drive unit. (page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the IH unit.(page 11-40)Reference[Removing the IH Unit]
4) Remove the belt displacement control motor unit.(page 11-42)Reference[Removing the Belt Displacement Control Motor Unit]

11.5.17.2 Removing the Fixing Belt Displacement Control Motor Unit

⚠ **Points to Note When Removing the Fixing Belt Displacement Control Motor Unit**

In the case of removing the fixing belt displacement control motor unit, make sure to remove only the parts described in the following steps to remove. Do not remove other parts such as the sensor and the flag. Because the sensor position and the flag position are fine adjusted in the factory, it will be difficult to adjust in the field if removing these parts.

1) Move the pressure belt displacement control motor unit [4] in the direction of the arrow to detach the cover [3].
   - 1 E-ring [1]
   - 1 screw [2]
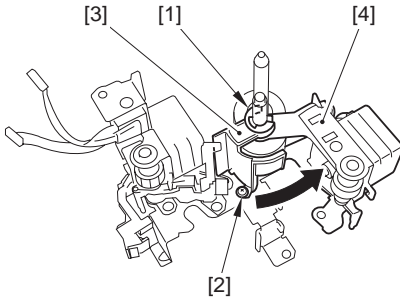
F-11-89

2) Along with the gear [1] and the 2 bearings [2], remove the pressure belt displacement control motor unit [4] from the shaft [3].
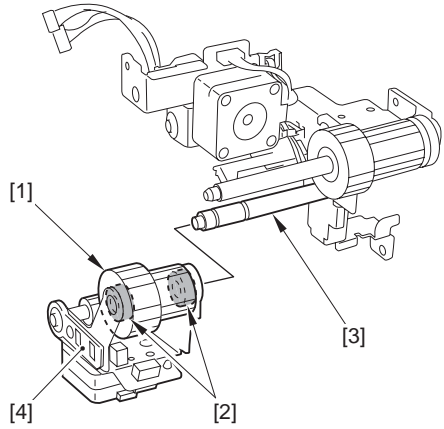
F-11-90

3) From the shaft [4] of the fixing belt displacement control motor unit [5], remove the E-ring [1], the gear [2], and the 2 bearings [3]. This fixing belt displacement control motor unit [5] (the unit that the E-ring, the gear, and the 2 bearings are removed) is to be a service part.
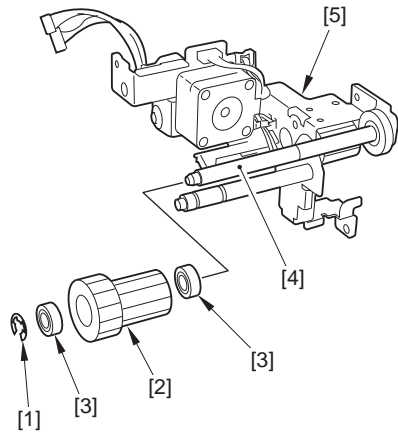
F-11-91

11.5.18 Pressure Belt Displacement Control Motor Unit

11.5.18.1 Preparation for Removing the Pressure Belt Displacement Control Motor Unit

1) Remove the fixing drive unit.(page 11-32)Reference[Removing the Fixing Drive Unit]
2) Remove the fixing assembly.(page 11-33)Reference[Removing the Fixing Assembly]
3) Remove the IH unit.(page 11-40)Reference[Removing the IH Unit]
4) Remove the belt displacement control motor unit.(page 11-42)Reference[Removing the Belt Displacement Control Motor Unit]

11.5.18.2 Removing the Pressure Belt Displacement Control Motor Unit

⚠ **Points to Note When Removing the Pressure Belt Displacement Control Motor Unit**
In the case of removing the pressure belt displacement control motor unit, remove only the parts described in the following steps to remove. Do not remove other parts such as the sensor and the flag. Because the sensor position and the flag position are fine adjusted in the factory, it will be difficult to adjust in the field if removing these parts.

1) Move the pressure belt displacement control motor unit [4] in the direction of the arrow to detach the cover [3].
   - 1 E-ring [1]
   - 1 screw [2]
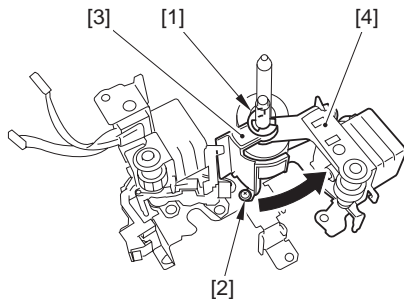
F-11-92

2) Along with the gear [1] and the 2 bearings [2], remove the pressure belt displacement control motor unit [4] from the shaft [3]. This pressure belt displacement control motor unit [4] (the unit that the gear and the 2 bearings are removed) is to be a service part.
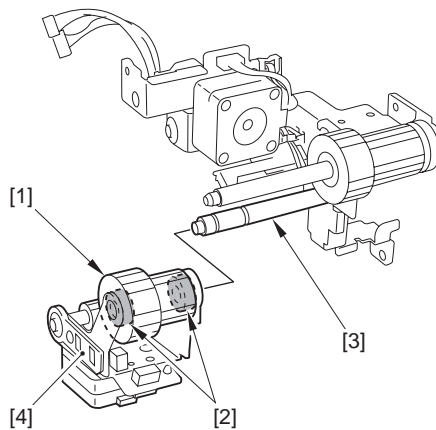
F-11-93

Chapter 12

EXTERNALS & CONTROLS

Contents

12.1 Control Panel

12.1.1 Outline

The machine's control panel consists of PCBs, LCD, and touch panel as shown below; the control panel is associated with the following functions:
- LCD indication
- contrast adjustment
- touch switch input
- hard key input
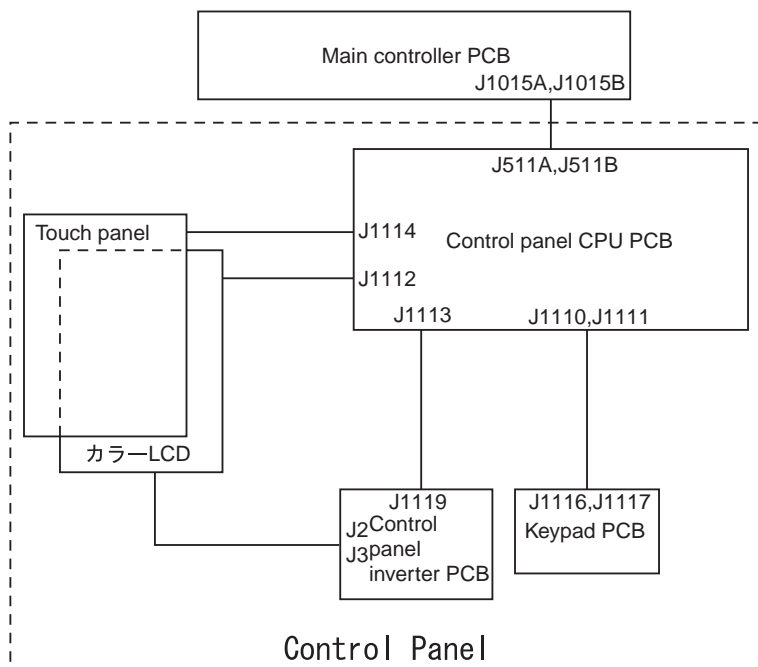
F-12-1

12.1.2 LCD Processing

The CPU on the main controller PCB sends data (display information) to the control panel CPU PCB as instructed by various programs.
The CPU on the main controller PCB sends data (display information) to the control panel CPU PCB as instructed by various programs.

12.1.3 LCD Contras Adjustment

The machine is equipped with a dial on its control panel designed for use by the user for adjustment of the LCD contrast.

12.1.4 Functions of the Control Panel CPU

- Monitoring key inputs (relays the inputs made by keypad keys and function keys to the CPU on the main controller PCB)
- Controlling the buzzer sound
- Turning on/off thecontrolpanel LEDs

12.2 Counters

12.2.1 Outline

The machine is equipped with counters that keep track of the number of prints made according to the type of print; a specific counter reading is shown in response to a press on the Check key on the control panel.The particulars of the counter settings made at time of shipment from factory and grouped by model are as follows:

T-12-1

Model	Counter 1	Counter 2	Counter 3	Counter 4	Counter 5	Counter 6	Counter7	Counter8
100V (*1Åj	Total 1	Total (B&W 1)	Copy (full color + mono color/1)	Print (full color + mono color/1)	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode
	101	108	232	324	0	0	0	0
120V (*2Åj	Total 1	Total (B&W 1)	Copy (full color + mono color/large)	Copy (full color +mono color/ small)	Print (full color + mono color/large)	Print (full color +mono color/small)	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode
	101	108	229	230	321	322	0	0
230V àfÌþ (*3Åj	Total 1	Total (B&W 1)	Copy + print (full color/ large)	Copy + print (full color/ small)	Total (mono color/1)	totalÅiduplex)	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode
	101	108	401	402	118	114	0	0
240V UK (*4Åj	Total 1	total (full color + mono color; large)	total (full color + mono color; small)	total (black-and-white; large)	total (black-and-white; small)	scan (total 1)	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode
	101	122	123	112	113	501	0	0
240V CA(*5Åj	Total 1	Total (B&W 1)	Copy (full color + mono color/large)	Copy (full color +mono color/ small)	Print (full color + mono color/large)	Print (full color +mono color/small)	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode
	101	108	229	230	321	322	0	0

Model	Counter 1	Counter 2	Counter 3	Counter 4	Counter 5	Counter 6	**Counter7**	**Counter8**
230V FRN (*4Åj	Total 1	total (full color + mono color; large)	total (full color + mono color; small)	total (black-and-white; large)	total (black-and-white; small)	scan (total 1)	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode
	101	122	123	112	113	501	0	0
230V GER (*4Åj	Total 1	total (full color + mono color; large)	total (full color + mono color; small)	total (black-and-white; large)	total (black-and-white; small)	scan (total 1)	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode
	101	122	123	112	113	501	0	0
230V AMS(*4Åj	total Åiblack-and-white/ largeÅj	total (black-and-white; small)	total (full color + mono color; large)	total (full color + mono color; small)	scan (total 1)	print (total 1)	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode
	112	113	122	123	501	301	0	0
230V ITA(*4Åj	Total 1	total (full color + mono color; large)	total (full color + mono color; small)	total (black-and-white; large)	total (black-and-white; small)	scan (total 1)	(disabled at default) May be changed in service mode	(disabled at default) May be changed in service mode
	101	122	123	112	113	501	0	0

Description of Symbols
- Large: indicates the large size paper (in case the size is more than 364 mm in the feeding direction / count up x 1 time)
- Small: indicates the small size paper (in case the size is less than 364 mm in the feeding direction)
- Total: indicates the count up with ALL (C+P) x 1 time.
- 2-sided: indicates the count up at the time of automatic 2-sided copy x 1 time.
The 3-digit symbols in the counter column indicate the setting value of the service mode items indicated below.
COPIER > OPTION > USER > COUNTER 1 to 6
(For the detail, see the foregoing items of the service mode.)

⚠

It is possible to set different counter mode with the service mode. (For 120/230V model, all counters are available.)

Medium Oredr(print unit)

*1:F14-8011/8012/8111/8113/8211/8213   *2:F14-8031/8035/8131/8135/8231/8235   *3:F14-8041/8042/8141/ 8142

*4:F14-8091/8195/8191/8295   *5:F14-8061/8161/8261

12.2.2 Signal-Sided Print and 2nd Side of a Double-Sided Print

When making a single-side print or printing on the 2nd side of a double-side print, the counter reading is incremented when the trailing edge of paper leaves the machine, as indicated by the output of the following sensor:

T-12-2

Condition	Sensor	
Finisher absent	face-down delivery (center tray):	center delivery tray full sensor (PS8)
	face-down delivery (copy tray):	face-down delivery sensor 2 (PS6)
	face-up delivery (side tray):	fixing delivery sensor (PS25)
Finisher present	finisher delivery sensor	

12.2.3 Side of a Duplex Print (duplex model only)

The machine identifies the end of printing on the 1st side of a double-sided print and increments the counter reading when the duplex pickup sensor (PS24) goes ON.

12.3 Fans

12.3.1 Outline

The names and functions of the fans equipped to the machine are shown in the table below.

T-12-3

Symbol	Name	Function / Other
FM1	Power Supply Exhaust Fan 1	Exhaust heat in the power supply unit.
FM2	Fixing Exhaust Fan	Exhaust heat in the fixing unit
FM3	Main Body Exhaust Fan	Exhaust heat in the main body.
FM4	Cleaner Fan	Ease heat in the main body.
FM5	Delivery Cooling Fan	Cool the paper being delivered.
FM6	Manual Feeder Cooling Fan	Cool the paper being fed manually.
FM7	Controller Cooling Fan	Cool the controller.
FM8	Delivery Vertical Path Cooling Fan	Cool the delivery vertical path.
FM9	IH Power Supply Cooling Fan	Cool the IH power supply unit.
FM10	Power Supply Exhaust Fan 2	Exhaust heat in the power supply unit.
FM11	ITB Power Supply Cooling Fan	Cool the intermediate transfer unit.
FM12	Face-down Tray Cooling Fan (Front)	Cool the paper being delivered.
FM13	Vertical Path Delivery Exhaust Fan	Exhaust heat in the main body.
FM14	Face-down Tray Cooling Fan (Rear)	Cool the paper being delivered.

FM6

FM13

FM8

FM3

FM11

FM5

FM4

FM10

FM12

FM14

FM1

FM7

FM9

FM2
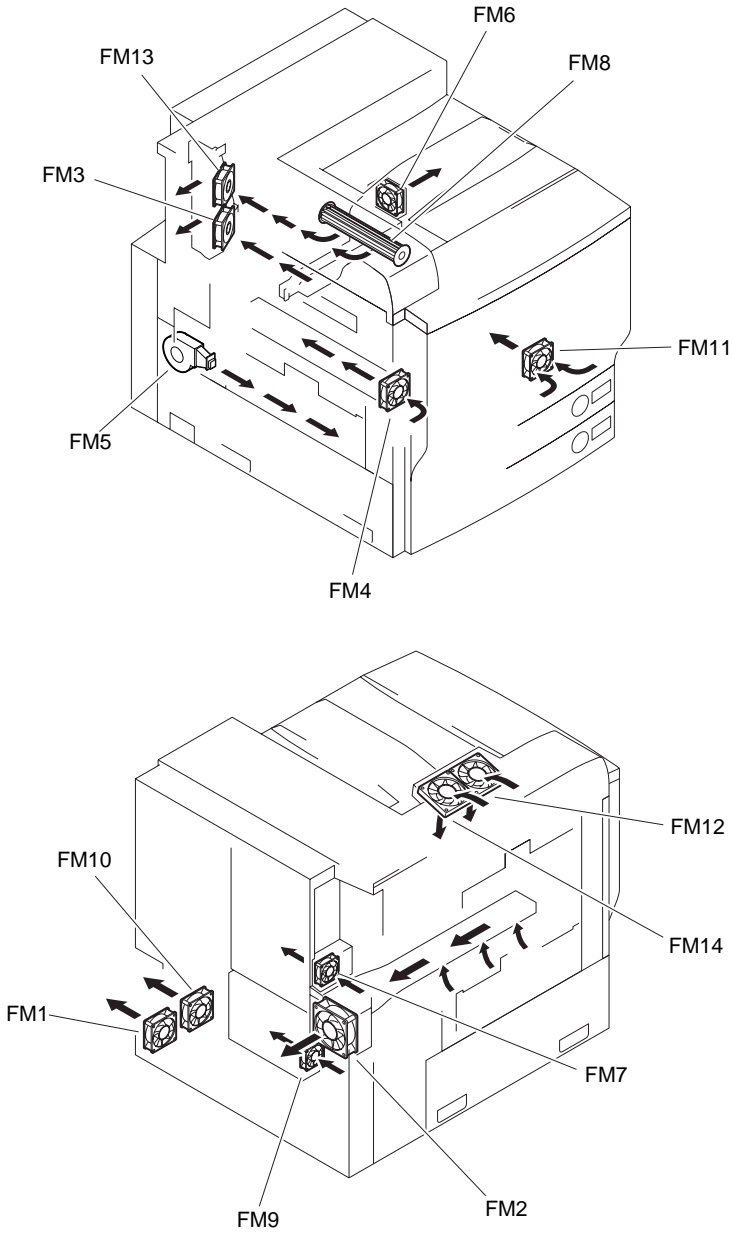
F-12-2

12.3.2 Fan Sequence

The fan sequence of the main body is shown below.
When the control panel power switch is pressed to get in the sleep mode, the LCD on the

	Warm up	Standby	Print Single-sided	Print Double-sided	Low-Power Mode	Power Saving Mode	Sleep Mode
Power Supply Exhaust Fan 1, 2 (FM1,10)	13V	13V	24V	24V	13V*5		
Fixing Exhaust Fan (FM2)	13V*1	13V*1	24/13V*3	24/13V*6	13V*1*5	13V*1*5	
Cleaner Fan (FM4)	13V	13V	24V	24V	13V		
Delivery Cooling Fan (FM5)			24V*4	24V			
Main Body Exhaust Fan (FM3)		13V*2	24/13V*2	24/13V*2			
Delivery Vertical Path Cooling Fan (FM8)				24V			
Manual Feeder Cooling Fan (FM6)				24V*3			
Controller Cooling Fan (FM7)	12V	12V	12V	12V	12V	12V	12V
IH Power Supply Cooling Fan (FM9)	24V	13V	24V	24V	13V		
Vertical Path Delivery Exhaust Fan (FM13)				24V			
ITB Cooling Fan (FM11)				24V			
Face-down Tray Cooling Fan (FM12,13)				24V			

Main Power Switch ON   Print Request Signal   Control Panel Power Switch OFF OFF   Main Power Switch OFF

■ : Full speed   ▨ : Half speed   ▨▨▨ : 3rd Speed

*1: 3rd Speed (Drive equivalent to 10V)
*2: Depending on the environment, switch ON/OFF and full speed/half speed.
*3: Normally the speed of fan is half speed when operating 1-sided copy.
    When the environment SNS atmosphere temperature is more 30 deg C or more,
    accelerate the speed of fan from half speed to full speed. When it is less than 28 deg C,
    deaccelerate the speed from full speed to half speed.
*4: Drive only selecting the following settings at Service Mode: COPIER > OPTION > BODY > DEVL-FAN (Level 2)
*5: Depending on the environment, switch ON/OFF.

F-12-3

12.4 Power Supply

12.4.1 Power Supply

12.4.1.1 Timing of Power Supply

The reader unit is supplied with 24 VDC by the printer unit at the following timing of operation:
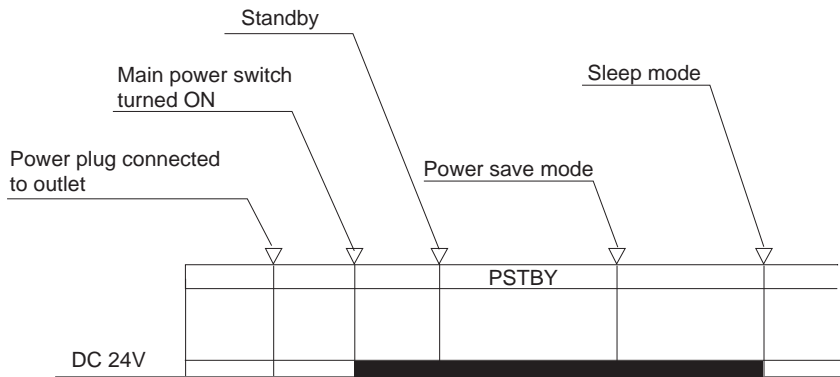
F-12-4

12.4.1.2 Wiring to Various Accessories

The power supply connection between the printer and accessories is shown in the figure below.

DADF-M1

Finisher X1/W1/W2

Reader

PS Print Server Unit H1

Side Paper
Deck Y1

Printer

Cable for the
Deck Heater

Pedestal

Outlet1

Outlet2

Inlet
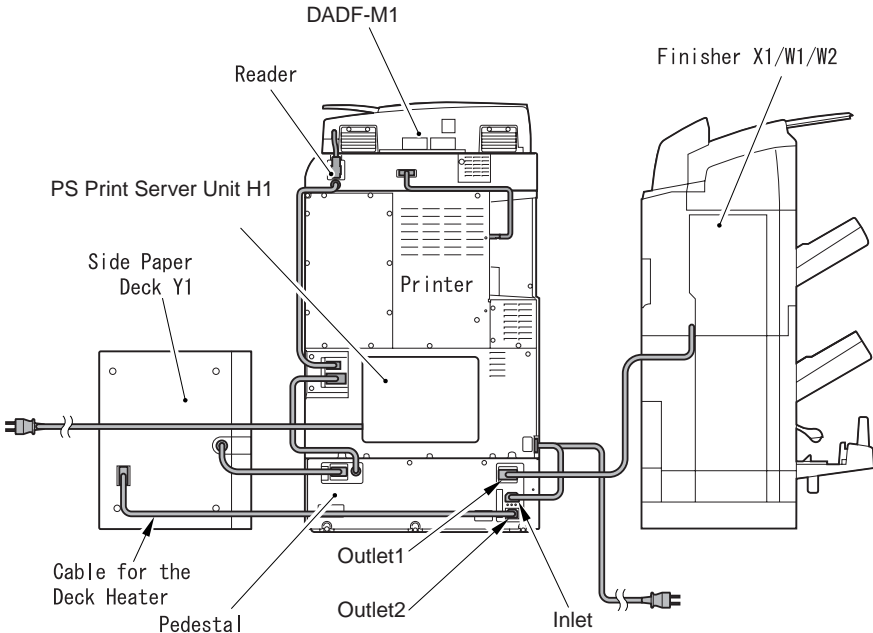
F-12-5

12.4.1.3 Power Supply Path to Reader Unit

The I/F PCB generates the following DC voltages based on DC24V and DC13V supplied from the printer unit.
- DC5V (for sensor drive)
- DC3.3V (for IC drive)
- DC2.5V (for IC drive)
- DC15V (for scanner motor drive)
- DC24V (for scanner motor drive)

The reader controller PCB generates the following DC voltages.
- DC12V (for CCD unit drive)
- DC5V
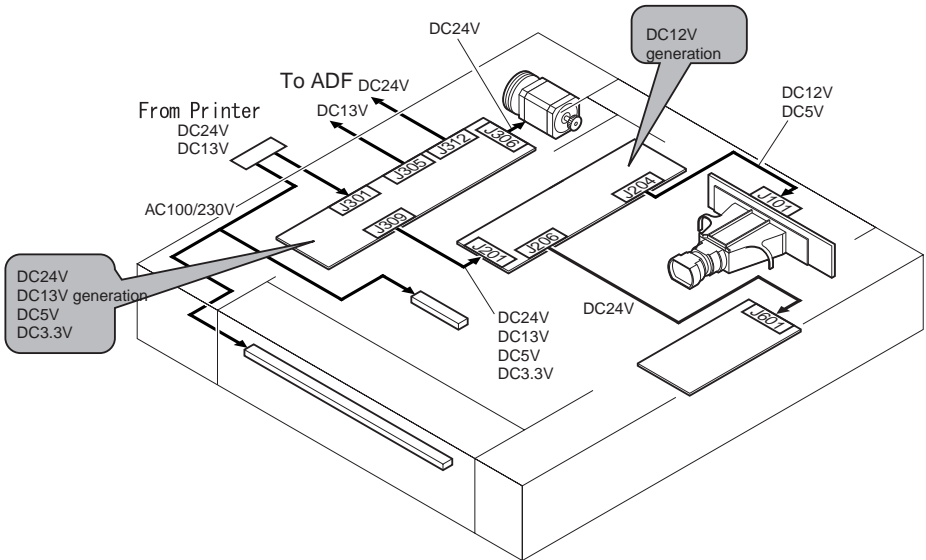
F-12-6

12.4.1.4 Power Supply Path in Printer

The DC power supply of this machine is supplied from 4 DC power supply PCBs (main power supply PCB, DC/DC converter PCB (12V/5V/3.3V), DC/DC converter PCB 1 (38V), and DC/DC converter PCB 2 (38V)) in the main power supply unit.

Main Power Supply PCB
- Generate DC voltage from AC voltage.
- Overcurrent / overvoltage protection
- Distribute DC power supply to each load.

DC/DC Converter PCB (12V/5V/3.3V)
- Generate 12V, 5V, and 3.3V from DC power supply 13V.
- Overcurrent / overvoltage protection
- Distribute DC power supply to each load.

DC/DC Converter PCB 1/2 (38V)
- Generate 38V from DC power supply 24V.
- Overcurrent / overvoltage protection
- Distribute DC power supply to each load.
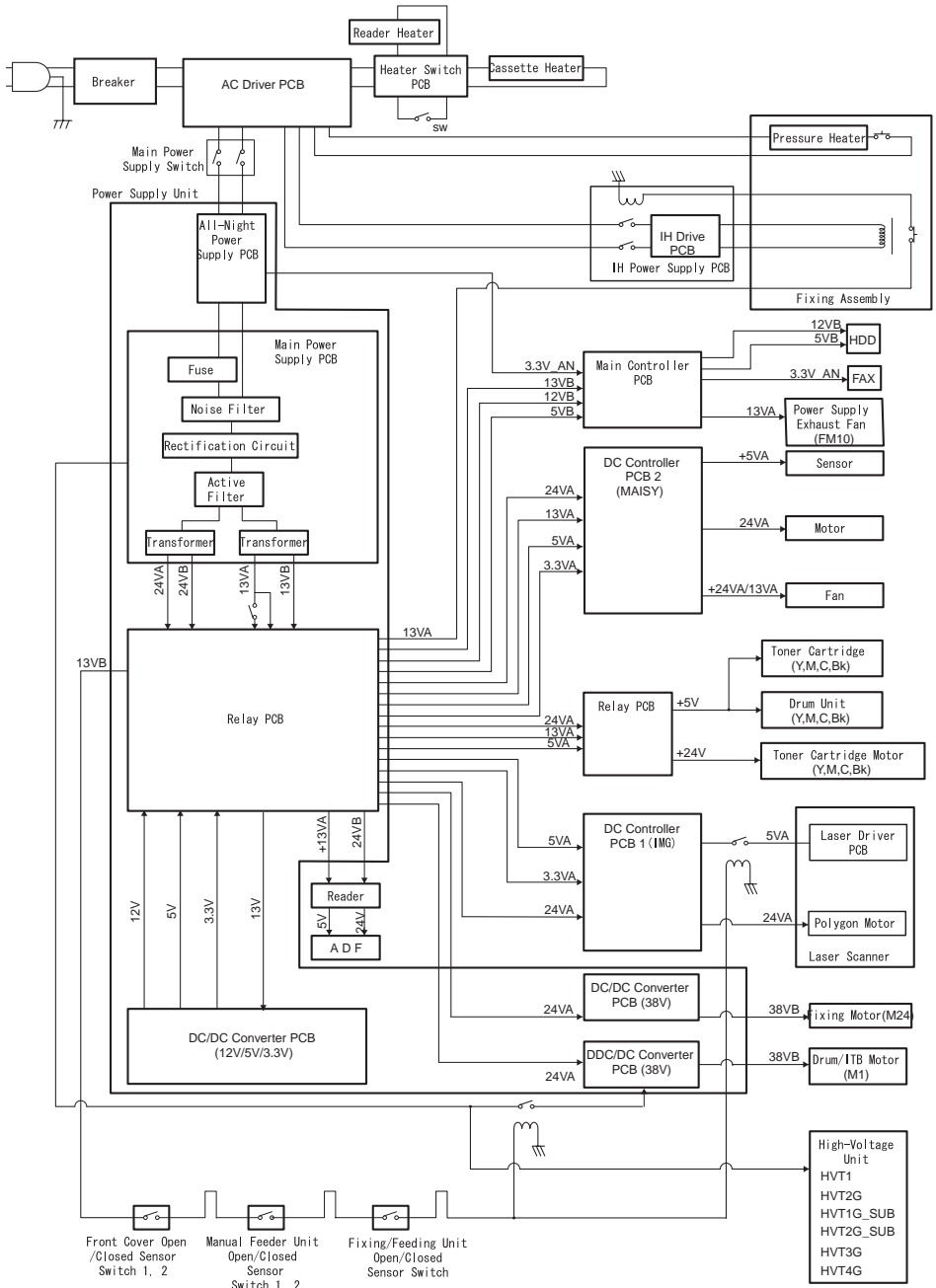
F-12-7

12.4.1.5 Power Supply Path in Pedestal (Accessory)

The DC power supply of the pedestal (plan pedestal and cassette pedestal) is supplied from 3 DC power supply PCBs for optional power (optional power supply PCB 1, optional power supply PCB 2, and optional sub power supply PCB).
DC power supply PCBs for optional power (optional power supply PCB 1, optional power supply PCB 2, and optional sub power supply PCB)
   -Generate DC power supply from AC power supply
   -Overcurrent / overvoltage protection
   -Distribute DC power supply to accessories (paper deck, finisher)
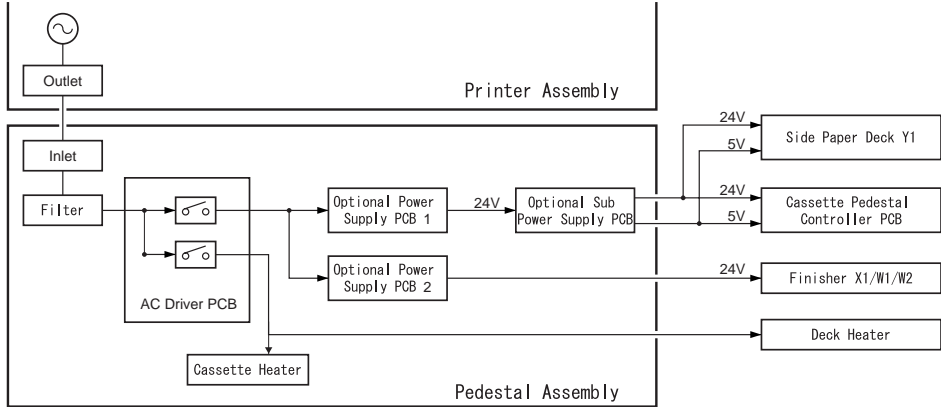
F-12-8

12.4.2 Rated Output of DC Power Supply PCB

12.4.2.1 Rated Output of DC Power Supply PCB

Rated Output of DC Power Supply PCB
1.Rated Output of DC Power Supply of the Main Body

T-12-4

Output Name	13VA	13VB	24VA
All-night/Non-all-night	Non-all-night	Non-all-night	Non-all-night
Rated output	+13.2V	+13.2V	+24.0V
Tolerance	+/-3%	+/-3%	+8/-6%

2.2. DC/DC Power Supply PCB (12V/5V/3.3V)

T-12-5

Output Name	3.3VA	5VA 5VB	12VB
All-night/Non-all-night	All-night/Non-all-night	All-night/Non-all-night	All-night/Non-all-night
Rated output	+3.4 V	+5.1V	+12.0 V
Tolerance	+/-4%	+/-3%	+/-5%

3.DC/DC Power Supply PCB (38V)

T-12-6

Output Name	38VA 38VB
All-night/Non-all-night	All-night/Non-all-night
Rated output	+38V
Tolerance	+/-10%

4.All-night Power Supply PCB (3.3V)

T-12-7

Output Name	3.3VA
All-night/Non-all-night	All-night/Non-all-night
Rated output	+3.3V
Tolerance	+/-3%

12.4.2.2 Rated Output of the Optional DC Power Supply PCB

The rated output and tolerance of the optional power supply PCB are shown in the table below.
1.1.Optional Power Supply PCB 1/2

T-12-8

Output Name	24VA
All-night/Non-all-night	Non-all-night
Non-all-night	24Çu
Tolerance	+7/-5%

2.2. Optional Sub Power Supply PCB

T-12-9

Output Name	5VA	24VA
All-night/Non-all-night	Non-all-night	Non-all-night
Non-all-night	5V	24Çu
Tolerance	+/-5V	+7/-5%

12.4.3 Protection Function

12.4.3.1 Protective Mechanisms

The machine's power supply PCB and the power supply PCBs of its accessories are equipped with an overcurrent/voltage protective mechanisms that prevent damage to the power supply circuit by automatically cutting off the output voltage in the event of an overcurrent/voltage caused, for example, by a short-circuit in any of its loads.
If the protective function has gone ON, turn off the power switch of the printer unit, disconnect the power plug of the printer unit or the accessories power supply circuit, and remove the cause of activation; then, leave the machine alone for about 3 min, and turn it on to reset.

12.4.4 Backup Battery

12.4.4.1 Battery for Backup

The SRAM PCB located at the main controller PCB and the DC controller PCB 1(IMG) of this machine are equipped each 1 of lithium battery as a backup power supply for each data in the case when there is blackout or the power plug is disconnected

SRAM PCB	Manganese Dioxide/Lithium Battery (3V, 100mAh)
DC controller PCB	Lithium Battery (3V, 560mAh)
Life of the Battery	10 years or more for both batteries (the state that the power plug is disconnected)
Replacement of the Battery	Replacement of the battery itself is not available in the servicing field.
Remedy after replacement of the battery at the workshop	Enter the value indicated on the service label

⚠

Wenn mit dem falschen Typ ausgewechselt, besteht Explosionsgefahr.
Gebrauchte Batterien gemas der Anleitung beseitigen.

12.4.4.2 Backup Power Supply

The SRAM PCB and the DC controller PCB of the machine's main controller PCB are each equipped with a lithium battery for backup in the event of a power outage or disconnection of the power plug.

T-12-10

SRAM PCB	manganese dioxide/lithium battery (3 V, 1000 mAh)
DC controller PCB	lithium battery (3 V, 560 mAh)

T-12-11

Battery life	10 yr or more (for both; with power plug disconnected)
Battery replacement	not possible (on its own, in the field)
After replacement of battery in workshop	input of values indicated on service label

⚠ The lithium battery must be replaced only with the one indicated in the Parts Catalog; otherwise, it may trigger a fire or explosion.
Do not charge, disassemble, or incinerate the lithium battery; mishandling can lead to a fire or a chemical explosion.
Keep the lithium battery out of reach of children. Be sure to dispose of a used battery strictly in accordance with all applicable regulations.

12.4.5 Energy-Saving Function

12.4.5.1 Outline

1. Standby Mode
In standby mode, the machine is in operation or is ready to operate, with all its parts supplied with power.
2. Power-Save Mode
The term "power-save mode" is used generically to refer to the following modes, in which the machine is supplied with power differently than it is in normal mode: power-save, low-power, sleep. A shift in the direction of 'resent power-save mode' to 'low-power mode' and then to 'sleep' mode occurs automatically.
- Power-Save Mode

T-12-12

Shift:	A shift to power-save mode is initiated only in response to a press on the Save Power button on the control panel.
Description:	The power used by the machine is reduced according to the settings made in user mode (immediate recovery, -10%, -25%, -50%; the fixing unit is controlled to 190 deg C).

- Low-Power Mode (factory setting)
This mode conforms to the standards under Energy Star.

T-12-13

Shift:	A shift is made only in response to the passage of time (auto low-power shift time) selected in user mode.
Description:	The power used by the machine is reduced to enable the machine to remain in a state that satisfies the standards under Energy Star.The power supplied to the reader unit will remain ON except the +24V power, which the reader unit uses to generate internal power. (All operations remain at rest.) The printer unit keeps the temperature of the fixing unit to a specific level (190 deg C) which is lower than when the machine is in normal operating mode.

- Sleep Mode (sleep mode 1 or sleep mode 2)

T-12-14

Shift:	A shift is made in response to the passage of time (auto sleep shift time) specified in user mode or in response to a press on the control panel software power switch.
Description:	In sleep mode 1 (relatively higher power consumption), the fixing assembly is totally deprived of power. The DC controller PCB, however, remains supplied with power. In sleep mode 2 (relatively lower power consumption), on the other hand, the printer unit (including the fixing assembly) remains OFF; the main controller PCB is supplied with all-night power as indicated in the table:

T-12-15

Controller	+3.3 VAN	CPU, main memory
	+12 VAN	controller cooling fan
FAX	+5 VAN	fax arrival detection

3. AC OFF Mode
AC OFF mode occurs when the main power switch is turned off, i.e., all parts of the machine is deprived of power.
The supply of power to the various systems of the machine in each of the foregoing modes is as follows:

T-12-16

			Standby mode	Power-save mode	Low-power mode	Sleep mode 1	Sleep mode 2	AC OFF mode
Main controller	Non-all night power	+12V	ON	ON	ON	ON	OFF	OFF
		+5V	ON	ON	ON	ON	OFF	OFF
		+3.3V	ON	ON	ON	ON	OFF	OFF
	All-night power	+3.3VAN	ON	ON	ON	ON	ON	OFF
		+12VAN	ON	ON	ON	ON	ON	OFF
Reader unit		+24V	ON	OFF	OFF	OFF	OFF	OFF
Printer unit		+24V	ON	ON	ON	ON	OFF	OFF
		+12V	ON	ON	ON	ON	OFF	OFF
		+5V	ON	ON	ON	ON	OFF	OFF
		+3.3V	ON	ON	ON	ON	OFF	OFF
FAX	Non-all night power	+5V	ON	ON	ON	ON	OFF	OFF
		+3.3V	ON	ON	ON	ON	OFF	OFF
	All-night power	+5VAN	ON	ON	ON	ON	ON	OFF

12.4.5.2 SNMP setup

When the machine is used as a Windows printer, enabling 'Use SNMP' causes the operating system to collect machine status information at specific intervals, preventing the machine from starting a sleep state.
To avoid the situation, disable the setting (Windows' printer properties).
-Disabling 'Use SNMP'
1) Select 'Configure Port' on the Ports screen (printer properties).
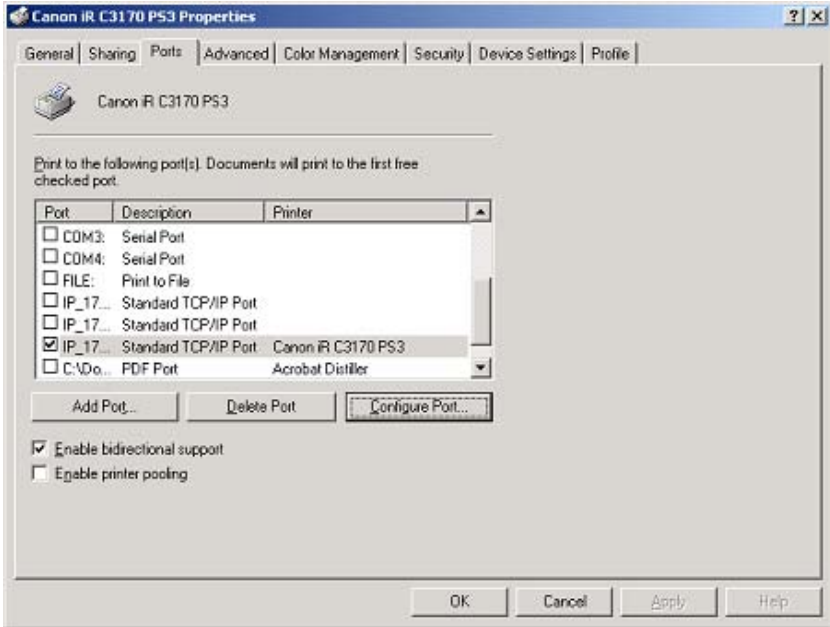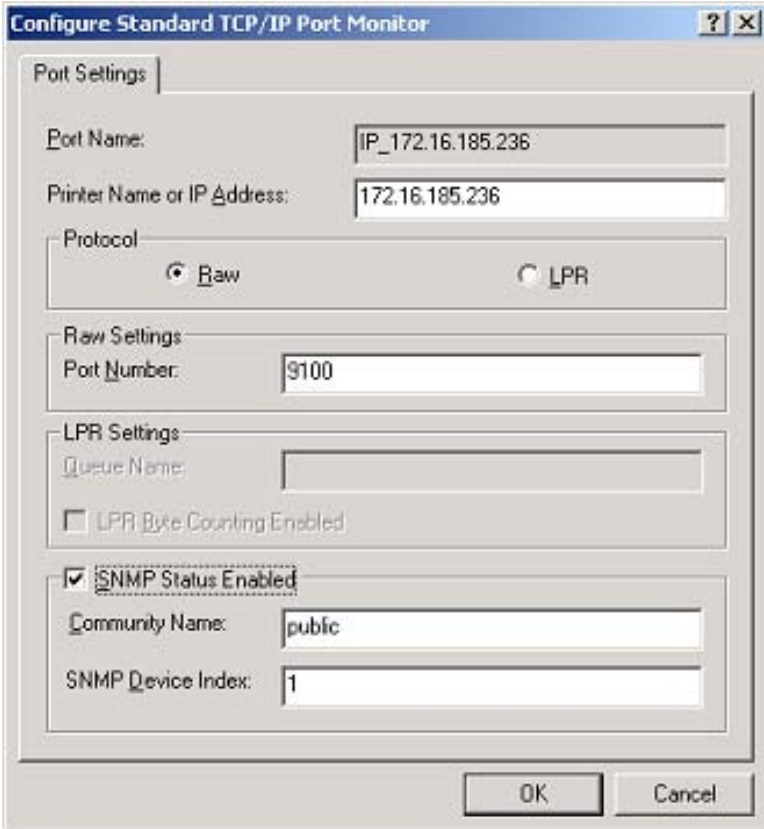
F-12-9

2) Remove the check mark from 'SNMP Status Enabled'.

F-12-10

12.5 **Parts Replacement Procedure**

12.5.1 External Covers

12.5.1.1 Front Cover

12.5.1.1.1 Removing the Front Cover

1) Open the front cover.
2) Remove the front cover [3].
   - 1 screw [1]
   - 2 hinge pins [2]
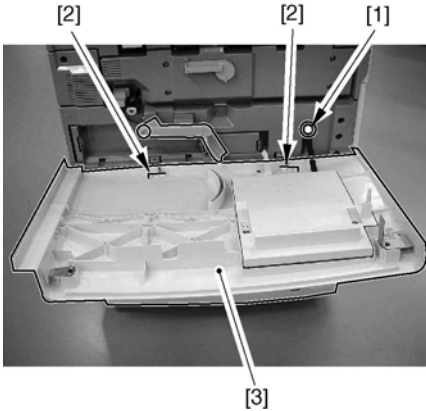
F-12-11

12.5.1.2 Upper Right Cover

12.5.1.2.1 Removing the Upper Right Cover

1) Pull out the manual feeder unit.
2) Remove the upper right cover [2].
   - 2 screws [1]
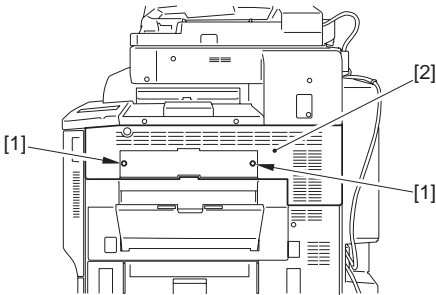
F-12-12

12.5.1.3 Right front cover

12.5.1.3.1 Removing the Right Front Cover

1) Slide out the manual feed unit, and open the pickup vertical path cover.
2) Remove the machine's front right cover [2].
   - 2 screws [1]
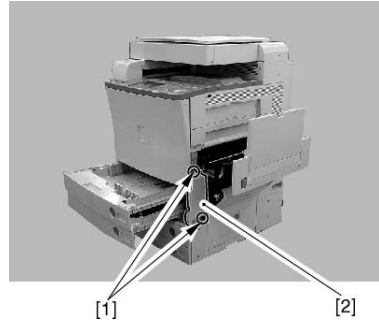
F-12-13

12.5.1.4 Rear Right Cover

12.5.1.4.1 Removing of the Right Rear Cover

1) Pull the manual feeder unit and open the feeding vertical path cover.

⚠

The rear right cover is fitted with the rear lower cover; shift it to the direction indicated to detach.

2) Remove the right rear cover [3] while pulling the manual feeder feeding unit [1].
   - 3 screws [2]
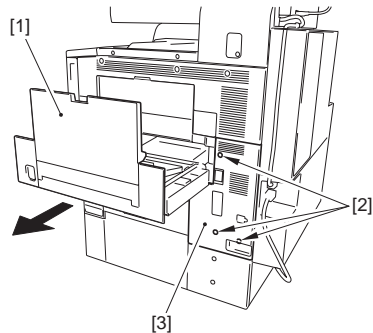
F-12-14

12.5.1.5 Upper Left Cover

12.5.1.5.1 Removing the Upper Left Cover

1) Open the delivery vertical path cover [1].
2) Remove the left upper cover [3].
   - 3 screws [2] (Including 1 screw for the cut reader cover)
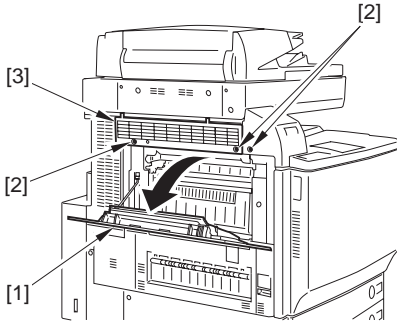
F-12-15

12.5.1.6 Left Lower Cover

12.5.1.6.1 Removing the Left Lower Cover

1) Pull out the pickup cassette [1].
2) Remove the left lower cover [3].
   - 4 screws [2]
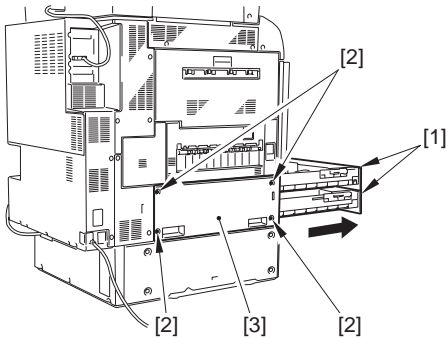
F-12-16

12.5.1.7 Upper Left Cover (small)

12.5.1.7.1 Removing the Card Reader Cover

1) Open the delivery vertical path cover [1].
2) Remove the card reader cover [4].
   - 1 rubber cover [2]
   - 2 screws [3]
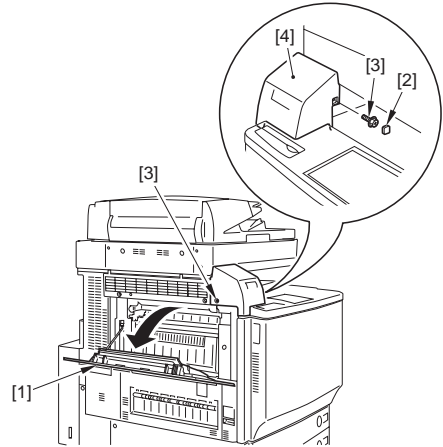
F-12-17

12.5.1.8 Left Rear Cover (Upper)

12.5.1.8.1 Removing the Left Rear Cover (Upper)

1) Remove the left rear cover (upper) [1].
   - 3 screws [2]
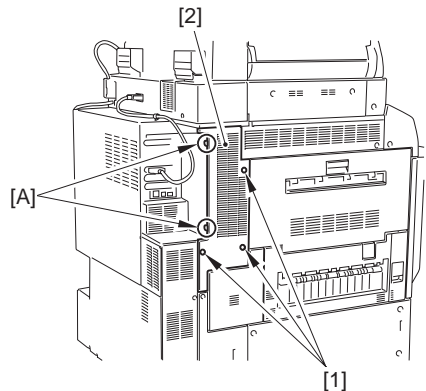
F-12-18

⚠

When attaching the rear left cover (upper), be sure to fit the cut-off to the hook [A].

12.5.1.9 Left Rear Cover (Lower)

12.5.1.9.1 Removing the Left Rear Cover (Lower)

1) Pull out the pickup cassette.
2) Remove the lower left cover. (page 12-21)Reference[Removing the Left Lower Cover]
3) Remove the left rear cover (lower) [2].
   - 2 screws [1]
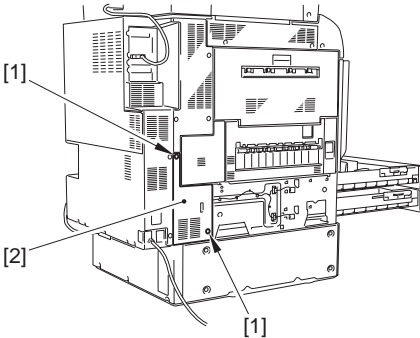
F-12-19

12.5.1.10 Rear Fan Cover

12.5.1.10.1 Removing the Rear Fan Cover

1) Remove the rear fan cover [1].
   - 3 screws [2]
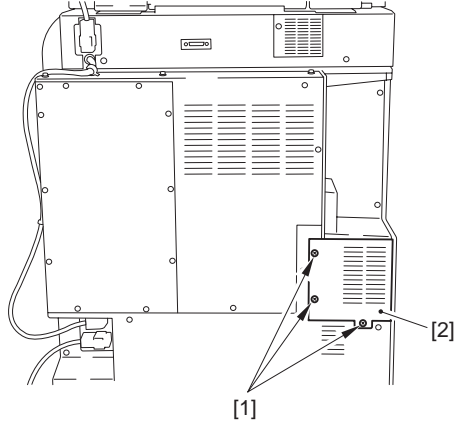
F-12-20

12.5.1.11 Rear Upper Cover

12.5.1.11.1 Removing the Rear Upper Cover

1) Remove the rear fan cover. (page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover [3].
   - 2 clamps [1]
   - 9 screws [2]
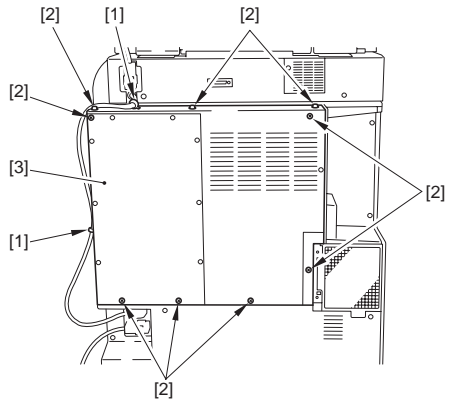
F-12-21

12.5.1.12 Rear Lower Cover

12.5.1.12.1 Removing the Rear Lower Cover

1) Remove the rear fan cover. (page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.
3) Remove the rear lower cover [3].
   - 1 clamp [1]
   - 5 screws [2]
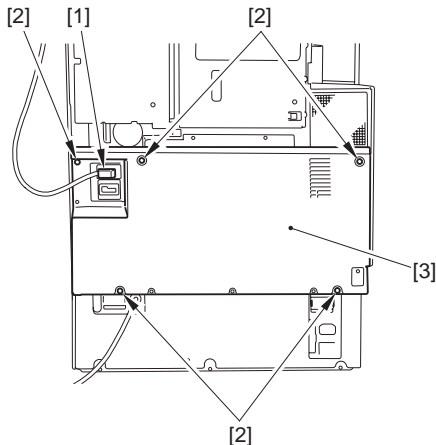
F-12-22

12.5.1.13 Rear Left Cover (Upper)

12.5.1.13.1 Removing the Rear Left Cover (Upper)

1) Remove the left rear cover (upper). (page 12-21)Reference[Removing the Left Rear Cover (Upper)]
2) Remove the rear left cover (upper).
   - 1 connector [1]
   - 2 screws [2]
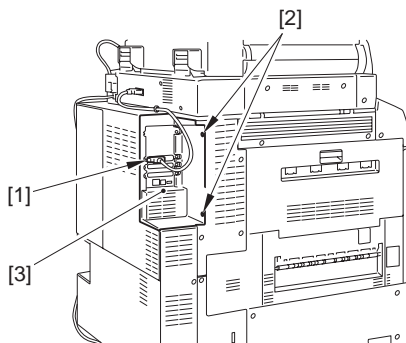
F-12-23

12.5.1.14 Inside Cover (Upper)

12.5.1.14.1 Removing the Inside Cover (Upper)

1) Remove the card reader cover. (page 12-21)Reference[Removing the Card Reader Cover]
2) Remove the front cover. (page 12-20)Reference[Removing the Front Cover]
3) Remove the toner receptacle releasing lever.
3-1) Lift the toner receptacle releasing lever and remove 4 toner receptacle.
3-2) Remove 4 toner receptacle releasing levers [2].
   - 4 screws [1]
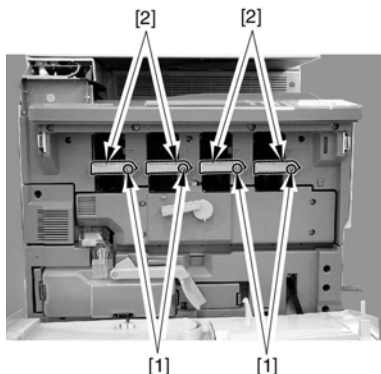
F-12-24

4) Remove the cleaner fan cover [2].
   - 1 screw [1]
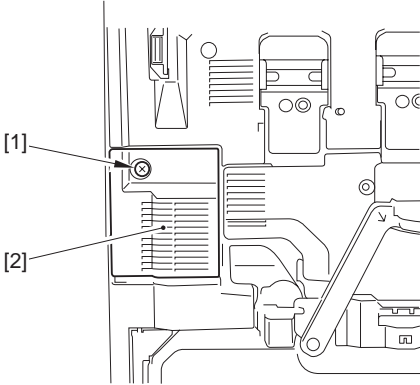
F-12-25

5) Remove the inner cover (upper).
5-1) Open the drum unit cover.
5-2) Remove the inner cover (upper) [2].
   - 5 screws [1]
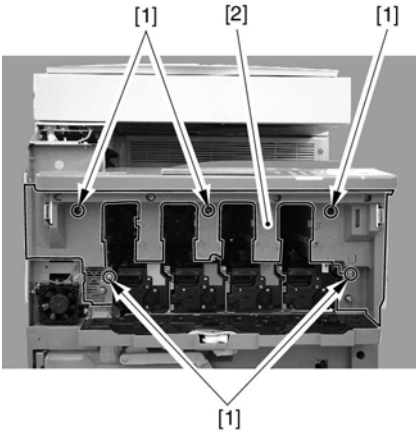
F-12-26

12.5.1.15 Inside Cover (Lower)

12.5.1.15.1 Removing the Inside Cover (Lower)

1) Remove the front cover. Reference[Removing the Front Cover]
2) Remove the toner container [3].
3) Remove the intermediate transfer unit releasing lever [2].
   - 1 screw [1]

[3]　　　[1]　　　[2]
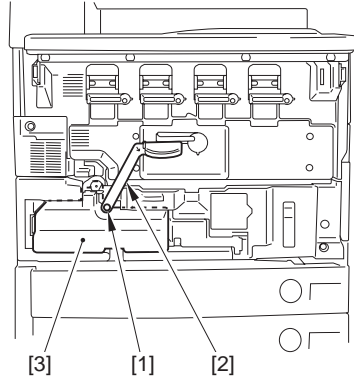
F-12-27

4) Remove the cleaner fan cover [2].
   - 1 screw [1]
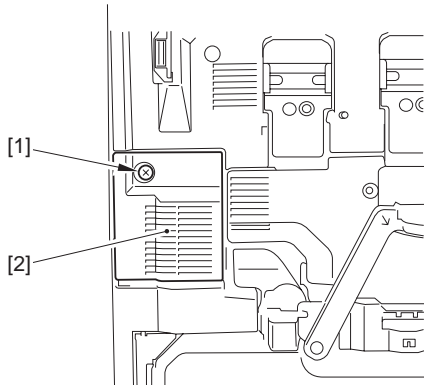
F-12-28

5) Remove the inner cover (lower) [3].
- 1 connector [1]
- 4 screws [2]

F-12-29

12.5.1.16 Reader Rear Cover

12.5.1.16.1 Removing the Reader Rear Cover

1) Free the reader power supply cable.
- 2 clamps [1]
- 2 connectors [2]
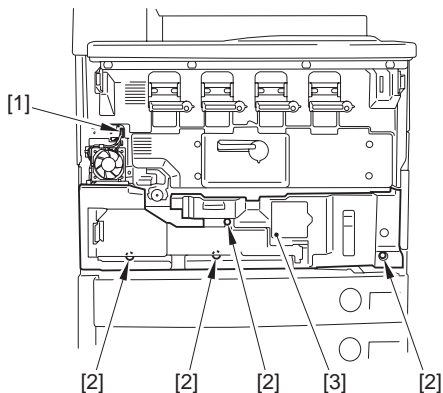
F-12-30

2) Remove the reader controller communication cable.
3) Remove the reader rear cover [2].
- 5 screws [1]

F-12-31
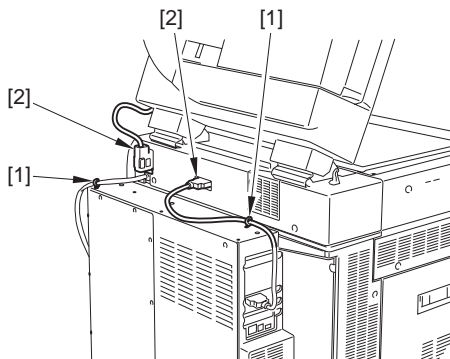
12.5.1.17 Manual Feeding Unit Cover

12.5.1.17.1 Removing the Manual Feed Unit Cover

1) Remove the manual feed unit.
1-1) Press the release button [1] on the machine's right side to slide out the manual feed unit [2].
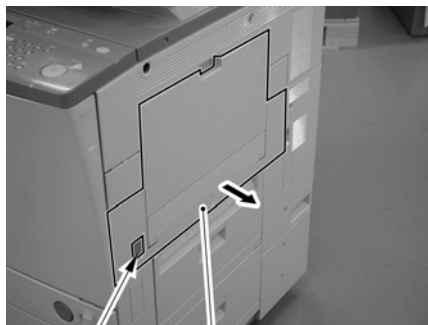
F-12-32

1-2) Remove the manual feed unit [3].
    - screw [1]
    - stopper plate [2]
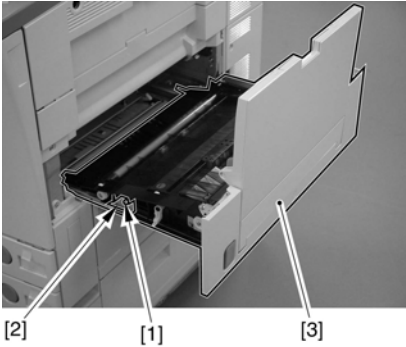
F-12-33

2) Remove the manual feed unit cover.
2-1) Remove the manual feed unit cover [4].
    - 2 screw [1]
    - 3 claws [2]
    - 3 snap-ons [3]
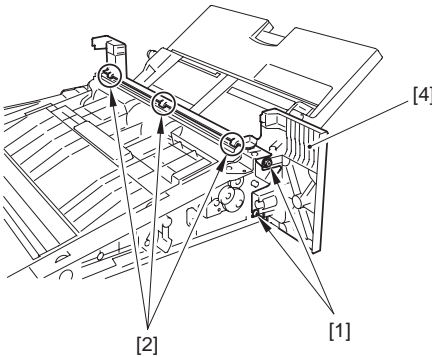
F-12-34
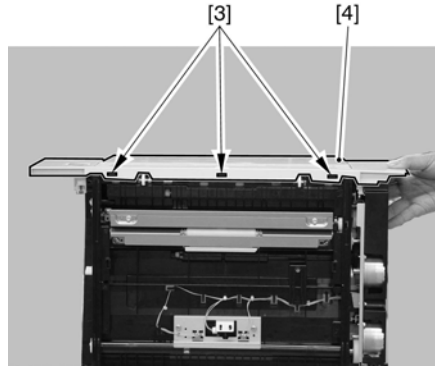
F-12-35

12.5.2 Developing Drive Unit

12.5.2.1 Preparation for Removing the Developing Drive Unit

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
4) Remove the main controller box cover.
5) Remove the main controller box.(page 5-23)Reference[Removing the Main Controller Box]
6) Remove the DC controller PCB cover.
7) Remove the DC controller box2.(page 12-31)Reference[Removing the DC Controller Box2]
8) Remove the DC controller box1.(page 12-32)Reference[Removing the DC Controller Box1]
9) Remove the high-voltage unit1.(page 12-27)Reference[Removing the High-Voltage Unit1]

12.5.2.2 Removing the Developing Drive Unit

1) Remove the development driving unit [4].
   - 6 wire saddles [1]
   - 1 connector [2]
   - 7 screws [3]
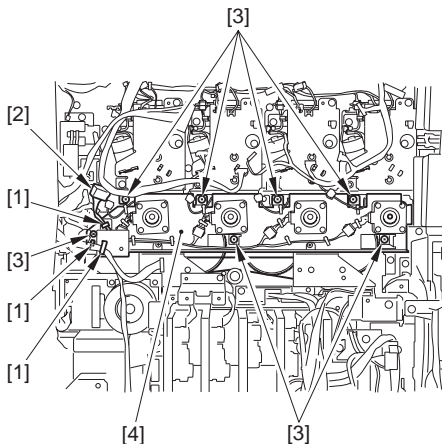
F-12-36

12.5.3 High-Voltage Unit

12.5.3.1 Preparation for Removing the High-Voltage Unit1

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
4) Remove the main controller box cover.
5) Remove the main controller box.(page 5-23)Reference[Removing the Main Controller Box]
6) Remove the DC controller PCB cover.
7) Remove the DC controller box2.(page 12-31)Reference[Removing the DC Controller Box2]
8) Remove the DC controller box1.(page 12-32)Reference[Removing the DC Controller Box1]

12.5.3.2 Removing the High-Voltage Unit1

1) Remove the high-voltage unit1 [4].
   - 1 clamp [1]
   - 11 connectors [2]
   - 5 screws [3] (Including 1 screw for the grounding wire)
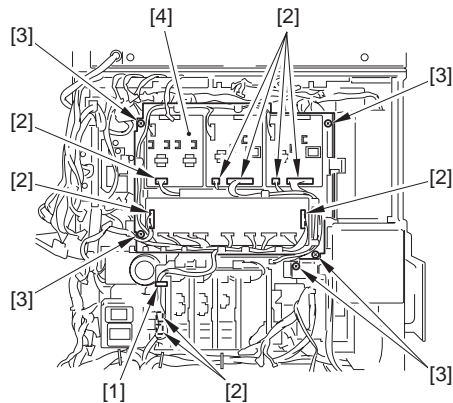
F-12-37

12.5.3.3 Preparation for Removing the High-Voltage Unit 2

1) Remove the rear fan cover. (page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover. (page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the rear lower cover. (page 12-23)Reference[Removing the Rear Lower Cover]
4) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]

12.5.3.4 Removing the High-Voltage Unit 2

1) Remove the high-voltage unit 2 [4].
   - 1 clamp [1]
   - 9 connectors [2]
   - 3 screws [3]
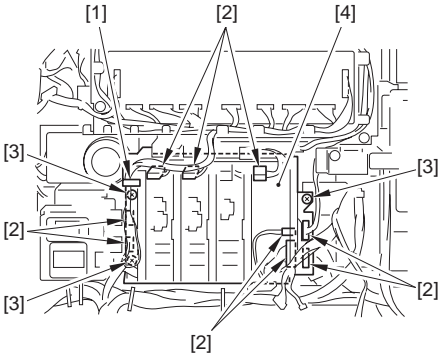
F-12-38

12.5.4 Secondary Transfer High-Voltage Unit

12.5.4.1 Preparation for Removing the Secondary Transfer Hign-Voltage Unit

1) Remove the rear fan cover. Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover. Reference[Removing the Rear Upper Cover]
3) Remove the rear lower cover. Reference[Removing the Rear Lower Cover]
4) Remove the left rear cover (lower).Reference[Removing the Left Rear Cover (Lower)]

12.5.4.2 Removing the Secondary Transfer Hign-Voltage Unit

1) With the fan, pull out the secondary transfer high-voltage unit [4].
   - 1 screw [3]
   - 3 connectors [2]
   - 2 clamps [1]
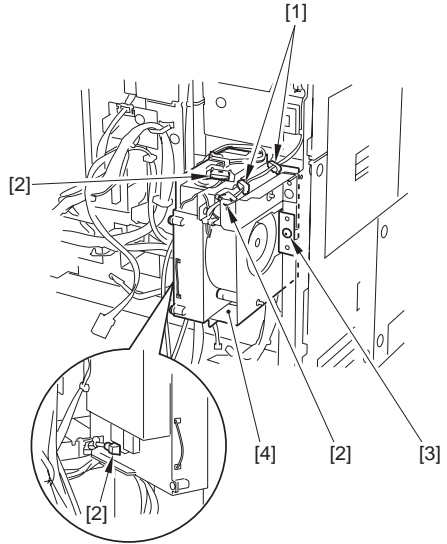
F-12-39

2) Remove the secondary transfer high-voltage unit [3].
   - 1 wire saddle [1]
   - 3 screws [2] (include 1 screw for the ground wire.)
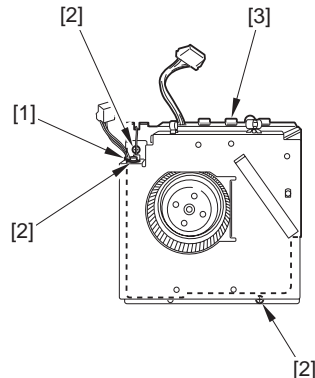
F-12-40

12.5.5 IH Power Supply Assembly

12.5.5.1 Preparation for Removing the IH Power Supply Unit

1) Remove the rear fan cover. (page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover. (page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the rear lower cover. (page 12-23)Reference[Removing the Rear Lower Cover]

12.5.5.2 Removing the IH Power Supply Unit

1) Remove the IH power supply unit [4].
   - 4 screws [1]
   - 5 clamps [2]
   - 6 connectors [3]
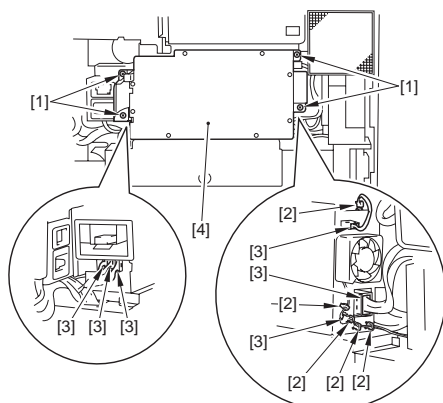
F-12-41

12.5.6 DC Power Supply Unit

12.5.6.1 Preparation for Removing the DC Power Supply Unit

1) Remove the rear fan cover. (page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover. (page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the rear lower cover. (page 12-23)Reference[Removing the Rear Lower Cover]
4) Remove the left rear cover (lower).(page 12-22)Reference[Removing the Left Rear Cover (Lower)]
5) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]

12.5.6.2 Removing the DC Power Supply Unit

1) Remove the DC power supply unit connector cover [2].
   - 3 screws [1]
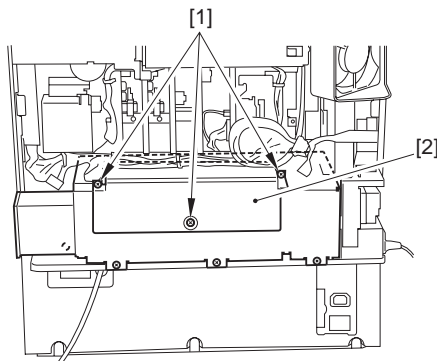
F-12-42

2) Remove the DC power supply unit [4].
   - 4 screws [1]
   - 2 clamps [2]
   - 22 connectors [3]
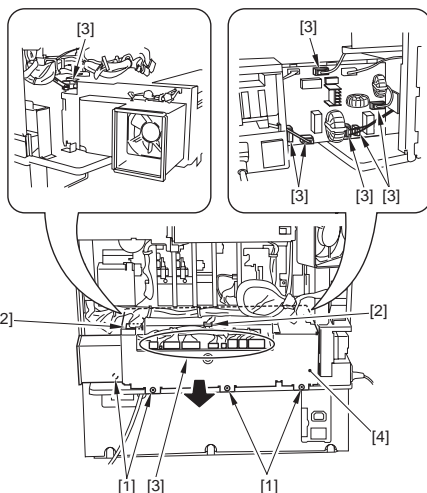
F-12-43

12.5.7 Control Panel

12.5.7.1 Preparation for Removing the Control Panel

1) Remove the card reader cover.(page 12-21)Reference[Removing the Card Reader Cover]
2) Remove the front cover.(page 12-20)Reference[Removing the Front Cover]

12.5.7.2 Removing the Control Panel

1) Remove the control panel [2] toward the front.
   - 4 screws [1]
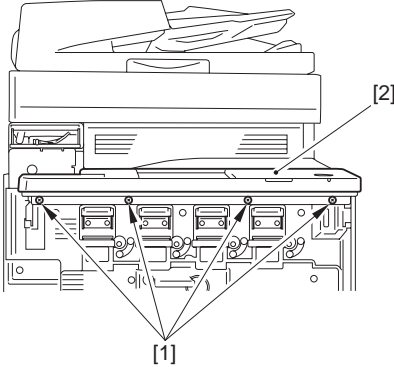
F-12-44

2) Remove the control panel [2].
   - 1 connector [1]
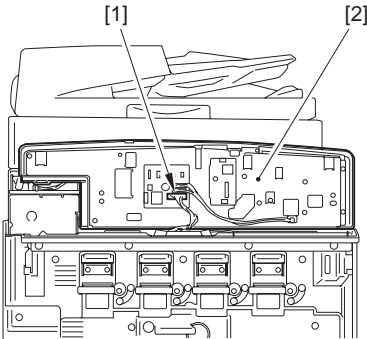
F-12-45

12.5.8 Control Panel LCD Unit

12.5.8.1 Preparation for Removing the Control Panel LCD Unit

1) Remove the card reader cover.(page 12-21)Reference[Removing the Card Reader Cover]
2) Remove the front cover.(page 12-20)Reference[Removing the Front Cover]
3) Remove the control panel [2] toward the front.
(Referring to procedure 12.5.7)
4) Remove the control panel [2].
(Referring to procedure 12.5.7)
5) Remove the control panel back plate [6].
   - 3 connectors [1] from the CPU PCB (Free the cable from the clamp.)
   - 2 flat cables [2]
   - 2 connectors [3] from the inverter PCB (Free the cable from the clamp.)
   - 1 binding screw [4]
   - 8 self-tapping screws [5]
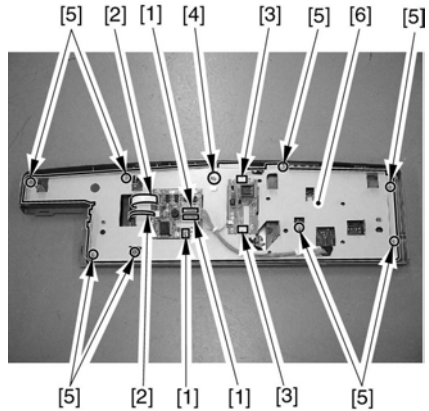
F-12-46

12.5.8.2 Removing the Control Panel LCD Unit

1) Remove the control panel LCD unit [2].
   - 3 screws [1]

F-12-47

12.5.9 DC Controller Box

12.5.9.1 Preparation for Removing the DC Controller Box2

1) Remove the rear fan cover. (page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover. (page 12-22)Reference[Removing the Rear Upper Cover]

12.5.9.2 Removing the DC Controller Box2

1) Remove the DC controller PCB cover [2].
   - 8 screws [1]

F-12-48
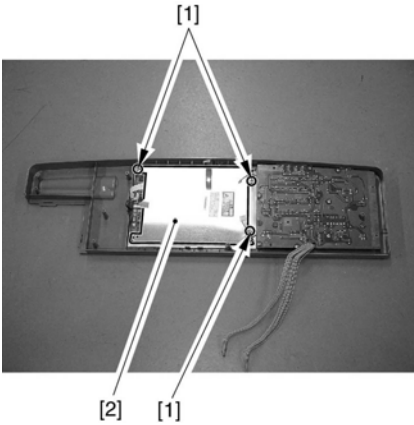
2) Remove the connectors, the clamps, and the flat cable on the DC controller box.
   - 18 connectors
   - 6 clamps [1]
   - 1 flat cable [2]

F-12-49
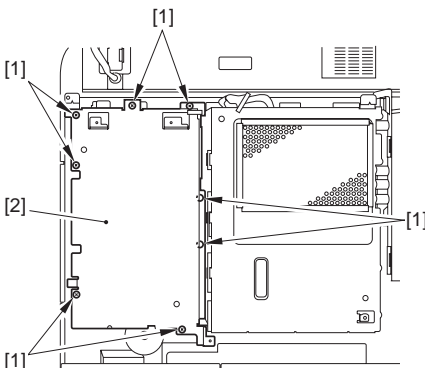
3) Remove the DC controller box 2 [2].
   - 9 screws [1]

F-12-50

12-31
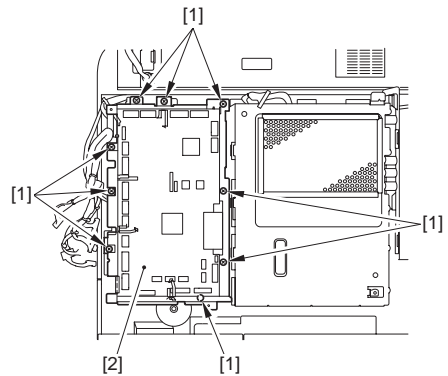
12.5.9.3 Preparation for Removing the DC Controller Box1

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the DC controller box2.(page 12-31)Reference[Removing the DC Controller Box2]

12.5.9.4 Removing the DC Controller Box1

1) Remove the connectors, wire saddles, and clamps of the DC controller box1.
   - 10 connectors
   - 6 wire saddles [1]
   - 5 clamps [2]
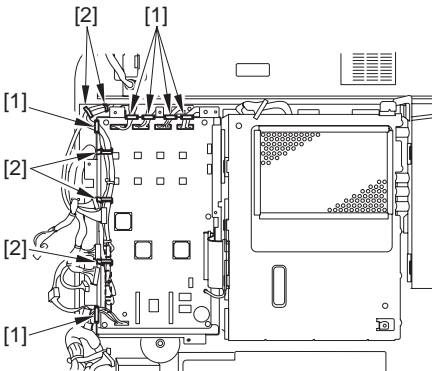
F-12-51

2) Remove the DC controller box1.
   - 5 screws [1]
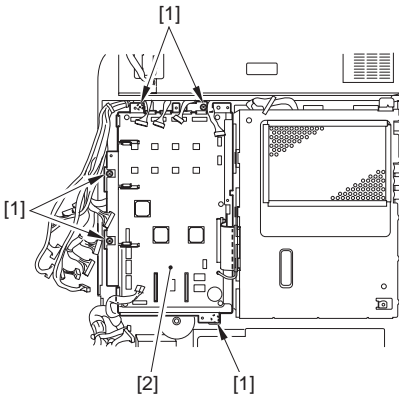
F-12-52

12.5.10 DC Controller PCB

12.5.10.1 Preparation for Removing the DC Controller PCB2 (MAISY)

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the DC controller box2.(page 12-31)Reference[Removing the DC Controller Box2]

12.5.10.2 Removing the DC Controller PCB2 (MAISY)

1) Remove the DC controller PCB2 (DCCON MAISY).
   - 8 screws [1]
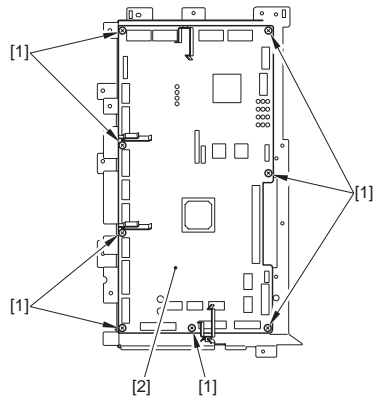
F-12-53

12.5.10.3 Preparation for Removing the DC Controller PCB1 (IMG)

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the DC controller box2.(page 12-31)Reference[Removing the DC Controller Box2]
4) Remove the DC controller box1.(page 12-32)Reference[Removing the DC Controller Box1]

12.5.10.4 Removing the DC Controller PCB1 (IMG)

1) Remove the DC controller PCB1 (DCCON IMG) [3].
   - 6 screws [1]
   - 1 flat cable [2]
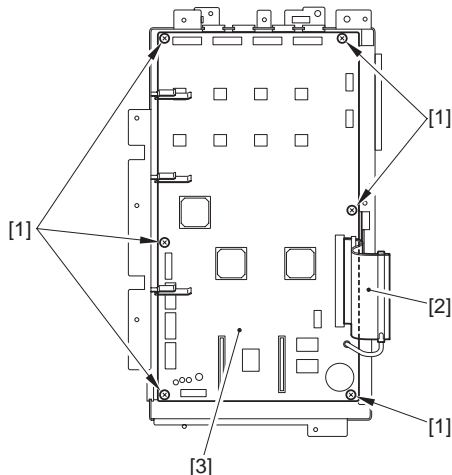
F-12-54

12.5.10.5 When Replacing the DC Controller PCB

1) After replacing the DC controller PCB, use the following service mode to initialize the memory of the DC controller PCB:
   COPIER>FUNCTION>CLEAR>DC-CON
2) Enter the settings indicated on the service label using the following service mode:
   COPIER>ADJUST>LASER>PVE-OFST
   Use it to enter an adjustment value for the laser beam position.
   COPIER>ADJUST>FEED-ADJ>REGIST
   Use it to adjust the timing at which the registration roller clutch goes ON.
   COPIER>ADJUST>FEED-ADJ>ADJ-REFE
   Use it to adjust the horizontal registration for re-pickup.
   COPIER>ADJUST>CST-ADJ>MF-A4R
   Use it to adjust the paper width basic value for the manual feed tray.
   COPIER>ADJUST>CST-ADJ>MF-A6R
   Use it to adjust the paper width basic value for the manual feed tray.
   COPIER>ADJUST>CST-ADJ>MF-A4
   Use it to adjust the paper width basic value for the manual feed tray.
3) Turn off and then on the main power switch.
4) Select the following in service mode: COPIER>FUNCTION>LASER>L-ADJ-0.
5) Press the OK key. (The machine starts auto adjustment and will indicate 'END' at its end.)

