

# imageRUNNER 5570/6570

# SERVICE MANUAL



# Canon

## DU7-1143-000

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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.

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## Caution










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

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## Symbols Used



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This documentation uses the following symbols to indicate special information:

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

The following rules apply throughout this Service Manual:

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

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

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

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

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

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

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



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# Chapter 1

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## Introduction

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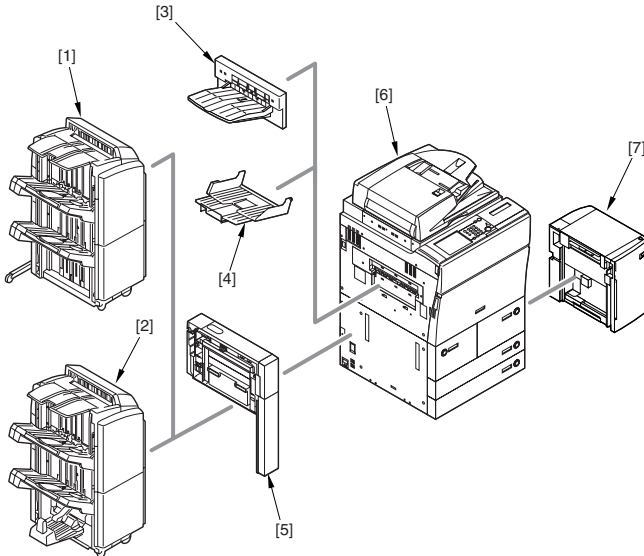
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## 1.1 System Construction

### 1.1.1 System Configuration with Input/Output Accessories

The following shows a typical system configuration:



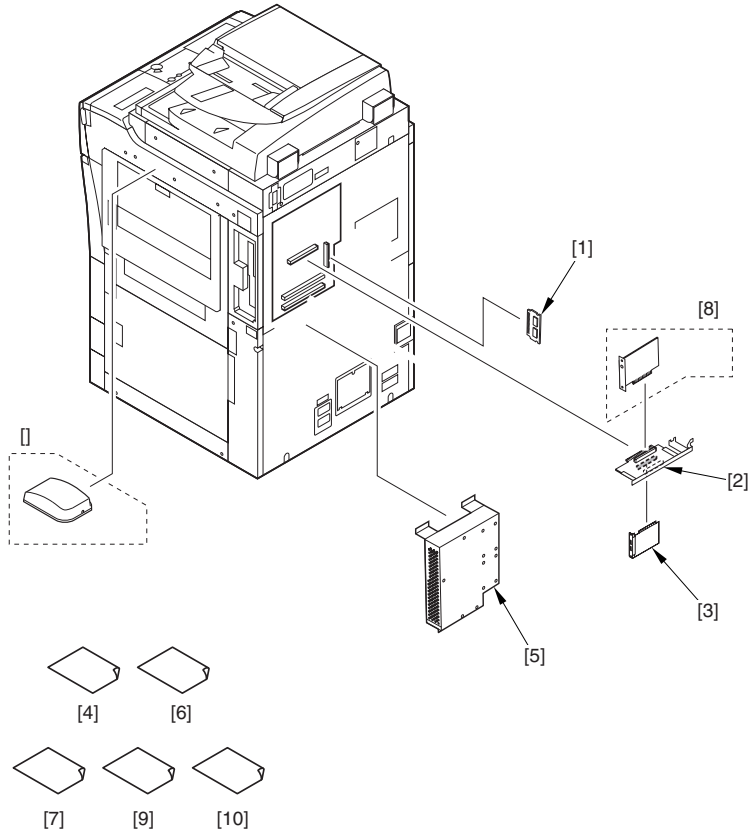
F-1-1

T-1-1

- [1] Finisher-T1
- [2] Saddle Finisher-T2
- [3] Shift Tray-D1
- [4] Copy Tray-L1
- [5] Puncher Unit-L1/M1/N1/P1
- [6] DADF-M1 (standard)
- [7] Paper Deck-V1

## 1.1.2 System Configuration with Printing/Transmission Accessories (120V)

The following shows a typical system configuration:



F-1-2

- [1] Multi PDL Printer Kit-G1 (BootROM)
- [2] Expansion Bus-C1
- [3] USB Application Interface Board-D1
- [4] iR Security Kit-A2 (license certificate)
- [5] Super G3 Fax Board-R1

- [6] Universal Send Kit-D1 (license certificate)
- [7] Universal Send PDF Enhancement Kit-B1 (license certificate)
- [8] Voice Guidance Kit-A1
- [9] Web Access Software-A1 (license certificate)
- [10] Remote Operators Software Kit-A1 (license certificate)

### 1.1.3 Functions and Printing/Transmission Accessories (120V)

The following shows the accessories needed for individual functions:

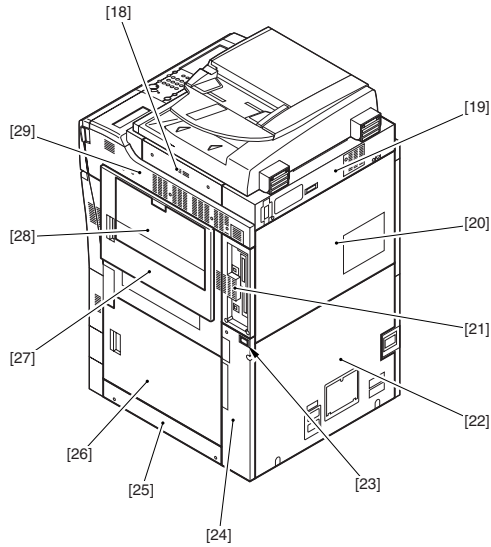
#### T-1-2

UFR II/PCL/PS printing + PDF/Tiff direct printing	==>	Multi PDL Printer Kit-G1
transmission	==>	Universal Send Kit-D1
faxing (1-line)	==>	Super G3 Fax Board-R1
MEAP application USB connection	==>	USB Application Interface Board-D1 Expansion Bus-C1
security function(HDD formatting + encryption)	==>	USB Application Interface Board-D1 Expansion Bus-C1 iR Security Kit-A2
encryption PDF function + searchable PDF function	==>	Universal Send Kit-D1 Universal Send PDF Enhancement
voice guidance	==>	Voice Guidance Kit-B1 Expansion Bus-C1
remote operation	==>	Remote Operators Software Kit-A1
Web browsing	==>	Web Access Software-A1





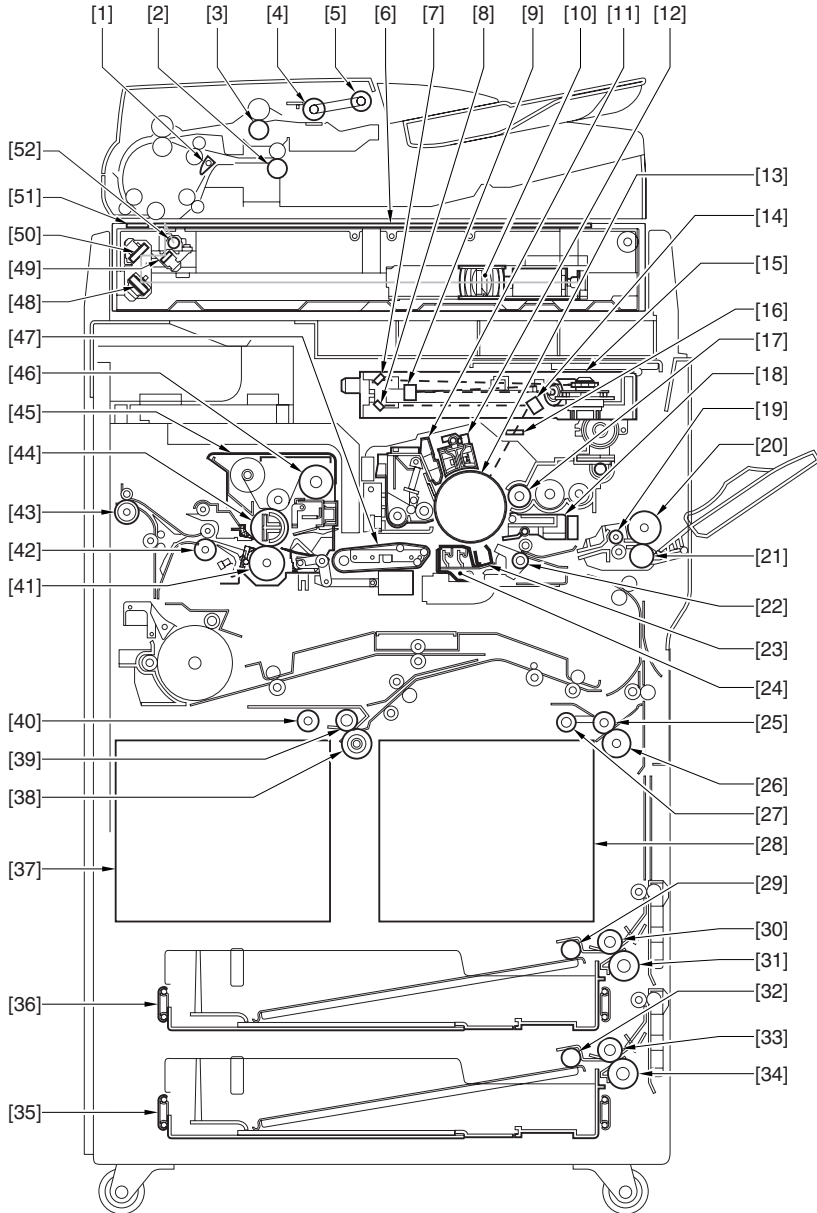
- [12] Leakage breaker
- [13] Left cover (middle)
- [14] Delivery cover
- [15] Left cover (upper)
- [16] Reader left cover
- [17] Reader front cover



F-1-4

- [18] Reader right cover
- [19] Reader rear cover
- [20] Read cover (upper)
- [21] Right cover (upper rear)
- [22] Rear cover (lower)
- [23] Main power switch
- [24] Right cover (lower rear)
- [25] Right cover (lower)
- [26] Right door unit (lower)
- [27] Right door unit (upper)
- [28] Manual feed pickup tray
- [29] Right cover (upper)

1.2.1.2 Cross-Section



## F-1-5

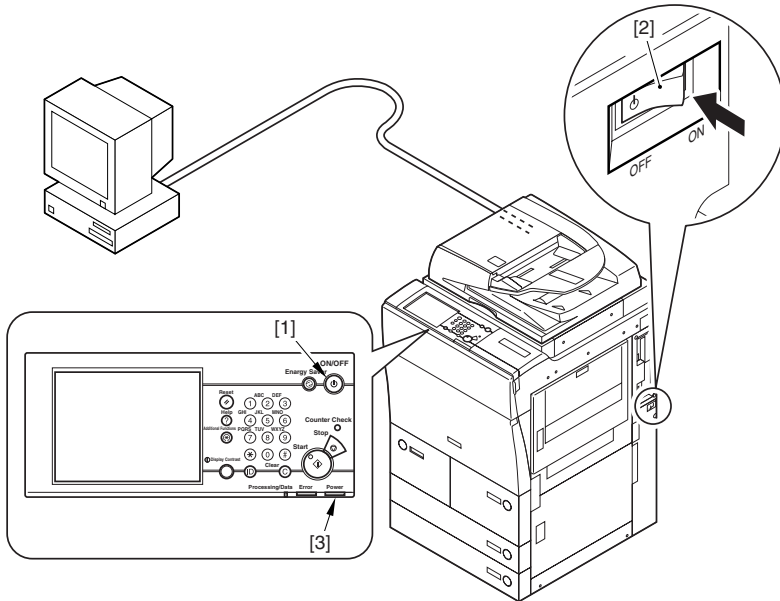
- [1] Delivery reversing flapper
- [2] Delivery reversing lower roller
- [3] No. 1 registration lower roller
- [4] Separation roller
- [5] Pickup roller
- [6] Copyboard glass
- [7] Laser mirror 2
- [8] Laser mirror 3
- [9] Laser mirror 1
- [10] CCD unit
- [11] Drum cleaner assembly
- [12] Primary charging assembly
- [13] Photosensitive drum
- [14] Laser mirror 4
- [15] Laser unit
- [16] Dust-proofing glass
- [17] Developing cylinder
- [18] Pre-transfer charging assembly
- [19] Manual feed pull-out roller
- [20] Manual feed feed roller
- [21] Manual feed separation roller
- [22] Registration roller
- [23] Transfer charging assembly
- [24] Separation charging assembly
- [25] Right deck feed roller
- [26] Right deck separation roller
- [27] Right deck pickup roller
- [28] Right deck
- [29] Cassette 3 pickup roller
- [30] Cassette 3 feed roller
- [31] Cassette 3 separation roller
- [32] Cassette 4 pickup roller
- [33] Cassette 4 feed roller
- [34] Cassette 4 separation roller

- [35] Cassette 4
- [36] Cassette 3
- [37] Left deck
- [38] Left deck separation roller
- [39] Left deck feed roller
- [40] Left deck pickup roller
- [41] Fixing lower roller
- [42] Internal delivery roller
- [43] External delivery roller
- [44] Fixing upper roller
- [45] Fixing assembly
- [46] Fixing web
- [47] Feeding assembly
- [48] No.3 mirror
- [49] No.1 mirror
- [50] No.2 mirror
- [51] ADF reading glass
- [52] Scanning lamp

## 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. Normally, i.e., other than sleep state, the machine starts up when the main power switch is turned on.



F-1-6

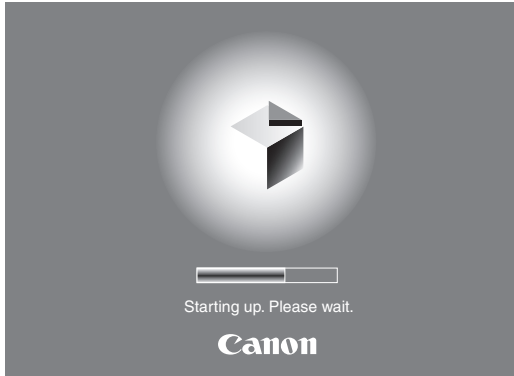
[1] Control panel power switch

[2] Main power switch

[3] Main power lamp



Never turn off the main power switch while the progress bar is shown, indicating that the machine HDD is being accessed. Otherwise, the HDD can develop a fault (E602).



F-1-7

### 1.2.2.2 Turning Off the Power Switch

Be sure to go through the shut-down sequence whenever turning off the main power switch.

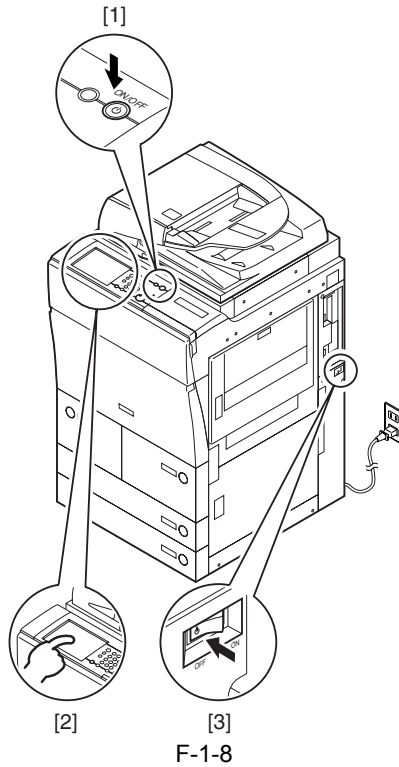
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#### How to Turn Off the Main Power Switch

To turn off the main power switch, be sure to go through the following steps to prevent damage to the machine's hard disk:

1. Hold down the control panel power switch for 3 sec or more.
2. Go through the down-sequence instructions indicated on the touch panel so that the main power switch may be turned off.
3. Turn off the main power switch.



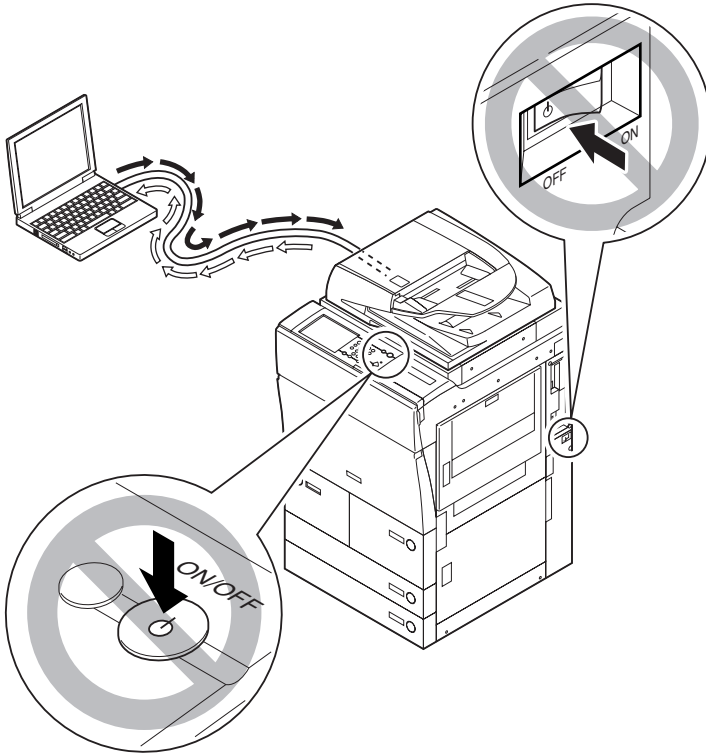
F-1-8



### While Downloading Is Under Way

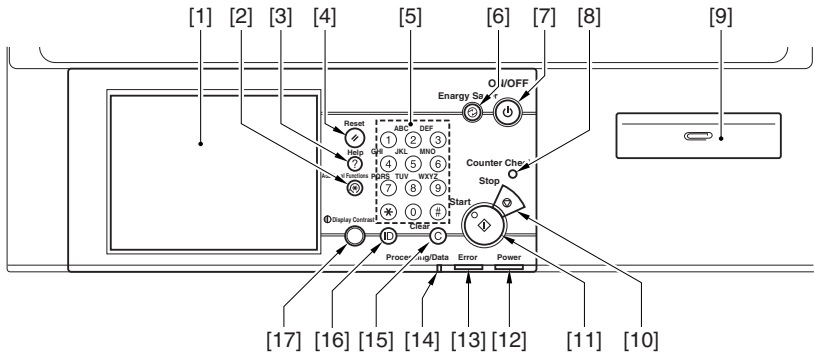
Never turn off the main power switch/control panel power switch while downloading is under way. (If the main power switch is turned off while downloading is under way, the machine can fail to operate.)





F-1-9

## 1.2.2.3 Control Panel



F-1-10

- [1] Control panel LCD (touch panel)
- [2] User Mode key
- [3] Guide key
- [4] Release key
- [5] Keypad
- [6] Power Save key
- [7] Control panel power switch
- [8] Counter key
- [9] Clip recess
- [10] Stop key
- [11] Start key
- [12] Main power lamp
- [13] Error lamp
- [14] Execute/Memory lamp
- [15] Clear key
- [16] ID key
- [17] Display contrast dial

## 1.2.3 User Mode Items

### 1.2.3.1 Common Settings

\*Factory settings.

\*\*Indicated when the appropriate accessory is installed.