12.5.11 Main Power Supply PCB

12.5.11.1 Preparation for Removing the Main Power Supply PCB

1) Remove the rear fan cover.Reference[Removing the Rear Fan Cover]
2) Remove the rear lower cover.Reference[Removing the Rear Lower Cover]
3) Remove the IH power supply unit.Reference[Removing the IH Power Supply Unit]
4) Remove the DC power supply unit.Reference[Removing the DC Power Supply Unit]
5) Remove the relay PCB.Reference[Removing the Relay PCB]
6) Remove the All-night Power Supply PCB.Reference[Removing the All-night Power Supply PCB]
7) Remove the DC/DC converter PCB (38V) 1.Reference[Removing the DC/DC Converter PCB (38V)1]
8) Remove the DC/DC converter PCB (38V) 2.Reference[Removing the DC/DC Converter PCB (38V)2]

12.5.11.2 Removing the Main Power Supply PCB

1) Remove the main power-supply middle support plate [3].
   - 4 clamps [1]
   - 8 screws [2]
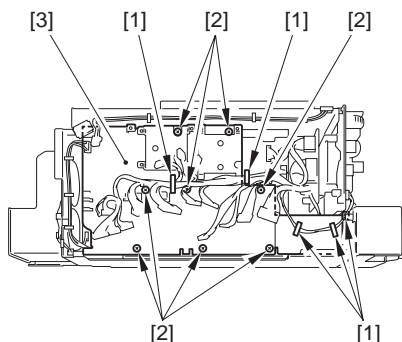
F-12-55

2) Remove the main power-supply PCB [3].
   - 1 connector [1]
   - 6 screws [2]

F-12-56

12.5.12 All-Night Power Supply PCB

12.5.12.1 Preparation for Removing the All-Night Power Supply PCB

1) Remove the rear fan cover(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
3) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]
4) Remove the DC power supply unit.(page 12-29)Reference[Removing the DC Power Supply Unit]

12.5.12.2 Removing the All-night Power Supply PCB

1) Remove the DC power supply unit cover [2].
   - 7 screws [1]

F-12-57

2) Remove the night-light power supply PCB [3].
   - 5 connectors [1]
   - 4 screws [2]

F-12-58
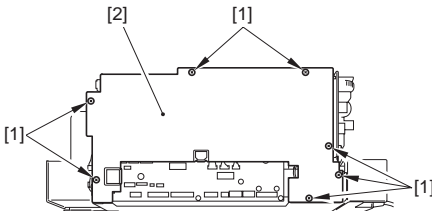
12.5.13 IH Power Supply PCB

12.5.13.1 Preparation for Removing the IH Power Supply PCB

1) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]

12.5.13.2 Removing the IH Power Supply PCB

1) Remove the IH power-supply unit cover [2].
   - 8 screws [1]
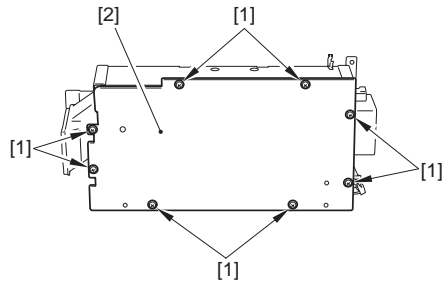
F-12-59

2) Remove the IH power-supply PCB [3].
- 4 connectors [1]
- 7 screws [2]
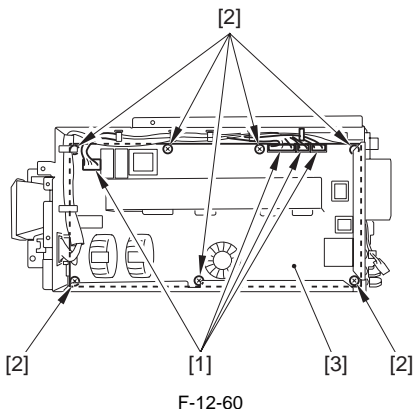
F-12-60

12.5.14 Leakage Breaker

12.5.14.1 Preparation for Removing the Leakage Breaker

1) Remove the rear fan cover.<u>(page 12-22)</u>Reference[Removing the Rear Fan Cover]
2) Remove the rear lower cover.<u>(page 12-23)</u>Reference[Removing the Rear Lower Cover]
3) Remove the IH power-supply unit.<u>(page 12-29)</u>Reference[Removing the IH Power Supply Unit]
4) Remove the DC power-supply unit.<u>(page 12-29)</u>Reference[Removing the DC Power Supply Unit]

12.5.14.2 Removing the Leakage Breaker

1) Remove the leak breaker unit [4].
- 1 clamp [1]
- 2 connectors [2]
- 3 screws [3]
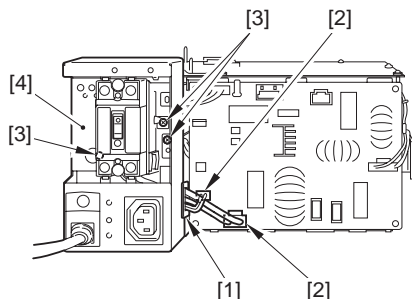
F-12-61

2) Remove the leak breaker [4].
- 2 screws [1]
- 1 clamp [2]
- 4 connectors [3]
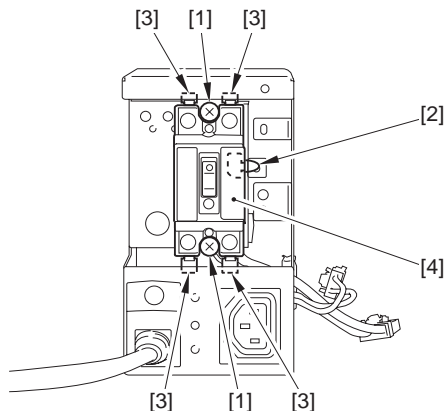
F-12-62

12.5.15 Relay PCB

12.5.15.1 Preparation for Removing the Relay PCB

1) Remove the rear fan cover.<u>(page 12-22)</u>Reference[Removing the Rear Fan Cover]
2) Remove the rear lower cover.<u>(page 12-23)</u>Reference[Removing the Rear Lower Cover]
3) Remove the IH power supply unit.<u>(page 12-29)</u>Reference[Removing the IH Power Supply Unit]
4) Remove the DC power-supply unit.<u>(page 12-29)</u>Reference[Removing the DC Power Supply Unit]

12.5.15.2 Removing the Relay PCB

1) Remove the DC power-supply unit cover [2].
(Referring to procedure 12.5.12.2)
2) Remove the relay PCB [2].
   - 14 connectors on the PCB
   - 6 screws [1]

F-12-63

12.5.16 DC/DC Converter PCB

12.5.16.1 Preparation for Removing the DC/DC Converter PCB (38V)1

1) Remove the rear fan cover(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
3) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]
4) Remove the DC power supply unit.(page 12-29)Reference[Removing the DC Power Supply Unit]

12.5.16.2 Removing the DC/DC Converter PCB (38V)1

1) Remove the DC power supply unit cover [2].
(Referring to procedure 12.5.12.2)
2) Remove the DC/DC converter PCB (38V)1 [3].
   - 2 connectors [1]
   - 4 screws [2]

F-12-64

12.5.16.3 Preparation for Removing the DC/DC Converter PCB (38V)2

1) Remove the rear fan cover(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
3) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]
4) Remove the DC power supply unit.(page 12-29)Reference[Removing the DC Power Supply Unit]

12.5.16.4 Removing the DC/DC Converter PCB (38V)2

1) Remove the DC power supply unit cover [2]. (Referring to procedure 12.5.12.2)
2) Remove the DC/DC converter PCB (38V)2 [3].
   - 2 connectors [1]
   - 4 screws [2]
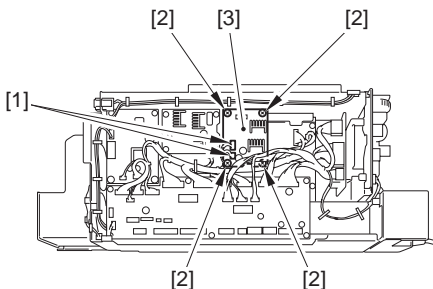
F-12-65

12.5.16.5 Preparation for Removing the DC/DC Converter PCB (3.3V/5V/12V)

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
3) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]
4) Remove the DC power supply unit.(page 12-29)Reference[Removing the DC Power Supply Unit]
5) Remove the main power supply PCB.(page 12-33)Reference[Removing the Main Power Supply PCB]

12.5.16.6 Removing the DC/DC Converter PCB (3.3V/5V/12V)

1) Remove the DC/DC converter PCB (3.3V/5V/12V) [3].
   - 3 connectors [1]
   - 4 screws [2]
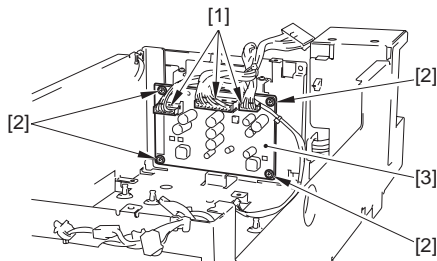
F-12-66

12.5.17 AC Driver PCB

12.5.17.1 Preparation for Removing the AC Driver PCB

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
3) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]
4) Remove the DC power supply unit.(page 12-29)Reference[Removing the DC Power Supply Unit]

12.5.17.2 Removing the AC Driver PCB

1) Remove the AC driver PCB [3].
   - 3 connectors [1]
   - 4 screws [2]
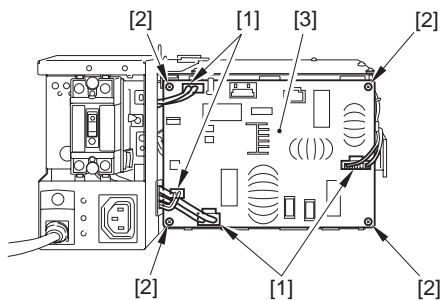
F-12-67

12.5.18 Relay PCB 1

12.5.18.1 Preparation for Removing the Relay PCB 1

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
4) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
5) Remove the main controller box.(page 5-23)Reference[Removing the Main Controller Box]
6) Remove the DC controller box 2.(page 12-31)Reference[Removing the DC Controller Box2]
7) Remove the DC controller box 1.(page 12-32)Reference[Removing the DC Controller Box1]
8) Remove the high-voltage unit 1.(page 12-27)Reference[Removing the High-Voltage Unit1]

12.5.18.2 Removing the Relay PCB 1

1) Remove elay PCB mount base [3].
   - 19 connectors
   - 7 clamps [1] (free the harness)
   - 4 screws [2]
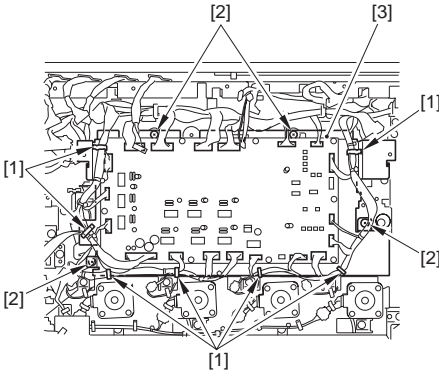
F-12-68

2) Remove the relay PCB [2].
   - 10 screws [1]
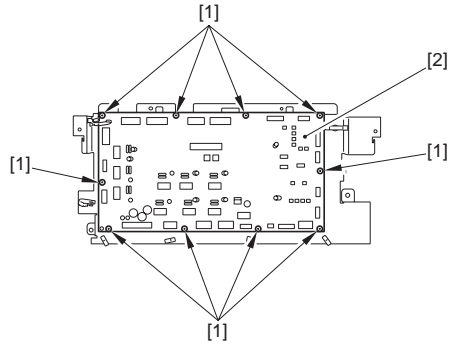
F-12-69

12.5.19 Control Panel CPU PCB

12.5.19.1 Preparation for Removing the Control Panel CPU PCB

1) Remove the card reader cover.(page 12-21)Reference[Removing the Card Reader Cover]
2) Remove the front cover.(page 12-20)Reference[Removing the Front Cover]
3) Slide the control panel to the front.
   - 4 screws [1]
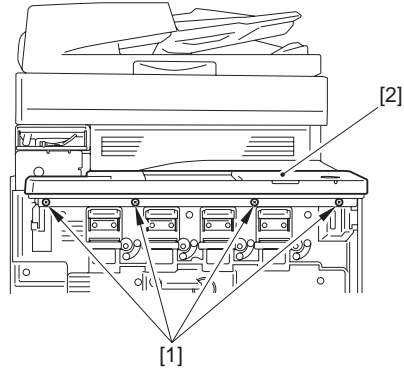
F-12-70

4) Dismount the control panel [2].
   - 1 connector [1]

[1]   [2]
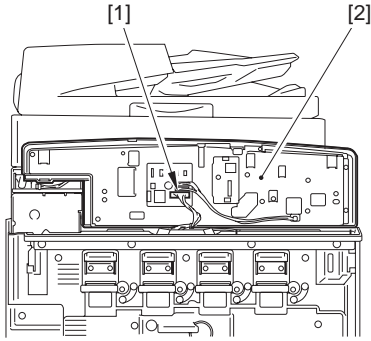
F-12-71

12.5.19.2 Removing the Control Panel CPU PCB

1) Remove the control panel CPU PCB [4].
   - 3 connectors [1]
   - 2 flat cables [2]
   - 4 screws [3]

[1]

[2] [3]

[2] [3]   [4] [3] [3]
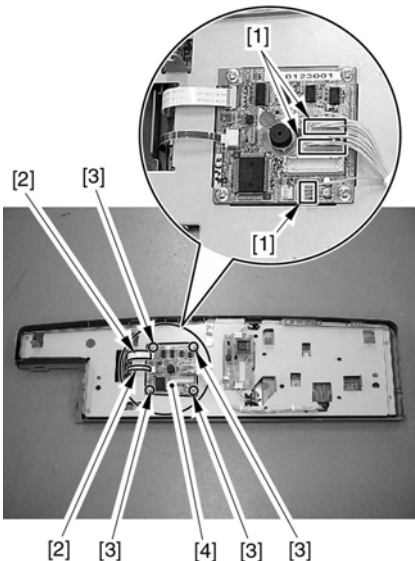
F-12-72

12.5.20 Control Panel Key Switch PCB

12.5.20.1 Preparation for Removing the Control Panel Key Switch PCB

1) Remove the card reader cover.Reference[Removing the Card Reader Cover]
2) Remove the front cover.Reference[Removing the Front Cover]
3) Remove the control panel [2] toward the front.
   - 4 screws [1]

[2]

[1]
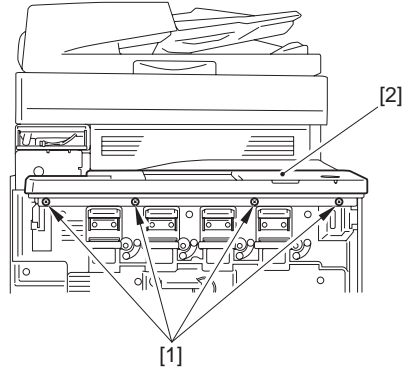
F-12-73

4) Remove the control panel [2].
   - 1 connector [1]

[1]   [2]
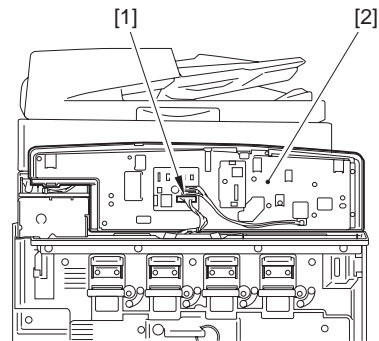
F-12-74

5) Remove the control panel back plate [6].
  - 3 connectors [1] from the CPU PCB (Free the cable from the clamp.)
  - 2 flat cables [2]
  - 2 connectors [3] from the inverter PCB (Free the cable from the clamp.)
  - 1 binding screw [4]
  - 8 self-tapping screws [5]
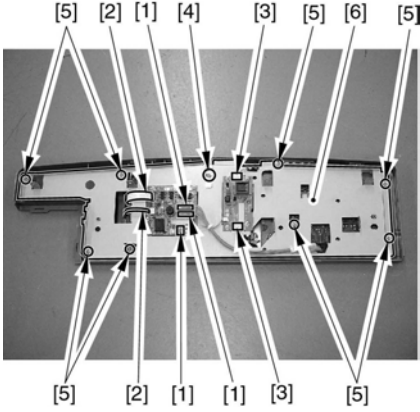
F-12-75

12.5.20.2 Removing the Control Panel Key Switch PCB

1) Remove the control panel key switch PCB [2].
  - 7 screws [1]
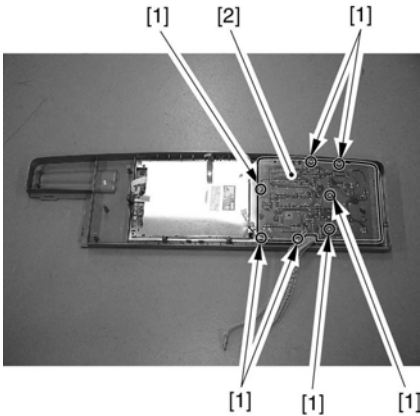
F-12-76

12.5.21 Control Panel Inverter PCB

12.5.21.1 Preparation for Removing the Control Panel Inverter PCB

1) Remove the card reader cover.Reference[Removing the Card Reader Cover]
2) Remove the front cover.Reference[Removing the Front Cover]
3) Remove the control panel [2] toward the front.
  - 4 screws [1]
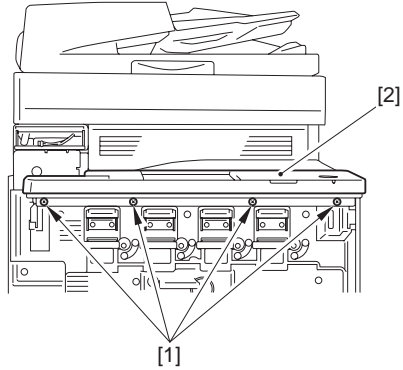
F-12-77

4) Remove the control panel [2].
(Referring to procedure 12.5.20.1)
5) Remove the control panel back plate [6].
(Referring to procedure 12.5.20.1)

12.5.21.2 Removing the Control Panel Inverter PCB

1) Remove the control panel inverter PCB [3].
   - 3 connectors [1]
   - 4 screws [2]
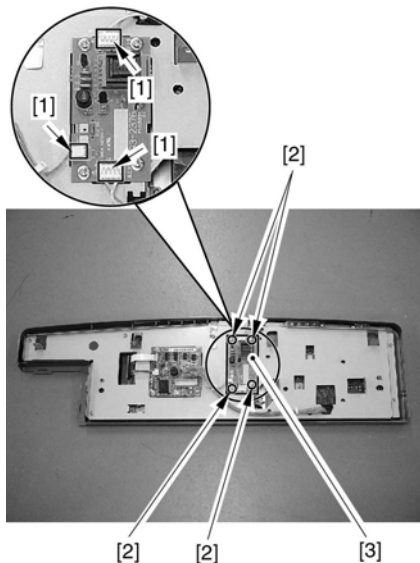
F-12-78

12.5.22 Environment Sensor

12.5.22.1 Preparation for Removing the Environment Sensor

1) Pressure release of the intermediate transfer unit.
1-1) Open the front cover, and turn the intermediate transfer unit pressure release lever to release it.
1-2) Slide the manual feeding unit out.
1-3) Remove the right middle cover [2].
   - 1 screw [1]
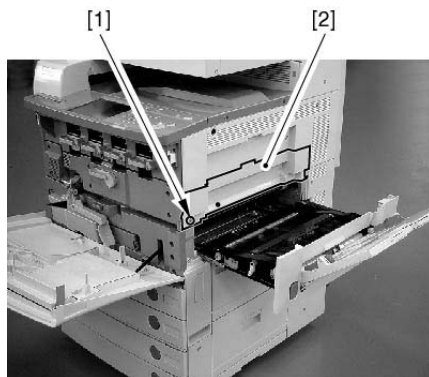
F-12-79

1-4) Release the escape lever [1] and fix with the tape [2] etc.

⚠

When the pressure release lever is not fixed, release lever may drop and damage the ITB.
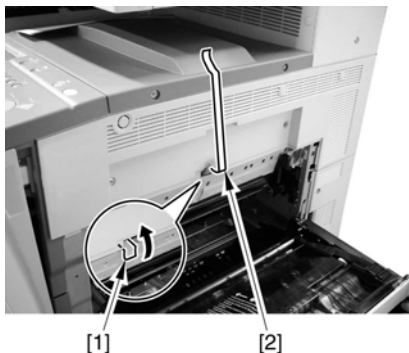
F-12-80

2) Remove the right upper cover [2].
   - 4 screws [1]
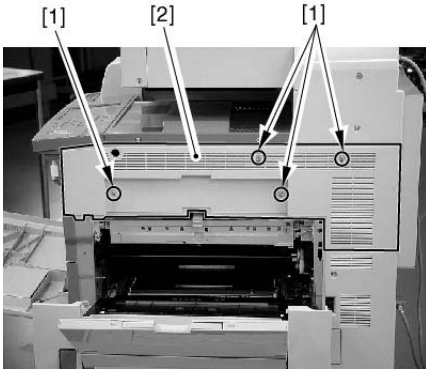
F-12-81

3) Remove the pattern reader unit.(page 9-79)Reference[Removing the Pattern Reader Unit]

12.5.22.2 Removing the Environment Sensor

1) Insert a screwdriver from the hole on the right upper stay of the main body, and remove the 1 screw [1] to dismount the environment sensor mount [2].
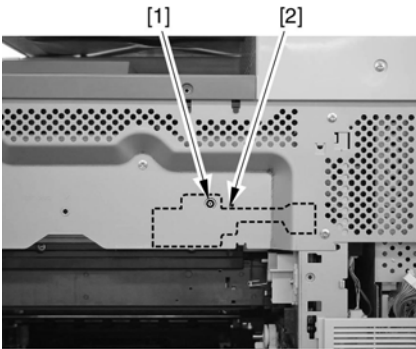
F-12-82

2) Free the claw [2] at the sensor mount to detach the environment sensor [2].
   - 1 connector [1]
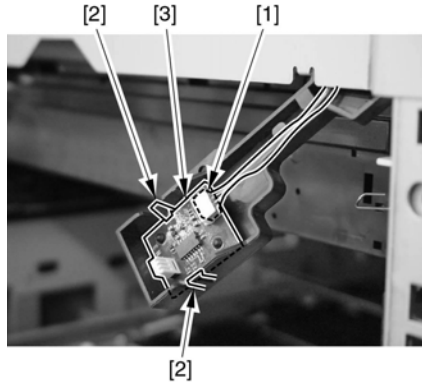
F-12-83

12.5.23 Manual Feed Unit Open/ Closed Sensor

12.5.23.1 Preparation for Removing the Manual Feed Unit Open/Closed Sensor

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the DC controller PCB cover.
4) Remove the DC controller box2.(page 12-31)Reference[Removing the DC Controller Box2]
5) Remove the DC controller box1.(page 12-32)Reference[Removing the DC Controller Box1]
6) Remove the manual feeder unit open/close sensor mount [3].
   - 4 connectors [1]
   - 1 screw [2]
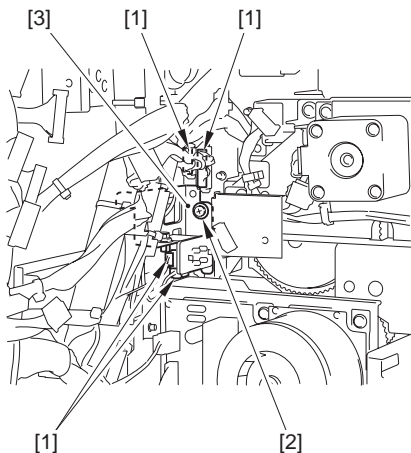
F-12-84

12.5.23.2 Removing the Manual Feed Unit Open/Closed Sensor

1) Remove the manual feeder unit open/close sensor [2].
   - 1 connector [1]
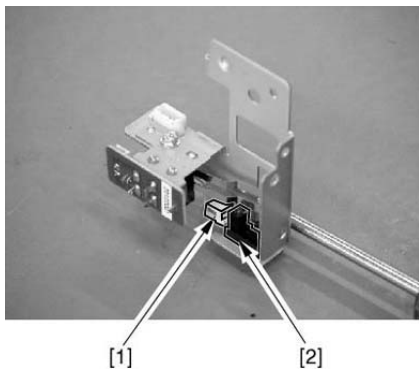
F-12-85

12.5.24 Front Cover Open/Closed Sensor

12.5.24.1 Preparation for Removing the Front Cover Open/Closed Sensor

1) Remove the control panel.(page 12-30)Reference[Removing the Control Panel]
2) Remove the inside cover (upper).(page 12-23)Reference[Removing the Inside Cover (Upper)]
3) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
4) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
5) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
6) Remove the DC controller PCB cover [2].
   - 8 screws [1]
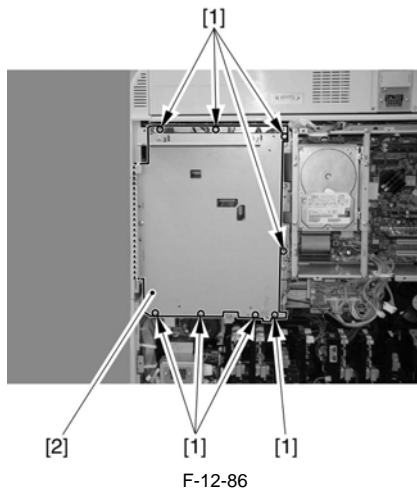
F-12-86

⚠ When Attaching the DC Controller PCB Cover
When attaching the cover, take care so that the cut-off will not come into contact with the latch of the flat cable. Otherwise, the flat cable can come loose.
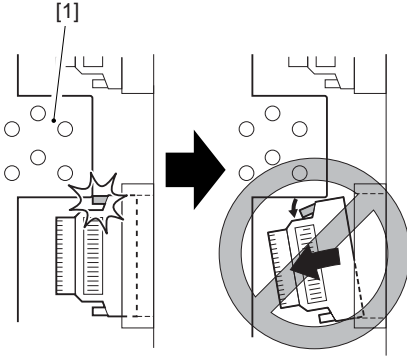
F-12-87

7) Remove the DC controller mounting.
7-1) Remove all connectors from the PCB, and free all harnesses from the cable clamps; then, remove the 7 screws [1], and remove the DC controller PCB [2] together with its base.
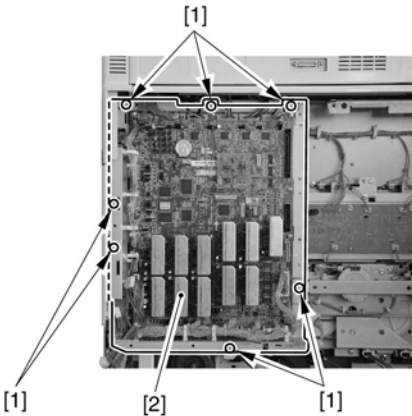
F-12-88

12.5.24.2 Removing the Front Cover Open/Closed Sensor

1) Remove the sensor flag retaining plate [2] found at the front.
   - 1 screw [1]
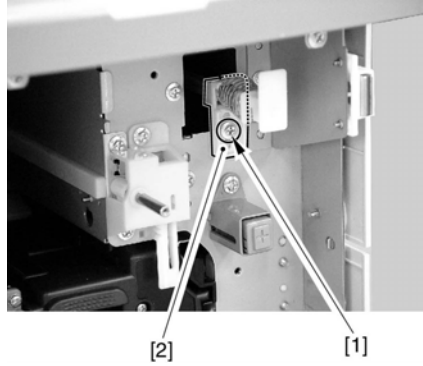
F-12-89

2) Pull out the sensor mounting plate [3] (The sensor flag retaining plate is found between the front side plate and the rear side plate).
   - 2 connectors [1]
   - 2 screws [2]
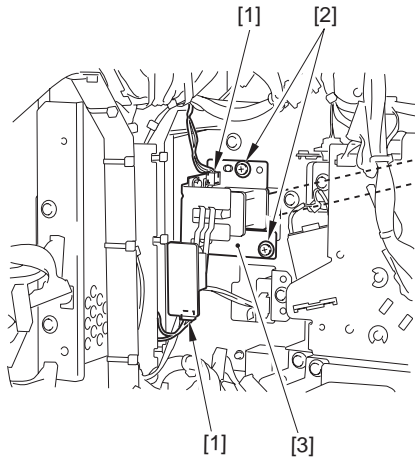
F-12-90

3) Remove the sensor cover [2].
   - 2 screws [1]
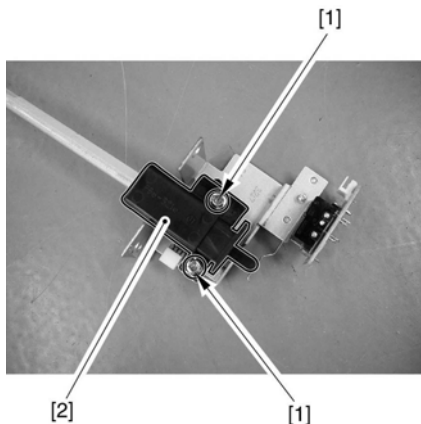
F-12-91

4) Remove the front cover open/closed sensor [3].
   - 2 connectors [1]
   - 3 screws [2]
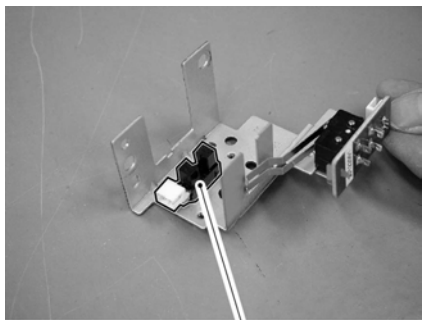
F-12-92

12.5.25 Main Power Switch

12.5.25.1 Preparation for Removing the Main Power Switch

1) With the manual feeder unit [1] pulled out, remove the rear right cover [3].
   - 3 screws [2]
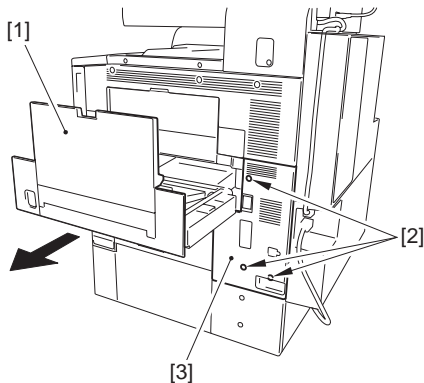
F-12-93

12.5.25.2 Removing the Main Power Switch

1) Remove the mounting plate [2].
   - 5 screws [1]
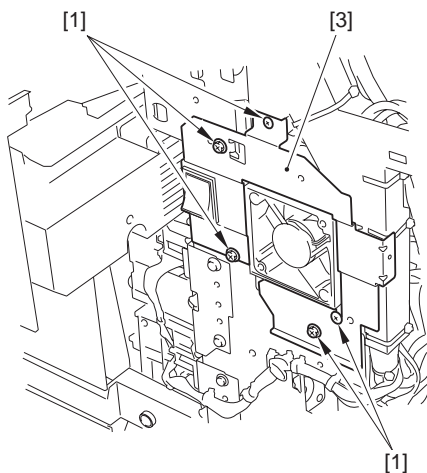
F-12-94

2) Remove 2 terminals [1].
3) Pick up the stopper [A], and remove the main power switch [2].
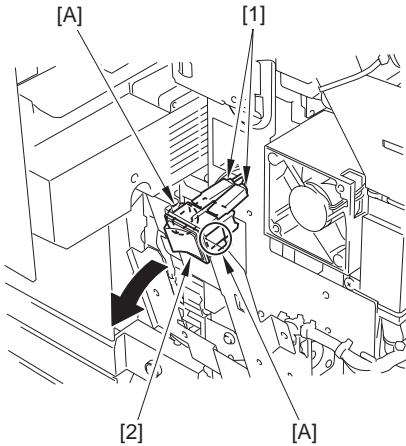
F-12-95

12.5.26 Manual Feed Unit Open/ Closed Detecting Switch

12.5.26.1 Preparation for Removing the Manual Feed Unit Open/Close Switch

1) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
2) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
4) Remove the controller box cover.
4-1) Remove the main controller cover [4].
  - 1 connector J1512 [1] from the power distribution PCB
  - harness from the wire saddle [2]
  - 6 screws [3]
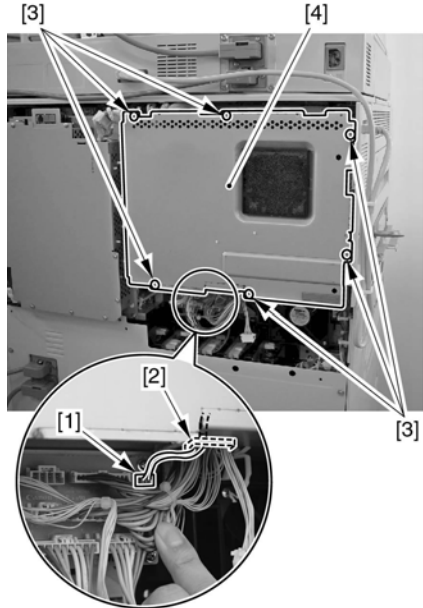
F-12-96

5) Remove the DC controller PCB cover [2].
(Referring to procedure 12.5.24.1)
6) Open the main controller box
6-1) Remove the 2 flat cables [1] used to connect the DC controller PCB and the main controller PCB.
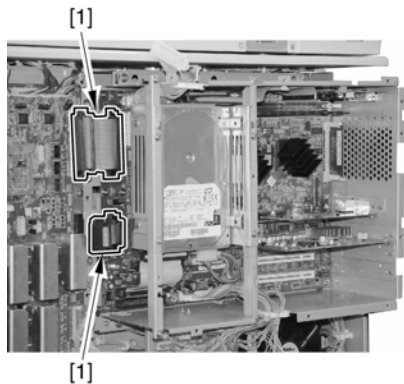
F-12-97

6-2) Remove the 9 screws [1] of the main controller box.
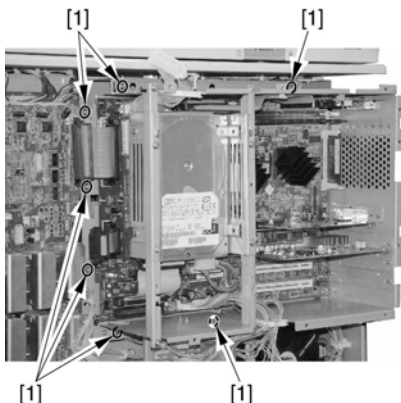
F-12-98

F-12-99

6-3) Remove the controller box from the hook [A/B] at the top of the main controller box.
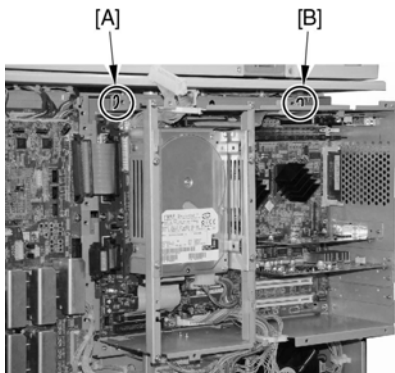
F-12-100

6-4) Engage the hook [1] found on the right side of the main controller box on the stay [2] of the machine, and open it.
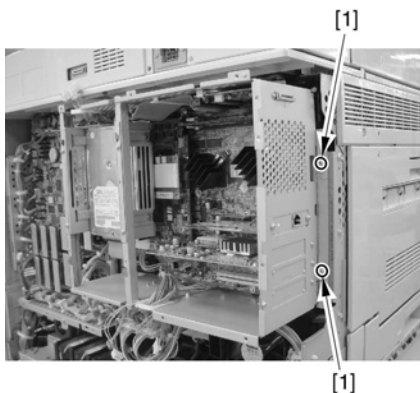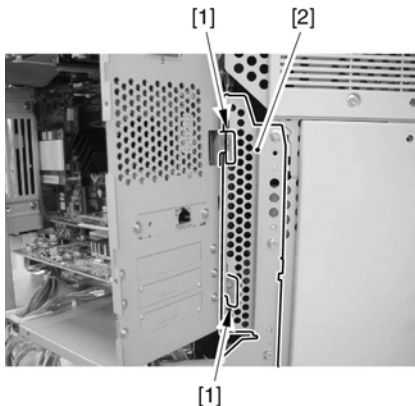
F-12-101

7) Remove the DC controller mounting.
7-1) Remove all connectors from the PCB, and free all harnesses from the cable clamps; then, remove the 7 screws [1], and remove the DC controller PCB [2] together with its base.
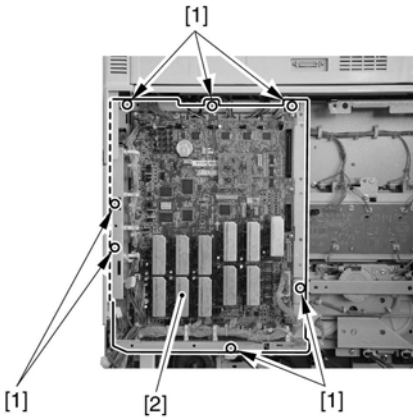
F-12-102

8) Remove the registration unit open/closed sensor mounting [3].
    - 4 connectors [1]
    - 1 screw [2]
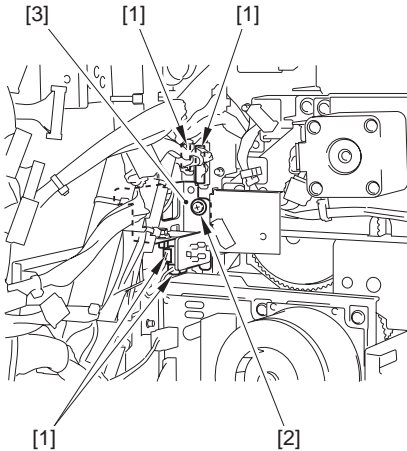
F-12-103

12.5.26.2 Removing the Manual Feed Unit Open/Close Switch

1) Remove the manual feeder unit open/close switch [2].
    - 1 screw [1]
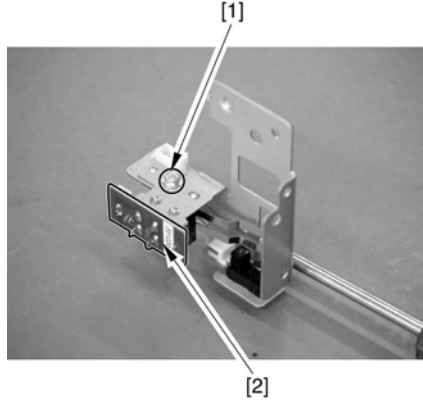
F-12-104

12.5.27 Front Cover Open/Closed Detecting Switch

12.5.27.1 Preparation for Removing the Front Cover Open/Close Switch

1) Remove the control panel.(page 12-30)Reference[Removing the Control Panel]
2) Remove the inside cover (upper).(page 12-23)Reference[Removing the Inside Cover (Upper)]
3) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
4) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
5) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
6) Remove the DC controller PCB cover [2].
(Referring to procedure 12.5.24.1)
7) Remove the DC controller mounting.
7-1) Remove all connectors from the PCB, and free all harnesses from the cable clamps; then, remove the 7 screws [1], and remove the DC controller PCB [2] together with its base.
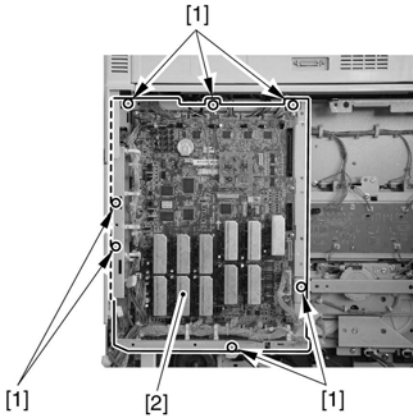
F-12-105

12.5.27.2 Removing the Front Cover Open/Close Switch

1) Remove the right rear cover [3] while pulling the manual feeder feeding unit [1].
 - 3 screws [2]
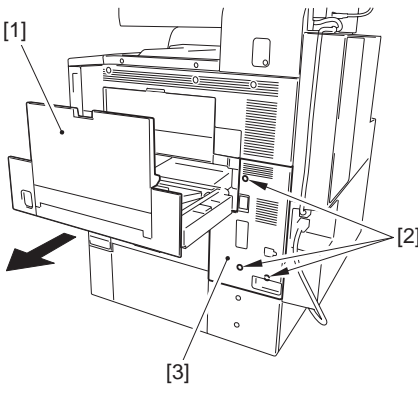
F-12-106

2) Remove the sensor flag pressure plate [2] on the front side.
 - 1 screw [1]
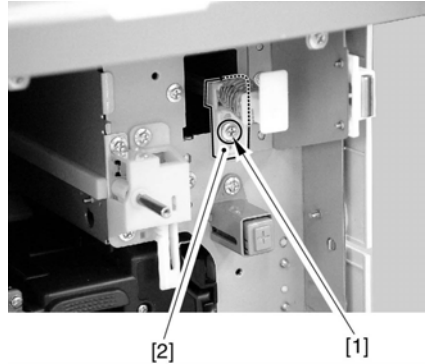
F-12-107

3) Pull the sensor mount [3]. (Sensor flag pressure plate is located from the end plate (front) to the end plate (rear))
 - 2 connectors [1]
 - 2 screws [2]
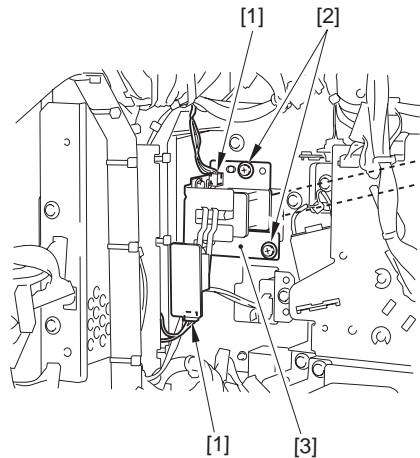
F-12-108

4) Remove the front cover open/close switch [2].
  - 1 screw [1]
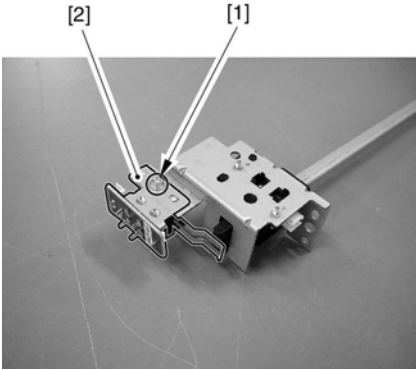
F-12-109

12.5.28 ITB Cooling Fan

12.5.28.1 Preparation for Removing the ITB Cooling Fan

1) Remove the front cover.(page 12-20)Reference[Removing the Front Cover]
2) Remove the cleaner fan cover [2].
  - 1 screw [1]
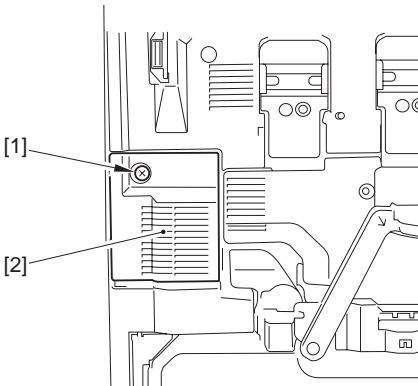
F-12-110

3) Remove the inside cover (lower side).(page 12-24)Reference[Removing the Inside Cover (Lower)]

12.5.28.2 Removing the ITB Cooling Fan

1) From the back of lower inside cover, remove ITB fan cover.
  - 2 screws [1]
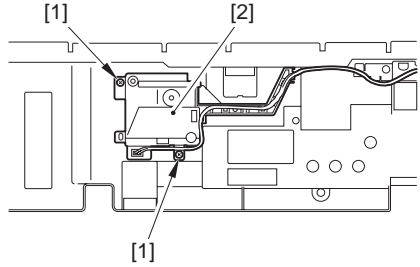
F-12-111

2) Remove ITB fan [2].
  - 1 connector [1]
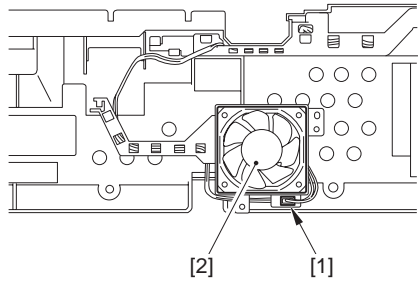
F-12-112

12.5.28.3 Removing the ITB Cooling Fan Filter

1) Open the front cover.
2) Remove ITB fan filter [2].
  - 1 screw [1]
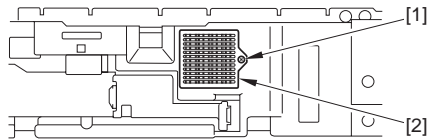
F-12-113

12.5.29 Face-down Tray Cooling Fan (rear/ front)

12.5.29.1 Preparation for Removing the Face-Down Tray Cooling Fan Unit

1) Remove the upper left cover.(page 12-21)Reference[Removing the Upper Left Cover]
2) Remove the delivery vertical path unit.(page 10-93)Reference[Removing the Delivery Vertical Path Unit]

12.5.29.2 Removing the Face-Down Tray Cooling Fan Unit

1) Remove the face-down tray fan unit [3].
   - 1 connector [1]
   - 2 screws [2]
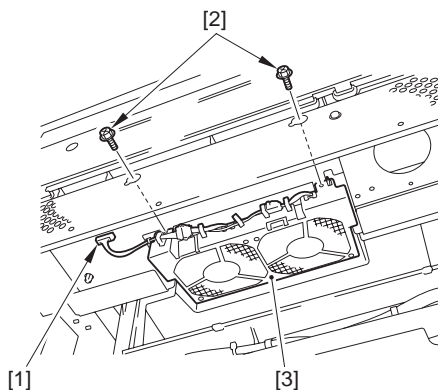
F-12-114

12.5.29.3 Preparation for Removing the Face-Down Tray Cooling Fan

1) Remove the face-down tray cooling fan unit.(page 12-51)Reference[Removing the Face-Down Tray Cooling Fan Unit]

12.5.29.4 Removing the Face-Down Tray Cooling Fan

⚠

There are 2 face-down tray fans side by side in the vicinity. Removing procedure is the same for both face-down tray fans.

1) Remove the face-down tray fans [5].
   - 1 clamp [1]
   - 1 wire saddle [2]
   - 1 connector [3]
   - 2 screws [4]
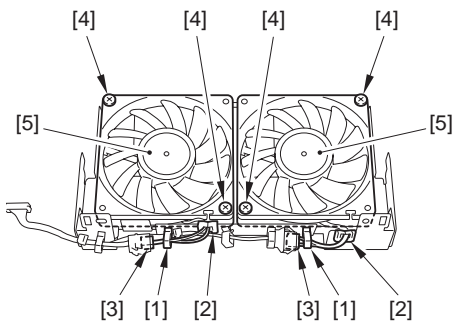
F-12-115

12.5.30 Cleaner Fan

12.5.30.1 Preparation for Removing the Cleaner Fan

1) Remove the cleaner fan cover.
1-1) Open the front cover.
1-2) Remove the cleaner fan cover [2].
   - 1 screw [1]
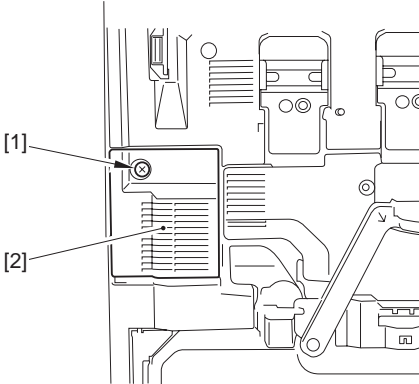
F-12-116

12.5.30.2 Removing the Cleaner Fan

1) Remove the connector [1], and free the 3 claws; then, remove the cleaner fan [2].
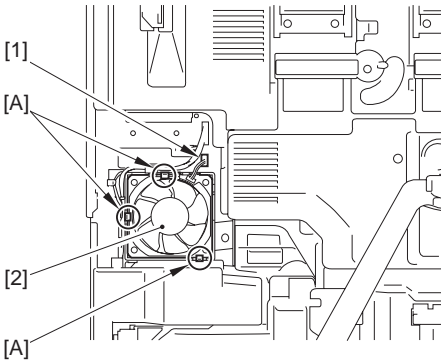
F-12-117

12.5.31 Manual Feed Cooling Fan

12.5.31.1 Preparation for Removing the Manual Feed Cooling Fan

1) Remove the right rear cover.Reference[Removing of the Right Rear Cover]
2) Remove the switch and the sheet metal around the fan.
   - 5 screws [1]
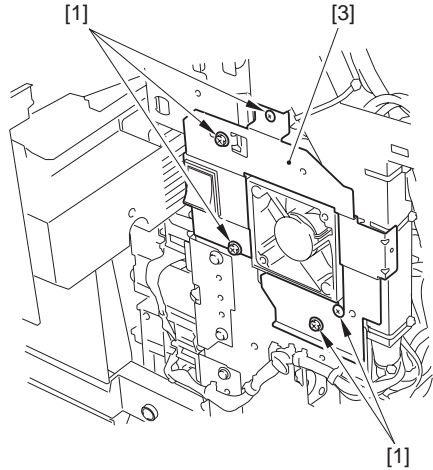
F-12-118

12.5.31.2 Removing the Manual Feed Cooling Fan

1) Remove the manual feeder cooling fan [3].
   - 2 screws [1]
   - 1 connector [2]
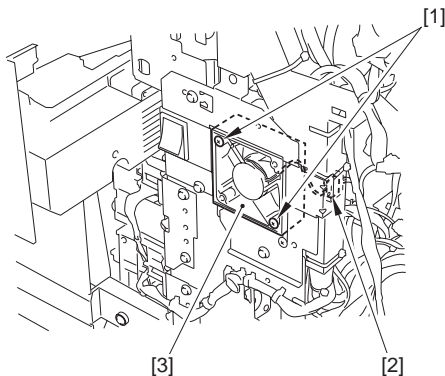
F-12-119
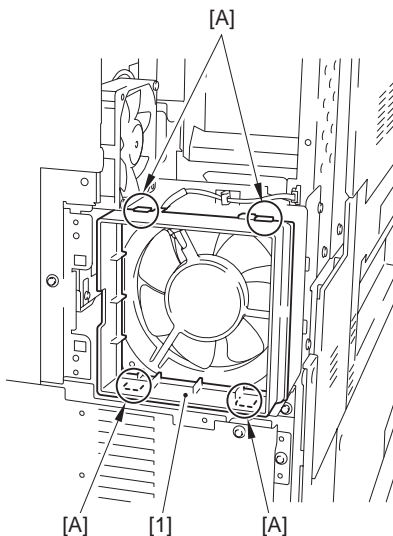
12.5.32 Fixing Heat Discharge Fan

12.5.32.1 Preparation for Removing the Fixing Heat Discharge Fan

1) Remove the reader transmission cable.
2) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
3) Remove the left rear cover (upper side).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
4) Remove the left rear cover (lower side).(page 12-22)Reference[Removing the Left Rear Cover (Lower)]
5) Remove the rear left cover (upper side).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]

12.5.32.2 Removing the Fixing Heat Discharge Fan

1) Remove 4 claws [A], and remove the filter unit [1].
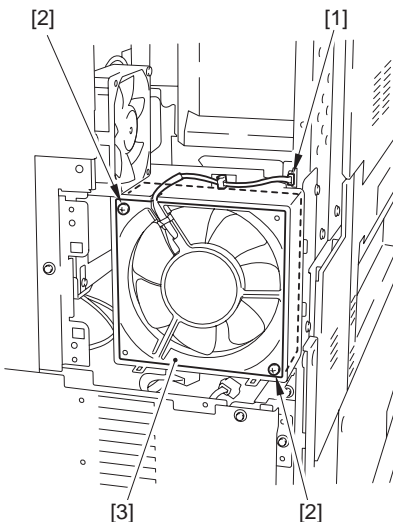
⚠ **Points to Note When Removing the Filter Unit**
Take care so that the 4 claws will not break.

F-12-120

2) Remove the fixing heat discharge fan [3].
   - 1 connector [1]
   - 2 screws [2]

F-12-121

12.5.32.3 Preparation for Removing the Toner Filter (Fixing Heat Discharge Fan Filter)

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]

12.5.32.4 Removing the Toner Filter (Fixing Heat Discharge Fan Filter)

1) Remove the toner filter [1].

⚠ **Points to Note When Removing the Fixing Heat Discharge Fan Filter**
Remove the toner filter using a screwdriver through the cut-off found at the left of the fan filter.
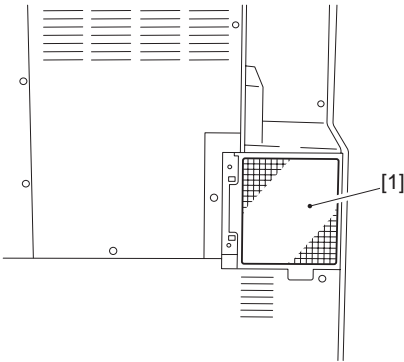
F-12-122

12.5.33 Power Supply Exhaust Fan

12.5.33.1 Preparation for Removing the Power Supply Exhaust Fan 1

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
3) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]
4) Remove the DC power supply unit.(page 12-29)Reference[Removing the DC Power Supply Unit]

12.5.33.2 Removing the Power Supply Exhaust Fan 1

1) Remove the power supply exhaust fan cover [2].
   - 1 screw [1]
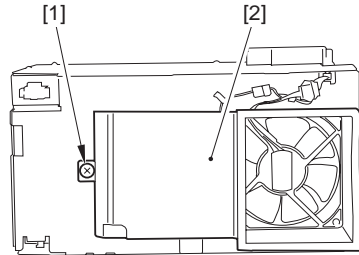
F-12-123

2) Remove the power supply exhaust fan 1 [3].
   - 1 connector [1]
   - 2 screws [2]
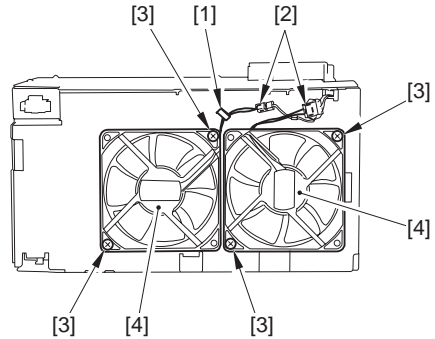
F-12-124

12.5.33.3 Preparation for Removing the Power Supply Exhaust Fan 2

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
3) Remove the IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]
4) Remove the DC power supply unit.(page 12-29)Reference[Removing the DC Power Supply Unit]

12.5.33.4 Removing the Power Supply Exhaust Fan 2

1) Remove the power supply exhaust fan cover [2].
(Referring to procedure 12.5.33.2)
2) Remove the power supply exhaust fan 2 [4].
 - 1 clamp [1]
 - 1 connector [2]
 - 2 screws [3]
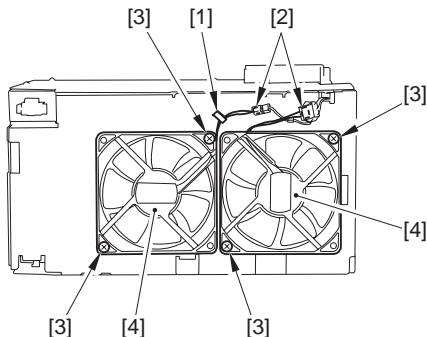
F-12-125

12.5.34 IH Power Supply Cooling Fan

12.5.34.1 Preparation for Removing the IH Power Supply Cooling Fan

1) Remove IH power supply unit.(page 12-29)Reference[Removing the IH Power Supply Unit]

12.5.34.2 Removing the IH Power Supply Cooling Fan

1) Remove IH power supply cooling fan [3].
 - 1 wire saddle [1]
 - 2 screws [2]
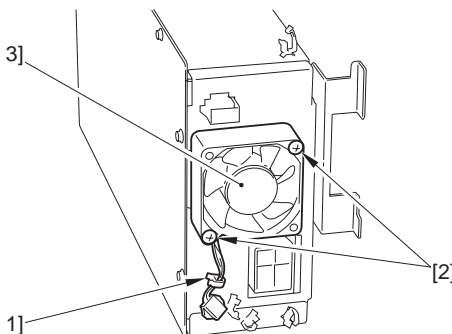
F-12-126

12.5.35 Delivery Cooling Fan

12.5.35.1 Preparation for Removing the Delivery Cooling Fan

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the rear lower cover.(page 12-23)Reference[Removing the Rear Lower Cover]
4) Remove the left rear cover (lower side).(page 12-22)Reference[Removing the Left Rear Cover (Lower)]
5) Remove the secondary transfer high-voltage unit.(page 12-28)Reference[Removing the Secondary Transfer Hign-Voltage Unit]

12.5.35.2 Removing the Delivery Cooling Fan

1) Remove the delivery cooling fan [3].
 - 1 clamp [1]
 - 2 screws [2]
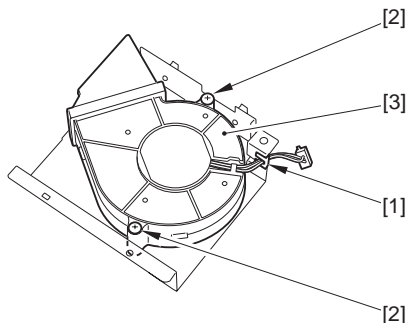
F-12-127

12.5.36 Machine Heat Discharge Fan

12.5.36.1 Preparation for Removing the Machine Heat Discharge Fan

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
4) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]

12.5.36.2 Removing the Machine Heat Discharge Fan

1) Remove fan duct [2].
   - 2 screws [1]
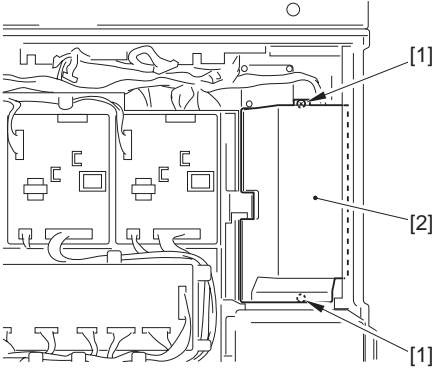
F-12-128

2) Remove the main body exhaust fan [3].
   - 1 connector [1]
   - 2 screws [2]
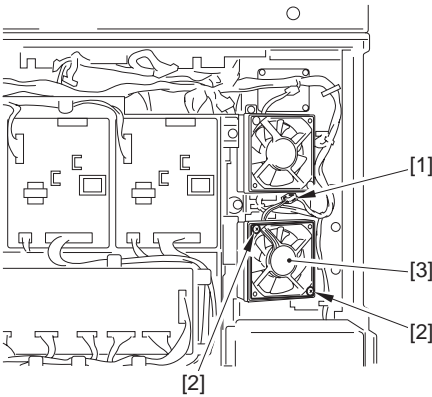
F-12-129

MEMO
The main body exhaust fan is the lower fan of the 2 located vertically.

12.5.37 Delivery Vertical Path Cooling Fan

12.5.37.1 Preparation for Removing the Delivery Vertical Path Cooling Fan

1) Remove the upper left cover.(page 12-21)Reference[Removing the Upper Left Cover]
2) Remove the delivery vertical path cover.(page 10-94)Reference[Removing the Delivery Vertical Path Cover]
3) Remove the delivery vertical path unit.(page 10-93)Reference[Removing the Delivery Vertical Path Unit]

12.5.37.2 Removing the Delivery Vertical Path Cooling Fan

1) Remove fan duct [2].
   - 3 screws [1]
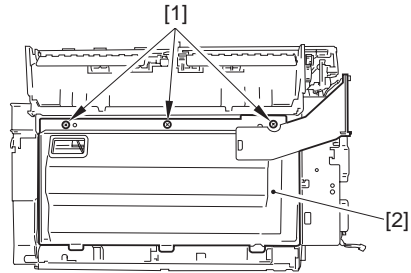
F-12-130

2) Remove the Delivery Vertical Path Cooling Fan [3].
   - 1 connector [1]
   - 2 screws [2]
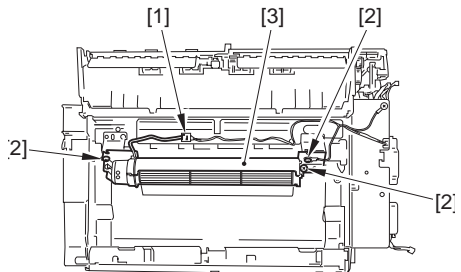
F-12-131

12.5.38 Delivery Vertical Path Exhaust Fan

12.5.38.1 Preparation for Removing the Delivery Vertical Path Exhaust Fan

1) Remove the rear fan cover.(page 12-22)Reference[Removing the Rear Fan Cover]
2) Remove the rear upper cover.(page 12-22)Reference[Removing the Rear Upper Cover]
3) Remove the left rear cover (upper).(page 12-21)Reference[Removing the Left Rear Cover (Upper)]
4) Remove the rear left cover (upper).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]

12.5.38.2 Removing the Delivery Vertical Path Exhaust Fan

1) Remove fan duct [2].
   - 2 screws [1]
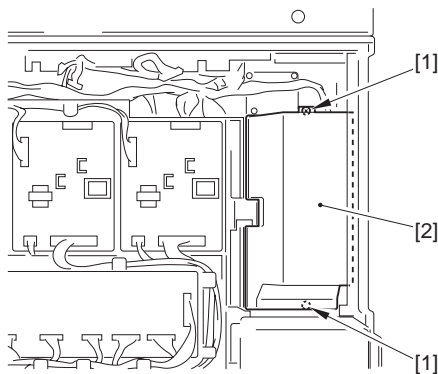
F-12-132

2) Remove the exhaust vertical path exhaust fan [3].
   - 1 connector [1]
   - 2 screws [2]
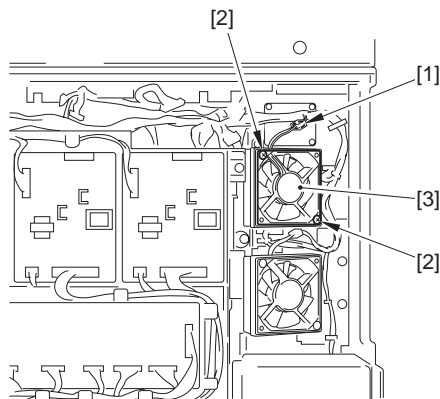
F-12-133

MEMO
The delivery vertical path exhaust fan is the upper fan of the 2 located vertically.

12.5.39 Drum Unit Drive Belt

12.5.39.1 Preparation for Removing the Drum Unit Drive Belt

1) Remove the upper left cover.(page 12-21)Reference[Removing the Upper Left Cover]
2) Remove the lower left cover.(page 12-21)Reference[Removing the Left Lower Cover]
3) Remove the rear left cover (upper side).(page 12-23)Reference[Removing the Rear Left Cover (Upper)]
4) Remove the developing drive unit.(page 12-27)Reference[Removing the Developing Drive Unit]
5) Remove the lattice connector mount [4].
   - 2 clamps [1]
   - 2 screws [2]
   - 6 connectors [3]
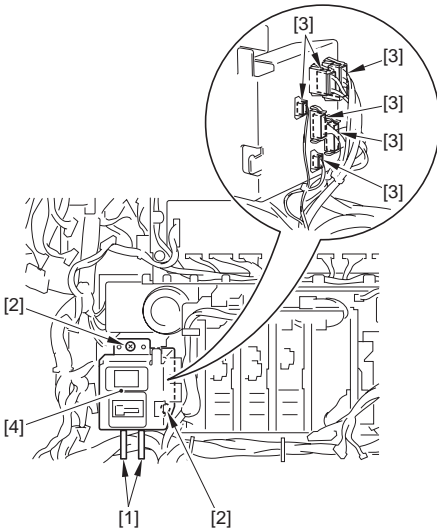
F-12-134

6) Remove the high voltage unit 2.(page 12-28)Reference[Removing the High-Voltage Unit 2]

7) Remove drum ITB motor base [3].
   - 2 connectors [1]
   - 3 screws [2]
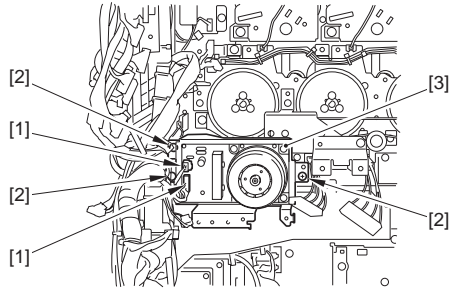
F-12-135

⚠ **Points to Note When Removing the Drum ITB Motor Mounting**
To remove, put your hand into the inside where you have slid out the manual feed unit; then, while holding down the swing plate [1] found to the rear of the drum drive unit, remove from the machine's rear side plate.
The drum drive unit is hooked on the protrusion from the rear side plate; lift it slightly to detach.

F-12-136

8) Remove the drum drive unit [3].
 - 6 connectors [1]
 - 7 screws [2]
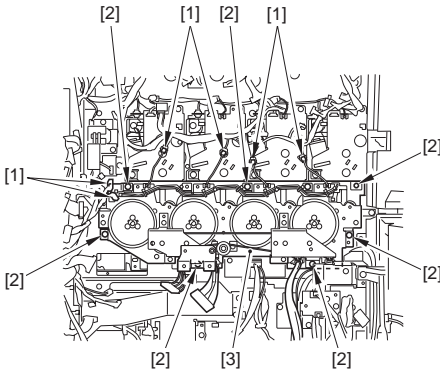
F-12-137

12.5.39.2 Removing the Drum Unit Drive Belt

⚠

Never remove the screws [1] (identified by a red marking) used to secure the belt tension plate in place. (The plate is used to maintain a specific degree of tension on the belt.)
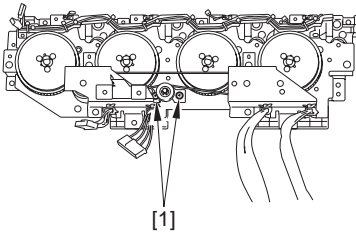
F-12-138

1) Remove the belt tension pulley cover [3] (2 positions on the right and left sides)
 - 4 clamps [1]
 - 4 screws [2]
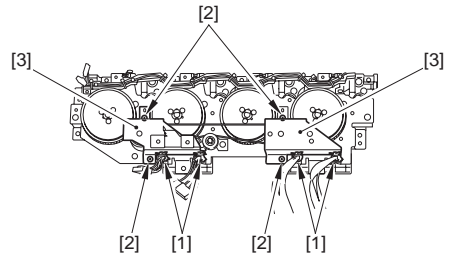
F-12-139

2) Remove the drum unit drive belt [2].
 - the belt retaining roll [1] found on the right side
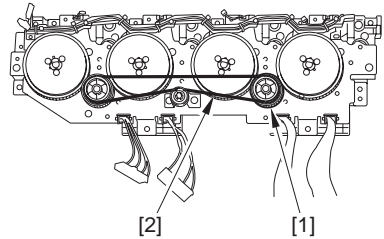
F-12-140

Chapter 13

MEAP

Contents

13.1 MEAP

13.1.1 Overview

The term MEAP stands for Multifunctional Embedded Application Platform, and is used to generically refer to a platform for software built into MFPs and peripheral equipment. The architecture is based on Java (J2ME, i.e., Java 2 Platform Micro Edition), and is designed to enable the execution of Java applications.
A MEAP application behaves independently from its host printer's system software, and may be installed or uninstalled using SMS (Service Management Service), which is an interface that runs as part of the browser on a PC. As long as the device supports MEAP, most MEAP applications may be added to the device in the field.

13.1.2 MEAP Counter

In addition to the commonly found print counters, a device that supports MEAP is equipped with a counter mechanism used to keep track of which functions are used as well as how often they are used for individual MEAP applications that are installed. The MEAP counter readings may be checked by making the following selections on the device control panel: Counter Check Key>MEAP Counter Check. A device may possess the following MEAP counters, and which counter to use and, therefore, to display all depend on the application in question.
A counter reading may be of a type that is forced to increase as a job is expected or of a type that is increased when the application sends instructions; or, it may be of a type that increases independently of the host device, thus increasing solely in response to the application being run; specifics are as follows:

T-13-1

Type	Count item
forced	total
	total (black-and-white 1)
	total (black-and-while large)
	scan (total 1)
	black-and-white scan (total 1)
in response to instructions from application	black-and-white scan 1
	black-and-white scan 2
	black-and-white scan 3
	black-and-white scan 4
application-independent	free 1
	free 2
	free 3
	free 4
	free 5
	free 6
	free 7
	free 8
	free 9
	free 10
	free 11
	free 12

MEMO:
forced: the device forces the counter to increase its reading in response to execution of a job.
in response to instructions from application: the counter increases its reading only in response to instructions from the application.
application independent: the counter operates according to the specifications of the application.

13.1.3 Construction of the MEAP Platform

In addition to the installation of the system software, language file, and RUI, a printer equipped with MEAP functions calls for the installation of MEAP content, which offers functions (system services) needed to run MEAP applications and class libraries needed by the MEAP applications to control the device.
It is important that the version of the system software be fully compatible with the version of the MEAP content, calling for special care. (In the case of a mismatch, the device will not be able to run the MEAP application.)
For version information, refer to the Service Information bulletin that is released in conjunction with the system software.

The following shows the components of a MEAP application:
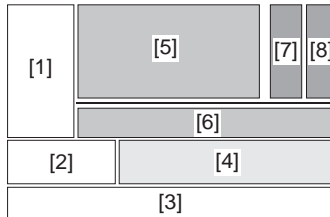
F-13-1

[1] User Interface Control Bock
    installed as part of the system software
[2] Device Control Block
    installed as part of the system software
[3] Operating System
    installed as part of the system software
[4] Java VM
    installed as part of the system software
[5] MEAP System Services (includes SDL/SSO)
    installed as part of MEAP content
[6] Device Control Class Library
    installed as part of MEAP content
[7] internally developed application
[8] externally developed application

Chapter 14

RDS

Contents

14.1 RDS

14.1.1 Application operation mode

Serviceman selects the operation mode of OFF/ON by the setting in e-RDS setting screen of the service mode.
(Menu Screen: E-RDS)
- OFF (default): e-RDS doesn't operate.
- ON: e-RDS operates every function.

14.1.2 Service Center URL and Port Specification

The URL and the port number of the equipment information destination can be specified as follows.
- Default (specified beforehand)
- Specified by the service mode. (Menu Screen: RGW-ADR, RGW-PORT)

14.1.3 Communication test

Serviceman can distinguish the communication status with the UGW by executing the communication test in the service mode (Menu Screen: COM-TEST), and referring to the communication log
Error information is displayed in the latest communication log at communication error.

14.1.4 Communication log

The list of the log of the communication error (proxy server error etc.)(For 30) can be displayed in display panel in the service mode. (Menu Screen: COM-LOG)

14.1.5 Detailed Communication log

Detailed information of the error in the communication log can be displayed in display panel. (Log List Screen: Each error)

14.1.6 SOAP communication function

The following processing is achieved by the SOAP communication (SSL client communication).
e-RDS does the host authentication by using the CA*1 certificate of the VeriSign Co..
When the host certificate or the CA certificate is expired, e-RDS doesn't connect to UGW.
*1: CA: Certificate Authority: Organization that issues electronic certificate used by electronic commerce etc

(1) Communication test:
- Do the communication test

(2) Regularly collect the following data, and transmit it.
- Copy Counter
- Service mode counter
- Parts counter
- Mode Counter
- ROM version
- Scheduling information
- Application log

(3) When jam or alarm/service call error is detected from the device, e-RDS transmits to UGW.
- Transmission of alert code(Counter information is transmitted at the same time.)
When the state of the device changes, e-RDS sends the alert code list.
The main alert codes used are Toner LOW/OUT, Jam, and Door open.
When recovering from an error, e-RDS transmits data that shows the recovering from an error again.
- Transmission of Jam log (Counter information is transmitted at the same time.)
- Transmission of Alarm log (Counter information is transmitted at the same time.)
- Transmission of Service Call (Error code) log (Counter information is transmitted at the same time.)

(4) Change of the device scheduling information
- Scheduling information can be changed by the instruction from UGW.

List of Transmissions:

Content of transmission	Transmission timing
Communication test	When Service mode of device is executed
Copy counter collection/transmission	Every 6 hours
Service mode counter collection/ transmission	Every 6 hours
Mode counter collection/transmission	Every 6 hours
Parts counter collection/transmission	Every 6 hours
ROM version transmission	Every 6 hours
Application log	When the log file size exceeds 10kbytes
Transmission of alert code	When the state of the device is changed.
Jam	When Jam occurs
Alarm	When Alarm occurs
Error	When Error occurs
Confirmation whether there is processing that e-RDS executes	Every 6 hours

14.1.7 Resend at SOAP transmission error

When SOAP send error is generated by the trouble on UGW side etc. at the transmission of an alert code, the latest three batches of data that failed in the transmission are stored in HDD, and e-RDS resends it at prescribed intervals.

14.1.8 e-RDS setting screen

The e-RDS setting screen is in the service mode screen.
When the tab above is selected on any e-RDS setting screen, it changes to the mid item screen. Moreover, it returns to previous screen when reset key is pressed.

Menu Screen

F-14-1

Setting screen of e-RDS. The form and the initial value of each setting item are as follows.

Item(meaning)	Explanation
E-RDS (Embedded-RDS)	Turning OFF/ON e-RDS. 0:OFF / 1:ON Counter information and error information are transmitted to the host at ON. Initial value: 0: OFF
RGW-ADR (RDS-Gateway ADDRESS)	URL of the host (When the input area is selected (touched), shift to the keyboard screen) Initial value: URL of an actual host. Length: 129 characters (NULL is contained)
RGW-PORT (RDS-Gateway PORT)	Port Number of the host Initial value: 443 Range of available number: 1-65535

Item(meaning)	Explanation
COM-TEST (Communication Test)	Execution of Communication test Communication test starts when you select (touch) this and press the [OK] key. e-RDS tries the connection with the host, and displays the result by "OK!" or "NG!". (NG: No Good, the communication test is failed)
COM-LOG (Communication Log)	The result of communication test When this is selected (touched), and the blank rectangle on right side is selected, it switches to "Log list screen".

Log list screen

F-14-2

History list of communication test error (error generation date, error code and error information) is displayed.
When the each line is selected (touched), it shifts to "Log detailed screen".
It shifts to "Menu screen" by the [Function] > [INSTALL].
The list screen changes by a right arrow or a left arrow.
Maximum log number: 30
Notes: Only the first part of error information is displayed.

Log detailed screen

Display	I/O	Adjust	Function	Option	Test	Counter

```
            <COM-TEST>      < 5/30 >    < READY  >
  No. DATE            TIME  CODE
  05  2005 0129       1758  8000 2046


  Information

    *Server certificate expired : getConfiguratio

    n
```

←	→	+/-	OK ↵

F-14-3

Detailed information of individual communication test error is displayed.
Refer to the displayed message to "Error message list".
It shifts to "Log list screen" by the [OK] button pressing.
Maximum length of error information: 128 characters (not include NULL)

14.1.9 Sleep operation

When there is a method that should be transmitted while e-RDS is operating (ON), e-RDS wakes from the state of sleep and begins transmitting.

14.1.10 Network Setting (Maintenance)

You should do the network setting of Device appropriately before the e-RDS setting.
A. Display the Additional Functions screen.
  - Press [Additional Functions (*)] key.
  - Input ID code.
B. Display the TCP/IP Settings screen.
  - Select (touch) [System Settings] > [Network Settings] > [TCP/IP Settings] on the Touch Panel Display.
C. Setting of items related to IP address
  - Select (touch) [IP Address Settings] => IP Address Settings screen is displayed.
  - Set each items such as IP Address, Subnet Mask, Gateway Addresses, and DHCP, etc.
  - Return to the TCP/IP Settings screen by pushing the [OK] button after the setting ends.
D. DNS Settings
  - Select (touch) [DNS Settings] => DNS Settings screen is displayed.
  - Set necessary items.
  - Return to the TCP/IP Settings screen by pushing the [OK] button after the setting ends.

E. Proxy Settings
- Select (touch) [Proxy Settings] (Press Down arrow button until [Proxy Settings] is displayed on the TCP/IP Settings screen.) => Proxy Settings screen is displayed.
- Set necessary items.
- Return to the TCP/IP Settings screen by pushing the [OK] button after the setting ends.
F. Display the normal screen.
- Press [Additional Functions (*)] key pressing or press [Done] button to a necessary frequency.

14.1.11 e-RDS Setting (Maintenance)

A. Display the Menu screen of e-RDS from the service mode.
A-1. Shift to the service mode
- Press [Additional Functions (*)] key.
- Press 2 and 8 of the numeric keys at the same time.
- Press [Additional Functions (*)] key. => SERVICE MODE LEVEL1
A-2. Initialize e-RDS
- Select (touch) [COPIER] > [Function] > [CLEAR] > [ERDS-DAT] on the Touch Panel Display.
A-3. Display Menu screen of e-RDS
- Select (touch) [COPIER] > [Function] > [INSTALL] => Menu screen

Display	I/O	Adjust	Function	Option	Test	Counter

```
            <INSTALL >      <  1/ 1 >    < READY  >

TONER-S    [        ]

STRD-POS   [        ]

CARD            0      ←(     0) {    1 ~   2001}

E-RDS           0      ←(     0) {    0 ~      1}

RGW-PORT      443      ←(   443) {    1 ~  65535}

COM-TEST   [        ]

COM-LOG    [        ]

RGW-ADR    https://a01.ugwdevice.net/ugw/agenti
```

⇐	⇒	+/-	OK ⏎

F-14-4

B. Set 1 in [E-RDS].
C. Input the URL of UGW in [RGW-ADR]. (Select the input area to shift to the keyboard screen, and Input URL.)
D. Input the port number of UGW in [RGW-PORT].
E. Select [COM-TEST] and push [OK] button to start the communication test with UGW.
F. While the result is "NG!", repeat to correct the setting and try [COM-TEST] until the result becomes "OK!".
You need checking the setting of the network of the device and the connection of the network if necessary.
Notes: In the environment with the proxy server, you should set the proxy server. Refer to the proxy setting in the network guide of the device for details.

14.1.12 Trouble shoot

1-1
Q. There is no setting item.
A. Confirm the network setting.
Confirm the model

1-2
Q. The communication test fails.
A. Confirm the firmware version.
Confirm the network setting.
Confirm the communication test result.

14.1.13 Error message

Error information displayed in "Log list screen" or "Log detailed screen" is as follows.

Notes: Only the first part of error information is displayed in "Log list screen". Maximum length of error information in "Log detailed screen": 128 characters (not include NULL)

When the communication test is not completed end e-RDS is 1 (ON), following string is displayed:
"SUSPEND: Communication test is not performed."

Moreover, when it fails in the event waiting in the device and either of a Jam notification, an Alarm notification, and a Service call notification or an Alert notification is specified, following string is displayed.

"Event Registration is Failed."

In other cases error information is displayed in the form of the following.

"[*] [Error string]: [Method name] [Server side detailed error]"

The enclosed character string by [] is replaced as follows.

[*]:
*(asterisk) is added to the head of the string only at the communication test.

[Error string]:
As for number 1 and 2 of the following Error string lists, only the Error string is displayed. Besides, it is displayed as "[*] [Error string]: [Method name] [Server side detailed error]". ([Server side detailed error] might not go out.)

	Error string	Cause	Counter Measure
1	SUSPEND: Communication test is not performed	The e-RDS is started (the device is rebooted) when e-RDS is ON and communication test isn't done.	Complete the communication test.
2	Event Registration is Failed.	The device failed event processing.	Turn OFF/ON of the device main switch. Or, replace the system software of the device (upgrade).
3	URL Scheme error (not https)	The header of registered URL of UGW is not https.	Change the header on URL of UGW to https

	Error string	Cause	Counter Measure
4	Server connection error	Communication failure of TCP/IP occurred. Or IP address of the device isn't set.	Check the network connection.
5	URL server specified is illegal	Illegal URL (other than UGW) is specified.	Correct URL.
6	Proxy connection error	The e-RDS cannot connect it with the proxy server.	Check and correct the proxy server address etc.
7	Proxy authentication error	The e-RDS fails the authentication to proxy.	Check and correct username and password to log in proxy.
8	Server certificate error	- The certificate is not installed in The device. - The certificate that The user is using is not registered in The device or The server.	Register the root certificate in the device or register the VeriSign certificate in the server.
9	Server certificate expired	- Expired certificate is registered in the device or the server. - The date of the device is outside the time limit of the certificate.	- Register the root certificate in expiration date in the device or register the VeriSign certificate in the server. - Set an accurate date to the device.
10	Unknown error	Other communication error occurs.	After waiting for a while, try again.
11	Server response error (NULL)	UGW returns the error but communication to UGW is succeeded. If (NULL) is displayed after the message, the error occurs in the HTTPS communication.	After waiting for a while, try again.
12	Server response error (Hexadecimal)	UGW returns the error but communication to UGW is succeeded. (Hexadecimal) displayed after the message is error code that UGW returns. [server side detailed error] is added at the end of error information only at this error.	After waiting for a while, try again.
13	Device internal error	Device internal error such as the memory cannot be taken occurs.	Turn OFF/ON of the device main switch. Or, replace the system software of the device (upgrade).

	Error string	Cause	Counter Measure
14	Server schedule is invalid	Illegal schedule transmission information is set in UGW. (Ex: Every 30 minutes were set to UGW but the right interval in e-RDS is 1 hour.)	Correct the schedule transmission information setting in UGW. (Ex: every 1 hour)
15	Server response time out	There was no reply from UGW in predetermined time. (The congestion of the network etc.) It is the timeout at HTTPS level.	After waiting for a while, try again.
16	Service not found	The URL of UGW is illegal, and UGW is inaccessible.	Check and correct the URL of UGW.
17	E-RDS switch is set OFF	You execute the communication test while the E-RDS switch is OFF.	Turn ON E-RDS switch, and execute the communication test.
18	Server schedule is not exist	The e-RDS receives empty schedule data from UGW.	Check setting file. (Call the help desk of UGW.)
19	Network is not ready, try later	You execute the communication when the connection to the network has not been established. (The network connection might not be established from the start-up of the device for 60 seconds.)	Confirm that the network connection has been established. Moreover, execute again after enough waiting.
20	URL error	Illegal URL (Syntax error etc.)	Correct URL.

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[Method name]:

	Method name	Meaning
1	postServiceModeCount	Account counter acquisition phase
2	postModeCount	Mode counter acquisition phase
3	postPartsCount	Parts counter acquisition phase
4	postFirmwareInfo	ROM version acquisition phase
5	getOperationList	Check/acquisition phase whether the information file for me is in UGW.
6	postOperationOutcome	
7	postConfiguration	Phase in which E-RDS configuration is transmitted to UGW
8	postGlobalClickCount	Counter acquisition phase
9	postJamLog	Jam notification acquisition phase
10	postServiceCallLog	Error notification acquisition phase
11	postAlert	Alert notification acquisition phase
12	postDebugLog	Log acquisition phase
13	getConfiguration	Information acquisition phase (Schedule transmission etc.)
14	communicationTest	Communication test phase

[Server side detailed error]:
Detailed error information returned from UGW is displayed for "Server response error".
However, only the first 128 characters are displayed by the entire error information.
Nothing is displayed here at other errors.

Chapter 15

MAINTENANCE & INSPECTION

Contents

15.1 Periodically Replaced Parts

15.1.1 Periodically Replaced Parts

Some parts of the machine must be periodically replaced to ensure a specific level of product performance (i.e., they may not show wear but can significantly affect the machine performance once they fail). If possible, schedule any periodical replacement so that it coincides with scheduled servicing.

⚠

The guide to periodical replacement is subject to change according to the site of installation and habits of use.

15.1.2 Reader Unit

The reader unit does not have parts that require periodical replacement.

15.1.3 Printer Unit

T-15-1

				As of July 2006	
No.	Part Name	Part No.	Quantity	Estimated Life	Remarks
[1]	Toner filter	FC7-4195	1	500,000 prints	
[2]	ITB Belt Dust Proof Filter	FL2-5780	1	500,000 prints	
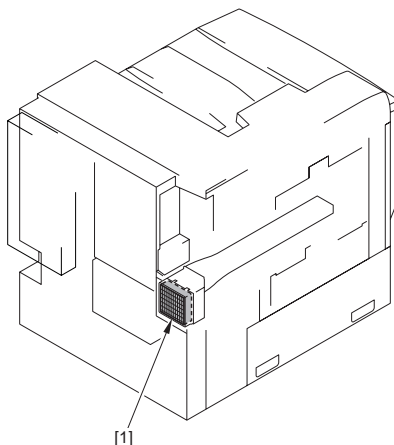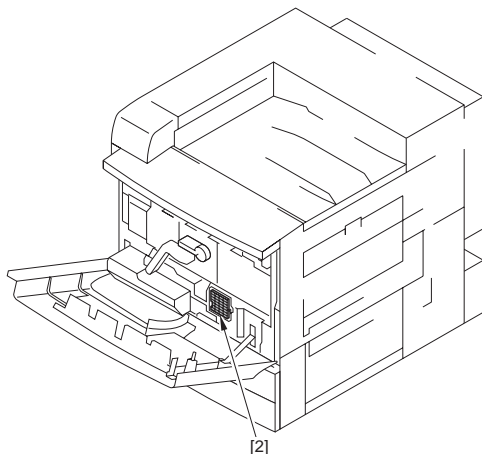
F-15-1

MEMO:
The estimated life is in terms of the median value found in the evaluation data. The parts number, further, is subject to change to reflect design changes.

15.2 Durables and Consumables

15.2.1 Outline

Some parts of the machine may require replacement once or more over the life of the product because of deterioration or damage. Replace them as needed by referring to the guide.
Find Out When to Replace
Use the following service mode to find out when it is best to replace a specific durable part.
- Copier
  COPIER>COUNTER>DRBL-1
- Option
  COPIER>COUNTER>DRBL-2

15.2.2 Reader Unit

The reader unit does not have parts that are designated as "durables."

15.2.3 Printer Unit

T-15-2

No.	Parts Name	Parts Number	Quantity	Replacement Timing	As of July 2006
1	Waste Toner Box	FM2-5383	1	50,000	Average Monthly CV is more than 5000 prints at 5% image ratio and 10 to 60% color image ratio. *This value may be lower if Average Monthly CV is less than 5000 prints or excessively high.
2	Intermediate Transfer Belt	FC7-0091	1	300,000	
3	Drive Roller	FC7-2747	1	300,000	
4	Primary Transfer Roller	FC7-4811	4	300,000	
5	Secondary Transfer Roller	FB6-2934	1	300,000	
6	Secondary Transfer (Outside) Roller Unit	FM2-7475	1	300,000	
7	Intermediate Transfer Cleaning Unit	FG6-8989	1	100,000	
8	Feeding Roller (Each Cassette)	FC6-7083	2	120,000	
9	Separation Roller (Each Cassette)	FC6-6661	2	120,000	
10	Feeding Roller (Manual Feed)	FB1-8581	1	120,000	
11	Separation Roller (Manual Feed)	FB5-0873	1	120,000	
12	Fixing Unit(100V)	FM3-0690	1	300,000	
	Fixing Unit(120V)	FM3-0691	1	300,000	
	Fixing Unit(230V)	FM3-0692	1	300,000	

MEMO:
The estimated life is in terms of the median value found in the evaluation data. The parts number, further, is subject to change to reflect design changes.
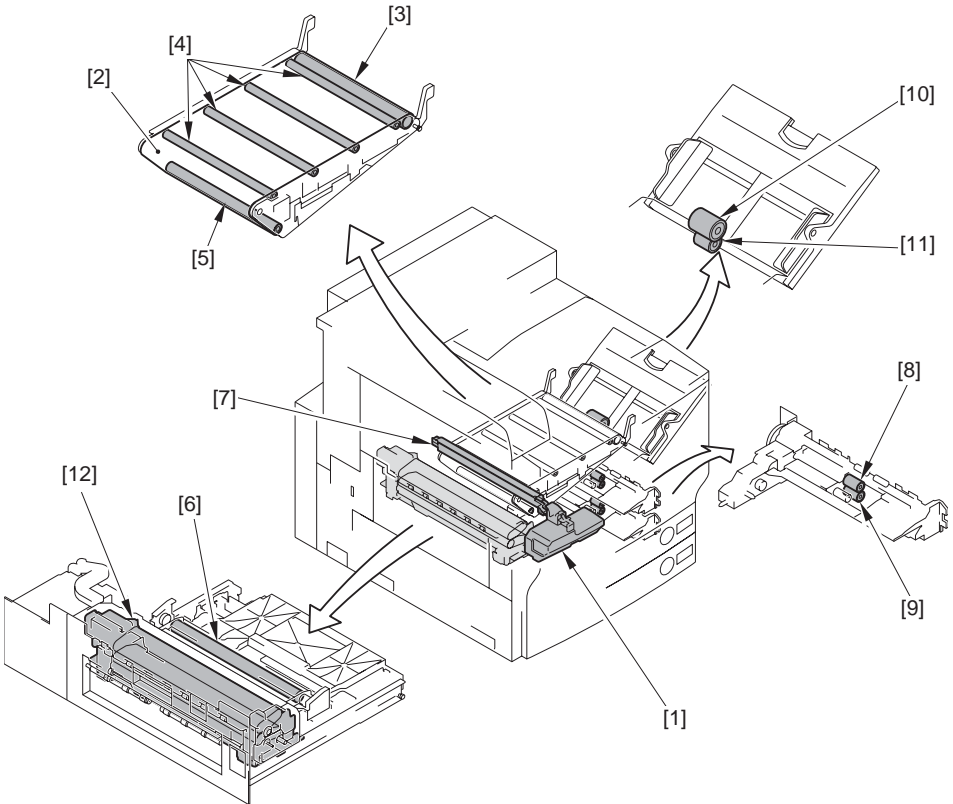
F-15-2

15.3 Scheduled Servicing Basic Procedure

15.3.1 Scheduled Servicing Basic Procedure

⚠

- As a rule, provide scheduled servicing every 40,000 prints.
- Before paying a scheduled visit, check the Service Record, and take any parts likely to need replacement.
- If the machine's power plug remains connected to a wall outlet for a long time in a site where there is much dust, moisture, or oil smoke, it can collect these elements and trigger insulation failure or fires. Be sure to disconnect the power plug periodically and clean the plug and the area around it with a dry cloth.

Steps
1) Report to the person in charge.
   Check the general condition.
2) Record the counter reading.
   Check the faulty prints.
3) Make test prints.
   (1) check the image density against standards
   (2) check for soiling in the white background;
   (3) check the clarity of characters;
   (4) check the margin;
   (5) check the fixing; check for poor registration and soiling on the back.
   Standards on margin (single-sided)
   leading edge: 2.5 mm +/-1.5 mm,
   trailing edge: 2.5 mm +/-1.5 mm, left: 2.0 mm +/-1.5 mm
4) Waste Toner Colleting Container
   If the waste toner collecting container is more than half full, dispose of the toner in a plastic bag; or, replace the toner collecting container itself.

⚠

- Be sure to observe all rules and regulations of the governing community when disposing of waste toner.
- Do not dispose of waste toner into fire. (It may explode, causing a significant hazard.)

5) Clean the copyboard glass and the reader glass.
6) Make test copies.
7) Make sample copies.

15.3.2 Scheduled Servicing (Reader Unit)

⚠

Do not use solvents or oils that are not indicated herein.

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Unit name	Location	Cleaning	Remarks
Optical path	Scanner rail	clean	if dirt is appreciable
	Copyboard glassÅiInside and outside sideÅj	clean	if dirt is appreciable
	No. 1 through No. 3 mirrors	clean	if dirt is appreciable
	Original reflecting plate	clean	if dirt is appreciable
	Original size sensor	clean	if dirt is appreciable
	Lens	clean	if dirt is appreciable
	ADF reader glassÅiInside and outside sideÅj	clean	if dirt is appreciable

Points to Note About Scheduled Servicing
Unless otherwise specifically mentioned, use lint-free paper and alcohol for cleaning.