#### T-1-3

Mode	Description
initial function	select initial function: *copier/transmit/box/MEAP use 'system status screen' as initial screen: ON/*OFF give priority to 'device' of 'system status screen': *ON/OFF
post-auto clear function	*use previous/do not use previous
set function order	copy/transmit/box/remote scan (in addition, functions on tabs); change order by up/down key function group order setup: group A, MEAP, group B
enable/disable buzzer	input sound: *ON/OFF input invalid sound: ON/*OFF replenish alert sound: ON/*OFF alert sound: *ON/OFF job end sound: *ON/OFF
indicate power level message	*ON/OFF
inch input	ON/*OFF (if US, *ON)
enable/disable cassette auto select	copier/printer/box/other (manual feed: ON/*OFF + individual cassette: *ON/OFF) (manual feed not possible for printer) consider copy/power type: ON/*OFF (toggle)
register paper type	right cassette deck/left cassette deck: plain paper/colored paper/recycled paper/heavy paper/bond paper (outside Japan)/letterhead (plain paper; outside Japan)/letterhead (heavy paper; outside Japan)/punched paper (outside Japan) cassettes 3/cassette 4: plain paper/colored paper/recycled paper/bond paper (outside Japan)/letterhead (plain paper; outside Japan)/letterhead (heavy paper; outside Japan)/punched paper (outside Japan)/index sheet

Mode	Description
	cassette 5 (paper deck): plain paper/colored paper/recycled paper/heavy paper/bond paper (outside Japan)/letterhead (heavy paper; outside Japan)/punched paper (outside Japan)
change power save mode	*-10%, -25%, -50%, no recovery interval
set power consumption level in sleep state	*low/high
set delivery tray** (w/ finisher)	- Finisher-T1/Saddle Finisher-T2  tray A: copier, box, printer, reception/fax*, other* tray B: copier*, box*, printer*, reception/fax, other tray C: copier*, box*, printer*, reception/fax, other  tray basic position: tray B*/tray C/not selected  detail setup: tray A: reception*/fax* tray B: reception/fax tray c: reception/fax
set printing priority	copier: *1/2/3  printer: 1/*2/3  box: 1/2/*3  reception/fax: 1/2/*3  other: 1/2/*3
register image for image merge	register: original size/full merge, see-through merge (20, *50, 99%) form name (24 characters max.) form read delete  check coy: cassette select, print sort  detail info: display detail info, change form name
register character string for print/ stamp	register/edit: change character string (16 character max.)  delete
register manual feed paper standard mode	ON (select paper size/select paper type)/*OFF

Mode	Description
select standard mode for local print	select paper type: *auto paper select/paper source select number of prints: *1 to 9999 sorter: sort/group/staple sort/*shift sort/shift group/rotation sort/rotation group/punch hole/z-fold duplex print: ON (open like book/open like calendar) OFF delete file after printing: merge file:
switch language	ON/*OFF
reverse screen color	ON/*OFF
between-job shift**	*ON/OFF
between-job interleaf**	ON (paper source select) *OFF
between-set interleaf	ON (setting range between *10 and 9999; paper source select) *OFF
right wait time indication	copier/box/other (for each, ON/*OFF)
output tray paper mix**	*ON/OFF
original reading area cleaning prompt	*ON/OFF
function limit mode	ON/*OFF
shut-down mode	execute key
reset common settings	Do you really want to reset?: yes/no

### 1.2.3.2 Timer Settings

\*Factory default.

#### T-1-4

Mode	Description
time fine-adjust	by +/- in 1-min increments
auto sleep time	10, 15, 20, 30, 40, 50 min; *1 hr; 90 min; 2, 3,4 hr
auto clear time	0=none, 1, ..., *2, ..., 9 min (in 1-min increments)
silent mode shift time	0=none, 1*, ..., 9 min (1-min increments)
set weekly timer	everyday from Sun to Sat (00:00 to 23:59; in 1-min increments)

### 1.2.3.3 Adjustment/Cleaning

\*Factory default.

\*\*Indicated when the appropriate accessory is installed.

#### T-1-5

Mode	Description
zoom fine-adjust	XY, independent: -1.0% to +1.0% (in 0.1%-increments), *0%
center bind staple edging** (w/ saddle finisher)	start key
change middle bind position** (w/ saddle finisher)	size: A3, 11x17/B4/A4R, LTR, LGL position: -2.0 mm to +2.0 mm (in -0.25-mm increments), *0 mm
correct density	copier/box, transmit; 9 steps each (at time of shipment, set to '5')
adjust page print/set print/stamp	X: -8 mm to +8 mm (in 1-mm increments), *0 mm Y: -8 mm to +8 mm (in 1-mm increments), *0 mm
clean wire	start key

### 1.2.3.4 Report Output

\*Factory default.

\*\*Indicated when the appropriate accessory is installed.

#### T-1-6

Mode	Description
transmit (specifications setup)**	transmission result report: *only if error/ON/OFF  indicate transmission original: *ON/OFF transmission control report print every 100 communications: *ON/OFF print at specific time: *ON/OFF time settings: *00:00 to 23:59 separate transmission/reception: (toggle) ON/*OFF

Mode	Description
fax (specifications setup)**	fax transmission result report: *only if error/ON/OFF indicate transmission original: *ON/OFF fax communications control report print automatically every 40 communications: *ON/OFF print at specific time: ON/*OFF time setting: *00:00 to 23:59 separate transmission/reception: (toggle) ON/*OFF fax reception results report: *only if error/ON/*OFF fax box reception report: *ON/OFF
print list (transmission)**	address book list: print list user data request: Do you want to print the user data list?: yes/no
print list (fax)**	user data list: Do you want to print the user data list?: yes/no

### 1.2.3.5 System Control Settings

\*Factory default.

\*\*Indicated when the appropriate accessory is installed.

#### T-1-7

Mode	Description
set system administrator information	system control group ID: 7 characters max. system control ID: set (7 characters) system administrator name: 32 bytes mail address: 64 bytes contact: 32 bytes comment: 32 bytes
group ID controller	group ID control: ON/*OFF ID No. register: register, edit, delete, function control count control: clear, count print, all clear

Mode	Description
	print job w/ unknown ID: *ON/OFF
	scan job w/ unknown job: *ON/OFF
communication	e-mail/**i-fax setup
control setup	transmission data size upper limit: 0=none, 1 to 99 MB; *3 MB
	abbreviation: 40 characters or 20 2-byte characters; *attached images
	transmission time-out in full state: 1 to 99 hr, *24 hr
	print for MDN/DSN reception: ON/*OFF
	always notify if reception error: *ON/OFF
	relay through server: ON/*OFF
	fax setup**
	transmission start speed: *33600bps, 14400bps, 9600bps, 7200bps, 4800bps, 2400bps
	reception start speed: 33600bps*, 14400bps, 9600bps, 7200bps, 4800bps, 2400bps
	reception password: 20 characters max.
	FIS switch: ON/*OFF
	system box setup
	system box ID No.**: 7 characters
	use fax memory reception**: ON/*OFF
	use i-fax memory reception**: ON/*OFF
	memory reception start time**: by day, by day of week, *no specification
	memory reception end time**: by day, by day of week, *no specification
enable/disable	*ON/OFF
remote UI	use SSL: ON/*OFF
limit target**	address book ID No.: 7 characters max.
	address book access No. control: ON/*OFF
	new target limit: ON/*OFF
device information	device name: 32 characters, or 16 2-byte characters
setup	installation site: 32 characters, or 16 2-byte characters
transfer setup**	reception method, enable/disable condition, registration, unconditional transfer registration, e-mail priority, detail/edit, delete, list print
delete bulletin	delete



Mode	Description
auto on-line/off-line shift**	auto on-line shift: ON/*OFF auto off-line shift: ON/*OFF date/time setup: set (12 numeric characters) time zone: GMT -12:00 to GMT +12:00 (GMT +*9:00) daylight saving time: ON/*OFF
adjust date/time	set (12 characters) time zone: GMT -12:00 to GMT +12:00 (GMT +*9:00) daylight saving time: ON, *OFF
register LDAP server**	register, detail/edit, delete, list print
register license	24 characters
set print expansion	ON/*OFF group ID: ON/*OFF date: ON/*OFF text: ON/*OFF
MEAP setup	use HTTP: *ON/OFF use SSL: ON/OFF print system info: print
set machine information distribution	- register recipient: auto search/register, register, detail info, delete - auto distribution: every day, by day of week, *no specification user mode setting: ON/*OFF network setup: include, do not include group ID: ON/*OFF address book: ON/*OFF - manual distribution setup: user mode settings: ON/*OFF network setup: include, do not include group ID: ON/*OFF address book: ON/*OFF - limit reception according to original ON/*OFF

Mode	Description
	- recover data: user mode settings, group ID, address book
	- time reception according to machine: user mode settings; ON/*OFF group ID: ON/*OFF address book: ON/*OFF
	- distribution/reception history: detail info, list print

### 1.2.3.6 Copier Specifications

\*Factory default.

\*\*Indicated when the appropriate accessory is installed.

#### T-1-8

Mode	Description
screen display setup	simple only/sample + quick*/quick only priority indication of single screen: ON*/OFF
quick screen paper select key setup	large* (manual feed/manual feed paper change reservation/(paper source) 1*/(paper source) 2*/(paper source) 3*/(paper source) 4*/(paper source) 5/ small
single screen preference key 1 setup	*no setting, individual modes
simple scan preference key 2 setup	*no setting, individual modes
quick screen preference key setup	number of preference keys indicated: 5*/10 setup: set location -> set individual keys *no setting, individual modes
auto sort**	*ON/OFF
priority on screen orientation	ON/OFF*
auto vertical/horizontal rotation	*ON/OFF
print photo mode	ON/*OFF
change standard mode	register/reset (factory shipment: 1 set, auto paper select, auto density, auto image quality; printer: local)

Mode	Description
register remote copy printer	priority/register (7 units max.)/detail info/delete  register IP address: 0.0.0.0*
remote copy transmission time-out	10* (5 to 30) sec
reset copier specifications	Do you want to reset? yes/no (auto sort: ON/face-up delivery: ON/preference key setup: no)

### 1.2.3.7 Transmission/Reception Settings

\*Factory default.

\*\*Indicated when the appropriate accessory is installed.

#### T-1-9

Mode	Description
set common	register source name**: 01 to 99; register/edit (24 characters max.); delete
transmission settings	register user abbreviation**: 24 characters max.  permit use of non-ASCII code for FTP transmission**: (ON/*OFF)  error file clear**: (*ON/OFF)  error transfer file handling**: always print/save/print/*off  print photo mode**: (ON/*OFF)  number of retries**: (*3 times; 0 to 5 times)  change transmission function standard mode**  read mode: black-and-white machine default *black at 200 dpi/black at 300 dpi/black at 600 dpi/black at 400 dpi (Note: if fax only, black at 200x100*/black at 200x200/black at 200x400/black at 400x400)  file type: *TIFF/PDF/PDF(OCR)  divide by page: (toggle) ON/*OFF  register routine task button**: (M1 through M9; register/edit, delete)  register: Do you want to register the settings? yes/no  name: 10 characters x 2 lines max.  PDF (OCR setup)**

Mode	Description
	original orientation auto detection: (*ON/OFF)
	limit number of characters in file name (OCR): (1 to *24)
	transmission screen initial display**: routine task button/one-touch button/*new address
	transmission source record**: *keep/do not keep
	indication location: inside image/*outside image
	target abbreviation indication: (*ON/OFF)
	telephone number marking: *FAX/TEL
	communication mode: G3 and G4/*G3 only
	reset transmission settings: Do you want to reset? yes/no
common reception	duplex record (ON/*OFF)
setup**	cassette select
	switch A: (*ON/OFF)
	switch B: (*ON/OFF)
	switch C: (*ON/OFF)
	switch D: (*ON/OFF)
	image reduction
	image reception: (*ON/OFF)
	reduction mode: *auto/fixd
	fixed mode reduction rate: E210 up: 75% to 97% (in 1% increments), *90%
	reduction direction: vertical/horizontal, *vertical only
	2-on-1 record (ON/*OFF)
	reception info record: keep/*do not keep
fax basic registration	register user telephone number**
setup	telephone number: 20 characters max.
	dial-in service (Japan): ON (global incoming all: ON/*OFF), OFF
	sub address: 19 characters max.
	sub address incoming ring: ON/*OFF
	source telephone number notice: ON/OFF/*abbreviation
	select line type**: 120V, 220V: *push (tone)/dial (pulse) 10 PPS 100V: *20 pps/10 pps/push
	volume adjust

Mode	Description
	alarm volume: 0 to 8 (84) communication volume: 0 to 8 (*4) off-hook alarm: (*ON/OFF)
fax transmission	ECM transmission (*ON/OFF)
function setup**	set pause length: (*1 to 15 sec)/4 to 11 sec/3 to 6 sec auto redial: (*ON/OFF) number of redial sessions: 100V: 1-15(*2), 120V: 1-10(*2), 230V: 1-10(*2) interval of redial session (min): 2 to 99 (*2) redial at transmission error: 1st and error pages/all pages/off pre-transmission dial tone check: (*ON/OFF)
fax reception function setup**	ECM reception: (*ON/OFF) select reception mode fax/tel switchover: at ring start: 0 to 30 sec (*8), ring length: 15 to 300 sec (*17), post-ring operation: end/*receive, voice answer: ON/*OFF auto reception modem dial-in fax/tel switchover ring sound: ON (number of rings: 0 to n)/*OFF remote reception: ON (remote reception ID: 00 to 99, 25)/*OFF auto reception switchover: ON (length of ring: 1 to n sec)/*OFF
fax addition line setup	register user telephone number: 20 characters max. register user abbreviation: 24 characters max. select type of line: *20 pps/10 pps/push select transmission line: line 1: *priority on transmission/do not permit transmission line 2: priority on transmission/do not permit transmission

### 1.2.3.8 Box Settings

\*Factory settings.

\*\*Indicated when the appropriate accessory is installed.

#### T-1-10

Mode	Description
set/register user box	select box: 0-99 register box name: 24 characters max. ID No.: 0-9999999 file auto delete: 0=none, 1, 2, 3, 6, 12 hr; 1, 2, *3, 7, 30 days URL transmission setup: select e-mail address reset
print photo mode	(ON/*OFF)
read setup standard mode	register/reset
set/register fax box**	select box: 0-49 register box name: 24 characters max. ID No.: 0-9999999 set URL transmission: select e-mail address reset

### 1.2.3.9 Printer Settings

\*Factory settings.

\*\*Indicated in the presence of a specific accessory.

#### T-1-11

Mode	Description
settings	number of copies: 1 to 9999 (*1) duplex: duplex/*simplex pickup default paper size: *A4 (additional 10 possible) default paper type: plain (additional 7 possible) paper size replacement: replace/*do not replace

Mode	Description
	adjust print
	super smooth: *use/do not use
	**toner density: 1 to 9 (*5)
	toner save: enable/*disable
	thin line correction: enable/*disable
	layout
	bind position: *long side/short side
	bind margin: -50to+50mm (*0.0)
	horizontal correction/vertical correction: -50to+50mm (*0.0)
	auto error skip**: skip/*do not skip
	secure print delete time length: *1, 2, 3, 6, 12, 24 hr
	timeout: 5 to 300 (*15 sec)/disable
	RIP: yes/*no
	sorter**: *do not use/sort/rotation sort/rotation group/shift sort/shift group/ staple sort
	punch**: *disable/top/bottom/left/right
	booklet print**: *disable/open to left/open to right
	middle bind**: enable/*disable
	transparency interleaf: *disable/white sheet/printed sheet
	print in sets
	print in sets: enable/*disable
	print position: *5 locations/upper left/lower left/upper right/lower right
	print start character: 1 to 9999 (*1)
	print size: small at 12-point/medium at 24-point/large at 36-point
	density: 1 to 5 (*3)
	Delivery side specification: *facedown/faceup
	printer operating mode: *auto (additional 6 settings possible)
	priority emulation** (*none/5 additional settings possible)
	auto switchover**

Mode	Description
	LIPS: *enable/disable
	N201: *enable/disable
	ESC-P: *enable/disable
	15577: *enable/disable
	HP-GL: *enable/disable
	connection recognition: *enable/disable
	printer settings rest: yes/no

### 1.2.3.10 Address Book Settings

\*Factory default.

#### T-1-12

Mode	Description
fax (register address)	<p>register name: Japanese (2-byte zone only); 24 characters</p> <p>telephone number: 120 characters max. (+ pause, tone, &lt;, &gt;, back space, space ISDN sub address, F net, DT, R, PIN, detail setup)</p> <p>detail setup</p> <p>F code: 20 characters max.</p> <p>password: 20 characters max.</p> <p>ECM transmission: *ON/OFF</p> <p>transmission speed: 33600bps*/14400bps/9600bps/4800bps</p> <p>line selection: line 1/line 2/*auto select</p> <p>international transmission: domestic*/international 1/international 2/international 3</p> <p>communication mode: G4, G3*/G3 only</p>
e-mail (register address)	<p>register name: 24 characters, or 12 2-byte characters</p> <p>register name: Japanese (2-byte zone only); 24 characters</p> <p>e-mail address: 128 characters</p>



Mode	Description
i-fax (register address)	register address: 24 characters, or 12 2-byte characters register name: Japanese (2-byte zone only), 24 characters mode select: *Simple/Full i-fax address: 128 characters relay through server: ON/*OFF fixed sentence 1: 40 characters fixed sentence 2: 16 characters detail setup paper size: A4/LTR+ B4, A3/11x17 compression method: MH+ MR/MMR resolution: 200x100dpi, 200x200dpi+200x400dpi/300x300dpi/400x400dpi/ 600x600dpi
file (register addresses)	register name: 24 characters, or 12 2-byte characters register name: Japanese (2-byte zone only), 24 characters protocol: *FTP/Windows (SMB)/Netware (IPX) host name: 128 characters path to folder: 12* characters user name: FTP, NetWare (IPX); 24 characters Windows (SMB); 15 characters password: FTP, NetWare (IPX); 24 characters Windows (SMB); 14 characters
group (register address)	register name: 24 characters, or 12 2-byte characters register name: Japanese (2-byte zone only), 24 characters address book: select from following already registered in address book: fax, e-mail, i-fax, remote file system, jet SEND, box, local printer save in box: select box: 00 to 99 delete

<b>Mode</b>	<b>Description</b>
search for address (server)	<p>simple search</p> <p>server to search: from pull-down from LDAP server already registered</p> <p>(search conditions):</p> <p>name: 128 characters, or 64 2-byte characters</p> <p>e-mail: 12* characters</p> <p>fax: 128 characters</p> <p>detail search</p> <p>server to search: from pull-down from LDAP server already registered</p> <p>(search conditions): *name/e-mail/fax/group/group unit under following: * includes next/does not include next/is identical to next/is not identical to next/start with next/ends with next</p> <p>name, group, group unit: 128 characters, or 64 2-byte characters</p> <p>e-main, fax: 128 characters</p> <p>(condition combination): *or/and</p> <p>search result</p> <p>register type: *all e-mail/fax</p> <p>register e-mail for i-fax: ON/*OFF (toggle)</p>
register name of address book	register name: 16 characters
register one-touch button	<p>register/edit address: register/edit, delete</p> <p>one-touch name: 12 characters max.</p>

### 1.2.3.11 Voice Guide Settings

\*Factory default.

#### T-1-13

<b>Mode</b>	<b>Description</b>
voice guide reading volume/ speed	<p>volume: 1 to 5* to 9</p> <p>speed: (slow) -5 to 0* to +5 (fast)</p>
voice type	male/female*
speaker/headphone switch	speaker*/headphone

Mode	Description
auto clear in voice guide	ON/OFF*
initialize voice guide settings	Is it OK to initialize? yes/no

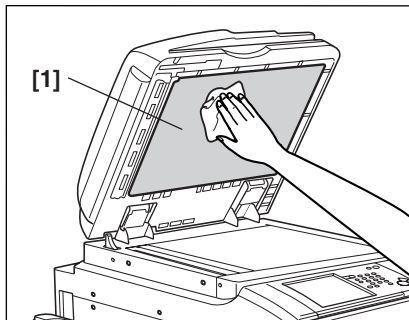
## 1.2.4 Maintenance by the User

### 1.2.4.1 Cleaning

The machine requires cleaning by the user from time to time. Advise the user to perform the following work on a periodical basis (e.g., at least once a month):

#### 1. Platen Board

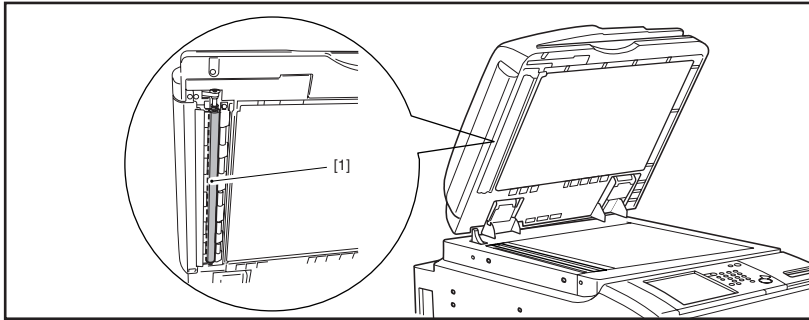
Clean the platen board cover [1] with a cloth moistened with water or solution of mild detergent (well-wrung); then, dry wipe it with a soft, dry cloth.



F-1-11

#### 2. Platen Roller

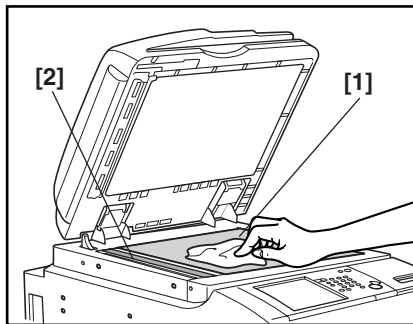
Clean the platen roller [1] with a cloth moistened with water or solution of mild detergent (well-wrung); then, dry wipe it with a dry, soft cloth.



F-1-12

### 3. Platen Board Glass/ADF Reading Glass

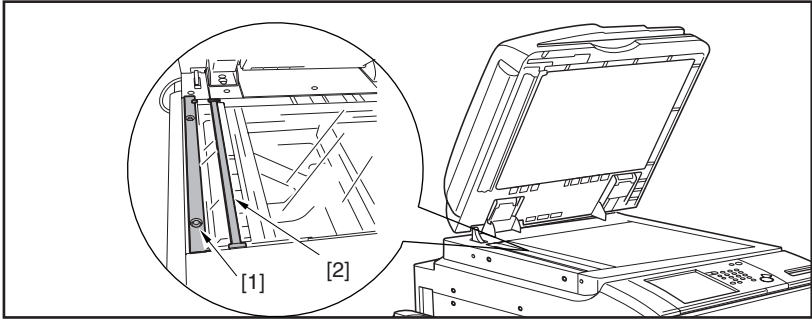
Wipe the platen board glass [1] and the ADF reading glass [2] with a cloth moistened with water or solution of mild detergent; then, dry wipe them with a dry, soft cloth.



F-1-13

### 4. ADF Glass Retainer/Paper Guide Base

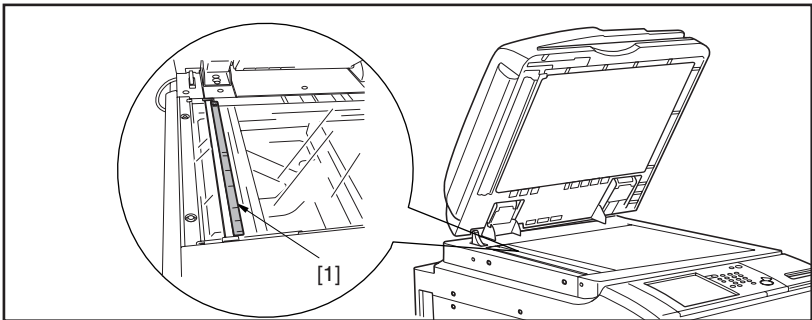
Wipe the ADF glass retainer [1] and the paper guide base [2] with a cloth moistened with water or solution of mild detergent; then, dry wipe them with a dry, soft cloth.



F-1-14

### 5. Vertical Size Plate

Wipe the vertical size plate [1] with a cloth moistened with waste or solution of mild detergent; then, dry wipe them with a dry, soft cloth.



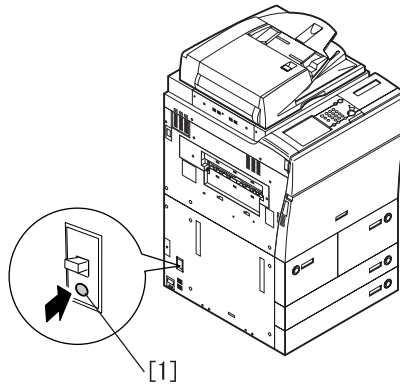
F-1-15

### 1.2.4.2 Checks

The machine is equipped with a breaker used to check for over-current and leakage current, requiring the user to check the operation of the breaker on a periodical basis (e.g., at least once a month). Also, ask the user to keep a record of checks made.

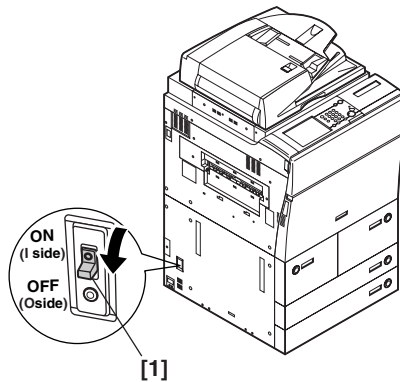
How to Check the Breaker.

- 1) Turn on the main power switch.
- 2) Press the test button [1] of the breaker using the tip of a ball-point pen or the like.



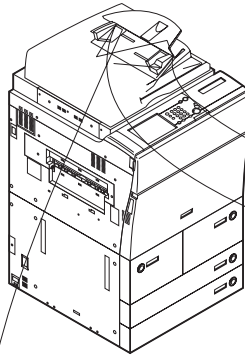
F-1-16

- 3) Check to see that the breaker switch [1] has shifted to the OFF position, 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 position.



F-1-18

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Advise the user that the breaker switch is fully to the ON position. If it is found between ON and OFF positions, it must first be shifted to the OFF position and then to ON.

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6) Turn off the main power switch.

## 1.2.5 Safety

### 1.2.5.1 Safety of the Machine's Laser Unit

Often, laser light can prove to be harmful to the human body. The machine's laser scanner unit is shielded in a protective housing and by external covers so that its light will not escape outside the machine as long as the machine is used in normal operating conditions.

### 1.2.5.2 CDRH Regulations

The Center for Devices and Radiological Health of the US Food and Drug Administration put into forth regulations intended for laser products. Under the regulations, laser products that are produced on and after August 1, 1976, may not be sold within the US unless they are appropriately certified. The following is a label issued to certify compliance with the regulations and must be found on all laser products sold in the US.

**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

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The text of the label may differ from model to model.

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### 1.2.5.3 Handling the Machine's Laser Unit

Be sure to observe the following whenever you are planning to service the areas around the machine's laser unit:

- Do not put a screwdriver or the like that has a high rate of reflection into the laser path.
- Remove watches and rings before starting the work to avoid reflection of laser light to the eye.

The machine's laser light is red, and its covers that may reflect laser light are identified by a warning label shown below. If you must detach a cover in the field to service the machine, be sure to exercise extra care. (Keep in mind that the machine's laser unit cannot be adjusted in the field.)



**DANGER**      ■ Laser radiation when open. Avoid direct eye exposure.  
**CAUTION**     ■ Class II laser product when operating.  
**ATTENTION**   ■ Attention: Laser is Class II laser.  
**VORSICHT**    ■ Laserstrahlung Klasse II. Klasse II Laser-Produkt.  
**PRECAUCION** ■ Precaution: Laser is Class II laser.  
**WARNING**    ■ Class II laser radiation when open.  
**WARNUNG**    ■ Laserstrahlung Klasse II. Klasse II Laser-Produkt.  
 注意          ■ 注意：激光辐射。避免直视激光。  
 警告          ■ 警告：激光辐射。避免直视激光。  
 警告          ■ 警告：激光辐射。避免直视激光。  
 注意          ■ 注意：激光辐射。避免直视激光。

**DANGER**      ■ Laser radiation when open. Avoid direct eye exposure.  
**CAUTION**     ■ Class II laser product when operating.  
**ATTENTION**   ■ Attention: Laser is Class II laser.  
**VORSICHT**    ■ Laserstrahlung Klasse II. Klasse II Laser-Produkt.  
**PRECAUCION** ■ Precaution: Laser is Class II laser.  
**WARNING**    ■ Class II laser radiation when open.  
**WARNUNG**    ■ Laserstrahlung Klasse II. Klasse II Laser-Produkt.  
 注意          ■ 注意：激光辐射。避免直视激光。  
 警告          ■ 警告：激光辐射。避免直视激光。  
 警告          ■ 警告：激光辐射。避免直视激光。  
 注意          ■ 注意：激光辐射。避免直视激光。

ety of

The machine's toner  
of storings.

If your skin or clothes  
using dry paper tissue  
toner will jell and fu  
into contact with vin



Do not throw toner into fire. An explosion can occur.

## 1.2.6 Product Specifications

### 1.2.6.1 Product Specifications

<b>Copyboard</b>	stream reading, fixed reading
<b>Body</b>	console
<b>Light source type</b>	xenon lamp (yellow green)
<b>Lens type</b>	fixed focus
<b>Photosensitive medium</b>	A-Si drum (80-mm dia.)
<b>Image reading method</b>	light-receiving element (1 line CCD)
<b>Reproduction method</b>	indirect electrostatic
<b>Exposure method</b>	laser light
<b>Copy density adjustment function</b>	auto or manual
<b>Charging method</b>	corona
<b>Development method</b>	dry, 1-component toner projection
<b>Transfer method</b>	corona / post
<b>Separation method</b>	static separation
<b>Pickup method</b>	from cassette, manual feeder, paper deck
<b>Cassette pickup method</b>	separation retard
<b>Paper deck pickup method</b>	separation retard
<b>Multifeeder pickup method</b>	separation retard
<b>Drum cleaning method</b>	blade + magnet roller
<b>Fixing method</b>	heat roller (IH heater)

<b>Delivery method</b>	face-down, face-up
<b>Toner level detection function</b>	yes
<b>Toner type</b>	Magnetic, positive toner
<b>Toner supply type</b>	toner bottle
<b>Original type</b>	sheet, book, 3-D object (2 kg max.)
<b>Maximum original size</b>	297mm x 431.8mm
<b>Original size detection function</b>	fixed sensor in combination with CCD
<b>Reproduction ratio</b>	100% (1:1), reduce (1:0.250, 1:0.500, 1:0.611, 1:0.707, 1:0.816, 1:0.865), enlarge (1:1.154, 1:1.224, 1:1.414, 1:2.000, 1:4.000), between (1:0.250 to 4.000) (25% and 400%, in 1%-increments)
<b>Warm-up time</b>	30sec or less
<b>Maximum non-image width (main scanning direction)</b>	2mm or less
<b>Maximum non-image width (sub scanning direction)</b>	2mm or less
<b>Image margin (leading edge)</b>	4.0±1.5/-1.0mm
<b>Image margin (trailing edge)</b>	2.0±1.5mm
<b>Image margin (left/right)</b>	left: 2.5±1.5mm (2nd side: 2.5±2.0mm), right: 0.5mm or more
<b>Non-image width (leading edge)</b>	4.0±1.5/-1.0mm (w/ ADF: 4.5±1.8mm)
<b>Non-image width (trailing edge)</b>	2.0±1.5mm (W/ ADF: 2.0±1.8mm)
<b>Non-image width (left/right)</b>	2.5±1.5mm (W/ ADF:2.5±2.0mm)
<b>Number of gradations</b>	256 gradations
<b>Reading resolution</b>	600dpi x 600dpi
<b>Copying resolution</b>	1200dpi (equivalent) x 600dpi

<b>Printing resolution</b>	2400dpi (equivalent) x 600dpi
<b>First copy time</b>	3.3sec
<b>Cassette capacity</b>	600 sheets (64g/m <sup>2</sup> ), 550 sheets (80g/m <sup>2</sup> )
<b>Multifeeder tray capacity</b>	50 sheets (64, 80g/m <sup>2</sup> )
<b>Paper deck capacity</b>	1700 sheets (64g/m <sup>2</sup> ), 1500 sheets (80g/m <sup>2</sup> )
<b>Duplex method</b>	through path
<b>Delivery tray stack</b>	250 sheets (80g/m <sup>2</sup> )
<b>Continuous reproduction</b>	1 - 999
<b>Memory</b>	512 MB
<b>Operating environment (temperature range)</b>	15 to 27.5 deg C
<b>Operating environment (humidity range)</b>	25 to 75%
<b>Operating environment (atmospheric pressure)</b>	0.8 to 1.0 atm
<b>Noise</b>	standby: 55 dB or less, printing: 78 dB or less
<b>Hard disk</b>	20GB
<b>Power supply rating</b>	100V / 120V / 230V
<b>Sleep mode</b>	yes
<b>Power consumption (maximum)</b>	1500W or less (100V)
<b>Power consumption</b>	continuous printing (100V, 50Hz, w / accessories ) : 923 Wh (reference only)
<b>Ozone</b>	Initial: 0.01ppm or less (avr), Later (after 250,000 pages): 0.035 ppm or less (avr)
<b>Dimensions</b>	643mm(W) x 743mm(D) x 1191.5mm(H)
<b>Weight</b>	215kg(approx.;excluding tonerbottle)

## 1.2.7 Function List

### 1.2.7.1 Paper Types

T-1-14

Type		Size	Source		
			cassette	deck (left/right)	manual feeder
plain paper (64 to 90 g/m2) recycled paper colored paper heavy paper (91 to 200 g/m2) bond paper		A3, B4, A4R, A5R, B5R, LDR, LGL, LTRR, STMTR	yes	no	yes
		A4, B5, LTR	yes	yes	yes
		EXE (bond paper only)	no	no	yes
special paper	transparency	A4, A4R, LTR, LTRR	no	no	yes
	postcard	A4R irregular, 2- pane postcard, 4- pane postcard	no	no	yes
	label sheet	A4, A4R, B4, LTR, LTRR	no	no	yes
	index sheet	A4, LTR	yes	no	no
	tracing paper	A3, B4, A4R, A4, B5R, B5	no	no	yes

## 1.2.7.2 Printing Speed

The value in brackets [] represents the iR5570/5570N.

## T-1-15

	Size	Simplex		duplex	
		cassette/deck	manual feeder	cassette/deck	manual feeder
plain paper	A4	65[55]	46	32[27]	23
	A5R	35	35	17	17
	B5	65[55]	46	32[27]	23
	B5R	55[46]	41	27[23]	20
	A4R	47[40]	38	23[20]	19
	B4	39	33	19	16
	A3	32	29	16	14
	STMTR	35	35	17	17
	LTR	65[55]	46	32[27]	23
	LTRR	50[43]	39	25[21]	19
	LGL	39	33	19	16
	LDR	31	29	15	14

	Size	Simplex		duplex	
		cassette/deck	manual feeder	cassette/deck	manual feeder
heavy paper	A4	55	46	27	23
	A5R	28	28	14	14
	B5	55	46	27	23
	B5R	46	41	23	20
	A4R	40	38	20	19
	B4	33	33	16	16
	A3	27	27	13	13
	STMTR	28	28	14	14
	LTR	55	46	27	23
	LTRR	43	39	21	19
	LGL	33	33	16	16
	LDR	27	27	13	13
	postcard	-	15	-	7
	2-pane postcard	-	28	-	14
	4-pane postcard	-	44	-	22
bond paper	EXE	-	30	-	15
	LTR	-	30	-	15
	LTRR	-	21	-	10
transparency	A4	-	46	-	-
	LTR	-	46	-	-
index sheets	A4	51	-	-	-
	LTR	51	-	-	-

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# Chapter 2

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## Installation



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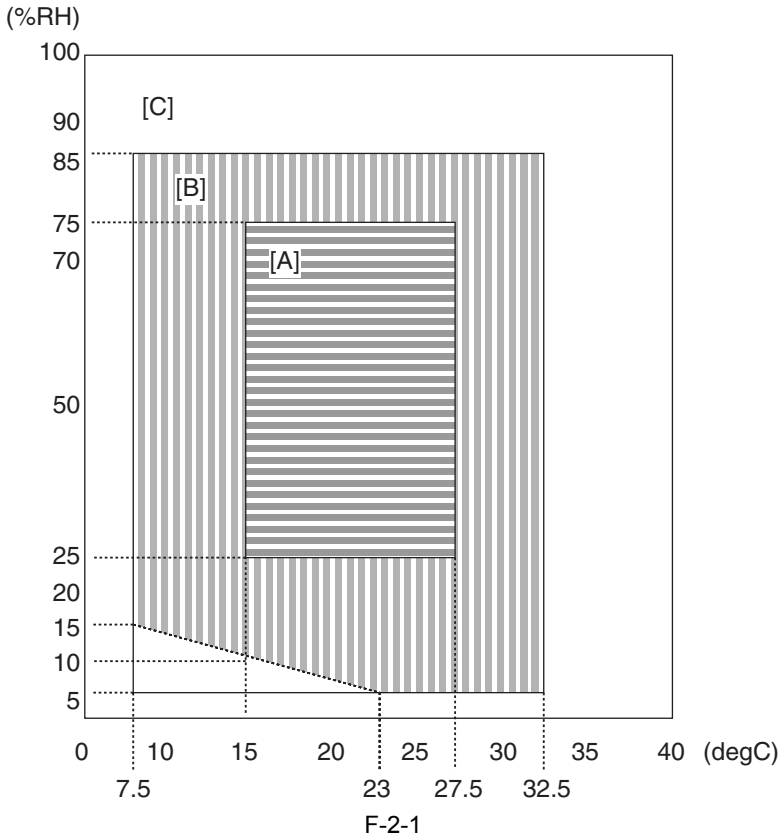
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## 2.1 Making Pre-Checks

### 2.1.1 Selecting the Site

The site must meet the following requirements; if possible, visit the user's premises before the machine is delivered.

1. The place must fall within the following ranges of temperature and humidity. The site must not be near a water faucet, water boiler, humidifier, or refrigerator.



<Assured environmental zone>

[A]: A zone. All quality standard items are satisfied.

[B]: B zone. Some quality standard items are inferior to those in A zone or not satisfied.

[C]: C zone. Copying operation is performed normally without any safety issues, malfunction, and errors in display.

2. The site must not be near a source of fire or subject to dust or ammonium gas.

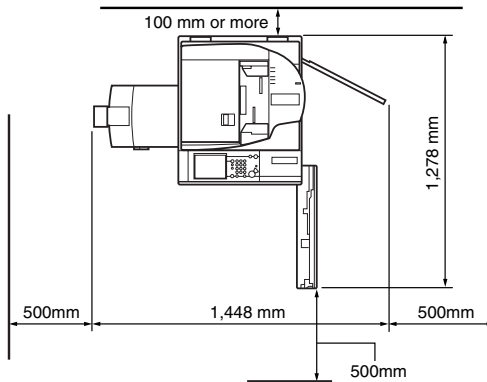
If exposed to direct rays of the sun, provide curtains.

3. The amount of ozone generated by the machine in operation is not of a level that would harm the health of individuals around it. However, some individuals may find its odor unpleasant when it is used for a long time in the room with poor ventilation. Be sure to ventilate the room well to provide a good working environment.