⚠

- If you used solvent for cleaning, be sure that the solvent has completely dried before mounting the part back
  to the machine.
- Unless specifically mentioned, do not use a wet (moist) cloth for cleaning.
- See to it that scheduled servicing and replacement are conducted as indicated.

Scanning lamp
Dry wipe with lint-free paper.
Reflecting plate
Clean with a blower brush.
No. 1 through No. 3 mirror
Use a blower brush; if dirt
cannot be removed, dry wipe
with lint-free paper.

Copyboard glass
Clean the face/back and white plate.

Scanner rail
Lubricate.

Lens
Use a blower brush.

Original size sensor
Use a blower brush.

Face-down
delivery roller 1

Note: Unless otherwise indicated and for guides coming into
contact with paper, use lint-free paper and alcohol.

F-15-3

15.3.3 Scheduled Servicing (Printer Unit)

⚠
Do not use solvents or oils that are not indicated herein.

T-15-4

Unit name	Location	Maintenance intervals every 40,000	150,000	Other	Remarks
Delivery unit	Internal delivery roller			clean	if dirt is appreciable
	External delivery roller			clean	if dirt is appreciable
Duplex feed unit	Duplex roller 1			clean	if dirt is appreciable
	Duplex roller 2			clean	if dirt is appreciable
	Duplex roller 3			clean	if dirt is appreciable
	Duplex roller 4			clean	if dirt is appreciable
Delivery vertical path unit	Reversing roller	clean			
	Face-down delivery roller 1	clean			
	Face-down delivery roller 2	clean			
Fixing unit	Fixing inlet guide			clean	if dirt is appreciable
	Fixing inlet roll			clean	if dirt is appreciable
	Delivery upper guide			clean	if dirt is appreciable
	Delivery lower guide			clean	if dirt is appreciable
Manual feed registration unit	Pre-registration roller			clean	if dirt is appreciable
	Registration upper roller			clean	if dirt is appreciable
	Registration lower roller			clean	if dirt is appreciable
	Pickup vertical path roller			clean	if dirt is appreciable
Intermediate transfer unit	Drive roller		clean		or, when replacing the intermediate transfer belt
	Tension roller		clean		or, when replacing the intermediate transfer belt
	Secondary transfer internal roller		clean		or, when replacing the intermediate transfer belt
	Internal transfer belt (inside)		clean		or, when replacing the intermediate transfer belt
Secondary transfer unit	Secondary transfer rear guide			clean	if dirt is appreciable

Points to Note About Scheduled Servicing
Unless otherwise specifically mentioned, use lint-free paper and alcohol for cleaning.

⚠️

- If you used solvent for cleaning, be sure that the solvent has completely dried before mounting the part back
  to the machine.
- Unless specifically mentioned, do not use a wet (moist) cloth for cleaning.
- See to it that scheduled servicing and replacement are conducted as indicated.

Note: Unless otherwise indicated and for guides coming into
contact with paper, use lint-free paper and alcohol.

F-15-4

Chapter 16

STANDARDS & ADJUSTMENTS

Contents

16.1 Image Adjustments

16.1.1 Standards for Image Position

The standards for the image margin/non-image width of prints made at 100% are as follows:

2.5±1.5mm
(2nd side of double-sided copy: 2.5±2.0mm)

0 2 4 5 6 8 10 12 14 16 18 20

F-16-1

2.0±1.5mm
(2nd side of double-sided copy: 2.0±1.5mm)

0
2
4
5
6
8
10

F-16-2

2.5±1.5mm
(2nd side of double-sided copy:2.5±2.0mm)

0 2 4 5 6 8 10 12 14 16 18 20

F-16-3

2.0±1.5mm
(2nd side of double-side copy: 2.0±1.5mm)

0
2
4
5
6
8
10
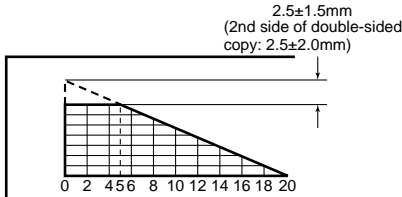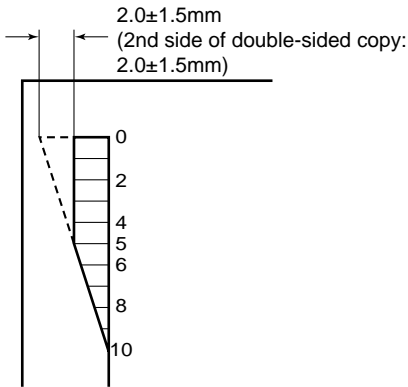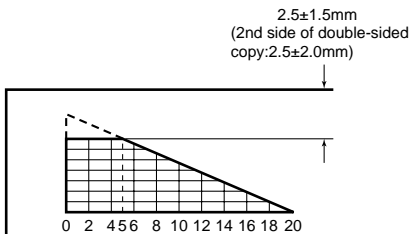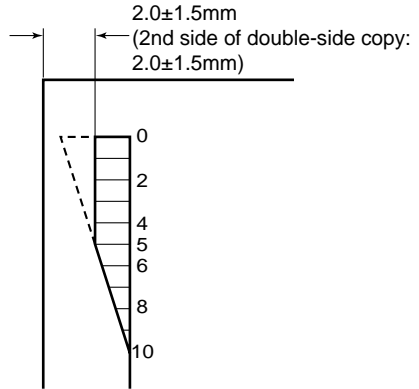
F-16-4

16.1.2 Checking the Image Position

Make 10 prints each using the following as the source of paper, and check that the image margin and non-image width are as indicated:
- individual cassettes
- manual feed tray
- side paper deck
- duplex unit

If not, perform the following:
1) left/right image margin adjustment (horizontal registration adjustment)
2) leading edge image margin adjustment (registration adjustment)
3) left-right non-image width adjustment (CCD read start cell position adjustment)
4) leading edge non-image width adjustment (scanner image leading edge position adjustment)

Adjusting the Image Leading Edge Margin
1) Select the following in service mode, and see that the image margin is as indicated: COPIER>ADJUST>FEED-ADJ>REGIST.

2.5±1.5mm
(2nd side of duplex copy: 2.5±2.0mm)

0 2 4 5 6 8 10 12 14 16 18 20

Decease the value of REGIST. (A decrease of '10' will increase the margin by 1 mm.)
Leading edge of paper
Increase the value of REGIST. (An increase of '10' will decrease the margin by 1 mm.)
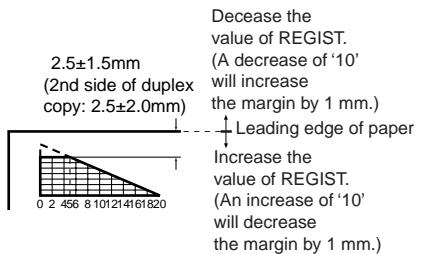
F-16-5

Adjusting the Left/Right Non-Image Width
1) Select the following in service mode, and see that the non-image width is as indicated: COPIER>ADJUST>ADJ-XY>ADJ-Y.

2.5±1.5mm
(2nd side of double-sided copy: 2.5±2.0mm)

Decrease the value of ADJ-X. (A decrease of '10' will decrease the non-image width by 1 mm.)

Image leading edge

Increase the value of ADJ-X. (An increase of '10' will increase the non-image width by 1 mm.)

0 2 456 8 101214161820
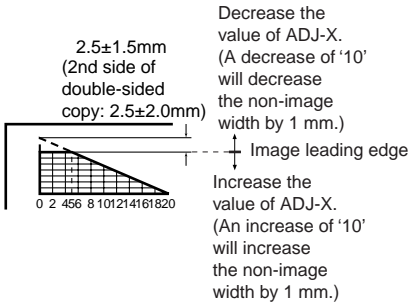
F-16-6

Adjusting the Leading Edge Non-Image Width
1) Select the following in service mode, and see that the non-image width is as indicated: COPIER>ADJUST>ADJ-XY>ADJ-X.

Edge of image
Increase the value of ADJ-Y.
(An increase of '10' will increase the non-image width by 1 mm.)

Decrease the value of ADJ-Y. (A decrease of '10' will decrease the non-image width by 1 mm.)

2.0±1.5mm
(2nd side of double-sided copy: 2.5±1.5mm)

0
2
4
5
6
8
10
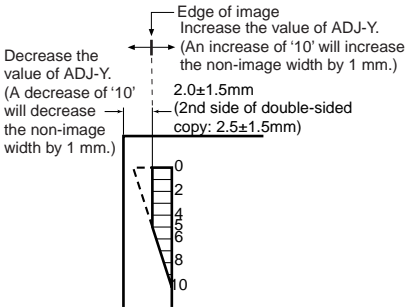
F-16-7

16.1.3 Adjusting the Left/Right Margin (Cassette)

1) Slide out the cassette 1/2, and open the pickup vertical path cover.
2) Remove the 2 screws [1], and remove the right front cover [2].
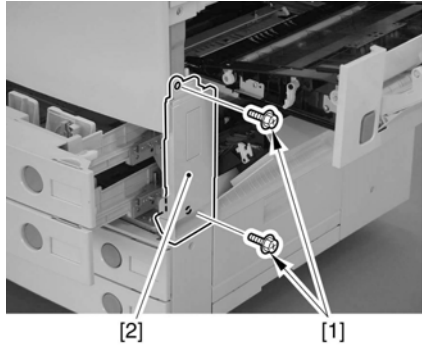
F-16-8

3) Remove the grip [1] found at the right front. (If only the cassette 2.)
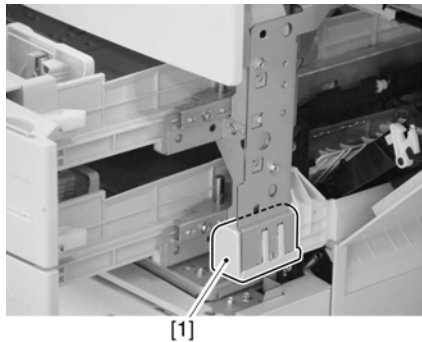
F-16-9

4) Insert a screwdriver through the hole in the right front stay, and loosen the screw [1] to adjust the position of the adjusting plate [2].

[2]   [1]

F-16-10

Moving the adjusting plate to the right

Image

L2
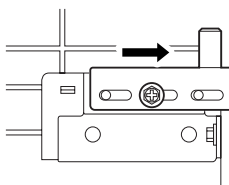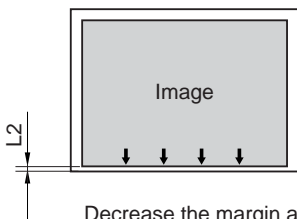
Decrease the margin at the front of the paper.

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- For output from each cassette, check that the margin (L1) along the leading edge is 2.5±1.5 mm; if not, make the following adjustments:
1) Select the following in service mode: COPIER>ADJUST>FEED-ADJ>REGIST.
2) Change the setting to adjust.
(A change of '1' will cause a move of 0.1 mm, and a higher value will move the image toward the leading edge.)

L1
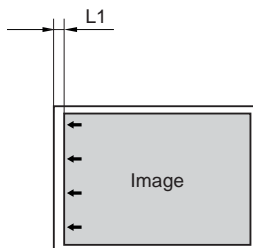
Image

Increasing the value of FEED-ADJ will move the image toward the leading edge of the paper.

F-16-12

- Adjusting the Image Area (non-image width)
1) Select the following in service mode: COPIER>ADJUST>BLANK>BLANK-T/L/B/R.
2) Change the setting to adjust.
(An increase by '24' increases the non-image width by about 1mm, with the range of settings being between 0 and 100.)

16.1.4 Adjusting the Left/Right Margin (Manual Feed Tray)

Loosen the 2 screws [1], and move the position of the slide guide [2] to adjust.
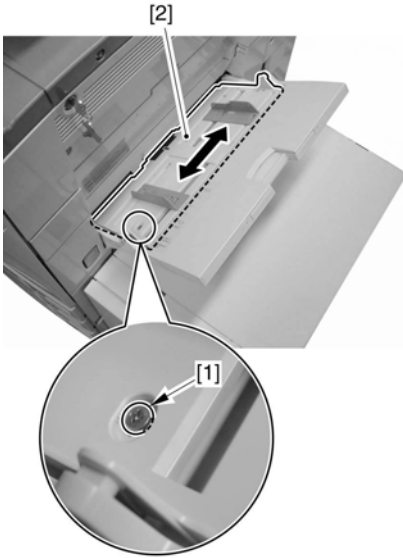
F-16-13

16.1.5 Adjusting the Left/Right Margin (Side Paper Deck)

1) Slide out the compartment, and adjust the position of the latch plate [1] of the compartment opening solenoid (SL102) using the 2 screws. (When doing so, refer to the index [3] on the latch plate.)

(left rear of compartment)
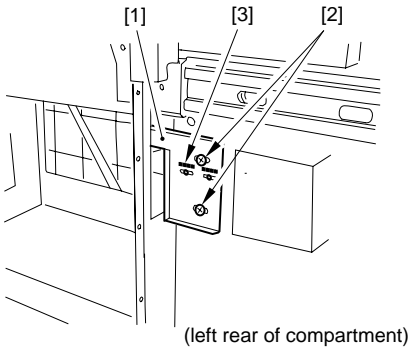
F-16-14

16.2 Scanning System

16.2.1 After Replacing the CCD Unit

If you have replaced the CCD unit, be sure to enter the settings indicated on the label attached to the CCD unit:

COPIER>ADJUST>CCD>CCDU-RG
(to enter the correction value for CCD-dependent RG color displacement in sub scanning direction)
COPIER>ADJUST>CCD>CCDU-GB
(to enter the correction value for CCD-dependent GB color displacement in sub scanning direction)
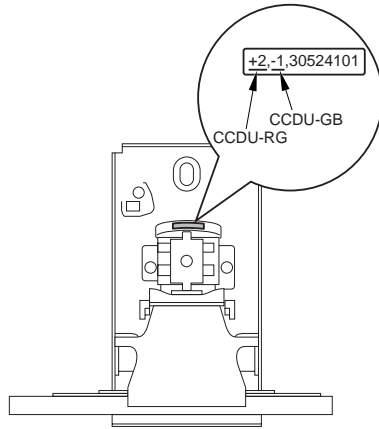
F-16-15

Moreover, be sure to update the settings indicated on the service label attached behind the reader unit front cover with the settings indicated on the label attached to the CCD unit.

16.2.2 After Replacing the Copyboard Glass

If you have replaced the copyboard glass, be sure to enter the bar code value indicated in the upper right of the copyboard glass using the following service mode items:
COPIER>ADJUST>CCD>W-PLT-X
COPIER>ADJUST>CCD>W-PLT-Y
COPIER>ADJUST>CCD>W-PLT-Z
(to enter the standard white plate white level data X, Y, Z)
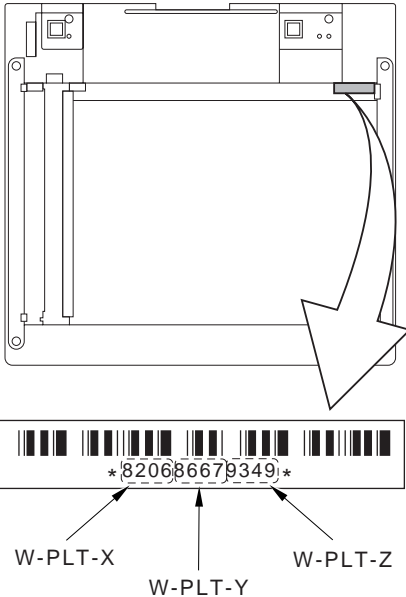
F-16-16

16.2.3 After Replacing the Reader Controller PCB or Initializing the RAM

-Be sure to generate the latest P-PRINT printout before replacing the reader controller PCB.
-If you are initializing the RAM of the reader controller without replacing the PCB, using the SST to upload the backup data of the reader controller. Then, after initializing the RAM, download the data to eliminate the need for the following adjustments:

1. Reader Unit-Related Adjustments
1) Using the SST, download the latest version of the system software (R-CON).
2) Select the following in service mode, and press the OK key to initialize the RAM: COPIER>FUNCTION>CLEAR>R-CON.
Thereafter, turn off and then on the main power.
3) Enter the settings for the following items in service mode:
(1) standard white plate white level data
COPIER>ADJUST>CCD>W-PLT-X,Y,Z

F-16-17

(2) service label settings (label attached behind reader unit front cover)
(a) image read start position adjustment (x direction; for fixed reading)
COPIER>ADJUST>ADJ-XY>ADJ-X
(b) image read start position adjustment (Y direction; fixed reading)
COPIER>ADJUST>ADJ-XY>ADJ-Y
(c) shading position adjustment (for fixed reading)
COPIER>ADJUST>ADJ-XY>ADJ-S
(d) feeder mode main scanning position adjustment
COPIER>ADJUST>ADJ-XY>ADJ-Y-DF
(e) ADF stream reading CCD read position adjustment
COPIER>ADJUST>ADJ-XY>STRD-POS
(f) CCD unit-dependent RB/GB sub scanning direction color displacement correction value

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COPIER>ADJUST>CCD>CCDU-RG/
GB
(g) CCD unit-dependent RG/GB sub scanning
direction color displacement value at shipment
COPIER>ADJUST>CCD>FCCDU-RG/
GB
(h) auto gradation adjustment target value
COPIER>ADJUST>PASCAL>OFST-P-
Y,M,C,K

2. ADF-Related Adjustments

⚠️

The machine uses the RAM on its reader controller
to store ADF-related service data; as such, you must
make the appropriate adjustments for the ADF
whenever you have replaced the reader controller or
initialized the RAM.

1) Enter the settings indicated on the P-PRINT
printout you have previously generated for the
following items:
   (1) original stop position adjustment
      FEEDER>ADJSUT>DOCST
   (2) original feed speed (magnification)
   adjustment
      FEEDER>ADUST>LA-SPEED
2) Make adjustments using the following items:
   (1) ADF sensor sensitivity adjustment
      FEEDER>FUNCTION>SENS-INT
   (2) tray width adjustment
      (a) AB system: FEEDER>FUNCTION>TRY-
      A4 and FEEDER>FUNCTION>TRY-A5R
      (b) inch system:
      FEEDER>FUNCTION>TRY-LTR and
      FEEDER>FUNCTION>TRY-LTRR
   (3) white level adjustment
      COPIER>FUNCTION>CCD>DF-WLVL1
      COPIER>FUNCTION>CCD>DF-WLVL2
When done, store the P-PRINT printout [1] you have
previously generated in the service book, disposing
of the older printout, if any.
(4) Adjustment of ADF stream reading (Make this
adjustment only for the machine with ADF
attached.)
1) Make a sheet of paper [1] for adjustment of the
scanning position using the paper (white paper) used
by users, following the procedures shown below.
á Make a sheet of paper with the width of 40mm or
wider and height of 50mm or higher.
Tolerance with the width of 14mm: + or - 0.3
áA Draw a straight line at the position more than
15mm away from the right edge of the paper made in
Procedure with a (black) pencil.
Right angle accuracy: Not required (Right angle
accuracy does not affect the adjustment accuracy.)
áB Draw a straight line at the position 14mm away
from the line drawn in Procedure to the left direction
(tolerance: + or - 0.3) with a (black) pencil.
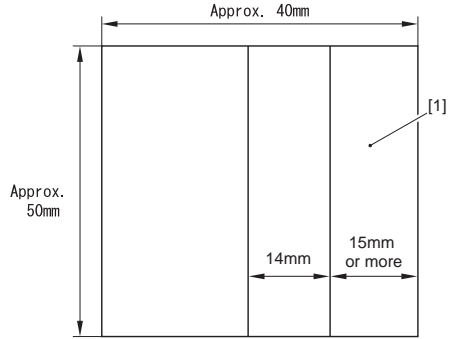
F-16-18

2) Adjust the line [1] to the line between the sheet [2]
and the mold [3], and fix the paper at one position
with the cellophane tape [4].
Accuracy of attaching the measurement sheet: + or -
0.3mm
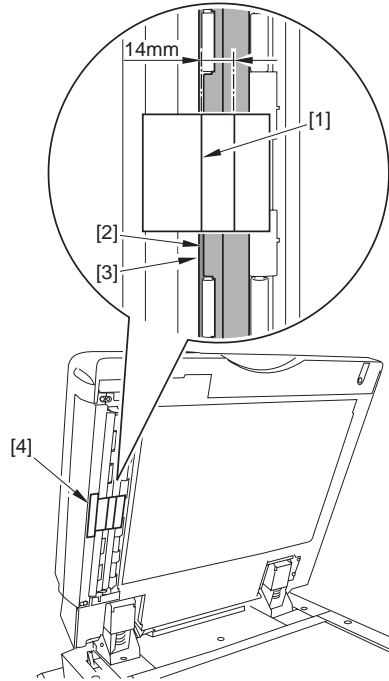
F-16-19

3) Execute the Service Mode
(COPIER>FUNCTION>INSTALL>STPD-POS).

16.2.4 Treatment for ADF Replacement

When replacing ADF or removing ADF from the main unit, make the following adjustments.
1) Make a sheet of paper [1] for adjustment of the scanning position using the paper (white paper) used by users, following the procedures shown below.
á) Make a sheet of paper with the width of 40mm or wider and height of 50mm or higher.
Tolerance with the width of 14mm: + or - 0.3
á)Draw a straight line at the position more than 15mm away from the right edge of the paper made in Procedure with a (black) pencil.
Right angle accuracy: Not required (Right angle accuracy does not affect the adjustment accuracy.)
áDraw a straight line at the position 14mm away from the line drawn in Procedure áA to the left direction (tolerance: + or - 0.3) with a (black) pencil.
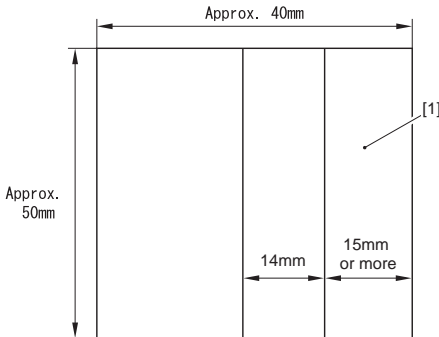
F-16-20

2) Adjust the line [1] to the line between the sheet [2] and the mold [3], and fix the paper at one position with the cellophane tape [4].
Accuracy of attaching the measurement sheet: + or - 0.3mm
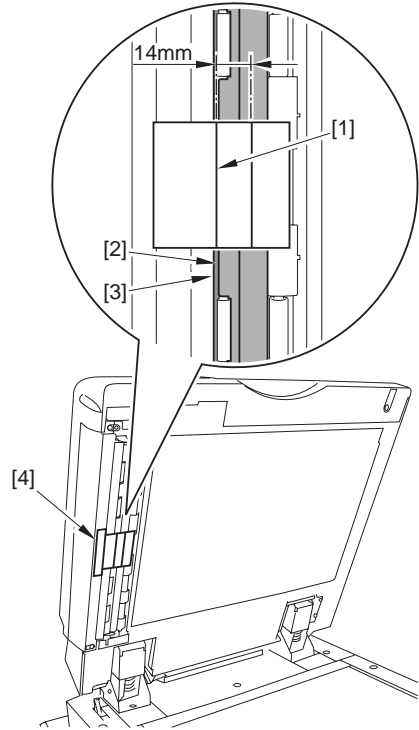
F-16-21

3)Execute the Service Mode (COPIER>FUNCTION>INSTALL>STPD-POS).

16.3 Laser Exposure System

16.3.1 Laser Exposure System

When replacing the laser unit, enter the values indicated in the label attached on the upper surface of the new laser unit to the following Service Mode items.
Laser maker identification
[1] COPIER > ADJUST > LASER > LA-MK-Y/M/C/K
Laser magnification (Y)
[2] COPIER > ADJUST > LASER > LDADJ1-Y/M/C/K
[3] COPIER > ADJUST > LASER > LDADJ2-Y/M/C/K
[4] COPIER > ADJUST > LASER > LDADJ3-Y/M/C/K
Laser phase difference
[5] COPIER > ADJUST > LASER > LDADJ4-Y/M/C/K
[6] COPIER > ADJUST > LASER > LDADJ4-Y/M/C/K
[7] COPIER > ADJUST > LASER > LDADJ4-Y/M/C/K
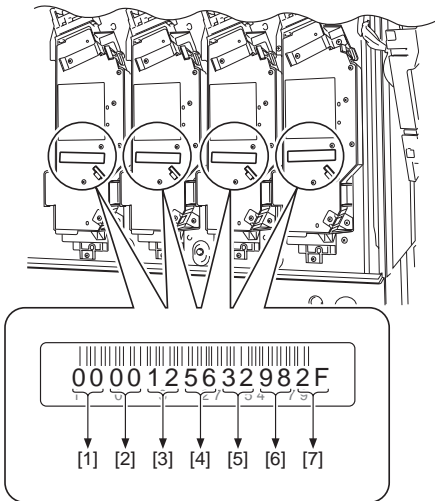
F-16-22

16.4 Image Formation System

16.4.1 Laser maker identification

There is no particular work to perform after replacing the drum unit.

16.4.2 After Replacing the Transfer Unit

There is no particular work to perform after replacing the transfer unit (intermediate transfer unit, secondary transfer unit).

16.4.3 After Replacing the Pattern Reading Unit

There is no particular work to perform after replacing the pattern reading unit.

16.4.4 Adjustments of Tilt in Intermediate Transfer Unit Rail

In this machine, displacement of the intermediate transfer belt to one side infrequently causes a tear in the belt.
In the machine where a tear occurs in the intermediate transfer belt, a rail supporting the intermediate transfer unit may be tilted.
In such a case, adjust the position of the rail supporting the intermediate transfer unit so that the heights of the rear and front sides become the same.
Adjustment procedures are shown below.
1. Replace the torn belt with a new one.

* Refer to the procedures of removing the intermediate transfer belt for details.
2. After replacing the intermediate transfer belt, follow the procedure shown below to make an adjustment so that the distance [C] between the edge [A] of the intermediate transfer belt and the ITB member [B] is 14mm.
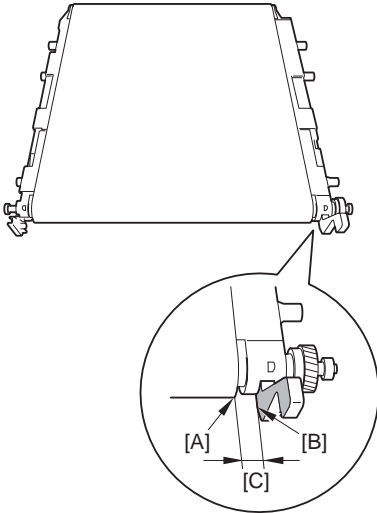
F-16-23

When the distance [C] is larger than 14mm:
Lift the handle [1] on the rear side and rotate the gear [2] in the direction shown by an arrow. The belt moves to the rear side.
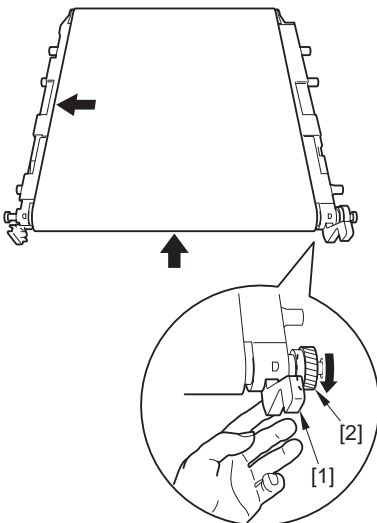
F-16-24

When the distance [C] is smaller than 14mm:
Lift the member [1] on the front side and rotate the gear [2] in the direction shown by an arrow. The belt moves to the front side.
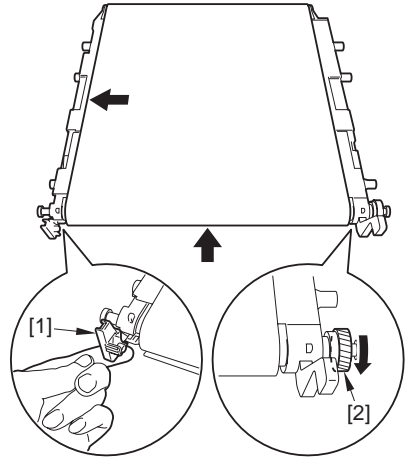
F-16-25

3. Attach the intermediate transfer unit to the machine again, following the reverse procedures.
4. Turn on the main power switch.
5. Execute "User Mode > Adjustment / Cleaning > Main Unit Cleaning".
6. After executing cleaning, remove the intermediate transfer unit again, and measure the distance [C] between the edge [A] and the ITB member [B].
When the distance [C] is larger or smaller than 14mm, make an adjustment following the procedures shown below.
* Be sure to keep the intermediate transfer unit detached during the work.
6-1) Remove the one screw [1] and the two bins [2], and detach the front cover [3].
6-2) Release the intermediate transfer unit release lever, and remove the waste toner bottle [2].

F-16-26

16-9
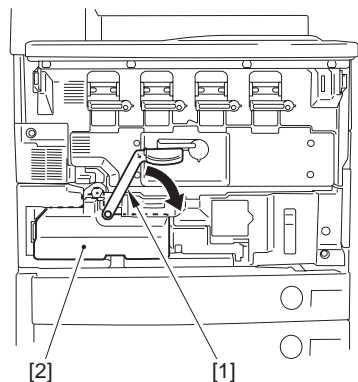
6-3) Detach the fan cover [2] with the one screw [1].
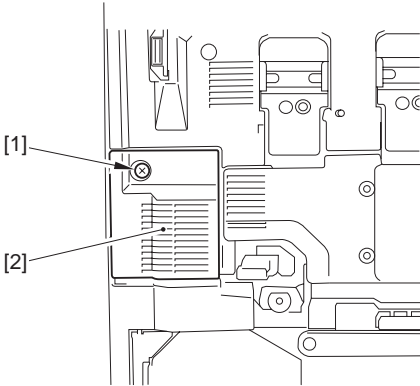
F-16-27

6-4) Remove the one screw [1] and detach the intermediate transfer unit release lever [2].
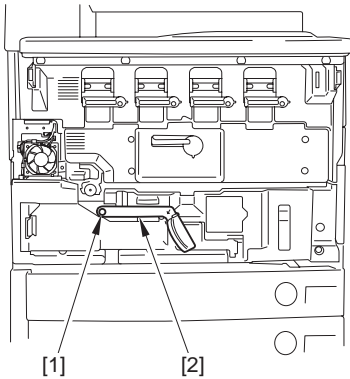
F-16-28

6-5) Remove the connector [1] and the four screws [2], and detach the inner cover [3].
6-6) Loosen the two bind screws [1].
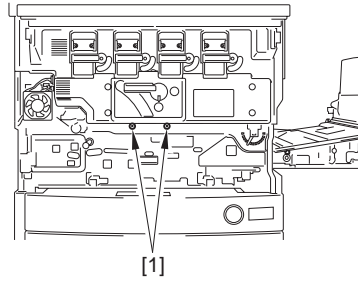
F-16-29

6-7) Release the open/close lever [1] and open the drum unit cover [2].
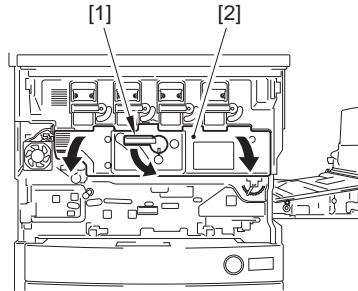
F-16-30

6-8) Loosen the one bind screw [1].
6-9) Loosen the two RS screws [1].
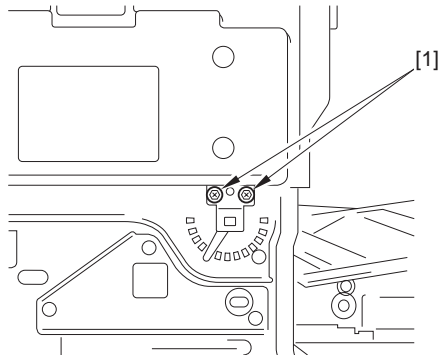
F-16-31

6-10)
When the distance [C] is larger than 14mm:
Displace the intermediate transfer rail adjustment lever in the left direction.
Be sure to displace the adjustment lever with the scales.
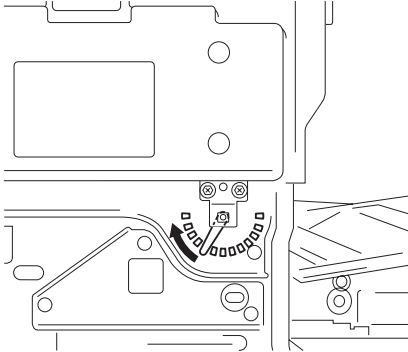
F-16-32

When the distance [C] is smaller than 14mm:
Displace the ITB rail adjustment lever in the right direction.
Be sure to displace the adjustment lever by one scale.
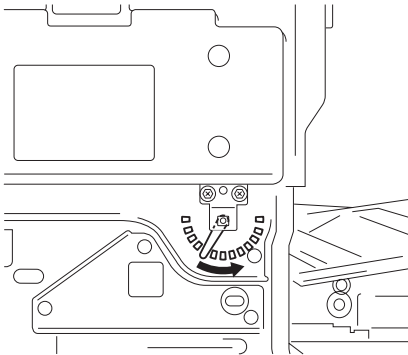
F-16-33

9) Repeat the procedures from 2) to 6), and set the ITB rail adjustment lever to the position where the displacement is minimized.

16.5 Fixing System

16.5.1 Treatment after Replacement of Fixing Unit

⚠ Points to Note when Replacing or Discarding Fixing Unit
The heat pipe is used at the upper belt of the fixing unit in order to equalize the heat of the rear front direction. The heat pipe is enclosing a little amount of liquid in vacuum in an airtight container. Thus, do not throw the heat pipe in the fire because it will burst.
When discarding the fixing unit, be sure to shred.

1. 1. Applying Grease to Fixing Drive Unit / Belt Displacement Control Motor Unit
When replacing the fixing unit, apply the super lube grease (standard tool: parts number FY9-6005-000, tube) to the specified parts of eh fixing drive unit and the belt displacement control motor unit.

⚠ Points to Note when Applying Grease
Do not apply the grease to the unspecified parts of the gear. It may cause the trouble.

a. Applying Grease to Fixing Drive Unit
The application parts and the amount of grease are as follows.
-To the center [A] of the gear [1], apply about 2 soybeans size of grease.
-To the edge [B] of the gear [1], apply about a soybean size of grease.
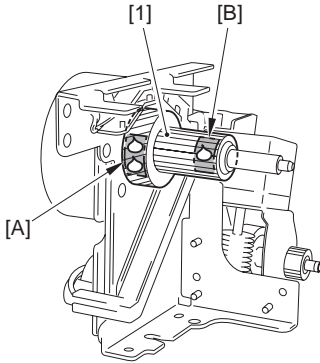
F-16-34

b. Applying Grease to Belt Displacement Control Motor Unit
The application parts and the amount of grease are as follows.
-To the edge [A] of the gear [1], apply about a soybean size of grease.
-To the center [B] of the gear [2] (inner side of the plate [3]), apply about a soybean size of grease.
-To the edge [C] of the gear [2], apply about a soybean size of grease.
-To the each side of the edge [D] [E] of the gear [4], apply about a soybean size of grease.
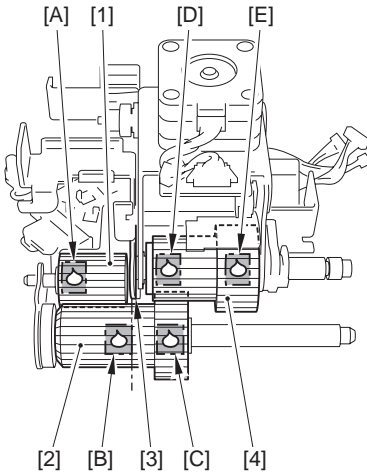
F-16-35

2. Executing Service Mode after Fixing Unit Replacement
When replacing the fixing unit, be sure to execute the following operation with the service mode.
-Clear the fixing delivery counter.
COPIER > COUNTER > DRBL-1 > FX-BLT-U
-Execute the fixing belt and pressure belt HP search operation.
COPIER > FUNCTION > FIXING > FX-UHP-S
COPIER > FUNCTION > FIXING > FX-LHP-S

⚠️**Points to Note When Replacing Fixing Unit**
By executing the service mode, the alarm code is closed and the total rotation time is cleared. Thus, this mode must be executed when replacing the fixing unit.
If the mode is not executed, the following symptoms will occur.
-The alarm code is not closed.
06-0002: Fixing unit life alarm (Caused by the belt displacement)
06-0004: Fixing unit life alarm (Caused by the torque up)
-Although the total rotation time of the replaced fixing assemble does not reach to the message threshold, the machine wrongly recognize that it reaches to the threshold and displays the message.
Be sure not to execute the mode except at the installation and the fixing unit replacement. If not, an error message may not be displayed when the fixing unit reaches to its life.

16.6 Electrical Components

16.6.1 After Replacing the Reader Controller PCB or Initializing the RAM

⚠

-Be sure to generate the latest P-PRINT printout before replacing the reader controller PCB.
-If you are initializing the RAM of the reader controller without replacing the PCB, using the SST to upload the backup data of the reader controller. Then, after initializing the RAM, download the data to eliminate the need for the following adjustments:

1. Reader Unit-Related Adjustments
1) Using the SST, download the latest version of the system software (R-CON).
2) Select the following in service mode, and press the OK key to initialize the RAM: COPIER>FUNCTION>CLEAR>R-CON.
   Thereafter, turn off and then on the main power.
3) Enter the settings for the following items in service mode:
   (1) standard white plate white level data
   COPIER>ADJUST>CCD>W-PLT-X,Y,Z

W-PLT-X   W-PLT-Y   W-PLT-Z

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(2) service label settings (label attached behind reader unit front cover)
   (a) image read start position adjustment (x direction; for fixed reading)
   COPIER>ADJUST>ADJ-XY>ADJ-X
   (b) image read start position adjustment (Y direction; fixed reading)
   COPIER>ADJUST>ADJ-XY>ADJ-Y
   (c) shading position adjustment (for fixed reading)
   COPIER>ADJUST>ADJ-XY>ADJ-S
   (d) feeder mode main scanning position adjustment
   COPIER>ADJUST>ADJ-XY>ADJ-Y-DF
   (e) ADF stream reading CCD read position adjustment
   COPIER>ADJUST>ADJ-XY>STRD-POS
   (f) CCD unit-dependent RB/GB sub scanning direction color displacement correction value
   COPIER>ADJUST>CCD>CCDU-RG/GB
   (g) CCD unit-dependent RG/GB sub scanning direction color displacement value at shipment
   COPIER>ADJUST>CCD>FCCDU-RG/GB
   (h) auto gradation adjustment target value
   COPIER>ADJUST>PASCAL>OFST-P-Y,M,C,K

2. ADF-Related Adjustments

⚠

The machine uses the RAM on its reader controller to store ADF-related service data; as such, you must make the appropriate adjustments for the ADF whenever you have replaced the reader controller or initialized the RAM.

1) Enter the settings indicated on the P-PRINT printout you have previously generated for the following items:
   (1) original stop position adjustment
   FEEDER>ADJSUT>DOCST
   (2) original feed speed (magnification) adjustment
   FEEDER>ADUST>LA-SPEED
2) Make adjustments using the following items:
   (1) ADF sensor sensitivity adjustment
   FEEDER>FUNCTION>SENS-INT
   (2) tray width adjustment
   (a) AB system: FEEDER>FUNCTION>TRY-A4 and FEEDER>FUNCTION>TRY-A5R
   (b) inch system: FEEDER>FUNCTION>TRY-LTR and FEEDER>FUNCTION>TRY-LTRR
   (3) white level adjustment
   COPIER>FUNCTION>CCD>DF-WLVL1
   COPIER>FUNCTION>CCD>DF-WLVL2

When done, store the P-PRINT printout [1] you have previously generated in the service book, disposing of the older printout, if any.

(4) Adjustment of ADF stream reading (Make this adjustment only for the machine with ADF attached.)

1) Make a sheet of paper [1] for adjustment of the scanning position using the paper (white paper) used by users, following the procedures shown below.

á) Make a sheet of paper with the width of 40mm or wider and height of 50mm or higher.

Tolerance with the width of 14mm: + or - 0.3

á) Draw a straight line at the position more than 15mm away from the right edge of the paper made in Procedure with a (black) pencil.

Right angle accuracy: Not required (Right angle accuracy does not affect the adjustment accuracy.)

áB Draw a straight line at the position 14mm away from the line drawn in Procedure áA to the left direction (tolerance: + or - 0.3) with a (black) pencil.

F-16-37

2) Adjust the line [1] to the line between the sheet [2] and the mold [3], and fix the paper at one position with the cellophane tape [4].

Accuracy of attaching the measurement sheet: + or - 0.3mm
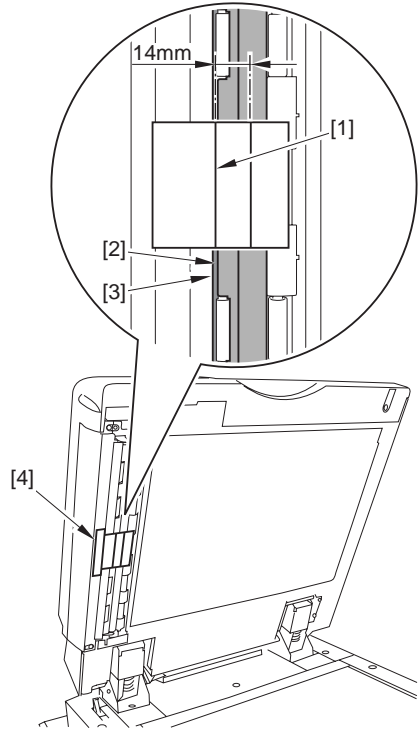
F-16-38

3) Execute the Service Mode (COPIER>FUNCTION>INSTALL>STPD-POS).

16.6.2 Replacing DC Controller PCB

1) After replacing the DC controller PCB, clear the memory of the DC controller PCB with the following service mode.
COPIER > FUNCTION > CLEAR > DC-CON
   COPIER>FUNCTION>CLEAR>DC-CON

2) Enter the value written on the service label from the following service mode.
   Laser Main Scanning Writ Start Position Adjustment
   COPIER > ADJUST > LASER > PVE-OFST

Laser Maker Identification
COPIER > ADJUST > LASER > LA-MK-Y/M/C/K
Laser Magnification
COPIER > ADJUST > LASER > LDADJ1-Y/M/C/K
   LDADJ2-Y/M/C/K
   LDADJ3-Y/M/C/K
Laser Phase Difference
COPIER > ADJUST > LASER > LDADJ4-Y/M/C/K

LDADJ5-Y/M/C/K
LDADJ6-Y/M/C/K
Patch Constants Adjustment
COPIER > OPTION > BODY > P-ALPHA
Write Start Position Adjustment (Margin along leading edge of image)
COPIER > ADJUST > FEED-ADJ > REGIST
Duplexing Side Registration Adjustment
COPIER > ADJUST > FEED-ADJ > ADJ-REFE
Duplexing Write Position Adjustment
COPIER > ADJUST > FEED-ADJ > REGIST2
Adjustment of Paper Width Standard Value of Manual Feed Tray
COPIER > ADJUST > CST-ADJ > MF-A4R
COPIER > ADJUST > CST-ADJ > MF-A6R
COPIER > ADJUST > CST-ADJ > MF-A4
Adjusting the paper width standard value of the manual feed tray.
3) Turn OFF/ON the main power switch.

16.6.3 Replacing Main Controller PCB

After mounting the main controller PCB (main), mount each PCB that is removed before the replacement.
[1] Main Controller PCB (Sub R-A)
[2] Main Controller PCB (Sub PDEM-EF-A)
[3] Main Controller PCB (Sub SJ-A)
[4] Main Controller PCB (Sub LAN-bar-A)
[5] Storage of program for BOOT ROM BOOT
[6] SRAM PCB
[7] DDR-SDRAM
[8] Main Controller PCB (Sub RB-A)
[9] HDD
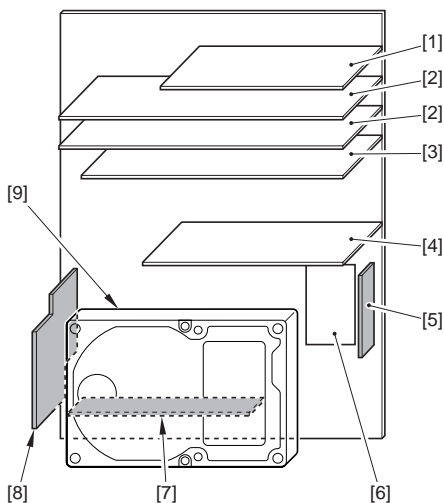
F-16-39

16.6.4 When Replacing the SRAM PCB

⚠

When the SRAM PCB is replaced, all data in its memory will be lost (file-related, user mode-related, service mode-related, history-related files). There will be no error operation, and initialization will take place automatically.
If you pull out the SRAM PCB from machine B and mount it to machine A, the PCB will be initialized and be rendered useless for machine A or B. Take full care.

1) When you turn on the power after replacing the SRAM PCB, the machine will perform automatic initialization and will indicate a message on its panel to the effect that you are to turn off and then on the power switch found on its right side. Follow the message and turn off and then on the machine.
2) Using service mode, initialize the RAM.
COPIER>FUNCTION>CLEAR>MN-CON

⚠

Before starting the work, be sure to inform the user that all image data stored in the Box will be lost and obtain his/her consent.

16.6.5 When Replacing the HDD

1. If NetSpot Accountant (NSA) Is Not Used
1) Formatting the HDD
While holding down the 2 and 8 keys on the control panel, turn on the power to start up. Using the HD formatting function of the SST, format all partitions.
2) Downloading the Software
Using the SST, download the various software (system, language, RUI). The machine will take about 10 min to start up after downloading.

2. If NetSpot Accountant (NSA) Is Used Together with a Card Reader
The card ID used by the NSA resides on the HDD. If you have replaced the HDD, therefore, you will have to newly download the card data from NSA to enable the statistical operations of NSA. After going through steps 1) and 2) above, perform the following:
1) Set the following in service mode:
Select the following : COPIER >FUNCTION >INSTALL >CARD; then, enter the number of the first card, and press [OK].
(For instance, if cards No. 1 through No. 1000 are

used for group control, enter '1')
2) Turn off and then on the machine; when the machine has started up, perform the following in user mode:
   Select the following : user mode >system control settings >group ID control >count control; then, check that IDs from 00000001 through 00001000 have been prepared.
   Select the following : user mode >system control settings >network settings >TCP/IP settings >IP address; then, set up 'IP address' 'gateway address' and 'subnet mask'
   Select the following : user mode >system administrator setup; then, fill in 'system control group ID' and 'system control ID No.' thereafter, turn off and then on the machine.
   If you leave out 'system control group ID' and 'system control ID No.' the service engineer will not be able to 'register card to device' as part of setup work for NSA.
3) With the machine in standby state, download the card ID to be used from NSA.
4) When the card data has been downloaded from NSA, check that the ID data has correctly been downloaded on the screen brought up by making the following selections:
   user mode>system control settings>group ID control
   (Only the downloaded ID data must be indicated.)
5) Make copies using a user card registered with NSA, and check that statistical operations are made for the device in question.

16.6.6 When Replacing the Power Supply PCB

There is no particular work to perform after replacing the power supply PCB.

16.7 Pickup/Feeding System

16.7.1 Adjusting the Horizontal Registration When Replacing the Pickup Cassette

Make a test copy of the A3 Test Chart, and check that the margin on the front side of the image is correct (L2 = 2.0 ±1.5 mm); otherwise, go through the following steps to adjust, starting with the 1st side and then the 2nd side:

1. Adjusting the Horizontal Registration on the 1st Side
1) Slide out the manual feed unit and the cassette 1/2; then, open the pickup vertical path cover.
2) Remove the 2 screws [1], and remove the front right cover [2].
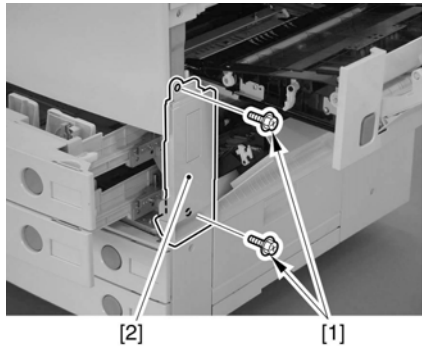
F-16-40

- Adjusting the Cassette 1 Side
3) Insert a screwdriver through the hole in the front right stay, and loosen the screw [1] to adjust the position of the adjusting plate [2].
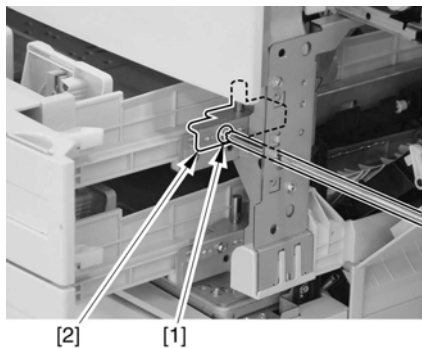
F-16-41
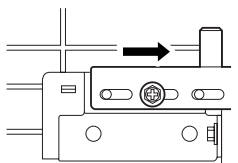
Moving the adjusting
plate to the right
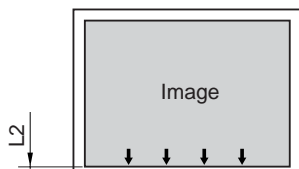
will decrease the margin on
the front side of the paper.

F-16-42

- Adjusting the Cassette 2 Side
3) Remove the grip [1] from the front right.
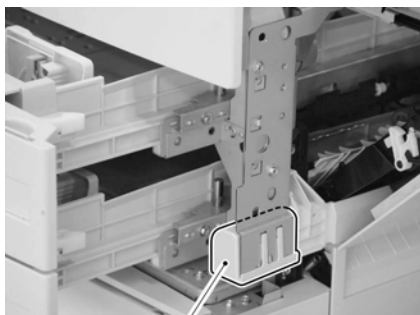
[1]

F-16-43

4) Insert a screwdriver through the hole in the front
   right stay, and loosen the screw [1] to adjust the
   position of the adjusting plate [2].
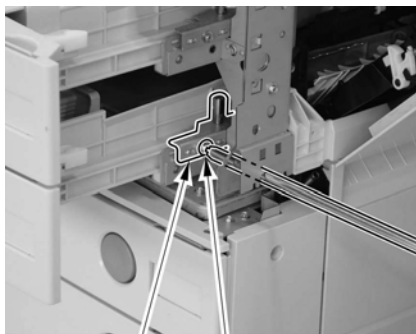
[2]   [1]

F-16-44
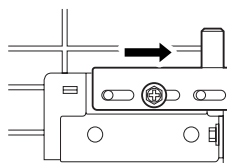
Moving the adjusting
plate to the right
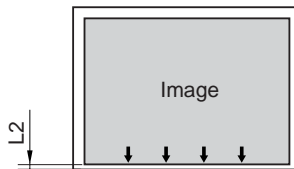
will decrease the margin on
the front side of the paper.

F-16-45

**2. Adjusting the Horizontal Registration on the
2nd Side**
Use the following service mode to adjust:
COPIER>ADJUST>FEED-ADJ>ADJ-REFE

16.7.2 Adjusting the Horizontal Registration When Replacing the Duplex Unit

After replacing the horizontal registration motor,
horizontal registration sensor, duplex unit, and fixing
delivery unit, follow the adjustment showing below.
COPIER>ADJUST>FEED>ADJ>ADJ-REFE

Chapter 17

CORRECTING FAULTY IMAGES

Contents

17.1 Outline of Electrical Components

17.1.1 Clutch/Solenoid

17.1.1.1 Reader Unit

The reader unit has no clutch or solenoid.

17.1.1.2 Printer Unit

T-17-1

Notation	Name	Description	Parts No.	PART-CHK	Jack No. DCON1
CL1	duplex registration clutch	matches the position of images on double-sided prints.	FH6-1986	CL > 1	J119
CL2	duplex pickup clutch	controls the timing of pickup for double-sided printing.	FH6-5052	CL > 2	J119
SL1	manual feed pickup solenoid	controls the timing of pickup for the manual feed block.	FK2-0115	SL > 1	J120
SL2	delivery path switching solenoid 1	switches over positions of the delivery tray.	FH6-5056	SL > 2	J717A
SL3	cassette 1 pickup solenoid	controls the timing of pickup from the cassette 1.	FK2-0408	SL > 3	J117A
SL4	cassette 2 pickup solenoid	controls the timing of pickup from the cassette 2.	FK2-0408	SL > 4	J117B
SL5	delivery path switching solenoid 2	switches over the paths in the delivery/feeder unit.	FG6-9061	SL > 5	J119
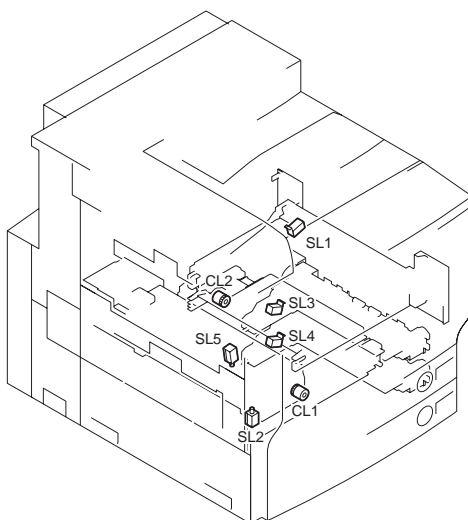
F-17-1

17.1.2 Motor

17.1.2.1 Reader Unit

T-17-2

Notation	Name	Description	Parts No.	PART-CHK	Jack No. RCON
M1	scanner motor	drives the scanner system.	FK2-0237	-	J306

17.1.2.2 Printer Unit

T-17-3

Notation	Name	Description	Parts No.	PART-CHK	Jack No. PCB	No.
M1	drum ITB motor	drives the drum/intermediate transfer unit.	FK2-2511	MTR > 1	DCON2	J118B
M2	laser scanner motor (Y)	drives the laser scanner (Y).	FK2-2144	-	DCON1	J211A
M3	laser scanner motor (M)	drives the laser scanner (M).	FK2-2144	-	DCON1	J211A
M4	laser scanner motor (C)	drives the laser scanner (C).	FK2-2144	-	DCON1	J211B
M5	laser scanner motor (Bk)	drives the laser scanner (Bk).	FK2-2144	-	DCON1	J211B
M6	cassette 1 pickup motor	drives the pickup unit 1.	FK2-2515	MTR > 6	DCON2	J118B
M7	cassette 2 pickup motor	drives the pickup unit 2.	FK2-2515	MTR > 7	DCON2	J118A
M8	pre-registration motor	drives the registration roller.	FK2-2519	MTR > 12	DCON2	J120A
M9	registration motor	drives the pre-registration roller.	FK2-2516	MTR > 11	DCON2	J120B
M10	delivery vertical path motor	drives the delivery vertical path roller 2.	FK2-2515	MTR > 13	relay PCB	J720B
M11	face-down delivery motor	drives the delivery vertical path roller 1.	FK2-2520	MTR > 14	relay PCB	J707
M12	developing motor (Y)	drives the developing unit (Y).	FK2-2518	MTR > 18	relay PCB	J710A
M13	developing motor (M)	drives the developing unit (M).	FK2-2518	MTR > 19	relay PCB	J710A
M14	developing motor (C)	drives the developing unit (C).	FK2-2518	MTR > 20	relay PCB	J710B
M15	developing motor (Bk)	drives the developing unit (Bk).	FK2-2518	MTR > 21	relay PCB	J710B

Notation	Name	Description	Parts No.	PART-CHK	Jack No.	
					PCB	No.
M16	image slope correction motor (Y)	corrects image slope (Y).	RH7-1501	-	DCON2	J102A
M17	image slope correction motor (M)	corrects image slope (M).	RH7-1501	-	DCON2	J102A
M18	image slope correction motor (C)	corrects image slope (C).	RH7-1501	-	DCON2	J102B
M19	image slope correction motor (Bk)	corrects image slope (Bk).	RH7-1501	-	DCON2	J102B
M20	toner container motor (Y)	stirs toner inside the toner container (Y).	FK2-2525	MTR > 2	relay PCB	J706
M21	toner container motor (M)	stirs toner inside the toner container (M).	FK2-2525	MTR > 3	relay PCB	J706
M22	toner container motor (C)	stirs toner inside the toner container (C).	FK2-2525	MTR > 4	relay PCB	J706
M23	toner container motor (Bk)	stirs toner inside the toner container (Bk).	FK2-2525	MTR > 5	relay PCB	J706
M24	fixing drive motor	drives the fixing unit.	FK2-2514	-	DCON2	J109B
M25	horizontal registration motor	matches the horizontal registration position for paper.	FK2-0144	MTR > 16	DCON2	J119B
M26	duplex feeder motor	moves paper to the duplex unit.	FK2-2520	MTR > 17	DCON2	J119B
M27	fixing pressure release motor	increases or releases a pressure of the pressure belt unit.	FK2-2522	-	relay PCB	J117
M28	fixing belt displacement control motor	controls displacement of the fixing belt.	FK2-2523	-	relay PCB	J117
M29	pressure belt displacement control motor	controls displacement of the pressure belt.	FK2-2523	-	relay PCB	J721B

*DCON1 : DC controller PCB 1 (IMG)
 DCON2 : DC controller PCB 2 (MAICY)
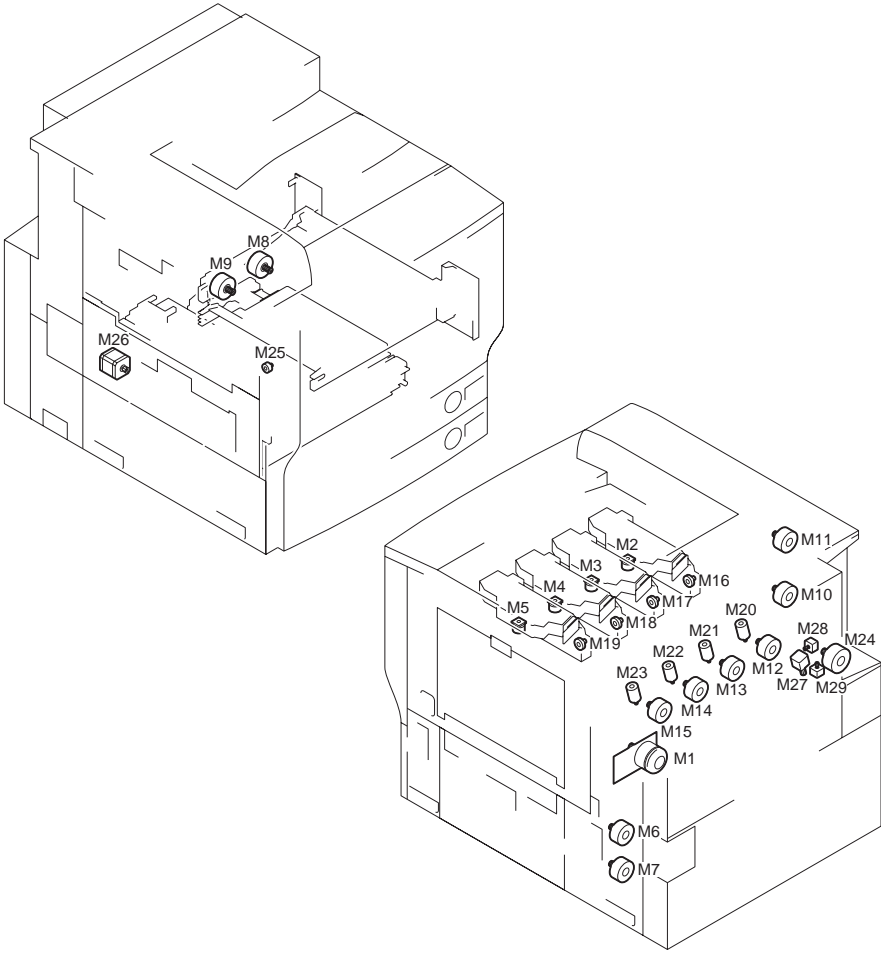
F-17-2

17.1.3 Fan

17.1.3.1 Reader Unit

T-17-4

Notation	Name	Description	Parts No.	PART-CHK	Jack No.
FM1	reader cooling fan	cools the interior of the reader.	FK2-0626	-	J306

17.1.3.2 Printer Unit

T-17-5

Notation	Name	Description	Parts No.	PART-CHK	Jack No.	
					PCB	No.
FM1	power supply exhaust fan 1	exhausts heat from the power supply.	FK2-0360	FAN > 1	relay PCB	J627
FM2	fixing heat discharge fan	discharges heat from the fixing unit.	FK2-2528	FAN > 2	relay PCB	J712
FM3	machine heat discharge fan	discharges heat from inside the machine.	FH9-1979	FAN > 3	relay PCB	J712
FM4	cleaner fan	limits overheating inside the machine.	FK2-2530	FAN > 4	relay PCB	J717A
FM5	delivery cooling fan	cools paper for delivery.	FK2-0124	FAN > 5	relay PCB	J712
FM6	manual feed cooling fan	cools paper for manual feeding.	FK2-2530	FAN > 6	DCON2	J118A
FM7	controller fan	cools the inside of the controller box.	FK2-2529	-	MNCOM	J1007
FM8	delivery vertical path cooling fan	cools the IH power supply assembly.	FH6-1984	FAN > 7	relay PCB	J707
FM9	IH power supply cooling fan	exhaust heat from the power supply assembly.	FK2-2530	-	DCON2	J118B
FM10	power supply exhaust fan 2	cools the intermediate transfer unit.	FK2-0360	FAN > 1	relay PCB	J627
FM11	ITB power supply cooling fan.	cools paper for delivery.	FK2-2530	FAN > 8	relay PCB	J717B
FM12	face-down tray cooling fan (front)	cools paper for delivery.	FK2-2527	FAN > 10	relay PCB	J718
FM13	vertical path delivery exhaust fan	exhaust heat from the interior of the main body.	FH9-1979	FAN > 9	relay PCB	J715
FM14	face-down tray cooling fan (rear)	cools paper for delivery.	FK2-2527	FAN > 10	relay PCB	J718
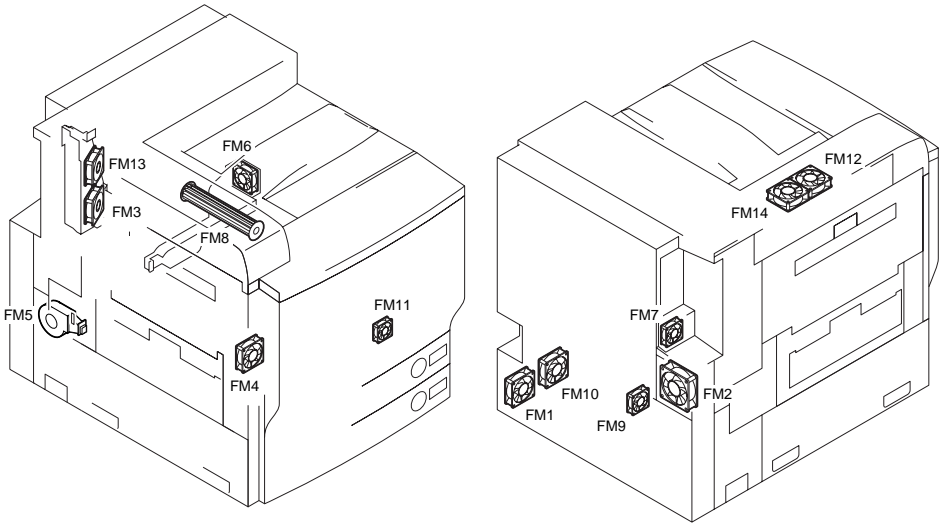
F-17-3

17.1.4 Sensor

17.1.4.1 Reader Unit

T-17-6

Notation	Name	Description	Parts No.	Jack No.	
				I/F-BOARD	RCON
PS501	scanner HP sensor	detects the home position of the scanner.	FK2-0149	J310/J308	J202
PS502	ADF open / close senor 1	detects the state (open / closed) of the ADF.	FK2-0149	J310/J307	J203
PS503	ADF open / close sensor 2	detects and screens detection timing of the original size recognition.	FK2-0149	J310/J308	J202

*RCON : reader controller PCB
 I/F-BOARD : interface PCB
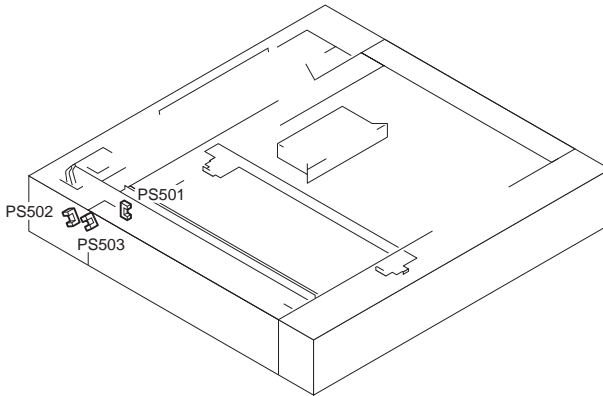
F-17-4

17.1.4.2 Printer Unit

T-17-7

Notati on	Name	Description	Parts No.	I/O	Jack No.	
					PCB	No.
PS1	toner feedscrew rotation sensor (Y)	detects the rotation of the feedscrew inside the toner container (Y).	FH7-7312	-	relay PCB	J708
PS2	toner feedscrew rotation sensor (M)	detects the rotation of the feedscrew inside the toner container (M).	FH7-7312	-	relay PCB	J708
PS3	toner feedscrew rotation sensor (C)	detects the rotation of the feedscrew inside the toner container (C).	FH7-7312	-	relay PCB	J708
PS4	toner feedscrew rotation sensor (Bk)	detects the rotation of the feedscrew inside the toner container (Bk).	FH7-7312	-	relay PCB	J708
PS5	fixing feeder unit open/ closed Sensor	detects the sate (open/ closed) of the fixing feeder unit.	FH7-7312	P005-4	relay PCB	J717A
PS6	face-down delivery sensor 2	detects the passage of paper in the face-down delivery assembly.	FH7-7312	P007-8	relay PCB	J716
PS7	cassette 1 paper sensor	detects the presence/ absence of power inside the cassette 1.	FH7-7312	P001-12	DCON2	J117A
PS8	center delivery tray full sensors	detects the state (full of paper) inside the face-down delivery assembly.	FH7-7312	P005-9	relay PCB	J716

Notation	Name	Description	Parts No.	I/O	Jack No.	
					PCB	No.
PS9	manual feed last paper sensor	detects paper in the manual feed unit.	FH7-7312	P001-15	DCON2	J120A
PS10	manual feed paper sensor	detects paper in the manual feed unit.	FH7-7312	P001-14	DCON2	J120A
PS11	pickup vertical path cover open/closed sensor	detects the state (open/closed) of the pickup vertical path cover.	FH7-7312	P005-10	DCON2	J120A
PS12	face-down delivery sensor 1	detects face-down delivery.	FH7-7312	P007-5	relay PCB	J716
PS13	delivery vertical path cover open/closed sensor	detects the state (open/closed) of the delivery vertical path cover.	FH7-7312	P005-7	relay PCB	J716
PS14	cassette 1 paper level sensor (A)	detects the level of paper inside the cassette 1 (A).	FH7-7312	P001-8	DCON2	J117A
PS15	cassette 1 paper level sensor (B)	detects the level of paper inside the cassette 1 (B).	FH7-7312	P001-9	DCON2	J117A
PS16	cassette 1 retry paper sensor	detects paper retry operation for the cassette 1.	FH7-7312	P007-1	DCON2	J117A
PS17	cassette 2 retry paper sensor	detects paper retry operation for the cassette 2.	FH7-7312	P007-0	DCON2	J117B
PS18	cassette 2 paper level sensor (B)	detects the level of paper inside the cassette 2 (B).	FH7-7312	P001-11	DCON2	J117B
PS19	cassette 2 paper sensor	detects the presence/absence of paper inside the cassette 2.	FH7-7312	P001-13	DCON2	J117B
PS20	cassette 2 paper level sensor (A)	detects the level of paper inside the cassette 2 (A).	FH7-7312	P001-10	DCON2	J117B
PS21	duplex registration sensor	detects double-sided registration.	FH7-7312	P007-6	DCON2	J119A
PS22	duplex horizontal registration Sensor	detects the position of paper in sub scanning direction.	FH7-7312	P007-9	DCON2	J119B
PS23	front cover open/closed sensor	detects the state (open/closed) of the front cover.	FH7-7312	P005-11	DCON2	J118A
PS24	duplex pickup sensor	detects pickup from the duplex unit.	FH7-7312	P007-7	DCON2	J119A
PS25	fixing delivery sensor	detects delivery in the fixing unit.	FH7-7312	P007-4	relay PCB	J721A
PS26	registration sensor	detects paper before registration.	FH7-7312	P007-2	DCON2	J120B
PS27	fixing inlet sensor	detects movement of paper to the fixing unit.	FH7-7312	P007-3	relay PCB	J720B
PS28	manual feed unit open/closed Sensor	detects the state (open/closed) of the manual feed unit.	FH7-7312	P005-8	DCON2	J118A

Notation	Name	Description	Parts No.	I/O	Jack No.	
					PCB	No.
PS29	fixing seizure sensor	detects fixing unit seizure.	FH7-7312	-	relay PCB	J721B
PS30	pressure belt HP sensor	detects pressure belt HP.	FH7-7312	-	relay PCB	J721B
PS31	fixing belt HP sensor	detects fixing belt HP.	FH7-7312	-	relay PCB	J720B
PS33	fixing belt position sensor 1	detects fixing belt displacement 1.	FH7-7312	-	relay PCB	J720A
PS34	fixing belt position sensor 2	detects fixing belt displacement 2.	FH7-7312	-	relay PCB	J720A
PS35	fixing belt position sensor 3	detects fixing belt displacement 3.	FH7-7312	-	relay PCB	J720A
PS36	pressure belt position sensor 1	detects pressure belt displacement 1.	FH7-7312	-	relay PCB	J721A
PS37	pressure belt position sensor 2	detects pressure belt displacement 2.	FH7-7312	-	relay PCB	J721A
PS38	pressure belt position sensor 3	detects pressure belt displacement 3.	FH7-7312	-	relay PCB	J721A
PS46	fixing pressure release HP sensor	detects pressure belt pressure.	FH7-7312	-	DCON2	J108B
PS47	fixing loop sensor	detects fixing loop.	FH7-7312	-	DCON2	J119B
PS50	Fixing feed unit open / close sensor	detects if the fixing feed unit is open or closed.	FH7-7312	-	relay PCB	J719
VR1	slide resistor	detects the width of paper for manual feed.	FH7-7600	-	DCON2	J120A
OHP1	transparency sensor (front)	detects a transparency.	RH7-7129	P007-10	DCON2	J120B
OHP2	transparency sensor (rear)	detects a transparency.	RH7-7129	P007-11	DCON2	J120B
EV1	environment sensor	environment sensor	FH7-7602	-	DCON2	J112A
TH1	fixing main thermistor	detects temperature of the central part of the fixing belt.	FK2-2539	-	DCON2	J108A
TH2	fixing sub thermistor 1	detects temperature of the fixing belt edge (front).	FK2-2539	-	DCON2	J108A
TH3	fixing sub thermistor 2	detects temperature of the fixing belt edge (rear).	FK2-2539	-	DCON2	J108A
TH4	pressure main thermistor 1	detects temperature of the central part of the pressure belt.	FK2-2537	-	DCON2	J108B
TH5	pressure sub thermistor 1	detects temperature of the pressure belt edge (front).	FK2-2538	-	DCON2	J108B

Notation	Name	Description	Parts No.	I/O	Jack No.	
					PCB	No.
TH6	pressure sub thermistor 2	detects temperature of the pressure belt edge (rear).	FK2-2538	-	DCON2	J108B
TP1	fixing thermal switch	detects temperature of the central part of the fixing belt.	FK2-2506	-	DCON2	J108A
TP2	pressure thermal switch	detects temperature of the center of the pressure belt.	FK2-2507	-	DCON2	J108B
TPS1	SALT sensor	stabilizes development characteristics (SALT).	FK2-2510	-	DCON2	J112A
TS1	ATR sensor (Y)	executes automatic toner density correction (ATR; Y).	MG4-0246	-	DCON2	J110
TS2	ATR sensor (M)	executes automatic toner density correction (ATR; M).	MG4-0246	-	DCON2	J110
TS3	ATR sensor (C)	executes automatic toner density correction (ATR; C).	MG4-0246	-	DCON2	J110
TS4	ATR sensor (Bk)	executes automatic toner density correction (ATR; Bk).	MG4-0246	-	DCON2	J110

*DCON2 : DC controller PCB 2 (MAICY)
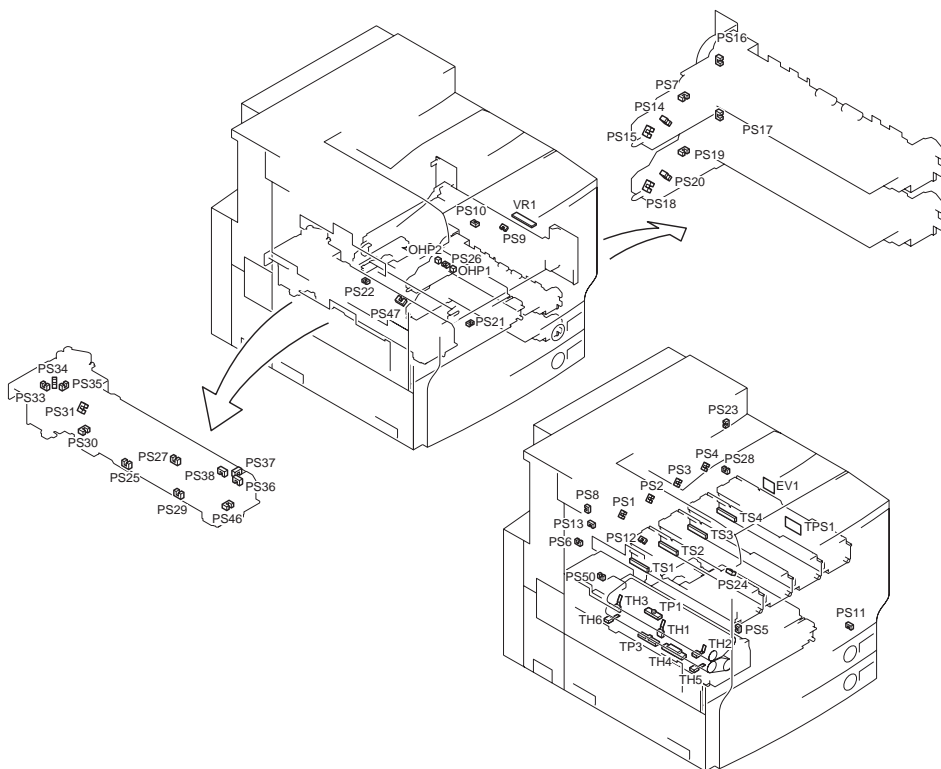
F-17-5

17.1.5 Switch

17.1.5.1 Reader Unit

 / Color iR C5180i / Color iR C5180 / / Color iR C4580G / / Color iR C4580i / Color iR C4580 / Color iR C4080G / Color iR C4080i / Color iR C4080 / / / Color Image Reader-F1 / Color Image Reader-E1 / Duplex Color Image Reader-G1

The reader unit does not have switches.

17.1.5.2 Printer Unit

T-17-8

Notation	Name	Description	Parts No.	Jack No. PCB	No.
SW1	main power switch	turns on/off the main power.	FK2-2509	AC driver PCB	J5
SW2	cassette 1 size detecting switch	detects the size of paper inside the cassette 1.	WC2-5332	DCON2	J113B
SW3	cassette 2 size detecting switch	detects the size of paper inside the cassette 2.	WC2-5332	DCON2	J113B
MSW1	front cover open/closed detection switch 1	detects the state (open/closed) of the front Cover.	RH7-6037	relay PCB	J624
MSW2	front cover open/closed detection switch 2	detects the state (open/closed) of the front Cover.	RH7-6037		
MSW3	manual feed unit open/closed detection switch 1	detects the state (open/closed) of the manual feed unit.	RH7-6037		
MSW4	manual feed unit open/closed detection switch 2	detects the state (open/closed) of the manual feed unit.	RH7-6037		
MSW5	fixing feeding unit open/closed detection switch 1	detects the state (open/closed) of the fixing feeder unit.	RH7-6037		
MSW6	fixing feeding unit open/closed detection switch 2	detects the state (open/closed) of the fixing feeder unit.	RH7-6037		

*DCON2 : DC controller PCB 2 (MAICY)
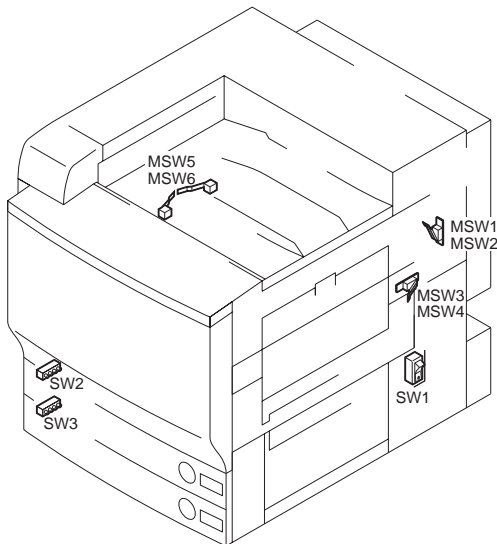
F-17-6

17.1.6 Lamps, Heaters, and Others

17.1.6.1 Reader Unit

T-17-9

Notation	Name	Description	Parts No.	Jack No.	
				inverter PCB	No.
LA1	scanning lamp	illuminates an original.	FK2-2291	J602< J601<	J206
H1	reader (condensation prevention) heater 1	prevents condensation on a mirror.	FK2-0227 (100V) FK2-0229 (230V)	J2301M< J651A<	J631A
H2	reader (condensation prevention) heater 1	prevents condensation on a lens.	FK2-0226 (100V) FK2-0228 (230V)	J2301M< J651A<	J631A

17.1.6.2 Printer Unit

T-17-10

Notation	Name	Description	Parts No.	E Code	Jack No.
H1	pressure heater	controls pressure heater temperature.	FK2-2531 (100V) FK2-2532 (120V) FK2-2533 (230V)	E001, E002, E003, E004	AC driver PCB : J4 / J11 > relay PCB : J628
IH	IH heater unit	controls fixing belt temperature.		E001, E002, E003, E004	IH power supply PCB : J310 / J301 > relay PCB : J623
ELCB1	leakage breaker	leakage breaker	FH7-7626 (iR C4580/4080 (100/120V)) FK2-0014 (iR C5180 (100/120V)) FH7-7625 (230V)		AC driver PCB : J2
PLG1	power cord	power cord			AC driver PCB : J2
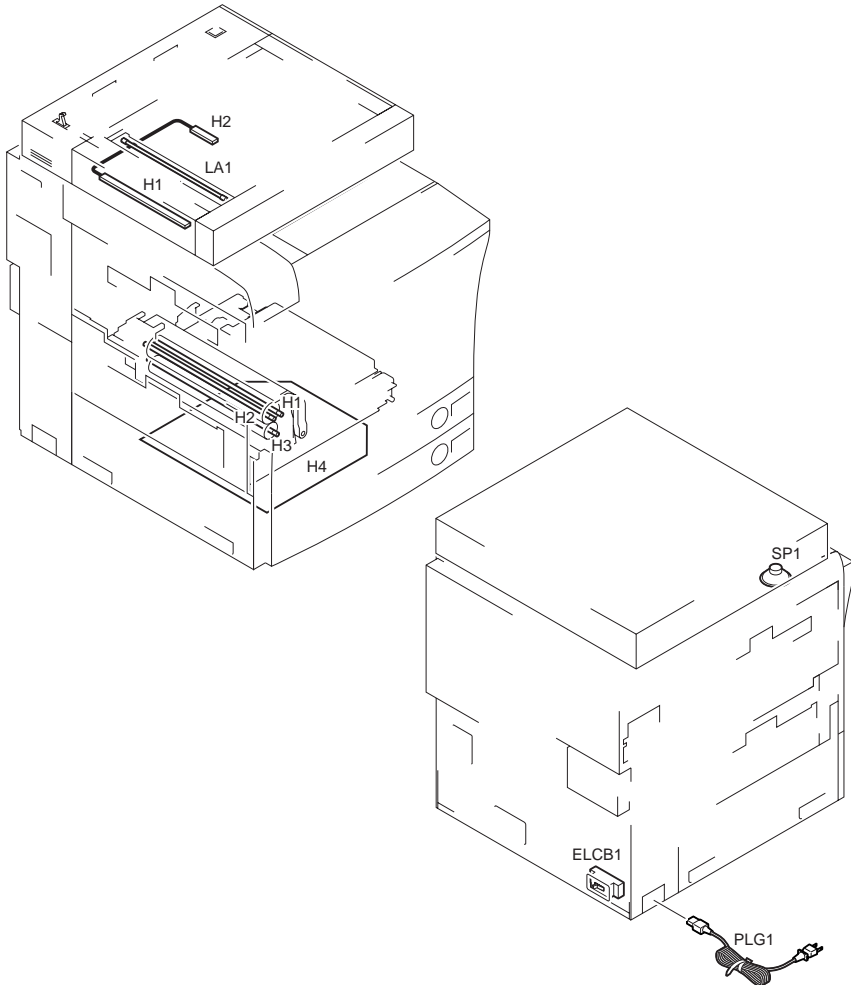
F-17-7

17.1.7 PCBs

17.1.7.1 Reader Unit
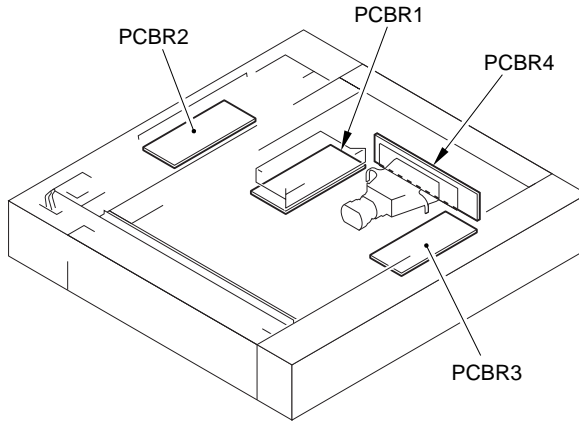
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T-17-11

Notation	Name	Parts No.	Description
PCBR1	Reader controller PCB	FM2-6801	controls the reader unit/ADF.
PCBR2	Interface PCB	FM2-6802	communicates image information read by the reader unit to the printer unit.
PCBR3	Inverter PCB	FK2-0225	controls the scanning lamp.
PCBR4	CCD/AP PCB	FM2-6803	drives the CCD/processes analog images.

17.1.7.2 Printer Unit

T-17-12

Notation	Name	Parts No.	Description
PCB1	DC controller PCB 1 (IMG)	FM2-6297	printer unit control / optional power supply control
PCB2	DC controller PCB 2 (MAICY)	FM2-6298	laser system control
PCB3	relay PCB	FM2-6299	printer unit load system control
PCB4	Laser driver PCB (Y)	FM2-6696	controls the drive of the laser unit (Y).
PCB5	Laser driver PCB (M)	FM2-6696	controls the drive of the laser unit (M).
PCB6	Laser driver PCB (C)	FM2-6696	controls the drive of the laser unit (C).
PCB7	Laser driver PCB (Bk)	FM2-6696	controls the drive of the laser unit (Bk).

Notation	Name	Parts No.	Description
PCB8	BD detection PCB (Y)	FM2-6699	detects the laser beam (Y).
PCB9	BD detection PCB (M)	FM2-6699	detects the laser beam (M).
PCB10	BD detection PCB (C)	FM2-6699	detects the laser beam (C).
PCB11	BD detection PCB (Bk)	FM2-6699	detects the laser beam (Bk).
PCB12	Waste toner detection PCB (light-emitting)	FG3-2374	detects the level of toner inside the waste toner container.
PCB13	Waste toner detection PCB (light-receiving)	FG3-2375	detects the level of toner inside the waste toner container.
PCB14	Auto registration sensor F (light-emitting) detection PCB	FG3-2317	reads the image position correction pattern.
PCB15	Auto registration sensor F (light-receiving) detection PCB	FG3-2316	reads the image position correction pattern.
PCB16	Auto registration sensor R (light-emitting) detection PCB	FG3-2317	reads the image position correction pattern.
PCB17	Auto registration sensor R (light-receiving) detection PCB	FG3-2316	reads the image position correction pattern.
PCB18	Microswitch PCB	FG3-2377	detects the state (open/closed) of the manual feed unit.
PCB19	Microswitch PCB	FG3-2377	detects the state (open/closed) of the front cover.
PCB20	Main power supply PCB (13V / 24V)	FM2-0829 (100V/ 120V) FM2-0835 (230V)	transforms power supply to 13V / 24V.
PCB21	All-night power supply PCB (3.3V)	FK2-0101 (100V/ 120V) FK2-0111 (230V)	transforms power supply (all-night) to 3.3V.
PCB22	DC / DC converter PCB (38V) 1	FM2-6300	transforms power supply to 38V (for the drum ITB motor).
PCB23	DC / DC converter PCB (38V) 2	FM2-6300	transforms power supply to 38V (for the fixing motor).
PCB24	DC / DC converter PCB (3.3V / 5V / 12V)	FM2-6049	transforms power supply to 3.3V / 5V / 12V.
PCB25	Relay PCB	FM2-6303	transforms power supply to 3.3V / 5V / 13V.
PCB26	AC driver PCB	FM2-6301 (100V/ 120V) FM2-6302 (230V)	AC drive

Notation	Name	Parts No.	Description
PCB27	IH power supply PCB	FM2-6313 (100V/ 120V) FM2-6314 (230V)	transforms IH power supply.
PCB28	HV1 PCB	FG3-2327	executes charging/development.
PCB29	HV2 PCB	FM2-6319	executes primary transfer.
PCB30	HV1-SUB PCB	FM2-6318	detects charging AC current; controls developing AC output; distributes signals; assists upstream mechanisms, assists downstream mechanisms.
PCB31	HV2-SUB PCB	FM2-6320	power input.
PCB32	HV3 PCB	FM2-6321	executes secondary transfer.
PCB33	HV4 PCB	FM2-6322	assists upstream mechanisms (sends to HV1).
PCB34	Heater control PCB	FM2-7168	controls the main heater.
PCB35	Main controller PCB (main)	FM2-6843	System control, memory control, and printer output image processing control
PCB36	Main controller PCB (sub LAN-bar-A)	FM2-6847	LAN connection, HDD controller, HDD power supply
PCB37	Main controller PCB (sub SJ-A)	FM2-6849	Scanner interface, scanner image processing (resolution conversion, image rotation, compression/decompression)
PCB38	Main controller PCB (sub PDRM-A)	FM2-6808	printer basic image processing (background removal, color space conversion, (RGB to CMYK), F-value, color balance adjustment), correction of misalignment among the 4 drums.
PCB39	Main controller PCB (sub PDRM-A)	FM2-6808	printer basic image processing (background removal, color space conversion, (RGB to CMYK), F-value, color balance adjustment), correction of misalignment among the 4 drums.
PCB40	Main controller PCB (sub EF-A)	FM2-6809	gradation conversion, screen processing, generating from REOS600dpi image data to 1200dpi image data, high-image-quality-capable SST (AST).
PCB41	Main controller PCB (sub EF-A)	FM2-6809	gradation conversion, screen processing, generating from REOS600dpi image data to 1200dpi image data, high-image-quality-capable SST (AST).
PCB42	Control panel CPU PCB	FG3-2358	controls the control panel.
PCB43	Control panel KEY PCB	FG3-2357	controls the input from the keypad.
PCB44	Control panel inverter PCB	FG3-2376	controls the backlight of the LCD.
PCB45	Main controller PCB (sub R-A)	FM2-6038	color space changes, electric sorting rotation, digitalization, resolution changes.
PCB46	Main controller PCB (sub RB-A)	FM2-6810	converts image data of a 1200 dpi resolution into image data of an equivalent of a 600 dpi resolution, which contains an equivalent of 1200 dpi character spacing information.

Notation	Name	Parts No.	Description
PCB47	SRAM PCB	FG3-3568	management of image data saved on the HDD, saves service mode setting data and user mode setting data.
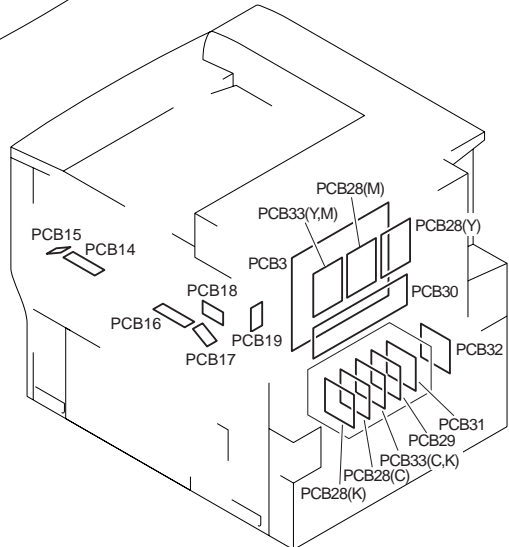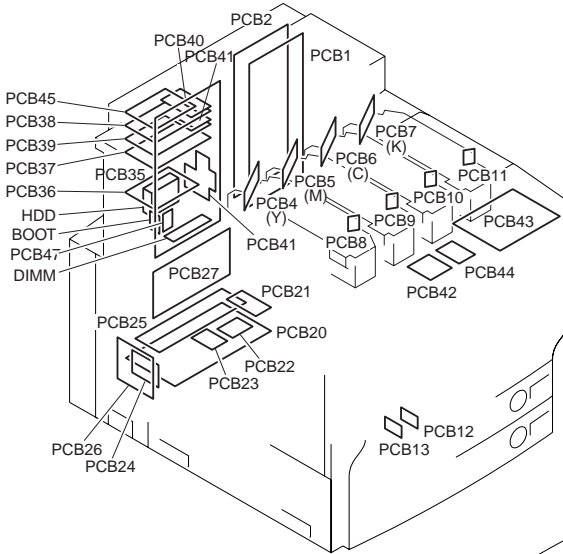
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Chapter 18

SELF DIAGNOSIS

Contents

18.1 Error Code Table

18.1.1 Error code tables

This unit has a function for diagnosing its own statuses (especially the sensor outputs). A diagnosis is performed when appropriate, and if a status is judged to be abnormal, an error code indicating the nature of the trouble is displayed on the control area.
In the tables below, these error codes are listed, and their detection methods, main causes and remedial action procedures are described.
The all-numeral 4-digit codes provide details of the errors, and these details can be checked using COPIER > DISPLAY > ERR in the service mode.

T-18-1

Code	Designation / general description of error
E000	Insufficient temperature rise of fixing unit when power is turned ON
E001	Abnormally high temperature rise of fixing unit (circuit trouble)
E002	Insufficient temperature rise of fixing unit
E003	Fixing unit low temperature trouble
E004	Fixing unit protection circuit trouble
E007	Fixing belt or pressure belt deviation trouble
E008	Fixing unit end-of-life detection error
E009	Pressure belt pressure release error
E012	Drum ITB motor trouble
E014	Fixing motor error
E020	Drum/developer-related trouble
E032	NE controller counter operation failure
E110	Laser scanner motor running trouble
E193	Gate array error
E202	1st mirror stand HP detection trouble
E225	Exposure lamp lighting trouble
E227	Reader unit power supply error
E240	Error in communication between main controller and DC controller
E248	Defective EEPROM on reader controller PCB
E315	Image data trouble
E351	Main controller PCB error
E400	Feeder communication error
E402	Transport motor error
E413	Pressure motor trouble
E490	Wrong model error
E500	Finisher communication error
E503	Saddle communication error
E505	Finisher backup memory error
E514	Bundling (forward rotation direction) error
E520	Offset error
E530	Alignment error

Code	Designation / general description of error
E531	Stapler error
E532	Stapler movement error
E535	Oscillation error
E537	Front alignment error
E540	Tray up/down error
E542	Tray shift error
E575	Binding motor error
E584	Tray unit trouble
E590	Punch motor error
E591	Waste full detection sensor error
E592	Sheet trailing edge, side registration sensor error
E593	Side registration initializing error
E5F0	Saddle sheet positioning error
E5F1	Saddle sheet creasing error
E5F2	Saddle guide error
E5F3	Saddle alignment error
E5F4	Saddle rear stapler error
E5F5	Saddle front stapler error
E5F6	Saddle sheet push plate stapler error
E5F9	Saddle switch error
E602	Hard disk trouble
E604	Defective or insufficient image memory (SDRAM)
E609	Hard disk trouble
E610	Hard disk encryption key failure
E611	Rebooting repeat error due to SRAM failure, etc.
E674	FAX board communication trouble
E677	External controller trouble
E710	IPC initializing error
E711	IPC communication error
E712	ADF/reader communication error
E713	Finisher/printer communication error
E716	Cassette pedestal/printer communication error
E717	Error in communication with NE controller
E719	Error in communication with coin vendor/card reader
E730	PDL error
E731	UFR PCB error
E732	Reader communication error
E733	Printer communication error
E740	Ethernet board trouble
E743	DDI communication error
E744	Language file/BootROM error

Code	Designation / general description of error
E747	Main controller PCB error (ASIC for image processing or ASIC for memory control/communication control)
E748	Main controller PCB error
E749	Instruction to restart accompanying change in product configuration
E751	Drum unit/toner cartridge connection trouble
E804	Controller fan error
E805	Fan error

18.2 Error Code Details

18.2.1 Table of error code details

T-18-2

Displayed code	Detection timing	Remedial action
E000	Insufficient temperature rise of fixing unit when power is turned ON	
0001	When the temperature of the fixing belt main thermistor failed to reach 50 deg C within 120 sec. after the fixing belt temperature regulation has started	Check for broken or disconnected heater wires. Checking Disconnection of the Connector in the Thermistor Wiring. Replace the fixing belt unit. Replace the fixer. Replace the IH power supply PCB and AC driver PCB. Replace the DC controller PCB 2 (MAISY). In the service mode, clear the error by selecting COPIER > FUNCTION > CLEAR > ERR.
0101	When the temperature of the pressure belt main thermistor failed to reach 50 deg C within 120 sec. after the pressure belt temperature regulation has started	Check for broken or disconnected heater wires. Replace the fixing belt unit. Checking Disconnection of the Connector in the Thermistor Wiring. Replace the fixer and AC driver PCB. Replace the DC controller PCB 2 (MAISY). In the service mode, clear the error by selecting COPIER > FUNCTION > CLEAR > ERR.
E001	Abnormally high temperature rise of fixing unit (circuit trouble)	
0001	When the fixing belt main thermistor has detected a high temperature (ASIC detection)	Check the connection of the connector in the thermistor wiring (wire-pinching, disconnection). Replace the fixing unit. Replace the IH unit, halogen heater, fixer and AC driver PCB. Replace the DC controller PCB 2 (MAISY). In the service mode, clear the error by selecting COPIER > FUNCTION > CLEAR > ERR.
0002	When fixing sub-thermistor 1 has detected a high temperature (ASIC detection)	
0003	When fixing sub-thermistor 2 has detected a high temperature (ASIC detection)	
0101	When pressure main thermistor has detected a high temperature (ASIC detection)	
0102	When pressure sub-thermistor 1 has detected a high temperature (ASIC detection)	
0103	When pressure sub-thermistor 2 has detected a high temperature (ASIC detection)	
E002	Insufficient temperature rise of fixing unit	

Displayed code	Detection timing	Remedial action
0002	When the fixing main thermistor fails to reach 80 deg C within the prescribed period of time after reaching 50 deg C during warm-up	Replace the fixing belt unit. Replace the fixer and AC driver PCB. Replace the DC controller PCB 2 (MAISY). In the service mode, clear the error by selecting COPIER > FUNCTION > CLEAR > ERR.
0003	When the fixing main thermistor fails to reach 110 deg C within the prescribed period of time after reaching 80 deg C during warm-up	
0004	When the fixing main thermistor fails to reach 130 deg C within the prescribed period of time after reaching 110 deg C during warm-up	
0005	When the fixing main thermistor fails to reach 150 deg C within the prescribed period of time after reaching 130 deg C during warm-up	
0006	When the fixing main thermistor fails to reach 170 deg C within the prescribed period of time after reaching 150 deg C during warm-up	
0101	When the pressure main thermistor fails to reach 80 deg C within the prescribed period of time after reaching 50 deg C during warm-up	
0102	When the pressure main thermistor fails to reach 100 deg C within the prescribed period of time after reaching 80 deg C during warm-up	
E003	Fixing unit low temperature trouble	
0001	When the fixing main thermistor has detected a temperature below 130 deg C for the prescribed period of time after standby	Checking Disconnection of the Connector in the Thermistor Wiring. Replace the fixing belt unit. Replace the fixer and AC driver PCB. Replace the DC controller PCB 2 (MAISY). In the service mode, clear the error by selecting COPIER > FUNCTION > CLEAR > ERR.
0002	When the pressure main thermistor has detected a temperature below 50 deg C for the prescribed period of time after standby	
E004	Fixing unit protection circuit trouble	
0101	When there is a short-circuit detection error in the halogen heater (ASIC detection)	Check the connection of the J114 jack of the AC driver PCB, and replace the AC driver PCB (triac short). Replace the Pressure heater. Replace the Fixing unit. Replace the DC controller PCB 2 (MAISY).

Displayed code	Detection timing	Remedial action
0201	When the difference in temperature between the front and back of the fixing belt is higher than the rating	Replace the fixing belt unit. Replace the DC controller PCB 2 (MAISY).
0202	When the difference in temperature between the center and front of the fixing belt is higher than the rating	
0203	When the difference in temperature between the center and back of the fixing belt is higher than the rating	
0204	When the difference in temperature between the front and back of the pressure belt is higher than the rating	
0205	Thermistor temperature difference error (combination unknown)	
0301	When an overcurrent has been detected in the IH power supply PCB	Replace the IH power supply PCB. Replace the fixing belt unit.
0401	13 V trouble error	Check the connection of the connectors of the relay PCB, the IH power supply, the fixing thermoswitch, and replace the fixing unit (fixing thermoswitch OFF), the relay PCB, and the IH power PCB (blowout of the FU261). In the service mode, clear the error by selecting COPIER > FUNCTION > CLEAR > ERR.
0501	Fixing main thermistor or fixing sub-thermistor 1 or 2 connection error	Check the connections of the fixing belt unit connectors. Replace the fixing belt unit.
0502	Pressure main thermistor or pressure sub-thermistor 1 or 2 connection error	Check the connections of the pressure belt unit connectors. Replace the pressure belt unit.
0601	IH power supply ID error	Check the connection of the connectors of the IH power supply PCB J1009, the DC controller PCB 2 (MAISY) J109, and the relay PCB connector. In the case of not being locked after turning ON the motor
0701	Relay OFF status error	Replace the relay PCB.
E007	Fixing belt or pressure belt deviation trouble	
0001	Fixing belt deviation trouble (trouble in top belt displacement or in belt deviation sensor)	Replace the fixing unit.
0002	Pressure belt deviation trouble (trouble in bottom belt push-off or in belt deviation sensor)	Replace the fixing unit.
0101	Fixing belt home position detection error	Replace the fixing belt HP sensor. Replace the fixing deviation control motor, DC controller PCB 2 (MAISY) and fixing unit.
0102	Pressure belt home position detection error	Replace the pressure belt HP sensor. Replace the pressure deviation control motor, DC controller PCB 2 (MAISY) and fixing unit.
0201	Belt push-off temporary escape mode error	Occurs when the belt deviation is not eliminated within 1 minute in the belt push-off temporary escape mode.
9991	Top belt deviation control timeout error	Occurs when operation was not performed normally when COPIER > FUNCTION > FIXING > FX-UHP-S was executed.
9992	Bottom belt deviation control timeout error	Occurs when operation was not performed normally when COPIER > FUNCTION > FIXING > FX-LHP-S was executed.
E008	Fixing unit end-of-life detection error	

Displayed code	Detection timing	Remedial action
0001	Fixing unit end-of-life detection error	Occurs when the fixing unit end-of-life is detected or when the belt push-off temporary escape mode was executed but normal operation was not restored.
E009	Pressure belt pressure release error	
0500	Pressure belt unit pressure release HP search error	Replace the fixing pressure release HP sensor. Replace the fixing pressure motor. Replace the DC controller PCB 2 (MAISY).
0501	Pressure belt unit pressure release timeout error	Replace the fixing pressure release HP sensor. Replace the fixing pressure motor. Replace the DC controller PCB 2 (MAISY).
0502	Pressure belt unit pressure timeout error	Replace the fixing pressure release HP sensor. Replace the fixing pressure motor. Replace the DC controller PCB 2 (MAISY).
E012	Drum ITB motor trouble	
0001	Drum ITB motor fails to run.	Replace the drumITB moter. Replace the DC controller PCB 2 (MAISY). Replace the DCDC converterÅi38VÅj.
0002	Drum ITB motor runs but then stops running.	
0003	When the drum ITB motor fails to stop	
E014	Fixing motor error	
0001	Drum Unit / Faulty Connection of the Toner Receptacle	Replace the drumITB moter. Replace the fixing moter. Replace the DCDC converterÅi38VÅj. Replace the fixing belt unit.
0002	When the lock was disengaged after the motor was locked	
E020	Drum/developer-related trouble	
	Concerning the first two digits of the details code in xx12 to xxD0 Å@xx=01: Y Å@xx=02: M Å@xx=03: C Å@xx=04: Bk	
xx20	ATR sensor trouble or a broken/disconnected wire. The drum unit is not installed properly or there is trouble in the unit.	Replace the drum unit (check its connections).
xx24	SALT sensor trouble or a broken/disconnected wire. There is trouble in the drum unit.	Replace the SALT sensor (clean it). Check the drum unit connections. Replace the drum unit.
xx25	SALT sensor trouble or a broken/disconnected wire. There is trouble in the drum unit. Deterioration in ITB.	Replace the SALT sensor (clean the sensor window). Replace the drum unit (check its connections). Replace the ITB (clean it).
xx30	ATR sensor trouble or a broken/disconnected wire. Incorrect setting of ATR sensor operation values. The drum unit is not installed properly or there is trouble in the unit.	Replace the drum unit (check its connections).
xx34	Sample images drawn by ATR control are not created. SALT sensor trouble or a broken/disconnected wire. There is trouble in the drum unit. Deterioration in ITB.	Replace the SALT sensor (clean the sensor window). Replace the drum unit (check its connections). Replace the ITB (clean it).
xx35	SALT sensor trouble or a broken/disconnected wire	Replace the SALT sensor (clean it).

Displayed code	Detection timing	Remedial action
xx40	Incorrect setting of ATR sensor operation values. ATR sensor trouble or a broken/disconnected wire. The drum unit is not installed properly (the copier cannot detect the drum unit) or there is trouble in the unit.	Replace the SALT sensor (clean it). Replace the drum unit (check its connections).
xx50	Incorrect developer density operation value which was set when the new drum unit was installed	Replace the drum unit (check its connections).
xx60	Incorrect developer density target value which was set when the new drum unit was installed (value is extremely low)	Replace the drum unit (check its connections).
xx70	Incorrect developer density target value which was set when the new drum unit was installed (value is extremely low)	Replace the drum unit (check its connections).
xx80	Density value is extremely high for the ITB surface reflectivity when the new drum unit was installed. SALT sensor trouble.	Replace the SALT sensor (clean the sensor window). Replace the drum unit (check its connections). Replace the ITB (clean it).
xx81	Density value is extremely low for the ITB surface reflectivity when the new drum unit was installed. SALT sensor trouble. Dirty ITB.	Replace the SALT sensor (clean the sensor window). Replace the drum unit (check its connections). Replace the ITB (clean it).
xx83	Trouble in detected ITB surface reflectivity rate (value is extremely high)	Replace the ITB (clean it).
xxA0	Measured value of the detected developer density is extremely low. Trouble in the ATR sensor. Trouble in the drum unit.	Replace the drum unit (check its connections).
xxB0	T/D ratio has dropped due to the drum unit end-of-life. Broken or disconnected wire in the ATR sensor.	Replace the drum unit (check its connections).
xxB2	T/D ratio is extremely high compared with when the new drum unit was installed.	Replace the drum unit (check its connections).
xxC0	Trouble in the supply of the toner from the toner cartridge to the developer. Too much toner is supplied to the developer. Broken or disconnected wire in the ATR sensor.	Replace the drum unit (check its connections).
xxD0	No toner is supplied from the toner cartridge to the developer. TCRG motor fails to run. An empty cartridge is being used. The toner supply port of the drum unit is damaged. Broken or disconnected wire in the ATR sensor.	Replace the toner cartridge motor. Replace the drum unit (check its connections).
E032	NE controller counter operation failure	
0001	When the counter function of the NE controller does not work	Check the cable connections.

Displayed code	Detection timing	Remedial action
E110	Laser scanner motor running trouble	
0110	Trouble in the running of the laser scanner motor for Y	Replace the laser scanner (Y) and the DC controller PCB 1 (IMG).
0210	Trouble in the running of the laser scanner motor for M	Replace the laser scanner (M) and the DC controller PCB 1 (IMG).
0310	Trouble in the running of the laser scanner motor for C	Replace the laser scanner (C) and the DC controller PCB 1 (IMG).
0410	Trouble in the running of the laser scanner motor for Bk	Replace the laser scanner (Bk) and the DC controller PCB 1 (IMG).
E193		
0001	Initializing error of the image ASIC on the DC controller PCB 2 (IMG)	Replace the DC controller PCB 2 (IMG).
E202	1st mirror stand HP detection trouble	
0001	The 1st mirror stand fails to move tTransparency even when it retracts.	Replace the optical system HP sensor, optical system motor and reader controller PCB.
0002	The 1st mirror stand fails to move from HP even when it advances.	Replace the optical system HP sensor, optical system motor and reader controller PCB.
E225	Exposure lamp lighting trouble	
0001	Light quantity of the exposure lamp has dropped.	Clean the white plate. Replace the exposure lamp.
E227	Reader unit power supply error	
0001	When the 24 V port is OFF when the power is turned ON.	Disconnect and re-connect the power connector. Replace the power supply.
0002	When the 24 V port is OFF when a job is started.	
0003	When the 24 V port is OFF when a job is finished.	
0004	When the 24 V port is OFF during load drive.	
E240	Error in communication between main controller and DC controller	
0000	Serial communication error	Check the connector connections. Check the DC controller PCB (MAISY). Replace the No.1 main controller circuit.
0002	When the response from the DC controller does not arrive within the prescribed period of time during printing	
E248	Defective EEPROM on reader controller PCB	
0001	Error when the power of the reader controller EEPROM is turned ON	Replace the reader controller PCB.
0002	Error when data is written into the reader controller EEPROM	
0003	Reader controller EEPROM check error or error when data is read after it was written	
E315	Image data trouble	
000e	Damaged data (trouble in memory or HDD) Software decoding error	Replace the image memory (SDRAM) or HDD.
E351	Main controller PCB error	

Displayed code	Detection timing	Remedial action
0000	When a communication error has occurred in the main controller PCB at startup	Check the connections between the main controller PCB and main controller PCB (sub). Replace the main controller PCB. Replace the main controller PCB (sub).
E400	Feeder communication error	
0001	Checksum error	Check the connections between the ADF controller PCB and main controller PCB (sub). Replace the ADF controller PCB. Replace the main controller PCB (sub).
0002	Reception status error	
0003	Reception interrupt error	
E402	Transport motor error	
	The transport motor (M2) fails to run.	When the transport motor encoder pulse is not detected even when 0.3 sec. has elapsed after the signal to drive the DF transport motor was set to ON
	Defective transport motor clock sensor (SR1)	
E413	Pressure motor trouble	
0001	Pressure HP sensor OPEN	Replace the pressure motor.
0002	Pressure HP sensor CLOSE	
E490	Wrong model error	
0001	When the feeder of another model has been detected	Connect the feeder for this unit.
E500	Finisher communication error	
0001	When trouble in the prescribed number of times or in the prescribed period of time has been detected during communication between the copier itself and finisher	Check the connections between the DC controller PCB and finisher controller PCB. Replace the finisher controller PCB. Replace the DC controller PCB.
E503	Saddle communication error	
0002	When communication with the saddle stitcher is interrupted	- Check the connections between the saddle stitcher controller PCB and finisher controller PCB. - Replace the saddle stitcher controller PCB and finisher controller PCB.
E505	Finisher backup memory error	
0001	When the checksum value calculated by the CPU differs from the checksum values of the data held inside the RAM	Replace the finisher controller PCB.
0002	When the verify processing is not completed even after 2000 ms have elapsed during data writing	
E514	Bundling (forward rotation direction) error	
8001	When the trailing edge fails to leave the trailing edge assist home position even when the trailing edge assist motor has been driven for 3 sec.	Replace the trailing edge assist motor (M109) and trailing edge assist home position sensor (PI109).
8002	When the trailing edge fails to return to the trailing edge assist home position even when the trailing edge assist motor has been driven for 3 sec.	
E520	Offset error	

Displayed code	Detection timing	Remedial action
0001	When the offset HP sensor fails to turn ON even though the offset motor was driven for 1000 ms toward the HP sensor approach side while the motor was running	- Check the offset HP sensor connectors. - Check the offset motor connectors. - Replace the offset HP sensor. - Replace the offset motor. - Replace the finisher controller PCB.
0002	When the offset HP sensor fails to turn OFF even though the offset motor was driven for 1000 ms toward the HP sensor escape side while the motor was running	
E530	Alignment error	
8001	When the alignment plate fails to leave the alignment plate front home position sensor position even when the alignment plate front motor was driven for 4 sec.	Replace the alignment plate front motor (M103) and alignment plate front home position sensor (PI106).
8002	When the alignment plate fails to return to the alignment plate front home position sensor position even when the alignment plate front motor was driven for 4 sec.	
E531	Stapler error	
0001	When the stapler unit failed to leave the stapler home position even though 400 ms elapsed since the stapler operation started	- Check the stapler unit connectors. - Replace the stapler unit. - Replace the finisher controller PCB.
0002	When the stapler unit left the stapler home position but then failed to reach the stapler home position even though 400 ms elapsed since the stapler operation started. When the unit failed to reach the stapler home position within 400 ms even after operation in the reverse direction.	
8001	When the stapler fails to leave the stapler home position even though the stapler motor was driven for 0.5 sec.	Replace the stapler motor (M111) and stapler home position detection sensor (PI50).
8002	When the stapler fails to return to the stapler home position even though the stapler motor was driven for 0.5 sec.	
E532	Stapler movement error	
8001	When the stapler fails to leave the stapler movement home position even though the stapler movement motor was driven for 5 sec.	Replace the stapler movement motor (M105) and stapler movement home position sensor (PI110).
8002	- When the stapler fails to return to the stapler movement home position even though the stapler movement motor was driven for 20 sec. - When the stapler was not at the home position and the stapler alignment interference sensor was actuated	

Displayed code	Detection timing	Remedial action
E535	Oscillation error	
8001	When the stapler fails to leave the oscillation home position even though the oscillator motor was driven for 3 sec.	Replace the oscillator motor (M106) and oscillation home position sensor (PI105).
8002	Occurs when the oscillation guide close switch fails to be set to ON even when the oscillator motor is run in the reverse direction for 1 sec.	
E537	Front alignment error	
8001	When the alignment plate fails to leave the alignment plate back home position sensor position even though the alignment plate back motor was driven for 4 sec.	Replace the alignment plate back motor (M104) and alignment plate back home position sensor (PI107).
8002	When the alignment plate fails to return to the alignment plate back home position sensor position even though the alignment plate back motor was driven for 4 sec.	
E540	Tray up/down error	
0001	When the sheet level could not be detected even though the standard tray was operated	- Check the standard tray HP sensor connectors. - Check the standard tray clock sensor connectors. - Check the standard tray shift motor connectors. - Replace the standard tray HP sensor. - Replace the standard tray clock sensor. - Replace the standard tray shift motor. - Replace the finisher controller PCB.
0003	When the sensor is not reached even after 3000 ms when the standard tray was operated	- Check the standard tray HP sensor connectors. - Check the standard tray clock sensor connectors. - Check the standard tray shift motor connectors. - Replace the standard tray HP sensor. - Replace the standard tray clock sensor. - Replace the standard tray shift motor. - Replace the finisher controller PCB.
0005	When the encoder clock signal of the standard tray is not detected for 2 or more times even after 300 ms when the standard tray was operated	

Displayed code	Detection timing	Remedial action
8001	- When the tray fails to return to the home position even when the 1st tray shift motor has been driven for 20 sec. - When the tray fails to move to another area even when the 1st tray shift motor has been driven for 4 sec.	- Check the 1st tray shift area sensor connectors. - Replace the 1st tray shift area sensor. - Replace the 1st tray shift motor (M107).
8002	When a danger area is reached before the sheet level is detected by the 1st tray sheet level detection sensor during the sheet level detection operation - When a discontinuous area was detected during the tray operation	
8003	When the input of the clock signal could not be detected within 0.2 sec. during the operation of the 1st tray shift motor	
8004	When the input of the clock signal could not be detected within 0.2 sec. during the operation of the 1st tray shift motor	
8005	When the lock detection signal was set to OFF 150 ms after the lock detection signal was set to ON	
8006	When the lock detection signal could not be set to ON within 1 sec. after the start of the 1st tray shift motor drive	
8007	When the lock detection signal fails to go OFF when the 1st tray shift motor is stopped	
E542	Tray shift error	

Displayed code	Detection timing	Remedial action
8001	- When the tray fails to return to the home position even when the 2nd tray shift motor has been driven for 20 sec. - When the tray fails to move to another area even when the 2nd tray shift motor has been driven for 4 sec.	- Check the 2nd tray shift area sensor board connectors. - Replace the 2nd tray shift area sensor board. - Replace the 2nd tray shift motor (M108).
8002	- When the upper limit area is reached before the sheet level is detected by the 2nd tray sheet level detection sensor 1 during a sheet level detection operation - When a discontinuous area was detected during the tray operation - When the fact that the area ahead of the 2nd tray sheet level detection sensor 2 has been reached is detected before the sheet level is detected by the 2nd tray sheet level detection sensor 2 during an escape operation	
8004	When the input of the clock signal could not be detected within 0.2 sec. while the 2nd tray shift motor was running	
8005	When the lock detection signal was set to OFF 150 ms after the lock detection signal was set to ON	
8006	When the lock detection signal could not be set to ON within 1 sec. after the 2nd tray shift motor started driving	
8007	When the lock detection signal fails to go OFF when the 2nd tray shift motor is stopped	
E575		
0001	When the binding motor was driven for 2000 ms in the binding direction (HP sensor approach direction) during a binding motor operation but the binding HP sensor failed to turn ON	- Check the binding HP sensor connectors. - Check the binding motor connectors. - Check the binding HP sensor connectors. - Replace the binding motor. - Replace the finisher controller PCB.
0002	When the binding motor was driven for 2000 ms in the HP sensor escape direction during a binding motor operation but the binding HP sensor failed to turn OFF	
E584	Tray unit trouble	
0001	- When the tray safety switch is actuated during a tray operation (up or down) - When the tray was operated with the finger pinching prevention switch actuated	- Check the tray shift motor connectors. - Check the tray safety switch connectors. - Replace the tray shift motor. - Replace the finisher controller PCB.

Displayed code	Detection timing	Remedial action
0002	When the shutter fails to return to the shutter home position even when the binding motor has been driven for 3 sec.	- Check the shutter home position sensor connectors. - Replace the shutter home position sensor. - Replace the shutter open/close clutch (CL101). - Replace the binding bottom roller clutch (CL102). - Replace the binding motor (M102).
8001	When the shutter fails to leave the shutter home position even when the binding motor has been driven for 3 sec.	
E590		
8001	When the puncher cannot detect the punch home position sensor even when the punch motor is driven for 200 ms	- Check the punch home position sensor (P163) and punch motor clock sensor (P162) connectors. - Replace the punch home position sensor (P163) and punch motor clock sensor (P162). - Replace the punch motor (M61).
8002	When the puncher cannot detect the punch home position sensor after motor drive has stopped during the initial operation of the punch motor	
E591		
8001	When the light sensing voltage is less than 3.0 V even though the light-emitting duty ratio of the waste full detection sensor has been set to more than 66%	- Check the waste full detection sensor (LED6, PTR6) connectors. - Replace the waste full detection sensors (LED6, PTR6).
8002	When the light sensing voltage is more than 2.0 V even though the light-emitting duty ratio of the waste full detection sensor has been set to 0%	
E592	Sheet trailing edge, side registration sensor error	

Displayed code	Detection timing	Remedial action
8001	When the light sensing voltage is less than 2.5 V even though the light-emitting duty ratio of the sheet trailing edge sensor has been set to more than 66%	- Check the sheet trailing edge sensor (LED5, PTR5) and side registration sensor (LED1-4, PTR1-4) connectors. - Replace the sheet trailing edge sensor (LED5, PTR5) and side registration sensors (LED1-4, PTR1-4).
8002	When the light sensing voltage is more than 2.0 V even though the light-emitting duty ratio of the sheet trailing edge sensor has been set to 0%	
8003	When the light sensing voltage is less than 2.5 V even though the light-emitting duty ratio of side registration sensor 1 (LED1, PTR1) has been set to more than 66%	
8004	When the light sensing voltage is more than 2.0 V even though the light-emitting duty ratio of side registration sensor 1 (LED1, PTR1) has been set to 0%	
8005	When the light sensing voltage is less than 2.5 V even though the light-emitting duty ratio of side registration sensor 2 (LED2, PTR2) has been set to more than 66%	
8006	When the light sensing voltage is more than 2.0 V even though the light-emitting duty ratio of side registration sensor 2 (LED2, PTR2) has been set to 0%	
8007	When the light sensing voltage is less than 2.5 V even though the light-emitting duty ratio of side registration sensor 3 (LED3, PTR3) has been set to more than 66%	
8008	When the light sensing voltage is more than 2.0 V even though the light-emitting duty ratio of side registration sensor 3 (LED3, PTR3) has been set to 0%	
8009	When the light sensing voltage is less than 2.5 V even though the light-emitting duty ratio of side registration sensor 4 (LED4, PTR4) has been set to more than 66%	
800A	When the light sensing voltage is more than 2.0 V even though the light-emitting duty ratio of side registration sensor 4 (LED4, PTR4) has been set to 0%	
E593	Side registration initializing error	

Displayed code	Detection timing	Remedial action
8001	When the side registration fails to leave the side registration home position sensor position even when the punch slide unit is moved 9 mm during the initial operation of the side registration motor	- Check the side registration home position sensor (P161) connectors. - Replace the side registration home position sensor (P161). - Replace the side registration motor (M62).
8002	When the side registration fails to return to the side registration home position sensor position even when the punch slide unit is moved 37 mm during the initial operation of the side registration motor	
E5F0	Saddle sheet positioning error	
8001	When the sheet positioning plate home position sensor fails to turn ON even when the sheet positioning plate motor is driven by 1500 pulses	- Check the sheet positioning plate home position sensor (P17) connectors. - Replace the sheet positioning plate home position sensor (P17). - Replace the sheet positioning plate motor (M4).
8002	When the sheet positioning plate home position sensor fails to turn OFF even when the sheet positioning plate motor is driven by 300 pulses	
E5F1	Saddle sheet creasing error	
8001	When the number of detection pulses of the sheet creasing motor clock sensor has dropped below the prescribed number	- Check the sheet creasing motor clock sensor (P14) and sheet creasing home position sensor (P121) connectors. - Replace the sheet creasing motor clock sensor (P14) and sheet creasing home position sensor (P121). - Replace the sheet creasing motor (M2).
8002	When the sheet creasing home position sensor status fails to change even when the sheet creasing motor is driven for 3 sec.	When the sheet creasing home position sensor status fails to change even when the sheet creasing motor is driven for 3 sec.
E5F2	Saddle guide error	
8001	When the guide home position sensor fails to turn ON even when the guide motor is driven by 700 pulses	- Check the guide home position sensor (P113) connectors. - Replace the guide home position sensor (P113). - Replace the guide motor (M3).
8002	When the guide home position sensor fails to turn OFF even when the guide motor is driven by 1 sec.	
E5F3	Saddle alignment error	
8001	When the alignment plate home position sensor fails to turn ON even when the alignment motor is driven for 0.5 sec. (or driven for 1.67 sec. during the initial operation)	- Check the alignment plate home position sensor (P15S) connectors. - Replace the alignment plate home position sensor (P15S). - Replace the alignment motor (M5S).
8002	When the alignment plate home position sensor fails to turn OFF even when the alignment motor is driven for 1 sec.	
E5F4	Saddle rear stapler error	

Displayed code	Detection timing	Remedial action
8001	When the stitch operation home position sensor fails to turn OFF even when the stitch motor (rear) has been run in the forward direction for at least 0.5 sec.	- Check the stitch operation home position sensor (rear, MS5S) connectors. - Replace the stitch operation home position sensor (rear, MS5S). - Replace the stitch motor (rear, M6S).
8002	When the stitch operation home position sensor fails to turn ON even when the stitch motor (rear) has been run in the reverse direction for at least 0.5 sec.	
E5F5	Saddle front stapler error	
8001	When the stitch operation home position sensor fails to turn OFF even when the stitch motor (front) has been run in the forward direction for at least 0.5 sec.	- Check the stitch operation home position sensor (front, MS7S) connectors. - Replace the stitch operation home position sensor (front, MS7S). - Replace the stitch motor (front, M7S).
8002	When the stitch operation home position sensor fails to turn ON even when the stitch motor (front) has been run in the reverse direction for at least 0.5 sec.	
E5F6	Saddle sheet push plate stapler error	
8001	When the sheet push plate home position sensor fails to turn ON even when the sheet push plate motor has been run for at least 0.3 sec.	- Check the sheet push plate home position sensor (P114S) connectors. - Replace the sheet push plate home position sensor (P114S). - Replace the sheet push plate motor (M8S).
8002	When the sheet push plate home position sensor fails to turn OFF even when the sheet push plate motor has been run for at least 80 ms	
8003	When the sheet push plate edge position sensor fails to turn OFF even when the sheet push plate motor has been run for at least 80 ms	
8004	When the number of pulses detected by the sheet push plate motor clock sensor has dropped below the prescribed number	
8005	When the sheet push plate edge position sensor fails to turn ON even when the sheet push plate motor has been run for at least 0.3 sec.	
E5F9	Saddle switch error	

Displayed code	Detection timing	Remedial action
8001	When the entrance door switch is in the open status even when all the covers are closed	- Check the entrance door switch (MSW1), delivery door switch (MSW3) and front cover close detection switch (MSW101). - Replace the entrance door switch (MSW1), delivery door switch (MSW3) and front cover close detection switch (MSW101).
8002	When the delivery door switch is in the open status even when all the covers are closed	
8003	When the front cover close detection door switch is in the open status even when all the covers are closed	
E602	Hard disk trouble	Refer to "E602 details."
E604	Defective or insufficient image memory (SDRAM)	
0000	When the amount of memory required for the model has not been recognized	Increase the amount of the SDRAM memory.
0001	When the memory for the MEAP applications is insufficient	
0512	When the memory is defective or insufficient (512 MB required)	
0758	When the memory is defective or insufficient (768 MB required)	
1024	When the memory is defective or insufficient (1024 MB required)	
E609	Hard disk trouble	
0008	When the HDD fails to reach the prescribed temperature within the prescribed period of time when it is started up	Replace with an HDD which is guaranteed to operate at low temperatures.
0009	When the HDD fails to reach the prescribed temperature when its operation is restored from the sleep mode	Replace with an HDD which is guaranteed to operate at low temperatures.
E610	Hard disk encryption key failure	
0001	When there is no encryption board	Install the encryption board.
0002	Defective or insufficient memory	Increase the amount of memory.
0101	When the initialization of the area of the memory where the key is stored has failed	Turn the main power supply OFF and back ON. Replace the main controller PCB.
0102	When initialization of the encoding area has failed	Turn the main power supply OFF and back ON. Replace the encryption board.
0201	Error in encoding area	
0202	Error in encoding area	
0301	When the preparation of the encryption key has failed	
0302	When an encryption key failure has been detected	Turn the main power supply OFF and back ON. Replace the main controller PCB.
0303	When an encryption key failure has been detected	The HDD is initialized by this error.
0401	When an error has been detected in the coding	Turn the main power supply OFF and back ON. Replace the encryption board.
0402	When an error has been detected in the decoding	

Displayed code	Detection timing	Remedial action
E611	Rebooting repeat error due to SRAM failure, etc.	
0000	Rebooting error when the SRAM data has been destroyed, the job information saved in the SRAM can no longer be read or when rebooting is otherwise repeated when the power is shut off and restored	- Clear the SRAM. - Clear the power shutdown guaranteed jobs.
E674	FAX board communication trouble	
0001	When an error in communication between the FAX board and main controller PCB has been detected for the prescribed number of times	Check the FAX board and main controller PCB connections. Replace the FAX board. Replace the main controller PCB.
0002	When an error in communication between the FAX board and main controller PCB has been detected for the prescribed number of times	
0004	When trouble was detected while the modem IC was being accessed	
0008	When trouble was detected while the port IC was being accessed	
000C	When trouble was detected while the modem IC and port IC were being accessed	
0010	When trouble has been detected when the timer device was opened	Replace the main controller PCB.
0011	When trouble has been detected when the timer device was started up	
E677	External controller trouble	
0003	External controller trouble	Check the cable connections. Re-install the external controller system.
	When trouble was detected during the configuration check conducted when the external controller was started up	
0010	When the controller of another model has been connected	Connect to the controller which supports this unit. Re-install the external controller system.
0080	When trouble has occurred in communication with the printer after the external controller started up normally	Check the cable connections. Re-install the external controller system.
E710	IPC initializing error	
0001	When the ready status fails to be established within 3 sec. after the IPC chip started up	Check the cable connections.
E711	IPC communication error	
0001	When error occurrence was set 4 or more times in the error register of the IPC chip within 1.5 sec.	Check the cable connections. Replace the ADF controller PCB. Replace the reader controller PCB.
E712	ADF/reader communication error	

Displayed code	Detection timing	Remedial action
0000	When communication between the reader and ADF was interrupted and 5 or more sec. have elapsed without communication having been restored	Check the connector connections between the reader and ADF.
E713	Finisher/printer communication error	
0004	When communication between the finisher and copier was interrupted	Check the cable connections. Replace the finisher controller PCB. Replace the DC controller PCB.
E716	Cassette pedestal/printer communication error	
0000	When trouble occurs in the data communication. When the DC controller or cassette pedestal controller PCB is defective	Check the cable connections. Replace the pedestal PCB. Replace the DC controller PCB.
E717	Error in communication with NE controller	
0001	When the NE controller which was connected before the power was turned OFF could not be recognized when the power was turned back ON	Check the cable connections.
0002	When the IPC has a broken or disconnected wire or when an error has occurred where IPC communication cannot be recovered	In the service mode, clear the error by selecting COPIER > FUNCTION > CLEAR > ERR.
E719	Error in communication with coin vendor/card reader	
0001	When the coin vendor which was connected before the power was turned OFF could not be recognized when the power was turned back ON	Check the cable connections.
0002	- When a wire in the IPC cable connected with the coin vendor is broken or disconnected or when an error has occurred where IPC communication cannot be recovered - When a broken or disconnected wire in the sheet feed/delivery signal line was detected - When an illegal connection has been detected (when Tx and Rx of IPC have been short-circuited)	In the service mode, clear the error by selecting COPIER > FUNCTION > CLEAR > ERR.
0011	When the card reader which was connected before the power was turned OFF could not be recognized when the power was turned back ON	
0012	When a wire in the IPC cable connected with the card reader is broken or disconnected or when an error has occurred where IPC communication cannot be recovered	
E730	PDL error	

Displayed code	Detection timing	Remedial action
1001	PDL software trouble	Reset the PDL. Turn the main power OFF and back ON.
	Initializing error at job startup	
100A	PDL software trouble	
	When an initializing failure or other system error has occurred while a job was being processed	
9004	OPEN interface communication error	Turn the main power OFF and back ON. Check the OPEN interface board and cable connections. Replace the external controller. Replace the OPEN interface board. Replace the main controller PCB.
	Trouble in PAI communication with external controller	
9005	When trouble in the connection of the video cable with the external controller has been detected	
A006	PDL communication error	Reset the PDL. Turn the main power OFF and back ON. Check the UFR board connections. Re-install the system. Replace the main controller PCB. Format the whole system, and re-install.
	When the PDL does not respond	
A007	Mismatch of PDL version	Reset the PDL. Turn the main power OFF and back ON. Format the whole system, and re-install.
	When the version of the main unit's control software unit and version of the PDL control software unit do not match during startup	
B013	Trouble in PDL built-in font	Turn the main power OFF and back ON. Re-install the system. Format the whole system, and re-install.
	When the font data is damaged at startup	
C000	Initializing error	Format the whole system, and re-install. Replace the main controller PCB.
C001	HDD access error	Format the whole system, and re-install. Replace the HDD. Replace the main controller PCB.
E731	UFR PCB error	
3000	When the UFR PCB cannot be recognized at startup	Check the UFR PCB connections*. Replace the UFR PCB*. Replace the main controller PCB.
3001	When the UFR PCB cannot be initialized at startup	
3002	When the Rambus cannot be initialized	
3015	When the image data do not reach the chip on the main controller PCB (main)	Turn the main power OFF and back ON. Replace the UFR PCB*. Replace the main controller PCB.
E732	Reader communication error	
0001	DDI-S communication error	Check the connections between the reader controller PCB and main controller PCB. Check the power supply of the reader.
E733	Printer communication error	
0000	When the printer cannot be detected at startup	Check the connections between the DC controller PCB and main controller PCB. Check the power supply of the printer.
0001	DDI-P communication error	
E740	Ethernet board trouble	
0002	When an illegal MAC address was detected at startup	Replace the Ethernet board*. Replace the main controller PCB (sub: LAN-bar)**.
0003	When an illegal network ID was detected at startup	
E743	DDI communication error	

Displayed code	Detection timing	Remedial action
0000	When the reader controller PCB has detected trouble in communication between the main controller PCB and reader controller PCB	Disconnect and re-connect the reader communication cable connector, or replace the reader controller PCB. Replace the main controller PCB.
E744	Language file/BootROM error	
0001	When the language version on the HDD and the bootable version do not match	Upgrade the language file version.
0002	When the size of the language on the HDD is too large	
0003	When the language which is described in Config.txt on the HDD and which is to be selected cannot be found	
	When it is not possible to switch to the language on the HDD	
0004	When it is not possible to switch to the language on the HDD	
1000	When the BootROM of a different model has been connected	Replace the BootROM.
1001	When the system and BootROM versions do not match	Replace the BootROM. Upgrade the system version.
2000	When an illegal engine ID has been detected	Re-install the system.
4000	When an illegal DC controller PCB has been detected	Upgrade the DC controller PCB version.
E747	Main controller PCB error	
0000-1217	Error on the main controller PCB (main)	Turn the main power OFF and back ON. Replace the main controller PCB (main).
2000-3D00	Error in communication with main controller PCB (sub PE)	Disconnect and re-connect the main controller PCB (sub PE) or replace. Replace the main controller PCB (main).
3F00, 3F02	When the non-mounting of the main controller PCB (sub PE) has been detected	Disconnect and re-connect the main controller PCB (sub PE) or replace.
6000-7D00	Error in communication with main controller PCB (sub R)	Disconnect and re-connect the main controller PCB (sub R) or replace. Replace the main controller PCB (main).
7F00	When the non-mounting of the main controller PCB (sub R) has been detected	Disconnect and re-connect the main controller PCB (sub R) or replace.
8000-9C00	Error in communication with the OPEN interface PCB	Disconnect and re-connect the OPEN interface PCB or replace. Replace the main controller PCB (main).
9F00	When the non-mounting of the main controller PCB (sub R) has been detected	Disconnect and re-connect the main controller PCB (sub R) or replace.
C000-DC00	Error in communication with the main controller PCB (sub SJ)	Disconnect and re-connect the main controller PCB (sub SJ) or replace. Replace the main controller PCB (main).
DF00	When the non-mounting of the main controller PCB (sub SJ) has been detected	Disconnect and re-connect the main controller PCB (sub SJ) or replace.
FF00	When an illegal main controller PCB (sub SJ, PE or R) or OPEN interface PCB has been detected	Replace with the main controller PCB (sub SJ, PE or R) or OPEN interface PCB designed for this unit.

Displayed code	Detection timing	Remedial action
EXXX	When there was an interrupt from a virtual ASIC	Turn the main power OFF and back ON. Replace the main controller PCB (main).
E748	Main controller PCB error	
4000	When not even one of the ASICs of the main controller PCBs (sub SJ, PE or R) or of the ASICs of the OPEN interface PCB can be detected	Disconnect and re-connect the main controller PCBs (sub SJ, PE or R) or replace. Disconnect and re-connect the OPEN interface PCB or replace. Replace the main controller PCB (main).
4010	When a defective main controller PCBs (sub SJ, PE or R) or OPEN interface PCB has been detected	Disconnect and re-connect the main controller PCBs (sub SJ, PE or R) or replace. Disconnect and re-connect the OPEN interface PCB or replace. Replace the main controller PCB (main).
4020	When the connection of an illegal board to the PCI expansion slot has been detected	Install the PCI expansion board (encryption board or audio board) designed for this unit.
4021	When the /SERROR signal of the PCI (address parity error, etc.) has been detected	Disconnect and re-connect the PCI expansion board or replace. Replace the main controller PCB (main).
4030	Error in accessing the HDD controller	Replace the main controller PCB (sub LAN-bar). Replace the main controller PCB (main).
4040	Error in accessing the main controller PCBs (sub SJ, PE or R) or OPEN interface PCB	Disconnect and re-connect the main controller PCBs (sub SJ, PE or R) or replace. Disconnect and re-connect the OPEN interface PCB or replace. Replace the main controller PCB (main).
4042	SDRAM size error	Disconnect and re-connect the SDRAM, replace or add. Replace the main controller PCB (main).
4043	MAC address read error	Replace the main controller PCB (sub LAN-bar). Replace the main controller PCB (main).
4045	Error in accessing the RTC	Disconnect and re-connect the SRAM PCB or replace. Replace the main controller PCB (main).
4050	Error in accessing the LAN controller	Replace the main controller PCB (sub LAN-bar). Replace the main controller PCB (main).
4150	When it is detected that the remaining charge of the SRAM/ RTC backup battery has been used up	Turn the main power OFF and back ON. Replace the SRAM PCB.
4160	Error in accessing the FAX interface controller	Replace the main controller PCB (main).
4170	Error in accessing the USB host controller	Replace the main controller PCB (sub LAN-bar). Replace the main controller PCB (main).
4180	Error in accessing the USB device controller	Replace the main controller PCB (sub LAN-bar). Replace the main controller PCB (main).
4190	Error in accessing the IPC communication interface controller (card reader or coin robot)	Replace the main controller PCB (sub LAN-bar). Replace the main controller PCB (main).
4210	Error in accessing the ASIC for I/O, interrupt processing	Replace the main controller PCB (main).
4220	SDRAM (slot position: top) read error	Disconnect and re-connect the SDRAM or replace.
4221	SDRAM (slot position: bottom) read error	Disconnect and re-connect the SDRAM or replace.
4230	Error in accessing the LCD controller	Replace the main controller PCB (main).
4260	Write error when BootROM version was upgraded	Replace the BootROM.

Displayed code	Detection timing	Remedial action
4901	When 3.3 V emergency night-time power OFF was detected during operation	Replace the controller power supply PCB. Replace the main controller PCB (main).
E749	Instruction to restart accompanying change in product configuration	
0001	When the existing BootROM has been replaced with the BootROM of a different kind (when a PDL option was installed, etc.)	Reset by turning the main power OFF and back ON.
1001	Error where SDRAM memory as high as 1 GB remains although the controller board version is an old one	Check the combination of the main controller PCB and SDRAM.
E751	Drum Unit / Faulty Connection of the Toner Receptacle See below X: reading=1, writing=2 x indicates color [Y=1, M=2, C=3, K=4]	
00Xx	Trouble in the drum unit connections (trouble at the printer side)	Check the drum unit connections or replace the unit.
10Xx	Trouble in the toner cartridge connections (trouble at the printer side)	Check the toner cartridge connections or replace the cartridge.
01Xx	Write error in the memory inside the drum unit	Check the drum unit connections or replace the unit.
11Xx	Write error in the memory inside the toner cartridge	Check the toner cartridge connections or replace the cartridge.
02Xx	Data error in the memory inside the drum unit	Check the drum unit connections or replace the unit.
12Xx	Data error in the memory inside the toner cartridge	Check the toner cartridge connections or replace the cartridge.
03Xx	Write error in the memory inside the drum unit (when the number of retries has exceeded the rating)	Check the drum unit connections or replace the unit.
13Xx	Write error in the memory inside the toner cartridge (when the number of retries has exceeded the rating)	Check the toner cartridge connections or replace the cartridge.
E804	Controller fan error	
0000	When a shutdown of the power supply fan has been detected	Check the power supply fan connections or replace the fan.
0004	When a shutdown of the controller fan has been detected	Check the controller fan connections or replace the fan.
E805	Fan error	
0001	When a shutdown of the fixing heat exhaust fan has been detected	Check the fixing heat exhaust fan connections or replace the fan.
0002	When a shutdown of the cleaner fan has been detected	Check the cleaner fan connections or replace the fan.
0003	When a shutdown of the IH power supply fan has been detected	Check the IH power supply fan connections or replace the fan.

Chapter 19

SERVICE MODE

Contents

19.1 DISPLAY (Status Display Mode)

19.1.1 COPIER

19.1.1.1 COPIER Table

1. VERSION
*1 Not displayed in service mode.

T-19-1

COPIER>DISPLAY>VERSION		
Sub item	**Description**	**level.**
Use it to check the ROM version of individual PCBs (host machine and accessories). - for example, in <R-CON XX.YY>, XX indicates the version and YY indicates R&D number. - if no PCB is connected, the indication will be <--.-->.		
DC-CON	ROM version of DC controller PCB.	1
R-CON	ROM version of reader controller PCB.	1
PANEL	ROM version of control panel CPU PCB.	1
ECO	ROM version of ECO PCB.	1
FEEDER	ROM version of DADF controller PCB.	1
SORTER	ROM version of finisher controller PCB.	1
FAX	ROM version of fax board.	1
NIB	Network software version.	1
PS/PCL *1	UFR board (PS/PCL function) version.	1
SDL-STCH	ROM version of saddle stitcher controller PCB.	1
OP-CON	ROM version of cassette pedestal controller PCB.	1
MN-CONT	System software version of main controller PCB.	1
RUI	Remote UI version.	1
PUNCH	Punch unit version	1
LANG-EN	English language file version.	1
LANG-FR	French language file version.	1
LANG-DE	German language file version.	1
LANG-IT	Italian language file version.	1
LANG-JP	Japanese language file version.	1
GDI-UFR	UFR board (GDI-UFR function) version.	1
MEAP	Use it to indicate the version of MEAP content.	1
OCR-CN	OCR version for Chinese (simplified)	1
OCR-JP	OCR version for Japanese	1
OCR-KR	OCR version for Korean	1
OCR-TW	OCR version for Chinese (traditional)	1
BOOTROM	BOOT-ROM version	1
TTS-JA	Voice dictionary version for Japanese	1
TTS-EN	Voice dictionary version for English	1
WEB-BRWS	Web browser version	1
HELP	Simple NAVI version	1
WEBDAV	WebDAV version	1
TIMESTMP	TIMESTMP version	1
LANG-CS	Use it to check the version of the Czech language file.	2

COPIER>DISPLAY>VERSION		
Sub item	**Description**	**level.**
LANG-DA	Use it to check the version of the Danish language file.	2
LANG-EL	Use it to check the version f the Greek language file.	2
LANG-ES	Use it to check the version of the Spanish language file.	2
LANG-ET	Use it to check the version of the Estonian language file.	2
LANG-FI	Use it to check the version of the Finnish language file.	2
LANG-HU	Use it to check the version of the Hungarian language file.	2
LANG-KO	Use it to check the version of the Korean language file.	2
LANG-NL	Use it to check the version of the Dutch language file.	2
LANG-NO	Use it to check the version of the Norwegian language file.	2
LANG-PL	Use it to check the version of the Polish language file.	2
LANG-PT	Use it to check the version of the Portuguese language file.	2
LANG-RU	Use it to check the version of the Russian langue file.	2
LANG-SL	Use it to check the version of the Slovenian language file.	2
LANG-SV	Use it to check the version of the Swedish language file.	2
LANG-TW	Use it to check the version of the Chinese language file (traditional text).	2
LANG-ZH	Use it to check the version of the Chinese language file (simplified text).	2
ECO-ID	Use it to check the ECO-ID number	2
LANG-BU	Use it to check the version of the Bulgarian language file.	2
LANG-CR	Use it to check the version of the Croatian language file.	2
LANG-RM	Use it to check the version of the Romanian language file.	2
LANG-SK	Use it to check the version of the Slovakian language file.	2
LANG-TK	Use it to check the version of the Turkish language file.	2
LANG-CA	Catalan language file version	2

2. ACC-STS

T-19-2

COPIER>DISPLAY>ACC-STS		
Sub item	**Description**	**level.**
FEEDER	Displays whether DADF is connected. 0: Not connected 1: Connected	1
SORTER	Displays whether finisher is connected. 0: Not connected 1: Finisher M1 or N1 connected 2: Saddle finisher N2 connected	1
DECK	Displays whether paper deck is connected. 0: Not connected 1: Connected	1
CARD	Displays whether card reader is connected. 0: Not connected 1: Connected	1
RAM	Displays memory capacity of memory mounted on main controller PCB. 512 MB, 768 MB	1
COINROBO	Displays whether coin vendor is connected. 0: Not connected 1: Connected	1

COPIER>DISPLAY>ACC-STS		
Sub item	**Description**	**level.**
NIB	Displays whether network board is connected. 0: Not connected, 1: Ethernet board connected, 2: Token ring board connected, 3: Ethernet board and token ring board connected	1
NETWARE	Displays whether NetWare firmware is installed. 0: Not installed 1: Installed	1
SEND	Indicates whether SEND function is appended. 0: No SEND function 1: SEND function	1
PDL-FNC1	Display of Enabled PDL (1)	1
PDL-FNC2	Display of Enabled PDL (2)	1
HDD	Display of HDD model name	1
PCI1	Display of PCI1 board name	1
PCI2	Display of PCI2 board name	1
PCI3	Display of PCI3 board name	1
USBH-SPD	Display of USB device connection speed	2

3. ANALOG

T-19-3

COPIER>DISPLAY>ANALOG		
Sub item	**Description**	**level.**
TEMP	Copier's internal temperature (environment sensor) in deg C	1
HUM	Copier's internal humidity (environment sensor) in %RH	1
ABS-HUM	Amount of moisture (environment sensor) in grams	1
FIX-UC	Fixing upper roller center temperature (main themistor detection temperature) unit: deg C	1
FIX-UE	Fixing upper roller end temperature (main themistor detection temperature) unit: deg C	1
FIX-LC	Fixing lower roller center temperature unit: deg C	1
FIX-LE	Fixing lower roller end temperature unit: deg C	1
FIX-LE2	Pressure belt (lower belt) temperature (rear side of the end)	1
FIX-UE2	Fixing belt (upper belt) temperature (rear side of the end)	1

4. CST-STS

T-19-4

COPIER>DISPLAY>CST-STS		
Sub item	**Description**	**level.**
WIDTH-MF	Use it to check the width of paper in the manual feed tray (in mm).	2

5. JAM
a. Displays jam data

Display	I/O	Adjust	Function	Option	Test	Counter

```
        < JAM >        < 1/7 >        < READY >
AA  BBBB  CCCC  DDDD  E      FFff  G  HHHHHH  IIIII
AA  BBBB  CCCC  DDDD  E      FFff  G  HHHHHH  IIIII
AA  BBBB  CCCC  DDDD  E      FFff  G  HHHHHH  IIIII
AA  BBBB  CCCC  DDDD  E      FFff  G  HHHHHH  IIIII
AA  BBBB  CCCC  DDDD  E      FFff  G  HHHHHH  IIIII
AA  BBBB  CCCC  DDDD  E      FFff  G  HHHHHH  IIIII
AA  BBBB  CCCC  DDDD  E      FFff  G  HHHHHH  IIIII
AA  BBBB  CCCC  DDDD  E      FFff  G  HHHHHH  IIIII

         ←            →
```

F-19-1

b. Jam Data Display

AA	Jam sequence number	1 to 50 (the larger the number, the older the jam)
BBBB	Date of jam	
CCCC	Time of jam	
DDDD	Time jam was restored	
EEEEE	Jam location	0: Copier, 1: DADF, 2: Finisher
FFff	Jam code	FF: Jam type, ff: Jam sensor (as will hereinafter be described in detail)
GG	Paper feed position (as will hereinafter be described in detail)	
HH	Paper feed level software counter value	

c. Jam Code/Pickup Position
   - FF: Jam type

T-19-5

Code	Jam type
00xx	Unused
01xx	Delay jam
02xx	Pileup jam
0Axx	Jam at power ON/jam during warmup
0Bxx	cover open jam (applies to all covers)
0Dxx	Transparency-related jam

- ff: Jam sensor (printer unit)

T-19-6

Code	Sensor type
xx01	Cassette 1 retry paper sensor (PS16)
xx02	Cassette 2 retry paper sensor (PS17)
xx03	Cassette 3 retry paper sensor (PS53)
xx04	Cassette 4 retry paper sensor (PS57)
xx05	Registration sensor (PS26)
xx06	Fixing inlet sensor (PS27)
xx07	Fixing paper delivery sensor (PS25)
xx08	Face-down paper delivery sensor 1 (PS12)
xx09	Face-down paper delivery sensor 2 (PS6
xx0A	Duplex registration sensor (PS21)
xx0B	Duplex paper feed sensor (PS24)
xx0C	Deck paper feed sensor (PS6D)
xx0D	Deck conveyor sensor (PS1D)
0D90	Transparency sensor (front OHP1, inner OHP2)
0D91	Manual feed paper sensor (PS10)
0D92	Transparency sensor (front OHP1, inner OHP2)
0D93	Transparency sensor (front OHP1, inner OHP2)

- ff: Jam sensor (finisher)

T-19-7

Code	Jam Name / Sensor of Finisher-M1	Jam Name / Sensor of Finisher-W1/W2
1001	Inlet sensor delay jam (Inlet sensor)	Inlet sensor delay jam (Inlet sensor)
1002	-	Puncher path sensor delay jam (Trailing edge sensor)
1003	-	Escape path sensor delay jam (Escape tray path sensor)
1004	-	Delivery path sensor delay jam (Delivery path sensor)
1101	Inlet sensor stationary jam (Inlet sensor)	Inlet sensor stationary jam (Inlet sensor)
1102	-	Puncher path sensor stationary jam ((Trailing edge sensor)
1103	-	Escape path sensor stationary jam (Escape tray path sensor)
1104	-	Delivery path sensor stationary jam (Delivery path sensor)
1200	Timing jam	Timing jam
1300	Power-on jam (Inlet sensor)	Power-on jam (Inlet sensor / delivery path sensor / escape tray path sensor)
1400	Door open/close jam (Joint switch)	Door open/close jam (Front cover sensor / front cover closed switch)
1500	Staple jam (Staple HP sensor)	Staple jam (Staple HP sensor)
1644	-	Punch HP sensor jam (Punch HP sensor)
1645	-	Punch stationary jam (Trailing edge sensor)
1647	Punch inlet path sensor jam (Punch inlet path sensor)	
1786	-	Staple jam (Stitch HP sensor)

Code	Jam Name / Sensor of Finisher-M1	Jam Name / Sensor of Finisher-W1/W2
1787	-	Saddle power on jam (Primary paper sensor / secondary paper sensor / tertiary paper sensor / vertical path paper sensor / saddle inlet sensor / delivery sensor / paper positioning plate paper sensor)
1788	-	Saddle door open jam (Delivery cover sensor / inlet cover sensor / front cover open/close sensor)
1791	-	Saddle delivery path sensor delay jam (Primary paper sensor)
1792	-	Saddle delivery sensor delay jam (Delivery sensor)
1793	-	Saddle inlet sensor delay jam (Saddle inlet sensor)
17A1	-	Saddle delivery path sensor stationary jam (Primary paper sensor / secondary paper sensor / tertiary paper sensor)
17A2	-	Saddle delivery sensor stationary jam (Delivery sensor / vertical path paper sensor)
17A3	-	Saddle inlet sensor stationary jam (Saddle inlet)
1781	bunch putting out JAM(bunch putting out HP sensor)	-

T-19-8

Code	Finisher M1 sensor/type	Finisher N1/saddle finisher N2 sensor/type
1103	Copier paper delivery delay jam	-
1104	Paper delivery pileup jam	-
1105	-	Jam due to early arrival while switching trays
1500	Staple jam in stapler	Staple jam in stapler
1300	Jam at power ON	Jam at power ON
1400	-	Front top cover OPEN jam
1011	-	Inlet path sensor delay ja
1013	-	Buffer path sensor delay jam
1014	-	Paper delivery path sensor delay jam
1121	-	Inlet path sensor pileup jam
1123	-	Buffer path sensor pileup jam
1124	-	Paper delivery path sensor pileup jam
1125	-	Staple tray sensor pileup jam
1181	Jam when pressing bun	-
1182	Jam when returning bundle	-
1186	-	Staple jam in saddle stapler
1187	-	Saddle power ON jam
1188	-	Front lower cover OPEN jam
1191	-	Saddle conveying path sensor delay jam
1192	-	Saddle fold path sensor delay jam
11A1	-	Saddle conveying path sensor pileup jam
11A2	-	Saddle fold path sensor pileup jam

- ff: Jam sensor (DADF)

T-19-9

Jam name	Code	Sensor	Condition
Separation delay	0002	SR3	Separation sensor (SR3) didn't turn ON within 500 msec after separation motor (M1) switched to drive (forward).
Paper feed delay	0003	U502	Registration front sensor (U502) didn't turn ON within 1 sec from separation sensor (SR3) (for small size) or near separation sensor (for large size).
Paper feed pileup	0005	U502	Registration front sensor (U502) didn't turn OFF after conveyor motor turned ON and operated for 500 msec, after formation of resist loop.
Separation early delivery	0006	SR3	Separation sensor (SR3) was ON during start of document separation.
Reverse outlet delay	0011	U505	Reverse outlet sensor (U505) didn't turn ON at specified amount of time after trailing edge of document passed right edge of belt's presser roller.
Reverse outlet pileup	0012	U505	Reverse outlet sensor (U505) didn't turn OFF when paper was conveyed by paper delivery motor for 500 msec after trailing edge of document was detected by reverse paper delivery resist sensor (SR5).
Duplex	0023	U505	Conveyor motor operated at constant speed with reverse outlet sensor (U505) still ON after a duplex copy finished reversing.
Paper delivery inlet delay	0041	SR4	Reverse paper delivery inlet sensor (SR4) didn't turn ON when conveyor motor (M2) conveyed paper for 100 mm from start of document paper feed (for small size document) or from 51 mm in front of reverse paper delivery inlet sensor (SR4) (for large size/duplex document).
Paper delivery inlet pileup	0042	SR4	Reverse inlet sensor (SR5) didn't turn OFF in specified amount of time after document's leading edge arrived at reverse registration roller nip (for small size), or after document's leading edge arrived at reverse outlet sensor (U505) (for large size/duplex document).
Reverse registration delay	0043	SR5	Reverse paper delivery registration sensor (SR5) didn't turn ON at specified amount of time after reverse inlet sensor (SR4) turned ON.
Reverse registration pileup	0044	SR5	Reverse registration sensor (SR5) didn't turn OFF at specified amount of time after reverse paper delivery inlet sensor (SR4) turned OFF.
Reverse flapper failure	0045	U505	Flapper didn't switch when flapper switching for each paper delivery was checked by reverse outlet sensor (U505).
Paper delivery sensor delay (small size)	0046	SR5	Paper delivery sensor (SR5) didn't turn OFF after specified amount of time had elapsed from start of reverse operation of reverse paper delivery motor (M3).
Paper delivery sensor pileup (small size)	0047	SR5	Paper delivery sensor (SR5) didn't turn OFF after paper was conveyed 50 mm after document trailing edge passed paper delivery sensor (SR5).
Paper delivery sensor delay (large size/ twosided document	0048	SR4	Reverse inlet sensor (SR5) didn't turn ON after specified amount of time elapsed after start of paper delivery.
Reverse paper delivery unit cover OPEN	0080	SR8	Reverse paper delivery unit cover was opened when copier was stopped due to lack of paper.
DADF OPEN	0081	SR6	DADF was opened when copier was stopped due to lack of paper.
Paper feed cover OPEN	0082	SR2	Paper feed unit cover was opened when copier was stopped due to lack of paper.
Document not removed	0088	SR4, SR5	Attempt to start paper feed was made with document left on document stand glass. Detected by reverse paper delivery inlet sensor (SR4) and reverse paper delivery registration sensor (SR5).

Jam name	Code	Sensor	Condition
Timing failure 1	008A		Paper feed timing for second side of paper failed during duplex copy operation. Alternately, end of task wasn't detected by inter-task monitoring after specified amount of time.
Timing failure 2	008B		During document conveying mode, when paper delivery clock sensor (SR7) was counting conveyed volume of document to deliver, paper feed of next document completed, and reverse paper delivery motor (M3) encoder pulse could no longer be detected.
Timing failure 3	008C		When the document is sent as a mixed load even though document mixed loading hasn't been set, the document size error alarm (0014) is generated, but since the jam must be processed, this jam display appears. 008C (jam) and 0014 (alarm) are displayed together, and the jam is restored automatically 5 seconds after being processed.
User DADF OPEN	0091	SR6	DADF was opened during DADF operation.
User cover OPEN	0092	SR2, SR8	Cover was opened during DADF operation.
Separation sensor initial status	0094	SR3	Separation sensor (SR3) was ON before separation of first document sheet.
Registration front sensor initial status	0095	U502	Registration front sensor (U502) was ON before separation of first document sheet.
Reverse paper delivery inlet sensor initial status	0096	SR4	Reverse paper delivery inlet sensor (SR4) was ON before separation of first document sheet.
Reverse paper delivery registration sensor	0097	SR5	Reverse paper delivery registration sensor (SR5) was ON before separation of first document sheet.

- GG: Paper feed position

T-19-10

Code	Description
1	Cassette 1
2	Cassette 2
3	Cassette 3
4	Cassette 4
5	Side paper deck
6 to 8	not used
9	duplex unit
10	manual feed tray

6. ERR
a. Displays error data

Display	I/O	Adjust	Function	Option	Test	Counter

```
        < ERR >          < 1/7 >        < READY >
AA   BBBB  CCCC  DDDD  EEEE    FFff   G
AA   BBBB  CCCC  DDDD  EEEE    FFff   G
AA   BBBB  CCCC  DDDD  EEEE    FFff   G
AA   BBBB  CCCC  DDDD  EEEE    FFff   G
AA   BBBB  CCCC  DDDD  EEEE    FFff   G
AA   BBBB  CCCC  DDDD  EEEE    FFff   G
AA   BBBB  CCCC  DDDD  EEEE    FFff   G
AA   BBBB  CCCC  DDDD  EEEE    FFff   G

        ←            →
```

F-19-2

b. Error Data Display

AA   Error sequence number   1 to 50 (the larger the number, the older the error)
BBBB   Date of error
CCCC   Time of error
DDDD   Time error was restored
EEEE   Error code
FFff   Detail code   "0000" if none.
G   Error location
         0: Main controller
         1: DADF
         2: Finisher
         3: Unused
         4: Reader unit
         5: Printer unit
         6: PDL board (any of)
         7: Fax board

7. CCD

T-19-11

COPIER>DISPLAY>CCD		
Sub item	**Description**	**level.**
TARGET-B	Use it to check the shading target value for B.	2
TARGET-G	Use it to check the shading target value for G.	2
TARGET-R	Use it to check the shading target value for R.	2
GAIN-OB	Use it to indicate the gain level adjustment value (for color) of odd-numbered blue bits of the CCD.	2
GAIN-OG	Use it to indicate the gain level adjustment value (for color) of odd-numbered green bits of the CCD.	2
GAIN-OR	Use it to indicate the gain level adjustment (for color) of odd-numbered red bits of the CCD.	2
GAIN-EB	Use it to indicate the gain level adjustment value (for color) of even-numbered blue bits of the CCD.	2
GAIN-EG	Use it to indicate the gain level adjustment (for color) of even-numbered green bits of the CCD.	2
GAIN-ER	Use it to indicate the gain level adjustment value (for color) of even-numbered red bits of the CCD.	2

8. DPOT
Displaying Photosensitive Drum Surface Potential Control Data

T-19-12

COPIER>DISPLAY>DPOT		
Sub item	**Description**	**level.**
MEMO: For items other than DPOT-K, displaying value at the time of the latest potential control.		
2TR-PPR	Use it to check the output value of the paper separation voltage of the secondary transfer DC voltage generated last.	2
2TR-BASE	Use it to check the output value of the reference voltage of the secondary transfer DC voltage generated last.	2
1TR-DC-Y	Use it to check the output value of the primary transfer DC voltage (Y) generated last.	2
1TR-DC-M	Use it to check the output value of the primary transfer DC voltage (M) generated last.	2
1TR-DC-C	Use it to check the output value of the primary transfer DC voltage (C) generated last.	2
1TR-DC-K	Use it to check the output value of the primary transfer DC voltage (K) generated last.	2
CHG-AC-Y	output value of primary charge AC voltage (Y) output last	2
CHG-AC-M	output value of primary charge AC voltage (M) output last)	2
CHG-AC-C	output value of primary charge AC voltage (C) output last)	2
CHG-AC-K	output value of primary charge AC voltage (Bk) output last)	2

9. DENS

T-19-13

<table>
<tr><td colspan="4" align="center">COPIER>DISPLAY>DENS</td></tr>
<tr><td align="center">Sub item</td><td align="center">Description</td><td align="center">level.</td></tr>
<tr><td>DENS-Y/M/C/K</td><td>Calculated value of developer concentration (indicated as % off target value)
Appropriate values -2.0 to 2.0%
Note
Value is updated when toner is supplied after main power switch ON.</td><td align="center">1</td></tr>
<tr><td>WINDOW-Y/M/C/K</td><td>SALT sensor window dirt coefficient (Y/M/C/Bk). The smaller the value, the dirtier the sensor window.
Appropriate values 50 or higher
Note
Value is updated when ATR control operation is performed after main power switch ON.</td><td align="center">1</td></tr>
<tr><td>SGNL-Y/M/C/K</td><td>Measured value of developer concentration (Y/M/C/Bk)
Measured when each job is received.
Appropriate values 16 to 192
Note
Value is updated when toner is supplied after main power switch ON.</td><td align="center">1</td></tr>
<tr><td>DENS-S-Y/M/C/K</td><td>Use it to check the density value (Y/M/C/Bk) detected of the sample image formed at time of ATR control.</td><td align="center">2</td></tr>
<tr><td>D-Y/M/C/K-TRGT</td><td>target value (Y/M/C/Bk) of developer concentration</td><td align="center">2</td></tr>
<tr><td>DEV-DC-Y/M/C/K</td><td>Use it to check the output value of the developing DC voltage (Y/M/C/Bk) generated last.</td><td align="center">2</td></tr>
<tr><td>CHG-DC-Y/M/C/K</td><td>Use it to check the output value of the primary DC voltage (Y/M/C/Bk) generated last.</td><td align="center">2</td></tr>
<tr><td>D-CRNT-P/S</td><td>Uses it to indicate the value (P wave/S wave) measured of the dark current at time of ATR control.</td><td align="center">2</td></tr>
<tr><td>P-SENS-P/S</td><td>detected light quantity value (P wave/S wave) of backing (ITB) during ATR control</td><td align="center">2</td></tr>
</table>

10. FIXING

T-19-14

<table>
<tr><td colspan="3" align="center">COPIER>DISPLAY>FIXING</td></tr>
<tr><td align="center">Sub item</td><td align="center">Description</td><td align="center">level.</td></tr>
<tr><td>FX-UHP</td><td>Indicates the displacement control auto home position center position (upper belt)</td><td align="center">1</td></tr>
<tr><td>FX-LHP</td><td>Indicates the displacement control auto home position center position (lower belt)</td><td align="center">1</td></tr>
<tr><td>FX-MTR2</td><td>Fixer motor current value display when belt is removed/ replaced.</td><td align="center">2</td></tr>
</table>

11. MISC

T-19-15

COPIER>DISPLAY>MISC		
Sub item	**Description**	**level.**
ENV-TR	printer internal environment display 1: Low humidity environment (5.8 g or less moisture) 2: Normal humidity environment (5.9 to 17.3 g moisture) 3: High humidity environment (17.4 g or more moisture)	1
Y/M/C/K-DRM-LF	Drum unit life (Y/M/C/Bk) Expresses how much of life has expired (as percentage). Appropriate values 0 to 100 (%) Note 0% when new drum unit is inserted.	1

12. ALARM-1

T-19-16

COPIER>DISPLAY>ALARM-1		
Sub item	**Description**	**level.**
IMG-DT-Y/M/C/K	- indicates the average of image ratios for copy/print jobs indicates the average image ratio (color ratio) within the drum unit	1
LST-DY-Y/M/C/K	Indicates the image duty (Y/M/C/Bk) output lastly within the range of 0~100%.	2

13. ALARM-2
a. Displays alarm data

Display	I/O	Adjust	Function	Option	Test	Counter

<ALARM-2 >　　< 1/7 >　　< READY >

AA BBBB CCCC DDDD EE FFFF GGGG HHHHHH

AA BBBB CCCC DDDD EE FFFF GGGG HHHHHH

AA BBBB CCCC DDDD EE FFFF GGGG HHHHHH

AA BBBB CCCC DDDD EE FFFF GGGG HHHHHH

AA BBBB CCCC DDDD EE FFFF GGGG HHHHHH

AA BBBB CCCC DDDD EE FFFF GGGG HHHHHH

AA BBBB CCCC DDDD EE FFFF GGGG HHHHHH

AA BBBB CCCC DDDD EE FFFF GGGG HHHHHH

←　　　→

F-19-3

b. Alarm Data Display

AA	Alarm sequence number	1 to 50 (the larger the number, the older the error)
BBBB	Date of alarm	
CCCC	Time of alarm	
DDDD	Time alarm was restored	
EE	Alarm location code (as will hereinafter be described in detail)	
FFFF	Alarm code (as will hereinafter be described in detail)	
GGGG	Alarm detail code (as will hereinafter be described in detail)	
HHHHHH	Total counter value when alarm is generated	

c. Alarm Code Detail

T-19-17

EE	Alarm location code	FFFF Alarm code
04	Paper feed/ conveying	0008: Side deck lifter alarm
		0009: Horizontal registration detection alarm
09	Drum unit	0001: Drum life (Y)
		0002: Drum life (M)
		0003: Drum life (C)
		0004: Drum life (K)
10	Developer unit	0001: Toner out (Bk)
		0002: Toner out (C)
		0003: Toner out (M)
		0004: Toner out (Y)
11	Waste toner conveying	0001: Waste toner box full (intermediate copy belt)
33	Fan	0007: Paper delivery cooling fan (FM5) alarm
		0012: Manual feed cooling fan (FM6) alarm
		0013: Copier exhaust heat fan (FM3) alarm
34	Image position compensation control	0001: Incorrect data read (zero included in image position pattern read data)
		0002: Incorrect data read (abnormal data in at least 8 of the 10 sets of image position patterns)
		0003: Pattern read timeout alarm
		0004: Attempt was made to compensate abnormally large slant as result of image position compensation.
		0005: Attempt was made to correct large abnormally large magnification as result of image position compensation.
61	Finisher staples	0001: No staples
62	Saddle stitcher	0001: No stitch needle

EE	Alarm location code	FFFF Alarm code
70	PDL	0001: memory overflow
		0002: font memory overflow
		0003: micro font memory overflow
		0004: image font memory overflow
		0005: pattern font memory overflow
		0006: hard disk write error
72	UFR board	0001: Register access failed.
		0002: Data transfer to memory failed (or timeout).
		0003: Rendering error (ECI module)
		0004: Rendering error (EM module)
		0005: Rendering error (IE module)
		0006: Rendering error (IDM module)
		0007: Rendering error (LAM module)
		0008: Rendering error (MI module)
		0009: Rendering error (PCM module)
		0010: Rendering error (PGM module)
		0011: Rendering error (VII module)
		0012: Rendering error (VOI module)
		0013: Stores compressed image during FallBack.
73	LIPS	0001: Download overflow
		0002: Insufficient work memory needed during system data processing (mainly figure processing, text processing).
		0003: Translator was specified that was not mounted by LIPS emulation start command.
		0004: Translator work memory overflow
		0006: Configuration acquiring/management error
		0007: LIPS internal memory management error
		0008: LIPS internal file management error
		0009: Received data management error
		0010: Page control error
		0011: Macro management error
		0012: Color management error
		0013: Layout control error
		0014: Font management error
		0015: Character drawing error
		0016: Figure drawing error
		0017: Image drawing error
		0018: LCD display error
		0019: Text mode command layer error
		0020: Vector mode command layer error
		0021: Utility execution control err
		0022: LIPS internal database management
		0023: LIPS internal menu control error
		0024: LIPS internal boot error
74	GDI-UFR	0001: Incorrect Job Wrapper Format version
		0002: Incorrect command sequence

EE	Alarm location code	FFFF Alarm code
75	PS print server unit-C1	0001: Error in PS print server unit-C1
		0002: Error due to incorrect SVG analysis received from PS print server unit-C1

14. ENVRNT

Reference: Displaying Environment Logs
Use it to indicate logs of changes that may have taken place for [machine inside temperature (deg C)/humidity (%)/fixing roller surface (middle) temperature (deg C)] collected from the monitor output of the fixing thermistor (main) and the environment sensor.
Remarks
The intervals of data collection may be set in service mode: COPIER>OPTION>BODY>ENVP-IN.

a. Environment Log Screen

F-19-4

b. Environment Log Display

No.	number of a data piece (higher the number, older the data piece)
DATE	date of data collection
TIME	time of data collection
D + deg C	machine inside temperature
E+%	machine inside humidity
F + deg C	fixing roller surface (middle) temperature

19.1.2 FEEDER

19.1.2.1 FEEDER Table

T-19-18

FEEDER>DISPLAY		
Sub item	**Description**	**level.**
FEEDSIZE	Displays the document size detected by the ADF. Note Displays the document size as a paper size such as A4 or LTR. For paper names, see COPIER > OPTION > CST > CST-U1, CST-U2.	1
TRY-WIDE	Indicates the length of the original width detection slide (paper width detention; 0.1 mm). Indicates the length of the slide used to detect the width of the original in the DF's original pickup tray (distance between 2 points).	1
SPSN-LMN	Use it to indicate the manual adjustment value (light-emission voltage) of the post-separation sensor. Optimum range: 179 or less	1
SPSN-RCV	Use it to indicate the manual adjustment value (light reception voltage) of the post-separation sensor. Optimum range paper present: 154 or less paper absent: 179 or more	1
RDSN-LMN	Use it to indicate manual adjustment value (light emission voltage of the reader sensor. Optimum range: 179 or less	1
RDSN-RCV	Use it to indicate the manual adjustment value (light reception voltage) of the read sensor. Optimum range paper present: 154 or less paper absent: 179 or more	1
DRSN-LMN	Intensity of Light Emitted by the Delivery Reversal Sensor The manually adjusted value (emission voltage) of the delivery reversal sensor will be indicated. Optimum range: 905 or less	1
DRSN-RCV	Intensity of Light received by the Delivery Reversal Sensor The intensity of light received by the delivery reversal sensor after manual adjustment will be indicated Optimum range paper present: 154 or less paper absent: 179 or more	1

19.2 I/O (I/O Display Mode)

19.2.1 Overview

The following appears in response to COPIER>I/O; descriptions of the items (limited to those needed in the field) area given on the pages that follow:

Display	I/O	Adjust	Function	Option	Test	Counter

DC-CON
R-CON

FEEDER
SORTER

MN-CONT

F-19-5

1. Guide to the Screen

Display	I/O	Adjust	Function	Option	Test	Counter

<DC-CON>   < 1/3 >   < READY >

P001 xxxxxxxx
P002 xxxxxxxx
P003 xxxxxxxx
P004 xxxxxxxx
P005 xxxxxxxx
P006 xxxxxxxx
P007 xxxxxxxx
P008 xxxxxxxx

◀   ▶

Bit0
Bit7
Address

F-19-6

19.2.2 DC-CON

T-19-19

Address	Bit	Symbol	Display	Remarks
P001 (input)	0		Cassette 1 size detection 0	4 bits enable 16 types of size detection (see Table T05-401-01).
	1		Cassette 1 size detection 1	
	2		Cassette 1 size detection 2	
	3		Cassette 1 size detection 3	
	4		Cassette 2 size detection 0	Size detection 0 to 3 enable 16 settings (see Table T05-401-01).
	5		Cassette 2 size detection 1	
	6		Cassette 2 size detection 2	
	7		Cassette 2 size detection 3	
	8	PS14	Cassette 1 remaining volume sensor A	1: Remaining volume is roughly half or less
	9	PS15	Cassette 1 remaining volume sensor B	1: Remaining volume is roughly 50 sheets or less
	10	PS20	Cassette 2 remaining volume sensor A	1: Remaining volume is roughly half or less
	11	PS18	Cassette 2 remaining volume sensor B	1: Remaining volume is roughly 50 sheets or less
	12	PS7	Cassette 1 paper sensor	1: ON
	13	PS19	Cassette 2 paper sensor	1: ON
	14	PS10	Manual paper feed paper sensor	1: ON
	15	PS9	Manual paper feed last paper sensor	1: ON