4. Be sure that the machine's feet will keep in contact with the floor and the machine will remain level.

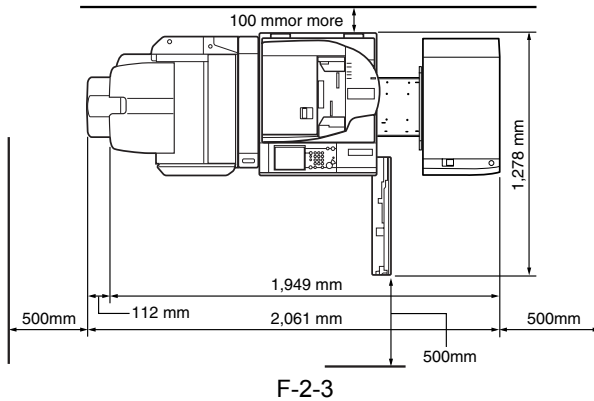
5. Be sure that the machine will be at least 10 cm from all walls, offering enough space for its use.

-Without Options

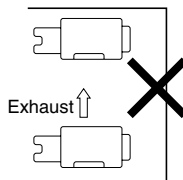


F-2-2

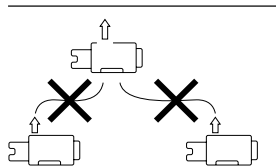
-With Options installed



6. The site must be well ventilated. Take care so that the machine will not be installed near a vent from which air is taken into the room.
7. When multiple machines are placed in the room, be aware that the machine will not be placed to suck the exhaust from other machines, otherwise the life of the corona wire may be shortened, especially in the low humidity environment, the tendency will be pronounced.



F-2-4



F-2-5



## T-2-1

[1]	Developing assembly	1
[2]	Grip	1
[3]	Grip assembly cover (large)	3
[4]	Latch face cover	1
[5]	Grip assembly cover (small)	1
[6]	Drum rotating tool	1
[7]	Cassette size plate	2
[8]	Cassette size label	2
[9]	Original size label	1
[10]	Non-inch block	4
[11]	Deck locking plate	1
[12]	Developing assembly locking plate unit	1
[13]	Wire saddle	1
[14]	Binding screw (M4X4)	4
[15]	Binding screw (M4X6)	1
[16]	RS tightening screw (M4X6)	1
[17]	Service book case	1
[18]	Touch Pen	1
[19]	Index paper attachment	1
[20]	Shut-Down Warning Label	1

Check the documentation and CD against the following table:

T-2-2

<b>Documentation</b>
Reference guide
Copy Guide
Box Guide
Operators manual CD-ROM: NW/RUI
License Agreement
Main unit warranty card
Drum Warranty
Registration card
Installation Check list

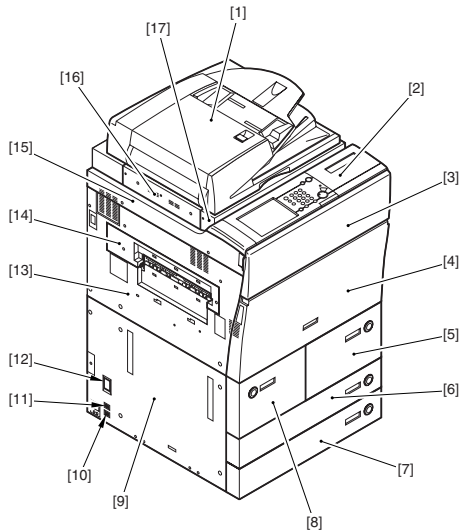
T-2-3

<b>CD-ROM</b>
MEAP Admin. CD-ROM

\*The original holder will come standard with the 120-V model.

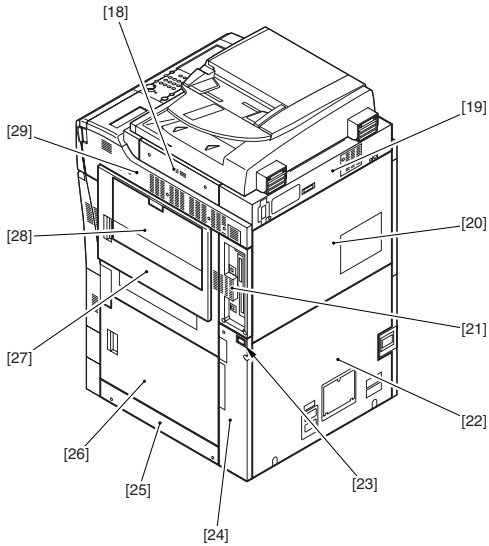


### 2.1.3 Name of Parts



F-2-7

- [1]Feeder
- [2]Control panel
- [3]Toner exchange cover
- [4]Front cover
- [5]Front right deck
- [6]Cassette 3
- [7]Cassette 4
- [8]Front left deck
- [9]Left cover (Lower)
- [10]Environment switch
- [11]Cassette heater switch
- [12]Breaker
- [13]Left cover (Middle)
- [14]Delivery cover
- [15]Left cover (Upper)
- [16]Reader left cover
- [17]Reader front cover



F-2-8

- [18]Reader right cover
- [19]Reader rear cover
- [20]Rear cover (Upper)
- [21]Right cover (Upper rear)
- [22]Rear cover (Lower)
- [23]Main power switch
- [24]Right cover (Lower rear)
- [25]Right cover (Lower)
- [26]Lower right cover
- [27]Manual feed tray cover
- [28]Manual feed tray
- [29]Right cover (Upper)

## 2.2 Unpacking and Installation

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### 2.2.1 Points to Note Before Starting the Work

Keep the following in mind when installing the machine:

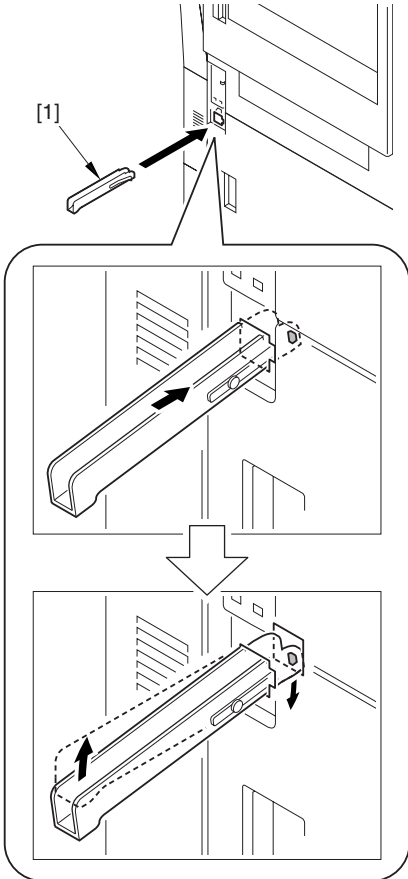
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1. If the machine is moved from a cold to a warm place for installation, condensation can develop in its pickup/feeding assembly, causing image faults. To avoid the condensation, leave the machine unpacked for 1 hr or more so that it will be fully used to the room temperature. (The term condensation refers to the phenomenon that occurs on a metal surface when it is brought from a cold to warm location as the result of rapidly cooled vapor. It is seen as droplets of water on the metal surface.
  2. When carrying the machine into/out of the site, if it is required to go up/down the stairs, be aware the following.
    - 1) Remove the ADF assembly, Fixing feeder unit and Duplexing unit from the main body, and carry them into/out of the site separately from the main body.
    - 2) Lift the machine with the four corners at the bottom, not with right and left grips (3 grips).
    - 3) The machine weighs about 215kg. Be sure to lift the machine in a group of 4.
  3. Be sure to work for installation in a group of 3 or more, especially when removing the pad, one person each at the rear and the front will hold the grip, and another person will remove the pad and the bottom plate.
-

## 2.2.2 Unpacking

- 1) Open the shipping box, and remove the plastic covers.
- 2) Open the cardboard box attached, take a grip [1] out of the box, and put it into the front of pickup assembly.



F-2-9



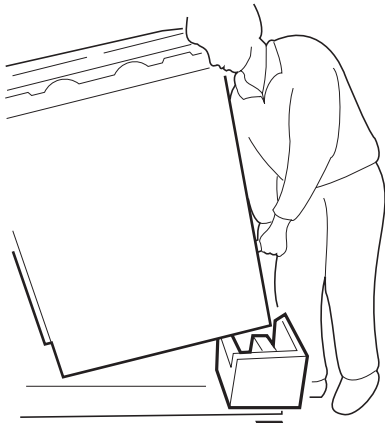
Be sure to put the stopper of grip in a downward direction into the machine. If it is in reversed, the grip may disengage from the main body when it is lifted.

- 3) Hold the two grips at the delivery assembly (front/rear), and lift the main body with them slightly enough to remove the pad. (The machine weight: Approx. 215kg)



F-2-10

- 4) Hold the two grips at the pick-up assembly (front/rear), and lift the main body with them slightly enough to remove the pad.



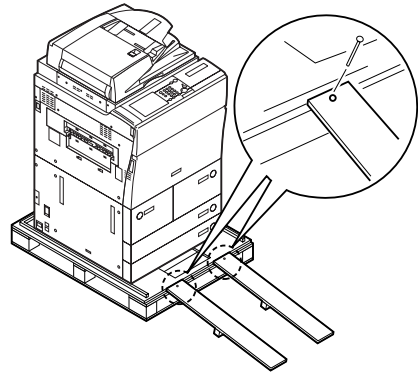
F-2-11

- 5) Remove the cardboard box on the skid, and take out the two slope plates, which have been stored in the center of skid.



If it is difficult to take out the slope plates, move the main body to the trailing edge of the skid.

- 6) Turn the slope plates upside down, match the pinholes of the skid to those of the slope plates, and inlet the pin to the hole respectively.



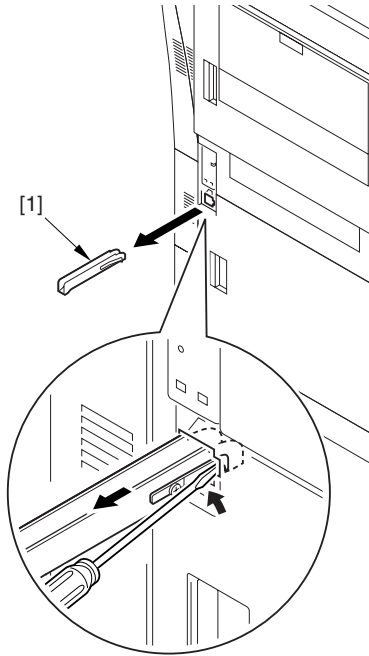
F-2-12

- 7) Hold the two grips (front/rear) of the main body, slide the main body on the slopes, and take it down from the skid.



Be aware that the wheels will not be dropped out of the skid.

- 8) Remove the grips attached using an appropriate tool (e.g.: a flat-blade screwdriver) while pushing the leaf spring.

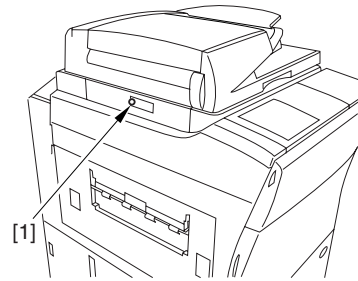


F-2-13

- 9) Remove the tape from the machine.
- 10) Check to see if all accessories are contained in the cardboard box that comes with the machine.

### 2.2.3 Installing the Scanner

- 1) Open the ADF and eliminate the packaging materials.
- 2) Remove the scanner screw [1].



F-2-14

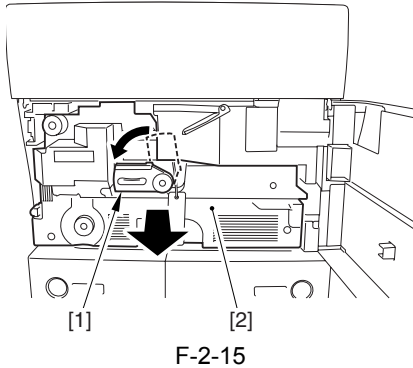


Be sure to have the user keep the scanner screw since it is used when the machine is moved.

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### 2.2.4 Installing the Fixing Assembly

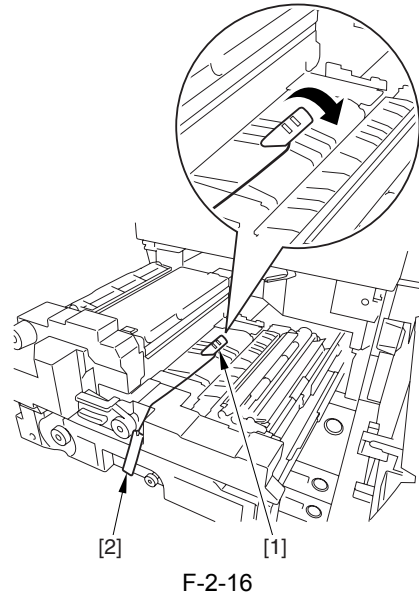
- 1) Turn the fixing feeder assembly release lever [1] in the direction of the arrow (left) to release the transfer/separation corona assembly. Slide out the fixing feeder unit [2] to the front.



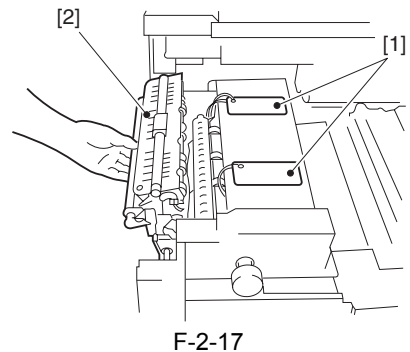
- 2) Remove the separation claw release component [1] and the tag [2] on the fixing feeder assembly.



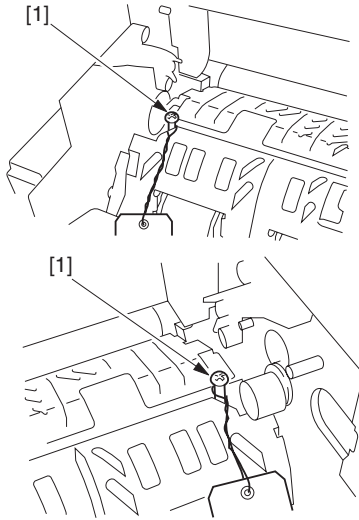
Remove foreign matter, such as an adhesive or tape on the feeder belt.



- 3) Remove the retaining tape of the tag [1] and open the fixing delivery assembly [2].



- 4) Remove the two nip pressure release screws [2] connecting to the cable of tag.

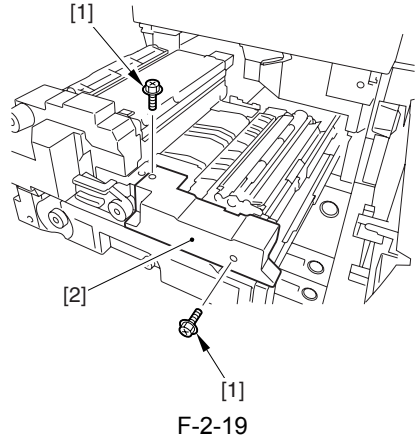


F-2-18

5) Close the fixing delivery assembly

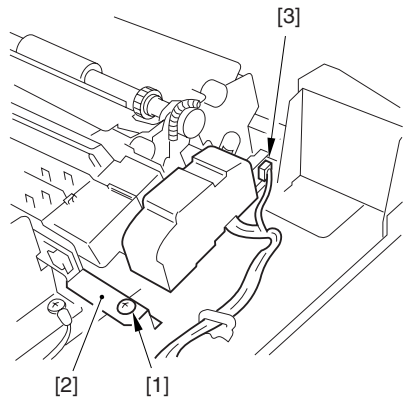
### 2.2.5 Checking the Corona Assembly and the Dust-proofing Glass

1) Detach the feeder assembly front cover (Right) [2] using the two screws [1].



F-2-19

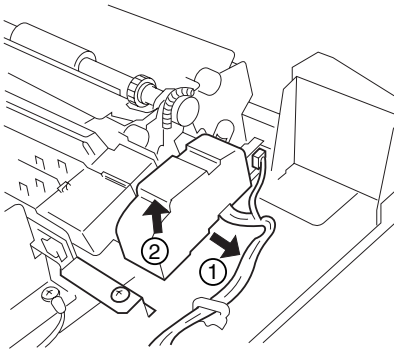
2) Remove the screw [1] and the fixture [2], and then remove the connector [3].



F-2-20

3) Pushing the front and the rear of the transfer/separation corona assembly, pull out the assembly to the front and remove it in the direction of upper left.



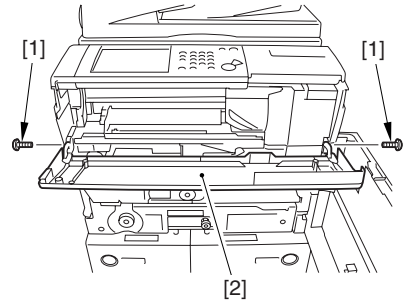


F-2-21



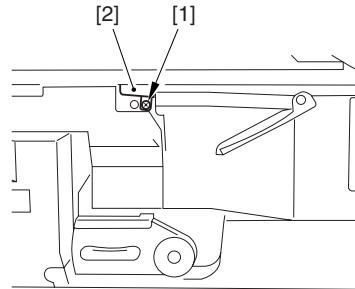
Be aware not to cut the nylon wire by coming into contact the transfer/separation corona assembly to the transfer guide.

- 4) Check the transfer/separation corona assembly, if dirt or paper dust adhere to the assembly, clean it using alcohol
- 5) Mount the assembly in reverse order from removing and fix it.
- 6) Attach the feeder assembly front cover (Right) using the two screws, and slide the fixing feeder assembly and the duplexing unit into the machine. (The fixing feeder assembly release lever remains released.)
- 7) Open the toner supply cover.
- 8) Remove the toner supply cover [2] using the two screws [1].



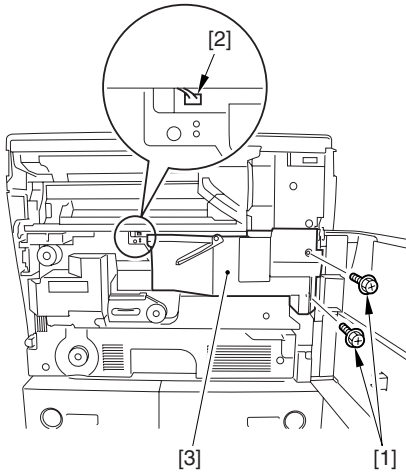
F-2-22

- 9) Remove the connector cover [2] using the screw [1].



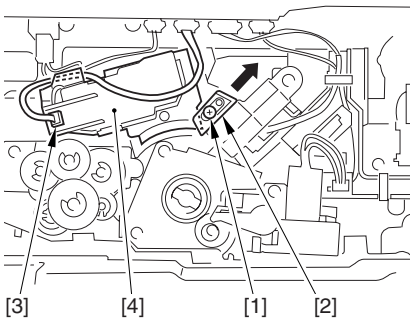
F-2-23

- 10) Remove the two screws [1] and the connector [2], and pull out the primary fan duct [3].



F-2-24

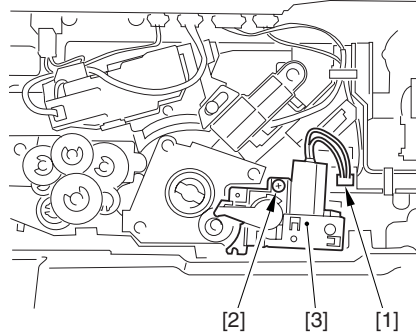
- 11) Loosen the screw [1], move the corona assembly fixture [2] to the direction of the arrow (upper right), and fix again.
- 12) Remove the connector [3] and pull out the primary corona assembly [4].



F-2-25

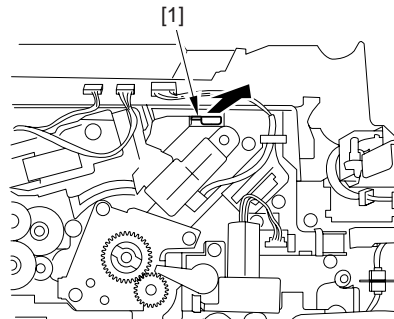
- 13) Check the primary corona assembly, if dirt or paper dust adheres to the assembly, clean it using alcohol.

- 14) Remove the connector [1], unscrew the screw [2], and pull out the pre-transfer corona assembly [3].



F-2-26

- 15) Check the pre-transfer corona assemblies, if dirt or paper dust adheres to the assembly, clean it using a solvent, 'Alcohol solution'.
- 16) Detach the dustproof glass [1].



F-2-27

- 17) Check the dustproof glass, if necessary, clean it using the blower brush.

18) Insert the primary corona assembly, the pre-transfer corona assembly, and the dustproof glass into the machine in reverse order from removing and fix them.



1. When using a solvent for cleaning, make sure that the parts become dry completely.
2. When inserting the pre-transfer corona assembly into the machine, be sure that it stays horizontal to the process unit to avoid scratching the surface of the drum.
3. Make sure that the one-way arm of the pre-transfer corona assembly is located on the eccentric cam.

19) Perform the procedures of 7) to 10) in reverse order, lock the fixing feeder assembly release lever, and close the front cover.

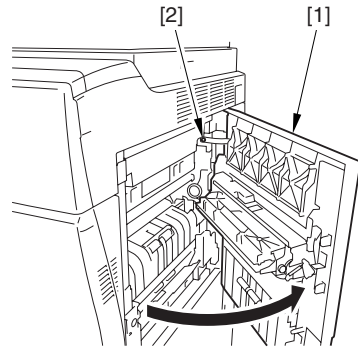


When mounting the primary fan duct, make sure to inlet the connector.

## 2.2.6 Installing the Developing Assembly

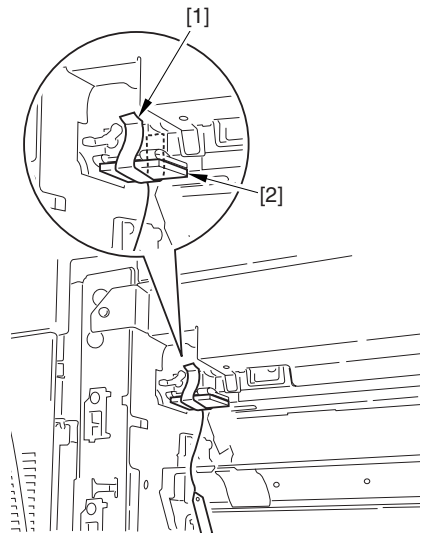
1) Open the manual feed tray cover [1], remove the screw [2] from the door tape,

and fully open the manual feed tray cover [1]



F-2-28

- 2) Remove the tape [1] and detach the hopper supply mouth cover [2].



F-2-29

- 3) Take out the developing assembly from

the packing box.

- 4) Turn the developing cylinder gear with a hand, and check to see if there is any breakage on the cylinder.
  - 5) Holding the central part (the pocket for handle) of the developing assembly [1], insert the assembly to the machine, and inlet the connector [2].
- 



When mounting the developing assembly, be aware to keep the developing cylinder from contact with the sheet metal of the developing assembly support.

---

(Front) keeping the unit in a horizontal position. Fix the unit using the truss head screw (M4 x 6) [1] in the package.

F-2-31

## 2.2.7 Installing the Pick-up Assembly

- 1) Remove the pick-up roller pressure release spacer [1].

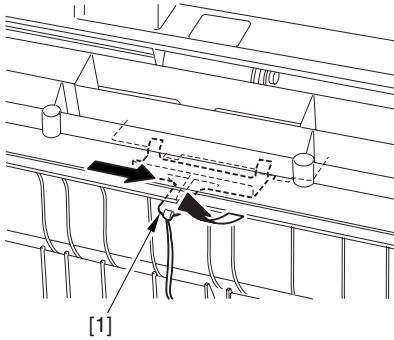
F-2-32

---

F-2-30

- 6) Insert the right side (Rear) of the developer pressure unit [2] in the package, and then insert the left side

When removing the spacer, move it to the right and pull it out lifting the front side.



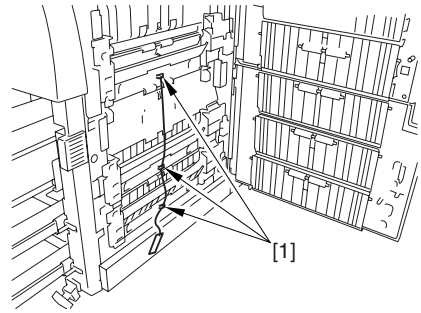
F-2-33

- 
- 2) Pull out the half of the right deck and the cassette, open the lower right cover, and remove the pick-up roller pressure release spacers [1] for the right deck, the third, [1] and the fourth cassette.
- 

**Reference:**

The spacers are removed by pulling out the half of the deck/cassette because the spacers are pressured and difficult to be removed if the deck/cassette remain set.

---

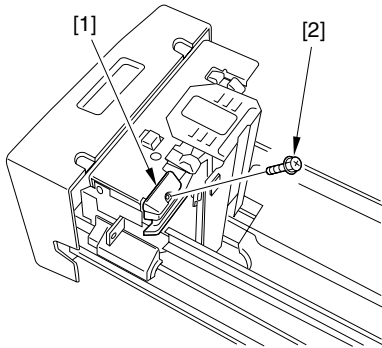


F-2-34

- 3) After removing the spacers, close the deck/cassette and the lower right cover.
- 4) Attach the door tape of the manual feed tray cover using the screw, and close the tray cover.

## 2.2.8 Installing the Deck Pressure Plate

- 1) Press the release button of the left deck, and pull out the left deck.
- 2) Mount the deck pressure plate [1] in the package using the RS screw [2], which is also in the package.

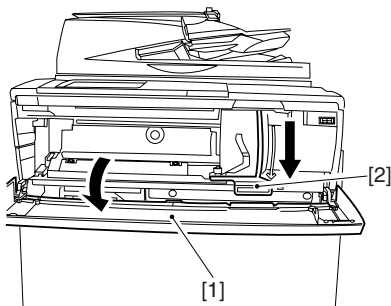


F-2-35

3) Close the left deck.

## 2.2.9 Setting Up the Toner Bottle

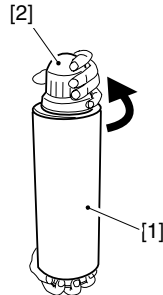
- 1) Take out the toner bottle from the packing box.
- 2) Open the toner supply cover [1], and push down on the lock lever [2].



F-2-36

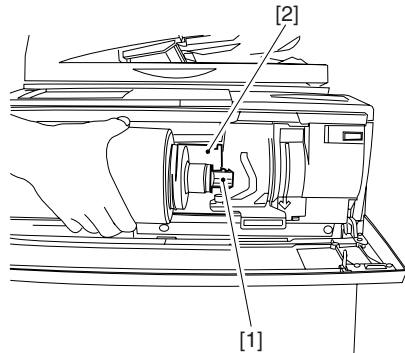
3) Holding the toner bottle [1] as shown in below, turn the cap [2] to the direction of the arrow, and remove the cap from the

toner bottle.



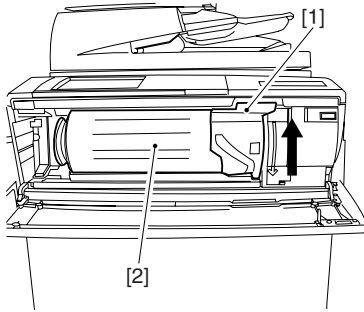
F-2-37

4) Hold the toner bottle with its mouth [1] to right, keeping in a horizontal position, set it to the supply case [2] in the machine.



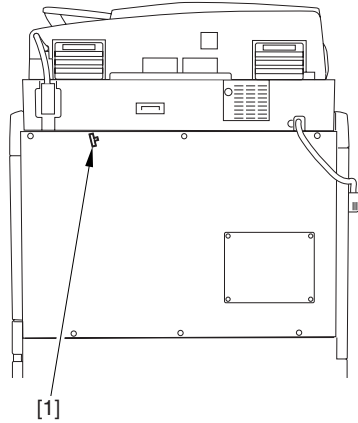
F-2-38

5) Pull up the lock lever [1] upward and fix the toner bottle [2].



F-2-39

6) Close the toner supply cover.

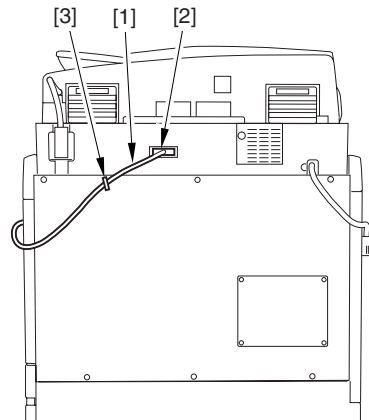


F-2-40



When the main power turns on in the state that the toner bottle has not been set in the machine, the toner remaining meter will be displayed as 'less than 25%' on the control panel. Thereby, make sure that the toner bottle is set in the machine before turning on the switch of the main power.

2) Connect the reader communication cable [1] to the reader unit [2], and clip the cable using the cable clip [3].



F-2-41

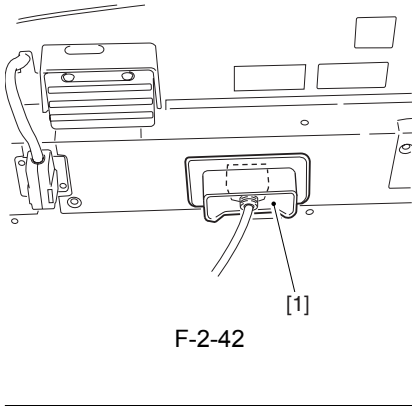
## 2.2.10 Connecting the Reader Communication Cable

1) Attach the cable clip [1] in the package to the upper rear cover.



When the clearance between the machine

and the wall is tight, be sure to mount the cable cover [1] (FB6-6210) of service part.



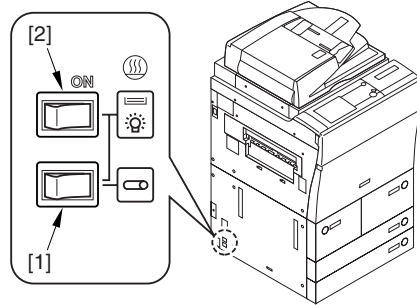
### 2.2.11 Checking the Environment Switch

1) Set the environment switch [1] and the cassette heater switch [2] depending on the installation environment. In the event the drum/cassette heater is necessary to turn on when turning the main power off, set it using the following two switches.

1. Environment switch: The switch for the drum heater and the all night setting.  
ON: The heater is left turned on when the main power switch turns off/on.  
OFF: The heater turns on only when the main power switch turns on.
2. Cassette heater switch  
ON: The heater turns on when the

main power switch turns on. However, when the environment switch turns on, the heater is always left turned on.

OFF: The heater is always left turned off.



### 2.2.12 Turning on the Main Power

---



Before turning on the main power, make sure to eliminate the packing materials in the cassette.

---

- 1) Pull out the duplexing unit and make sure that there is no foreign matter or damage.
- 2) Make sure that the main power switch turns off, and connect the power plug to the power outlet.
- 3) Turn on the main power switch.
  - The indication of loading programs appears.



- The message [Wait...]Is displayed.



How to turn off the main power:

When turning off the main power, follow the procedure below in order to protect the hard disk of the machine.

1. Press the power switch on the control panel for 3 sec or more.
2. Operate the touch panel following the instruction display for the shut down sequence so that the main power switch can be ready for turning off.
3. Turn off the main power switch.

## 2.2.13 Stirring the Toner

After waiting until the machine is ready for operation, supply the toner from the hopper to the developing unit by operating in service mode.

- 1) Start service mode. (Press the '\*' key, '2' and '8' at the same time, and the \* key once again.)
- 2) Make the following selections:

COPIER>FUNCTION>INSTALL>TONER-S.

- 3) Make sure that the message, 'CHECK THE DEVELOPER' appears.
- 4) Check to see if the developing assembly is properly locked in place, and press the OK key.

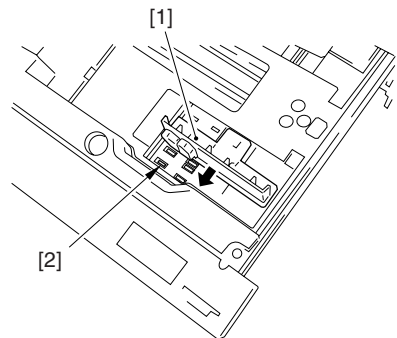
- The supplying operation will last for about 8min to 10min, after which the operation stops automatically.
- Perform the cassette setting before the toner supplying operation is completed. (Refer to the cassette setting.)



Do not turn the power off during the operation.

## 2.2.14 Setting the Cassette

- 1) Press the cassette releasing button, and slide out the cassette to the front.
- 2) Set the side guide plate [1] of each cassette to the hole (A4/A3) of the stamp M [2].



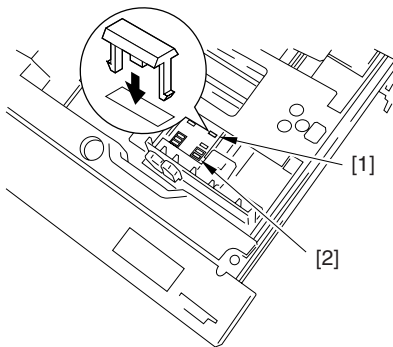
F-2-44

- 3) Mount the non-inch spacer in the package from the inside of the cassette

so that the hole (STMT-R) of the stamp A [1] and the hole (LTR-R) of the stamp H [2] are covered.



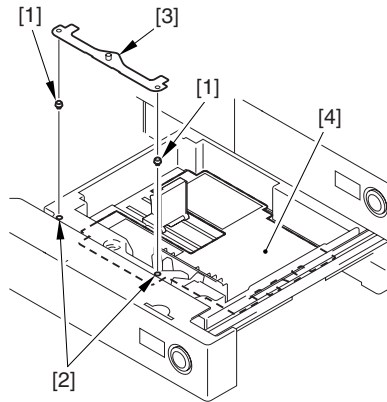
- Be sure to mount the spacer to keep in contact with the cassette.
- This procedure should be conducted only when Inch size paper is not used.



F-2-45

cassette, and slide it out to the front. Match the 2 one-touch supports [1] against the holes [2] in the cassette; then, push in the pins to fix them in place.

- 2) Place the index paper attachment [3] by matching its holes against the one-touch supports [1].
- 3) Fit the base sheet [6] in the cassette. Slid out the cassette.



F-2-46

- 4) Check with the user to find out the size of paper to use, and set the paper size of each cassette, and attach the size label to the cassette size plate.
- 5) Slide the cassettes into the machine.

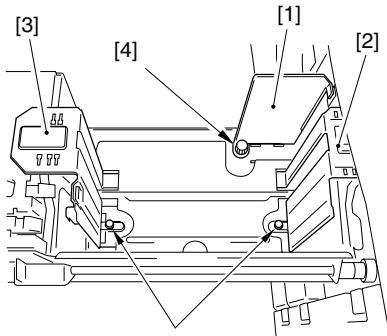
### 2.2.15 Index Paper Attachment

- 1) Decide on either cassette 3 or 4 for use for index paper.  
Press the releasing button for the

### 2.2.16 Changing Paper Size of the Front Deck (Left/Right)

- 1) Press the release button to draw out the deck.
- 2) Remove the screws [4] of the end plate [1], left plate [2], and right plate [3]. Adjust these plates to a paper size requested by user, and fix them.  
Default: A4 size

After changing the size, put back the deck to the machine.



F-2-47

- 3) Attach a new paper size label to the paper size plate of the deck.
- 4) After changing the size, register the new paper size of the front deck in service mode.

Right deck: COPIER>OPTION>CST>P-SZ-C1

Left deck: COPIER>OPTION>CST>P-SZ-C2

A4=6,B5=15,LTR=18

## 2.2.17 Checking

Images/

Operations, User

Mode

- 1) Press the reset key twice to go back to the main screen. Check copying operations and images using the test sheet.

- Copying operation: Make sure that copying operation is normal.
- 2-sided copying operation: Make sure that paper feed in the duplexing unit is normal.
- Pickup operation: Make sure that paper pickup from each cassette is normal.
- Operating sound: Make sure that abnormal sound is not generated.
- Fixed copy ratio: Check a copy image on a fixed ratio basis.
- Multiple copying: Make sure that the specified number of copies is normally made.
- Make sure that images on paper picked up from the cassettes/decks are within the following specs.

The specs have the following 2 types:

Side registration (margin at the left edge of image):  $2.5 \pm 1.5\text{mm}$

Leading edge registration (margin at the leading edge of image):  $4.0 + 1.5\text{mm} / -1.0\text{mm}$

Refer to [Adjusting Side Registration] or [Adjusting Leading Edge Registration] if a result is out of specs.

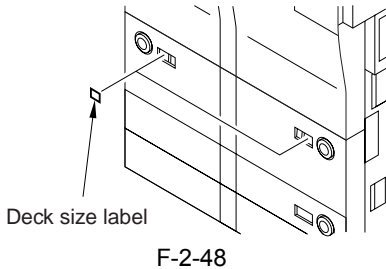
- \* If image density differs between left and right of a copy, adjust the height of the rear of the primary corona wire to correct.



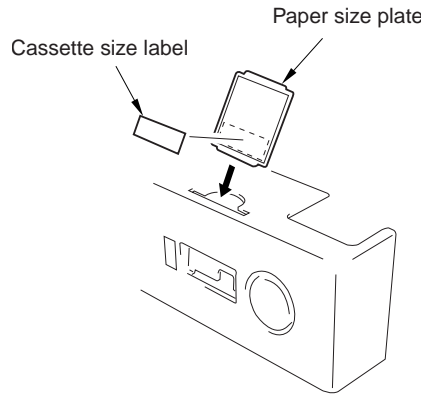
The approx. first 10 copies may get soiled due to toner dropped from the drum separation claw. However, this will not

occur as copies are made.

- 2) Set standard mode in user mode/service mode upon request by user.
- 3) Load paper in the right/left deck.
- 4) Put back the right/left deck to the machine. Peel an appropriate deck size label from the size label (cassette/deck) board, and attach it to the paper size plate of the deck.



- 5) Press the release button to draw out the cassettes 3/4.
- 6) Peel an appropriate cassette size label from the size label (cassette/deck) board, and attach it to the paper size plate of the cassette. Set the paper size plate to the cassette cover.

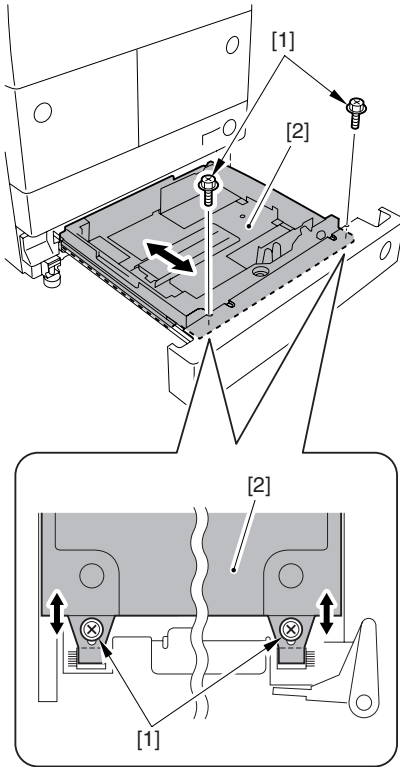


- 7) Put back each cassette to the machine.

## 2.2.18 Adjusting Side Registration

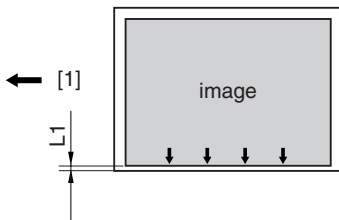
### <Cassette 3/4>

- 1) Press the release button to draw out the cassette 3/4.
- 2) Loosen the 2 fixing screws [1] on both sides of the cassette.
- 3) Move the cassette body frontward or backward to adjust.  
Backward: The side registration value (left margin) is decreased.  
Frontward: The side registration value (left margin) is increased.