T-19-20

		4-ream actuator			
		Inner			Front
	Cassette paper size	Bit 3	Bit 2	Bit 1	Bit 0
1	STMT R	0	1	1	1
2	LTR	1	0	1	1
3	LTR R	0	1	0	1
4	LGL	1	0	1	0
5	11×17	1	1	0	1
6	A5 R	0	1	1	0
7	A4	0	0	1	1
8	A4 R	1	0	0	1
9	A3	0	1	0	0
10	B5	0	0	1	0
11	B5 R	0	0	0	1
12	B4	0	0	0	0
13	12×18	1	0	0	0

	Cassette paper size	4-ream actuator			
		Inner			Front
		Bit 3	Bit 2	Bit 1	Bit 0
14	U1	1	1	0	0
15	U2	1	1	1	0
16	No cassette	1	1	1	1
0:	Actuator pressed				

T-19-21

Address	Bit	Symbol	Display	Remarks
P002	0		Developing bias mode (Y)	0: Rectangular wave
(output)	1		Developing bias mode (M)	0: Rectangular wave
	2		Developing bias mode (C)	0: Rectangular wave
	3		Developing bias mode (K)	0: Rectangular wave
	4		For R&D	
	5		For R&D	
	6		For R&D	
	7		For R&D	
	8		High-pressure remote	0: High pressure ON permitted
	9		For R&D	
	10		For R&D	
	11		Drum ITB motor operation direction	0: Forward
	12		Drum ITB motor	0: ON
	13		Fixing exhaust heat fan half-speed	1: Half-speed
	14		Cleaner fan half-speed	1: Half-speed
	15		Power cooling fan half-speed	0: Half-speed
P003	0		Cassette 1 paper feed solenoid	1: ON
(output)	1		Cassette 2 paper feed solenoid	1: ON
	2		Manual paper feed unit paper feed solenoid	1: ON
	3		Paper delivery path switching solenoid 1	0: Back side paper delivery,
				1: Front side paper delivery
	4		For R&D	
	5		For R&D	
	6		For R&D	
	7		For R&D	
	8		Transparency detection LED	1: ON
	9		For R&D	
	10		For R&D	
	11		For R&D	
	12		For R&D	
	13		For R&D	
	14		For R&D	
	15		For R&D	
P004	0		For R&D	
(input)	1		For R&D	

Address	Bit	Symbol	Display	Remarks
	2		For R&D	
	3		For R&D	
	4		For R&D	
	5		For R&D	
	6		For R&D	
	7		For R&D	
	8		For R&D	
	9		Two-sided PCB connection	0: Connected
	10		Paper delivery cooling fan lock detection	0: Running, 1: Stopped
				(only operates during two-sided copying)
	11		Copier exhaust heat fan lock detection	0: Running, 1: Stopped
	12		Manual feed cooling fan lock detection	0: Running, 1: Stopped
	13		Power cooling fan lock detection	0: Running, 1: Stopped
	14		Cleaner fan lock detection	0: Running, 1: Stopped
	15		Fixing exhaust heat fan lock detection	0: Running, 1: Stopped
P005	0		For R&D	
(input)	1		For R&D	
	2		Cassette pedestal connection	0: Connected
	3		Cassette pedestal power ready	0: Ready
	4	PS5	Fixing conveyor unit OPEN/CLOSED detection	1: CLOSED
	5		Fixing heater enable	0: Enabled
	6		For R&D	
	7	PS13	Delivery vertical path cover detection	0: OPEN, 1: CLOSED
	8	PS28	Manual feed unit OPEN/CLOSED detection	1: CLOSED
	9	PS8	Center paper delivery tray full sensor	1: Full
	10	PS11	Paper feed vertical path cover OPEN/CLOSED sensor	1: CLOSED
	11	PS23	Front cover OPEN/CLOSED sensor	1: CLOSED
	12		For R&D	
	13		Drum ITB motor lock detection	0: Running
	14		TRIAC short detection	0: Error
	15		Fixing unit high temperature detection	1: Error
P006	0		For R&D	
(output)	1		For R&D	
	2		For R&D	
	3		For R&D	
	4		24-V ON	0: ON
	5		Secondary transfer positive/negative switching	0: Positive output, 1: Negative output
	6		Drum unit operation signal	1: ON
	7		Cassette heater (for cassette 1/2) ON	0: Heater ON, 1: Heater OFF
	8		For R&D	
	9		For R&D	
	10		For R&D	

Address	Bit	Symbol	Display	Remarks
	11		For R&D	
	12		For R&D	
	13		Paper delivery cooling fan full speed	1: Full speed (during two-sided output)
	14		For R&D	
	15		Copier exhaust heat fan full speed	1: Full speed (during output when temperature inside copier is 30°C or more)
P007	0	PS17	Cassette 2 retry paper sensor	1: ON
(input)	1	PS16	Cassette 1 retry paper sensor	1: ON
	2	PS26	Resist sensor	1: ON
	3	PS27	Fixing inlet sensor	1: ON
	4	PS25	Fixing paper delivery sensor	1: ON
	5	PS12	Face-down paper delivery sensor 1	1: ON
	6	PS21	Two-sided resist sensor	1: ON
	7	PS24	Two-sided paper feed sensor	1: ON
	8	PS6	Face-down paper delivery sensor 2	1: ON
	9	PS22	Two-sided horizontal resist sensor	1: ON
	10		Transparency sensor (front)	1: ON
	11		Transparency sensor (inner)	1: ON
	12		For R&D	
	13		For R&D	
	14		For R&D	
	15		For R&D	
P008	0		Paper delivery vertical path motor current switching 0	See separate Table T05-401-08.
(output)				
	1		Paper delivery vertical path motor current switching 1	
	2		Face-down paper delivery motor current switching 0	See separate Table T05-401-08.
	3		Face-down paper delivery motor current switching 1	
	4		Manual feed cooling fan	1: ON
	5		Cleaner fan	1: ON
	6		Fixing exhaust heat fan	1: ON
	7		Power cooling fan	0: ON
	8		Transparency sensor (front) gain switching	1: Gain large, 0: Gain small
	9		Transparency sensor (inner) gain switching	1: Gain large, 0: Gain small
	10		For R&D	
	11		For R&D	
	12		For R&D	
	13		For R&D	
	14		For R&D	
	15		For R&D	
P009	0		Two-sided resist clutch	1: ON two-sided
(input/ output)	1		Two-sided paper feed clutch	1: ON two-sided

Address	Bit	Symbol	Display	Remarks
	2		Paper delivery path switching solenoid 2	1: ON
	3		For R&D	
	4		For R&D	
	5		For R&D	
	6		Horizontal registration voltage down	1: Voltage down two-sided
	7		Horizontal registration excitation	0: Excitation ON (voltage down status)
	8		For R&D	
	9		For R&D	
	10		For R&D	
	11		For R&D	
	12		For R&D	
	13		For R&D	
	14		For R&D	
	15		For R&D	
P010 to P018 (for R&D)	0 to 7		For R&D	
P019 (input)	0		Cassette 3 size detection 0	Size detection 0 to 3 enable 16 settings (see Table T05-401-01).
	1		Cassette 3 size detection 1	
	2		Cassette 3 size detection 2	
	3		Cassette 3 size detection 3	
	4		Cassette 4 size detection 0	Size detection 0 to 3 enable 16 settings (see Table T05-401-01).
	5		Cassette 4 size detection 1	
	6		Cassette 4 size detection 2	
	7		Cassette 4 size detection 3	
P020 (input)	0		Cassette 3 remaining volume detection A	1: Remaining volume is roughly half or less
	1		Cassette 3 remaining volume detection B	1: Remaining volume is roughly 50 sheets or less
	2		Cassette 4 remaining volume detection A	1: Remaining volume is roughly half or less
	3		Cassette 4 remaining volume detection B	1: Remaining volume is roughly 50 sheets or less
	4		Right cover OPEN/CLOSED detection	1: CLOSED
	5	PS5D	Deck attachment	0: Deck released from copier
	6	PS8D	Deck paper volume sensor top	0: No paper
	7		Deck connection signal detection	1: Connected
P021 (input)	0		Deck LED switch	0: LED switch pressed
	1	PS4D	Deck lifter sensor	1: Lifter at paper feed position
	2		Deck lifter motor error detection	0: Lifter error detected
	3	PS3D	Deck lifter upper limit sensor	1: Lifter has reached upper limit
	4	PS7D	Deck paper volume sensor bottom	0: No paper
	5	PS6D	Deck paper feed sensor	1: Paper

Address	Bit	Symbol	Display	Remarks
	6		Deck lifter lower limit sensor	1: Lifter has reached lower limit
	7	PS9D	Deck open sensor	0: Storage compartment is open
P022	0		Paper feed 3 solenoid	1: ON
(output)	1		Paper feed 4 solenoid	1: ON
	2	CL2D	Deck paper feed clutch	1: ON
	3	SL1D	Deck paper feed solenoid	1: ON
	4		Deck lifter motor	0: Lifter motor ON
	5		Deck lifter motor DOWN	1: Lift DOWN,
				0: Lift UP
	6	SL2D	Deck paper compartment OPEN SL	1: SL ON
	7		Deck paper compartment button LED	1: LED lit
P023	0	to 7	For R&D	
to P025				
(for R&D)				
P026	0		For R&D	
(input/	1		For R&D	
output)	2		For R&D	
	3		Cassette heater (for cassette 3/4) ON	0: Heater ON, 1: Heater OFF
	4		For R&D	
	5		For R&D	
	6		For R&D	
	7		For R&D	
P027	0		For R&D	
(input/	1		For R&D	
output)	2		For R&D	
	3		For R&D	
	4		For R&D	
	5		For R&D	
	6		Deck motor current switching signal 0	See Table T05-401-09.
	7		Deck motor current switching signal 1	See Table T05-401-09.
P028	0		Cassette 3 paper feed current switching signal 0	See pulse motor current setting
(input/				table (Table T05-401-08).
output)	1		Cassette 3 paper feed current switching signal 1	
	2		Cassette 4 paper feed current switching signal 0	See pulse motor current setting
				table (Table T05-401-08).
	3		Cassette 4 paper feed current switching signal 1	
	4		For R&D	
	5		For R&D	
	6		For R&D	
	7		For R&D	
P029	0		Cassette 3 retry sensor	1: Paper
(input/	1		Cassette 4 retry sensor	1: Paper
output)	2	PS2D	Deck no paper detection	1: Paper
	3	PS1D	Deck outlet paper sensor	1: Paper
	4		Cassette 3 paper detection	1: Paper

Address	Bit	Symbol	Display	Remarks
	5		Cassette 4 paper detection	1: Paper
	6		Pedestal model detection	1: Plain pedestal, 0: Cassette pedestal
	7	CL1D	Deck conveyor CL	1: CL ON

T-19-22

0	1	Pulse motor current setting
0	0	100%
1	0	70%
0	1	31%
1	1	0%

T-19-23

0	1	Paper deck pulse motor current setting
0	0	100%
1	0	70%
0	1	50%
1	1	35%

19.2.3 R-CON

T-19-24

Indication	bit	Item	Remarks
P001	0	delivery reversal motor CLK	
	1	DDIS IF (OPTO0-)	0: operation prohibited
	2	DDIS IF (SPRDY)	0: operation permitted
	3	DDIS IF (OPTI0)	0: active
	4	ADF pickup motor CLK	
	5	fan power ON signal	1: ON
	6	ADF read motor CLK	
	7	size senor ON	1: ON
P002	0	shift motor CLK	
	1	24V power supply monitor	0: normal
	2-3	not used	
	4	scanner motor CLK	
	5	13V power supply monitor	0: normal
	6	Use it to switch between notations to suit the local needs.	0: others (OEM) 1: Canon
	7	DDIS IF (SCPRDY)	0: operation ready

Indication	bit	Item	Remarks
P003	0	DDIS serial communication (TxD)	-
	1	ADF serial communication (TxD)	-
	2	DDIS serial communication (RxD)	-
	3	ADF serial communication (RxD)	-
	4	LED control	1: ON
	5	ADF serial communication (SCK)	-
	6-7	not used	
P004	0	original size detection 0	0: original present
	1	original size detection 1	0: original present
	2	original size detection 2	0: original present
	3	original size detection 3	0: original present
	4	DF connection detection	-
	5	DDIS IF (SRTS)	0: reception ready
	6	scanner motor Vref output	-
	7	not used	-
P005	0	PC connection IF (TxD)	-
	1	PC connecting IF (RxD)	-
	2	fan lock detection signal	0: enabled
	3	DDIS IF (SCTS)	0: reception ready
	4-7	not used	
P006	0	not used	-
	1	PCB check terminal	1: normal
	2	DDIS IF (OPTI1)	0: active
	3	DDIS IF (OPTO1)	0: active
	4	ADF sensor interrupt input	0: active
	5	copyboard open/closed sensor interrupt input 0	1: copyboard cover closed
	6	HP sensor interrupt input	1: HP
	7	not used	-
P007	0	address bus 16	-
	1	address bus 17	-
	2	address bus 18	-
	3-4	not used	-
	5	ADF pickup motor lock interrupt input	
	6	ADF pickup motor lock interrupt input	
	7	ADF delivery reversal motor lock interrupt input	
P008	0	lamp ON signal	1: on
	1	CCD drive ON signal	1: on
	2	wait signal	0: wait
	3	L light signal	0: active
	4	H light signal	0: active
	5	read signal	0: active
	6	ADF serial communication (LOAD)	0: enabled
	7	CPU clock output	-

Indication	bit	Item	Remarks
P009	0	not used	
	1	shading RAM chip select	0: selected
	2	work RAM chip select	0: selected
	3	ASIC registration chip select	0: selected
	4	ROM chip select	0: selected
	5-7	not used	

19.2.4 FEEDER

T-19-25

Address	bit	Indication	Remarks
P001	0	read sensor	0: paper present
	1	registration sensor	1: paper present
	2	delivery reversal sensor	0: paper present
	3	ADF open/closed sensor	0: ADF open
	4-7	not used	
P002	0	delivery reversal motor current setting 1	
	1	delivery reversal motor current setting 2	
	2	release motor current setting 1	
	3	release motor current setting 2	
	4	stamp solenoid drive	1: ON
	5	clutch drive	1: ON
	6	original detection LED	1: ON
	7	fan motor drive	1: ON
P003	0	pickup motor current setting CUT	
	1	read motor current setting CUT	
	2	shift motor current setting	
	3	read motor mode setting	
	4	read motor current setting 1	
	5	read motor current setting 2	
	6	pickup motor current setting 1	
	7	pickup motor current setting 2	
P004	0	feeder cover open/closed sensor	0: feeder cover open
	1-6	not used	
	7	stamp	0: stamp present
P005	0	not used	
	1	release HP sensor	1: released
	2	delivery reversal sensor	0: paper present
	3	post-separation sensor	0: paper present
	4	LGL sensor	1: paper present
	5	A4R/LTRR identification sensor	1: AB
	6	not used	
	7	original placement sensor	0: paper present
P006	0-7	for R&D	
P007	0-7	for R&D	

Address	bit	Indication	Remarks
P008	0-7	for R&D	
P009	0-7	for R&D	
P010	0-7	for R&D	
P011	0-7	for R&D	

19.2.5 SORTER

\<Finisher X1\>

T-19-26

address	bit	description	remarks
P001	7	not used	
	6	gripper solenoid drive signal	1: drive
	5	stapler HP detection	0: detection
	4	offset motor operation permission signal	1: drive
	3	offset motor / phase B	1:ON
	2	offset motor phase B	1:ON
	1	offset motor / phase A	1:ON
	0	offset motor phase A	1:ON
P002	7		
	6	feed motor current switch signal	0:ON
	5	feed motor phase A (interrupting input) IRQ5	1:ON
	4	main tray motor operation permission signal	0:ON
	3	main tray motor rotation mode (CCW)	1: negative rotation
	2	main tray motor rotation mode (CW)	1: positive rotation
	1	(writing built-in flash)	1: writing
	0	(writing built-in flash)	1: writing
P003	7	not used	
	6	main tray lower limit detection	I
	5	not used	
	4	not used	
	3	not used	
	2	not used	
	1	main tray paper detection	1: detection
	0	main tray loading volume (300 sheets) detection	1: detection
P004	7	staple motor operation permission signal	
	6	staple motor rotation mode (CCW)	1: negative rotation
	5	staple motor rotation mode (CW)	1: positive rotation
	4	not used	
	3	offset solenoid drive signal	1: drive
	2	not used	
	1	not used	
	0	not used	

address	bit	description	remarks
P005	7	stapler READY signal	1: detection
	6	staple detection	1: detection
	5	not used	
	4	not used	
	3	not used	
	2	not used	
	1	not used	
	0	not used	
P006	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	not used	
	2	stack delivery motor operation permission signal	1:ON
	1	stack delivery motor Phase B	1:ON
	0	stack delivery motor Phase A	1:ON
P007	7	not used	
	6	feed motor operation permission signal	0:ON
	5	feed motor current switch 3	1:ON
	4	feed motor current switch 2	1:ON
	3	feed motor current switch 1	1:ON
	2	feed motor current switch 0	1:ON
	1	feed motor phase B	1:ON
	0	feed motor phase B	1:ON
P008	7	not used	
	6	not used	
	5	not used	
	4	stack tray paper surface detection	1: detection
	3	processing tray paper presence detection	1: detection
	2	stack delivery HP detection	1: detection
	1	offset HP detection	1: detection
	0	inlet sensor	1: detection
P009	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	not used	
	2	not used	
	1	not used	
	0	not used	

address	bit	description	remarks
P010	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	not used	
	2	not used	
	1	not used	
	0	main tray motor clock signal IRQ6	0:ON
P011	7	not used	
	6	not used	
	5	not used	
	4	DIP_SW4	0:ON
	3	DIP_SW3	0:ON
	2	DIP_SW2	0:ON
	1	DIP_SW1	0:ON
	0	PUSH_SW	0:ON
P012	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	EEPROM_DI	1:ON
	2	EEPROM_DO	1:ON
	1	EEPROM_SK	1:ON
	0	EEPROM_CS	1:ON
P013	7	not used	
	6	not used	
	5	24V power ON	0:ON
	4	finger safety SW	1: detection
	3	joint open detection	1: detection
	2	not used	
	1	not used	
	0	finisher pilot LED	1:ON

<Finisher W1/W2>

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Address	bit	Description	Remarks
P001	0	inlet feed motor phase A signal	
	1	inlet feed motor phase B signal	
	2	inlet feed motor phase A* signal	
	3	inlet feed motor phase B* signal	
	4	escape feed motor phase A signal	
	5	escape feed motor phase B signal	
	6	escape feed motor phase A* signal	
	7	escape feed motor phase B* signal	

Address	bit	Description	Remarks
P002	0	punch feed motor phase A signal	
	1	punch feed motor phase B signal	
	2	punch feed motor phase A* signal	
	3	punch feed motor phase B* signal	
	4	tray motor CLK signal	
	5	swing locking motor current switchover I0	0: ON
	6	swing locking motor phase A signal	
	7	swing locking motor phase B signal	
P003	0	TxD for external source	
	1	TxD for write	
	2	RxD for external	
	3	RxD for write	
	4	punch connection detection	0: connected
	5	OUT for punch communication	0: ON
	6-7	not used	
P004	0	escape feed motor CLK (IRQ0*)	
	1	not used	
	2	saddle connection detection	0: connected
	3	upper tray FG (IRQ3*)	
	4	swing lock HP sensor	1: HP
	5	not used	
	6	front cover open/closed sensor	0: open
	7	not used	
P005	0	TxD for punch communication	
	1	RxD punch for punch communication	
	2	IN for punch communication (IRQ2*)	0: ON
	3-7	not used	
P006	1	lower tray motor LOCK	0: locked
	2	not used	
	3	lower tray motor ON	0: ON
	4	not used	
	5	motor standby signal	0: ON
	6	not used	
	7	not used	
P007	0-7	not used	
P008	0	lower tray area sensor 1	0: detected
	1	lower tray area sensor 2	0: detected
	2	lower tray area sensor 3	0: detected
	3	not used	
	4	punch feed motor CLK (IRQ4*)	
	5	lower tray FG (IRQ5*)	
	6	inlet feed motor lock input (IRQ6*)	
	7	stack edging motor clock input (IRQ7*)	

Address	bit	Description	Remarks
P009	0	inlet sensor	1: paper present
	1	lower tray paper surface sensor	0: paper present
	2	1700-sheet paper surface sensor	0: paper present
	3	upper tray interlock	1: error
	4	upper tray area sensor 1	0: detected
	5	upper tray area sensor 2	0: detected
	6	upper tray area sensor 3	0: detected
	7	not used	
P010	0	inlet feed motor current switch I1	0: ON
	1	inlet feed motor current switch I0	0: ON
	2	punch feed motor current switch I1	0: ON
	3	punch feed motor current switch I0	0: ON
	4	punch feed motor standby	0: ON
	5	escape feed motor I0	0: ON
	6	escape feed motor I1	0: ON
	7	escape feed motor standby	0: ON
P011	0	upper tray motor CW/CCW	1: CCW/0: CW
	1	upper tray motor ON	0: ON
	2	upper tray motor LOCK	0: locked
	3	solenoid ON signal	0: ON
	4-5	not used	
	6	lower tray motor CW/CCW	1: CCW/0: CW
	7	delivery path sensor	1: paper present
P012	0	inlet roller shift solenoid	1: ON
	1	buffer roller shift solenoid	1: ON
	2	expansion IO chip select signal (CS2*)	
	3	IPC chip select (CS3*)	
	4-7	not used	
P013	0	gear change motor phase A signal	
	1	gear change motor phase B signal	
	2	gear change motor current switch I0	0: ON
	3	gear change motor current switch I1	0: ON
	4	escape flapper solenoid ON signal	1: ON
	5	EEPROM output signal	
	6	EEPROM enable signal	
	7	EEPROMCLK	
P014	0	EEPROM input signal	
	1	aligning plate FHP sensor	1: HP
	2	aligning plate RHP sensor	1: HP
	3	handling tray paper sensor	1: paper present
	4	trailing edge assist HP sensor	1: HP
	5	for machine download	
	6-7	not used	

Address	bit	Description	Remarks
P015	0	aligning plate R motor phase A signal	
	1	aligning plate R motor phase B signal	
	2	aligning pate R motor current switch I0	0: ON
	3-7	not used	
P016	0	aligning plate F motor phase A signal	
	1	aligning plate F motor phase B signal	
	2	aligning plate F motor current switch I0	0: ON
	3-7	not used	
P017	0	trailing edge assist motor phase A signal	
	1	trailing edge assist motor phase B signal	
	2	trailing edge assist motor current switch I0	0: ON
	3	trailing edge assist motor current switch I1	0: ON
	4	trailing edge assist motor standby signal	0: ON
	5-7	not used	
P018	0	stapler shift motor standby signal	0: ON
	1	stapler motor direction switch CCW	1: ON
	2	stapler motor direction switch CW	1: ON
	3	not used	
	4	stapler shift motor phase A signal	
	5	stapler shift motor phase B signal	
	6-7	not used	
P019	0	escape tray path sensor	1: paper present
	1	escape tray full sensor	1: full
	2	stapler HP detection	1: HP
	3	stapler READY	1: ready
	4	stapler LS	1: staple present
	5	escape feed upper cover sensor	1: close
	6	stapler shift HP sensor	1: HP
	7	stapler alignment interference sensor	1: interference
P020	0	stapler shift motor current switch I0	0: ON
	1	stapler shift motor current switch I1	0: ON
	2	No. 1 delivery motor shift solenoid	1: ON
	3	buffer trailing edge retaining solenoid	1: ON
	4	stack edging lower roller clutch	1: ON
	5	shutter open/close clutch	1: ON
	6	stack edging motor current switch I1	0: ON
	7	stack edging motor current switch I0	0: ON
P021	0	stack feeding motor phase A signal	
	1	stack edging motor phase B signal	
	2	stack feeding motor phase A* signal	
	3	stack edging motor phase B* signal	
	4	upper tray paper surface sensor	1: paper present
	5	stapler interlock	1: open
	6	shutter HP sensor	1: HP
	7	swing guide interlock	1: open

Address	bit	Description	Remarks
P022	0	DIPSW_8	0: ON
	1	DIPSW_7	0: ON
	2	DIPSW_6	0: ON
	3	DIPSW_5	0: ON
	4	DIPSW_4	0: ON
	5	DIPSW_3	0: ON
	6	DIPSW_2	0: ON
	7	DIPSW_1	0: ON
P023	0	PUSHSW1	0: ON
	1	PUSHSW2	0: ON
	2	PUSHSW	0: ON
	3	upper tray paper sensor	0: paper present
	4	lower tray paper sensor	0: paper present
	5	24V detection	0: detected
	6	front cover interlock	1: open
	7	fan error detection	0: detected
P024	0	fan ON signal	1: ON
	1	LED1	0: ON
	2	LED2	0: ON
	3	LED3	0: ON
	4	X4-POWER-ON signal	0: ON
	5-7	not used	
P025	0	saddle guide motor phase A signal	
	1	saddle guide motor phase B signal	
	2	saddle guide motor current switch I0	0: ON
	3	saddle feed motor current switch I0	0: ON
	4	saddle feed motor phase A signal	
	5	saddle feed motor phase B signal	
	6	saddle feed motor phase A* signal	
	7	saddle feed motor phase B* signal	
P026	0	saddle alignment motor phase A signal	
	1	saddle alignment motor phase B signal	
	2	saddle alignment motor current switch I0	0: ON
	3	saddle paper positioning motor current switch I0	0: ON
	4	saddle paper positioning motor phase A signal	
	5	saddle paper position motor phase B signal	
	6	solenoid PWM	
	7	saddle folding motor PWM	
P027	0	trimmer PICKUP-TxD	
	1	TxD for write	
	2	trimmer CPU-RxD	
	3	RxD for write	
	4	trimmer OUT	0: ON
	5	trimmer connection detection	0: detected
	6-7	not used	

Address	bit	Description	Remarks
P028	0	saddle front stapling current detection	1: detected
	1	saddle rear stapling current detection	1: detected
	2	saddle delivery door connection detection	1: detected
	3-5	not used	
	6	saddle stapler unit connection detection	1: detected
	7	not used	
P029	0	saddle rear staple detecting switch	0: detected
	1	saddle front staple detecting switch	0: detected
	2	saddle front stapler CCW	0: ON
	3	stapler feed motor standby	0: ON
	4-7	not used	
P030	0-1	not used	
	2	saddle folding motor FWD (CW)	1: ON
	3	saddle folding motor RV (CCW)	1: ON
	4	saddle folding CLK sensor (IRQ0*)	
	5	saddle butting CLK sensor (IRQ1*)	
	6	saddle rear stapler HP sensor (IRQ2*)	1: HP
	7	saddle front stapler HP sensor (IRQ3*)	1: HP
P031	0	saddle position HP sensor	0: HP
	1	saddle guide HP sensor	1: HP
	2	inlet cover sensor	1: close
	3	saddle stapler unit sensor	0: detected
	4	saddle butting HP sensor (IRQ4*)	1: HP
	5	saddle butting TOP sensor (IRQ5*)	1: butting position
	6	trimmer IN (IRQ6*)	0: ON
	7	saddle feed motor CLK (IRQ7*)	
P032	0	saddle tray paper sensor	0: paper present
	1	positioning plate paper sensor	0: paper present
	2	saddle crescent roller sensor	0: HP
	3	saddle delivery sensor	0: paper present
	4	saddle trailing edge sensor 1	1: detected
	5	saddle trailing edge sensor 2	1: detected
	6	saddle trailing edge sensor 3	1: detected
	7	saddle path sensor	1: detected
P033	0	saddle butting motor EN	1: ON
	1	saddle butting motor FWD (CW)	1: ON
	2	saddle butting motor RV (CCW)	1: ON
	3	saddle folding HP sensor	0: HP
	4	not used	
	5	saddle delivery sensor	0: paper present
	6	saddle aligning plate HP sensor	0: HP
	7	not used	

Address	bit	Description	Remarks
P034	0	saddle inlet solenoid	1: ON
	1	saddle No. 1 flapper solenoid	1: ON
	2	saddle No. 2 flapper solenoid	1: ON
	3	saddle pickup solenoid	1: ON
	4-6	not used	
	7	saddle inlet sensor	1: detected
P035	0	saddle rear stapler CW (CW)	0: ON
	1	saddle rear stapler CCW (CCW)	0: ON
	2	saddle front stapler CW (CW)	0: ON
	3	chip select (CS1*)	
	4-7	not used	
P036	0	DIPSW_1	0: ON
	1	DIPSW_2	0: ON
	2	DIPSW_3	0: ON
	3	DIPSW_4	0: ON
	4	DIPSW_5	0: ON
	5	DIPSW_6	0: ON
	6	DIPSW_7	0: ON
	7	DIPSW_8	0: ON
P037	0	not used	
	1	PUSHSW1	0: ON
	2	5V detection signal	0: detected
	3	24V detection signal	0: detected
	4	for revision control	
	5	for revision control	
	6	for revision control	
	7	for revision control	
P038	0	download ON signal	1: ON
	1	not used	
	4	LED3	0: ON
	5	LED2	0: ON
	6	LED1	0: ON
	7	power-on signal	0: ON
P039	0	DIPSW1	0: ON
	1	DIPSW2	0: ON
	2	DIPSW3	0: ON
	3	not used	
	4	PCH-OUT	
	5	trailing edge sensor	1: ON
	6	punch encoder lock	
	7	punch HP sensor	0: detected
P040	0	PCH-IN	
	1	RxD	
	2	TxD	
	3-7	not used	

Address	bit	Description	Remarks
P041	0	EEPROM-IN	
	1	EEPROM-OUT	
	2	EEPROM-CLK	
	3	EEPROM-CS	
	4	horizontal registration HP sensor	1: ON
	5	horizontal registration motor STB	0: ON
	6	punch motor CCW	0: ON
	7	punch motor CW	0: ON
P042	0-3	not used	
	4	DIPSW4	0: ON
	5	horizontal registration motor CUR	0: ON
	6	PWM	
	7	not used	
P043	0	LED1	0: ON
	1	horizontal registration motor INA	
	2	horizontal registration motor INB	
	3	LED2	0: ON
	4	front cover sensor	0: close
	5	BOOTMODE	
	6	PUSHSW2	0: ON
	7	PUSHSW1	0: ON
P044	0-4	not used	
	5	upper cover sensor	1: open
	6-7	not used	
P045	ADDRA	not used	
P046	ADDRB	not used	
P047	AD0	trailing edge sensor	
P048	AD1	B5R sensor	
P049	AD2	A4R sensor	
P050	AD3	B4 sensor	
P051	AD6	dust sensor	
P052	AD7	A3 sensor	

19.2.6 MN-CONT

Address	Bit	Sign	Remarks
P001	0	I/O port for general-purpose (P1-board)	
	1	I/O port for general-purpose (S-board)	
	2	I/O port for general-purpose (R-board)	
	3	I/O port for general-purpose (P0-board)	
	4	Test packet issuance request to the image processing ASIC	
	5	DDI-P POWER signal	L:ON
	6	Delivery count (Control card, Coin machine)	H:At delivery
	7	Pick-up count (Control card, Coin machine)	H:At pick-up
P002	0	CPU reset cancel signal	
	1	Image processing ASIC reset signal	
	2	DDI-P CTS signal (Printer -> Controller)	
	3	DDI-P RTS signal (Controller -> Printer)	
	4	DDI-P Power Ready signal (Controller -> Printer)	
	5	DDI-P Power Ready signal (Printer -> Controller)	
	6	Copy allowing signal (Control card)	
	7	Copy allowing signal (Coin machine)	
P003	0	Controller cooling fan ON signal	1:ON 0:OFF
	1	USB host Power (5V) control signal	1:ON 0:OFF
	2	PCI Serror interruption clear	
	3	FAX reset signal	
	4	for R&D	
	5	for R&D	
	6	for R&D	
	7	for R&D	
P004	0	for R&D	
	1	FAX board connection detection	0: Unconnected 1: Connected
	2	FAX board connection detection	0: Unconnected 1: Connected
	3	FAX board connection detection	0: Unconnected 1: Connected
	4	Control panel connection check	0: Connected 1: Unconnected
	5	DIMM judgment	
	6	DIMM judgment	
	7	DIMM judgment	

Address	Bit	Sign	Remarks
P005	0	Open Interface Power Ready signal	
	1	Watch dog function	
	2	Watch dog interruption clear	
	3	DDI-S Livewake signal	
	4	DDI-S Download signal	
	5	DDI-P Livewake signal	
	6	DDI-P Download signal	
	7	for R&D	
P006	0	Main controller PCB version	
	1	Main controller PCB version	
	2	Main controller PCB version	
	3	Main controller PCB version	
	4	Coin machine controller Power Ready signal	
	5	Coin machine Power Ready signal	
	6	Coin machine Communication Ready signal	
	7	for R&D	
P007	0	not used	
	1	not used	
	2	Power control signal	
	3-6	not used	
	7	Modem board detection signal	0: Connected 1: Unconnected
P008	0	FRAM CLK	
	1	FRAM DATA	
	2	FRAM WP	
	3-7	not used	
P009	0	SPD CLK	
	1	SPD DT	
	2-4	not used	
	5	Emergency night power source (13V) ON signal	0:OFF 1:ON
	6	Emergency night power source switching signal	0: High efficiency 1: Standard
	7	Emergency night power source (24V) ON signal	0:OFF 1:ON
P010	0	LCD Backlit switch control signal	0:ON 1:OFF
	1	not used	
	2	SDRAM structure detection	
	3	SDRAM structure detection	
	4	Watch dog timer CLK	
	5	Emergency night power source reset signal	
	6,7	not used	
P011	0-7	not used	
P012	0-7	not used	
P013	0-7	not used	
P014	0-7	not used	
P015	0-7	not used	
P016	0-7	not used	

19.3 ADJUST (Adjustment Mode)

19.3.1 COPIER

19.3.1.1 COPIER Table

1. ADJ-XY
Adjust the scanner image leading edge position

T-19-28

COPIER>ADJUST>ADJ-XY		
Sub item	**Description**	**level.**
ADJ-X	Use it to adjust the scanner image leading edge position (i.e., image read start position in sub scanning direction). Method of adjustment - if the non-image width is larger than indicated, decrease the setting. - if an area outside the original is copied, increase the setting. - an increase by '1' will move the image read start position toward the trailing edge by 0.1 mm (i.e., move the image read area toward the trailing edge). - if you have initialized the RAM of the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment 1 to 100 [Factory default/After RAM clear: 20] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
ADJ-Y	Use it to adjust the read start cell position of the CCD (i.e., image read start position in main scanning direction). Method of Adjustment - if the non-image width is larger than indicated, decrease the setting. - if an area outside the original is copied, increase the setting. - an increase by '1' will move the image read start position toward the front by 0.1 mm (i.e., move the image read area toward the front). - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment 47 to 131 [Factory default/After RAM clear: 90] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
ADJ-S	Use it when entering the adjustment value for the scanner shading measurement position. Method of Adjustment - a decrease by '1' will move the shading measurement position toward the leading edge by 0.1 mm. - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment 40 to 60 [Factory default/After RAM clear: 50] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
ADJ-Y-DF	Use it to adjust the main scanning points for DF SRAM reading mode. Method of Adjustment - an increase by '1' will move the image read start position to the front by 0.1 mm. - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment 21 to 106 [Factory default/After RAM clear: 53] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1

COPIER>ADJUST>ADJ-XY		
Sub item	**Description**	**level.**
STRD-POS	Use it to adjust the CCD read position for DF stream reading mode. Method of Adjustment - an increase by '1' will move the image read position to the left by 1 mm. - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment 1 to 200 [Factory default/After RAM clear: 110] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
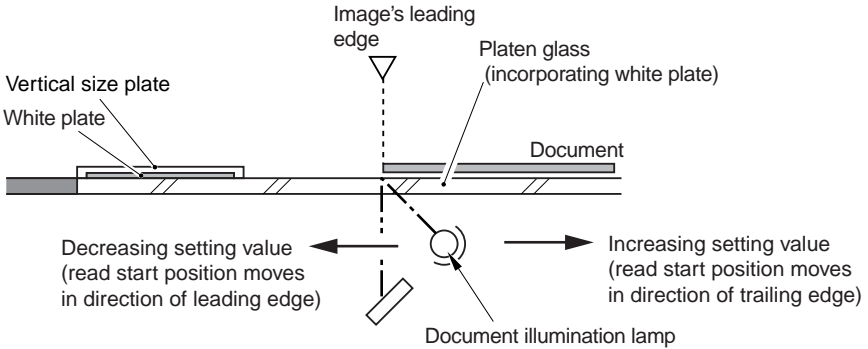
F-19-7
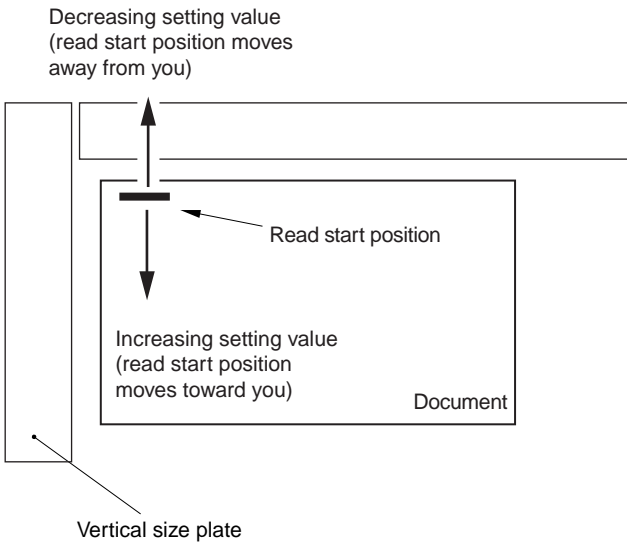
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2. CCD

T-19-29

COPIER>ADJUST>CCD		
Sub item	**Description**	**level.**
W-PLT-X/Y/Z	Use it when entering the white label data indicated on the standard white plate. Method of Adjustment - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. - if you have replaced the copyboard glass, enter the value indicated on the copyboard glass. (See the figure below) Range of Adjustment: 1 to 9999 [Factory default/After RAM clear: W-PLT-X=8271: W-PLT-Y=8735: W-PLT-Z=9418] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
CCDU-RG	Use it to correct color displacement in sub scanning direction between RG associated with the CCD unit. Method of Adjustment - if you have initialized the RAM on the reader controller or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -9 to 9 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
CCDU-GB	Use it to correct color displacement in sub scanning direction between GB associated with the CCD unit. Method of Adjustment - if you have initialized the RAM on the reader controller or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -9 to 9 [Factory default/After RAM clear: 0]	1
FCCDU-RG	Use it to correct color displacement in sub scanning direction between R and G associated with the CCD unit at time of shipment. Method of Adjustment - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -9 to 9 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
FCCDU-GB	Use it to correct color displacement in sub scanning direction between GB associated with the CCD unit at time of shipment. Method of Adjustment - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -9 to 9 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
50-RG	Use it to indicate the degree of offset (color displacement; RG) for book mode at 50% reading. Method of Adjustment - if you have initialized the RAM on the rear controller or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -256 to 256 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1

COPIER>ADJUST>CCD		
Sub item	**Description**	**level.**
50-GB	Use it to indicate the degree of offset (color displacement; GB) for book mode at 50% reading. Method of Adjustment - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -256 to 256 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
100-RG	Use it to indicate the degree of offset (color displacement; RG) for book mode at 100% reading. Method of Adjustment - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -256 to 256 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
100-GB	Use it to indicate the degree of offset (color displacement; GB) for book mode at 100% reading. Method of Adjustment - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -256 to 256 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
50DF-RG	Use it to indicate the degree of offset (color displacement RG) for ADF mode at 50% reading. Method of Adjustment - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -256 to 256 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
50DF-GB	Use it to indicate the degree of offset (color displacement; GB) for ADF mode at 50% reading. Method of Adjustment - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -256 to 256 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
100DF-RG	Use it to indicate the degree of offset (color displacement; RG) for ADF mode at 100% reading. Method of Adjustment - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -256 to 256 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
100DF-GB	Use it to indicate the degree of offset (color displacement; GB) for ADF mode at 100% reading. Method of Adjustment - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: -256 to 256 [Factory default/After RAM clear: 0] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1

COPIER>ADJUST>CCD		
Sub item	Description	level.
DFTAR-R	Use it when entering the shading target value (red) for use when the DF is used (i.e., normal original read position). Method of Adjustment - COPIER>FUNCTION>CC>WLVL1/DF-WLVL2 if the image has a fault when the foregoing service mode item has been executed (e.g., as caused by soiling of the chart), enter the factory measurement using this mode item. - if you have initialize the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: 1 to 2047 [Factory default/After RAM clear: 1159] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
DFTAR-G	Use it when entering the shading target (green) for the DF (normal original reading position). Method of Adjustment - COPIER>FUNCTION>CD>DF-WLVL1/DF-WLVL2 if the image starts to develop a fault after executing the foregoing service mode item (e.g., as caused by soiling of the chart), enter the factory measurement using this mode. - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: 1 to 2047 [Factory default/After RAM clear: 1189] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1
DFTAR-B	Use it to enter the shading target value (blue) for the DF (normal original read position). Method of Adjustment - COPIER>FUNCTION>CCD>DF-WLVL1/DF-WLVL2 if the image starts to develop a fault after executing the foregoing service mode item, enter the factory measurement using this mode item. - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label. Range of Adjustment: 1 to 2047 [Factory default/After RAM clear: 1209] **Attention** If you have changed the setting, be sure to record the new setting on the service label.	1

value of W-PLATE-X   value of W-PLATE-Z

value of W-PLATE-Y
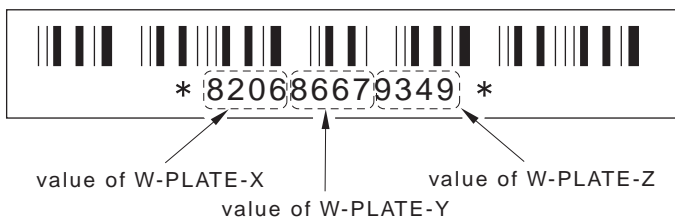
F-19-9

3. LASER
Laser Output Adjustment

T-19-30

COPIER>ADJUST>LASER		
*If you replaced the laser scaner unit, enter the value on the laser scaner unit.		
Sub item	Description	level.
PVE-OFST	Used to enter the adjusted value of the laser irradiation position. Adjustment method - If you have cleared the DC controller PCB's RAM or replaced the DC controller PCB, enter the value on the service label. Adjustment range -25 to 25 [Factory default/After RAM clear: 0] **Reference:** This item is to enable input of the factory-adjusted value, and should not be adjusted in the market.	1
LDADJ1-Y*	A-B laser reproduction ratio (Y) B laser reproduction adjustment value (Y) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and B become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ2-Y*	A-C laser reproduction ratio (Y) C laser reproduction adjustment value (Y) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and C become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ3-Y*	A-C laser reproduction ratio (Y) C laser reproduction adjustment value (Y) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and C become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]A-D laser reproduction ratio (Y) D laser reproduction adjustment value (Y) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios the laser of A and D become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ4-Y*	A-D laser reproduction ratio (Y) D laser reproduction adjustment value (Y) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios the laser of A and D become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]A-B laser phase difference (Y) A-B inter-laser phase difference (exposure start timing) adjustment value (Y) of the laser scanner unit Unless an appropriate value is entered here, A and B laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1

COPIER>ADJUST>LASER		
*If you replaced the laser scaner unit, enter the value on the laser scaner unit.		
Sub item	**Description**	**level.**
LDADJ5-Y*	A-C laser phase difference (Y) A-C inter-laser phase difference (exposure start timing) adjustment value (Y) of the laser scanner unit Unless an appropriate value is entered here, A and C laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1
LDADJ6-Y*	A-D laser phase difference (Y) A-D inter-laser phase difference (exposure start timing) adjustment value (Y) of the laser scanner unit Unless an appropriate value is entered here, A and D laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1
LDADJ1-M*	A-B laser reproduction ratio (M) B laser reproduction adjustment value (M) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and B become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ2-M*	A-C laser reproduction ratio (M) C laser reproduction adjustment value (M) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and C become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ3-M*	A-D laser reproduction ratio (M) D laser reproduction adjustment value (M) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and D become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ4-M*	A-B laser phase difference (M) A-B inter-laser phase difference (exposure start timing) adjustment value (M) of the laser scanner unit Unless an appropriate value is entered here, A and B laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1
LDADJ5-M*	A-C laser phase difference (M) A-C inter-laser phase difference (exposure start timing) adjustment value (M) of the laser scanner unit Unless an appropriate value is entered here, A and C laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1
LDADJ6-M*	A-D laser phase difference (M) A-D inter-laser phase difference (exposure start timing) adjustment value (M) of the laser scanner unit Unless an appropriate value is entered here, A and D laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1

COPIER>ADJUST>LASER		
If you replaced the laser scaner unit, enter the value on the laser scaner unit.		
Sub item	**Description**	**level.**
LDADJ1-C*	A-B laser reproduction ratio (C) B laser reproduction adjustment value (C) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and B become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ2-C*	A-C laser reproduction ratio (C) C laser reproduction adjustment value (C) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and C become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ3-C*	A-D laser reproduction ratio (C) D laser reproduction adjustment value (C) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and D become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ4-C*	A-B laser phase difference (C) A-B inter-laser phase difference (exposure start timing) adjustment value (C) of the laser scanner unit Unless an appropriate value is entered here, A and B laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1
LDADJ5-C*	A-C laser phase difference (C) A-C inter-laser phase difference (exposure start timing) adjustment value (C) of the laser scanner unit Unless an appropriate value is entered here, A and C laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1
LDADJ6-C*	A-D laser phase difference (C) A-D inter-laser phase difference (exposure start timing) adjustment value (C) of the laser scanner unit Unless an appropriate value is entered here, A and D laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1
LDADJ1-K*	A-B laser reproduction ratio (Bk) B laser reproduction adjustment value (Bk) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and B become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ2-K*	A-C laser reproduction ratio (Bk) C laser reproduction adjustment value (Bk) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and C become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1

COPIER>ADJUST>LASER		
*If you replaced the laser scaner unit, enter the value on the laser scaner unit.		
Sub item	**Description**	**level.**
LDADJ3-K*	A-D laser reproduction ratio (Bk) D laser reproduction adjustment value (Bk) based on the A laser reproduction ratio of the laser scanner unit Unless an appropriate value is entered here, reproduction ratios of the laser A and D become different, resulting in exposed images of different reproduction ratios. Setting range: -512 ~ 511 [Factory default value /post-RAM clear value: 0]	1
LDADJ4-K*	A-B laser phase difference (Bk) A-B inter-laser phase difference (exposure start timing) adjustment value (Bk) of the laser scanner unit Unless an appropriate value is entered here, A and B laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1
LDADJ5-K*	A-C laser phase difference (Bk) A-C inter-laser phase difference (exposure start timing) adjustment value (Bk) of the laser scanner unit Unless an appropriate value is entered here, A and C laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1
LDADJ6-K*	A-D laser phase difference (Bk) A-D inter-laser phase difference (exposure start timing) adjustment value (Bk) of the laser scanner unit Unless an appropriate value is entered here, A and D laser phases (exposure starting position) become different, resulting in faulty exposed image Setting range: 0 ~ 1023 [Factory default value /post-RAM clear value: 0]	1
LA-MK-Y*	Laser manufacturer identification (Y) Identify the scanner unit manufacturer (Y) Setting range: 0 ~ 7 [Factory default value / post-RAM clear value: 0]	1
LA-MK-M*	Laser manufacturer identification (M) Identify the scanner unit manufacturer (M) Setting range: 0 ~ 7 [Factory default value / post-RAM clear value: 0] P1-19	1
LA-MK-C*	Laser manufacturer identification (C) Identify the scanner unit manufacturer (C) Setting range: 0 ~ 7 [Factory default value / post-RAM clear value: 0]	1
LA-MK-K*	Laser manufacturer identification (Bk) Identify the scanner unit manufacturer (Bk) Setting range: 0 ~ 7 [Factory default value / post-RAM clear value: 0]	1

4. IMG-REG
Adjustment for color displacement of the color image

T-19-31

COPIER>ADJUST>IMG-REG		
Sub item	**Description**	**level.**
MAG-H-K	Used to adjust magnification of the Bk image's main scanning direction. Adjustment method - If you have cleared the DC controller PCB's RAM or replaced the DC controller PCB, enter the value on the service label. Adjustment range 10 to 10 [Factory default/After RAM clear: 0] **Reference:** This item is to enable input of the factory-adjusted value, and should not be adjusted in the market.	1

5. DENS
Concentration of developer in developer unit.

T-19-32

COPIER>ADJUST>DENS		
Sub item	**Description**	**level.**
T-SPLY-Y	Adjusting the amount of toner supply (Y color) Adjustment method - Enter a value of the service label when RAM of the DC controller PCB has been cleared/the DC controller has been replaced. Adjustment range -3 to 5 [Factory default/After RAM clear: 0]	2
T-SPLY-M	Adjusting the amount of toner supply (M color) Adjustment method - Enter a value of the service label when RAM of the DC controller PCB has been cleared/the DC controller has been replaced. Adjustment range -3 to 5 [Factory default/After RAM clear: 0]	2
T-SPLY-C	Adjusting the amount of toner supply (C color) Adjustment method - Enter a value of the service label when RAM of the DC controller PCB has been cleared/the DC controller has been replaced. Adjustment range -3 to 5 [Factory default/After RAM clear: 0]	2
T-SPLY-K	Adjusting the amount of toner supply (K color) Adjustment method - Enter a value of the service label when RAM of the DC controller PCB has been cleared/the DC controller has been replaced. Adjustment range -3 to 5 [Factory default/After RAM clear: 0]	2
DMAX-Y/ M/C/K	Y/M/C/K colour density control target offset adjustment Adjustment method Sets offset value for Y/M/C/K colour density control target in 2D-MAX control. Setting range: -8 to 8 [Factory settings and after RAM clear: 0]	2
P-ALPHA	Patch detection sensor P wave and S wave ratio: a Adjusts a, the patch detection sensor P wave and S wave ratio. Setting range: 512 to 2047 [Factory settings and after RAM clear: 1200]	1
P-K-Y	Patch density conversion coefficient: k (Y) Adjusts k, the Y colour patch density conversion coefficient Setting range: 0 to 2047 [Factory settings and after RAM clear: 500]	2

COPIER>ADJUST>DENS		
Sub item	Description	level.
P-K-M	Patch density conversion coefficient: k (M) Adjusts k, the M colour patch density conversion coefficient Setting range: 0 to 2047 [Factory settings and after RAM clear: 500]	
P-K-C	Patch density conversion coefficient: k (C) Adjusts k, the C colour patch density conversion coefficient Setting range: 0 to 2047 [Factory settings and after RAM clear: 450]	
P-K-K	Patch density conversion coefficient: k (Bk) Adjusts k, the Bk colour patch density conversion coefficient Setting range: 0 to 2047 [Factory settings and after RAM clear: 1]	

6. BLANK
Adjustment for the leading edge of image/margin of the rear end

T-19-33

COPIER>ADJUST>BLANK		
Sub item	Description	level.
BLANK-T	Used to enter adjusted value of image blank width (leading edge). Adjustment method - If you have cleared the main controller PCB's RAM or replaced the SRAM PCB, enter the value on the service label. Adjustment range 0 to 1000 [Factory default/After RAM clear: +59]	1
BLANK-L	Used to enter adjusted value of image blank width (left edge). Adjustment method - If you have cleared the main controller PCB's RAM or replaced the SRAM PCB, enter the value on the service label. Adjustment range 0 to 1000 [Factory default/After RAM clear: +47]	1
BLANK-R	Used to enter adjusted value of image blank width (right edge). Adjustment method - If you have cleared the main controller PCB's RAM or replaced the SRAM PCB, enter the value on the service label. Adjustment range 0 to 1000 [Factory default/After RAM clear: +47]	1
BLANK-B	Used to enter adjusted value of image blank width (trailing edge). Adjustment method - If you have cleared the main controller PCB's RAM or replaced the SRAM PCB, enter the value on the service label. Adjustment range 0 to 1000 [Factory default/After RAM clear: +59]	1

7. V-CONT
Potential Control System Adjustment

T-19-34

COPIER>ADJUST>V-CONT		
Sub item	Description	level.
VCONT-Y/M/C/K	- VCONT-Y/M/C/K (Used to adjust electric potential for image contrast.) Adjustment range: -30 to 30 (10 V units) [Factory default/After RAM clear: 0] The larger the setting value, the higher the density. Whenever possible, avoid using this setting during normal operation.	2
VBACK-Y/M/C/K	- VBACK-Y/M/C/K (Used to adjust electric potential for removing image fog.) Adjustment range: Y/M -6 to 12 (5 V units) [Factory default/After RAM clear: 0] C/K -12 to 6 (5 V units) [Factory default/After RAM clear: 0] The larger the setting value, the more fog is reduced. Whenever possible, avoid using this setting during normal operation.	2
VD-LIM-Y	Adjusting the upper limit of charge DC. Adjustment range: -10 to 0 (1 step: 25V) [Factory default/After RAM clear: 0] Change a setting value when either of the following faulty images occurs. - Color blanking in the highlight area (especially on low-density image) - Fogging (when making a large number of low-density image copies)	2
VD-LIM-M	Adjusting the upper limit of chargeDC. Adjustment range: -10 to 0 (1 step: 25V) [Factory default/After RAM clear: 0] Change a setting value when either of the following faulty images occurs. - Color blanking in the highlight area (especially on low-density image) - Fogging (when making a large number of low-density image copies)	2
VD-LIM-C	Adjusting the upper limit of charge DC. Adjustment range: -10 to 0 (1 step: 25V) [Factory default/After RAM clear: 0] Change a setting value when either of the following faulty images occurs. - Color blanking in the highlight area (especially on low-density image) - Fogging (when making a large number of low-density image copies)	2
VD-LIM-K	Adjusting the upper limit of charge DC. Adjustment range: -10 to 0 (1 step: 25V) [Factory default/After RAM clear: 0] Change a setting value when either of the following faulty images occurs. - Color blanking in the highlight area (especially on low-density image) - Fogging (when making a large number of low-density image copies)	2

8. PASCAL
Adjustment for auto gradation correction control

T-19-35

COPIER>ADJUST>PASCAL		
Sub item	Description	level.
OFST-P-Y/M/C/K	Use it to apply offset adjustment on the test print reading signal (Y) for PASCAL control at time of auto gradation correction (full). Method of Adjustment - a higher setting will make the image darker after auto gradation correction (full). Range of Adjustment: -128 to +128 [Factory default/After RAM clear: 0]	1

9. COLOR
Adjustment for color balance

T-19-36

COPIER>ADJUST>COLOR		
Sub item	Description	level.
LD-OFS-Y/M/C/K	- LD-OFS-Y/M/C/K (Used to adjust low-density color balance.) Whenever possible, avoid using this setting during normal operation.	2
MD-OFS-/Y/M/C/K	- MD-OFS-Y/M/C/K (Used to adjust medium-density color balance.) Whenever possible, avoid using this setting during normal operation. (Recommended setting value: -1)	2
HD-OFS-Y/M/C/K	- HD-OFS-Y/M/C/K (Used to adjust high-density color balance.) Whenever possible, avoid using this setting during normal operation. (Recommended setting value: -2)	2

10. HV-PRI
Primary Charging Assembly Output Adjustment

T-19-37

COPIER>ADJUST>HV-PRI		
Sub item	Description	level.
LSUB-Y/M/C/KDC	- LSUB-Y/M/C/KDC (Used to turn ON/OFF of DC bias offset for the downstream auxiliary brush.) Whenever possible, avoid using this setting during normal operation.	2
USUB-Y/M/C/KAC	- USUB-Y/M/C/KAC (Used to adjust upstream auxiliary brush charge voltage.) Whenever possible, avoid using this setting during normal operation.	2
DIS-TGY/M/C/K	- DIS-TGY/M/C/K (Used to adjust the offset to the target current used in discharge current control (normal paper).) Whenever possible, avoid using this setting during normal operation.	2
DIS-TGY2/M2/C2/K2	- DIS-TGY2/M2/C2/K2 (Used to adjust the offset to the target current used in discharge current control (card/special paper/transparencies).) Whenever possible, avoid using this setting during normal operation.	2

11. HV-TR

Transfer Charging Assembly / Pre-Transfer Charging Assembly Output Adjustment
The adjusted offset doesn't become valid unless all of the following 6 items are entered: 2TR-TGT, 2TR-SHR, TR-PPR, TR-ENV, TR-CLR and TRDUP.
The settings entered for all 6 items make up a single pattern. 8 patterns can be stored in memory.

T-19-38

COPIER>ADJUST>HV-TR		
Sub item	**Description**	**level.**
2TR-TGT1/2/3/4/5/6/7/8	- 2TR-TGT1/2/3/4/5/6/7/8 (Used to adjust the offset to the secondary transfer target current.) Adjustment range: -5 to +5 (2 μA units) [Factory default/After RAM clear: 0] Increasing the setting value: Effective for images with toner spatter/water droplets. Decreasing the setting value: Effective for images with white marks, white blotches, rough-textured half-tones.	2
2TR-SHR1/2/3/4/5/6/7/8	- 2TR-SHR1/2/3/4/5/6/7/8 (Used to adjust the offset to the secondary transfer paper-portion voltage.) Adjustment range: -5 to +5 (100 V units) [Factory default/After RAM clear: 0] Increasing the setting value: Effective for images with toner spatter/water droplets. Decreasing the setting value: Effective for images with white marks, white blotches, rough-textured half-tones.	2
TR-PPR1/2/3/4/5/6/7/8	- TR-PPR1/2/3/4/5/6/7/8 (paper type item for secondary transfer offset adjustment) 1: Plain [Factory default/After RAM clear: 1] 2: Recycled 3: Bond 4: Tracing Paper 5: Heavy1 6: Heavy2 7: Special paper 1 (including labels) 8: Glossy paper 9: Special paper 2 (including Japanese paper) 10: Postcards/envelopes 11: Transparencies (color) 12: Transparencies (monochrome)	2
TR-ENV1/2/3/4/5/6/7/8	- TR-ENV1/2/3/4/5/6/7/8 (environmental item for secondary transfer offset adjustment) Enter value of COPIER > DISPLAY > MISC > ENV-TR. 1: Low-humidity environment [Factory default/After RAM clear: 1] 2: Normal-humidity environment 3: High-humidity environment	2
TR-CLR1/2/3/4/5/6/7/8	- TR-CLR1/2/3/4/5/6/7/8 (color mode item for secondary transfer offset adjustment) 1: Full-color mode [Factory default/After RAM clear: 1] 2: Monochrome mode	2
TR-DUP1/2/3/4/5/6/7/8	- TR-DUP1/2/3/4/5/6/7/8 (one/two-sided item for secondary transfer offset adjustment) 1: One-sided [Factory default/After RAM clear: 1] 2: Automatic two-sided 3: Manual feed two-sided	2
1TR-TGY	Adjusting target current offset of primary transfer ATVC (Y) Adjustment range: -5 to 5 (unit: 0.5 uA) (default: 0) It is enabled when COPIER>OPTION>BODY>PTATVCSW = 1 (primary ATVC control is enabled). Change a setting value when any of the following faulty images occurs. - Mottle marks/Mark of the auxiliary brush due to remaining transfer toner (when color density of the brush mark is high)/Transfer ghost: Primary transfer current is low. -> Change a setting value to the '+' direction. - Fogging due to re-transfer/Mark of the auxiliary brush due to remaining re-transfer toner (when color density of the former station is higher than that of the brush mark): Primary transfer current is high -> Change a setting value to the '-' direction.	2

COPIER>ADJUST>HV-TR		
Sub item	Description	level.
1TR-TGM	Adjusting target current offset of primary transfer ATVC (M) Adjustment range: -5 to 5 (unit: 0.5 uA) (default: 0) It is enabled when COPIER>OPTION>BODY>PTATVCSW = 1 (primary ATVC control is enabled). Change a setting value when any of the following faulty images occurs. - Mottle marks/Mark of the auxiliary brush due to remaining transfer toner (when color density of the brush mark is high)/Transfer ghost: Primary transfer current is low. -> Change a setting value to the '+' direction. - Fogging due to re-transfer/Mark of the auxiliary brush due to remaining re-transfer toner (when color density of the former station is higher than that of the brush mark): Primary transfer current is high -> Change a setting value to the '-' direction.	2
1TR-TGC	Adjusting target current offset of primary transfer ATVC (C) Adjustment range: -5 to 5 (unit: 0.5 uA) (default: 0) It is enabled when COPIER>OPTION>BODY>PTATVCSW = 1 (primary ATVC control is enabled). Change a setting value when any of the following faulty images occurs. - Mottle marks/Mark of the auxiliary brush due to remaining transfer toner (when color density of the brush mark is high)/Transfer ghost: Primary transfer current is low. -> Change a setting value to the '+' direction. - Fogging due to re-transfer/Mark of the auxiliary brush due to remaining re-transfer toner (when color density of the former station is higher than that of the brush mark): Primary transfer current is high -> Change a setting value to the '-' direction.	2
1TR-TGK1	Adjusting target current offset of primary transfer ATVC (K: Black (monochrome) mode) Adjustment range: -5 to 5 (unit: 0.5 uA) (default: 0) It is enabled when COPIER>OPTION>BODY>PTATVCSW = 1 (primary ATVC control is enabled). Change a setting value when any of the following faulty images occurs. - Mottle marks/Mark of the auxiliary brush due to remaining transfer toner (when color density of the brush mark is high)/Transfer ghost: Primary transfer current is low. -> Change a setting value to the '+' direction. - Fogging due to re-transfer/Mark of the auxiliary brush due to remaining re-transfer toner (when color density of the former station is higher than that of the brush mark): Primary transfer current is high -> Change a setting value to the '-' direction.	2
1TR-TGK4	Adjusting target current offset of primary transfer ATVC (K: 4C mode) Adjustment range: -5 to 5 (unit: 0.5 uA) (default: 0) It is enabled when COPIER>OPTION>BODY>PTATVCSW = 1 (primary ATVC control is enabled). Change a setting value when any of the following faulty images occurs. - Mottle marks/Mark of the auxiliary brush due to remaining transfer toner (when color density of the brush mark is high)/Transfer ghost: Primary transfer current is low. -> Change a setting value to the '+' direction. - Fogging due to re-transfer/Mark of the auxiliary brush due to remaining re-transfer toner (when color density of the former station is higher than that of the brush mark): Primary transfer current is high -> Change a setting value to the '-' direction.	2

12. FEED-ADJ

T-19-39

COPIER>ADJUST>FEED-ADJ		
Sub item	**Description**	**level.**
REGIST	Used to adjust the registration roller clutch ON timing. Adjustment method - Increasing the value by 1 moves the image by 0.1 mm in the direction of the leading edge of the paper. - If you have cleared the DC controller PCB's RAM or replaced the DC controller PCB, enter the value on the service label. Adjustment range - 50 to 50 (0.1 mm units) [Factory default/After RAM clear: -20]	1
ADJ-REFE	Used to adjust the horizontal registration during re-feed. Adjustment method - Increasing the value by 1 moves the image 0.1 mm away from you. - If you have cleared the DC controller PCB's RAM or replaced the DC controller PCB, enter the value on the service label. Adjustment range - 100 to 100 (0.1 mm units) [Factory default/After RAM clear: 0]	1
REGIST2	use it to adjust the leading edge margin of the 2nd side in duplex mode Adjustment value see service label-Enter the value calculated by adding +10 to the adjustment value of the first side of the label. Adjustment range - 50 to 50 (unit: 0.1mm) [Factory default/After RAM clear: 0]	1
REG-NORM	Registration clutch ON timing (plain paper) Adjusts the margin on the leading edge (0.1mm scale) by adjusting the timing to turn ON the registration clutch for plain paper. Setting Range: 50 ~ -50 [Factory default value / post-RAM clear value: -20]	1
REG-THCK	Registration clutch ON timing (thick paper) Adjusts the margin on the leading edge (0.1mm scale) by adjusting the timing to turn ON the registration clutch for thick paper. Setting Range: 50 ~ -50 [Factory default value / post-RAM clear value: -20]	1
REG-OHT	Registration clutch ON timing (OHT) Adjustment of the OHT registration clutch ON timing allows adjustment of the leading edge margin (unit: 0.1mm). Setting range: -50 to 50 [Factory settings and after RAM clear: -20]	1
REG-DUP1	Second page registration clutch ON timing (plain paper) Adjustment of the plain paper second page registration clutch ON timing allows adjustment of the second page leading edge margin (unit: 0.1mm). Setting range: -50 to 50 [Factory settings and after RAM clear: -10]	1
REG-DUP2	Second page registration clutch ON timing (thick paper) Adjustment of the thick paper second page registration clutch ON timing allows adjustment of the second page leading edge margin (unit: 0.1mm). Setting range: -50 to 50 [Factory settings and after RAM clear: -10]	1

COPIER>ADJUST>FEED-ADJ		
Sub item	Description	level.
LP-FEED1	Pre-registration loop adjustment during CST pickup (plain paper) Adjusts pre-registration loop adjustment during plain paper CST pickup in increments of 0.5mm. Adjustment method Moving the setting in the plus direction in increments of 0.5mm increases the pre-registration curl. Moving the setting in the minus direction in increments of 0.5mm decreases the pre-registration curl. Setting range: -50 to 50 [Factory settings and after RAM clear: 0]	1
LP-FEED2	Pre-registration loop adjustment during CST pickup (thick paper and OHT) Adjusts pre-registration loop adjustment during thick paper and OHT CST pickup in increments of 0.5mm. Adjustment method Moving the setting in the plus direction in increments of 0.5mm increases the pre-registration curl. Moving the setting in the minus direction in increments of 0.5mm decreases the pre-registration curl. Setting range: -50 to 50 [Factory settings and after RAM clear: 0]	1
LP-MULT1	Pre-registration loop adjustment during multi-pickup (plain paper) Adjusts pre-registration loop adjustment during plain paper multi-pickup in increments of 0.5mm. Adjustment method Moving the setting in the plus direction in increments of 0.5mm increases the pre-registration curl. Moving the setting in the minus direction in increments of 0.5mm decreases the pre-registration curl. Setting range: -50 to 50 [Factory settings and after RAM clear: 0]	1
LP-MULT2	Pre-registration loop adjustment during multi-pickup (thick paper and OHT) Adjusts pre-registration loop adjustment during thick paper and OHT multi-pickup in increments of 0.5mm. Adjustment method Moving the setting in the plus direction in increments of 0.5mm increases the pre-registration curl. Moving the setting in the minus direction in increments of 0.5mm decreases the pre-registration curl. Setting range: -50 to 50 [Factory settings and after RAM clear: 0]	1
LP-DUP1	Pre-registration loop adjustment during duplex-pickup (plain paper) Adjusts pre-registration loop adjustment during plain paper duplex pickup in increments of 0.5mm. Adjustment method Moving the setting in the plus direction in increments of 0.5mm increases the pre-registration curl. Moving the setting in the minus direction in increments of 0.5mm decreases the pre-registration curl. Setting range: -50 to 50 [Factory settings and after RAM clear: 0]	1
LP-DUP2	Pre-registration loop adjustment during duplex-pickup (thick paper and OHT) Adjusts pre-registration loop adjustment during thick paper and OHT duplex pickup in increments of 0.5mm. Adjustment method Moving the setting in the plus direction in increments of 0.5mm increases the pre-registration curl. Moving the setting in the minus direction in increments of 0.5mm decreases the pre-registration curl. Setting range: -50 to 50 [Factory settings and after RAM clear: 0]	1

13. CST-ADJ

T-19-40

	COPIER>ADJUST>CST-ADJ	
Sub item	**Description**	**level.**
MF-A4R	Used to enter the basic value for the manual feed tray's paper width (A4R). Adjustment method - If you have cleared the DC controller PCB's RAM or replaced the DC controller PCB, enter the value on the service label. - When replacing the paper width detection VR or registering a new value, perform the following service mode: FUNCTION>CST. Adjustment range 0 to 255 [Factory default/After RAM clear: 141]	1
MF-A6R	Used to enter the basic value for the manual feed tray's paper width (A6R). Adjustment method - If you have cleared the DC controller PCB's RAM or replaced the DC controller PCB, enter the value on the service label. - When replacing the paper width detection VR or registering a new value, perform the following service mode: FUNCTION>CST. Adjustment range 0 to 255 [Factory default/After RAM clear: 235]	1
MF-A4	Used to enter the basic value for the manual feed tray's paper width (A4). Adjustment method - If you have cleared the DC controller PCB'sRAM or replaced the DC controller PCB, enter the value on the service label. - When replacing the paper width detection VR or registering a new value, perform the following service mode: FUNCTION>CST. Adjustment range 0 to 255 [Factory default/After RAM clear: 26]	1

14. FIXING

T-19-41

	COPIER>ADJUST>FIXING	
Sub item	**Description**	**level.**
FX-MTR1	Fixer motor initial current display Setting range: 0 to 240	2

15. MISC

T-19-42

COPIER>ADJUST>MISC		
Sub item	**Description**	**level.**
SEG-ADJ	Used to adjust the text and photo separation level for text/photo/map mode. Adjustment method - To make documents more easily recognized as photo documents, increase the setting value. - To make documents more easily recognized as text documents, decrease the setting value. Adjustment range -4to 4 (Value at time of factory shipment/value after RAM clear: 0)	1
K-ADJ	Used to adjust the black recognition level during black text processing. Adjustment method - To make text more easily recognized as black, increase the setting value. Adjustment range -3to 3 (Value at time of factory shipment/value after RAM clear: 0)	1
ACS-ADJ	Used to adjust the color recognition level during ACS mode. Adjustment method To make documents more easily recognized as black and white documents, increase the setting value. - To make documents more easily recognized as color documents, decrease the setting value. Adjustment range -3to 3 (Value at time of factory shipment/value after RAM clear: 0)	1
ACS-EN	- ACS-EN (Used to adjust ACS recognition zone.) Increasing the setting value expands the recognition zone.	2
ACS-CNT	- ACS-CNT (Used to adjust color recognition pixel count zone during ACS recognition.) Increasing the setting value expands the recognition zone.	2
ACS-EN2	ACS judgement area adjustment (with DF stream reading) Adjustment method Increasing the setting value increases the judgement range. Setting range: -2 to 2 [Factory settings and after RAM clear: 1]	2
ACS-CNT2	Colour judgement pixel count area adjustment in ACS judgement (with DF stream reading) Adjustment method Increasing the setting value increases the judgement range. Setting range: -2 to 2 [Factory settings and after RAM clear: 0]	2
REOS-PG	REOS processing coefficient selection in 1200 dpi Setting range: 0 to 4 [Factory settings and after RAM clear: 0]	2

19.3.2 FEEDER

19.3.2.1 FEEDER Table

T-19-43

FEEDER>ADJUST		
Sub item	**Description**	**level.**
DOCST	Adjusting the Original Image Leading Edge Method of adjustment A higher setting will delay the image leading edge timing. Range of adjustment -50 to 50 (unit: 0.1mm) [Factory default/After RAM clear:0]	1
LA-SPEED	Adjusting the document feeding speed at the time of stream reading from the feeder The speed becomes faster (image is reduced) by increasing setting value. Range of adjustment: -30 to 30 (unit: 0.1%) [Factory default/After RAM clear:0]	1

19.4 FUNCTION (Operation/Inspection Mode)

19.4.1 COPIER

19.4.1.1 COPIER Table

1. INSTALL
*1 Not displayed in service mode.

T-19-44

COPIER>FUNCTION>INSTALL		
Sub item	Description	level.
STRD-POS	Automatic detection of CCD scanning position in DF stream reading	1
CARD	Used to make card reader installation settings. Setting values 1 to 2001 [Factory default/After RAM clear: 1] Operation method Enter the number of cards to use. (You can use up to 1,000 cards from the entered number.) Initialize the card management information. - Initialize the card name (department ID) (from the entered number). - Initialize the card's password.	1
DRY-RT	Eliminates condensation during installation. Note: This item is used to eliminate condensation generated in the copier immediately after installation. When the copier has detected that the drum units and toner containers are out, the ITB is forced to idle to raise the temperature at points of condensation with fixing temperature regulation left ON, evaporating the moisture. Operation method 1) Turn the main power switch OFF, and remove the drum unit and toner container for each color. 2) Replace the transfer cleaning unit with a dummy transfer cleaning unit (since the cleaning plate may be damaged otherwise). 3) Turn the main power switch ON. 4) Select this item, and press the OK key. 5) Wait for the operation to stop automatically. (The operation may take between 6 and 180 minutes depending on the environment.) 6) 'OK' is displayed when the operation completes normally. 7) Insert the drum units, toner containers and transfer cleaning unit, and check the image with half-tones.	1
KEY	Used to set management key function recognition. Setting values 0: Don't recognize management key function (value at time of factory shipment). 1: Recognize management key function. Operation method 1) Select COPIER > INSTALL > KEY, then enter '1' 2) Turn the main power switch OFF/ON (the management key function is now recognized).	1
E-RDS	E-RDS settings Setting values 0: Not in use 1: In use [Factory settings and after RAM clear: 0]	1
RGW-PORT	Specify port number of sales company server used in E-RDS Setting range: 1 to 65535 [Factory settings and after RAM clear:]	1
COM-TEST	Check connection with sales company server used in E-RDS Checks sales company server connection. Judges whether connection can be made and displays the results as OK or FAIL.	1
COM-LOG	Display detailed results of communication test with sales company server used in E-RDS Displays information on any errors that have occurred in connection with sales company server.	1

COPIER>FUNCTION>INSTALL		
Sub item	**Description**	**level.**
RGW-ADR	Specify URL of sales company server used in E-RDS Sets sales company server URL.	1
CNT-DATE *1	Set timing of counter transmission to server Sets time and date for start of transmission of counter information to server, via E-RDS third party extension function. Setting range: YYYYMMDDHHMM (YYYY: year, MM: month, DD: date, HH: hours, MM: minutes) [Factory settings and after RAM clear::000000000000] Note This item is only displayed when the E-RDS third party extension function is enabled.Set timing of counter transmission to server Sets time and date for start of transmission of counter information to server, via E-RDS third party extension function. Setting range: YYYYMMDDHHMM (YYYY: year, MM: month, DD: date, HH: hours, MM: minutes) [Factory settings and after RAM clear:: 000000000000] Note This item is only displayed when the E-RDS third party extension function is enabled.	1
CNT-INTV *1	Set interval of counter transmission to server Sets transmission intervals for transmission of counter information to server, via E-RDS third party extension function.	1

2. CCD

T-19-45

COPIER>FUNCTION>CCD		
Sub item	**Description**	**level.**
DF-WLVL1/2	Use it to adjust the ADF white level. Method of Operation 1) Place the type of original most often used by the user on the copyboard glass, and perform the following service mode item: COPIER>FUNCTION>CCD>DF-WLVL1. (In response, the machine will read the white level for book mode, checking the transmission quality of the glass for book mode). 2) Place the type of original most often used by the user in the DF, and perform the following service mode item: COPIER>FUNCTION>CCD>DF-WLVL2. (In response, the machine will read the white level for DF mode (stream reading mode), checking the transmission quality of the reading glass by reading both sides of the original.) face reading: computes DFTAR-R/G/B back reading: computes DFTAR2-R/G/B Be sure to execute this item in combination with item 2.	1

3. LASER

T-19-46

COPIER>FUNCTION>LASER		
Sub item	**Description**	**level.**
LD-ADJ-Y/M/C	Making the tilt correction motor return to the initial position automatically. Operating Instructions 1) Select this mode. 2) Press the OK key. - The operation starts. It automatically stops when it is completed. Reference: The tilt correction motor may get locked when the tilt amount in the horizontal scanning direction exceeds the expected range, and consequently color displacement cannot be corrected even though automatic registration is conducted. When this symptom occurs, use this mode to make the tilt correction motor return to the center position automatically. (If you try to do this operation manually by opening the scanner unit, you may touch the lens. For this reason, be sure to do it by the automatic operation.) This Service Mode is used to correct the tilt of Y, M, and C against BK, which is used as a reference, when the tilt is large (when the horizontal lines are higher at the right).	2

4. CST

T-19-47

COPIER>FUNCTION>CST		
Sub item	**Description**	**level.**
MF-A4R, MF-A6R, MF-A4	Registers basic value of manual feeder's (DADF's) paper width. A4R width: 210mm, A6R width: 105mm, A4 width: 297mm - Once registered, the basic value can be fine-tuned by performing COPIER> ADJUST > CST-ADJ > MF-A4R, MF-A6R or MF-A4. Operation method 1) Place A4R size paper in the manual feeder, and set the size guide to the A4R width. 2) In this service mode, select 'MF-A4R' to display the item in reverse. Press the OK key to perform automatic adjustment and register the value. 3) Repeat Steps 1) and 2) to register the basic values for the A6R and A4 sizes.	1

5. CLEANING

T-19-48

COPIER>FUNCTION>CLEANING		
Sub item	Descripti	level.
TBLT-CLN	Cleans intermediate transfer belt. Image imperfections are improved by removing impurities adhering to the intermediate transfer belt (such as fingerprints, grease and paper dust). Operation method 1) Press 'TBLT-CLN' to display the item in reverse and select it. 2) Press the OK key. The cleaning operation lasts about 80 seconds, then ends automatically.	1
FDRL-CLN	Used when cleaning face-down paper delivery roller 1/2. Operation method 1) Select this item, then press the OK key to start the rollers operating. 2) While both rollers are operating, press against each with a cloth soaked in alcohol to clean it. 3) Press the stop key to stop the rollers.	1
RVRL-CLN	Used when cleaning reverse roller. Operation method 1) Open the paper delivery cover. 2) Select this item and press the OK key to start the roller operating. 3) While the roller is operating, press against it with a cloth soaked in alcohol to clean it. 4) Press the stop key to stop the roller.	1
DEVL-CLN	Cleans inside developer unit. Image imperfections are improved by forcibly consuming toner that has been over-agitated (toner with improper charge) by the toner agitation screw. Operation method 1) Select this item and press the OK key. 2) The cleaning operation lasts about 160 seconds, then ends automatically.	1

6. FIXING

T-19-49

COPIER>FUNCTION>FIXING		
Sub item	Description	level.
NIP-CHK	not use	1
FX-UHP-S	Fixing belt (upper belt) displacement control auto home position search Forces fixing belt (upper belt) displacement control and detects belt position detection sensor switching time. From that time, the home position displacement table is used to change the home position.	1
FX-LHP-S	Pressure belt (lower belt) displacement control auto home position search Pressure fixing belt (lower belt) displacement control and detects belt position detection sensor switching time. From that time, the home position displacement table is used to change the home position.	1
MTR-CHK1	Fixer motor initial current measurement	2
MTR-CHK2	Fixer motor current measurement	2
F-SP-CHK	Long speed difference measurement Explanation of operation 1) A3 paper picked up from multi-feed tray. 2) High density cyan image formed over whole sheet, then leading edge and trailing edge kept stuck in fixing unit for 5 seconds, a total of two times. 3) Paper output into FU tray.	2

7. PANEL

T-19-50

COPIER>FUNCTION>PANEL		
Sub item	**Description**	**level.**
LCD-CHK	Used to check missing dots in LCD. Operation method 1) Select this item, then press the OK key to start the operation. The touch panel's front surface should light repeatedly in the sequence: white, black, red, green and blue. (Check that it does.) 2) Press the stop key (the clear key on printer models) to end the operation.	1
LED-CHK	Used to check that operation panel's LEDs light. Operation method 1) Select this item, then press the OK key to start the operation. The LEDs light sequentially. 2) Press LED-OFF to end the operation.	1
LED-OFF	Used in checking that operation panel's LEDs light. Operation method 1) Selecting this item stops the LED-CHK operation.	1
KEY-CHK	Used to check key input. Operation method 1) Select "KEY-CHK" to display the number/name of the entered key. 2) Press the key to check. If the key is normal, the text for it appears in the touch panel (see separate table) . 3) Select "KEY-CHK" again to exit the key input check operation.	1
TOUCHCHK	Used to adjust coordinate positions of analog touch panel. Operation method - Used to align the touch panel touch position with the LCD coordinate position. - Perform this service mode item if you have replaced the LCD unit. 1) Select "TOUCHCHK" to display the item in reverse, then press the OK key. 2) "+" appears on the touch panel at 9 positions sequentially. After you press each position, adjustment is complete.	1

T-19-51

Input key numbers, names

Ke	Screen display
0 to 9, #, *	0 to 9, #, *
Reset	RESET
Stop	STOP
User mode	USER
Start	START
Power save	STAND BY
Clear	CLEAR
Secret code	ID
Help	?
Counter check	BILL

8. PART-CHK

T-19-52

COPIER>FUNCTION>PART-CHK		
Sub item	**Description**	**level.**
CL	Used to specify clutch for operation check. (Range: 1 to 10, 5 and above are reserved.) Operation method 1) Select this item. 2) Enter the desired clutch code on the numeric keypad. 1: Two-sided registration clutch CL1 2: Two-sided paper feed clutch CL2 3: Conveyor clutch CL1 (paper deck) 4: Paper feed clutch CL2 (paper deck) 3) Press the OK key. 4) Press CL-ON, and check the operation.	1
CL-ON	Used to start clutch operation check. Operation method 1) Select this item, and press the OK key. The clutch turns ON/OFF in the pattern below. 0.5 second ON -> 10 seconds OFF -> 0.5 second ON -> 10 seconds OFF -> 0.5 second ON -> OFF	1
FAN	Used to specify fan for operation check. (Range: 1 to 10; 7 and above are reserved.) Operation method 1) Select this item. 2) Enter the desired fan code on the numeric keypad. 1: Power cooling fan FM1 2: Fixing exhaust heat fan FM2 3: Copier exhaust heat fan FM3 4: Cleaner fan FM4 5: Paper delivery cooling fan FM5 6: Manual feed cooling fan FM6 3) Press the OK key. 4) Press FAN-ON, and check the operation.	1
FAN-ON	Starts fan operation. - Operation for power fan, fixing fan and cleaner fan: 1) Select this item, and press the OK key. The fan performs the operation below. 10 seconds ON at full-speed -> 10 seconds ON at half-speed -> Standby - Operation for copier exhaust heat fan, paper delivery cooling fan and manual feed cooling fan: 1) Select this item, and press the OK key. The fan performs the operation below. 10 seconds ON at full-speed -> Standby - Operation for controller fan: 1) Select this item, and press the OK key. The fan performs the operation below.	1

COPIER>FUNCTION>PART-CHK		
Sub item	Description	level.
MTR	Used to specify motor for operation check. (Range: 1 to 25; 18 and above are reserved.) Operation method 1) Select this item. 2) Enter the desired motor code on the numeric keypad. 1: Drum ITB motor M1 2: Toner container motor (Y) M20 3: Toner container motor (M) M21 4: Toner container motor (C) M22 5: Toner container motor (Bk) M23 6: Cassette 1 paper feed motor M6 7: Cassette 2 paper feed motor M7 8: Cassette 3 paper feed motor M51 9: Cassette 4 paper feed motor M52 10: Paper deck main motor M1D (paper deck) 11: Registration front motor M8 12: Registration motor M9 13: Paper delivery vertical path motor M10 14: Face-down paper delivery motor M11 15: Fixing motor M24 16: Horizontal registration motor M25 17: Two-sided transfer motor M26 3) Press the OK key. 4) Press MTR-ON, and check the operation.	1
MTR-ON	Starts motor operation. Operation method Toner container motors (Y/M/C/K): 1) Remove the toner container, and leave the front cover open and push the front cover detect sensor with cover switch tool. 2) Select this item, and press the OK key. - 10 seconds ON -> OFF Horizontal resist motor: 1) Select this item, and press the OK key. - HP search operation starts -> Stops automatically when complete Motors other than toner container motors (Y/M/C/K) or horizontal resist motor: 1) Select this item, and press the OK key. - 10 seconds ON -> OFF	1
SL	Used to specify solenoid for operation check. (Range: 1 to 15; 10 and above are reserved.) Operation method 1) Select this item. 2) Enter the desired solenoid code on the numeric keypad. 1: Manual paper feed solenoid SL1 2: Paper delivery path switching solenoid 1 SL2 3: Cassette 1 paper feed solenoid SL3 4: Cassette 2 paper feed solenoid SL4 5: Cassette 3 paper feed solenoid SL51 6: Cassette 4 paper feed solenoid SL52 7: Paper delivery path switching solenoid 2 SL5 8: Paper deck paper feed solenoid SL1D 9: Paper container OPEN solenoid SL2D 3) Press the OK key. 4) Press SL-ON, and check the operation.	1
SL-ON	Starts solenoid operation. Operation method 1) Select this item, and press the OK key. The solenoid turns ON/OFF in the pattern below. 0.5 second ON -> 10 seconds OFF -> 0.5 second ON -> 10 seconds OFF -> 0.5 second ON -> OFF	1

9. CLEAR

T-19-53

COPIER>FUNCTION>CLEAR		
Sub item	**Description**	**level.**
ERR	Clears error codes. (Cleared error codes: E000, E001, E002, E003) Operation method 1) Select this item, and press the OK key. 2) Turn the main power OFF/ON.	1
DC-CON	Clears DC controller PCB's RAM. ⚠ The RAM is cleared after the main power switch is turned OFF/ON. Operation method 1) Select COPIER > FUNCTION > MISC-P > P-PRINT to print out the service mode setting values. 2) Select this item, then press the OK key. 3) Turn the main power OFF/ON. 4) Enter the data printed by the P-PRINT operation as needed.	1
R-CON	Use it to reset the RAM on the reader controller PCB. Method of Operation The RAM will not be cleared until the main power switch has been turned off and then on again. 2) Select the item, and press the OK key. 3) Turn off and then on the main power. 4) As necessary, enter the settings printed out using 'PRINT'.	1
JAM-HIST	Clears reader controller PCB's RAM. ⚠ The RAM is cleared after the main power switch is turned OFF/ON. Operation method 1) Select COPIER > FUNCTION > MISC-P > P-PRINT to print out the service mode setting values. 2) Select this item, then press the OK key. 3) Turn the main power OFF/ON. 4) Enter the data printed by the P-PRINT operation as needed.	1
ERR-HIST	Clears error code history. ⚠ The error code history is cleared after the main power switch is turned OFF/ON. Operation method 1) Select this item, then press the OK key. 2) Turn the main power OFF/ON.	1
PWD-CLR	Clears "System administrator" password set in user mode. ⚠ The password value is cleared after the main power switch is turned OFF/ON. Operation method 1) Select this item, then press the OK key. 2) Turn the main power OFF/ON.	1
ADRS-BK	Clears address book data. ⚠ The address book data is cleared after the main power switch is turned OFF/ON. Operation method 1) Select this item, then press the OK key. 2) Turn the main power OFF/ON.	1

COPIER>FUNCTION>CLEAR		
Sub item	**Description**	**level.**
CNT-MCON	Clears service counters maintained by main controller PCB (main). (See the COUNTER mode items for the counters cleared.) ⚠ The counter values are cleared after the main power switch is turned OFF/ON. Operation method 1) Select this item, then press the OK key. 2) Turn the main power OFF/ON.	1
CNT-DCON	Clears following service counters maintained by DC controller PCB: - COPIER>COUNTER>DRBL-2>SORT - COPIER>COUNTER>DRBL-2>FIN-STPR - COPIER>COUNTER>DRBL-2>FIN-PDDL - COPIER>COUNTER>DRBL-2>SADDLE - COPIER>COUNTER>DRBL-2>SDL-STPL ⚠ The counter values are cleared after the main power switch is turned OFF/ON. Operation method 1) Select this item, then press the OK key. 2) Turn the main power OFF/ON.	1
OPTION	Restores OPTION service mode setting values to default values (RAM clear values). ⚠ The setting values are cleared after the main power switch is turned OFF/ON. Note The cleared data is the data in the main controller, DC controller and reader controller. Operation method 1) Select COPIER > FUNCTION > MISC-P > P-PRINT to print out the service mode setting values. 2) Select this item, then press the OK key. 3) Turn the main power OFF/ON.	1
MMI	Clears following user mode setting values: - Backup data for copy operation panel (user-set values) - Common settings backup data (user-set values) - Backup data (except fax data) (user-set values) ⚠ The setting values are cleared after the main power switch is turned OFF/ON. Operation method 1) Select this item, then press the OK key. 2) Turn the main power OFF/ON.	1
MN-CON	Clears RAM on main controller PCB's SRAM board. ⚠ - The RAM is cleared after the OK key is pressed. - Performing this item initializes all the data on the SRAM board. In other words, file management information for the hard disk is initialized, and image data on the hard disk can no longer be read. Before performing this item, explain to the user that all images in the BOX will be lost, and receive permission to perform. Operation method 1) Select COPIER > FUNCTION > MISC-P > P-PRINT to print out the service mode setting values. 2) Select this item, then press the OK key.	1
CARD	Clears card ID (department) data. ⚠ The card ID data is cleared after the main power switch is turned OFF/ON. Operation method 1) Select this item, then press the OK key. 2) Turn the main power OFF/ON.	1

COPIER>FUNCTION>CLEAR		
Sub item	**Description**	**level.**
LANG-ERR	Clear language related error. This item enables recovery when a language related error code is generated after switching from the default language. (Returns to default language after recovery.)	1
ERDS-DAT	Embedded-RDS SRAM data clear SCM data in the embedded-RDS SRAM are restored to the factory settings.	1
SND-STUP	- use it to initialize the transmission read settings After changing service mode settings (pressing the OK key), turn off and then on the power to initialize the backup data of the transmission read settings. Otherwise, after you have changed the display language, the language used before the change would remain. Be sure to perform this mode item if you have switched the language.	2
CA-KEY	CA authentication and key deleted together. When the serviceman needs to replace or dispose of the device, the CA authentication and key can be deleted together.	2
KEY-CLR	HDD encoding board code key clear The HDD encoding board (security kit) code key is cleared to allow replacement. When this item is selected and OK pressed, the code key is cleared. Then, when the main power supply is turned OFF/ ON, the encoding board installation processing activates. If installation processing is carried out, a new code key is generated. Caution! If this operation is carried out, all data on the HDD will be rendered useless. The main power supply is switched OFF/ ON after this operation in order to format the HDD.	2

10. MISC-R

T-19-54

COPIER>FUNCTION>MISC-R		
Sub item	**Description**	**level.**
SCANLAMP	Use it to check the activation of the scanning lamp. Method of Operation 1) Select the item. 2) Press the OK key so that the scanning lamp will go on and remain on for 3 sec.	1

11. MISC-P

T-19-55

COPIER>FUNCTION>MISC-P		
Sub item	**Description**	**level.**
P-PRINT	Prints service mode setting values. Operation method 1) Select this item. 2) Press the OK key to print the setting values. **Reference:** Printing takes about 15 seconds to start.	1
KEY-HIST	- KEY-HIST (Prints the operation panel's key input history.) 1) Select this item. 2) Press the OK key to start printing.	1
HIST-PRT	- HIST-PRT (Prints the jam history and error history.) 1) Select this item. 2) Press the OK key to start printing.	1
USER-PRT	Prints user mode list. Operation method 1) Select this item. 2) Press the OK key to print the list. **Reference:** Printing takes about 3 seconds to start.	1
LBL-PRNT	Prints service label. Operation method 1) Place A4/LTR paper in the manual feed tray. 2) Select this item. 3) Press the OK key to print the label. **Reference:** Printing takes about 15 seconds to start.	1
D-PRINT	Printing out service mode (DISPLAY) Procedure 1) Select this mode. 2) Press OK to print out. **Reference:** Only DISPLAY items are printed out. (Items of P-PRINT/LBL-PRINT/HIST-PRINT and ALARM are excluded.)	1
ENV-PRT	Outputting logs of inside machine temperature and humidity/fixing roller surface temperature Procedure 1) Select this mode. 2) Press OK to output logs of inside machine temperature and humidity/fixing roller surface temperature. **Reference:** This mode is to output logs of [inside temperature(deg C)/humidity(%)/fixing roller surface (center) temperature (deg C)] variations using signals of the attached temperature/humidity (environmental) sensor and fixing thermistor (main). (Max. 100 records)	1
PJH-P-1	Prints print job history with detailed information (for 100 jobs). Prints print job history with detailed information for last 100 jobs stored in copier main unit.	1
PJH-P-2	Prints print job history with detailed information (for all jobs). Prints print job history with detailed information for all jobs stored in copier main unit.	1
TRS-DATA	- TRS-DATA (Moves the data received in memory to the BOX.) 1) Select this item. 2) Press the OK key to start printing.	2

12. SYSTEM

T-19-56

COPIER>FUNCTION>SYSTEM		
Sub item	**Description**	**level.**
DOWNLOAD	Switches to download mode. Operation method 1) Select this item. 2) Press OK to enter download mode and have the copier wait for commands (wait for connection). ("STNDBY" is now displayed, next to the DOWNLOAD sub-items.) 3) Use the service support tool to start downloading. ("CONNECTED"is displayed during communication with the PC.) 4) When communication ends, "HOLD"is displayed. (The power can be turned off when "HOLD"is displayed.)	1
CHK-TYPE	Used to specify partition number when performing HD-CHECK or HD-CLEAR. Operation method 1) Select this item. 2) Use the numeric keypad to select the desired partition number. 0: Check and restore all bad sectors on hard disk 1: Image storage area 2: General-purpose file storage area 3: PDL file storage area 4: Firmware storage area - General-purpose files include user-set data, log data, PDL spool data, and management information for image data. 3) Press the OK key.	1
HD-CHECK	Use it to check the entire HD and perform recovery. Operation method set '0' to the following: COPIER>FUNCTION>SYSTEM>CHK-TYPE 1) Select this item. 2) Press the OK key.	1
HD-CLEAR	Initializes partition specified by CHK-TYPE item. ⚠ - The following must be kept in mind and the user must be properly informed of the fact when using CHECK-TYPE: 0: entire HDD -> no operation occurs (to initialize, use the SST) 1: image storage area -> removes image data 2: general-purpose file area (user settings data, various log data, PDL spool data, image data control information) -> initializes files 3: PDL-related file storage area -> removes font data, requiring re-installation 4: firmware, address book, filter storage area -> no operation occurs (to initialize, use the SST) Operation method 1) Select this item. 2) Press the OK key. ⚠ If you perform <HD-CLEAR> after selecting 1 (image storage area) or 3 (PDL file storage area) for the <CHK-TYPE> item, the initialization process is performed after the power is turned OFF/ON. The initialization process takes about 5 minutes. A progress bar slowly advances to indicate the progress during this time. Never turn the power OFF during this time.	1

COPIER>FUNCTION>SYSTEM		
Sub item	**Description**	**level.**
DEBUG-1	Specify timing with which log types and logs are to be stored on HDD. Specifies timing with which log types and logs are to be stored on HDD. Setting range 0: Saves PLOG when Reboot/Exception is detected. 1: Saves PLOG when Reboot/Exception/Encode is detected. 2: Saves SUBLOG when Reboot/Exception/Encode is detected. 3: Saves SUBLOG in overwrite mode when Reboot/Exception/Encode is detected. [Factory settings and after RAM clear: 0] Note: When 0 or 1 is set, the saved PLOG can be printed out with the sequence COPIER>FUNCTION>SYSTEM>DEBUG-2. When 2 or 3 is set, the saved SUBLOG cannot be printed out. (Upload from SST.)	2
DEBUG-2	Prints out logs saved on HDD. When 0 or 1 is set in the sequence COPIER>FUNCTION>SYSTEM>DEBUG-1, the saved PLOG is printed out. Note: When 2 or 3 is set in the sequence COPIER>FUNCTION>SYSTEM>DEBUG-1, the saved SUBLOG is not printed out. Up to around 20 sheets of A4 can be printed out.	2

19.4.2 FEEDER

19.4.2.1 FEEDER Table

T-19-57

FEEDER>FUNCTION		
Sub item	**Description**	**level.**
SENS-INT	Use it to adjust the sensitivity of the individual sensors of the feeder. Select the item, and press the OK key to start feeder sensor initialization, turning the screen indication to 'ACT'. The operation will end automatically, turning the indication to 'OK'.	1
MTR-CHK	Use it to check the motor and the like of the ADF on its own. Operation 1) Press [MOTOR-CHK] to highlight. 2) Enter the number of the component using the keypad. 3) Press the OK key. 4) Press [MOTOR-ON[to start checking the operation. Settings 0: pickup motor 1: feed motor 2: delivery reversal motor 3: lock motor [Factory default/After RAM clear: 0]	1
TRY-A4	Use it to execute automatic adjustment (A4 Width) for DF original paper width detection.	1
TRY-A5R	Use it to execute automatic adjustment (A5R width) for DF original paper width detection.	1
TRY-LTR	Use it to execute automatic adjustment (LTR width) for DF original paper width detection.	1
TRY-LTRR	Use it to execute automatic adjustment (LTR-R width) for DF original paper width detention.	1

FEEDER>FUNCTION		
Sub item	Description	level.
FEED-CHK	Use it to check paper movement in the ADF on its own. Operation 1) Press [FEED-CHK] to highlight. 2) Enter the number of the component using the keypad. 3) Press the OK key. 4) Press [FEED-ON] to start checking the operation. Feed Mode 0: single-sided operation 1: double-side operation 2: single-sided operation w/ stamp 3: double-sided operation w/ stamp [Factory default/After RAM clear: 0]	1
CL-CHK	Use it to check the DF fan on its own. 0:DF fan Method of Operation 1)Press [FAN-CHK] (to highlight). 2)Enter the code of the part you want to check using the keypad. 3)Press the OK key. 4)Press [FAN-ON] to start checking the operation.	1
CL-ON	Use it to start the operation of the selected clutch. Press [CL-ON] and then press the OK key to start the operation of the clutch. Another press on the key will stop the operation. (The operation will stop in 200 msec; however, unless you press the OK key once again, the indication will not change to 'STOP.)	1
FAN-CHK	Use it to check the DF cooling fan. Perform using FAN-ON. 1) Press [FAN-CHK] to highlight. 2) Enter the number of the component using the keypad. 3) Press the OK key. 4) Press [FAN-ON] to start checking the operation. Component Number 0: cooling fan	1
FAN-ON	Use it to start the operation of the selected fan. Method of Operation Press [FAN-ON], and press the OK key to start the operation of the fan. Another press on the OK key will stop the operation. (The operation will automatically stop in 5 sec; hover, unless you press the OK key once again, the indication will not turn 'STOP'.)	1
SL-CHK	Use it to check the ADF solenoid on its own. Operation 1) Press [SL-CHK] to highlight 2) Enter the number of the component using the keypad. 3) Press the OK key. 4) Press [SL-ON] to start checking the operation. Number of Component 0: lock solenoid 1: stamp solenoid [Factory default/After RAM clear: 0]	1

FEEDER>FUNCTION		
Sub item	**Description**	**level.**
SL-ON	Use it to start the operation of the selected solenoid. Operation The operation varies from model to model. 1) Press [SL] to highlight; then, press the OK key to start motor operation. 2) Press the OK key once again to stop the ongoing operation. (The operation will stop automatically in 5 sec; however, the indication will not change to [STOP] unless the OK key is pressed once again.)	1
MTR-ON	Use it to start motor operation. Operation The operation varies from model to model. 1) Press [MTR-ON] to highlight; then, press the OK key to start motor operation. 2) Press the OK key once again to stop the motor. (The operation will stop automatically in 5 sec; however, the indication will not change to [STOP] unless the OK key is pressed once again.)	1
ROLL-CLN	Use it to clean the ADF roller. In this mode item, the roller is rotated by the work of its motor; it is cleaned by lint-free paper (moistened with alcohol) forced against it while it rotates. Operation 1) Press [ROLL-CLN] to highlight. 2) While the roller is rotating, clean it by forcing lint-free paper (moistened with alcohol) against it. 3) Press [ROLL-CLN] to highlight, and press the OK key to stop the rotation of the roller.	1
FEED-ON	Use it to check the movement of paper in the ADF on its own. Operation 1) Press [FEED-ON], and then press the OK key so that the ADF starts to move paper according to the operation mode selected using [FEED-CHK].	1

19.5 OPTION (Machine Settings Mode)

19.5.1 COPIER

19.5.1.1 COPIER Table

1. BODY
*2 Does not operate in printer model.
Select Machine Specification Concerning the Machine Body

T-19-58

COPIER>OPTION>BODY		
Sub item		
MODEL-SZ	Used to select standard variable magnification display and ADF document size detection. The setting value takes effect after the main power switch is turned OFF/ON. Setting values 0: AB (6R5E) 1: INCH (5R4E) 2: A (3R3E) 3: AB/INCH (6R5E)	**1**
PASCAL	Used to select whether to use the contrast electric potential calculated by automatic gradation compensation (full compensation) control, and the gradation compensation data. - For printer models, you must always make this setting value 0 at time of installation. - The setting value takes effect after the power switch is turned OFF/ON. Setting values 0: Don't use 1: Use [Factory default/After RAM clear]	1
DLIFE-SW	Used to select light-sensitive drum life display. Reference: Use this item to select whether to display drum unit remaining service life. Setting values 0: Don't display [Factory default/After RAM clear] 1: Display (Drum unit life is displayed by selecting "System status"> "Consumable part display"in the user screen.)	1
CONFIG	Used to select from among multiple sets of firmware stored on the hard disk, to switch the copier's country, language, manufacturer and paper size system. The setting value takes effect after the main power switch is turned OFF/ON. Operation method 1) Enter the service modes, and select COPIER > OPTION > BODY > CONFIG. 2) Select the item to switch, and press the + or -key. 3) Each time you press the + or -key, the setting for the selected item changes. 4) When you have displayed the desired setting for each item, press the OK key. 5) Turn the main power switch OFF/ON. Setting values XXYYZZAA XX: Country (Example: JP -> Japan) YY: Language (Example: ja -> Japanese) ZZ: Manufacturer (Example: 00 -> CANON) AA: Paper size system (Example: 00 -> AB system)	1
TEMP-TBL	Used to change temperature table for fixing temperature regulation. Setting values 0: Use normal temperature-regulation table (190 deg C) [Factory default/After RAM clear] 1: Use approximately 5 deg C lower temperature-regulation table (185 deg C) 2: Use approximately 10 deg C lower temperature-regulation table (180 deg C)	1

COPIER>OPTION>BODY		
W/SCNR	For copy models, sets whether scanner is present. The setting value takes effect after the main power switch is turned OFF/ON. Setting values 0: Printer model 1: Model with scanner Reference The setting will automatically change to '1' upon detection of the presence of a scanner (printer model).	1
RUI-DSP	Used to select copy function in remote UI. 0: Display copy the screen in remote UI[Factory default/After RAM clear] 1: Don't display copy screen in remote UI	1

ADJ-LVL	Sets execution mode for image stabilization control performed after preset number of sheets.
	Sets execution mode (adjustment set data) for forward/reverse operation of copy or print jobs and image stabilization control done between sheets.
	Reference:
	Changing the setting of this item lets you shorten the execution time for image stabilization control, a process performed after a preset number of sheets since the previous adjustment, or in a set time interval.
	Setting values
	0: Normal mode [Factory default/After RAM clear]
	  Adjustment set 1: Discharge current volume control, single-cycle ATVC control, ATR control, image position compensation
	  Adjustment set 2: Discharge current volume control, single-cycle ATVC control, ATR control, SALT-Dmax control, image position compensation
	1: Compression mode 1
	  Adjustment set 1: Discharge current volume control, single-cycle ATVC control, ATR control, image position compensation
	  Adjustment set 2: Discharge current volume control, single-cycle ATVC control,
		1

INTROT-1	Sets the execution interval (number of sheets) for image stabilization control (adjustment set 1) during forward/reverse operation. Sets the interval in which automatic adjustment control (adjustment set 1) is performed during forward/reverse operation of copy or print jobs. Reference: If this item is set to a larger value than the setting value for image stablization control (adjustment set 2) (COPIER > OPTION > BODY > INTROT-2), the setting value for this item is invalid. When the adjustment set 2 (INTROT-2) process is performed, the adjustment set 1 (INTROT-1) process is considered to have been performed. The count is reset in the following cases: - When the number of sheets reaches the specified value - When an image stablization control process including the control items performed by this item is performed Increasing the interval in which the control process is performed may adversely affect the density fluctuation. When the setting value for the COPIER >OPTION > BODY > ADJ-LVL item is 2, the set	1

COPIER>OPTION>BODY		
INTROT-2	Sets the execution interval (number of sheets) for image stabilization control (adjustment set 2) during forward/reverse operation. Sets the interval in which automatic adjustment control (adjustment set 2) is performed during forward/reverse operation of copy or print jobs. Reference: If this item is set to a smaller value than the setting value for image stablization control (adjustment set 1) (COPIER > OPTION > BODY > INTROT-1), the setting value for this item is invalid. The count is reset in the following cases: - When the number of sheets reaches the specified value - When an image stablization control process including the control items performed by this item is performed Increasing the interval in which the control process is performed may adversely affect the density fluctuation. When the setting value for the COPIER > OPTION > BODY > ADJ-LVL item is 2, the setting for this item is invalid. Setting values 50 to 1000 [Factory default/After RAM clear: 500]	1
INTROT-T	Sets the execution interval (time) for image stabilization control during standby. Sets the interval in which image stabilization control is performed during standby. The control process is performed after the preset amount of time has elapsed since the last job was performed. Reference: The time count starts after the last job has finished. The time is reset in the following cases: - When the time reaches the specified value - When a job is received before the time has reached the specified value To turn image stabilization control during standby ON/OFF, select: COPIER > OPTION > BOD > AUTO-DH Setting values 1 to 10 (hours) [Factory default/After RAM clear: 2]	1
DEVL-PTH	Sets threshold value (number of sheets) for starting toner forcible consumption sequence. Use this item when copying/printing consecutive images with low color ratios. Operation method If the density drops below the set threshold value when copying/printing method consecutive low-color-ratio images, once the set number of sheets has been exceeded, the toner forcible consumption sequence is started during the job. Setting values 0: Don't perform sequence 1: About 100 sheets 2: About 200 sheets [Factory default/After RAM clear: 2] 3: About 500 sheets	1
AUTO-DH	Turns image stabilization control OFF/ON during standby. Used to turn OFF/ON the image stabilization control operation started by fluctuation in environment during standby, or started after the copier has been idle for an extended period. Operation method Downtime not intended by the user (when the copier starts up by itself) can be eliminated by turning OFF the image stabilization control operation that starts automatically due to environmental fluctuation during standby or when the copier is idle for an extended period. Setting values 0: Automatic start OFF (prohibit operation) 1: Automatic start ON (permit operation) Reference: The trigger time setting (in hours) is set by the following service mode item: COPIER > OPTION > BODY > INTROT-T If you enter a setting value of 0 (OFF), the user will have to monitor the output image to determine when to perform the following item in the user mode: Adjustment/cleaning > automatic gradation compensation (full compensation). Other image stabilization control p	1
DFDST-L1	A higher setting will increase the level of dust detection (i.e., the machine will be more sensitive in detecting dust, which if left behind will cause thin lines in the images). settings range 0 to 255 [Factory default/After RAM clear: 200]	1

COPIER>OPTION>BODY		
DFDST-L2	A higher setting will increase the level of dust detection (i.e., the machine will be more sensitive in detecting dust, which if left behind will cause thin lines in the images). settings range 0 to 255 [Factory default/After RAM clear: 200]	1
ENVP-INT	Setting log correction interval of inner machine temperature/humidity/fixing temperature Setting log collection interval to COPIER>FUNCTION>MISC-P>ENV-PRT and COPIER>DISPLAY>ENVRNT Settings 0 to 480 <min> [Factory default/After RAM clear: 60] Reference Log is not collected when '0' is set.	1
BLNK-THP	Switches leading edge margin for paper thicker than thick 1, 2. (Colour only.) This paper leading edge lateral stripe countermeasure. Setting values 0: Default margin 1: Leading edge margin centre value made 7 mm. [Factory settings and after RAM clear: 0]	1
FX-SPD2	Fixing roller speed fine tuning (for half speed) Allows adjustment of TBF speed when half speed is being used. Setting range: -5 to 5 [Factory settings and after RAM clear: 0]	1
CNTR-DSP	Selecting screen in response to the external controller Settings 0: The external controllericon is displayed on the control panel of the copier[Factory default/After RAM clear] (When the color image server is connected.) 1: The control panel of the copier becomes nondisplay mode (When the control panel-mounted external controller is connected.)	1
BASE-SW	Use it when trouble attributable to MEAP application occurs. By setting to '0', the operation of MEAP application can be controlled. settings 0: off (base model); 1: on (full model) [Default] MEMO: The change only from '1' to '0' is possible.	1
SC-L-CNT	Switch settings for paper size Large/ Small threshold in scanner counter Sets whether to count B4 size are Large or Small. Setting range 0: B4 size is counted as Small size paper. 1: B4 size is counted as Large size paper. Reference value 0 Note If 1 is set, so that B4 size is counted as large size paper, LTR size will be counted as Small size paper.	1
REPORT-Z	Report print attribute flag function control Switches attribute flags added to report prints. Setting values 0: PDL text mode 1: PDL photograph mode 2: SCAN text mode 3: SCAN photograph mode [Factory settings and after RAM clear: 0]	1

COPIER>OPTION>BODY		
IFXEML-Z	Colour iFAX, E-Mail Rx print attribute flag function control Switches attribute flags added to colour iFAX, E-Mail Rx prints. Setting values 0: PDL text mode 1: PDL photograph mode 2: SCAN text mode 4: SCAN photograph mode [Factory settings and after RAM clear: 0]	1
BMLNKS-Z	BMLinks Rx print attribute flag function control Switches attribute flags added to colour BMLinks Rx prints. Setting values 0: SCAN photograph mode 1: PDL photograph mode 2: SCAN text mode 3: PDL text mode [Factory settings and after RAM clear: 0]	1
DELV-THY	Switch toner ejection threshold value Sets threshold value of mean image ratio for forced toner ejection sequence. Setting range: 1 to 5(%) [Factory settings and after RAM clear: 2]	1
SCANSLCT	Used to turn ON/OFF function that calculates scan area from selected paper size. settings 0: AB; 1: inch (Factory default value: varies by destinations / value after RAM clear: 0) Due to the reader controller PCB RAM clear, the value is set as '0'. Re-define the value as '1' for inch-configuration destination machines (North America etc.,) When setting as '1', if the media size is larger than the original size, productivity decreases due to a larger scanning area.	2
SENS-CNF	Use it to set the original sensor. Settings 0: AB configuration 1: inch configuration [Factory default/After RAM clear: 0]	2
RAW-DATA	Sets whether to print out raw received data. 0: Normal operation [Factory default/After RAM clear] 1: Print out raw received data	2
RMT-LANG	Used to select language of remote UI used from Web. Select language code with + and - keys.	2
IFAX-LIM	Used to select whether number of output lines will be restricted when largevolume data is received by IFAX. 0: No restriction 1 to 999 [Factory default/After RAM clear: 500]	2
TC-REF	Used to turn ON/OFF environmental compensation on ATR sensor output Normally, the ATR sensor output value used is the value compensated for the environment. 0: Environmental compensation OFF 1: Environmental compensation ON [Factory default/After RAM clear] If fogging occurs in a low-humidity environment, set this item to 0.	2
SMTPTXPN	Used to change SMTP send port number. 0 to 65535 (increments of 1) [Factory default/After RAM clear: 25]	2
SMTPRXPN	Used to change SMTP receive port number. 0 to 65535 (increments of 1) [Factory default/After RAM clear: 25]	2
POP3PN	Used to change POP receive port number. 0 to 65535 (increments of 1) [Factory default/After RAM clear: 110]	2

COPIER>OPTION>BODY		
ORG-LGL	Used to set special paper size not compatible with DF size recognition. 0: LEGAL [Factory default/After RAM clear] 1: G-LEGAL 2: FOOLSCAP 3: A-FOOLSCAP 4: FORIO 5: OFFICIO 6: E-OFFICIO 7: A-OFFICIO 8: M-OFFICIO 9: B-OFFICIO	2
ORG-LTR	Used to set special paper size not compatible with DF size recognition. 0: LTR [Factory default/After RAM clear] 1: G-LTR 2: A-LTR 3: EXECTIVE	2
ORG-B5	Sets special paper sizes that cannot be detected in ADF. Setting values 0: B5 1: K-LEGAL [Factory settings and after RAM clear: 0]	2
UI-COPY	Use it to select whether to display the copy screen in the control panel. Setting value 0: Do not display the copy screen. 1: Display the copy screen. [Factory default/After RAM clear: 1]	2
UI-BOX	Used to select whether to display operation panel box screen. 0: Don't display 1: Display [Factory default/After RAM clear]	2
UI-SEND	Used to select whether to display operation panel send screen. 0: Don't display 1: Display [Factory default/After RAM clear]	2
UI-FAX	Used to select whether to display operation panel fax screen. 0: Don't display 1: Display [Factory default/After RAM clear]	2
C4HTR-DT	Cassette heater: Sets lighting ratio of cassette on 4th level. Whenever possible, avoid using this setting during normal operation.	2
C2HTR-DT	Cassette heater: Sets lighting ratio of cassette on 2nd level. Whenever possible, avoid using this setting during normal operation.	2
Y-PTN	Used to eliminate 100 mm horizontal lines. 0: Don't imprint Y dot patterns on intermediate transfer belt. 1: Imprint Y dot patterns on intermediate transfer belt (only when reading color documents; Factory default/After RAM clear). 2: Imprint more Y dot patterns on intermediate transfer belt than when value of 1 is set. K dot patterns are imprinted on intermediate transfer belt during monochrome document reading only when value of 2 is set.	2
NEGA-GST	Additional Setting to the Sequence of Preconditioning Exposure (except laser) 0: OFF 1: ON (preconditioning exposure during initial rotations only) 2: ON (Preconditioning exposure during initial rotations and paper interval) [Factory default/After RAM clear] Reference Problem occurring when "2" is selected: - Lower Productivity (=> delay by 2 or 3 seconds)	2
SCR-SLCT	Used to select half-tone process for photographic printing paper/photo mode. 0: Use error diffusion method 1: Use low-line-count screen [Factory default/After RAM clear] 2: Use high-line-count screen	2

COPIER>OPTION>BODY		
TMC-SLCT	Used to select coefficient used in error diffusion process. 0: Low granularity/low dot stability for Y/M/C/Bk 1: Y/M/C -> Low granularity, low dot stability, Bk -> high granularity, low dot stability [Factory default/After RAM clear] 2: High granularity/low dot stability for Y/M/C/Bk	2
CAL-SW	Used to switch condition for performing calibration control. Whenever possible, avoid using this setting during normal operation.	2
CLN-PTH	Sets threshold value (number of sheets) for starting drum cleaning sequence. Whenever possible, avoid using this setting during normal operation.	2
CLN-VTH	Sets threshold value (image density) for starting drum cleaning sequence. Whenever possible, avoid using this setting during normal operation.	2
DEVL-VTH	Sets threshold value (video count) for starting toner forcible consumption sequence. Whenever possible, avoid using this setting during normal operation.	2
FTPTXPN	Used to specify port (FTP) number to send to. 0 to 65535 (16-bit value) [Factory default/After RAM clear: 21]	2
PRNT-ORD	Used to switch order of output to side tray. Whenever possible, avoid using this setting during normal operation.	2
INTPPR-1	Sets interval (number of sheets) for performing image stabilization control (adjustment set 1) between sheets. 0.50 to 1000 [Factory default/After RAM clear: 100]	2
DWNSQ-SW	Used to improve tray loading during one-sided continuous printing. Whenever possible, avoid using this setting during normal operation.	2
PRN-FLG	Used to select area flag for PDL images. Whenever possible, avoid using this setting during normal operation.	2
SCN-FLG	Used to select area flag for copy images. Whenever possible, avoid using this setting during normal operation.	2
T-LW-LVL	Used to switch timing for display of remaining toner volume warning message. Whenever possible, avoid using this setting during normal operation.	2
DVTGT-Y/M/C/K	developer concentration target value offsets Whenever possible, avoid using these settings during normal operation.	2
NWERR-SW	Used to select whether to display network error messages. 0: Don't display 1: Display [Factory default/After RAM clear]	2
FX-SPD	Used to adjust fixing roller speed. -2 to 2 [Factory default/After RAM clear: 0] Increasing the setting value increases the fixing roller's speed (in 0.8% increments). Setting this value automatically increases the operation speed of the paper delivery vertical path motor (the speed increases by the same ratio as the speed of the fixing roller).	2
EX-PS-SP	Used to adjust paper delivery vertical path motor speed. -2 to 2 [Factory default/After RAM clear: 0]	2
FX-N-ROT	Used to turn fixing motor idle after warmup ON/OFF. 0: ON (idle) [Factory default/After RAM clear] 1: OFF (don't idle) Setting this value to 1 increases the amount of paper curl, and reduces the capacity for the load on the paper delivery tray.	2
FX-SUB	Sets the fixing sub-heater's lighting ratio. 0: Normal [Factory default/After RAM clear] 1: Level 1 2: Level 2 Increasing this setting value decreases the lighting ratio (shortens the lighting time).	2

COPIER>OPTION>BODY		
SLV-UP	Used to increase developing cylinder operation speed. Use when image fault 'developing assembly uneven screw pitch' occurs. 0: Normal [Factory default/After RAM clear] 1: Operate developing cylinder at 110% of normal speed. 2: Operate developing cylinder at 120% of normal speed. 3: Operate developing cylinder at 120% of normal speed and expand interval between sheets as well. Setting this value to 2 decreases productivity (-> 24 ppm).	2
STS-PORT	Use it to turn off/on the T.O.T (TUIF over TCP/IP) sync type command communication port. Turns on/off the inquiry/response (sync) type command communication port for TUIF over TCP/IP. settings 0: off (default); 1: on For service NAVI, set the value as '1' when connecting the PC and main body by crossing cable. MEMO: T.O.T (TUIF over TCP/IP) Communication protocol between embedded application presentation (UI) and applications within the device including COPY/SEND/BOX etc., (Canon original protocol)	2
CMD-PORT	Use it to turn on/off the T.O.T (TUIF over TCP/IP) async type status communication port. Turns on/off the inquiry/response (sync) type status communication port for TUF over TCP/IP. settings 0: off (default); 1: on For service NAVI, set the value as '1' when connecting the PC and main body by crossing cable. MEMO: T.O.T (TUIF over TCP/IP) Communication protocol between embedded application presentation (UI) and applications within the device including COPY/SEND/BOX etc., (Canon original protocol)	2
BK-4CSW	Used to select color mode used in photo mode. 0: OFF (Use monochrome mode when reading monochrome documents in printed photo or photographic printing paper photo mode.) 1: ON (Use simple color mode when reading monochrome documents in printed photo or photographic printing paper photo mode.) Instead of creating monochrome images in 4 colors, simple color mode applies only a very small amount of Y/M/C toner to the ITB.	2
MODELSZ 2	Use it to make global support settings for copyboard original size detection. 2 settings 0: Size detection by CCD (Default) ; 1: Size detection by photo sensor - This is for individual user (glare protection), not used normally. - When the value is set as '1', original size detection at open/close of the pressure plate is not performed. For detection of the original size (without lightning the scanning lamp), original size sensor (photo sensor) is required.	2
SZDT-SW	Use it to enable/disable the switch-over from CCD size detection to photo size detection for copyboard original size detection. Settings 0: Size detection by CCD (Default) ; 1: Size detection by photo sensor [Factory default/After RAM clear: 0] - This is for individual user (glare protection), not used normally. - When the value is set as '1', original size detection at open/close of the pressure plate is not performed. For detection of the original size (without lightning the scanning lamp), original size sensor (photo sensor) is required.	2
LST-TNSW	use it to enable/disable the toner forced consumption sequence for last rotation 0: OFF 1: ON [Factory default/After RAM clear] Reference: negative effects of '0' If the original has a low color ratio, the output image may appear coarse or may have different hues.	2

COPIER>OPTION>BODY		
OHP-PTH	use it to set the number of copies to be used for ITB cleaning sequence, occurring following the passage of a transparency Setting values: 15 [Factory default/After RAM clear] Settings: 0 to 100 Reference: if Type E transparencies are used in a high humidity environment, '2' is recommended	2
DEVL-FAN	Used to switch the paper feeding speed when using the delivery vertical path. Whenever possible, avoid using this setting during normal operation.use it to enable/disable the delivery cooling fan (FM5) 0: disable regardless of paper type [Factory default/After RAM clear] 1: enable only if plain paper Reference: if any of the following occurs, '1' is recommended - traces of the FU/FD switching flapper (when FD delivery is used for an image with a high color ratio at the trailing edge; on a simplex model) - traces of the FU/FD switching flapper (when FD delivery is used for an image with a high color ratio at the trailing edge; on a simplex model) - poor stacking in FU delivery (duplex model only) - dropouts on the trailing edge of a 2nd side in the morning (after being left alone for a long time; high humidity environment only)	2
CTM-MARK	Used to switch the paper feeding speed when using the delivery vertical path. Whenever possible, avoid using this setting during normal operation.	2
UISW-DSP	switch appearing on the User screen use it to enable/disable the indication of the switch used to switch between Standard Setup screen and Simplified setup screen (e.g., for Lawson, self-copy shop) 0: disable indication of switch [Factory default/After RAM clear] 1: enable indication of switch Reference: a model supporting a coin vendor mechanism may come equipped with functions equivalent to those of a limited function model (Lawson)/standard model	2
CLR-SHFT	use it to correct color displacement on heavy paper 0: disable remedy [Factory default/After RAM clear] 1: enable remedy Reference: negative effects of '1' - the productivity for heavy paper will drop (to about 1/3)	2
ITB-CLN	use it to implement a remedy for uneven density in horizontal direction (dropout) 0: disable remedy 1: enable remedy [Factory default/After RAM clear]	2
NS-CMD5	Use it to set CRAM-MD5 authentication under SMTP authentication. setting 0: dependent on SMTP server 1: disable	2
NS-GSAPI	Use it to set GSSAPI authentication under SMTP authentication. setting 0: dependent on SMTP server 1: disable	2
NS-NTLM	Use it to set NTLM authentication under SMTP authentication. setting 0: dependent on SMTP server 1: disable it	2
NS-PLNWS	Use it to set PLAIN LOGIN authentication under SMTP authentication. <environment in which communication packets are subjected to coding> setting 0: dependent on SMTP server 1: disable	2

COPIER>OPTION>BODY		
NS-PLN	Use it to set PLAIN LOGIN under SMTP authentication. <environment in which communication packages are not subjected to coding> setting 0: dependent on SMTP server 1: disable	2
NS-LGN	Use it to set LOGIN authentication under SMTP authentication. setting 0: dependent on SMTP server 1: disable	2
MEAP-PN	Setting the port No. of HTTP server used for MEAP application Settings 0 to 65535 [Factory default/After RAM clear: 8000] Referemnce: Do not use 1 to 1023 excepting 80 (HTTP) if specifying the port No. of HTTP server as MEAP port. (Because standard servers use numbers in this range.)	2
TMIC-BK	Use it to set the correction along the trailing edge for BkLUT and BkLUT for PDL (Tmic). Settings 0: PDL BK_LUT end correction ON; copy Bk_LUT end correction OFF 1: PDL BK_LUT end correction OFF; copy Bk_LUT end correction OFF 2: PDL BK_LUT end correction ON; copy Bk_LUT end correction ON (default) 3: PDL BK_LUT end correction OFF; copy Bk_LUT end correction ON [Factory default/After RAM clear: 2]	2
SVMD-ENT	Switching the method of entering the Service Mode. Setting Values 0: [User Mode key] -> Press [2] and [8] simultaneously -> [User Mode key] [Factory default/After RAM clear] 1: [User Mode key] -> Press [4] and [9] simultaneously -> [User Mode key] Reference Information Support for Siemens	2
DH-MODE	Patch Data (high density side) Used in D-half Except in Full Correction Change the default setting so that the readout collected from D-half at time of full correction will be substituted for the patch on the high density side at time of D-half (other than in full correction). Settings 0: use patch image read data of full correction (at time of shipment/upon RAM initialization) 1: do not use patch image read data of full correction [Factory default/After RAM clear: 0]	2
LSUB-DWY	Switching DC bias voltage of the lower auxiliary brush Settings: 0: Bias is standard 1: Bias is reduced [Factory default/After RAM clear: 0] Increasing DC bias of the lower auxiliary brush has the effect of retaining/charging remaining transfer toner. (Countermeasures against fogged image) However, faulty image such as mark of the auxiliary brush and filming may occur as a result. Set this mode to '1' if such faulty image occurs.	2
LSUB-DWM	Switching DC bias voltage of the lower auxiliary brush Settings: 0: Bias is standard 1: Bias is reduced [Factory default/After RAM clear: 0] Increasing DC bias of the lower auxiliary brush has the effect of retaining/charging remaining transfer toner. (Countermeasures against fogged image) However, faulty image such as mark of the auxiliary brush and filming may occur as a result. Set this mode to '1' if such faulty image occurs.	2
LSUB-DWC	Switching DC bias voltage of the lower auxiliary brush Settings: 0: Bias is standard 1: Bias is reduced [Factory default/After RAM clear: 0] Increasing DC bias of the lower auxiliary brush has the effect of retaining/charging remaining transfer toner. (Countermeasures against fogged image) However, faulty image such as mark of the auxiliary brush and filming may occur as a result. Set this mode to '1' if such faulty image occurs.	2

COPIER>OPTION>BODY		
BKTC-DWN	Countermeasures against fogged image due to Bk supply Settings: 0: OFF 1: ON [Factory default/After RAM clear: 0] Set this mode to [1 (countermeasures: ON)] when fogged image due to Bk supply occurs.	2
SSH-SW	SSH server ON/OFF Settings 0: Sever is not started up [Factory default/After RAM clear: 0] 1: Server is started up The following modes also become ON when COPIER>OPTION>BODY>DA-CNCT is set to '1'. COPIER>OPTION>BODY>CMD-PORT COPIER>OPTION>BODY>SSH-SW COPIER>OPTION>BODY>DA-PORT	2
RMT-LGIN	ON/OFF setting of remote login operation to SSH server Settings 0: Remote login operation to SSH server is disabled [Factory default/After RAM clear] 1: Remote login operation to SSH server is enabled	2
RE-PKEY	ON/OFF setting of SSH server key reproduction Settings 0: SSH server key is not reproduced. [Factory default/After RAM clear] 1: SSH server key is reproduced. This mode is enabled only when COPIER>OPTION>BODY>SSH-SW is set to '1'.	2
U-NAME	Use it to set a user name required to connect to the SSH server. Sets a login user name required to connect to the SSH server. Only one user can login the server. Setting range 8 characters maximum (English one byte characters) [Factory default/After RAM clear: gN3Fp2A] - Do not change this setting because this is for future expansion. - This is valid only when "1 (ON)" is set to <SSH-SW>.	2
U-PASWD	Use it to set a password of the user required to connect to the SSH server. Sets a password of the login user required to connect to the SSH server. Setting range 8 characters maximum (English one byte characters) [Factory default/After RAM clear: Vs8DuwJ] - Do not change this setting because this is for future expansion. - This is valid only when "1 (ON)" is set to <SSH-SW>. - The password is left hidden on the screen.	2
FXERRLVL	Not used	
DA-PORT	Setting port for communication with DA Settings 0: Close [Factory default/After RAM clear:0] 1: Open The following modes also become ON when COPIER>OPTION>BODY>DA-CNCT is set to '1'. COPIER>OPTION>BODY>STS-PORT COPIER>OPTION>BODY>CMD-PORT COPIER>OPTION>BODY>SSH-SW COPIER>OPTION>BODY>DA-PORT	2

COPIER>OPTION>BODY		
DA-CNCT	Setting connection to DA Settings 1: DA is used 2: DA is not used [Factory default/After RAM clear:0] The following modes also become ON when COPIER>OPTION>BODY>DA-CNCT is set to '1'. COPIER>OPTION>BODY>STS-PORT COPIER>OPTION>BODY>CMD-PORT COPIER>OPTION>BODY>SSH-SW COPIER>OPTION>BODY>DA-PORT MEMO: This is used only inside Japan, not outside Japan.	2
FXMSG-SW	Use it to enable/disable the message that prompts replacement of the fixing assembly. Use it to enable/disable the message on the control panel indication the need for the replacement of the fixing assembly. Normally, the setting is enabled; however, you can disable the message if there is no need for replacement (so that the user will not feel unnecessarily concerned and place a service call). If replacement is necessary, be sure to replace it and enable the setting. Settings 0: do not indicate 1: indicate a time of shipment/upon RAM initialization: 1	2
CHNG-STS	Use it to set the T.O.T (TUIF over TCP/IP) status connection port number. Changes the port number for status connection in a TUIF over TCP/IP environment. This is used for changing the port No. in service NAVI. settings 1 to 65535 (default: 20010) MEMO: T.O.T (TUIF over TCP/IP) Communication protocol between embedded application presentation (UI) and applications within the device including COPY/SEND/BOX etc., (Canon original protocol)	
CHNG-CMD	Use it to set the T.O.T (TUIF over TCP/IP) command connection port number. Use it to set the port number for the command connection in an TUIF over TCP/IP environment. This is used for changing the port No. in service NAVI. settings 1 to 65535 (default: 20000) MEMO: T.O.T (TUIF over TCP/IP) Communication protocol between embedded application presentation (UI) and applications within the device including COPY/SEND/BOX etc., (Canon original protocol)	2
MEAP-DSP	Use it to prohibit a switch-over from the MEAP screen to the standard screen (COPY/SEND/BOX screen etc.,). settings 0: off (shift to standard screen; default); 1: on (do not shift to atandard screen) MEMO: Although setting the value as '1' in COPIER > OPTION > BODY > MEAP-DSP, at the occurrence of error/jam/alarm, the display transits to the standard screen for showing a warning.	2

COPIER>OPTION>BODY		
ANIM-SW	Use it to prohibit display of the Error/Jam screen while a MEAP application is in operation. Although setting the value as '1' in COPIER > OPTION > BODY > MEAP-DSP, at the occurrence of error/jam/alarm, the display transits to the standard screen for showing a warning. When setting this value as '1', at the occurrence of error/jam/alarm, - Display transition to the standard screen is prohibited. - Warning is displayed on the MEAP screen to urge the user to contact servicing. settings 0: off (display warning screen; default); 1: on (do not display warning screen)	2
HDD-TMP	Use it to set a level of temperature to serve as a reference for detecting a low temperature error. The new setting will not be valid until the power switch has been turned off and then on again. Settings 0 to 30 deg C [Factory default/After RAM clear: 2]	2
HDD-TIM	Use it to set the time interval allowed before a low temperature error is identified The new setting will not be valid until the power switch has been turned off and then on again. Settings 0 to 200 min [Factory default/After RAM clear: 10]	2
HDD-SW	Use it to enable/disable E code indication of a low temperature error The new setting will not be valid until the power switch has been turned off and then on again Settings 0: do not indicate 1: indicate [Factory default/After RAM clear: 0]	2
DV-RT-LG	Switching the developing assembly idle rotation time of first thing in the morning Settings 0: 1 minute 1: 2 minutes [Factory default/After RAM clear: 0] Default of idle rotation time is 1 minute since iR C3200/iR C3220 Dcon V12.1 to prolong life of the process cartridge. However, use this mode to set 2 minutes if any trouble (faulty image etc.) occurs due to reduction of the time.	2
MEAP-SSL	Use it to set an HTTPS port for MEAP. Sets a port for the HTTPS server to use SSL in the MEAP HTTP. Setting range 1 to 65535 [Factory default/After RAM clear: 8443]	2
DH-TMG	Setting up a threshold for the accumulated number of outputs for the Dhalf control sequence operation trigger. Control If the fixing unit is lower than a specified temperature when the machine is turned on or recovered from the sleep mode, use this mode to make automatic full adjustments during initial multiple rotations. At this time, the Dhalf control is performed only if the number of outputs accumulated since the last Dhalf control exceeds the value specified in this Service Mode. Changing the timing of or canceling the Dhalf control (according to the number of accumulated outputs) by using this mode can reduce the downtime in the morning. (A measure for a complaint about the downtime in the morning) Meanwhile, there is a possibility that gray scale (half-tone image) might be degraded when the Dhalf control is cancelled. With regard to the accumulated number of outputs, a small-size copy is regarded as 1 count, and a large-size copy is regarded as 2 counts. When the Dhalf control is performed first thi	2

COPIER>OPTION>BODY		
MIX-FLG	Use it to select an image field flag (for image synthesis). Selects the image processing method which is performed when a combined image cannot be compressed at a certain compression ratio on the main controller side. Setting value 0: Image processing equivalent to the PDL character mode 1: Image processing equivalent to the PDL photo mode 2: Image processing equivalent to the SCAN character mode 3: Image processing equivalent to the SCAN photo mode [Factory default/After RAM clear: 0]	2
KSIZE-SW *2	Paper size (K size) switch for China This switch allows iR series scanner controllers to support K size paper detection and display. When the switch is set to ON = 1 for MODEL-SZ = (AB type) destinations, the operation switches to allow K size paper recognition and detection to be performed with document detection, paper selection screen and APS type, etc. The following types of K size paper are available. - 8K: 270mm x 390 mm - 16K: 270mm x 195 mm Setting values 0: OFF (K size paper not handled) 1: ON (K size paper handled) [Factory settings and after RAM clear: 0]	2
LPD-PORT	Toggle switch to turn Rx transfer (PDF Tx) reduction transmission ON/ OFF. Images received in FAX, IFAX modes are converted to PDF and then reduced for transmission as email or for file transmission. Setting range 1 to 65535 [Factory settings and after RAM clear: 515]	2
ORG-A4R	Sets special paper sizes in ADF. Sets special paper sizes that cannot be detected in the ADF. Setting values 0: A4R 1: FOLIO-R [Factory settings and after RAM clear: 0]	2
PDF-RDCT	Switches to reduction transmission for reception transfer (PDF transmission). Images received in FAX, IFAX modes are converted to PDF and then reduced for transmission as email or for file transmission. Setting values 0: Image not converted to PDF and reduced for reception transfer. 1: Image converted to PDF and reduced for reception transfer. [Factory settings and after RAM clear: 0]	2
REDU-CNT	Switching control for density adjustment method Controls whether to perform density adjustment, in consideration of the amount of toner deposit.	2
REBOOTS W	Reboot switch for E240 error Sets whether to reboot automatically when an E240 error occurs. Setting values 0: Automatic reboot when E240 occurs. 1: No automatic reboot when E240 occurs. [Factory settings and after RAM clear: 0] How to use: There have been complaints from the field that, if the unit reboots automatically when E240 occurs, PDL jobs are lost. This item has been added in order to enable selection of whether to reboot automatically or not.	2

COPIER>OPTION>BODY		
VP-ART	This mode enables line art processing to be changed. The line art outline processing in scalable PDF is changed. Setting range 0 to 99 Increase value:: Outline is made smoother. Decrease value:: Outline is made rougher. [Factory settings and after RAM clear: 1]	2
VP-TXT	This mode enables text vectorisation processing to be changed. The text vectorisation processing in scalable PDF is changed. Setting range 0 to 99 Increase value:: Outline is made smoother. Decrease value:: Outline is made rougher. [Factory settings and after RAM clear: 1]	2
UI-PRINT	Control panel print job screen display restriction Switches between display and non display of control panel print job screen. (Some users with customized control panels prefer not to display this screen.) Setting values 0: No display 1: Display [Factory settings and after RAM clear: 1] Note: Here, 'print job' refers to a new screen loaded from E307G. In order to enhance the convenience of print related functions, screens that used to be treated as job status screens in the conventional system status have been upgraded to tab screens.	2
WUEV-SW	Sleep notification switch Sets whether to notify the DS application on the network when the copier main unit enters or recovers from sleep mode. Setting values 0: Send sleep notification. 1: Do not send sleep notification. [Factory settings and after RAM clear: 0]	2
WUEV-INT	Sets sleep notification interval. Sets interval at which sleep notification is sent. Setting range 0-65535 (Sec.) [Factory settings and after RAM clear: 600]	2
WUEV-POT	Sets sleep notification port number. Sets the PC port number to which sleep notification is to be sent. Setting range 1 to 65535 (Sec.) [Factory settings and after RAM clear: 11427]	2
WUEV-RTR	Sets sleep notification range. Sets the number of routers via which sleep notification may be sent. Setting range 1 to 255 [Factory settings and after RAM clear: 3]	2
SJB-UNW	Secure print job storage number (number of reserved jobs) switch Toggles secure print job storage number (number of reserved jobs) upper limit between 50 and 90. Setting range 0:50 1:90 [Factory settings and after RAM clear: 0]	2

COPIER>OPTION>BODY		
UI-RSCAN	Control panel remote scan screen restriction Switches between display and non display of control panel remote scan screen. (Some users with customized control panels prefer not to display this screen.) Setting values 0: No display 1: Display [Factory settings and after RAM clear: 1]	2
UI-EPRNT	Control panel extension print screen display restriction Switches between display and non display of control panel extension print screen (EFI print screen). (Some users with customized control panels prefer not to display this screen.) Setting values 0: No display 1: Display [Factory settings and after RAM clear: 1]	2
UI-WEB	Control panel web browser screen display restriction Switches between display and non display of control panel web browser screen. (Some users with customized control panels prefer not to display this screen.) Setting values 0: No display 1: Display [Factory settings and after RAM clear: 1]	2
WEBV-SW	Control panel hold job screen display restriction Switches between display and non display of control panel hold job screen. (Some users with customized control panels prefer not to display this screen.) Setting values 0: No display 1: Display [Factory settings and after RAM clear: 1]	2
PASCL-TY	Sets paper to be used with PASCAL (reader/ printer). Sets type of paper to be used with PASCAL (reader/ printer). Setting values (differs by region) (differs by region) 1: CLC-SK 80 g (for regions other than USA/ EU, mainly Japan) 2: Hammermill 105 g (for USA) 3: Neusiedler 100 g (for UK) [Factory settings and after RAM clear: 1 (differs by region)]	2
CARD-RNG	Sets number of card groups (no. of cards) that can be used. Sets the number of card groups (no. of cards) that can be used with a card reader. Setting range 1-1000 [Factory settings and after RAM clear: 1000] Set the card starting number in COPIER> FUNCTION> INSTALL> CARD, then, in this mode, set the number of card groups (no. of cards) that can be used with a card reader.	2
WUEN-LIV	Sets start time after sleep notification from network. Sets time in seconds till the copier main unit next enters sleep mode after sleep mode is initiated by the network, irrespective of a new job. Setting range 10-600 (Sec.) Factory settings and after RAM clear: 15]	2

COPIER>OPTION>BODY		
FXLP1-SW	Loop control OFF (normal speed) Sets loop control OFF when normal speed is being used. Set '1' when image fault 'the center of the image scraped' and/or 'the rear end of the paper scraped' occurs. Setting values 0: Loop control ON 1: Loop control OFF [Factory settings and after RAM clear: 1]	2
FX-SPD3	Speed change (OHP, glossy paper) Changes TBF speed for OHP and glossy paper. Setting range: -5 to 5 [Factory settings and after RAM clear: 1]	2
FX-LOOP1	TBF loop control and trailing edge OFF timing (normal speed) Changes the timing of TBF loop control and trailing edge OFF, when normal speed is being used. Setting range: -5 to 5 [Factory settings and after RAM clear: 1]	2
FX-LOOP2	TBF loop control and trailing edge OFF timing (half speed) Changes the timing of TBF loop control and trailing edge OFF, when half speed is being used. Set '1' when the image fault 'the center of the image scraped' and/or 'the rear end of the paper scraped' occurs at half-speed printing. Setting range: -5 to 5 [Factory settings and after RAM clear: 1]	2
FX-LOOP3	TBF loop control and trailing edge OFF timing (OHP, glossy paper) Changes the timing of TBF loop control and trailing edge OFF, when OHP or glossy paper is being used. Setting range: -5 to 5 [Factory settings and after RAM clear: 1]	2
FXLP2-SW	Loop control OFF (half speed) Sets loop control OFF when half speed is being used. Setting values 0: Loop control ON 1: Loop control OFF [Factory settings and after RAM clear: 1]	2
FXLP3-SW	Loop control OFF (OHP, glossy paper) Sets loop control OFF when OHP or glossy paper is being used. Setting values 0: Loop control ON 1: Loop control OFF [Factory settings and after RAM clear: 1]	2
FX-U-STB	Changes fixer belt standby temperature adjustment. Setting values 0: default 1: -5 deg C 2: -10 deg C 3: -15 deg C 4: -20 deg C [Factory settings and after RAM clear: 1]	2
FX-L-STB	Changes pressure belt standby temperature adjustment. Setting values 0: default 1: -5 deg C 2: -10 deg C 3: -15 deg C 4: -20 deg C [Factory settings and after RAM clear: 1]	2

COPIER>OPTION>BODY		
COMP-PRT	Composite print operation control (image processing memory allocation control) When a count of 2 or more prints are to be made in page print/ set print/ stamp/ date print/ book binding/ watermark print (composite print), depending on the memory model (optional configuration) and document size, the memory allocation method is set to 'print priority' for image processing purposes. This means there is not enough memory for image processing for Scan, Send Tx (excluding FAX), and PDL entry, and these operations must wait until printing is finished. In this case, all memory is allocated equally to all jobs so that the operations can be carried out (each a little at a time) without waiting until printing is finished. Setting values 0: Print priority 1: Equal allocation [Factory settings and after RAM clear: 0]	2
FX-ST-SP	Fixing unit idling speed in standby. Sets the fixing unit idling speed in standby. Setting values 0: 32 mm/s 1: 50 mm/s 2: 70 mm/s [Factory settings and after RAM clear: 0]	2
FIX-RT-T	Change intermission interval in standby Sets rotation stop interval in standby. Setting range: 0 to 300 (in units of 10 sec.) [Factory settings and after RAM clear: 0]	2
DELV-THC	Switch toner ejection threshold value (C) Sets threshold value of mean image ratio for forced toner ejection sequence. Setting range: 1 to 5(%) [Factory settings and after RAM clear: 2]	2
DELV-THM	Switch toner ejection threshold value (M) Sets threshold value of mean image ratio for forced toner ejection sequence. Setting range: 1 to 5(%) [Factory settings and after RAM clear: 2]	2
DELV-THK	Switch toner ejection threshold value (Bk) Sets threshold value of mean image ratio for forced toner ejection sequence. Setting range: 1 to 5(%) [Factory settings and after RAM clear: 2]	2
FX-EX-TM	Extend warm-up time Sets warm-up time. Setting values 0: default 1: 1 min. extension 2: 2 min extension [Factory settings and after RAM clear: 0]	2
FAN-SLP	Switch fan sequence when entering sleep mode. Setting range 0: Sequence uses environment sensor temperature reading. 1: Sequence does not use environment sensor temperature reading. [Factory settings and after RAM clear: 0]	2
AST-SEL	Change advanced smoothing range Used when adjustments to advanced smoothing effect are felt necessary. If the smoothing effect is felt to be too strong, even though 'Soft' is selected in the advanced smoothing UI, set this item to '0'. If the smoothing effect is felt to be too weak, even though 'Strong' is selected in the advanced smoothing UI, set this item to '3'. Setting range: 0 to 3 [Factory settings and after RAM clear: 2]	2

COPIER>OPTION>BODY		
REGM-SEL	Change fine line density correction range Used when adjustments to fine line density for lines and characters in 1200 dpi printing are felt necessary. If lines and characters are felt to be too faint, even though '+2' is set in the fine line density UI, increase the plus setting of this item. If lines and characters are felt to be too dark, even though '-2' is set in the fine line density UI, increase the minus setting of this item. Setting range: 0 to 4 [Factory settings and after RAM clear: 2]	2
SLV-UP-H	Increase developing cylinder rotation speed Whenever possible, avoid using this setting during normal operation. Setting range: 0 to 3 [Factory settings and after RAM clear: 1]	2
DWNSQ-FU	Decrease throughput (for FU, normal speed, duplex, colour jobs) This setting changes the throughput for FU, normal speed, duplex and colour jobs. Setting values 0: Ordinary productivity 1: 32 cpm 2: 12 cpm [Factory settings and after RAM clear: 1]	2
DWNSQ-FJ	Decrease throughput (for FJ, normal speed, duplex, colour jobs) This setting changes the throughput for FJ, normal speed, duplex and colour jobs. Setting values 0: Normal productivity 1: 32 cpm 2: 12 cpm [Factory settings and after RAM clear: 1]	2
FXLP-DWN	Modify the arching level before fixing Modify the S-arching level between the secondary transfer to fixing at plain-paper printing. When the center of the image scraped occurs at plain-paper printing, set 1 at this mode. Setting value 0: Level of modifying arching 1 1: Level of modifying arching 2 2: Level of modifying arching 3 Factory settings and after RAM clear: 0] Make the following settings at this mode. - Set 4 by COPIER>OPTION>BODY>FX-LOOP1. - Set 1 by COPIER>OPTION>BODY>FXLP1-SW.	2
DELV-FN2	Change the control of delivery cooling fan at 2-side, large size printing Change the operation of the delivery cooling fan at 2-side, large size paper printing If curl is produced at 2-side, large-size paper printing, set 1 or 2. When 2-side printing on a large-size paper left in place of high temperature and humidity causes bounding of the rear end, set 0 or 1. Setting value 0: Stop 1: Half speed 2: Full speed Factory settings and after RAM clear: 0]	2
PRES-ADJ	Pressure control for fixing assembly Modify the pressure pulse to reduce the pressure when pressuring the belt. Set 1 at this mode when scrape on the image center occurs. Setting value 0: Normal 1: Decrease Factory settings and after RAM clear:0]	2

2. USER

T-19-59

COPIER>OPTION>USER		
Specification selection related to user mode		
Sub item	Description	level.
COPY-LIM	Used to change upper limit value setting for number of sheets to copy. Setting values 1 to 999 sheets [Factory default/After RAM clear: 999]	1
SLEEP	Used to turn sleep function ON/OFF. Setting values 0: OFF 1: ON [Factory default/After RAM clear] Reference: The sleep function is set by the timer setting in the "User mode"	1
COUNTER 1	Used to change the counter type display for the operation panel's software counter 2, to meet user or dealer requirements. Reference: Lets you change the counter data to meet user or dealer requirements. Setting values 0 to 999 [Factory default/After RAM clear: 108]	1
COUNTER 2	Used to change the counter type display for the operation panel's software counter 2, to meet user or dealer requirements. Reference: Lets you change the counter data to meet user or dealer requirements. Setting values 0 to 999 [Factory default/After RAM clear: 108]	1
COUNTER 3	Used to change the counter type display for the operation panel's software counter 3, to meet user or dealer requirements. Reference: Lets you change the counter data to meet user or dealer requirements. Setting values 0 to 999 [Factory default/After RAM clear: 232]	1
COUNTER 4	Used to change the counter type display for the operation panel's software counter 4, to meet user or dealer requirements. Reference: Lets you change the counter data to meet user or dealer requirements. Setting values 0 to 999 [Factory default/After RAM clear: 324]	1
COUNTER 5	Used to change the counter type display for the operation panel's software counter 5, to meet user or dealer requirements. Reference: Lets you change the counter data to meet user or dealer requirements. Setting values 0 to 999 [Factory default/After RAM clear: 000]	1
COUNTER 6	Used to change the counter type display for the operation panel's software counter 6, to meet user or dealer requirements. Reference: Lets you change the counter data to meet user or dealer requirements. Setting values 0 to 999 [Factory default/After RAM clear: 000]	1
CONTROL	Used to initialize the transmission reading setting. Setting values When connecting with the account-managing device (e.g., coin vendor, non-Canon control card), it switches over the count pulse (on/off) in the account-managing device. 0: Not restricted [Factory default/After RAM clear] 1: Restricted When charging against PDL prints, set '1'.	1
B4-L-CNT	Used to select whether to count B4 size paper as large size or small size for software counters 1 to 6. Setting values 0: Small size [Factory default/After RAM clear] 1: Large size	1

COPIER>OPTION>USER		
Specification selection related to user mode		
COPY-JOB	Prohibits copy job reservations when card reader and coin vendor are in use. Setting values 0: Copy job reservations [Factory default/After RAM clear] 1: No copy job reservations	1
TAB-ROT	Rotates landscape images on PDL tab paper 180 degrees. Setting values 0: Don't rotate [Factory default/After RAM clear] 1: Rotate	1
PR-PSESW	Print pause function switch display selection Sets whether to display the print pause switch on the user screen. Setting values 0: No display 1: Display [Factory settings and after RAM clear: 0]	1
IDPRN-SW	Used to switch type of count-up job for department management counter. Setting values 0: BoxPrint, ReportPrint, SendLocalPrint and PDLPrint are counted as PRINT categories [Factory default/After RAM clear] 1: Only PDLPrint is counted as a PRINT category	1
CPRT-DSP	Used to select whether to display count print button in sales counter check screen, for Lawson models. Setting values 0: Don't display (This setting is only for stores that request it.) 1: Display (Count print function can be used.) [Factory default/After RAM clear]	1
CNT-SW	use it to select charge counters and default display items (100-V model only) Settings 0: counter 1-101 total 1 counter 2-108 total (black-and-white 1) counter 3-232 copy (full color + mono color/1) counter 3-234 copy (full color + mono color/1) 1: counter 1-101 total 2 counter 2-231 copy (full color + mono color/2) counter 3-148 total A (full color + mono color/2) counter 4-222 copy (black-and-white 2) counter 5-133 total A (black-and-white 2) [Factory default/After RAM clear]	1
BCNT-AST	Used to select a job type with which to count BOX print from ASSIST. Setting values 0: Count as PDL print [Factory default/After RAM clear] 1: Count as Copy print	1
DFLT-CPY	Sets default COPY colour mode. Setting values 0: AUTO/ACS/Driver setting 1: Full colour 2: Black and white JPN [Factory settings and after RAM clear: 0] USA [Factory settings and after RAM clear: 0] EUR [Factory settings and after RAM clear: 2 (CLC models: 0)] Other than the above: [Factory settings and after RAM clear: 2]	1

COPIER>OPTION>USER		
Specification selection related to user mode		
DFLT-BOX	Sets BOX default mode Setting range 0: AUTO/ACS/Driver settings 1: Full colour 2: Black and white JPN [Factory settings and after RAM clear:: 0] USA [Factory settings and after RAM clear:: 0] EUR [Factory settings and after RAM clear:: 0 (iR models: 2)] Other than the above: [Factory settings and after RAM clear: 2]	1
DOC-REM	Sets document removal message. Setting range 0: No display 1: Display [Factory settings and after RAM clear: 0]	1
COUNTER7	Selects type of counter to be displayed in user mode counter 7. Enter values to make setting. The setting will be for the seventh counter displayed in the user mode counter confirmation. [Factory settings and after RAM clear: 0 (No setting)]	1
COUNTER8	Selects type of counter to be displayed in user mode counter 8. Enter values to make setting. The setting will be for the eighth counter displayed in the user mode counter confirmation. [Factory settings and after RAM clear: 0 (No setting)]	1
LDAP-SW	Sets LDAP search conditions. Sets conditions to be matched when searching from email addresses and fax numbers from the LDAP server. Setting values 0: 'includes' 1: 'does not include' 2: 'is equal to' 3: 'is not equal to' 4: 'begins with' 5: 'ends with' [Factory settings and after RAM clear: 4]	1
FROM-OF	Sets whether to delete 'from' address when sending mail. Setting values 0: Do not delete 'from' address. 1: Delete 'from'. [Factory settings and after RAM clear: 0]	1
SPEAKER	Sets text-to-speech (user mode) 'Speaker/ Headphones' button display. Setting values 0: Do not display 'Speaker/ Headphones' button. 1: Display 'Speaker/ Headphones' button. [Factory settings and after RAM clear:: 0]	1
FILE-OF	Sets file address transmission prohibition. This setting prohibits transmission to a file address by prohibiting file address entry into the address book. Setting values 0: Do not prohibit transmission to file address. 1: Prohibit transmission to file address. [Factory settings and after RAM clear: 0]	1
MAIL-OF	Sets email address transmission prohibition. This setting prohibits transmission to an email address by prohibiting email address entry into the address book. Setting values 0: Do not prohibit transmission to email address. 1: Prohibit transmission to email address. [Factory settings and after RAM clear: 0]	1

COPIER>OPTION>USER		
Specification selection related to user mode		
IFAX-OF	Sets IFAX address transmission prohibition. This setting prohibits transmission to an IFAX address by prohibiting IFAX address entry into the address book. Setting values 0: Do not prohibit transmission to IFAX address. 1: Prohibit transmission to IFAX address. [Factory settings and after RAM clear: 0]	1
LDAP-DEF	Switches LDAP search condition defaults. Sets default search attributes when LDAP detailed search is selected. Setting values 0: 'Name' 1: 'Email' 2: 'Fax' 3: 'Organisation' 4: 'Unit' 5: User setting 1 6: User setting 2 [Factory settings and after RAM clear: 0]	1
SIZE-DET	Sets document size detection function ON/ OFF. When the pressure plate opens and closes, there is no light flashing, so extraneous light can be cut out. Setting values 0: OFF 1: ON [Factory settings and after RAM clear: 1] 2	2
DATE-DSP	Used to switch date display. 0: 'YYMM/DD 1: DD/MM'YY 2: MM/DD/YY	2
MB-CCV	Used to select whether to restrict mailbox control card users. 0: Don't restrict 1: Restrict	2
TRY-STP	Used to set mode in which output stops when tray is full. 0: Normal mode (Interrupted when finisher tray is full.) 1: Interrupted only by height detection	2
MF-LG-ST	Sets long length mode key. Setting values 0: Normal setting 1: Display long length key in mode screen. [Factory settings and after RAM clear: 0]	2
CNT-DISP	Used to select whether to display serial number when counter check key is pressed. 0: Display serial number. 1: Don't display serial number.	2
OP-SZ-DT	Used to turn document size detection when pressure plate is open ON/OFF. 0: Enter document size in control panel. 1: Detect document when start key is turned ON with pressure plate open.	2
NW-SCAN	Used to select whether to permit network scan function 0: Don't permit 1: Permit (Invalid when UFR board or open interface board isn't connected.)	2

COPIER>OPTION>USER		
Specification selection related to user mode		
HDCR-DSP	Used to turn off display of user mode hard disk clear mode and switch clear operations. 0: Don't display and don't clear 1: Clear once with zeroes 2: Clear once with random data 3: Clear 3 times with random data (mode displayed for settings 1 to 3) MEMO: function for HDD initialization This is the function to clear the data on HDD completely by overwriting the 0 (null) data and random data to file data area at the moment of deleting files logically (timing for deleting the administrative information data) in HDD.	2
JOB-INVL	Used to set job interval during interrupt. 0: Standard setting (Output next job continuously during interrupt copy job.) 1: Start output of next job after last sheet of interrupt copy job has been delivered. 2: Start output of next job after last sheet of any job has been delivered.	2
LGSW-DSP	Used to select whether to display "Log display ON/OFF setting" on user mode screen. 0: Don't display "Log display ON/OFF setting" 1: Display "Log display ON/OFF setting"	2
P-CRG-LF	Used to select operation performed when drum unit has reached end of service life. 0: Don't stop 1: Stop	2
PCL-COPY	Used to set compatible mode for "COPIES" PCL command. 0: Perform control on each page individually, according to value of COPIES command specified for each page. [Factory default/After RAM clear] 1: Compatible (other controller) mode (not in use) 2: Reserved	2
PRJOB-CP	Setting for count pulse (on/off) at receipt print/report print. When using account-managing device (e.g., coin vendor, non-Canon control card), it switches over (on/off) the count pulse notice for every page at receipt print/report print. 0: disable generation of count pulse [Factory default/After RAM clear] 1: enable generation of count pulse Reference: use it to apply or not apply a count pulse notification to the control guard for each page	2
DPT-ID-7	Registering a department ID and inputting a 7-digit code for authentication. Setting Values 0: As before [Factory default/After RAM clear] 1: Inputting a 7-digit code Reference Infomation Support for Siemens	2
RUI-RJT	Disconnecting the HTTP port when three authentication failures from RUI are recognized. Setting Values 0: Invalid [Factory default/After RAM clear] 1: Valid Reference Information Support for Siemens	2
SND-RATE	Sets compression rate when compression rate in SEND is selected 'High'. Setting values 0: Compression rate 1/16 1: Compression rate 1/20 2: Compression rate 1/24 [Factory settings and after RAM clear: 0]	2
CTM-S06	Setting password deletion from the export file of file transmission address Settings 0: Password is not deleted from the export file [Factory default/After RAM clear] 1: Password is deleted from the export file	2

COPIER>OPTION>USER		
Specification selection related to user mode		
FREG-SW	Switching display/nondisplay of a free register area of SEND MEAP counter Settings 0: Nondisplay [Factory default/After RAM clear] 1: Display MEMO: - This is not used at normal servicing because it is for trouble analysis. - Obey the instruction by the quality support section for usage.	2
IFAX-SZL	Switching transmission size limitation during IFAX transmission (Only when bypassing server) Settings 0: Transmission size limitation is enabled (via/bypassing server) 1: Transmission size limitation is disabled (bypassing server only) [Factory default/After RAM clear] In the case of setting '0', - as for upper limit value, set it in transmission data size by selecting the following: additional functions mode>System Settings>Communications Settings>E-mail/I-Fax Settings>Maximum Data Size For Setting - if sending data that the size exceeds the upper limit value, it will be #830 error.	2
IFAX-PGD	Permitting the divided transmission per page (only when the upper limit of the transmission data size is exceeded). Settings 0: Not permit the divided transmission per page upon transmission in the IFAX Simple mode. [Factory default/After RAM clear] 1: Permits the divided transmission per page upon transmission in the IFAX Simple mode. When setting '1', in the case of exporting the address book data from remote UI, the password of file server is hidden from the exported file (to avoid leakage of information).	2
MEAPSAFE	Switching over to the MEAP safe mode. Settings 0: Normal mode [Factory default/After RAM clear] 1: Safe mode Safe mode works to stop the added MEAP application, and to startup the only system application that was activated at initial state to start up the system safely. Set '1' to startup in safe mode in the case of system recovery processing when MEAP platform does not startup normally because of resource competition among MEAP applications, or the order to register/use the service. "MPSF" is indicated in the control panel screen when in safe mode.	2
TRAY-FLL	Setting the timing to issue an output-tray-full warning. Settings 0: Issues an output-tray-full warning when all the delivery trays become full. [Factory default/After RAM clear] 1: Issues an output-tray-full warning when all the specified trays become full.	2
PRNT-POS	Toggle switch to pause or not pause all subsequent print jobs once a job has been cancelled because of an error In DL printing, sets whether to pause all print jobs once a job has been cancelled for a machine error other than a service call (#037, etc.). Setting values 0: No pause 1: Pause all jobs [Factory settings and after RAM clear: 0]	2
AFN-PSWD	Limiting access to the User Mode. Settings 0: Normal mode (Enters the User Mode without asking a password) [Factory default/After RAM clear] 1: Enters the User Mode after a password matches.	2

COPIER>OPTION>USER		
Specification selection related to user mode		
PTJAM-RC	PDL jam recovery switch Sets whether to perform recovery print when there is a jam in a PDL job. Setting values 0: OFF (No recovery) 1: ON (Recovery) [Factory settings and after RAM clear: 1]	2
SLP-SLCT	Use it to set the switch designed to switch between existing network-based applications. A certain packet needs to be received as a condition for the machine to recover from sleep mode via network. Because the existing network system applications (e.g., Net Spot Accountant, image WARE) do not send such packet, the machine fails to recover via network if it's shifted to sleep mode 3. When setting '1', the machine able to recover from sleep mode via network because it does not shift to sleep mode 3 (1wsleep), resulting the trade-off with the increase of consuming electricity. settings 0: do not use (default); 1: use MEMO: This is not used at normal servicing.	2
PS-MODE	Selecting compatibility mode when using PS (image processing, print specification) This is the mode to simulate REPLACE to hold compatibility for image processing and print specification. settings 0: no use of PS compatibility mode (default) 1: image processing equivalent of iR2220/2800/3300 series (compatibility with existing machines) 2: image processing equivalent of iR105 (compatibility with existing machine) 3: backup 4: landscape image and portrait image can be duplexed printing using Canon controller. This is the compatible mode with non-Canon controller. 5 through 65535: backup When the setting value is '1', the output will be equivalent to that of iR2200 / 2800 / 3300 series. Whereas when the setting value is '2', the output will be equivalent to that of iR105 series.	2
CNCT-RLZ	Use it to enable/disable the connection serialization function. Connection serialize function works to secure job grouping function of imageWARE Output Manager Select Edition V1.0. Because MFP (such as iR machine) is able to gain multiple connections, the job grouping function is secured by setting not to receive multiple connections at host machine side. If setting '1', it is able to avoid rearrangement of jobs that the machine does not execute job reception by other connections until the job data reception of a certain connection completes. settings 0: off (default) ; 1: on MEMO: Connection - connection established among multiple hosts (e.g., PC) via network Job grouping function - imageWARE Output Manager Select Edition V1.0 to work not to let a job interruption from other PC by group job (sending multiple jobs for 1 session when sending jobs)	2
2C-CT-SW	Colour counter (restricted to two colour mode) switch In 2 colour mode, switches the incremental counter between full colour and mono-colour. Setting values 0: Mono-colour counter 1: Full colour counter [Factory settings and after RAM clear: 1]	2

COPIER>OPTION>USER		
Specification selection related to user mode		
JA-FUNC	Job archive function ON/OFF When ON, the job archive function is activated. *The settings cannot be changed in service mode, but only referenced. Settings can only be made from a job archive-enabled MEAP programme. Setting values 0: OFF 1: ON [Factory settings and after RAM clear: 0]	2
JA-JOB	Designates job archive jobs. When the job archive function is activated, the job archive operates when a job is run, in accordance with the job type designation. *The settings cannot be changed in service mode, but only referenced. Settings can only be made from a job archive-enabled MEAP programme. Setting values 0: None 3: FAX/IFAX only 0xFFFFFFFF: all jobs [Factory settings and after RAM clear: 0]	2
JA-RESTR	Job archive restriction settings When the job archive function is activated, spec. restrictions are applied against those functions for what spec. restrictions are set. *The settings cannot be changed in service mode, but only referenced. Settings can only be made from a job archive-enabled MEAP programme. Setting values 0, 1 32 spec. restrictions by bit setting. Bit0: Image file acquisition function (0: OFF, 1: ON) Bit1: Form registration merge function (0: OFF, 1: ON) Bit2: Document edit function (0: OFF, 1: ON) Other bits are not set, but will be added as and when needed. (4 byte needed) [Factory settings and after RAM clear: 0]	2
DOM-ADD	Sets domain complement for transmission destination when sending email. Sets whether to complement the domain (e.g. @canon.co.jp) programmed in the user mode to the entered account when transmitting email. Setting values 0: Do not complement Tx destination domain. 1: Complement Tx destination domain. [Factory settings and after RAM clear: 0]	2
JA-DPI	Specifies job archive record resolution. For jobs other than PC-FAX, FAX Rx, IFAX Rx, etc., the resolution is converted to the programmed resolution and an archive image is recorded. *The settings cannot be changed in service mode, but only referenced. Settings can only be made from a job archive-enabled MEAP programme. Setting values 0 : No not convert resolution. 1: 100 x 100 dpi 2: 200 x 200 dpi 3: 300 x 300 dpi [Factory settings and after RAM clear: 3]	2

COPIER>OPTION>USER		
Specification selection related to user mode		
JA-COMPR	Specifies job archive record compression rate. For jobs other than PC-FAX, FAX Rx, IFAX Rx, etc., the compression rate is converted to the programmed compression rate and an archive image is recorded. Setting values 0: Do not convert compression rate (use same compression table as original image). 1: 1/4 compression 2: 1/8 compression 3: 1/16 compression 4: 1/32 compression 5: 1/64 compression [Factory settings and after RAM clear: 3]	2
N-MAILOF	Switches new email destination prohibition ON/OFF. Sets whether to prohibit new email destinations (selection is disabled). Setting values 0: Do not prohibit 1: Prohibit [Factory settings and after RAM clear: 0]	2
N-FAXOF	Switches new FAX destination prohibition ON/OFF. Sets whether to prohibit new FAX destinations (selection is disabled). Setting values 0: Do not prohibit 1: Prohibit [Factory settings and after RAM clear: 0]	2
N-IFAXOF	Switches new IFAX destination prohibition ON/OFF. Sets whether to prohibit new IFAX destinations (selection is disabled). Setting values 0: Do not prohibit 1: Prohibit [Factory settings and after RAM clear: 0]	2
N-FILEOF	Switches new FILE destination prohibition ON/OFF. Sets whether to prohibit new FILE destinations (selection is disabled). Setting values 0: Do not prohibit 1: Prohibit [Factory settings and after RAM clear: 0]	2
TNRB-SW	Toner bottle counter display switch Sets whether to display the toner bottle counter in the counter confirmation screen. 0: Do not display 1: Display [Factory settings and after RAM clear: 0]	2

The numbers entered for software counters are classified as follows:

100 to 199: Total	500 to 599: Scans
200 to 299: Copies	600 to 699: Box prints
300 to 399: Prints	700 to 799: Received prints
400 to 499: Copies + prints	800 to 899: Report prints

- Meanings of symbols in tables -
- yes: Valid counter for copier
- 4C: Full-color
- Mono: Monocolor (Y, M, C/R, G, B/retro-style monochrome)
- Bk: Black only
- L: Large size (paper larger than B4 size)
- S: Small size (B4 size and smaller paper)

- 1, 2 in "Counter description" Numbers of large size paper counts
  You can have B4 and larger paper sizes counted as large sizes by selecting the COPIER > OPTION > USER
  > B4_L_CNT service mode item.
- Copies: Local copies + remote copies
- Copies A: Local copies + remote copies + box prints
- Prints: PDL prints + report prints + box prints
- Prints A: PDL prints + report prints
- Scans: Black and white scans + color scans

T-19-60

Compatibility	No.	Counter description
	000	No display
yes	101	Total 1
yes	102	Total 2
yes	103	Total (large)
yes	104	Total (small)
yes	105	Total (full-color 1)
yes	106	Total (full-color 2)
yes	108	Total (black and white 1)
yes	109	Total (black and white 2)
yes	110	Total (monocolor/large)
yes	111	Total (monocolor/small)
yes	112	Total (black and white/large)
yes	113	Total (black and white/small)
yes	114	Total 1 (two-sided)
yes	115	Total 2 (two-sided)
yes	116	Large (two-sided)
yes	117	Small (two-sided)
yes	118	Total (monocolor 1)
yes	119	Total (monocolor 2)
yes	120	Total (full-color/large)
yes	121	Total (full-color/small)
yes	122	Total (full-color + monocolor/large)
yes	123	Total (full-color + monocolor/small)
yes	124	Total (full-color + monocolor 2)
yes	125	Total (full-color + monocolor 1)
yes	201	Copies (total 1)
yes	202	Copies (total 2)
yes	203	Copies (large)
yes	204	Copies (small)
yes	205	Copies A (total 1)
yes	206	Copies A (total 2)
yes	207	Copies A (large)
yes	208	Copies A (small)
yes	209	Local copies (total 1)
yes	210	Local copies (total 2)
yes	211	Local copies (large)
yes	212	Local copies (small)

Compatibility	No.	Counter description
yes	213	Remote copies (total 1)
yes	214	Remote copies (total 2)
yes	215	Remote copies (large)
yes	216	Remote copies (small)
yes	217	Copies (full-color 1)
yes	218	Copies (full-color 2)
yes	219	Copies (monocolor 1)
yes	220	Copies (monocolor 2)
yes	221	Copies (black and white 1)
yes	222	Copies (black and white 2)
yes	223	Copies (full-color/large)
yes	224	Copies (full-color/small)
yes	225	Copies (monocolor/large)
yes	226	Copies (monocolor/small)
yes	227	Copies (black and white/large)
yes	228	Copies (black and white/small)
yes	229	Copies (full-color + monocolor/large)
yes	230	Copies (full-color + monocolor/small)
yes	231	Copies (full-color + monocolor/2)
yes	232	Copies (full-color + monocolor/1)
yes	233	Copies (full-color/large/two-sided)
yes	234	Copies (full-color/small/two-sided)
yes	235	Copies (monocolor/large/two-sided)
yes	236	Copies (monocolor/small/two-sided)
yes	237	Copies (black and white/large/two-sided)
yes	238	Copies (black and white/small/two-sided)
yes	245	Copies A (full-color 1)
yes	246	Copies A (full-color 2)
yes	247	Copies A (monocolor 1)
yes	248	Copies A (monocolor 2)
yes	249	Copies A (black and white 1)
yes	250	Copies A (black and white 2)
yes	251	Copies A (full-color/large)
yes	252	Copies A (full-color/small)
yes	253	Copies A (monocolor/large)
yes	254	Copies A (monocolor/small)
yes	255	Copies A (black and white/large)
yes	256	Copies A (black and white/small)
yes	257	Copies A (full-color + mono-color/large)
yes	258	Copies A (full-color + mono-color/small)
yes	259	Copies A (full-color + mono-color 2)
yes	260	Copies A (full-color + mono-color 1)
yes	261	Copies A (full-color/large/two-sided)
yes	262	Copies A (full-color/small/two-sided)
yes	263	Copies A (monocolor/large/two-sided)