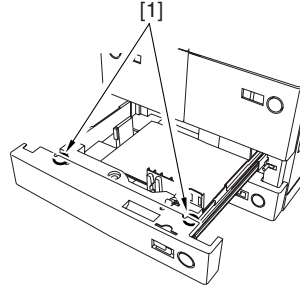
F-2-50

- 4) Make sure that the side registration values (left and right margins) of a copy made from the cassette 3/4 are  $L1 = 2.5 \pm 1.5\text{mm}$  respectively.



F-2-51

- [1] Paper feed direction  
5) Tighten back the 2 fixing screws [1] after the adjustment.



F-2-52

- 6) Put back the cassette 3/4 to the machine.  
7) Perform the following service mode after the adjustment.

Cassette 3

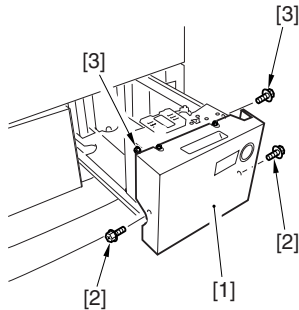
COPIER > FUNCTION > CST > C3-STMTR/A4R

Cassette 4

COPIER > FUNCTION > CST > C4-STMTR/A4R

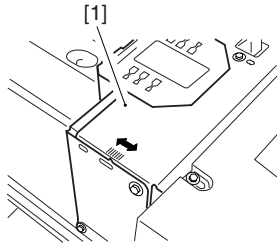
#### <Front Deck Left/Right>

- 1) Press the release button to draw out the front deck left/right.
- 2) Loosen the 2 screws [2] and 2 fixing screws [3] of the deck front cover [1].



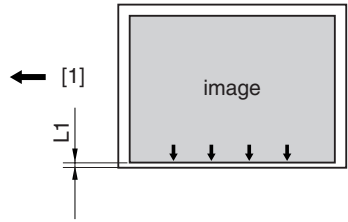
F-2-53

- 3) Move the cassette plate (front) [1] forward or backward to adjust.  
 Backward: The side registration value (left margin) is decreased.  
 Frontward: The side registration value (left margin) is increased.



F-2-54

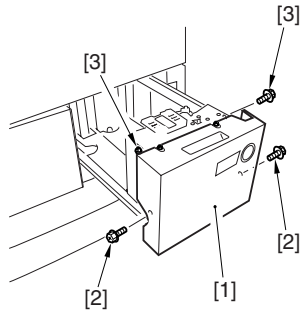
- 4) Make sure that the side registration values (left and right margins) of a copy made from the front deck left/right are  $L1 = 2.5 \pm 1.5\text{mm}$  respectively.



F-2-55

[1] Paper feed direction

- 5) Tighten the 2 screws [2] and 2 fixing screws [3] of the deck front cover [1].

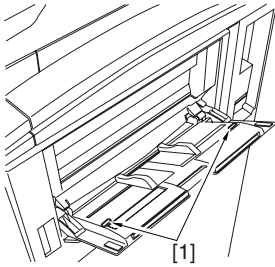


F-2-56

- 6) Put back the front deck left/right to the machine.

**<Manual Feed Tray>**

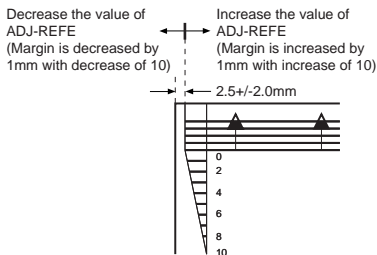
- 1) Move the side plates [1] to the center. Loosen the 2 mounting screws [2] of the manual feed tray, and adjust the position of the manual feed tray.



F-2-57

### <Duplexing Feeder Unit>

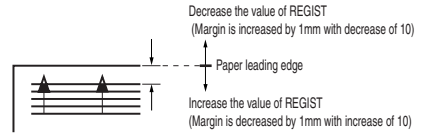
- 1) Select the following service mode  
COPIER > ADJUST > FEED-ADJ >  
ADJ-REFE, and make an adjustment so  
that margin on the 2nd side image will  
be within specs.



F-2-58

## 2.2.19 Adjusting Leading Edge Registration

- 1) Select the following service mode  
COPIER > ADJUST > FEED-ADJ >  
REGIST, and make an adjustment so  
that margin will be within specs.

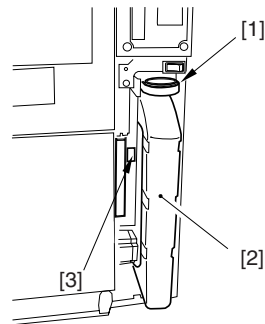


F-2-59

## 2.2.20 Getting the Machine Ready for Installation

### <Storing the drum rotation tool and grip>

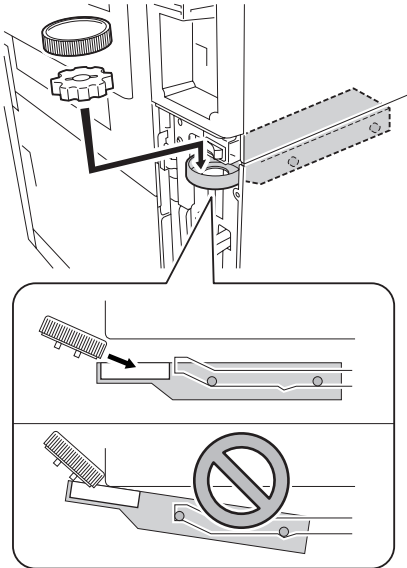
- 1) Remove the 2 screws, and detach the  
right rear bottom cover; store the parts  
below.
  1. Drum rotation tool [1]: Store it inside  
the waste toner case cap in the hole of  
the drawer grip at the top of the waste  
toner case [2].
  2. Grip (included in the package): Store it  
in the grip storage area [3].



F-2-60



The drum rotation tool and the cap cannot be stored if the drawer grip is fully drawn out. Therefore, draw out the grip in moderation as shown the fig. below.



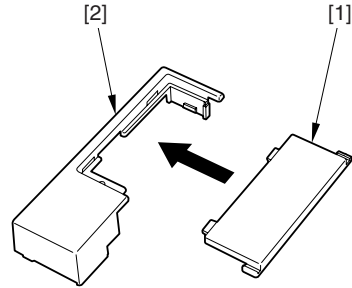
F-2-61

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2) Attach the right rear bottom cover with the 2 screws.

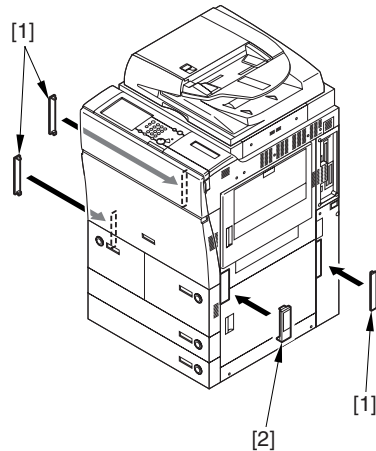
<Attaching the grip cover>

1) Attach the grip cover (small) [1] to the latch blanking cover [2].



F-2-62

2) Attach the 3 grip covers (large) [1] and the cover [2] assembled in step 1) to the machine.



F-2-63

<Attaching the service book holder>

1) Remove the double-faced tape at the back of the service book holder [1], and attach the holder to the bottom of the machine.

---

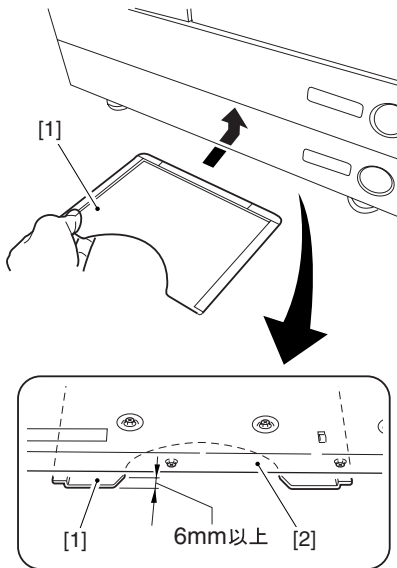




## Points to Note

When attaching the service book holder to the machine, 6mm or more space must be ensured between the front of the bottom sheet metal [2] and the front of the service book holder. If the paper deck is attached afterward without the space, the paper deck rail hits the service book holder.

When attaching the paper deck at the same time, be sure to attach the paper deck before the service book holder.



F-2-64



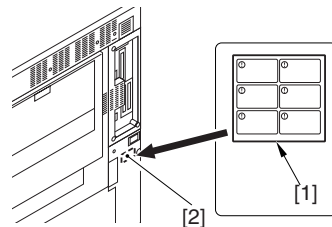
## Prohibited area of affixation

- Inside the machine (inside the front cover)

- The area blocking the louver
- The area blocking the grip

## &lt;Attaching the Shut-Down Warning Label&gt;

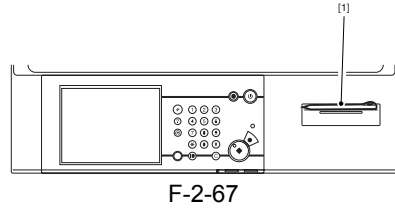
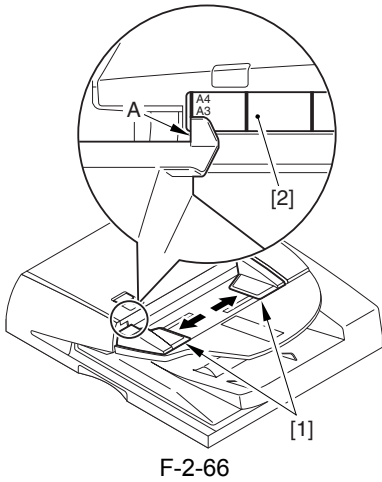
- 1) Pick out the Shut-Down Warning Label [1] prepared in the appropriate language, and attach it to the bottom left side [3] of the main power switch [2] of the machine's right cover (lower rear).



F-2-65

## &lt;Attaching the document size label&gt;

- 1) Widen the document size plates [1] to the A4/A3 position, and attach the label while matching the part A of the document size plate [1] with the A4/A3 position of the ADF size label [2].



<Steps after the machine gets ready for installation>

- 1) Refer to the Installation Manual included with each option if attaching the options such as the sorter.
- 2) Clean up around the machine.
- 3) Move the machine to the installation site, and fix the machine with the 2 adjusters.

Reference: Use a driver if the adjusters cannot be rotated by hand.

- 4) Enter requirements in the service book, and store it in the service book holder.

<Mounting the Touch Pen>

- 1) Set the touch pen on the control panel.

## 2.3 Checking the Connection to the Network

### 2.3.1 Overview

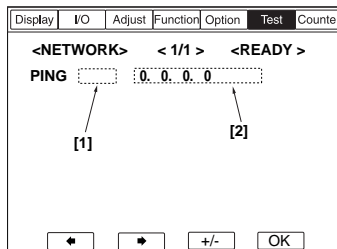
Perform this procedure only when connecting the machine to networks.

If user's network environment is TCP/IP, make sure using Ping that the network settings are properly made.

If user's network environment is IPX/SPX or Apple Talk, you don't need to perform this procedure.

### 2.3.2 Ping Operating Procedure

- 1) Select the following service mode COPIER>TEST>NETWORK>PING, and select PING.
- 2) Enter the IP address using the numeric keys on the control panel, and press OK.
- 3) Press the start key.
  - OK is displayed if Ping succeeds, but NG is displayed if it ends in failure.



F-2-68

[1] Result (OK/NG)

[2] IP address entry

### 2.3.3 Checking with Remote Host Address

You can check whether a network connection is available by executing Ping using the remote host address.

Remote host address: IP address of PC connecting to/operating under TCP/IP network environment to which the machine is connected.

- 1) Tell a system administrator that you will check a network connection using Ping.
- 2) Ask the system administrator about the remote host address.
- 3) Enter the remote host address in PING.
- 4) If OK is displayed, it means that the machine is properly connected to networks.
- 5) If NG is displayed, it means that the machine is not properly connected to networks. Perform the following troubleshooting.

## 2.4 Troubleshooting the Network

---

### 2.4.1 Overview

Perform this procedure only when connecting the machine to networks.

If the machine fails to be connected to networks, any of the following causes is probable.

- a. Connection failure between networks and the machine
- b. TCP/IP setting failure of the machine
- c. User network failure
- d. Main controller PCB failure

The detailed check methods are as follows.

### 2.4.2 Checking with Loopback Address

The loopback address returns before the network controller. Therefore, you can check whether TCP/IP settings of the machine are appropriate by executing Ping with this address.

1) Enter the loopback address (127.0.0.1) in PING.

- If NG is displayed, check TCP/IP settings of the machine again, and re-execute Ping.
- If OK is displayed, perform the next check.

### 2.4.3 Checking with Local Host Address

The local host address is the IP address of the machine. Since the local host address returns in response to the network controller by executing Ping with the address, you can check whether the network controller (main controller PCB) is in a normal condition.

1) Enter the IP address of the machine in PING.

If NG is displayed, take the following actions, and re-execute Ping.

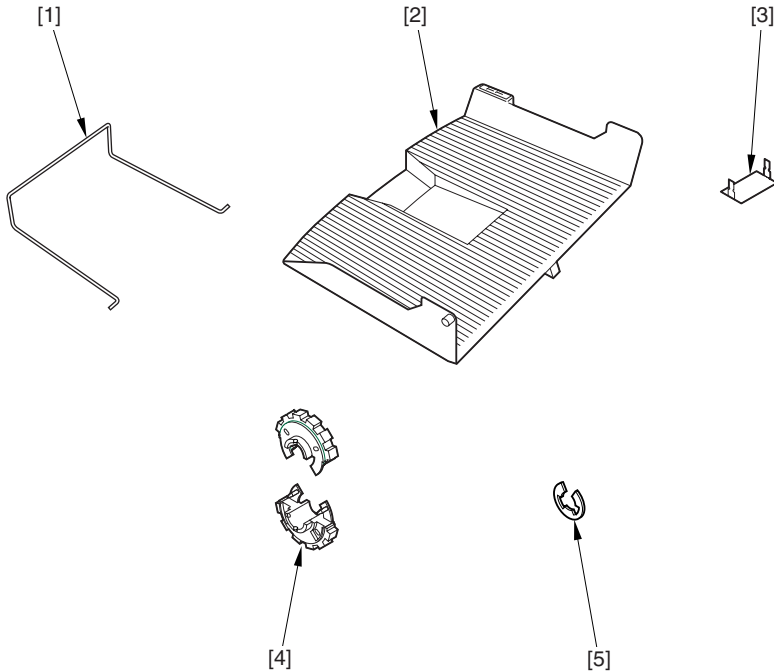
- IP address error of the machine: Check to see again if the IP address settings of the machine are appropriate. Ask the system administrator whether the allocated IP address is valid.

- Failure in the main controller PCB: Replace the main controller PCB

If OK is displayed, a cause may be user's network environment. Inform the system administrator of the current situation, and ask for measures.

## 2.5 Installing the Copy Tray

### 2.5.1 Checking the Contents



F-2-69

T-2-4

[1]	Delivery Bar	1 pc.
[2]	Delivery Tray	1 pc.
[3]	Magnet Catch	1 pc.
[4]	delivery roll	2 pc.
[5]	E ring	1 pc.

## 2.5.2 Turning Off the Host Machine

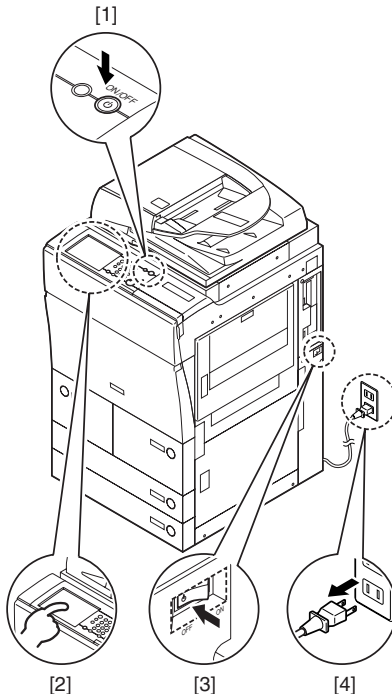
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### Turning Off the Main Power

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

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



F-2-70

## 2.5.3 Installation

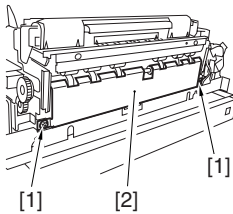
### Procedure for the Copy Tray-L1



When attaching the copy tray to the machine, be sure to attach the delivery roll to the center of the delivery roller.

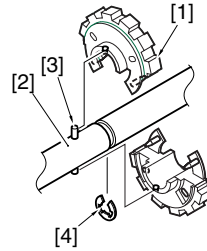
When attaching the shift tray or the finisher to the machine, however, do not perform the following steps.

- 1) Open the front cover, and draw out the fixing feeder unit. Remove the 2 screws [1], and detach the delivery roller guide [2].

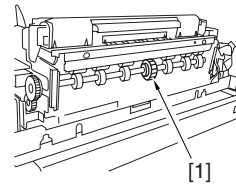


F-2-71

- 2) Fit the delivery roll [1] to the center pin [3] of the delivery roller [2] to attach, and fix the delivery roll with the E ring [4].

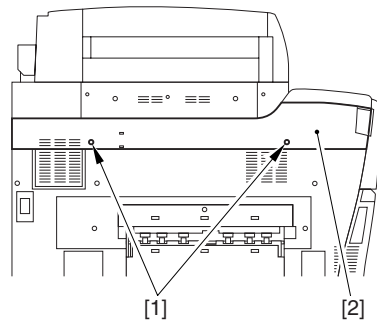


F-2-72



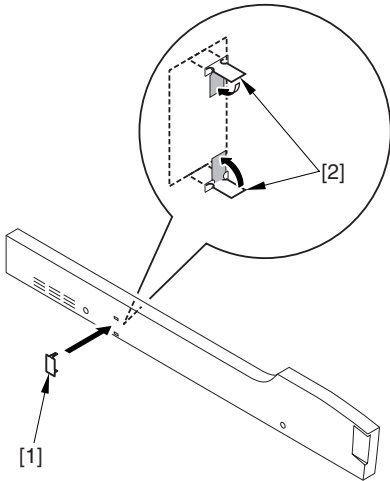
F-2-73

- 3) Attach the delivery roller guide with the 2 screws, and push the fixing feeder unit inside the machine. Close the front cover.
- 4) Remove the 2 screws [1], and detach the left cover (upper) [2].



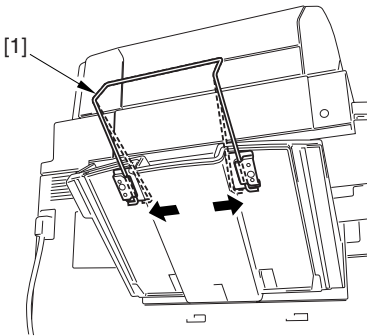
F-2-74

- 5) Attach the left magnet catch [1] to the left cover (upper), and bend the claws [2] of the magnet catch in the direction of arrows.



F-2-75

- 6) Attach the left cover (upper) with the 2 screws.
- 7) Attach the copy tray.
- 8) Attach the delivery bar [1].



F-2-76



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## 2.6 Installing the Card Reader

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### 2.6.1 Installation Procedure for the Card Reader

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The Card Reader Attachment-C2 is required to install the card reader.