Compatibility	No.	Counter description
yes	264	Copies A (monocolor/small/two-sided)
yes	265	Copies A (black and white/large/two-sided)
yes	266	Copies A (black and white/small/two-sided)
yes	273	Local copies (full-color 1)
yes	274	Local copies (full-color 2)
yes	275	Local copies (monocolor 1)
yes	276	Local copies (monocolor 2)
yes	277	Local copies (black and white 1)
yes	278	Local copies (black and white 2)
yes	279	Local copies (full-color/large)
yes	280	Local copies (full-color/small)
yes	281	Local copies (monocolor/large)
yes	282	Local copies (monocolor/small)
yes	283	Local copies (black and white/large)
yes	284	Local copies (black and white/small)
yes	285	Local copies (full-color + mono-color/large)
yes	286	Local copies (full-color + mono-color/large)
yes	287	Local copies (full-color + mono-color 2)
yes	288	Local copies (full-color + mono-color 1)
yes	289	Local copies (full-color/large/two-sided)
yes	290	Local copies (full-color/small/two-sided)
yes	291	Local copies (monocolor/large/two-sided)
yes	292	Local copies (monocolor/small/two-sided)
yes	293	Local copies (black and white/large/two-sided)
yes	294	Local copies (black and white/small/two-sided)
yes	002	Remote copies (full-color 1)
yes	003	Remote copies (full-color 2)
yes	004	Remote copies (monocolor 1)
yes	005	Remote copies (monocolor 2)
yes	006	Remote copies (black and white 1)
yes	007	Remote copies (black and white 2)
yes	008	Remote copies (full-color/large)
yes	009	Remote copies (full-color/small)
yes	010	Remote copies (monocolor/large)
yes	011	Remote copies (monocolor/small)
yes	012	Remote copies (black and white/large)
yes	013	Remote copies (black and white/small)
yes	014	Remote copies (full-color + monocolor/large)
yes	015	Remote copies (full-color + monocolor/small)
yes	016	Remote copies (full-color + monocolor 2)
yes	017	Remote copies (full-color + monocolor 1)
yes	018	Remote copies (full-color/large/two-sided)
yes	019	Remote copies (full-color/small/two-sided)
yes	020	Remote copies (monocolor/large/two-sided)
yes	021	Remote copies (monocolor/small/two-sided)

Compatibility	No.	Counter description
yes	022	Remote copies (black and white/large/two-sided)
yes	023	Remote copies (black and white/small/two-sided)
yes	301	Prints (total 1)
yes	302	Prints (total 2)
yes	303	Prints (large)
yes	304	Prints (small)
yes	305	Prints A (total 1)
yes	306	Prints A (total 2)
yes	307	Prints A (large)
yes	308	Prints A (small)
yes	309	Prints (full-color 1)
yes	310	Prints (full-color 2)
yes	311	Prints (monocolor 1)
yes	312	Prints (monocolor 2)
yes	313	Prints (black and white 1)
yes	314	Prints (black and white 2)
yes	315	Prints (full-color/large)
yes	316	Prints (full-color/small)
yes	317	Prints (monocolor/large)
yes	318	Prints (monocolor/small)
yes	319	Prints (black and white/large)
yes	320	Prints (black and white/small)
yes	321	Prints (full-color + monocolor/large)
yes	322	Prints (full-color + monocolor/small)
yes	323	Prints (full-color + monocolor/2)
yes	324	Prints (full-color + monocolor/1)
yes	325	Prints (full-color/large/two-sided)
yes	326	Prints (full-color/small/two-sided)
yes	327	Prints (monocolor/large/two-sided)
yes	328	Prints (monocolor/small/two-sided)
yes	329	Prints (black and white/large/two-sided)
yes	330	Prints (black and white/small/two-sided)
yes	331	PDL prints (total 1)
yes	332	PDL prints (total 2)
yes	333	PDL prints (large)
yes	334	PDL prints (small)
yes	335	PDL prints (full-color 1)
yes	336	PDL prints (full-color 2)
yes	339	PDL prints (black and white 1)
yes	340	PDL prints (black and white 2)
yes	341	PDL prints (full-color/large)
yes	342	PDL prints (full-color/small)
yes	345	PDL prints (black and white/large)
yes	346	PDL prints (black and white/small)
yes	351	PDL prints (full-color/large/two-sided)

Compatibility	No.	Counter description
yes	352	PDL prints (full-color/small/two-sided)
yes	355	PDL prints (black and white/large/two-sided)
yes	356	PDL prints (black and white/small/two-sided)
yes	401	Copies + prints (full-color/large)
yes	402	Copies + prints (full-color/small)
yes	403	Copies + prints (black and white/large)
yes	404	Copies + prints (black and white/small)
yes	405	Copies + prints (black and white 2)
yes	406	Copies + prints (black and white 1)
yes	407	Copies + prints (full-color + monocolor/large)
yes	408	Copies + prints (full-color + monocolor/small)
yes	409	Copies + prints (full-color + monocolor/2)
yes	410	Copies + prints (full-color + monocolor/1)
yes	411	Copies + prints (large)
yes	412	Copies + prints (small)
yes	413	Copies + prints (2)
yes	414	Copies + prints (1)
yes	415	Copies + prints (monocolor/large)
yes	416	Copies + prints (monocolor/small)
yes	417	Copies + prints (full-color/large/two-sided)
yes	418	Copies + prints (full-color/small/two-sided)
yes	419	Copies + prints (monocolor/large/two-sided)
yes	420	Copies + prints (monocolor/small/two-sided)
yes	421	Copies + prints (black and white/large/two-sided)
yes	422	Copies + prints (black and white/small/two-sided)
yes	501	Scans (total 1)
-	502	Scans (total 2)
-	503	Scans (large)
-	504	Scans (small)
yes	505	Black and white scans (total 1)
-	506	Black and white scans (total 2)
-	507	Black and white scans (large)
-	508	Black and white scans (small)
yes	509	Color scans (total 1)
-	510	Color scans (total 2)
-	511	Color scans (large)
-	512	Color scans (small)
yes	601	Box prints (total 1)
yes	602	Box prints (total 2)
yes	603	Box prints (large)
yes	604	Box prints (small)
yes	605	Box prints (full-color 1)
yes	606	Box prints (full-color 2)
yes	607	Box prints (monocolor 1)
yes	608	Box prints (monocolor 2)

Compatibility	No.	Counter description
yes	609	Box prints (black and white 1)
yes	610	Box prints (black and white 2)
yes	611	Box prints (full-color/large)
yes	612	Box prints (full-color/small)
yes	613	Box prints (monocolor/large)
yes	614	Box prints (monocolor/small)
yes	615	Box prints (black and white/large)
yes	616	Box prints (black and white/small)
yes	617	Box prints (full-color + monocolor/large)
yes	618	Box prints (full-color + monocolor/small)
yes	619	Box prints (full-color + monocolor 2)
yes	620	Box prints (full-color + monocolor 1)
yes	621	Box prints (full-color/large/two-sided)
yes	622	Box prints (full-color/small/two-sided)
yes	623	Box prints (monocolor/large/two-sided)
yes	624	Box prints (monocolor/small/two-sided)
yes	625	Box prints (black and white/large/two-sided)
yes	626	Box prints (black and white/small/two-sided)
yes	701	Received prints (total 1)
yes	702	Received prints (total 2)
yes	703	Received prints (large)
yes	704	Received prints (small)
-	705	Received prints (full-color 1)
-	706	Received prints (full-color 2)
-	707	Received prints (gray scale 1)
-	708	Received prints (gray scale 2)
yes	709	eceived prints (black and white 1)
yes	710	Received prints (black and white 2)
-	711	Received prints (full-color/large)
-	712	Received prints (full-color/small)
-	713	Received prints (gray scale/large)
-	714	Received prints (gray scale/small)
yes	715	Received prints (black and white/large)
yes	716	Received prints (black and white/small)
-	717	Received prints (full-color + gray scale/large)
-	718	Received prints (full-color + gray scale/small)
-	719	Received prints (full-color + gray scale 2)
-	720	Received prints (full-color + gray scale 1)
-	721	Received prints (full-color/large/two-sided)
-	722	Received prints (full-color/small/two-sided)
-	723	Received prints (gray scale/large/two-sided)
-	724	Received prints (gray scale/small/two-sided)
yes	725	Received prints (black and white/large/two-sided)
yes	726	Received prints (black and white/small/two-sided)
yes	801	Report prints (total 1)

Compatibility	No.	Counter description
yes	802	Report prints (total 2)
yes	803	Report prints (large)
yes	804	Report prints (small)
-	805	Report prints (full-color 1)
-	806	Report prints (full-color 2)
-	807	Report prints (gray scale 1)
-	808	Report prints (gray scale 2)
yes	809	Report prints (black and white 1)
yes	810	Report prints (black and white 2)
-	811	Report prints (full-color/large)
-	812	Report prints (full-color/small)
-	813	Report prints (gray scale/large)
-	814	Report prints (gray scale/small)
yes	815	Report prints (black and white/large)
yes	816	Report prints (black and white/small)
-	817	Report prints (full-color + gray scale/large)
-	818	Report prints (full-color + gray scale/small)
-	819	Report prints (full-color + gray scale 2)
-	820	Report prints (full-color + gray scale 1)
-	821	Report prints (full-color/large/two-sided)
-	822	Report prints (full-color/small/two-sided)
-	823	Report prints (gray scale/large/two-sided)
-	824	Report prints (gray scale/small/two-sided)
yes	825	Report prints (black and white/large/two-sided)
yes	826	Report prints (black and white/small/two-sided)
-	901	Copy scan total 1 (color)
-	902	Copy scan total 1 (black and white)
-	903	Copy scan total 2 (color)
-	904	Copy scan total 2 (black and white)
-	905	Copy scan total 3 (color)
-	906	Copy scan total 3 (black and white)
-	907	Copy scan total 4 (color)
-	908	Copy scan total 4 (black and white)
-	909	Local copy scans (color)
-	910	Local copy scans (black and white)
-	911	Remote copy scans (color)
-	912	Remote copy scans (black and white)
-	913	Sent scan total 1 (color)
-	914	Sent scan total 1 (black and white)
yes	915	Sent scan total 2 (color)
yes	916	Sent scan total 2 (black and white)
yes	917	Sent scan total 3 (color)
yes	918	Sent scan total 3 (black and white)
-	919	Sent scan total 4 (color)
-	920	Sent scan total 4 (black and white)

Compatibility	No.	Counter description
yes	921	Sent scan total 5 (color)
yes	922	Sent scan total 5 (black and white)
yes	929	Sent scan total 6 (color)
yes	930	Sent scan total 6 (black and white)
-	931	Sent scan total 7 (color)
-	932	Sent scan total 7 (black and white)
-	933	Sent scan total 8 (color)
-	934	Sent scan total 8 (black and white)
-	935	Universal sent scan total (color)
-	936	Universal sent scan total (black and white)
yes	937	Box scans (color)
yes	938	Box scans (black and white)
yes	939	Remote scans (color)
yes	940	Remote scans (black and white)
-	941	Sent scans/faxes (color)
-	942	Sent scans/faxes (black and white)
-	943	Sent scans/I faxes (color)
-	944	Sent scans/I faxes (black and white)
yes	945	Sent scans/e-mails (color)
yes	946	Sent scans/e-mails (black and white)
-	947	Sent scans/FTP (color)
-	948	Sent scans/FTP (black and white)
-	949	Sent scans/SMB (color)
-	950	Sent scans/SMB (black and white)
-	951	Sent scans/IPX (color)
-	952	Sent scans/IPX (black and white)
-	953	Sent scans/databases (color)
-	954	Sent scans/databases (black and white)
-	955	Sent scans/local prints (color)
-	956	Sent scans/local prints (black and white)
-	957	Sent scans/box (color)
-	958	Sent scans/box (black and white)

3. CST

T-19-61

COPIER>OPTION>CST		
Sub item	**Description**	**level.**
U1-NAME	Used to turn paper name display when U1 paper size group is detected ON/OFF. 0: Display "U1" on touch panel (default). 1: Display paper name set by "CST-U1" service mode item.	2
U2-NAME	Used to turn paper name display when U2 paper size group is detected ON/OFF. 0: Display "U2" on touch panel (default). 1: Display paper name set by "CST-U2" service mode item.	2
CST-U1/U2	Used to specify paper name used by U1/U2 paper size group. 24: FOOLSCAP (CST-U2: Default) 25: Australian FOOLSCAP 26: OFFICIO 27: Ecuador OFFICIO 28: Bolivia OFFICIO 29: Argentine LETTER 30: Argentine LETTER-R 31: Government LETTER 32: Government LETTER-R 34: Government LEGAL 35: FOLIO 36: Argentine OFFICIO 37: Mexico OFFICIO 38: EXECTIVE (CST-U1: Default)	2

4. ACC
*1 Not displayed in service mode.

T-19-62

COPIER>OPTION>ACC		
Sub item	Description	level.
COIN	Coin vendor switch Sets whether to enter coin vendor management mode. Setting values 0: Coin vendor not in use (control card can be used, no tariff applied) 1: Coin vendor (tariff applied) 2: Remote counter (tariff applied) 3: DA tariff [Factory settings and after RAM clear: 0] Caution! When the setting values are set to '3' (DA tariff), the following items will be changed also. [Service mode] - COPIER>OPTION>USER>CONTROL: 1 - COPIER>OPTION>USER>AFN-PSWD: 1 - COPIER>OPTION>BODY>UI-BOX: 0 - COPIER>OPTION>BODY>UI-SEND: 0 - COPIER>OPTION>BODY>UI-FAX: 0 - COPIER>OPTION>BODY>UI-EXT: 0 - COPIER>OPTION>BODY>DA-CNCT: 1 [User mode > system management settings] - Extension settings > Extension function priority: ON - Network settings > Email/IFAX > SMTP Rx: OFF - Network settings > Email/IFAX > POP3 Rx: OFF - Network settings > SMB settings > use SMB printing: O - Network settings > TCP/IP settings > use IPP printing: O - Network settings > TCP/IP settings > IP address range settings > print permitted address ON/OFF: ON - Network settings > TCP/IP settings > use FTP printing: OFF	1
DK-P	Used to set paper size used by paper deck (option). Setting values 0: A4 [Factory default/After RAM clear] 1: B5 2: LTR	1
CARD-SW	Used to select UI screen when coin vendor is supported. Setting values 0: Coin [Factory default/After RAM clear] 1: Card 2: Coin + card	1
USB-MSK	Limiting the number of USB-HOST channels on the models with the USB-HOST installed. Setting values 0 to 2 The relevant channels of the USB-HOST are masked (deactivated). (e.g.) When there are two channels of CH0 and CH1, 0: Not mask any channel. 1: Masks CH1. 2: Reserved	1
STPL-LMT *1	Used to restrict number of sheets for saddle binding. 0: 5 sheets (no white band) 1: 10 sheets (no white band) 2: 10 sheets (white band) 3: 15 sheets (no white band) [Factory default/After RAM clear]	2
SC-TYPE	Used to switch type of coin vendor-compatible model Whenever possible, avoid using this setting during normal operation.	2

COPIER>OPTION>ACC		
Sub item	**Description**	**level.**
CC-SPSW	use it to enable/disable support of the switch in relation to the support level of the control guard I/F 0: do not support [Factory default/After RAM clear] 1: support (priority on speed) 2: support (priority on upper limit on number of prints) **Reference:** negative effects of '1' - the machine may fail to use an accurate stop based on the upper limit negative effects of '2' - some source of power (pickup assembly) may suffer a drop in productivity	2
UNIT-PRC	Unit price setting for coin vendors Sets unit price for coin vendors. Setting values 0: yen 1: euro 2: pound 3: Swiss franc 4: dollar [Factory settings and after RAM clear: 0]	2
DA-PUCT	Pickup/ delivery notification setting for charged output This mode prevents prints from being output for free if some kind of network trouble interferes with the pickup/ delivery notification (if Ack is not returned after DA) by continuing to output the notification. Setting values 2 to 10 [Factory settings and after RAM clear: 6] E.g. If the value is 5, if Ack is not returned after DA, 5 sheets will be picked up. -> If iR-DA communication is disrupted for some reason, the device will still operate for 5 sheets (printed out without charging). If the setting values are too low, the demerit is that engine performance will suffer. And, depending on the model, the reference value can be changed (because of the relationship with engine speed). - When the setting values are low, the number of sheets that can be output without reducing the tariff becomes lower. Engine performance may suffer. - When the setting values are high, the number of sheets that can be output without reducing the tariff increases. Engine performance does not suffer.	2

5. INT-FACE

T-19-63

COPIER>OPTION>INT-FACE		
Sub item	Description	level.
IMG-CONT	Used to set connection to PS print server unit. Setting values 0: Normal mode (no PS print server unit) [Factory default] 1: Not used 2: Not used 3: PS print server unit 4: Not used 5: Not used ⚠️ When 1 is selected as the setting value, the following user mode items are restored to their initial values: - System management settings > Network settings > TCP/IP settings > IP address settings > IP address - System management settings > Network settings > TCP/IP settings > IP address settings > Sub-net mask - System management settings > Network settings > TCP/IP settings > IP address settings > Gateway address - System management settings > Network settings > Ethernet driver settings > Communication method - System management settings > Network settings > Ethernet driver settings > Ethernet type - System management settings > Network settings > Startup time - Common specifications settings The following user mode settings are turned OFF: - System management settings > Network settings > TCP/IP settings > IP address setting > DHCP use - System management settings > Network settings > TCP/IP settings > IP address settings > RARP use - System management settings > Network settings > TCP/IP settings > IP address settings > BOOTP use - System management settings > Network settings > Ethernet driver settings > Automatic detection - System management settings > Network settings > Spool function use When 3 or 4 is selected as the setting value, the following settings are turned OFF in addition to the items above. - System management settings > Network settings > TCP/IP settings > RAW setting - System management settings > Network settings > TCP/IP settings > LPD setting - System management settings > Network settings > TCP/IP settings > IPP printing - System management settings > Network settings > SMB setting The items above are not restored when the setting value is returned to "0: Normal mode", so must be set again as needed.	1
AP-OPT	Used to set whether printing from application PrintMe in PS print server unit is possible. 0: Printing permitted for all department IDs [Factory default/After RAM clear] 1: Printing refused (printing is only possible for specified department ID).	2
AP-ACCNT	Used to set (CPCA) department ID for printing (print jobs) from application PrintMe in PS print server unit. 0 to 9999999 [Factory default/After RAM clear: 0]	2
AP-CODE	Use it to set a path for printing from an external controller (CPCA). Setting: 0 [Factory default/After RAM clear] Setting range: 0 to 9999	2

COPIER>OPTION>INT-FACE		
Sub item	Description	level.
NWCT-TM	Sets the time limit for maintaining the network connection ('KeepAlive' setting). Sets the length of time that the PC application and the iR device can be kept connected (KeepAlive) via the network. Main PC applications (envisaged): network printing application, email function, remote copy printer function, MEAP network applications, etc. Setting range: 1 to 5 (min.) [Factory settings and after RAM clear: 5]	2

6. LCNS-TR
*1 Not displayed in service mode.

T-19-64

COPIER>OPTION>LCNS-TR		
Sub item	Description	level.
ST-SEND	Use it to select whether to display the installation status of the SEND function when the transfer function is set invalid. Setting value 0: SEND function not available (not installed) 1: SEND function available (installed) [Factory default/After RAM clear]	2
TR-SEND	Use it to obtain the transfer license key for the SEND function when the transfer function is set invalid. Obtains the transfer license key to use the SEND function in other MFP machine.	2
OF-SEND *1	Use it to select whether to use the SEND function when the transfer function is set invalid. Setting value 0: Do not use SEND function. 1: Use SEND function. [Factory default/After RAM clear]	2
ST-ENPDF	Use it to display the installation status of the SEND encryption PDF transmission function when the transfer function is set invalid. Setting value 0: SEND encryption PDF transmission function not available (not installed) 1: SEND encryption PDF transmission function available (installed) [Factory default/After RAM clear: 0]	2
TR-ENPDF	Use it to obtain the transfer license key for the SEND encryption PDF transmission function when the transfer function is set invalid. Obtains the transfer license key to use the SEND encryption PDF transmission function in other MFP machine.	2
OF-ENPDF *1	Use it to select whether to use the SEND encryption PDF transmission function when the transfer function is set invalid. Setting value 0: Do not use SEND encryption PDF transmission function. 1: Use SEND encryption PDF transmission function. [Factory default/After RAM clear: 0]	2
ST-SPDF	Use it to select whether to display the installation status of the SEND searchable PDF transmission function when the transfer function is set invalid. Setting value 0: SEND searchable PDF transmission function not available (not installed) 1: SEND searchable PDF transmission function available (installed) [Factory default/After RAM clear: 0]	2
TR-SPDF	Use it to obtain the transfer license key for the SEND searchable PDF transmission function when the transfer function is set invalid. Obtains the transfer license key to use the SEND searchable PDF transmission function in other MFP machine.	2

COPIER>OPTION>LCNS-TR		
Sub item	**Description**	**level.**
OF-SPDF *1	Use it to select whether to use the SEND searchable PDF transmission function when the transfer function is set invalid. Setting value 0: Do not use SEND searchable PDF transmission function. 1: Use SEND searchable PDF transmission function. [Factory default/After RAM clear: 0]	2
ST-EXPDF	Use it to display the installation status of the PDF expansion kit (encryption PDF + searchable PDF) when the transfer function is set invalid. Setting value 0: PDF expansion kit not available (not installed) 1: PDF expansion kit available (installed) [Factory default/After RAM clear: 0]	2
TR-EXPDF	Use it to obtain the transfer license key for the PDF expansion kit (encryption PDF + searchable PDF) when the transfer function is set invalid. Obtains the transfer license key to use the PDF expansion kit (encryption PDF + searchable PDF) in other MFP machine.	2
OF-EXPDF *1	Use it to select whether to use the PDF expansion kit (encryption PDF + searchable PDF) when the transfer function is set invalid. Setting value 0: Do not use PDF expansion kit. 1: Use PDF expansion kit. [Factory default/After RAM clear: 0]	2
ST-PDFDR	Use it to display the installation status of the PDF Direct when the transfer function is set invalid. Setting value 0: PDF Direct not available (not installed) 1: PDF Direct available (installed) [Factory default/After RAM clear: 0]	2
TR-PDFDR	Use it to obtain the transfer license key for the PDF Direct when the transfer function is set invalid. Obtains the transfer license key to use the PDF Direct in other MFP machine.	2
OF-PDFDR *1	Use it to select whether to use the PDF Direct when the transfer function is set invalid. Setting value 0: Do not use PDF Direct. 1: Use PDF Direct. [Factory default/After RAM clear: 0]	2
ST-SCR	Use it to display the installation status of the encryption secure print when the transfer function is set invalid. Setting value 0: Encryption secure print not available (not installed) 1: Encryption secure print available (installed) [Factory default/After RAM clear: 0]	2
TR-SCR	Use it to obtain the transfer license key for the encryption secure print when the transfer function is set invalid. Obtains the transfer license key to use the encryption secure print in other MFP machine.	2
OF-SCR *1	Use it to select whether to use the encryption secure print when the transfer function is set invalid. Setting value 0: Do not use encryption secure print. 1: Use encryption secure print. [Factory default/After RAM clear: 0]	2
ST-HDCLR	Use it to display the installation status of the HDD encryption / HDD complete deletion when the transfer function is set invalid. Setting value 0: HDD encryption / HDD complete deletion not available (not installed) 1: HDD encryption / HDD complete deletion available (installed) [Factory default/After RAM clear: 0]	2

COPIER>OPTION>LCNS-TR		
Sub item	Description	level.
TR-HDCLR	Use it to obtain the transfer license key for the HDD encryption / HDD complete deletion when the transfer function is set invalid. Obtains the transfer license key to use the HDD encryption / HDD complete deletion in other MFP machine.	2
OF-HDCLR *1	Use it to select whether to use the HDD encryption / HDD complete deletion when the transfer function is set invalid. Setting value 0: Do not use HDD encryption / HDD complete deletion. 1: Use HDD encryption / HDD complete deletion. [Factory default/After RAM clear: 0]	2
ST-BRDIM	[Factory default/After RAM clear: Setting value 0: BarDIMM not available (not installed) 1: BarDIMM available (installed) [Factory default/After RAM clear: 0]	2
TR-BRDIM	Use it to obtain the transfer license key for BarDIMM when the transfer function is set invalid. Obtains the transfer license key to use BarDIMM in other MFP machine.	2
OF-BRDIM *1	Use it to select whether to use BarDIMM when the transfer function is set invalid. Setting value 0: Do not use BarDIMM. 1: Use BarDIMM. [Factory default/After RAM clear: 0]	2
ST-VNC	Use it to display the VNC installation status when the transfer function is set invalid. Setting value 0: VNC not available (not installed) 1: VNC available (installed) [Factory default/After RAM clear: 0]	2
TR-VNC	Use it to obtain the transfer license key for VNC when the transfer function is set invalid. Obtains the transfer license key to use VNC in other MFP machine.	2
OF-VNC *1	Use it to select whether to use VNC when the transfer function is set invalid. Setting value 0: Do not use VNC. 1: Use VNC. [Factory default/After RAM clear: 0]	2
ST-WEB	Use it to display the installation status of the WEB browser when the transfer function is set invalid. Setting value 0: WEB browser not available (not installed) 1: WEB browser available (installed) [Factory default/After RAM clear: 0]	2
TR-WEB	Use it to obtain the transfer license key for the WEB browser when the transfer function is set invalid. Obtains the transfer license key to use the WEB browser in other MFP machine.	2
OF-WEB *1	Use it to select whether to use the WEB browser when the transfer function is set invalid. Setting value 0: Do not use WEB browser. 1: Use WEB browser. [Factory default/After RAM clear: 0]	2
ST-HRPDF	Use it to display the installation status of the high-compression PDF when the transfer function is set invalid. Setting value 0: High-compression PDF not available (not installed) 1: High-compression PDF available (installed) [Factory default/After RAM clear: 0]	2
TR-HRPDF	Use it to obtain the transfer license key for the high-compression PDF when the transfer function is set invalid. Obtains the transfer license key to use the high-compression PDF in other MFP machine.	2

COPIER>OPTION>LCNS-TR		
Sub item	**Description**	**level.**
OF-HRPDF *1	Use it to select whether to use the high-compression PDF when the transfer function is set invalid. Setting value 0: Do not use high-compression PDF. 1: Use high-compression PDF. [Factory default/After RAM clear: 0]	2
ST-TRSND	Display of installation status of test SEND function in transfer invalidation Displays installation status of test SEND function. Setting values 0: No (not installed) 1: Yes (installed) [Factory settings and after RAM clear: 0]	2
TR-TRSND	Test SEND function transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow test SEND function to be used with another MFP.	2
OF-TRSND *1	Test SEND function ON/ OFF in transfer invalidation. Switches test SEND function ON/ OFF. Setting values 0: OFF 1: ON [Factory settings and after RAM clear: 0]	2
ST-WTMRK	Display of installation status of main unit watermark function in transfer invalidation. Displays installation status of main unit watermark function. Setting values 0: No (not installed) 1: Yes (installed) [Factory settings and after RAM clear: 0]	2
TR-WTMRK	Main unit watermark function transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow main unit watermark function to be used with another MFP.	2
OF-WTMRK *1	Main unit watermark function ON/ OFF in transfer invalidation. Switches main unit watermark function ON/ OFF. Setting values 0: OFF 1: ON [Factory settings and after RAM clear: 0]	2
ST-TSPDF	Display of installation status of time stamped PDF transmission function in transfer invalidation. Displays installation status of time stamped PDF transmission function. Setting values 0: No (not installed) 1: Yes (installed) [Factory settings and after RAM clear: 0]	2
TR-TSPDF	Time stamped PDF transmission function transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow time stamped PDF transmission function to be used with another MFP.	2
OF-TSPDF *1	Time stamped PDF transmission function ON/ OFF in transfer invalidation. Switches time stamped PDF transmission function ON/ OFF. Setting values 0: OFF 1: ON [Factory settings and after RAM clear: 0]	2
ST-USPDF	Display of installation status of user signature attached PDF transmission function in transfer invalidation. Displays installation status of user signature attached PDF transmission function. Setting values 0: No (not installed) 1: Yes (installed) [Factory settings and after RAM clear: 0]	2

COPIER>OPTION>LCNS-TR		
Sub item	**Description**	**level.**
TR-USPDF	User signature attached PDF transmission function transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow user signature attached PDF transmission function to be used with another MFP.	2
OF-USPDF *1	User signature attached PDF transmission function ON/ OFF in transfer invalidation. Switches user signature attached PDF transmission function ON/ OFF. Setting values 0: OFF 1: ON [Factory settings and after RAM clear: 0]	2
ST-DVPDF	Display of installation status of device signature attached PDF transmission function in transfer invalidation. Displays installation status of device signature attached PDF transmission function. Setting values 0: No (not installed) 1: Yes (installed) [Factory settings and after RAM clear: 0]	2
TR-DVPDF	Device signature attached PDF transmission function transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow device signature attached PDF transmission function to be used with another MFP.	2
OF-DVPDF *1	Device signature attached PDF transmission function ON/ OFF in transfer invalidation. Switches device signature attached PDF transmission function ON/ OFF. Setting values 0: OFF 1: ON [Factory settings and after RAM clear: 0]	2
ST-SCPDF	Display of installation status of scalable PDF transmission function in transfer invalidation. Displays installation status of scalable PDF transmission function. Setting values 0: No (not installed) 1: Yes (installed) [Factory settings and after RAM clear: 0]	2
TR-SCPDF	Scalable PDF transmission function transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow scalable PDF transmission function to be used with another MFP.	2
OF-SCPDF *1	Scalable PDF transmission function ON/ OFF in transfer invalidation. Switches scalable PDF transmission function ON/ OFF. Setting values 0: OFF 1: ON [Factory settings and after RAM clear: 0]	2
ST-AMS	Display of installation status of ACQ in transfer invalidation. Displays installation status of ACQ. Setting values 0: No (not installed) 1: Yes (installed) [Factory settings and after RAM clear: 0]	2
TR-AMS	ACQ transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow ACQ to be used with another MFP.	2
OF-AMS *1	ACQ ON/ OFF in transfer invalidation. Switches ACQ ON/ OFF. Setting values 0: OFF 1: ON [Factory settings and after RAM clear: 0]	2

COPIER>OPTION>LCNS-TR		
Sub item	Description	level.
ST-ERDS	Display of installation status of ERDS 3rd party extension function in transfer invalidation. Displays installation status of ERDS 3rd party extension function (which sends tariff counter to 3rd party tariff server). Setting range 0: No (not installed) 1: Yes (installed) Reference value 0	2
TR-ERDS	ERDS 3rd party extension function transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow ERDS 3rd party extension function (which sends tariff counter to 3rd party tariff server) to be used with another MFP. Reference value Transfer licence key: 24 digits	2
OF-ERDS *1	ERDS 3rd party extension function ON/ OFF in transfer invalidation. Switches ERDS 3rd party extension function (which sends tariff counter to 3rd party tariff server) ON/ OFF. Setting values 0:OFF 1:ON Reference value 0	2
ST-PS	Display of installation status of PS in transfer invalidation. Displays installation status of PS. Setting values 0: No (not installed) 1: Yes (installed) Reference value 0	2
TR-PS	PS transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow PS to be used with another MFP.	2
OF-PS *1	PS ON/ OFF in transfer invalidation. Switches PS ON/ OFF. Setting values 0: OFF 1: ON Reference value 0	2
ST-PCL	Display of installation status of PCL in transfer invalidation. Displays installation status of PCL. Setting range 0: No (not installed) 1: Yes (installed) Reference value 0	2
TR-PCL	PCL transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow PCL to be used with another MFP. Reference value Transfer licence key: 24 digits	2
ST-PSLI5	Display of installation status of PS, LIPS4 and LIPS LX in transfer invalidation. Displays installation status of compound option made up of PS, LIPS4 and LIPS LX (overseas name: UFR II). Setting range 0: No (not installed) 1: Yes (installed) Reference value 0	2

COPIER>OPTION>LCNS-TR		
Sub item	**Description**	**level.**
TR-PSLI5	PS, LIPS4 and LIPS LX transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow compound option made up of PS, LIPS4 and LIPS LX (overseas name: UFR II) to be used with another MFP. Reference value Transfer licence key: 24 digits	2
ST-LIPS5	Display of installation status of LIPS LX and LIPS4 in transfer invalidation. Displays installation status of compound option made up of LIPS LX (overseas name: UFR II) and LIPS4. Setting range 0: No (not installed) 1: Yes (installed) Reference value 0	2
TR-LIPS5	LIPS LX and LIPS4 transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow compound option made up of LIPS LX (overseas name: UFR II) and LIPS4 to be used with another MFP. Reference value Transfer licence key: 24 digits	2
ST-LIPS4	Display of installation status of LIPS4 in transfer invalidation. Displays installation status of LIPS4. Setting range 0: No (not installed) 1: Yes (installed) Reference value 0	2
TR-LIPS4	LIPS4 transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow LIPS4 to be used with another MFP. Reference value Transfer licence key: 24 digits	2
ST-PSPCL	Display of installation status of PC and PCL in transfer invalidation. Displays installation status of compound option made up of PC and PCL. Setting range 0: No (not installed) 1: Yes (installed) Reference value 0	2
TR-PSPCL	PS and PCL transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow compound option made up of PS and PCL to be used with another MFP. Reference value Transfer licence key: 24 digits	2
ST-PCLUF	Display of installation status of PC and UFR in transfer invalidation. Displays installation status of compound option made up of PC and UFR. Setting range 0: No (not installed) 1: Yes (installed) Reference value 0	2
TR-PCLUF	PC and UFR transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow compound option made up of PC and UFR to be used with another MFP. Reference value Transfer licence key: 24 digits	2

COPIER>OPTION>LCNS-TR		
Sub item	**Description**	**level.**
ST-PSLIP	PC and UFR transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow compound option made up of PC and UFR to be used with another MFP. Reference value Transfer licence key: 24 digits	2
TR-PSLIP	PS and LIPS transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow compound option made up of PS and LIPS to be used with another MFP. Reference value Transfer licence key: 24 digits	2
ST-PSPCU	Display of installation status of PS, PCL and UFR in transfer invalidation. Displays installation status of compound option made up of PS, PCL and UFR. Setting range 0: No (not installed) 1: Yes (installed) Reference value 0	2
TR-PSPCU	PS, PCL and UFR transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow compound option made up of PS, PCL and UFR to be used with another MFP. Reference value Transfer licence key: 24 digits	2
ST-LXUFR	Display of installation status of LIPS LX (overseas name: UFR II) in transfer invalidation. Displays installation status of LIPS LX (overseas name: UFR II). Setting range 0: No (not installed) 1: Yes (installed) Reference value 0	2
TR-LXUFR	LIPS LX (overseas name: UFR II) transfer licence key acquisition in transfer invalidation Acquires transfer licence key to allow LIPS LX (overseas name: UFR II) to be used with another MFP. Reference value Transfer licence key: 24 digits	2

19.5.2 FEEDER

19.5.2.1 FEEDER Table

T-19-65

FEEDER>OPTION		
Sub item	**Description**	**level.**
LS-DBL	Use it to enable/disable ADF high-speed duplex mode. Settings 0: on (execute high-speed duplex mode; normal, default) 1: off (do not execute high-speed duplex mode; use low-speed duplex mode) [Factory default/After RAM clear: 0]	1
STAMP-SW	Use it to specify the presence/absence of the stamp. This mode item indicates the presence/absence of the stamp, and is designed for use by the service person. Settings 0:stamp absent 1:stamp present [Factory default/After RAM clear: 0]	1

19.5.3 SORTER

19.5.3.1 SORTER Table

T-19-66

SORTER>OPTION		
Sub item	**Description**	**level.**
BLNK-SW	Fold position margin width (W) settings when saddle stitcher is used Setting values 0: Normal width (5 mm) 1: Extra width (10 mm) [Factory settings and after RAM clear: 0]	1
MD-SPRTN	Finisher function restriction setting Setting values 0: Normal 1: Reduced operation [Factory settings and after RAM clear: 0]	1
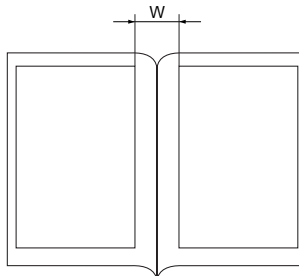
F-19-10

19.5.4 BOARD

19.5.4.1 BOARD Table

T-19-67

BOARD>OPTION		
Sub item	Description	level.
SURF-OFF	UFR Board function release Setting values 0: Even with no UFR board, device operates as copy model, without E code display. 1: UFR board identification check performed. With no UFR board, E code is displayed.	1
MENU-1 to 4	Displays printer setting menu levels 1 to 4. Setting values 0: No display 1: Display [Factory settings and after RAM clear: 0]	2
TR-DSP	Toggles between display/ non display of toner reduction function switch. Should be avoided where possible during normal operation.	2

19.6 TEST (Test Print Mode)

19.6.1 COPIER

19.6.1.1 COPIER Table

1. PG

T-19-68

COPIER>TEST>PG		
Sub item	**Description**	**level.**
TYPE	Performs test print when test print type number is entered and start key is turned ON. (This setting must always be restored to 0 after making test print.) Setting values 0: Normal print, 0 to 100 [Factory default/After RAM clear: 0]	1
TXPH	Used to set image mode during test print output. Setting values 0: Text mode 1: Photo mode 2: Automatic mode 3: Text/photo/map mode 4: Photographic printing paper photo mode 5: Printed photo mode 6: Text/photo mode 7: Black and white text mode **Reference:** This setting is only valid for test prints. [Factory default/After RAM clear: 0]	1
THRU	Used to select whether to use image compensation table during test print output. Setting values 0: ON (Use) 1: OFF (Don't use) [Factory default/After RAM clear: 0]	1
DENS-Y/M/C/K	Used to adjust density of each color for test prints (TYPE = 5). Setting values 0 to 255: Increasing the value increases the density. [Factory default/After RAM clear: 128]	1
COLOR-Y/M/C/K	Used to set output of each color for each TYPE. For example, to set single-color M output, set "COLOR-M = 1", and make the other settings 0 (only single colors can be output). Setting values 0: Don't output 1: Output [Factory default/After RAM clear: 1]	1
F/M-SW	Set it to switch over full color and mono color during PG output. Settings 0: full color output 1: mono color output [Factory default/After RAM clear: 0]	1

COPIER>TEST>PG		
Sub item	**Description**	**level.**
PG-PICK	Used to select output level during test print output. Setting values 1: Cassette 1 2: Cassette 2 3: Cassette 3 4: Cassette 4 5 to 6: Not used 7: Side deck 8: Manual feed [Factory default/After RAM clear: 1]	1
2-SIDE	Use it to set the output mode for test printing. Settings 0: single-sided (at time of shipment/upon RAM initialization) 1: double-sided [Factory default/After RAM clear: 0]	1
PG-QTY	Use it to set the output mode for test printing. Use it to set the copy count of test printing. 1 to 999 [Factory default/After RAM clear: 1]	1

Type of test print for each number entered for PG > TYPE

T-19-69

Entered number	Description
0	Image from CCD (normal print)
1	For development
2	For development
3	For development
4	16 gradations
5	Full-sheet half tones
6	Grid
7	For development
8	For development
9	For development
10	MCYBk horizontal stripes
11	For development
12	YMCBk 64 gradations
13	For development
14	Full-color 16 gradations
15 to 100	For development

2. NETWORK

T-19-70

COPIER>TEST>NETWORK		
Sub item	**Description**	**level.**
PING	Checks connection between copier and network (during TCP/IP connection only). Use this item when checking the connection to the network at time of installation or when there is a network connection problem.	1
BML-DISP	Switching display of the screen in response to support for BMlinks Settings 0: Normal system status screen [Factory default/After RAM clear] 1: Screen of device display only	2
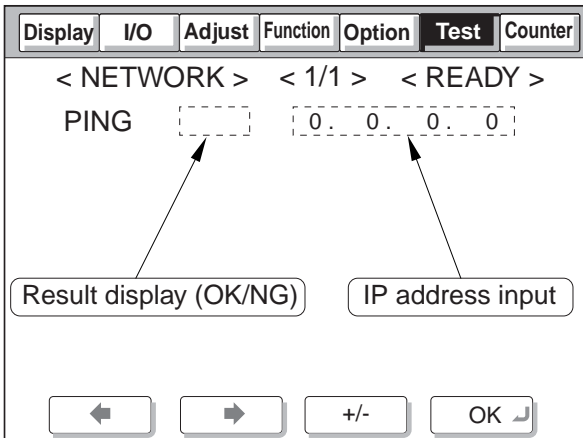
F-19-11

Operation
method

1) Turn the main power switch OFF.

2) Connect the network cable to the copier and turn the main power switch ON.

3) Tell the user's system administrator that copier installation is complete, and have them him/her the network settings.

4) Ask the system administrator to allow you to perform a network connection check, and check the address of the remote host (IP address of the PC terminal in the user network) to send the PING.

5) Select the COPIER > TEST > NETWORK > PING service mode item, enter the IP address checked in Step 4 on the operation panel's numeric keypad, and press the OK key.

- If the copier is connected to the network normally, "OK" is displayed (and the procedure is finished).

- If "NG" is displayed, first check the connection of the network cable. If the connection is normal, go to Step 6. If there is a problem with the network cable's connection, redo the connection and redo Step 5.

6) Select the COPIER > TEST > NETWORK > PING service mode item, enter the loop back address* (127.0.0.1), and press the OK key followed by the start key.

- If "NG" is displayed, there is a problem with the local TCP/IP settings. Go back to Step 3 and check the settings again.

- If "OK" is displayed, there is no problem with the local TCP/IP settings. However, there could be a problem with the network interface board (NIC) connection or the NIC itself. Go to Step 7 to check the NIC.

*The loop back address returns the signal in front of the NIC, enabling checking of the local TCP/IP settings.

7) Select the COPIER > TEST > NETWORK > PING service mode item, enter the local host address (local IP address), then press the OK key.

- If "OG" is displayed, there could be a problem with the NIC connection or the NIC itself. In this case, check the NIC connection or replace the NIC.

- If "OK" is displayed, there is no problem with the local network settings or NIC.

In this case, the problem may be with the user's network environment. Explain the situation to the system administrator, and ask them to deal with it.

19.7 COUNTER (Counter Mode)

19.7.1 COPIER

19.7.1.1 COPIER Table

The COPIER/COUNTER screen is shown below. The items are described starting on the next page.

| Display | I/O | Adjust | Function | Option | Test | Counter |

TOTAL

PICK-UP

FEEDER

JAM   DRBL-1

DRBL-2
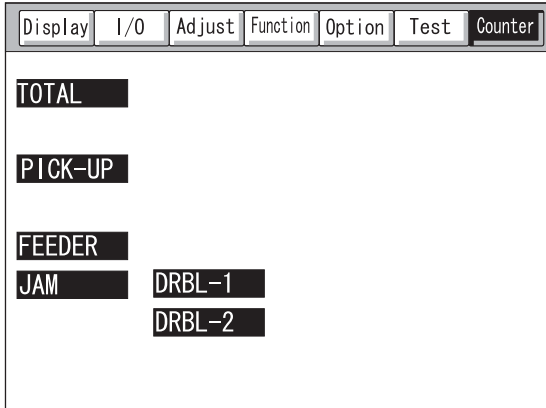
F-19-12

Clearing counter values
1) Select the item to clear, displaying it in reverse.
2) Press the clear key on the operation panel.
    - The counter is cleared, resetting it to "00000000".

Small size and large size in this mode
- TOTAL/PICKUP/FEEDER/JAM
    Large (L) size: Paper larger than A4, LTR size
    Small (S) size: A4, LTR size and smaller paper

- DRBL-1/DRBL-2 (PD-PU-RL, C3-PU-RL, C4-PU-RL)
    Large (L) size: Paper longer than 324 mm in the feed direction
    Small (S) size: Paper 324 mm or shorter in the feed direction

- DRBL-2 (DF-PU-RL, DF-SP-PD, DF-F-BLT, DF-SP-RL)
    Large (L) size: Paper longer than the LTR length (216 mm) in the feed direction
    Small (S) size: Paper of the LTR length (216 mm) or shorter in the feed direction

Reading counters for consumable parts/parts needing periodic replacement
The copier has special counters (DRBL-1/DRBL-2) that can be used to provide a guideline for when to replace consumable parts or parts needing periodic replacement.
Small size sheets are counted in increments of 1, large size sheets are counted in increments of 2.

<Example>

| **TR-BELT** | / | **00000201** | / | **00240000** | / | **0%** | **!!** | **000082** |
| [1] | | [2] | | [3] | | [4] | [5] | [6] |

[1]: Displays the part name. In this example, the intermediate transfer belt unit.
[2]: Displays the counter value (actual number of sheets used). The value is cleared by pressing the clear key when the part is replaced.

[3]: Displays the limit value (number of sheets as guideline for replacement). You can select the item and change the value with the numeric keypad. After changing the value, press the OK key.
[4]: Displays the ratio of the counter value to the limit value.
[5]: When the ratio is between 90% and 100%, a single exclamation mark (!) is displayed.
When the ratio is over 100%, two exclamation marks (!!) appear. In the example above, no exclamation marks would appear.
[6]: Displays the predicted number of days until replacement. The example above shows 82 days.

1. TOTAL

T-19-71

COPIER>COUNTER>TOTAL		
Sub item	**Description**	**level.**
SERVICE1	Service total counter 1 Incremented when paper is delivered outside the printer. (Incremented for both large and small size sheets.) Returns to "00000000" after reaching "99999999".	1
SERVICE2	Service total counter 2 Incremented when paper is delivered outside the printer. (Incremented by 2 for large size sheets, and by 1 for small size sheets.) Returns to "00000000" after reaching "99999999".	1
COPY	Total copies counter Incremented when a copy operation is performed and paper is delivered outside the printer. Returns to "00000000" after reaching "99999999".	1
PDL-PRT	PDL print counter Incremented along with the billing counter during PDL printing, when paper is delivered outside the copier and two-sided paper is loaded. Blank sheets are not counted. Incremented by 1 for both large and small size sheets. Returns to "00000000" after reaching "99999999".	1
FAX-PRT	Fax received print counter Incremented along with the billing counter when a fax is received, when a print is delivered outside the copier and two-sided paper is loaded. Blank sheets are not counted. Incremented by 1 for both large and small size sheets. Can be cleared. Returns to "00000000" after reaching "99999999".	1
BOX-PRT	Box print counter Incremented along with the billing counter when a box print is made, when paper is delivered outside the copier and two-sided paper is loaded. Blank sheets are not counted. Incremented by 1 for both large and small size sheets. Can be cleared. Returns to "00000000" after reaching "99999999".	1
RPT-PRT	Report print counter Incremented along with the billing counter when a report print is made, when paper is delivered outside the copier and two-sided paper is loaded. Blank sheets are not counted. Incremented by 1 for both large and small size sheets. Can be cleared. Returns to "00000000" after reaching "99999999".	1
2-SIDE	Two-sided copy/print counter Incremented along with the billing counter when a two-sided copy/print is made, when paper is delivered outside the copier and two-sided paper is loaded. Blank sheets are not counted. Incremented by 1 for both large and small size sheets. Can be cleared. Returns to "00000000" after reaching "99999999".	1
SCAN	Scan counter Incremented along with the billing counter when a scan is made, when reading finishes. Incremented by 1 for both large and small size sheets. Can be cleared. Returns to "00000000" after reaching "99999999".	1

2. PICK-UP

T-19-72

COPIER>COUNTER>PICK-UP		
Sub item	Description	level.
C1	Cassette 1 paper feed total counter Displays number of sheets fed from cassette 1. Returns to "00000000" after reaching "99999999".	1
C2	Cassette 2 paper feed total counter Displays number of sheets fed from cassette 2. Returns to "00000000" after reaching "99999999".	1
C3	Cassette 3 paper feed total counter Displays number of sheets fed from cassette 3 (top level of cassette pedestal). Returns to "00000000" after reaching "99999999".	1
C4	Cassette 4 paper feed total counter Displays number of sheets fed from cassette 4 (bottom level of cassette pedestal). Returns to "00000000" after reaching "99999999".	1
MF	Manual paper feed total counter Displays number of sheets fed from manual paper feed unit. Returns to "00000000" after reaching "99999999".	1
DK	Deck paper feed total counter Displays number of sheets fed from deck paper feed unit. Returns to "00000000" after reaching "99999999".	1
2-SIDE	Two-sided paper feed total counter Displays number of two-sided sheets fed. Returns to "00000000" after reaching "99999999".	1

3. FEEDER

T-19-73

COPIER>COUNTER>FEEDER		
Sub item	Description	level.
FEED	ADF document feed total counter	1
DFOP-CNT	ADF hinge open/close count display Counts how many times ADF is opened/closed.	1

4. JAM

T-19-74

COPIER>COUNTER>JAM		
Sub item	**Description**	**level.**
TOTAL	Total jam counter for copier	1
FEEDER	Total jam counter for feeder	1
SORTER	Total jam counter for finisher	1
2-SIDE	Jam counter for two-sided unit	1
MF	Jam counter for multi-feeder	1
C1	Jam counter for cassette 1	1
C2	Jam counter for cassette 2	1
C3	Jam counter for cassette 3	1
C4	Jam counter for cassette 4	1
DK	Jam counter for side paper deck	1

5. DRBL-1

T-19-75

COPIER>COUNTER>DRBL-1		
Sub item	**Description**	**level.**
T-CLN-BD	Number of sheets that have passed through transfer cleaning unit (count value is stored in controller).	1
TR-BLT	Number of sheets that have passed through intermediate transfer belt unit (count value is stored in controller).	1
TR-ROLL	Number of sheets that have passed through primary transfer roller (count value is stored in controller).	1
2TR-ROLL	Number of sheets that have passed through secondary transfer outer roller (count value is stored in controller).	1
2TR-INRL	Number of sheets that have passed through secondary transfer internal roller (count value is stored in controller).	1
C1-SP-RL	Cassette 1 separation roller no. of sheets fed	1
C1-FD-RL	Cassette 1 separation roller no. of sheets fedCassette 1 separation roller no. of sheets fed	1
C2-SP-RL	Cassette 1 separation roller no. of sheets fedCassette 2 separation roller no. of sheets fedCassette 1 separation roller no. of sheets fed	1
C2-FD-RL	Cassette 1 separation roller no. of sheets fedCassette 2 separation roller no. of sheets fedCassette 2 separation roller no. of sheets fedCassette 1 separation roller no. of sheets fed	1
M-SP-RL	Manual feed tray separation roller no. of sheets fed	1
M-FD-RL	Manual feed transport roller no. of sheets fed	1
WST-TNR	2 Waste toner counter When waste toner is removed, this counter is cleared.	1
TN-FIL1	Toner filter (FM1) fan drive sheet count	1
FX-BLT-U	Fixing unit fed sheet count	1
FX-BLT-L	Not in use	1

6. DRBL-2

T-19-76

COPIER>COUNTER>DRBL-2		
Sub item	**Description**	**level.**
DF-PU-RL	Number of sheets that have passed through ADF paper feed roller. (count retained by controller PCB)	1
DF-SP-PL	ADF separation roller no. of sheets fed	1
DF-SP-PD	Number of sheets that have passed through ADF separation pad. (count retained by controller PCB)	1
DF-FD-RL	DF Separation plate separation sheet count Single side: Scanned document each sheet +1 Duplex: Scanned document each sheet + 3 (front, back, idle feed) No distinction between large and small.	1
DF-SP-RL	Number of sheets that have passed through ADF separation roller. (count retained by controller PCB)	1
LNT-TAP1	for the dust collecting tape A, indicates the number of sheets that have passed. (count retained by controller PCB)	1
LNT-TAP2	for the dust collecting tape B, indicates the number of sheets that have passed. (count retained by controller PCB)	1
LNT-TAP3	for the dust-collecting tape C, indicates the number of sheets that have passed. (count retained by controller PCB)	1
LNT-TAP4	for the dust-collecting tape D, indicates the number of sheets that have passed. (count retained by controller PCB)	1
LNT-TAP5	for the dust-collecting tape D, indicates the number of sheets that have passed. (count retained by controller PCB)	1
STAMP	Stamp operation count	1
PF-PU-RL	for the paper deck pickup roller, indicates the number of sheets that have passed. (count retained by controller PCB)	1
PD-SP-RL	for the paper deck separation roller, indicates the number of sets that have passed. (count retained by controller PCB)	1
PD-FD-RL	for the paper deck feed roller, indicates the number of sheets that have passed. (count retained by controller PCB)	1
C3-SP-RL	Count 3 separation roller no. of sheets fed	1
C3-FD-RL	Count 3 separation roller no. of sheets fed	1
C4-SP-RL	Count 4 separation roller no. of sheets fed	1
C4-FD-RL	Count 4 separation roller no. of sheets fed	1
FIN-STPR	Number of staple operations.	1
SDL-STPL	Number of saddle staple operations. Incremented by 1 even for L-size sheets.	1
FN-BFFRL	for the buffer roller, indicates the number of times it has gone on. (count retained by DC controller PCB)	1
DL-STC-L	Paper eject static eliminator brush (L) sheet count	1
DL-STC-R	Paper eject static eliminator brush (R) sheet count	1
ENT-STC	Entrance static eliminator brush sheet count	1
CENT-STC	Swing guide static eliminator brush (R) sheet count	1
BACK-ROL	Reverse roller static eliminator brush (R) sheet count	1
FIN-STP2	Finisher-SA1 stapler operation count	1

Chapter 20

UPGRADING

Contents

20.1 Outline

20.1.1 Function/ Operation Overview

Following functions can be realized by connecting the PC (registered with SST, system software) or USB memory (registered with system) to the main body.

iR C5180/4580/3880 Series

PC for Servicing

USB Memory

HDD setting information

HDD Initialization

HDD

System Software

System Software Download

Flash ROM

Backup Data Download*1

Backup Data

Backup Data Download*2

Back up RAM
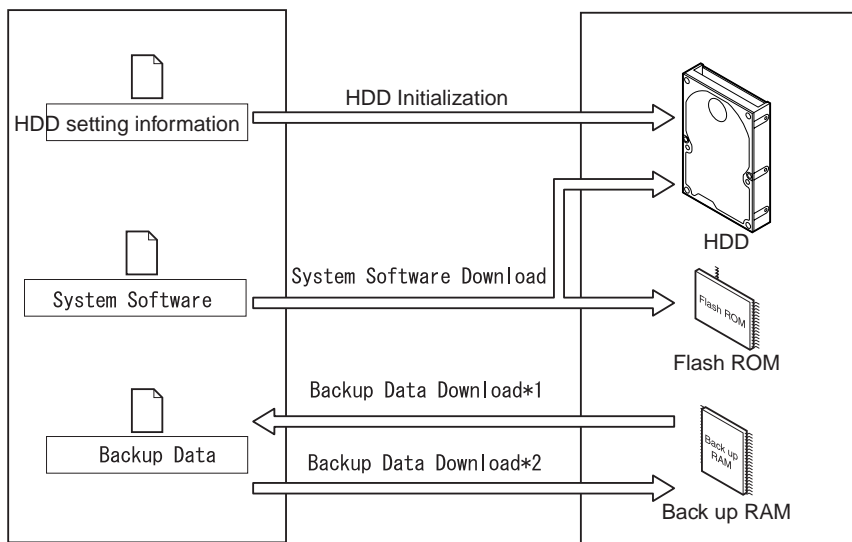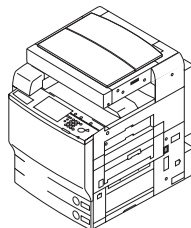
F-20-1

*1: Not applicable when using USB memory

In order to use these functions, the main body must be set to download mode.
There are 2 types of download mode.

-Safe mode (download mode A)
(Turn the main power ON by pressing '2+8')
-Normal mode (download mode B)
(Turn the main power ON by pressing '1+7' and select the following service mode: COPIER > FUNCTION > SYSTEM > DOWNLOAD)
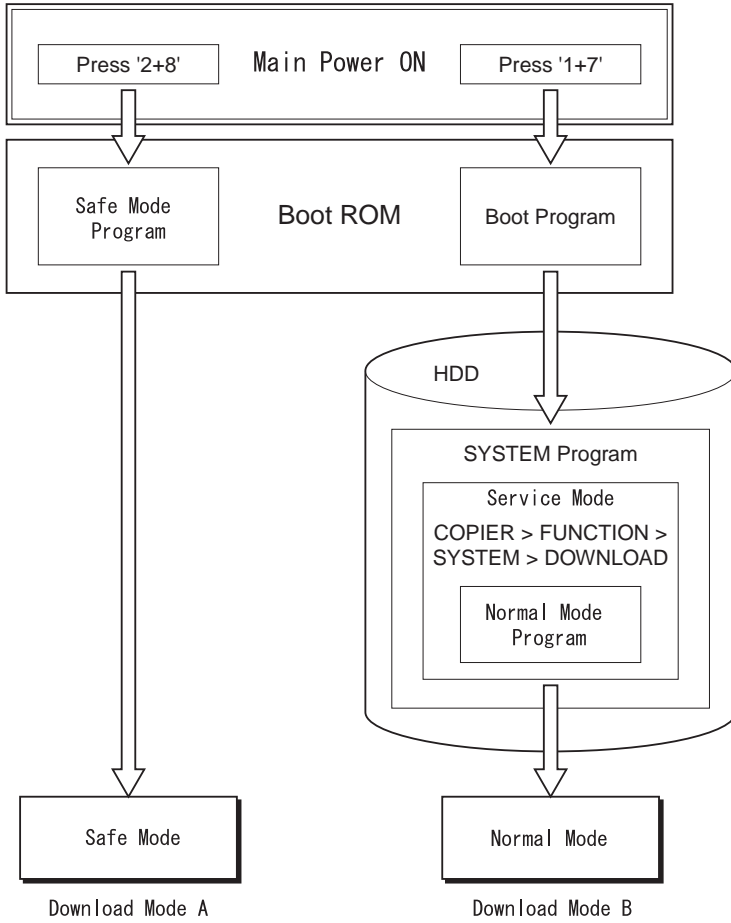
F-20-2

⚠
Safe mode can be used:
- in case the HDD is replaced.
- in case the system does not start properly.

The combinations of the download mode and function are shown below:

T-20-1

Function	Download Mode	
	Normal Mode (Download mode B)	Safe Mode (Download mode A)
HDD Format	- -	Total BOOTDEV
System Software Downloading *1	-System -Language -RUI -Boot -Dcon -Rcon -SDICT -MEAPCONT -KEY -TTS -BROWSER -TSTMP -MEDIA -HELP -WebDAV -G3FAX	-System -Language -RUI -Boot -Dcon -Rcon -SDICT -MEAPCONT -KEY -TTS -BROWSER -TSTMP -MEDIA -HELP -WebDAV -
Backup Data Uploading/Downloading *2	- -SramRCON -SramDCON	-Meapback - -

*1: Free selection of system software to download is not available when using USB memory.
*2: Not applicable when using USB memory.

System Software Installation
Downloaded system software is stored in the temporary storage space of the HDD. After downloading, the main power switch must be turned OFF/ON and then the main body must be re-booted. The system software saved in the temporary storage space of the HDD is written in the system area and the flash ROM. The machine starts with the downloaded system software by turning OFF/ON the main power switch.
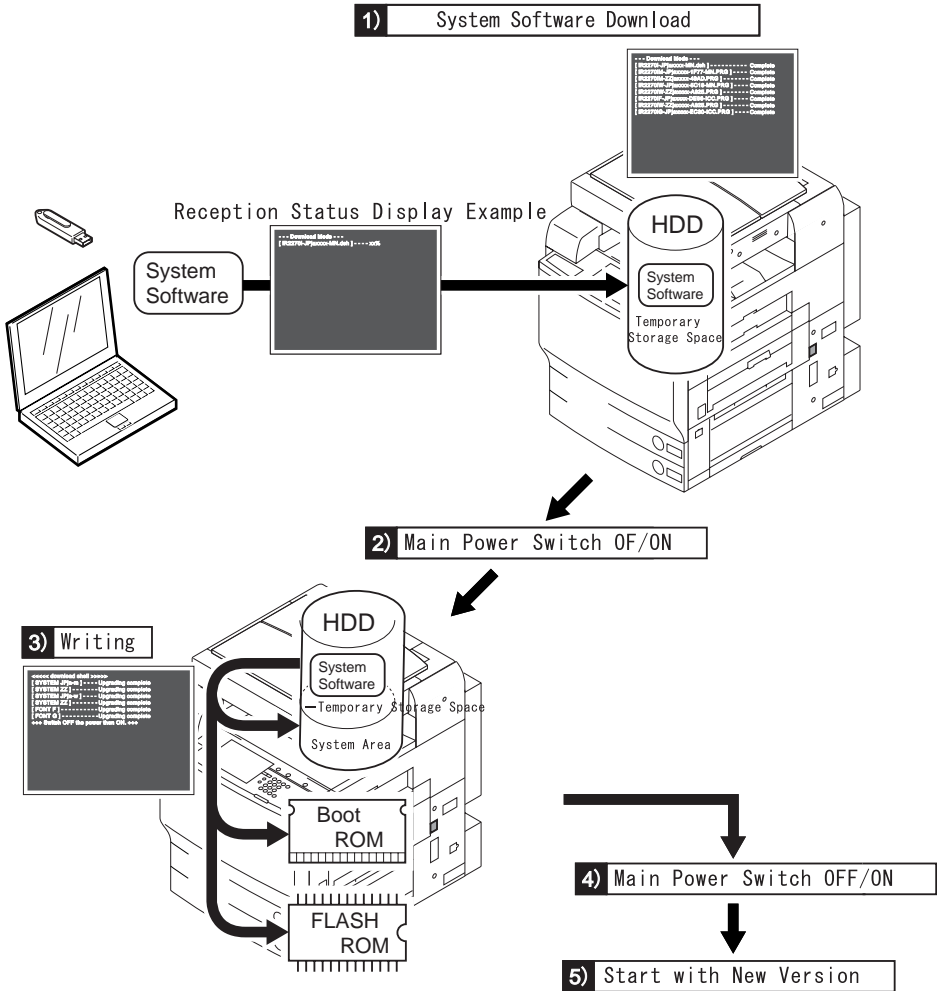
F-20-3

20.1.2 Points to Note at Downloading

⚠ **Do not turn OFF of the power supply during downloading/writing**
Be sure not to turn OFF the power supply during downloading/writing of the system software, otherwise the machine may not start after turning ON the power supply. If that occurred, download the system software after formatting the HDD. As for the Boot ROM, replace the DIMM-ROM.

⚠ **Downgrading of the DCON/RCON**
DCON/RCON can be downloaded both from normal/safe mode, but in the case of safe mode, version information of the DCON/RCON cannot be obtained and DCON/RCON registered in the SST is always overwritten.

20.2 Making Preparations

20.2.1 Registration of System Software (System CD to SST)

Register the system software stored in the system CD onto SST.

[Preparation]
Required Items
- PC installed with SST ver3.22 or later
- System CD for this machine
[System Procedure Registration Procedure]
1) Boot the PC.
2) Set the system CD into the PC.
3) Boot the SST.
4) Click [Register the System Software].
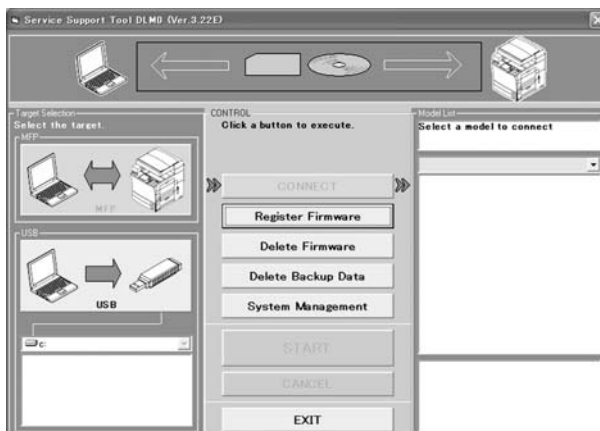
F-20-4

5) Select the system software CD drive and click [Search].
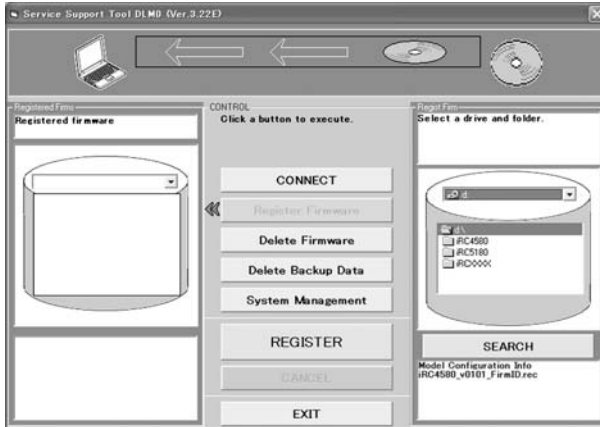
F-20-5

MEMO:
'XXXX' on the screen indicates the system software version (Same in the subsequent figures).

6) The system software list in the system CD is displayed. Remove the check of unnecessary folder or system software and then click [Register].
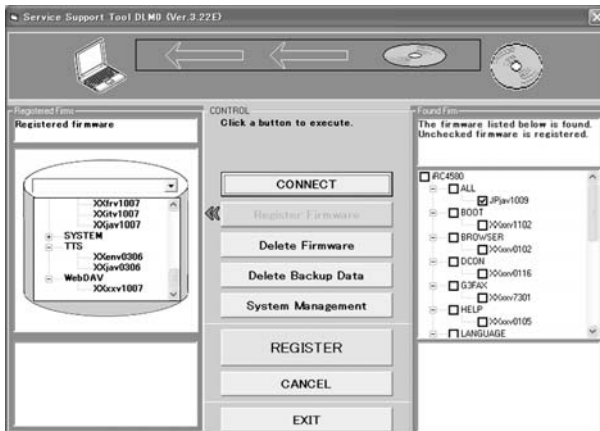
F-20-6

7) Press [OK] after the system software registration completion message is displayed.
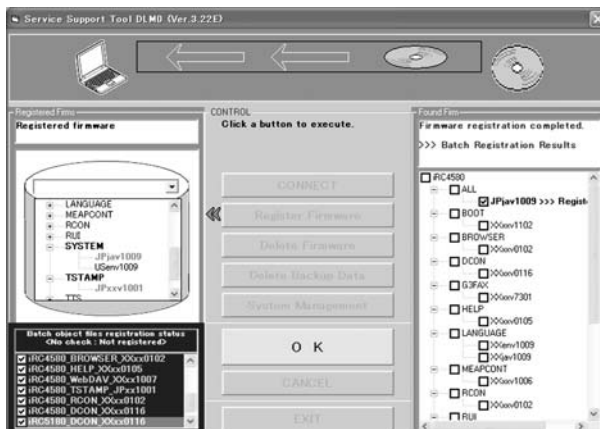
F-20-7

20.2.2 Registration of System Software (SST to USB memory)

Register the system software registered in the SST onto USB memory.

[Preparation]
Required Items
   - PC installed with SST Ver3.22 or later
   - USB memory (*)

      *: Required specification for USB memory

Interface	USB 1.1 or later (Recommendation: USB 2.0)
Memory	Memory 1GB or more recommended (Total size of the system software package exceeds 512MB)
Format	FAT (FAT16), FAT32 (NTFS, HFS not available) 1 partition only (multiple-partition not available)

⚠

USB memory protected by security cannot be used. Deactivate the security before use.

[System Software Registration Procedure]
1) Boot the PC
2) Connect the USB memory to the USB port of the PC.
3) Boot the SST.

4) Click the USB icon on the target selection screen.

F-20-8

5) Select the drive (removable disc) connected with the USB memory.
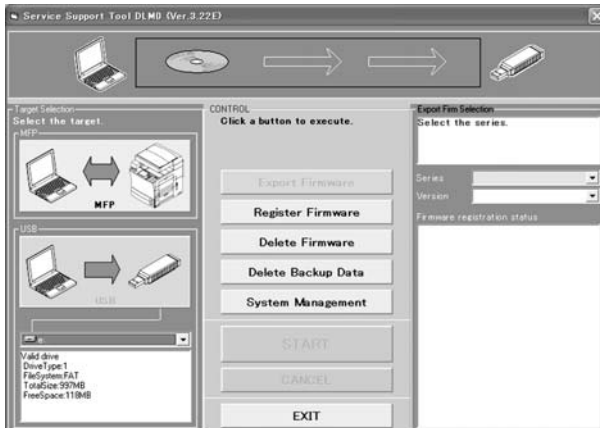
F-20-9

6) Select 'Series' and 'Version' (System).
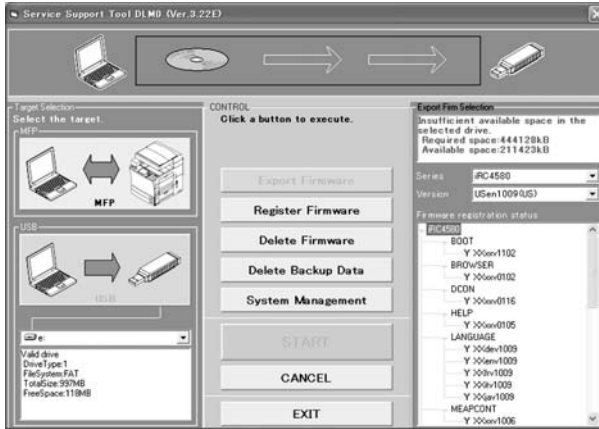
F-20-10

MEMO:
The meanings of the marks displayed on the column 'The registration status of system software' are as follows.
Y: Already registered to SST
N: Not yet registered to SST

7) Click 'Start' button. The registration to the USB memory is started.
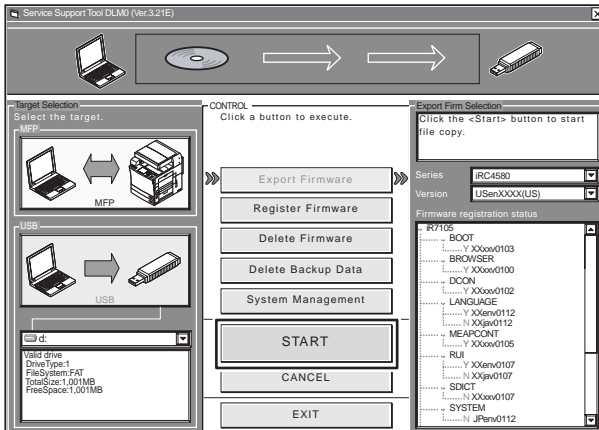
F-20-11

8) When the registration to the USB memory was completed, click 'OK' button.
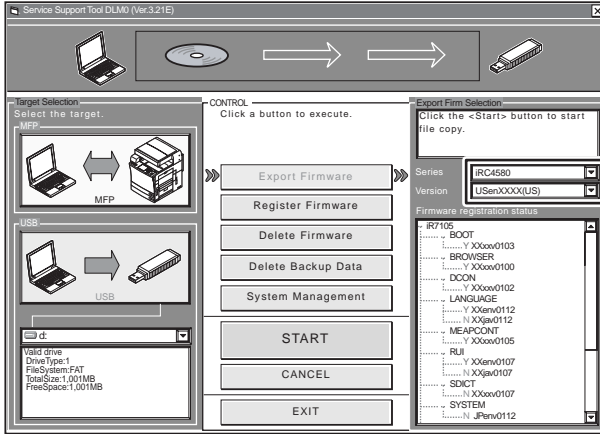
F-20-12

20.2.3 Connection (At Using SST)

[Required items]
- PC with SST Ver. 3.22 or later installed and the system software for this machine registered.
- Twisted pair crossing cable
    10Base-T: Category 3, or Category 5 or more
    100Base-TX: Category 5 or more
[Procedure]
1) Start up PC.
2) Check the network setting for the PC.
2-1) Start command prompt. After inputting 'IPCONFIG', press the return key.
2-2) Check if the network setting displayed on the screen is same as the following setting. If not, change the network setting for the PC.
   IP address: 172.16.1.160
   Sub netmask: 255.255.255.0
   Default gateway: Arbitrary

⚠️

Do not designate the following IP address on the PC.
- 172.16.1.0
- 172.16.1.100
- 172.16.1.255

3) After checking if execution/memory lamp on the control panel turns off, turn OFF the main power switch of the machine body in the following procedure.

3-1) Push the control panel power switch for three seconds or more.
3-2) Implement the operation according to the shutdown instruction displayed on the control panel screen to make the main power switch ready to turn OFF.
3-3) Turn OFF the main power switch.
4) Connect the machine body to the PC with the crossing cable.

IP address : 172.16.1.160
Sub netmask : 255.255.255.0

IP address : 172.16.1.100
Sub netmask : 255.255.255.0

Crossing cable
   10Base-T: Category 3, Category 5 or more
100Base-TX: Category 5 or more
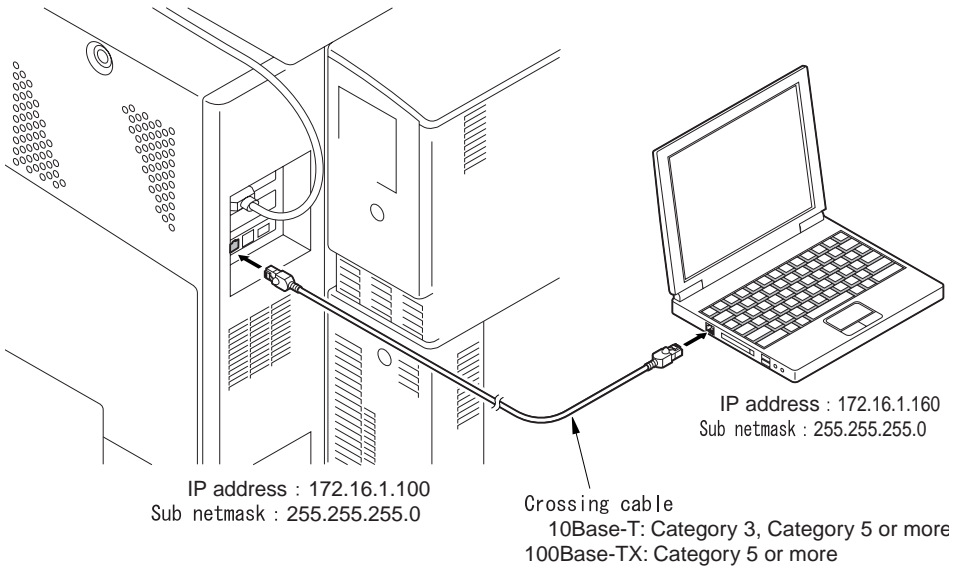
F-20-13

5) Make the machine body be on the download mode for the function to be used.
   In the case of the normal mode
      Press 1+7 to turn ON the main power switch.
      After start up, select the service mode COPIER>FUNCTION>SYSTEM>DOWNLOAD and push [OK].
   In the case of the safe mode
      When pressing 2+8 to turn ON the main power switch, it starts to operate on the safe mode.

20.2.4 Connection (At Using USB Memory)

[Required items]
USB memory with the system software for this machine installed.
[Procedure]
1) After checking if execution/memory lamp on the control panel turns off, turn OFF the main power switch as in the following procedure.
    1-1) Push the control panel power switch for three seconds or more.
1-2) Implement the shutdown sequence.
1-3) Turn OFF the main power switch.
2) Connect the USB memory [2] to the USB port [1].

[1]   [2]
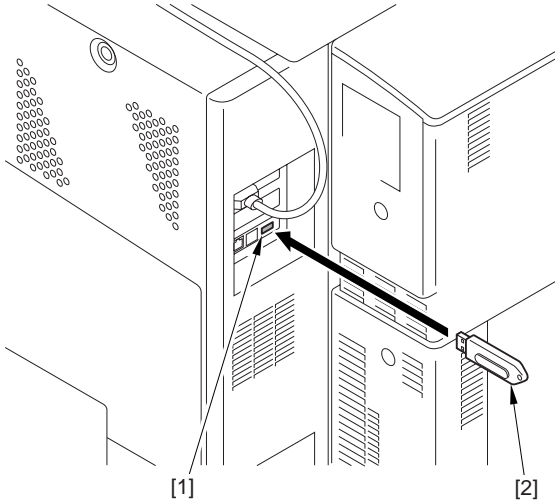
F-20-14

3) If this machine is connected with the network cable, detach it.
4) Make the machine be on the download mode for the function to be used.
    In the case of the normal mode
        Press 1+7 to turn OFF the main power switch.
        After start up, select the service mode COPIER>FUNCTION>SYSTEM>DOWNLOAD and push [OK].
    In the case of the safe mode
        When pressing 2+8 to turn ON the main power switch, it starts to operate on the safe mode.

5) When the machine recognizes the USB memory, the following messages are displayed on the screen of the control panel (Figure is for the normal mode).

```
[[[[[ download Menu (USB) ]]]]]]]]]]]
  -----------------------------------
  [1]: Upgrade (Auto)
  [2]: Upgrade (w Confirmation)
  [3]: Upgrade (Overwrite all)
  [4]: Format HDD
  [5]: Backup
  [6]: Restore former version
  [7]: Clear downloaded files

  [Stop]:Shutdown
```

F-20-15

⚠

Due to the makers or the kinds, the machine may not recognize the USB memory. If the detection of the USB memory for maximum 60 seconds was tried after turning ON the main power switch but it failed, the menu screen described above is not displayed. Prepare another USB memory in such cases.

⚠

Simultaneous usage of the USB memory and SST is impossible (Because the communication to SST is not performed when the machine detected the connection of the USB memory).

20.3 Formatting the HDD

20.3.1 Formatting All Partitions

Set partition on the inside of HDD, format (initialize) each partition so that the main controller can be used. Necessary information for the settings of partitions is registered on the partition setting information file (On SST, 'HDFormat' on the folder 'iRCXXXX').
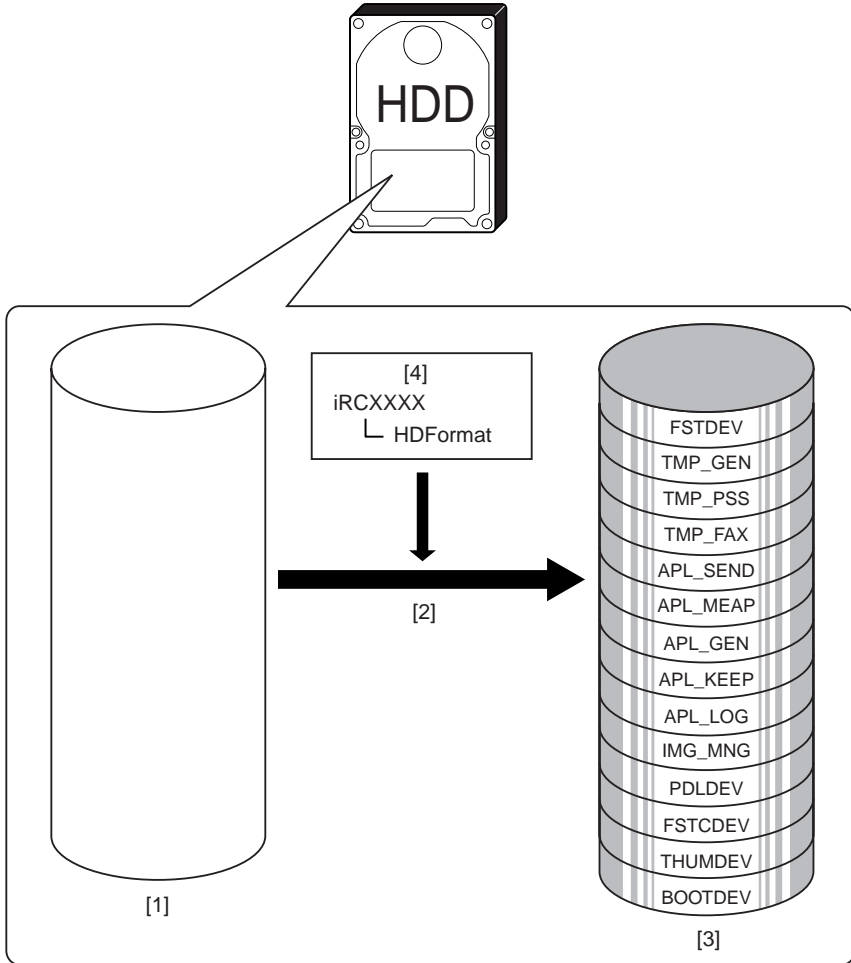
F-20-16

[1] HDD for the service parts (Partition not yet set)
[2] Format for all partitions (Available only on the safe mode)
[3] HDD after formatting
[4] Partition setting information file

20.3.2 Formatting Selected Partitions

Format (initialize) the selected partition.

FSTDEV
TMP_GEN
TMP_PSS
TMP_FAX
APL_SEND
APL_MEAP
APL_GEN
APL_KEEP
APL_LOG
IMG_MNG
PDLDEV
FSTCDEV
THUMDEV
BOOTDEV

[1]

[2]
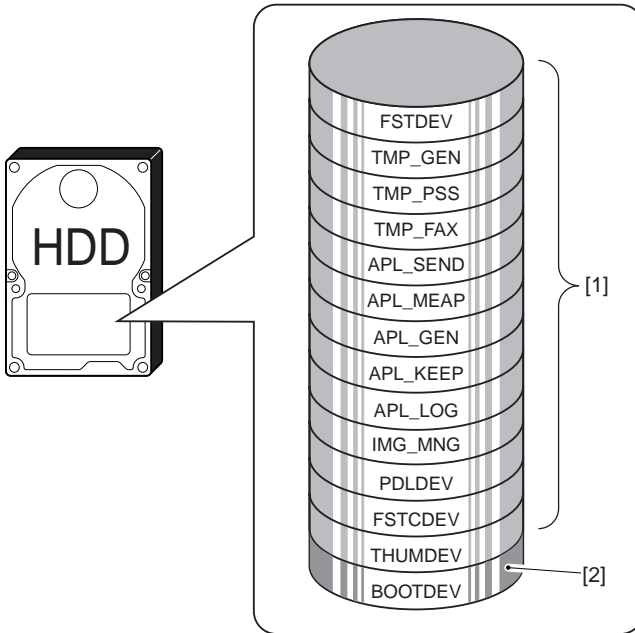
F-20-17

[1] Format impossible
[2] Format possible on the safe mode

MEMO:
Formatting per partition is possible on the service mode (COPIER>FUNCTION>SYSTEM>HD-CLEAR). For BOOTDEV, formatting is impossible on the service mode.

20.3.3 Formatting the Partitions

1) Start up SST.
2) Select the model to be connected [1] and the information file for single download [2] ('Single'). After checking the network setting, click 'Start' button.
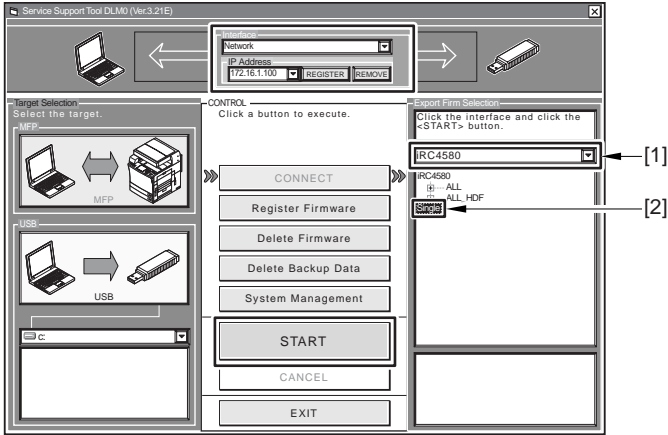
F-20-18

3) Click 'HDD format' button.
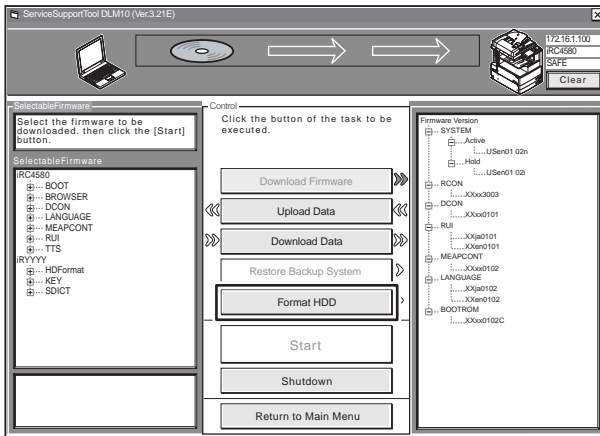
F-20-19

4) After selecting BOOTDEV partition or all partitions (ALL), click 'START' button.
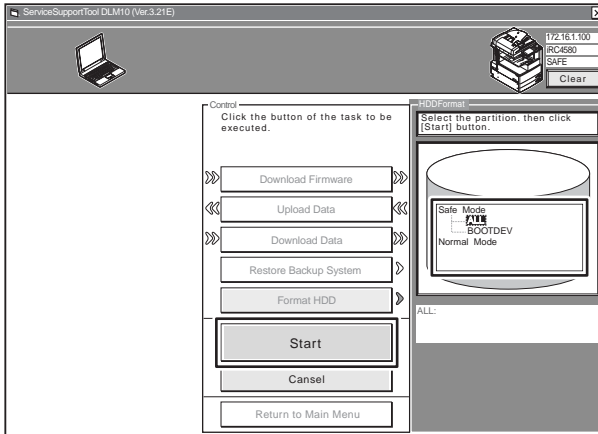
F-20-20

5) Click 'Execute formatting' button.
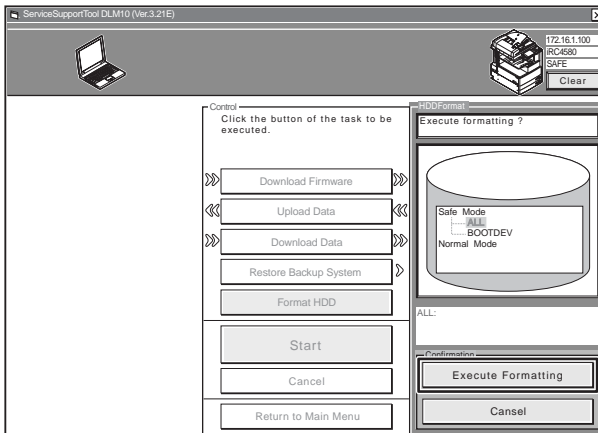
F-20-21

6) After the format is completed, click 'OK' button. Return to the menu screen.
7) Continue to download the system software.