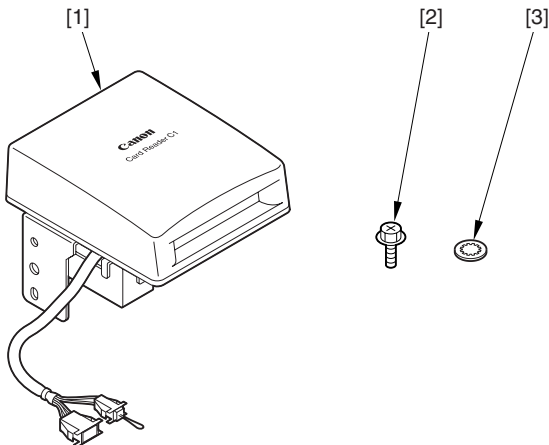
---

### 2.6.2 Checking the Contents

<Card Reader-C1>

T-2-5

[1]	Card Reader-C1	1 pc.
[2]	RS Tightening Screw (M4x10)	1 pc.
[3]	Binding Washer	1 pc.

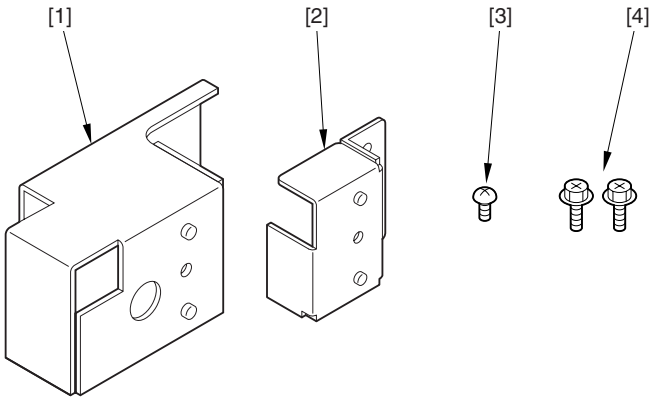


F-2-77

<Card Reader Attachment-C2>

T-2-6

[1]	Card Reader Mount	1 pc.
[2]	Joint Plate	1 pc.
[3]	Screw (M4x6)	1 pc.
[4]	RS Tightening Screw (M4x10)	2 pc.



F-2-78

### 2.6.3 Turning Off the Host Machine

---

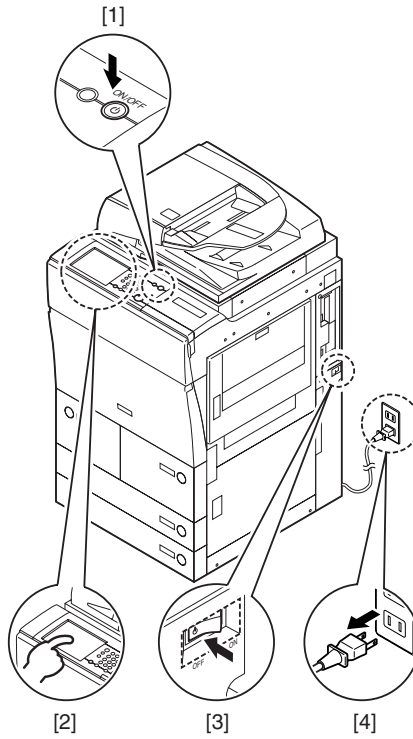


#### Turning Off the Main Power

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

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

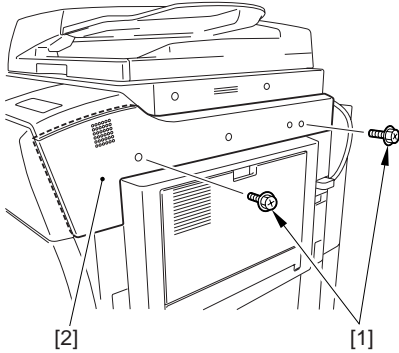
4. Disconnect the power cable (for the power outlet).



F-2-79

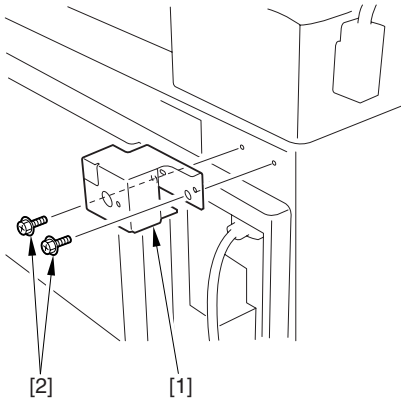
## 2.6.4 Installation Procedure

1) Remove the 2 screws [1], and detach the right cover (upper) [2].



F-2-80

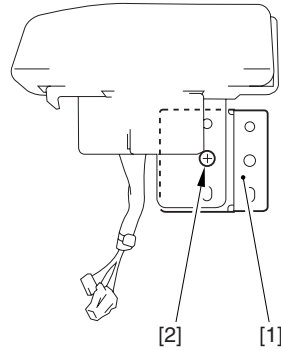
2) Attach the card reader mount [1] with the 2 screws [2] included in the package.



F-2-81

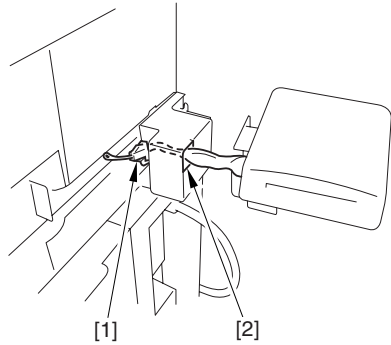
3) Attach the card reader to the joint plate

[1] with the screw and binding washer [2] included in the package.



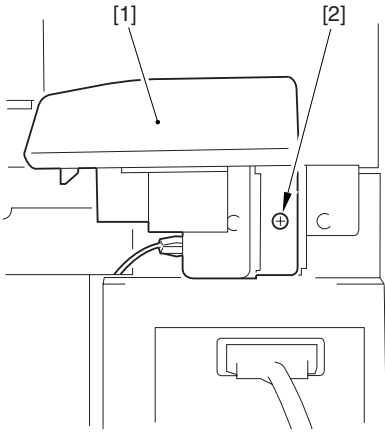
F-2-82

4) Pass the card reader cable [1] through the hole [2] of the card reader mount.



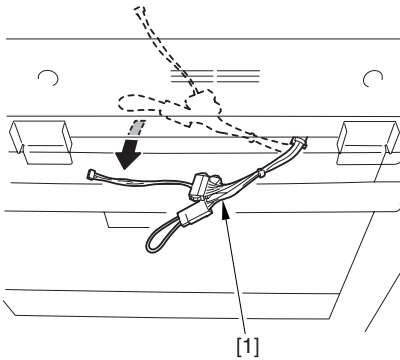
F-2-83

5) Attach the card reader with the joint plate attached [1] to the card reader mount using the screw [2] included in the package.



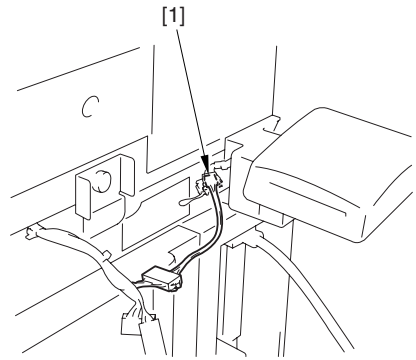
F-2-84

6) Detach the cable [1] from the machine.



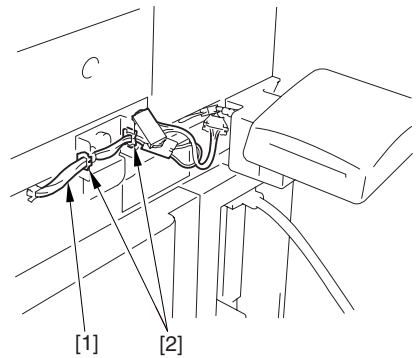
F-2-85

7) Connect the card reader cable to the connector [1].



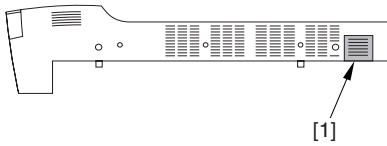
F-2-86

8) Pass the card reader cable [1] through the 2 clamps [2].



F-2-87

9) Cut off the area [1] of the right cover (upper) shown in the fig. below using nippers.



F-2-88

- 10) Attach back the right cover (upper) detached in step 1).
- 11) Connect the power cable to a receptacle.
- 12) Turn on the main power switch, and check the indication requesting for setting the control card.
- 13) Select the following service mode  
COPIER>FUNCTION>INSTALL>CARD, and enter the card number of use (1 to 2001).
  - Of the cards used by user, enter the minimum card number.
  - 1000 cards are available from the number entered.
- 14) Follow the instructions on the shutdown sequence screens to operate the touch panel, and turn off the main power switch.
- 15) Turn on the main power switch.
- 16) Insert the control card, and make sure that the machine becomes ready to copy.

## 2.7 Installing the NE Controller

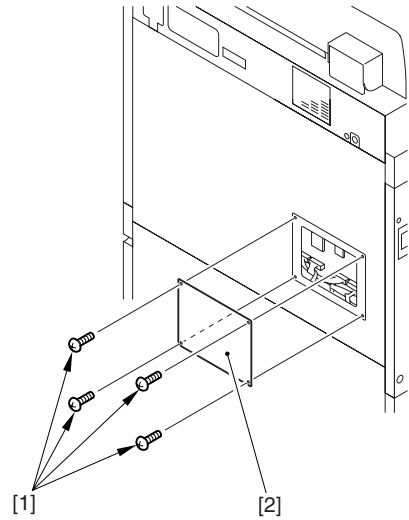
### 2.7.1 Installing the NE Controller-A1



The following are installation steps specific to iR6570/5570 series.

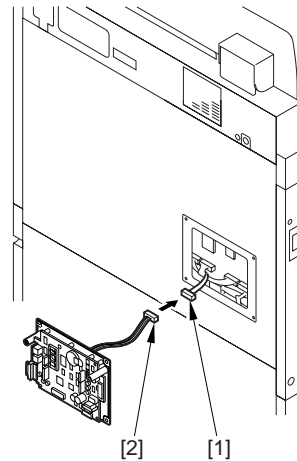
Refer to the Installation Manual included with the NE controller-A1 for various settings, operations check, and points to note.

- 1) Remove the upper cover of the controller (refer to the Installation Manual).
- 2) Connect the AC adapter plug to the controller (refer to the Installation Manual).
- 3) Remove the 4 screws [1], and detach the blanking plate [2] of the rear upper cover.



F-2-89

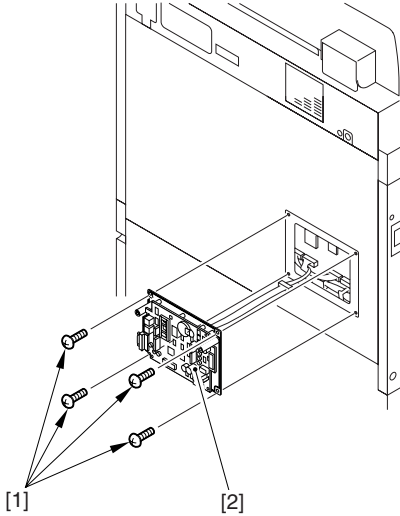
- 4) Draw out the cable [1] for the controller, and connect it to the controller cable [2].



F-2-90

- 5) Attach the controller [1] to the rear

upper cover with the 4 screws [2]. (Use the screws included with the NE controller-A1.)



F-2-91

- 6) Refer to the Installation Manual for the NE controller-A1, and make various settings and check operations.

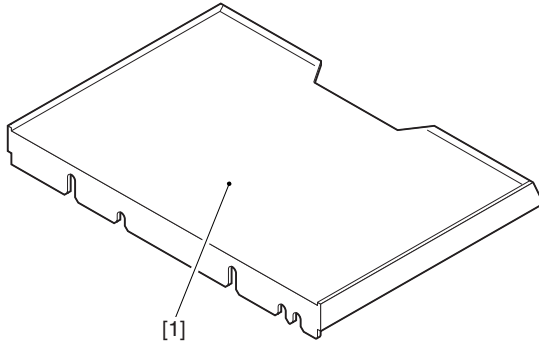


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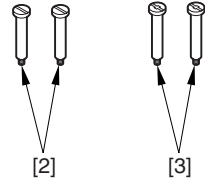
## 2.8 Installing the Original Holder

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### 2.8.1 Checking the Contents



F-2-92



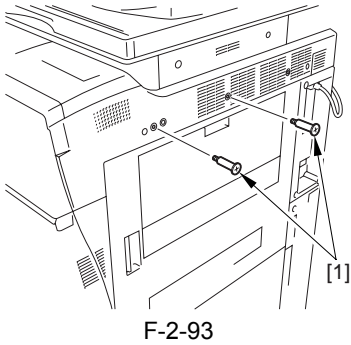
T-2-7

- |     |  |        |
|-----|--|--------|
| [1] | Document Tray                              | 1 pcs. |
| [2] | Stepped Screw (M4, approx. 31mm in length) | 2 pcs. |
| [3] | Stepped Screw (M4, approx. 33mm in length) | 2 pcs. |

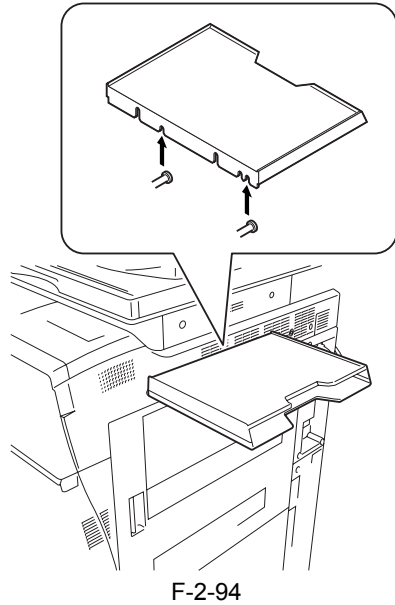
To attach the document tray.

## 2.8.2 Installation Procedure

- 1) Attach the 2 stepped screws [1] included in the package to the right upper cover.



- 2) Hook the document tray [1] on the stepped screws attached in step 1).



If it is difficult to attach the document table, loosen the 2 stepped screws once, and tighten them back after attaching the document tray.

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# Chapter 3

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## Basic Operation

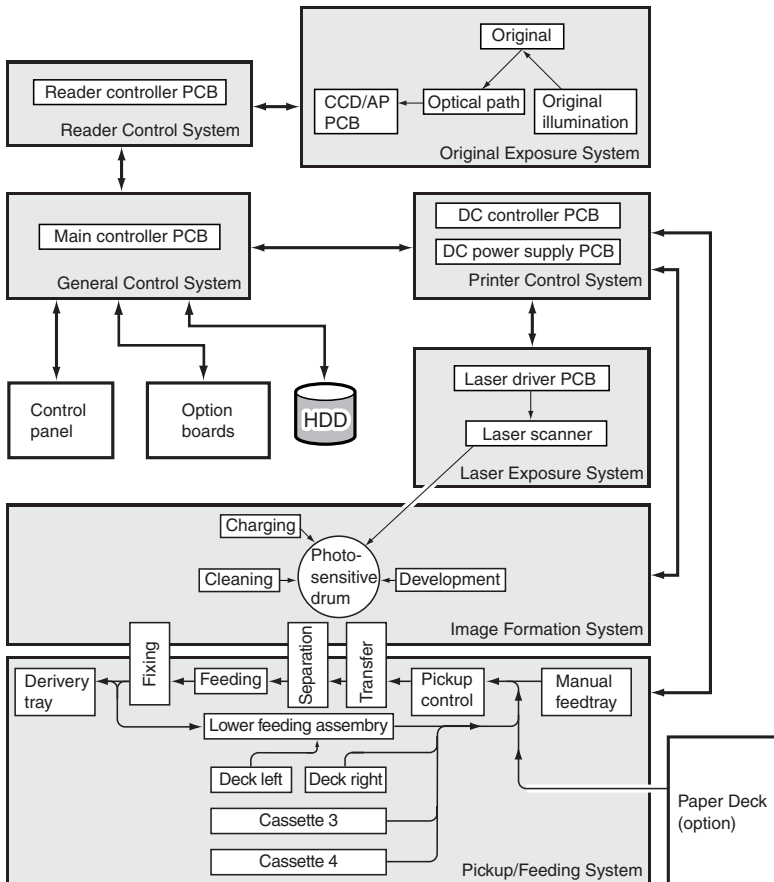
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3.1.2 Wiring Diagram of the Major PCBs .....	3-2
3.1.3 Controlling the Main Motor (M2).....	3-3
3.2 Basic Sequence .....	3-4
3.2.1 Basic Sequence of Operation (at power-on; 30-sec start-up mode).....	3-4
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3.2.3 Basic Sequence of Operation (at power-on; high-humidity start-up mode) .....	3-8
3.2.4 Basic Sequence of Operation (at time of copying/printing) .....	3-10

## 3.1 Construction

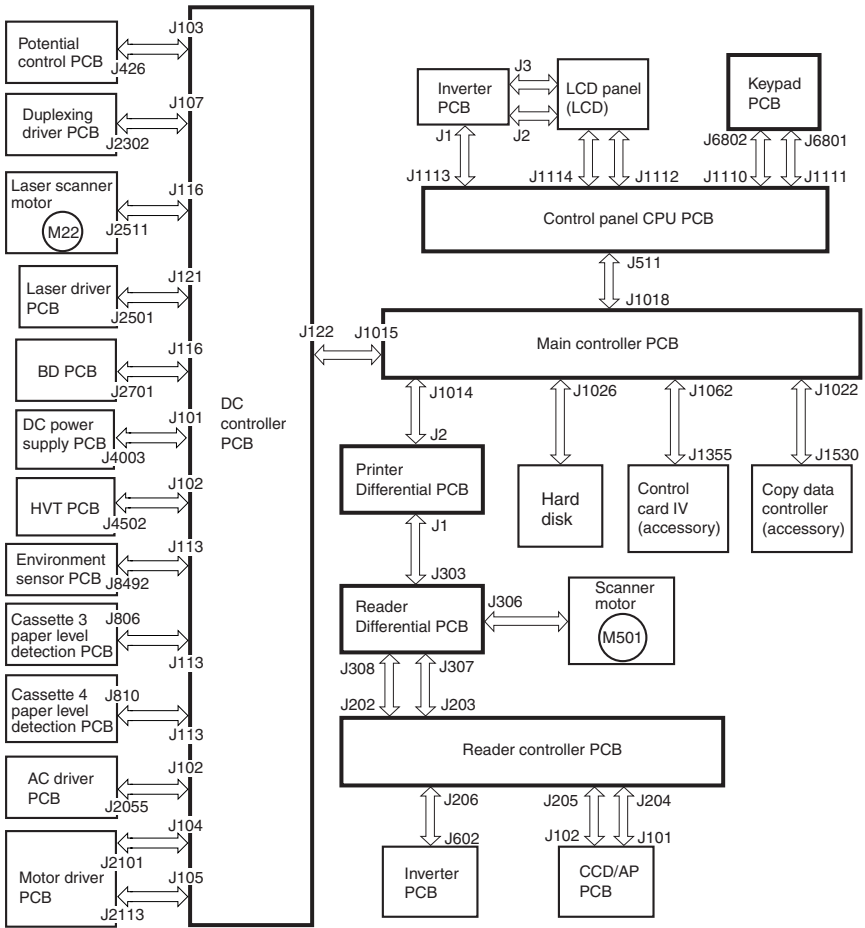
### 3.1.1 Functional Construction

The machine may be divided into the following seven functional blocks:



F-3-1

### 3.1.2 Wiring Diagram of the Major PCBs



Note: The symbol  $\longleftrightarrow$  in the diagram indicates major wiring connections, and does not indicate the flow of signals.