⚠️

After implementing HDD format, download the system software. Without implementing the download, E602 error occurs at the main power ON.

20-17

20.4 Downloading System Software

20.4.1 Batch Downloading

20.4.1.1 Overview

Bulk downloading for each system software is available. The sets of the system software (combination) for bulk downloading are defined in the information file for the bulk downloading.
This file is included in the system CD, and the bulk downloading function will be effective by registering to SST.

<Information file for bulk downloading>

ALL: For downloading at the normal mode
Implement bulk downloading for all of the registered system software.
Use it at the time of version upgrading.

ALL_HDF: For downloading on the safe mode
Implement bulk loading for the registered software other than the following software.
    -BOOT
    -DCON
    -RCON
Use it when reinstalling the system software after HDD format.
It is possible to select executing downloading for the above three system software.

20.4.1.2 Procedure for Downloading

Here the procedure for bulk downloading on the safe mode is shown as an example.

1) Start up SST.
2) Select the model to be connected [1] and the information file for bulk downloading [2] ('ALL_HDF').
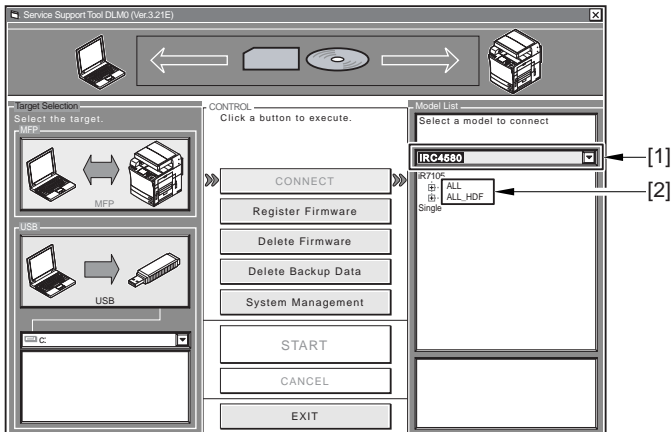
F-20-22

3) After checking the network setting, click 'Start bulk downloading' button.
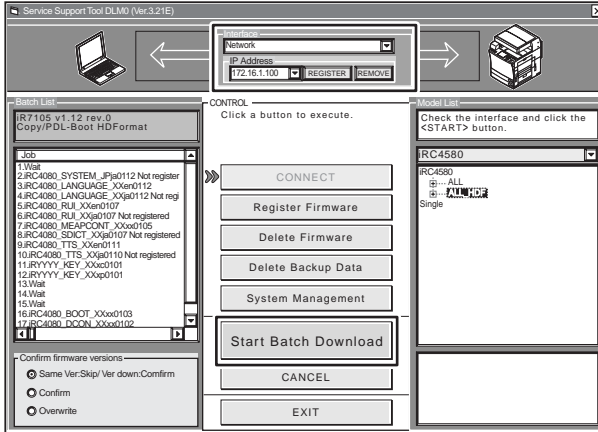
F-20-23

4) Click 'Restart' button.
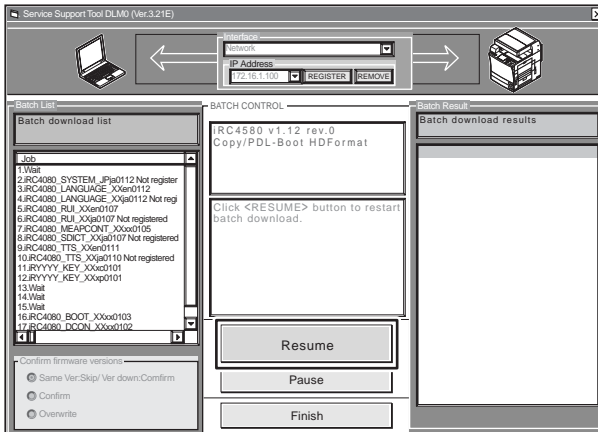
F-20-24

MEMO:
The progress of downloading can be checked on the bulk downloading list screen [1].
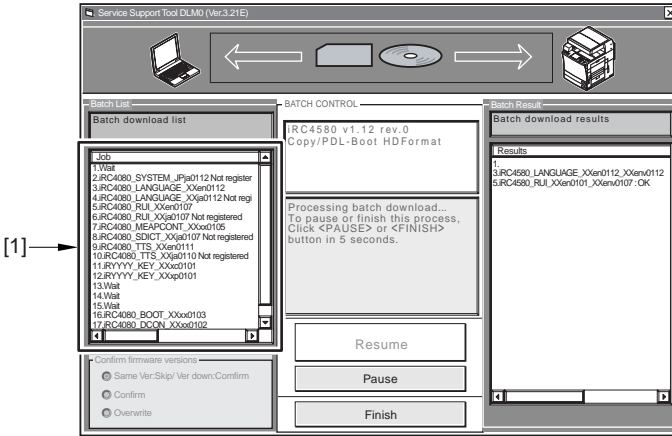
F-20-25

5) The downloading completion screen for the system software to be stored on HDD is displayed. When finishing downloading, click 'Fix cancellation' button. When continuing downloading 'BOOT', 'DCON' and 'RCON', click 'Restart' button and go to the next procedure.
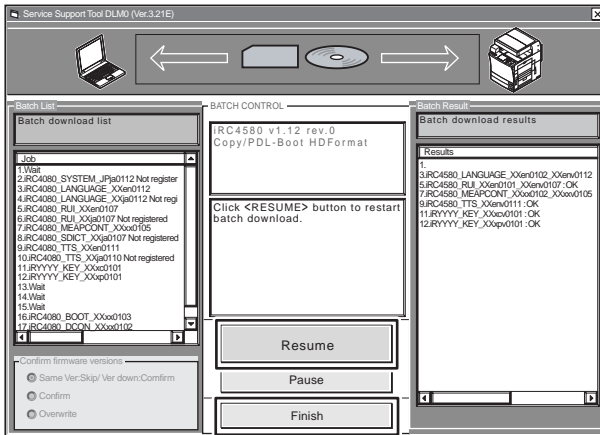
F-20-26

6) After turning OFF the main power switch of the machine body, turn it to the normal mode (After turning ON the main power switch by pressing 1+7 key simultaneously, turn it to the download mode by the service mode).
Click 'Restart' button.
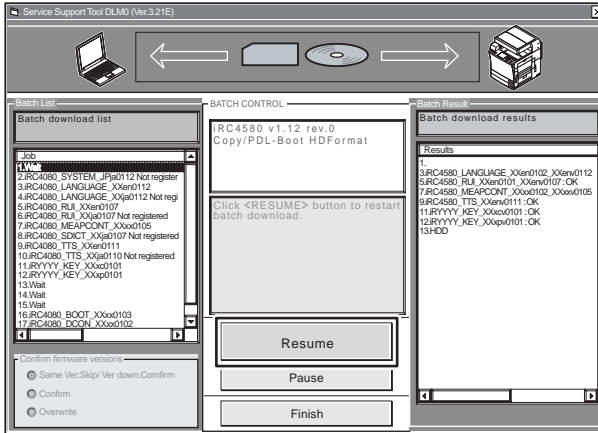
F-20-27

7) Click 'Restart' button. The downloading of 'BOOT', 'DCON' and 'RCON' is started.
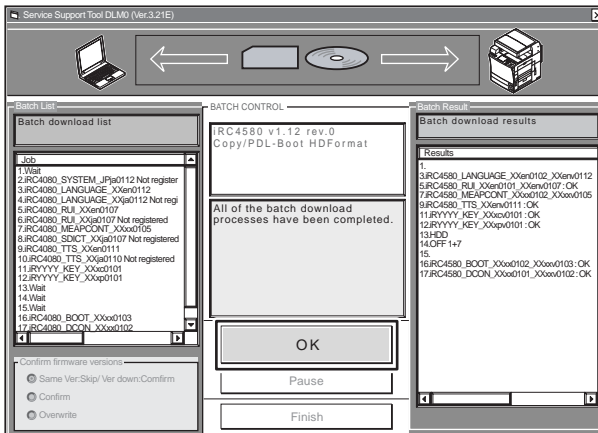
F-20-28

8) Click 'OK' button.
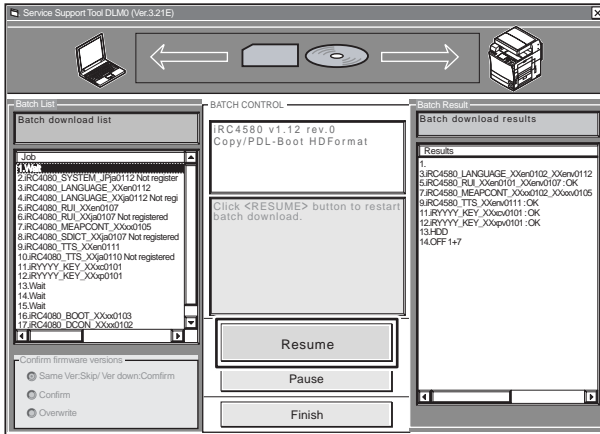
F-20-29

⚠ **Prohibition of turning OFF during downloading/writing**
Do not turn OFF the power of the machine during downloading or writing. It may obstruct the activation of the machine body. In such cases, download the system software after formatting HDD.

20.4.2 Downloading the System Software (Single)

20.4.2.1 Downloading Procedure

The procedure for downloading SYSTEM is explained as an example (Same for other system software).
1) Start up STT.
2) Select the model to be connected [1] and the information file for single downloading [2] ('Single'). After checking the network setting, click 'Start' button.
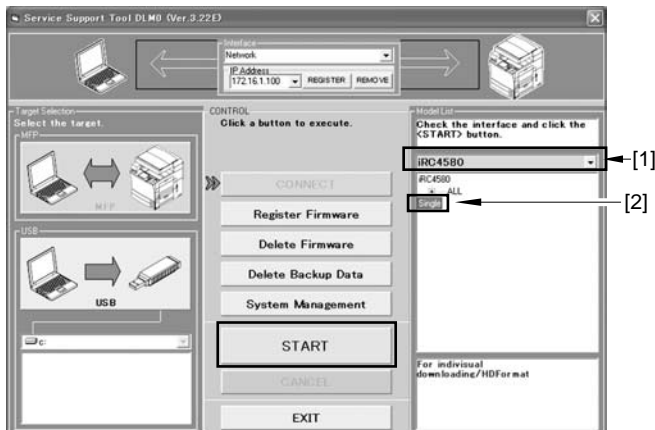
F-20-30

3) After selecting version of System to be downloaded, click 'Start' button.
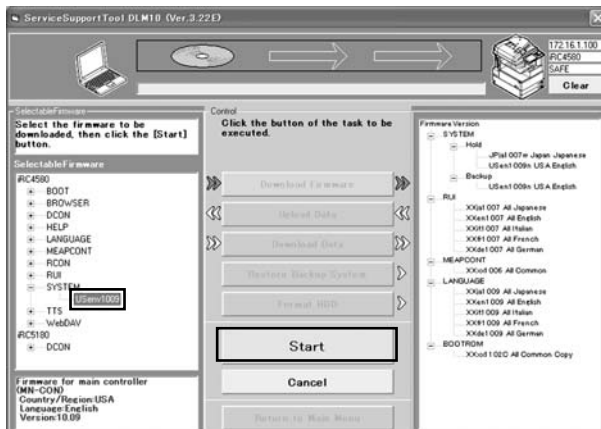
F-20-31

4) When downloading is completed, click 'OK' button. Return to the previous page.
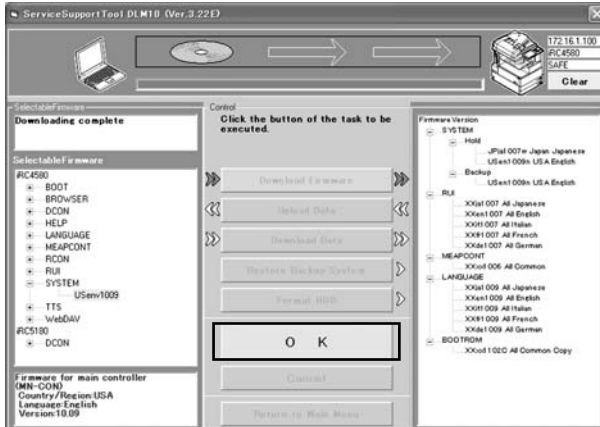
F-20-32

5) Restart the machine. The procedure differs due to download mode.

In the case of the normal mode
5-1) Click 'Shutdown' button.
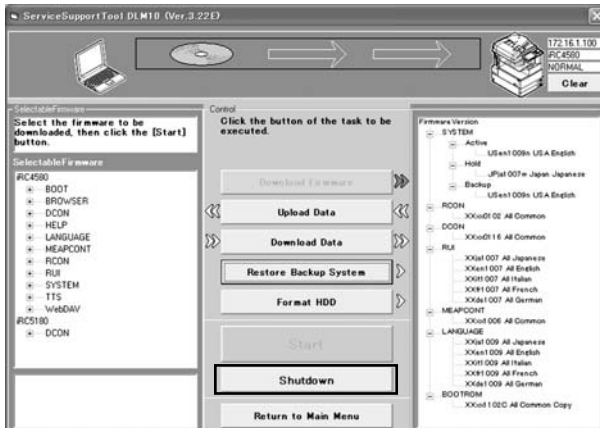
F-20-33

5-2) Click 'Start shutdown' button. The shutdown is performed.
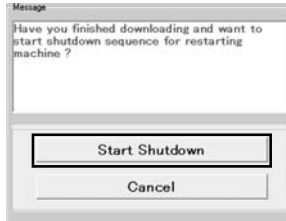
F-20-34

5-3) Click 'OK', turn OFF/ON of the main power switch of the machine.
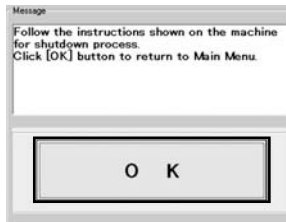
F-20-35

In the case of the safe mode
5-1) Turn OFF/ON the main power switch of the machine.

6) After restart, the downloaded system software is written on HDD or flash ROM, the status of the writing is displayed on the screen of the control panel. The message urging the power OFF/ON is displayed when the writing was completed, then turn OFF/ON the main power switch.

⚠ **Prohibition of power OFF during downloading/writing**
Do not turn OFF the power of the machine during downloading or writing. It may obstruct the activation of the machine body. In such cases, download the system software after implementing HDD format.

MEMO:
It is possible to clear the downloaded system software without writing into HDD or flash ROM. Before restarting the machine body when the download is completed, implement the following procedure.
1) Click 'Clear' button [1].
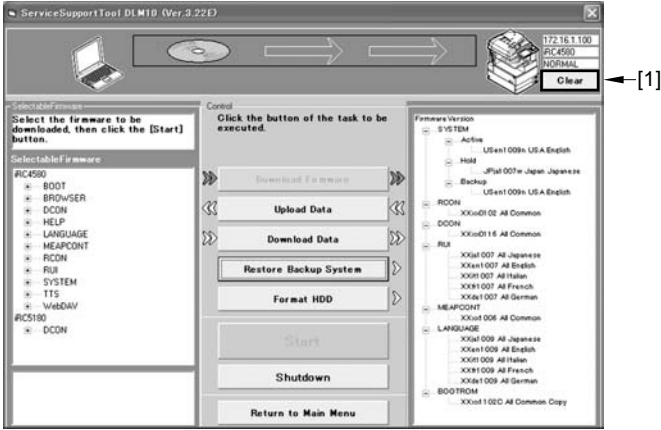
F-20-36

2) Click 'Execute clear' button. The system software stored on the temporary storage space of HDD is cleared.
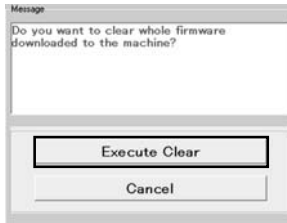
F-20-37

3) Click 'OK' button. Return to the previous page.

F-20-38

MEMO:
After connecting, the following device information [1] is displayed on the right upper area of the SST screen.
- IP address
- Product name
- Download mode
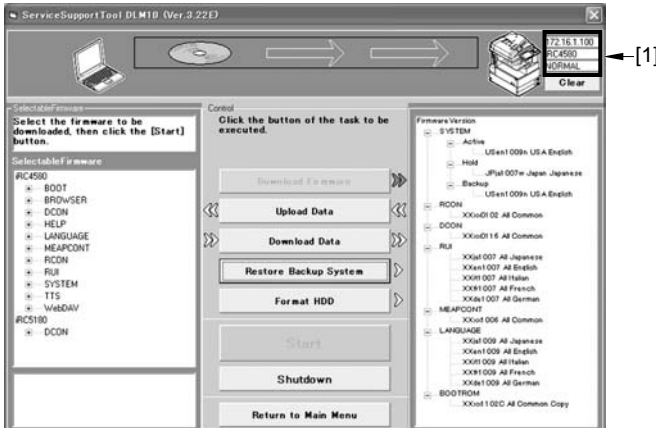
F-20-39

20.5 Uploading and Downloading Backup Data

20.5.1 Outline

MeapBack is the MEAP application stored in HDD and its data.
SramDCON is the data stored in SRAM of the DC Controller PCB.
SramRCON is the data stored in EEPROM of the Reader Controller PCB.

Backup data	File name to be selected at download/upload
For the developmental inspection	~~Sublog.txt~~ (Do not select this file.)
MEAP application	MeapBack.bin (Possible to upload/download in the safe mode.)
For the developmental inspection	~~Sublog.txt~~ (Do not select this file.)
Reader Controller PCB Backup	SramRCON (Possible to upload/download in the normal mode.)
DC Controller PCB Backup	SramDCON (Possible to upload/download in the normal mode.)

⚠ **Points to Note When Executing Meapback Upload/Download**
When re-installing the System as a remedy for a trouble, upload Meapback, and then, download it after the format. By doing so, it will be possible to save the MEAP application temporary.
1) Upload Meapback
2) Execute ALL format of HDD.
3) Re-install the System and other system softwares.
   When re-install the System, make sure to use the same version before the HDD format. If the version of the System differs, the uploaded Meapback cannot be downloaded.
4) Download Meapback.
   The uploaded Meapback can be downloaded only to the machine, not to the other machines.

MEMO:
- In case of replacing HDD, or executing the format of ALL and APL_MEAP, upload MeapBack, and then, download it after the format. By doing so, it will be possible to save the MEAP application temporary.
- In case of replacing the Reader Controller PCB, upload the SramRCON, and then, download it after the replacement. By doing so, the setup data, like the service mode, can be taken over.
- In case of replacing the DC Controller PCB, upload the SramDCON, and then, download it after the replacement. By doing so, the setup data, like the service mode, can be taken over.

20.5.2 Uploading Procedure

⚠

- When uploading data, do not select 'SramImg.bin' and 'Sublog.txt'.
- The upload/download of SramDCON and SramRCON can be possible only in the normal mode.
- The upload/download of MeapBack can be possible only in the safe mode.

[In Case of MeapBack]
1) Activate SST.
2) Select the model to be connected [1] and the information file for individual download [2] ('Single'), and click [Start] button after checking the network settings.
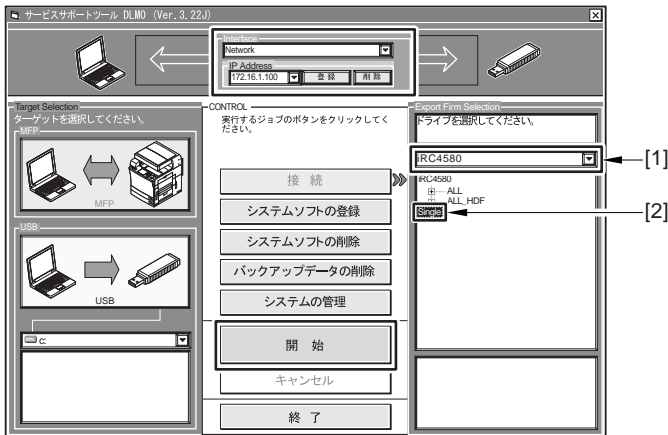
F-20-40

3) Click [Data upload] button.

F-20-41

4) Select 'MeapBack.bin' and click [Start] button.
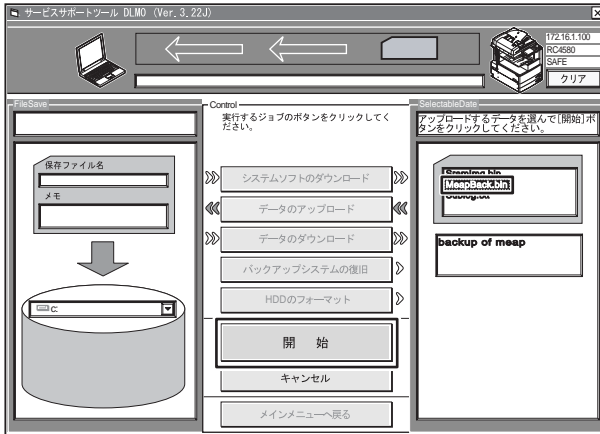
F-20-42

5) Input a file name to be saved, and click [Save] button after inputting memo, if necessary.
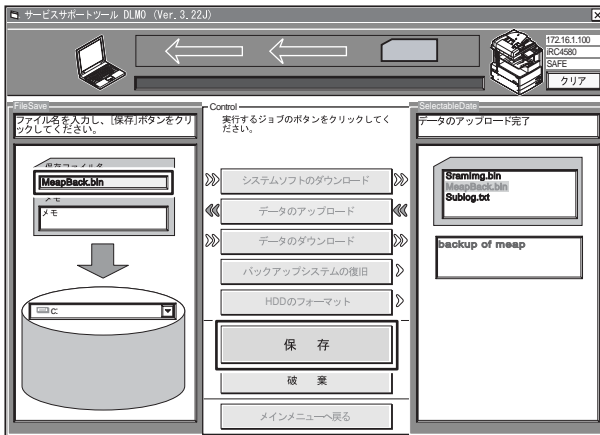
F-20-43

6) Click [OK] button.

⚠

SramRCON, SramDCON, and MeapBack can be downloaded only to the machine from which upload is performed.
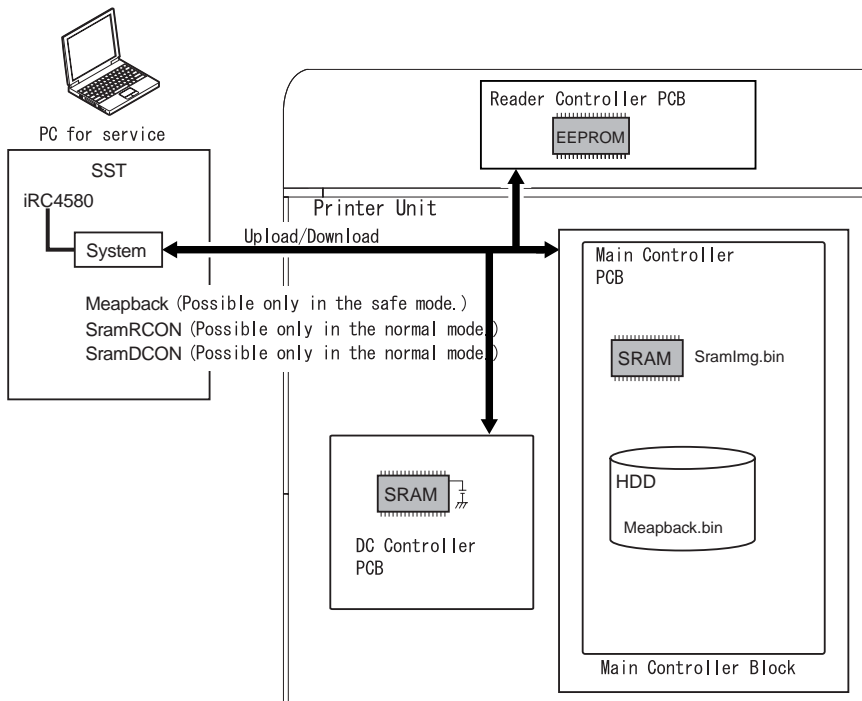
F-20-44

20.5.3 Download Procedures

- The upload/download of SramDCON and SramRCON can be possible only in the normal mode
- The upload/download of MeapBack can be possible only in the safe mode.

[In Case of MeapBack]

1) Activate SST.
2) Select the model to be connected [1] and the information file for individual download [2] ('Single'), and click [Start] button after checking the network settings.
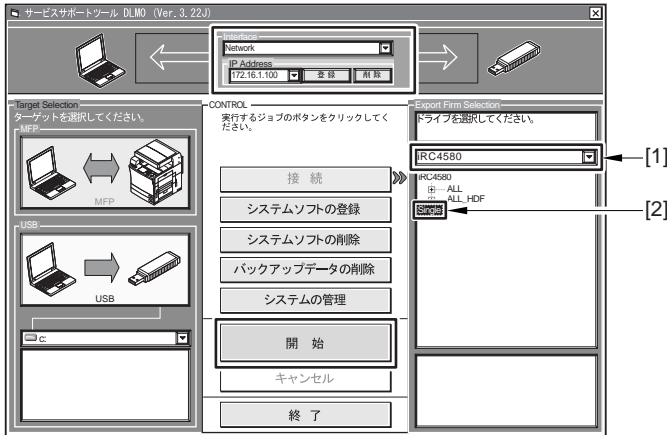
F-20-45

3) Click [Data download] button.

F-20-46

4) Select the data to be downloaded, and click [Start] button.
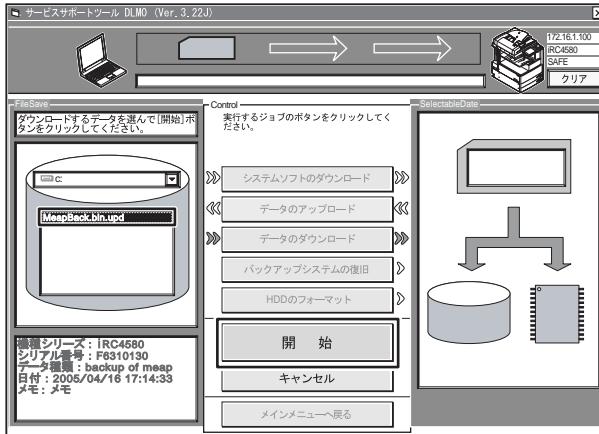
F-20-47

5) When the download is completed, click [OK] button. It returns to the previous screen.

20.6 Version Upgrade using USB

20.6.1 Menu/Function Overview

```
[[[[[ download Menu (USB) ]]]]]]]]]]]
----------------------------------------
 [1]: Upgrade (Auto)
 [2]: Upgrade (w Confirmation)
 [3]: Upgrade (Overwrite all)
 [4]: Format HDD
 [5]: Backup
 [6]: Restore former version
 [7]: Clear downloaded files


 [Stop]:Shutdown
```

F-20-48

<u>Download of System Software</u>
    [1]: Upgrade (AUTO)
      Download/writing of the system software (auto)
    [2]: Upgrade (w Confirmation)
      Download of the system software (auto, or selectable)
    [3]: Upgrade (Overwrite all)
      Download of the system software (overwriting)

<u>HDD Format (Available Only When the Safe Mode Is Active)</u>
    [4]: Format HDD (displayed when BOOTDEV exists)
      Format of BOOTDEV partition
    [4]: Format HDD (ALL) (displayed when BOOTDEV does not exist)
      Format the all partitions

<u>Other Functions</u>
    [5]: Backup
      This function is under the development inspection; thus, not in use.
    [6]: Restore former version (displayed only when the System is saved as backup)
      Enabling the backup System
    [7]: Clear downloaded files
      Clear the system software right after the download (before writing)
    [Stop]: Shutdown (displayed only when the normal mode is active)
      Executing the shutdown sequence

The selection and execution of each function is performed with pressing keys on the control panel.

20.6.2 Points to Note at the Time of Operation/Use

⚠ **Do Not Turn OFF the Power During Download/Writing**
Do not turn OFF the power of the host machine during download and writing. It may cause the failure to start the machine. In such a case, download the system software after formatting HDD (Menu [4]). If the machine does not start due to the failure of BOOT download, replace the DIMM ROM.

⚠ **Point to Note Regarding Version Down**
The latest version of the system software must be saved in the USB memory.
The version information for the following system software cannot be obtained; thus, the system software in the USB memory must be always overwritten to HDD.
   - **KEY** (both in the normal mode and the safe mode)
   - **TTS** (both in the normal mode and the safe mode)
   - **BROWSER** (both in the normal mode and the safe mode)
   - **DCON** (only in the safe mode)
   - **RCON** (only in the safe mode)
For the normal system software download (not after the HDD replacement or after format), the following mode is recommended for download:
   Download mode - Normal mode
   Download menu - [1]: Upgrade (Auto)

⚠ **Point to Note When Turning OFF the Power after the Activation of the Normal Mode**
When exiting from the download mode, execute the HDD shutdown sequence. From the Initial Menu screen, press [Stop] key>[0] key and execute the HDD shutdown sequence; then, turning off the main power switch.

```
[[[[[ download Menu (USB) ]]]]]]]]]]
--------------------------------------
 [1]: Upgrade (Auto)
 [2]: Upgrade (w Confirmation)
 [3]: Upgrade (Overwrite all)
 [4]: Format HDD
 [5]: Backup
 [6]: Restore former version
 [7]: Clear downloaded files


 [Stop]:Shutdown

 / [Shutdown] Execute?/
 - (OK):0 / (CANCEL):The other keys -
```
F-20-49

20.6.3 Download/Writing of System Software (Auto)

[1]: Upgrade (AUTO)

Compare the system software version in HDD with its in USB memory, and download only new version in the USB memory to the temporary storage area in HDD. After the completion of download, the machine is automatically rebooted and the downloaded system software is written in the system area in HDD and Flash ROM.

<Procedure>

1) If the power of the machine is ON, turning off the main power after executing HDD shutdown processing.
2) Connect the USB memory to the USB port.
3) Get the machine into the download mode (the normal mode, or the safe mode).
4) By following the display on the control panel, press key.

 [1] -> [0]: Execution of download / Keys other than [0]: Return to the menu screen

```
[[[[[ download Menu (USB) ]]]]]]]]]]]
--------------------------------------
 [1]: Upgrade (Auto)
 [2]: Upgrade (w Confirmation)
 [3]: Upgrade (Overwrite all)
 [4]: Format HDD
 [5]: Backup
 [6]: Restore former version
 [7]: Clear downloaded files


 [Stop]:Shutdown
```

F-20-50

5) The download status is displayed on the control panel during download. When download is completed, the machine is automatically rebooted, and writing to the system area of HDD or the Flash ROM is started.

Download Status Screen:

```
////Copying files from USB-dev.///
[iRC4080-XXenXXXX-5822-TTS.lst] OK.
[iRCXXXX-XXxcXXXX-1776-KEY.dsh] OK.
[iRCXXXX-XXxcXXXX-F4D1-KEY.dat] OK.
[iRCXXXX-XXxcXXXX-405C-KEY.lst] OK.
[iRCXXXX-XXxpXXXX-17AC-KEY.dsh] OK.
[iRCXXXX-XXxpXXXX-96D0-KEY.dat] OK.
[iRCXXXX-XXxpXXXX-0564-KEY.lst] OK.
[iRC4580-XXxxXXXX-5C64-DCON.ird] OK.
[iRC4580-XXxxXXXX-B1B1-DCON.prg] OK.
[iRC4580-XXxxXXXX-DCON.ift] OK.
File transfer has been completed.
```

Writing Status to HDD:

```
<<<<<<<<<< download-shell >>>>>>>>>>
[KEY xp]     ...Upgrading complete
[KEY xc]     ...Upgrading complete
[TTS en]     ...Writing to HDD XX%
```

F-20-51

6) Once the writing to HDD is completed, the message prompting to turn OFF/ON the power supply is displayed. After turning OFF the main power switch and removing the USB memory, turn ON the main power switch.

```
<<<<<<<<<< download-shell >>>>>>>>>>
[KEY xp]     ...Upgrading complete
[KEY xc]     ...Upgrading complete
[TTS en]     ...Upgrading complete
+++ Switch OFF the power then ON. +++
```

F-20-52

20.6.4 Download of System Software (Auto, or Selectable)

[2]: Upgrade (w Confirmation)
Compare the system software version in HDD with its in USB memory, and copy only the latest version from the USB memory to the temporary storage area in HDD. In case of the same version or old version, the confirmation message is displayed on the screen and the availability of download execution can be selected. Unlike in case of Menu [1], the automatic reboot after the download is not executed. By turning OFF/ON the power supply manually, writing of the system software is executed on start-up.
<Procedure>

1) If the power of the machine is ON, turning off the main power after executing HDD shutdown processing.
2) Connect the USB memory to the USB port.
3) Get the machine into the download mode (the normal mode, or the safe mode).
4) By following the display on the control panel, press key.
   [2] -> [0]: Execution of download / Keys other than [0]: Return to the menu screen

```
[[[[[  download Menu (USB) ]]]]]]]]]]]
 --------------------------------------
  [1]: Upgrade (Auto)
  [2]: Upgrade (w Confirmation)
  [3]: Upgrade (Overwrite all)
  [4]: Format HDD
  [5]: Backup
  [6]: Restore former version
  [7]: Clear downloaded files

  /[2] has been selected. Execute?/
  - (OK):0 / (CANCEL):The other keys -
```

F-20-53

MEMO:
If the system software version in the USB memory is older or the same when starting the download, the message to confirm overwriting is displayed. By following the display on the control panel, press key.
[0]: Overwrite / Keys other than [0]: Not to overwrite

```
////Copying files from USB-dev.///
[Warning] Same version or old version.
----------------------------------------
[BOOT XXxx]...Same. OVERWRITE?
   -- (YES):0 /(NO):The other keys--
```

F-20-54

5) The download status is displayed on the control panel during download. When download is completed, the message prompting to press key is displayed, so press any key. In case of the normal mode, the shutdown sequence is activated.

```
////Copying files from USB-dev.///
[iRC4080-XXenXXXX-5822-TTS.lst] OK.
[iRCXXXX-XXxcXXXX-1776-KEY.dsh] OK.
[iRCXXXX-XXxcXXXX-F4D1-KEY.dat] OK.
[iRCXXXX-XXxcXXXX-405C-KEY.lst] OK.
[iRCXXXX-XXxpXXXX-17AC-KEY.dsh] OK.
[iRCXXXX-XXxpXXXX-96D0-KEY.dat] OK.
[iRCXXXX-XXxpXXXX-0564-KEY.lst] OK.
[iRC4580-XXxxXXXX-5C64-DCON.ird] OK.
[iRC4580-XXxxXXXX-B1B1-DCON.prg] OK.
[iRC4580-XXxxXXXX-DCON.ift] OK.
File transfer has been completed.

---Please hit any key---
```

F-20-55

6) When the message prompting to turn OFF the power supply, turn OFF the main power switch. Then, remove the USB memory and turning ON the main power switch.
7) After the machine is started, writing to the system area in HDD or the Flash ROM is started. Once the writing to HDD is completed, the message prompting to turn OFF/ON the power supply is displayed, so turn OFF/ON the main power switch.

```
<<<<<<<<<< download-shell >>>>>>>>>>
[KEY xp]     ...Upgrading complete
[KEY xc]     ...Upgrading complete
[TTS en]     ...Upgrading complete
+++ Switch OFF the power then ON. +++
```

F-20-56

20.6.5 Download of System Software (Overwriting)

[3]: Upgrade (Overwrite all)
    Regardless of the system software version in HDD, download the system software in the USB memory.
    Unlike in case of Menu [1], the automatic reboot after the download is not executed. By turning OFF/ON the
    power supply manually, writing of the system software is executed on start-up.
<Procedure>

1) If the power of the machine is ON, turning off the main power after executing HDD shutdown processing.
2) Connect the USB memory to the USB port.
3) Get the machine into the download mode (the normal mode, or the safe mode).
4) By following the display on the control panel, press key.
[3] -> **[0]**: Execution of download / Keys other than [0]: Return to the menu screen

```
[[[[[  download Menu (USB) ]]]]]]]]]]
 ------------------------------------
 [1]: Upgrade (Auto)
 [2]: Upgrade (w Confirmation)
 [3]: Upgrade (Overwrite all)
 [4]: Format HDD
 [5]: Backup
 [6]: Restore former version
 [7]: Clear downloaded files

 /[3] has been selected. Execute?/
 - (OK):0 / (CANCEL):The other keys -
```

F-20-57

5) The download status is displayed on the control panel during download. When download is completed, the
    message prompting to press key is displayed, so press any key. In case of the normal mode, the shutdown
    sequence is activated.

```
////Copying files from USB-dev.///
[iRC4080-XXenXXXX-5822-TTS.lst] OK.
[iRCXXXX-XXxcXXXX-1776-KEY.dsh] OK.
[iRCXXXX-XXxcXXXX-F4D1-KEY.dat] OK.
[iRCXXXX-XXxcXXXX-405C-KEY.lst] OK.
[iRCXXXX-XXxpXXXX-17AC-KEY.dsh] OK.
[iRCXXXX-XXxpXXXX-96D0-KEY.dat] OK.
[iRCXXXX-XXxpXXXX-0564-KEY.lst] OK.
[iRC4580-XXxxXXXX-5C64-DCON.ird] OK.
[iRC4580-XXxxXXXX-B1B1-DCON.prg] OK.
[iRC4580-XXxxXXXX-DCON.ift] OK.
File transfer has been completed.

---Please hit any key---
```

F-20-58

6) When the message prompting to turn OFF the power supply, turn OFF the main power switch. Then, remove the USB memory and turning ON the main power switch.
7) After the machine is started, writing to the system area in HDD or the Flash ROM is started. Once the writing to HDD is completed, the message prompting to turn OFF/ON the power supply is displayed, so turn OFF/ON the main power switch.

```
<<<<<<<<<< download-shell >>>>>>>>>>
[KEY xp]      ...Upgrading complete
[KEY xc]      ...Upgrading complete
[TTS en]      ...Upgrading complete
+++ Switch OFF the power then ON. +++
```

F-20-59

20.6.6 Format HDD

⚠

This function is only available when the machine is in the safe mode.

[4]: Format HDD (displayed when BOOTDEV exists)
　　Format of BOOTDEV partition
[4]: Format HDD (ALL) (displayed when replacing to a new HDD or BOOTDEV does not exist)
　　Format the all partitions

<Procedure>
　　Procedure to clear BOOTDEV partition is shown here.

1) If the power of the machine is ON, turning off the main power after executing HDD shutdown processing.
2) Connect the USB memory to the USB port.
3) Get the machine into the download mode (the normal mode, or the safe mode).
4) By following the display on the control panel, press key.
　　[4] -> [0]: Go to the partition selection screen　/ Keys other than [0]: Return to the menu screen

```
[[[[[  download Menu (USB) ]]]]]]]]]]
 ----------------------------------------
  [1]: Upgrade (Auto)
  [2]: Upgrade (w Confirmation)
  [3]: Upgrade (Overwrite all)
  [4]: Format HDD
  [5]: Backup
  [6]: Restore former version
  [7]: Clear downloaded files

  /[4] has been selected. Execute?/
  - (OK):0 / (CANCEL):The other keys -
```

F-20-60

5) By following the display on the control panel, press key.
[1] -> [0]: Execution of BOOTDEV format / Keys other than [0]: Return to the menu screen
[C]: Return to the menu screen

```
[[[[[ Format HDD Manu (USB) ]]]]]]]]]]]]
-----------------------------------------
 [1]: /BOOTDEV
 [C]: Return to Main Menu

 /[1] has been selected. Execute?/
 - (OK):0 / (CANCEL):The other keys -
```

F-20-61

6) Once the format is completed, the message prompting to press key is displayed. By pressing any key, it returns to the menu screen.

```
[[[[[ Format HDD Manu (USB) ]]]]]]]]]]]]
-----------------------------------------
 [1]: /BOOTDEV
 [C]: Return to Main Menu

 /[1] has been selected. Execute?/
 - (OK):0 / (CANCEL):The other keys -

Formatting /BOOTDEV ... OK
///Formatting HDD ...Complete///

---Please hit any key---
```

F-20-62

7) Download the system software. For the procedure, see the Individual Download.

20.6.7 Other Functions

[5]: Backup

⚠

This function is under the development inspection; thus, normally do not use it.

[6]: Restore former version (displayed only when the system is saved as backup)
Enabling the system that is saved as backup, and save the System that has been enabled as backup.

<Procedure>

1) If the power of the machine is ON, turning OFF the main power after executing HDD shutdown processing.
2) Connect the USB memory to the USB port.
3) Get the machine into the download mode (the normal mode, or the safe mode).

4) By following the display on the control panel, press key.
   [6] -> [0]: Execution of clear / Keys other than [0]: Return to the menu screen
   After the execution, the message prompting to turn OFF/ON the power supply is displayed.

```
[[[[[ download Menu (USB) ]]]]]]]]]]]
--------------------------------------
 [1]: Upgrade (Auto)
 [2]: Upgrade (w Confirmation)
 [3]: Upgrade (Overwrite all)
 [4]: Format HDD
 [5]: Backup
 [6]: Restore former version
 [7]: Clear downloaded files

 /[6] has been selected. Execute?/
 - (OK):0 / (CANCEL):The other keys -
Restore former version...Complete.
+++ Switch OFF the power then ON. +++
```

F-20-63

5) Turn OFF the main power switch, and remove the USB memory. Then, turn ON the main power switch.

[7]: Clear downloaded files
   Clear the system software stored in the temporary storage area in HDD. This function can be used after the
   system software download (Menu [2] and [3]), and when clearing the file without writing in HDD.

<Procedure>

1) After the completion of the system software with Menu [2] and [3], execute the step 2) without turning OFF/
   ON the power supply. If turning OFF the power supply, activate the machine in the safe mode.
2) By following the display on the control panel, press key.
   [7] [0]: Execution / Keys other than [0]: Return to the menu screen
   After the execution, it returns to the menu screen.

```
[[[[[  download Menu (USB) ]]]]]]]]]]]
 --------------------------------------
 [1]: Upgrade (Auto)
 [2]: Upgrade (w Confirmation)
 [3]: Upgrade (Overwrite all)
 [4]: Format HDD
 [5]: Backup
 [6]: Restore former version
 [7]: Clear downloaded files

 /[7] has been selected. Execute?/
 - (OK):0 / (CANCEL):The other keys -
```

F-20-64

[Stop]: Shutdown (displayed only when the normal mode is active)
    Activate the shutdown sequence.

<Procedure>

1) By following the display on the control panel, press key.
    [Stop] -> [0]: Execution / Keys other than [0]: Return to the menu screen
    The shutdown sequence is executed and the message prompting to turn OFF/ON the power supply is displayed.

```
[[[[[ download Menu (USB) ]]]]]]]]]]]
-------------------------------------
 [1]: Upgrade (Auto)
 [2]: Upgrade (w Confirmation)
 [3]: Upgrade (Overwrite all)
 [4]: Format HDD
 [5]: Backup
 [6]: Restore former version
 [7]: Clear downloaded files

 [Stop]:Shutdown

 / [Shutdown] Execute?/
 - (OK):0 / (CANCEL):The other keys -
```

<center>F-20-65</center>

2) Turn OFF the main power switch, and remove the USB memory.

Chapter 21

SERVICE TOOLS

Contents
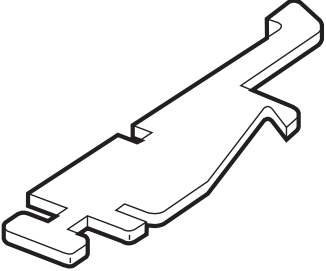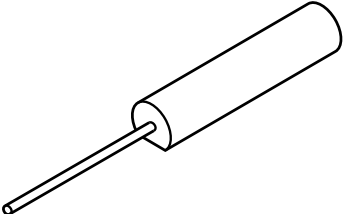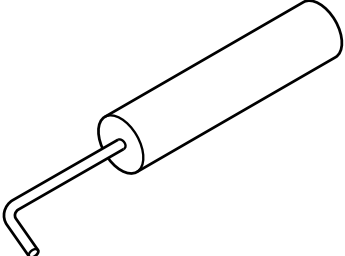
21.1 Service Tools

21.1.1 Special Tools

In addition to the standard tools set, the following special tools are required when servicing the machine:

T-21-1

No.	Tool name	Tool No	Ctgr	Appearance	Remarks
1	Digital multimeter	FY9-2002	A		Used for electrical checks; for adjustment of laser power in com-bination with the laser power checker.
2	Cover switch	TKN-0093	A		
3	Tester extension pin	FY9-3038	A		
4	Tester extension pin(L-shaped)	FY9-3039	A		Used as a probe ex-tension when makingelectrical checks.

No.	Tool name	Tool No	Ctgr	Appearance	Remarks
5	Mirror positioning tool (front, rear)	FY9-3009-040	B		Used for positioning mirror mounts.
8	CA1 Test Sheet	FY9-9030	A		
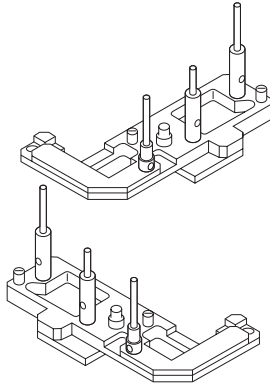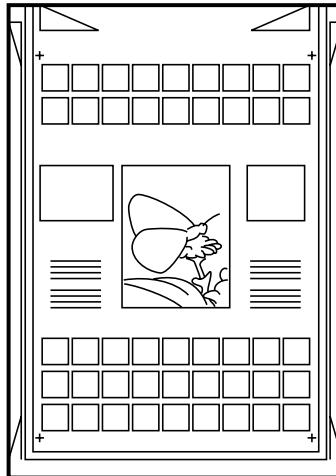
21.1.2 Solvents and Oils

T-21-2

No.	Name	Uses	Composition	Remarks
1	Alcohol	Cleaning; e.g., glass, plastic, rubber; external covers.	Fluoride-family hydrocarbon Alcohol Surface activating agent Water	- Do not bring near fire. - Procure locally. Substitute: IPA (isopropyl alcohol)
2	Solvent #160	Cleaning; e.g., metal; oil or toner stain.	Fluoride-family hydrocarbon Chlorine-family hydrocarbon Alcohol	- Do not bring near fire. - Procure locally Substitute: MEK
3	Heat-resisting grease	Lubrication; e.g., fixing drive areas.	Mineral oil-family lithium soap Molybdenum disulfide	- MO-138S Tool No.: CK-0427 (500 g/can)
4	Lubricating oil		Mineral oil (paraffin-family)	Tool No.: CK-0524 (100 cc)
5	Lubricating oil	Lubrication; i.e., drive areas, friction areas.	Silicone oil	Tool No.: CK-0551 (20 g)
6	Lubricating oil (EM-50L)	Lubrication; e.g., gears.	Special oil Special solid lubricating agent Lithium soap	Tool No.: HY9-0007
7	Lubricating oil	Lubrication; e.g., scanner rail	Silicone oil	Tool No.: FY9-6011 (50 cc)
8	Super lube grease	Apply to the gear of the fixing assembly	Chemical synthesis oil	-Chemical synthesis oil -Tool Number: FY9-6005 (80g)

APPENDIX
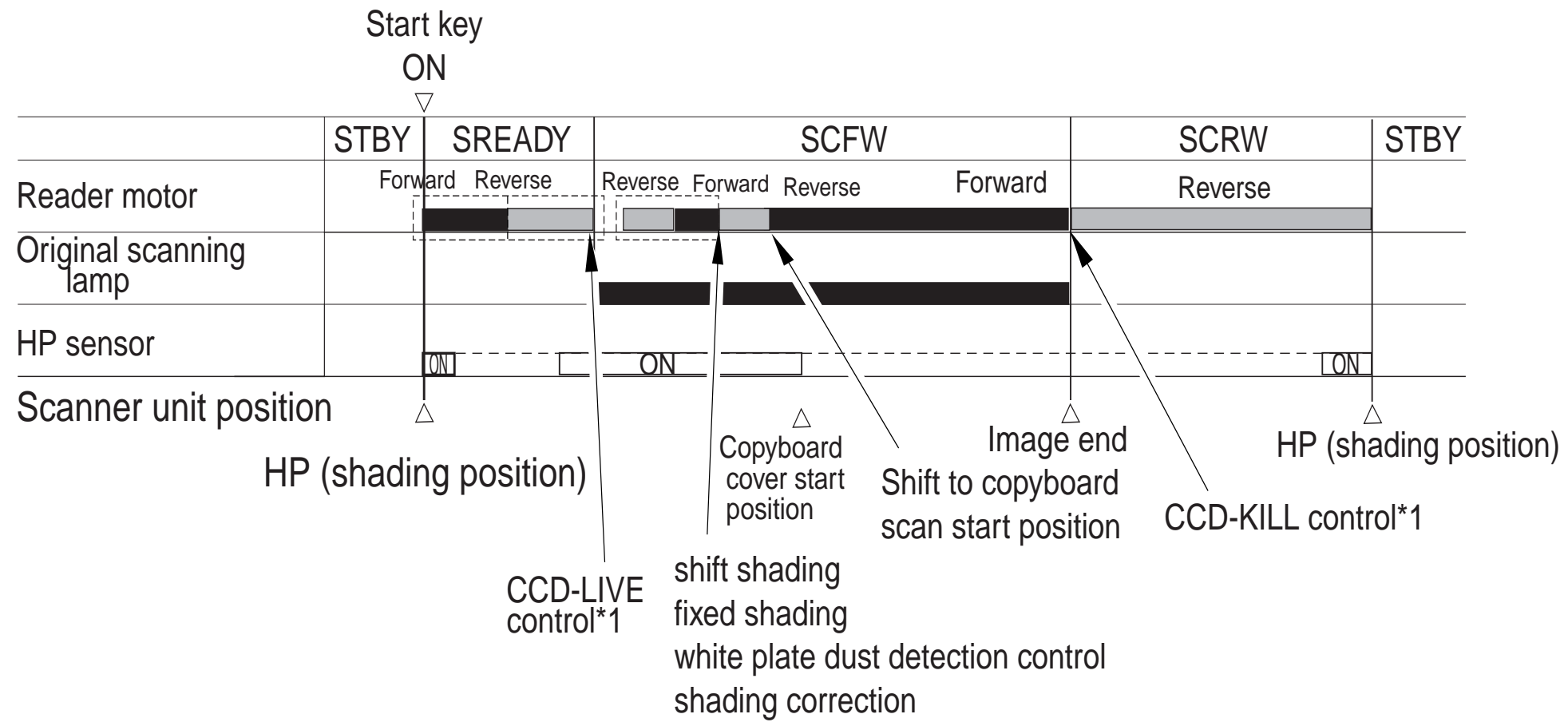
Start key
ON

	STBY	SREADY	SCFW	SCRW	STBY
Reader motor		Forward Reverse	Reverse Forward Reverse Forward	Reverse	
Original scanning lamp					
HP sensor		ON ON		ON	

Scanner unit position

HP (shading position)

Copyboard
cover start
position

Image end
Shift to copyboard
scan start position

HP (shading position)

CCD-KILL control*1

CCD-LIVE
control*1

shift shading

fixed shading

white plate dust detection control

shading correction

*1: controls by turning on/off the power of the CCD and the circuitry around it for power saving and for
   protection against overheating.

F-1-1

Sequence of Operations (printer unit)

Full color, Cassette 1, A4 Single-sided (2 prints, continuous)

Used to stabilize the rotation (3.5 sec)

Start key ON

Ready for image formation

Printer unit	PSTBY	PINTR	PRINT	LSTR	PSTBY

Laser exposure
- Polygon motor (Y,M,C,Bk)
- ITOP signal
- Laser Y ON
- Laser M ON
- Laser C ON
- Laser Bk ON

Image formation
- Toner stirring motor Y (M20)
- Toner stirring motor M (M21)
- Toner stirring motor C (M22)
- Toner stirring motor Bk (M23)
- Development motor Y (M12)
- Development motor M (M13)
- Development motor C (M14)
- Development motor Bk (M15)
- Developing bias AC (Y)
- Developing bias AC (M)
- Developing bias AC (C)
- Development basis AC (Bk)
- Developing bias DC (Y)
- Developing bias DC (M)
- Developing bias DC (C)
- Developing basis DC (Bk)
- Charging roller AC (Y)
- Charging roller AC (M)
- Charging roller AC (C)
- Charging roller AC (Bk)
- Charging roller DC (Y)
- Charging roller DC (M)
- Charging roller DC (C)
- Charging roller DC (Bk)
- Drum ITB motor (M1)

Pickup/feeding
- Cassette 1 pickup motor (M6)
- Cassette 1 pickup solenoid (SL3)
- Cassette 1 retry paper sensor (PS16)
- Registration sensor (PS26)
- Pre-registration motor (M8)
- Registration motor (M9)

Acceleration control: accelerates before pulling on the leading edge of paper.

Constant control: synchronizes transfer timing and then with process speed.

Deceleration control: slows down to the front of the secondary transfer roller to synchronize transfer timing.

Fixing
- Fixing motor (M24)
- IH heater (H1) *1
- Pressure heater (H2)

*1: iRC5180,iRC4580/3880(230V)only

F-1-2

2

T-2-1

*PM_DEV_C_A	development_motor_phase_A*_C		BELT LOWER SIDE MOTER HP	pressure belt displacement control motor HP sensor signal
*PM_DEV_C_B	development_motor_phase_B*_C		BELT LOWER SNS 1	pressure belt position sensor signal 1
*PM_DEV_K_A	development_motor_phase_A*_Bk		BELT LOWER SNS 2	pressure belt position sensor signal 2
*PM_DEV_K_B	development_motor_phase_B*_Bk		BELT LOWER SNS 3	pressure belt position sensor signal 3
*PM_DEV_M_A	development_motor_phase_A*_M		BELT SIDE DOWN HP SNS	Fixing belt displacement control motor HP sensor signal
*PM_DEV_M_B	development_motor_phase_B*_M		BELT SIDE LOWER MOTER A	pressure belt displacement control motor_phase_A*
*PM_DEV_Y_A	development_motor_phase_A*_Y		BELT SIDE LOWER MOTER A*	pressure belt displacement control motor_phase_A*
*PM_DEV_Y_B	development_motor_phase_B*_Y		BELT SIDE LOWER MOTER B	pressure belt displacement control motor_phase_B
*PM_SIDE_REGI_A	horizontal_registration_motor_phase_A*		BELT SIDE LOWER MOTER B*	pressure belt displacement control motor_phase_B*
*PM_SIDE_REGI_B	horizontal_registration_motor_phase_B		BELT SIDE MOTER A	Fixing belt displacement control motor_phase_A*
AC_I_SNS_C	charging_AC_current_C		BELT SIDE MOTER A*	Fixing belt displacement control motor_phase_A*
AC_I_SNS_K	charging_AC_current_Bk		BELT SIDE MOTER B	Fixing belt displacement control motor_phase_B
AC_I_SNS_M	charging_AC_current_M		BELT SIDE MOTER B*	Fixing belt displacement control motor_phase_B*
AC_I_SNS_Y	charging_AC_current_Y		BELT SIDE UPPER SNS 1	Fixing belt position sensor signal 1
ACC-C	laser_scanner_motor_acceleration_control		BELT SIDE UPPER SNS 2	Fixingbelt position sensor signal 2
ACC_CLK	machine_communication_I/F		BELT SIDE UPPER SNS 3	Fixingbelt position sensor signal 3
ACC_CNCT	machine_communication_I/F		BR_DETECT	detection_signal
ACC_CPRDY	machine_communication_I/F		C-0-1	laser_drive_1
ACC_INT	machine_communication_I/F		C-0-2	laser_drive_2
ACC-K	laser_scanner_motor_acceleration_control		C-1-1	laser_drive_1
ACC-M	laser_scanner_motor_control		C-1-2	laser_drive_2
ACC_POWER_ON	machine_communication_I/F		C-2-1	laser_drive_1
ACC_PRDY	machine_communication_I/F		C-2-2	laser_drive_2
ACC_RXD	machine_communication_I/F		C1_SIZE0	cassette_1_size_detection_0
ACC_TXD	machine_communication_I/F		C1_SIZE1	cassette_1_size_detection_1
ACC-Y	laser_scanner_motor_acceleration_control		C1_SIZE2	cassette_1_size_detection_2
ATR_CTRL_C	ATR_sensor_gain_control_C		C1_SIZE3	cassette_1_size_detection_3
ATR_CTRL_K	ATR_sensor_gain_control_Bk		C2_SIZE0	cassette_2_size_detection_0
ATR_CTRL_M	ATR_sensor_gain_control_M		C2_SIZE1	cassette_2_size_detection_1
ATR_CTRL_Y	ATR_sensor_gain_control_Y		C2_SIZE2	cassette_2_size_detection_2
BD-C	C-BD_detection		C2_SIZE3	cassette_2_size_detection_3
BD-K	K-BD_detection		CASET_HEATER_ON	cassette_heater_drive
BD-M	M-BD_detection		CASET_HEATER_	cassette_heater_power_supply_24_V
BD-Y	Y-BD_detection			

CH_CLK	charging_AC_bias_clock_error	DATA__M_B*	ImBge_signBl_for_BeBm_B*
CHRG_AC_CLK	charging_AC_bias_clock_error_(after_level_conversion)	DATA__M_C	ImCge_signCl_for_CeCm_C
CHRG_AC_CTRL_C	charging_AC_bias_control_C	DATA__M_C*	ImCge_signCl_for_CeCm_C*
CHRG_AC_CTRL_C_SND	charging_AC_bias_control_C	DATA__M_D	ImDge_signDl_for_DeDm_D
CHRG_AC_CTRL_K	charging_AC_bias_control_Bk	DATA__M_D*	ImDge_signDl_for_DeDm_D*
CHRG_AC_CTRL_K_SND	charging_AC_bias_control_Bk	DATA__Y_A	Image_signal_for_Beam_A
CHRG_AC_CTRL_M	charging_AC_bias_control_M	DATA__Y_A*	Image_signal_for_Beam_A*
CHRG_AC_CTRL_M_SND	charging_AC_bias_control_M	DATA__Y_B	ImBge_signBl_for_BeBm_B
CHRG_AC_CTRL_Y	charging_AC_bias_control_Y	DATA__Y_B*	ImBge_signBl_for_BeBm_B*
CHRG_AC_CTRL_Y_SND	charging_AC_bias_control_Y	DATA__Y_C	ImCge_signCl_for_CeCm_C
CHRG_DC_CTRL_C	charging_DC_bias_control_C	DATA__Y_C*	ImCge_signCl_for_CeCm_C*
CHRG_DC_CTRL_K	charging_DC_bias_control_Bk	DATA__Y_D	ImDge_signDl_for_DeDm_D
CHRG_DC_CTRL_M	charging_DC_bias_control_M	DATA__Y_D*	ImDge_signDl_for_DeDm_D*
CHRG_DC_CTRL_Y	charging_DC_bias_control_Y	DECK_HEATER_ON	Deck heater drive signal
CHRG_OUT	charging_bias_output	DERIVERY_FAN_ERR	delivery_cooling_fan_rotation_detection
CLEANER_FAN_ERR	cleaner_fan_rotation_detection	DERIVERY_FAN_ON_	delivery_cooling_fan_drive
CLEANER_FAN_ON_	cleaner_fan_drive	DEV_AC_CLK1_C	developing_AC_bias_clock_error_1C
C-PWM	laser_K_data_differential_positive_output	DEV_AC_CLK1_K	developing_AC_bias_clock_error_1Bk
CROSS_PASS_SL	cross_bus_solenoid_ON/OF_signal	DEV_AC_CLK1_M	developing_AC_bias_clock_error_1M
DATA__C_A	Image_signal_for_Beam_A	DEV_AC_CLK1_Y	developing_AC_bias_clock_error_1Y
DATA__C_A*	Image_signal_for_Beam_A*	DEV_AC_CLK2_C	developing_AC_bias_clock_error_2C
DATA__C_B	ImBge_signBl_for_BeBm_B	DEV_AC_CLK2_K	developing_AC_bias_clock_error_2Bk
DATA__C_B*	ImBge_signBl_for_BeBm_B*	DEV_AC_CLK2_M	developing_AC_bias_clock_error_2M
DATA__C_C	ImCge_signCl_for_CeCm_C	DEV_AC_CLK2_Y	developing_AC_bias_clock_error_2Y
DATA__C_C*	ImCge_signCl_for_CeCm_C*	DEV_AC_CTRLT_C	developing_AC_bias_control_ON/OFF_signal_C
DATA__C_D	ImDge_signDl_for_DeDm_D	DEV_AC_CTRLT_K	developing_AC_bias_control_ON/OFF_signal_Bk
DATA__C_D*	ImDge_signDl_for_DeDm_D*	DEV_AC_CTRLT_M	developing_AC_bias_control_ON/OFF_signal_M
DATA__K_A	Image_signal_for_Beam_A	DEV_AC_CTRLT_Y	developing_AC_bias_control_ON/OFF_signal_Y
DATA__K_A*	Image_signal_for_Beam_A*	DEV_CLK_A	developing_AC_bias_clock_error_A
DATA__K_B	ImBge_signBl_for_BeBm_B	DEV_CLK_A_INV	developing_AC_bias_clock_error_A_(reversal)
DATA__K_B*	ImBge_signBl_for_BeBm_B*	DEV_CLK_B	developing_AC_bias_clock_error_B
DATA__K_C	ImCge_signCl_for_CeCm_C	DEV_CLK_B_INV	developing_AC_bias_clock_error_B_(reversal)
DATA__K_C*	ImCge_signCl_for_CeCm_C*	DEV_CLK_C	developing_AC_bias_clock_error_C
DATA__K_D	ImDge_signDl_for_DeDm_D	DEV_CLK_C_INV	developing_AC_bias_clock_error_C_(reversal)
DATA__K_D*	ImDge_signDl_for_DeDm_D*	DEV_DC_CTRL_C	developing_DC_clock_bias_control_ON/OFF_signal_C
DATA__M_A	Image_signal_for_Beam_A	DEV_DC_CTRL_K	developing_DC_bias_control_ON/OFF_signal_Bk
DATA__M_A*	Image_signal_for_Beam_A*	DEV_DC_CTRL_M	developing_DC_bias_control_ON/OFF_signal_M
DATA__M_B	ImBge_signBl_for_BeBm_B	DEV_DC_CTRL_Y	developing_DC_bias_control_ON/OFF_signal_Y

DEV_MODE_C	developing_AC_bias_wave_form_switchover_C_(WBP_<=>_square)	K-0-2	laser_drive_2
DEV_MODE_K	developing_AC_bias_wave_form_switchover_Bk_(WBP_<=>_square)	K-1-1	laser_drive_1
DEV_MODE_M	developing_AC_bias_wave_form_switchover_M_(WBP_<=>_square)	K-1-2	laser_drive_2
DEV_MODE_Y	developing_AC_bias_wave_form_switchover_Y_(WBP_<=>_square)	K-2-1	laser_drive_1
DEV_OUT	developing_bias_output	K-2-2	laser_drive_2
DEV_VIN_C	developing_AC_bias_power_supply_C	K-PWM	laser_K_data_differential_positive_output
DEV_VIN_K	developing_AC_bias_power_supply_Bk	LED-M-A-C	video_signal
DEV_VIN_M	developing_AC_bias_power_supply_M	LED-M-A*-C	video_signal
DEV_VIN_Y	developing_AC_bias_power_supply_Y	LED-M-A-K	video_signal
DRAM_MTR_CLK	drum_ITB_motor_fault	LED-M-A*-K	video_signal
DRAM_MTR_DIR	drum_ITB_motor_rotation_direction_switchover	LED-M-A-M	video_signal
DRAM_MTR_FG	drum_ITB_motor_FG	LED-M-A*-M	video_signal
DRAM_MTR_GAIN	drum_ITB_motor_gain_switchover	LED-M-A-Y	video_signal
DRAM_MTR_ON	drum_ITB_motor_ON/OFF_signal	LED-M-A*-Y	video_signal
DRUM_MTR_LOCK	drum_ITB_motor_clock_error	LED-M-B-C	video_signal
ENV_HUM	environmental_humidity	LED-M-B*-C	video_signal
ENV_THM	environmental_temperature	LED-M-B-K	video_signal
EXHAUST_FAN_ERR	heat_discharge_fan_rotation_detection	LED-M-B*-K	video_signal
EXHAUST_FAN_ON_	heat_discharge_fan_drive	LED-M-B-M	video_signal
FBT_CLK	high-voltage_DC_bias_clock_error	LED-M-B*-M	video_signal
FD-DELI-SNS	face-down_delivery_sensor	LED-M-B-Y	video_signal
FG-C	Signal_of_rotational_speed_of_scanner_motorÅiCÅj	LED-M-B*-Y	video_signal
FG-M	Signal_of_rotational_speed_of_scanner_motorÅiMÅj	LED-ON-C	LDE_motor_ON/OFF
FG-K	Signal_of_rotational_speed_of_scanner_motorÅiKÅj	LED-ON-K	LDE_motor_ON/OFF
FG-Y	Signal_of_rotational_speed_of_scanner_motorÅiYÅj	LED-ON-M	LDE_motor_ON/OFF
FD-FULL-SNS	face-down_full_detection	LED-ON-Y	LDE_motor_ON/OFF
FJ-SNS	face-down_delivery_sensor_detection	LEFT-UP-DOOR-SNS	left_upper_cover_open/closed_detection
FIX_FEED_MOTOR_CLK	Fixicing drive motor error	M-0-1	laser_drive_1
FIX_FEED_MOTOR_CW CCW	Fixicing drive motor _rotation_direction_switchover	M-0-2	laser_drive_2
FIX_FEED_MOTOR_GAIN	Fixicing drive motor _gain_switchover	M-1-1	laser_drive_1
FIX_FEED_MOTOR_LOCK	Fixicing drive motor _clock_error	M-1-2	laser_drive_2
FIX_FEED_MOTOR_ON OFF	Fixicing drive motor _ON/OFF_signal	M-2-1	laser_drive_1
FIX_FEED_MOTOR_BREAK	Fixicing drive motor _ON/OFF_break	M-2-2	laser_drive_2
FIX_FEED_MOTOR_LD	Fixicing drive motor _ON/OFF_signal	M-PWM	laser_M_data_differential_positive_output
FIX SHOOT 1	fixing belt sub_thermistor_shoot detection	MF_LAST_PARET_SNS	manual_feed_last_paper_detection_
FIX SHOOT 2	fixing belt sub_thermistor_shoot detection	MF_PAPER_SNS	manual_feed_pickup_paper_detection
FIX SUB 1 TH	fixing belt sub_thermistor_detection	MF_PAPER_WIDTH	manual_feed_paper_width_detection
FIX SUB 2 TH	fixing belt thermistor_detection	MF_PICKUP_SL	manual_feed_pickup_solenoid_drive

NCTL	secondary_transfer_negative_control	PM_REGI_B*	registration_motor_phase_B*
OHP_LED_ON	transparency_detection_LEDON_signal_(front)	PM_SIDE_REGI_A	horizontal_motor_phase_A
OHP_LED_ON	transparency_detection_LEDON_signal_(rear)	PM_SIDE_REGI_B	horizontal_motor_phase_B
PATCH_P	SALT_sensor_detection_2	PM_SIDE_REGI_COM	horizontal_registration_motor_GND
PATCH_REF	reference	PRE_REGI_CL	pre-registration_clutch_ON/OFF_signal
PATCH_S	SALT_sensor_detention_1	PRE_REGI_SNS	pre-registration_sensor_signal
PCTL	secondary_transfer_positive_control	PRESS RELASE SNS	fixing pressure release HP sensor signal
PM_DEV_C_A	development_motor_phase_A_C	PRESS SHOOT 1	Pressure belt sub_thermistor_shoot detection
PM_DEV_C_B	development_motor_phase_B_C	PRESS SHOOT 2	Pressure belt sub_thermistor_shoot detection
PM_DEV_K_A	development_motor_phase_A_Bk	PRESS SUB 1 TH	Pressure belt sub_thermistor_detection
PM_DEV_K_B	development_motor_phase_B_Bk	PRESS SUB 2 TH	Pressure belt thermistor_detection
PM_DEV_M_A	development_motor_phase_A_M	PRESS_BELT_MAIN_YH_FIIM	Pressure belt sub_thermistor_detection
PM_DEV_M_B	development_motor_phase_B_M	PRESS_BELT_MAIN_YH_CASE	Pressure beltsub_thermistor_detection
PM_DEV_Y_A	development_motor_phase_A_Y	PSEL	secondary_transfer_positive/negative_switchover
PM_DEV_Y_B	development_motor_phase_B_Y	R_LED_ON	registration_detection_LED_drive
PM_DUP_A	duplex_motor_phase_A	R_RESET	peak_hold_circuit_reset_signal
PM_DUP_A*	duplex_motor_phase_A*	REAR_OHP_SNS	transparency_detection_signal_(rear)
PM_DUP_B	duplex_motor_phase_B	REFEED_CL	re-pickup_clutch_ON/OFF_signal
PM_DUP_B*	duplex_motor_phase_B*	REFEED_SNS	re-pickup_sensor
PM_FEED1_A	cassette_1_pickup_motor_phase_A	REGI_MF_CLOSE_SNS	registration_manual_feed_open/closed_detection
PM_FEED1_A*	cassette_1_pickup_motor_phase_A*	REGI_SNS	registration_sensor_signal
PM_FEED2_A	cassette_2_pickup_motor_phase_A	REGIMULTI_FAN_ERR	registration_manual_feed_fan_rotation_detection
PM_FEED2_A*	cassette_2_pickup_motor_phase_A*	REGIMULTI_FAN_ON	registration_manual_feed_fan_drive
PM_FEED1_B	cassette_1_pickup_motor_phase_B	SIDE_REGI_SNS	horizontal_registration_sensor
PM_FEED1_B*	cassette_1_pickup_motor_phase_B*	SUB_LO_CTRL_C	downstream_auxiliary_bias_control_C
PM_FEED2_B	cassette_2_pickup_motor_phase_B	SUB_LO_CTRL_K	downstream_auxiliary_bias_control_Bk
PM_FEED2_B*	cassette_2_pickup_motor_phase_B*	SUB_LO_CTRL_M	downstream_auxiliary_bias_control_M
PM-FJ-A	face-down_delivery_motor_phase_A	SUB_LO_CTRL_Y	downstream_auxiliary_bias_control_Y
PM-FJ-A*	face-down_delivery_motor_phase_A*	SUB_LO_DC_CTRL_C	downstream_auxiliary_DC_bias_control_C
PM-FJ-B	face-down_delivery_motor_phase_B	SUB_LO_DC_CTRL_K	downstream_auxiliary_DC_bias_control_Bk
PM-FJ-B*	face-down_delivery_motor_phase_B*	SUB_LO_DC_CTRL_M	downstream_auxiliary_DC_bias_control_M
PM_PREREGI_A	pre-registration_motor_phase_A	SUB_LO_DC_CTRL_Y	downstream_auxiliary_DC_bias_control_Y
PM_PREREGI_A*	pre-registration_motor_phase_A*	SUB_LOWER_OUT	downstream_bias_output
PM_PREREGI_B	pre-registration_motor_phase_B	SUB_UP_AC_CTRL_C	upstream_bias_AC_bias_control_C
PM_PREREGI_B*	pre-registration_motor_phase_B*	SUB_UP_AC_CTRL_K	upstream_bias_AC_bias_control_Bk
PM_REGI_A	registration_motor_phase_A	SUB_UP_AC_CTRL_M	upstream_bias_AC_bias_control_M
PM_REGI_A*	registration_motor_phase_A*	SUB_UP_AC_CTRL_Y	upstream_bias_AC_bias_control_Y
PM_REGI_B	registration_motor_phase_B	SUB_UP_DC_CTRL_C	upstream_bias_DC_bias_control_C

SUB_UP_DC_CTRL_K	upstream_bias_DC_bias_control_Bk	XSYNC	lamp_sync_control
SUB_UP_DC_CTRL_M	upstream_bias_DC_bias_control_M	XTDATA	2.5K_deck_communication_I/F
SUB_UP_DC_CTRL_Y	upstream_bias_DC_bias_control_Y	XYA_PWM	laser_A_data_differential_negative_output
SUB_UPPER_C	upstream_auxiliary_bias_high_voltage_C	XYB_PWN	laser_B_data_differential_negative_output
SUB_UPPER_K	upstream_auxiliary_bias_high_voltage_Bk	Y_BD_N	Y-BD_detection
SUB_UPPER_M	upstream_auxiliary_bias_high_voltage_M	Y-0-1	laser_drive_1
SUB_UPPER_Y	upstream_auxiliary_bias_high_voltage_Y	Y-0-2	laser_drive_2
TCRG_ON_C	toner_container_motor_drive_C	Y-1-1	laser_drive_1
TCRG_ON_K	toner_container_motor_drive_Bk	Y-1-2	laser_drive_2
TCRG_ON_M	toner_container_motor_drive_M	Y-2-1	laser_drive_1
TCRG_ON_Y	toner_container_motor_drive_Y	Y-2-2	laser_drive_2
TCRG_PULSE_C	toner_container_rotation_detection_C	Y-PWM	laser_Y_data_differential_positive_output
TCRG_PULSE_K	toner_container_rotation_detection_Bk		
TCRG_PULSE_M	toner_container_rotation_detection_M		
TCRG_PULSE_Y	toner_container_rotation_detection_Y		
TBF_LOOP_SNS_1	Fixing loop sensor signal		
TR1_CTRL_C	primary_transfer_control_C		
TR1_CTRL_K	primary_transfer_control_Bk		
TR1_CTRL_M	primary_transfer_control_M		
TR1_CTRL_Y	primary_transfer_control_Y		
TR1_OUT_C	primary_transfer_bias_output_C		
TR1_OUT_K	primary_transfer_bias_output_Bk		
TR1_OUT_M	primary_transfer_bias_output_M		
TR1_OUT_Y	primary_transfer_basis_output_Y		
TR2_CTRL_P	Secondary_transfer_control_P		
TR2_CTRL_N	Secondary_transfer_control_N		
VPASS_FAN_ERR	vertical_path_fan_error		
VPASS_FAN_ON	vertical_path_fan_ON		
VPASS_OPEN_SNS	pickup_vertical_path_cover_open/closed_detection		
VPASS-OUT-FAN-ON	vertical_path_delivery_exhaust_fan_ON		
VPASS-OUT-FAN-ERR	vertical_path_delivery_exhaust_fan_drive_signal		
WASTE_TONER_FULL	waste_toner_sensor_drive		
XCA_PWM	laser_A_data_differential_negative_output		
XCB_PWN	laser_B_data_differential_negative_output		
XKA_PWM	laser_A_data_differential_negative_output		
XKB_PWN	laser_B_data_differential_negative_output		
XMA_PWM	laser_A_data_differential_negative_output		
XMB_PWN	laser_B_data_differential_negative_output		

F-2-1

F-2-2

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PCB1
DC controller PCB 1 (IMG)

PCB2
DC controller PCB 2 (MAISY)

PCB3
relay PCB

PCB2
DC controller PCB 2 (MAISY)

J313
CT-2
toner
cartridge
memory (Y)

J314
CT-2
toner
cartridge
memory (M)

J315
CT-2
toner
cartridge
memory (C)

J316
CT-2
toner
cartridge
memory (Bk)

PS1
toner feed
screw rotation
sensor (Y)

PS2
toner feed
screw rotation
sensor (M)

PS3
toner feed
screw rotation
sensor (C)

PS4
toner feed
screw rotation
sensor (Bk)

M20
toner container
motor (Y)

M21
toner container
motor (M)

M22
toner container
motor (C)

M23
toner container
motor (Bk)

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F-2-3

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PCB2
DC controller PCB 2 (MAISY)

Drum Drive Unit

DRV BOARD

Drum-Drive-Unit

drum cartridge (Y)

drum cartridge (M)

drum cartridge (C)

drum cartridge (Bk)

TONER SENSOR Y

TONER SENSOR M

TONER SENSOR C

TONER SENSOR K

EV1
environment sensor

TPS1
SALT sensor

PCB15
Auto registration sensor F (lightreceiving) detection PCB

PCB13
Waste toner detection PCB (lightreceiving)

PCB14
Auto registration sensor F (lightemitting) detection PCB

PCB12
Waste toner detection PCB (lightemitting)

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F-2-4

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F-2-5

DBF-13760-01-A504

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PCB3
relay PCB

J716   13CZ-6Y
J707   07CZ-6Y
J719   03CZ-6Y

J717WH
CZW-16P
J717A   A8 B8   J717B
08CZ-6Y   08CZ-6H

J717B_SUB[0:8]   J717A_SUB[0:8]

FUSER BOAD
TO 501

CT3P
J5621L

GND
+5V
+5V
FL-SNS
FD-DELI-SNS
FD-FULL-SNS
GND
+5V

LEFT-UP-DOOR-SNS

PM-FL-B*
PM-FL-B
PM-FL-A*
PM-FL-A
VPASS-FAN-ON
GND
VPASS-FAN-ERR

FUSER-CLOSE2-SNS-SIG
FUSER-CLOSE2-SNS-GND
FUSER-CLOSE2-SNS-+5V
FU_FD_SL_GND
FU_FD_SL_+24V
CLEANER-FAN-ON
GND
CLEANER-FAN-ERR
FUSER-CLOSE-SNS-GND
FUSER-CLOSE-SNS-SIG
FUSER-CLOSE-SNS-+5V
WASTE-TONER-FULL
GND
+3.3V
+5V
GND
ITB-FAN-ON
GND
ITB-FAN-ERR

J7161D
12CZ-6Y
CZH-12
J7161DH

J7072DH
CZH-7
J7072D
07CZ-6Y

J72088D
19CZ-6Y

CT4
J562D

12CZ-6Y
J7161L

J7072L
07CZ-6Y

MT86 MT87

J720LH
CZH-19
J720L
19CZ-6Y

J562LH
CTH4
J562L
CT4

FT18 FT19 FT20 FT21

J2002 J2003 J2004 J2005
XR3   XR3   XR3   XR3

J1028
03XR-8Y-P
J1028DH

J7204
03XR-6Y-P

J1010D
03XR-6Y-P
J1010DH

XR3

J7201D
08CZ-6Y
J7201DH
CZH-8

MSW5
fixing feeding
unit open/closed
detection switch 1

MSW6
fixing feeding
unit open/closed
detection switch 2

J705
04XR-6Y-P
J705H
CTH-4

CTH-3P
J1028L
CT-3P

J7202DH
CTH-2P
J7202D
J7202L
XR-2

J7203D
J7203LH
J7203L
04XR-6Y-P

CTH-3
CT-3P

J7201L
08CZ-6Y

J1008D
03XR-6Y-P

PS13
delivery vertical
path cover
open/closed
sensor

PS6
face-down
delivery
sensor 2

PS12
face-down
delivery
sensor 1

PS8
center
delivery tray
full sensors

M11
face-down
delivery
motor

FM8
delivery vertical
path cooling fan

PS50
Fixing feed unit
open / close
sensor

SL2
delivery path
switching
solenoid 1

FM4
cleaner fan

PS5
fixing feeder unit
open/closed Sensor

J7231
XR3

J7241
XR3

J1008DH
CTH-3
J1008L
CT-3P

J72031
03XR-6Y-P

PCB12
Waste toner
detection PCB
(lightemitting)

PCB13
Waste toner
detection PCB
(lightreceiving)

FM11
ITB power
supply cooling fan.

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PCB3
relay PCB

J712 12CZ-6Y
EXHAUST_FAN_ON
EXHAUST_FAN_ERR
GND
DELIVERY_FAN_ON
DELIVERY_FAN_ERR
GND
FUSER1_FAN_ON
FUSER1_FAN_ERR
GND

J1012D XR3
J1012DH CTH3
CT3
J1012L

FM3
machine heat
discharge fan

J1014D XR3
J1014DH CTH3
CT3
J1014L

FM5
delivery
cooling fan

J1016D XR3
J1016DH CTH3
CT3
J1016L

FM2
fixing heat
discharge fan

CZW-16P
J710WH
J710A CZ-8P A8 B8 J710B CZ-8P
J710A_BUS[0:8]   J710B_BUS[0:8]

*PM_DEV_Y_B
PM_DEV_Y_B
*PM_DEV_Y_A
PM_DEV_Y_A
*PM_DEV_M_B
PM_DEV_M_B
*PM_DEV_M_A
PM_DEV_M_A
*PM_DEV_C_B
PM_DEV_C_B
*PM_DEV_C_A
PM_DEV_C_A
*PM_DEV_K_B
PM_DEV_K_B
*PM_DEV_K_A
PM_DEV_K_A

J7000DA_BUS[0:8]   J7000DB_BUS[0:8]
J7000DA CZ-8P   J7000DB CZ-8P
J7000DWH   J7000DH
CTWH-16P A8 B8 CZH-16
J7000LWH   J7000LB CZ-8P
J7000LA CZ-8P A8 B8
J7000A_SUB[0:8]   J700LB_SUB[0:8]

J650 XR4
J650H CTH4
J651 XR4
J651H CTH4
J652 XR4
J652H CTH4
J653 XR4
J653H CTH4

M12
developing
motor (Y)

M13
developing
motor (M)

M14
developing
motor (C)

M15
developing
motor (Bk)

transfer drive unit

J714 09CZ-6Y
PCRG-A-Y
PCRG-B-Y
PCRG-A-M
PCRG-B-M
PCRG-A-C
PCRG-B-C
PCRG-A-K
PCRG-B-Bk

J301D XR-2P
J301DH
CT-2P
J301L

J302D XR-2P
J302DH
CT-2P
J302L

J303D XR-2P
J303DH
CT-2P
J303L

J304D XR-2P
J304DH
CT-2P
J304L

J3091 CT-2
PCRG-MEMORY
Y

J310 CT-2
PCRG-MEMORY
M

J311 CT-2
PCRG-MEMORY
C

J312 CT-2
PCRG-MEMORY
K

M15
process cartridge
memory (Y)

M15
process cartridge
memory (M)

M15
process cartridge
memory (C)

M15
process cartridge
memory (Bk)

J715 06CZ-6Y
VPASS-OUT-FAN-ERR
VPASS-OUT-FAN-GND
VPASS-OUT-FAN-ON

J1022D 03XR-6Y-P
J1022DH CTH-3P
CT-3P
J1022L

FM13
vertical path
delivery exhaust
fan

J718 06CZ-6Y

PCB3
relay PCB

J7181D XR6
J7181DH CTH6
J7181L XR6

J7182D XR6
J7182LH CTH6
J7182L XR6

J7183D XR3
J7183DH CTH3
J7183L CT-3P

J7184D XR3
J7184DH CTH3
J7184L CT-3P

MAKER   MAKER

FM14
Delivery
cooling fan 1

FM15
Delivery
cooling fan 2

DBF-13760-01-A506 (6/12)

F-2-7

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F-2-8

DBF-13760-01-A507 (7/12)

F-2-9

DBF-13760-01-A508   (8/12)

F-2-10

DBF-13760-01-A509   (9/12)

F-2-11

DBF-13760-01-A510   (10/12)

F-2-12

DBF-13760-01-A511   (11/12)

F-2-13

DBF-13760-31-A5.14 (12/12)

F-2-14

DEF13760-21-A501   (1/2)

F-2-15

DEF13760-21-A501

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