F-3-2

### 3.1.3 Controlling the Main Motor (M2)

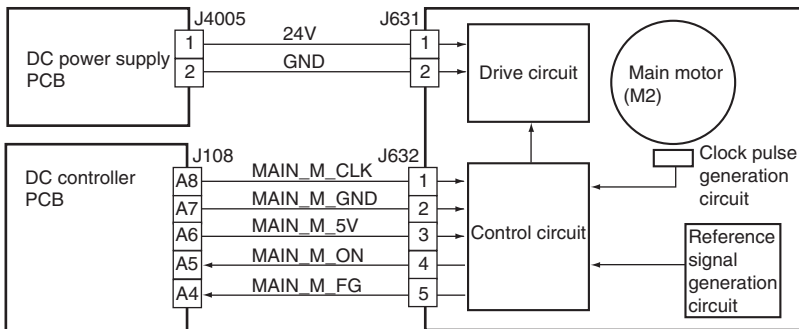
The functions of the main motor control circuit are as shown in the following table, and its block diagram is shown in the following figure:

T-3-1

Item	Description
Power supply	24V is supplied by the DC controller PCB
drive signal	from the DC controller PCB (MAIN_M_ON)
Operating/driving	Waste toner feedscrew Cleaning assembly Registration roller Manual feed pickup assembly Left deck feed roller 2 Developing assembly unit
Control	Turning on/off the motor Controlling the motor to a specific speed
Error detection	code E010

[1] When the main motor drive signal (MAIN\_M\_ON) goes '1', the main motor starts to rotate.

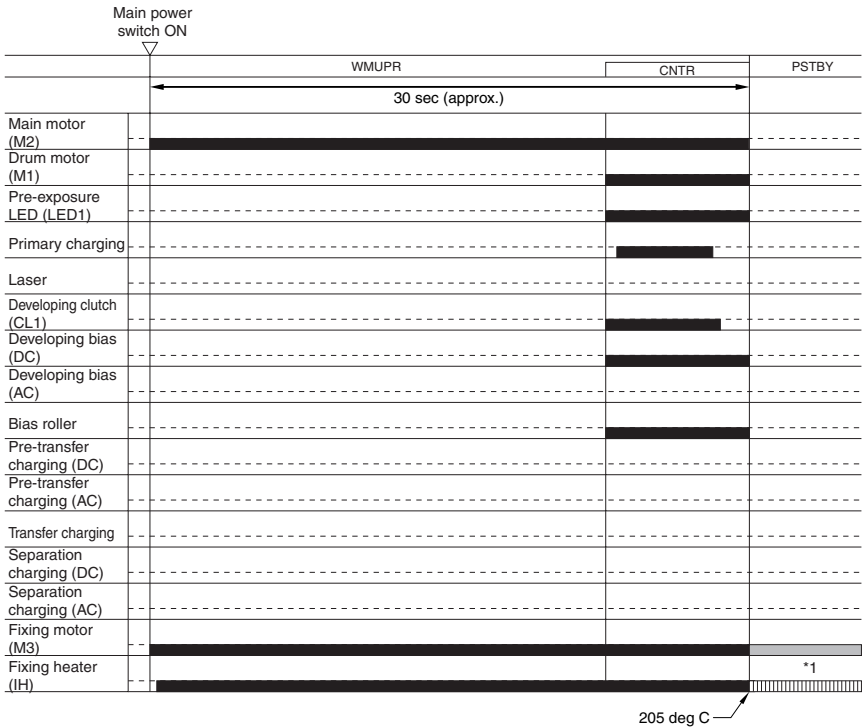
[2] When the main motor rotates, clock pulse signals (MAIN\_M\_FG) are generated. If the DC controller PCB detects an error in clock pulse signals, it will indicate "E010" in the control panel.



F-3-3

## 3.2 Basic Sequence

### 3.2.1 Basic Sequence of Operation (at power-on; 30-sec start-up mode)



F-3-4

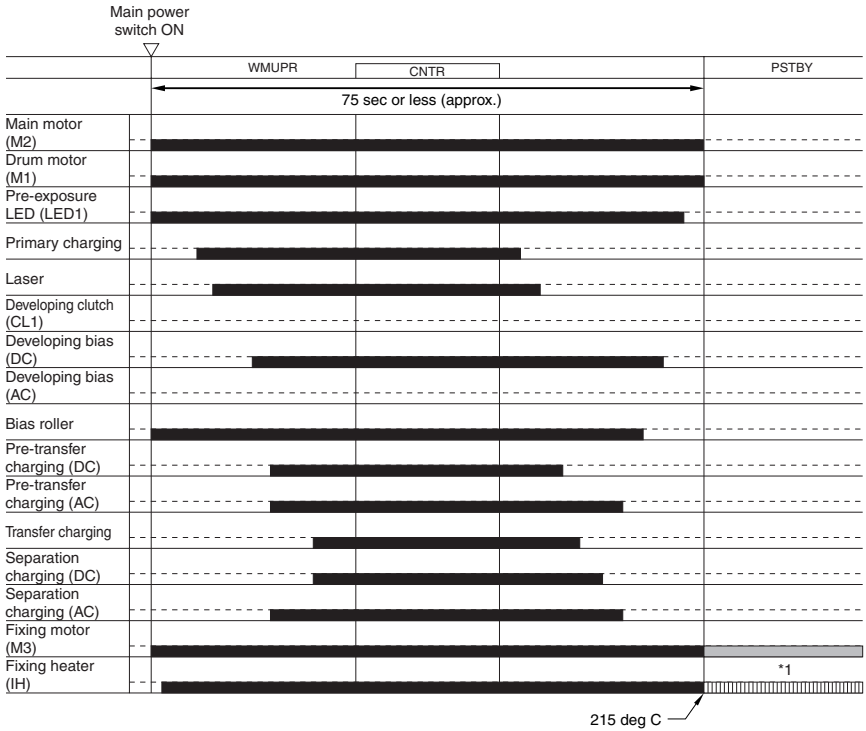
\*1: After a shift to standby, the fixing target temperature is decreased in 5-deg C increments at specific time intervals. When a specific temperature is reached, the fixing heater and the fixing motor are turned on and off to maintain the temperature.



## T-3-2

Interval	Description
WMUPR (warm-up)	For 30 sec after the main power is turned on.
CNTR (control rotation)	The machine executes potential control for the photosensitive drum. In the case of 30-sec start-up mode, the machine measure the potential for a single rotation of the drum, and adjusts only the target output. (VL control)
PSTBY (print standby)	The machine is in a state in which it is ready to accept a copy/print request signal.

### 3.2.2 Basic Sequence of Operation (at power-on; low-temperature start-up mode)



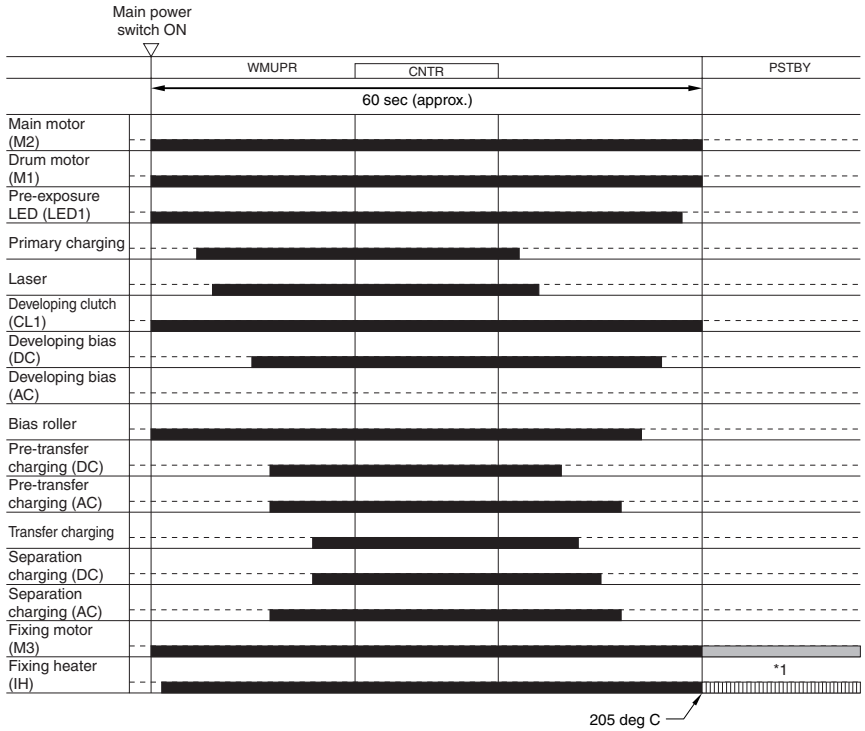
F-3-5

\*1: After a shift to standby, the fixing target temperature is decreased in 5-deg C increments at specific time intervals. When a specific temperature is reached, the fixing heater and the fixing motor are turned on and off to maintain the temperature.

## T-3-3

Interval	Description
WMUPR (warm-up)	From when the main power is turned on until the fixing roller temperature reaches a specific level and, in addition, the potential control of the photosensitive drum ends.
CNTR (control rotation)	The machine executes potential control of the photosensitive drum. For each mode (i.e., copier, printer), the machine executes VD control (to adjust the primary discharge current) and VI control (to adjust the laser output), and determines Vdc (developing bias).
PSTBY (print standby)	The machine is in a state in which it is ready to accept a copy/print request signal.

### 3.2.3 Basic Sequence of Operation (at power-on; high-humidity start-up mode)



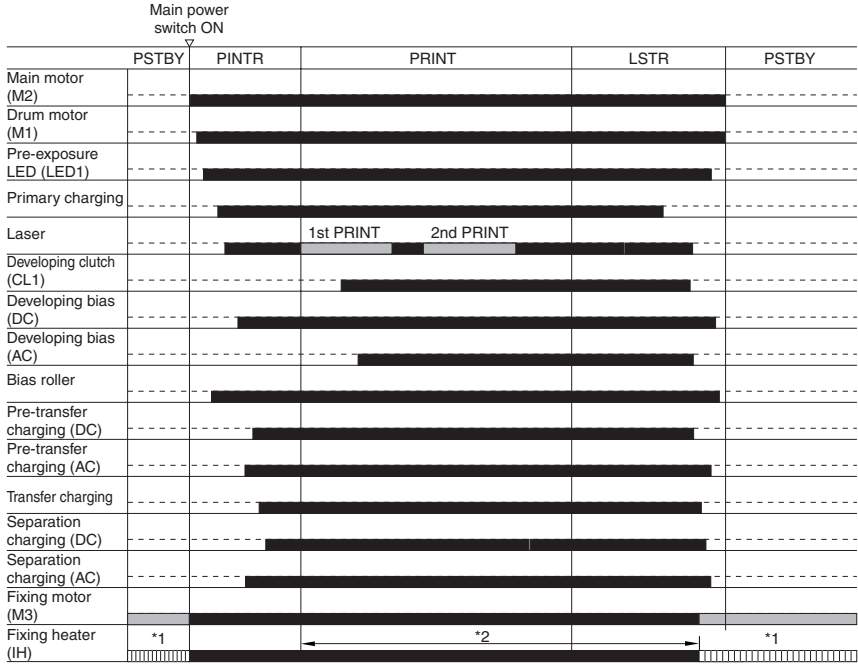
F-3-6

\*1: After a shift to standby, the fixing target temperature is decreased in 5-deg C increments at specific time intervals. When a specific temperature is reached, the fixing heater and the fixing motor are turned on and off to maintain the temperature.

## T-3-4

Interval	Description
WMUPR (warm-up)	From when the main power is turned on until the fixing roller temperature reaches a specific level, the potential control of the photosensitive drum ends, and as much as 60 sec passes from power-on.
CNTR (control rotation)	The machine executes potential control of the photosensitive drum. For each mode (i.e., copier, printer), it executes VD control (to adjust the primary discharge current) and VL control (to adjust the laser output) and determines Vdc (developing bias).
PSTBY (print standby)	The machine is in a state in which it is ready to accept a copy/print request signal.

### 3.2.4 Basic Sequence of Operation (at time of copying/printing)



F-3-7

- \*1: temperature control under way for fixing standby mode.
- \*2: as in the case of standby, while copying/printing is under way, the fixing target temperature is decreased to suit the passage of time after the end of start-up.

T-3-5

Interval	Description
PSTBY (standby)	The machine is in a state in which it can accept a copy/print request signal.
PNTR (initial rotation)	From when a print request signal is received until the image signal is generated.

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Interval	Description
PRINT (print)	The machine is in a state in which a toner image is transferred to paper and the paper is discharged.
LSTR (last rotation)	The machine is in a state in which paper has been discharged and all drive has ended.

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# Chapter 4

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## Main Controller



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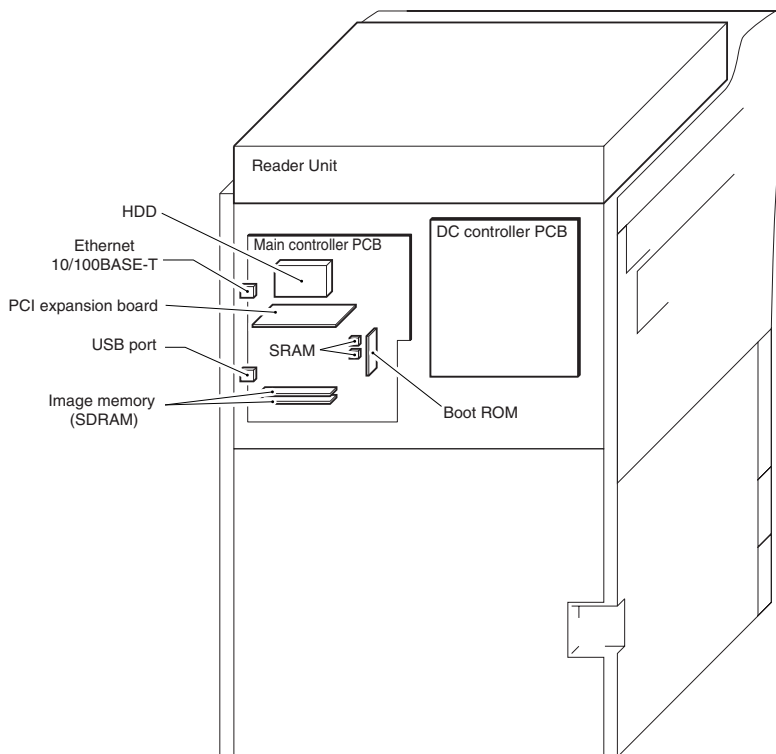
## 4.1 Construction

### 4.1.1 Construction and Mechanisms

The machine's main controller block consists of the following and has the following functions:

T-4-1

Item	Description
Main controller PCB	Controls system operation, memory, printer unit output, image processing, printer unit image input processing, rendering, color LCD controller, card printer unit interface, fax image processing, etc.
SRAM	Retains service mode settings (by SRAM), HDD management information
Image memory (SDRAM)	Temporarily retains image data (256 MB; 512 MB max.)
BOOTROM	Stores boot program
HDD	Stores system software, retains image data for Box/Fax function (20 GB)
USB port	USB2.0 interface
Ethernet port (10/100Bsae-T)	Ethernet interface

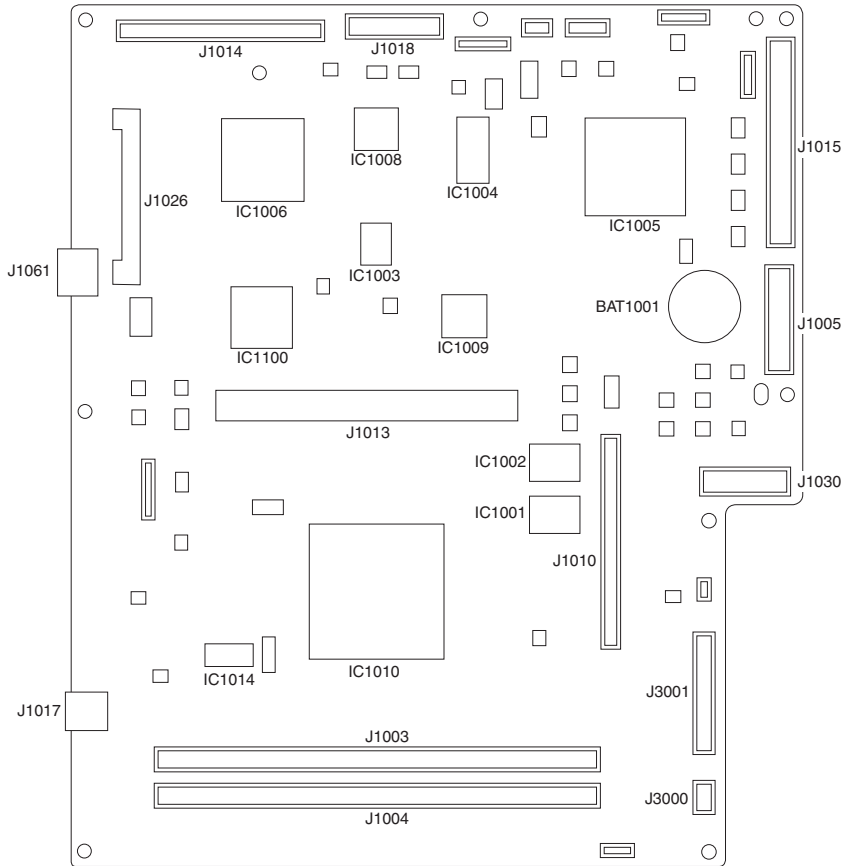


F-4-1

## 4.2 Construction of the Electrical Circuitry

### 4.2.1 Main Controller PCB

The following is a diagram showing the major control mechanisms of the main controller according to connectors:



F-4-2

## T-4-2

Connector	Description
J1003	SDRAM connection slot
J1004	SDRAM connection slot
J1005	Fax connector (2-port)
J1010	Boot ROM connector slot
J1013	Riser board connection slot
J1014	Scanner DDI
J1015	Printer DDI
J1017	USB port
J1018	Control panel connector
J1026	Hard disk connector
J1030	Fax connector (1-port)
J1061	Ethernet port (10Base-T/100Base-TX)
J3000	Power connector (+5V)
J3001	Power connector (+3.3V)

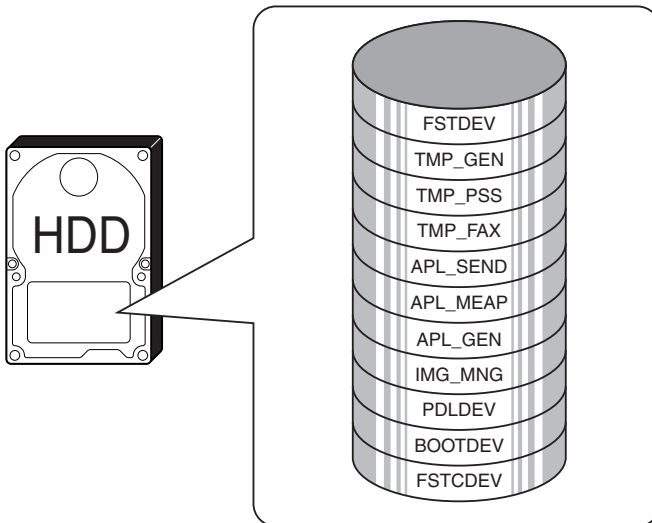
## 4.2.2 HDD

The HDD is divided into 11 partitions (blocks), each assigned with specific functions.

## T-4-3

Partition	Description
FSTDEV	Collects compressed image data.
TMP_GEN	Stores temporary files, log data.
TMP_PSS	PDL spool
TMP_FAX	Ensures fax reception.
APL_SEND	Stores user data (address book, transfer settings).
APL_MEAP	Stores MEAP applications.

Partition	Description
APL_GEN	Mode memory data, standard mode data History (e.g., print job history) iFax image data Fax image data Other
IMG_MNG	Stores file management table, profile.
PDL_DEV	Stores PDL font, etc.
BOOTDEV	Stores execution module, message data file, RUI content, etc.
FSTCDEV	Chasing (not used)

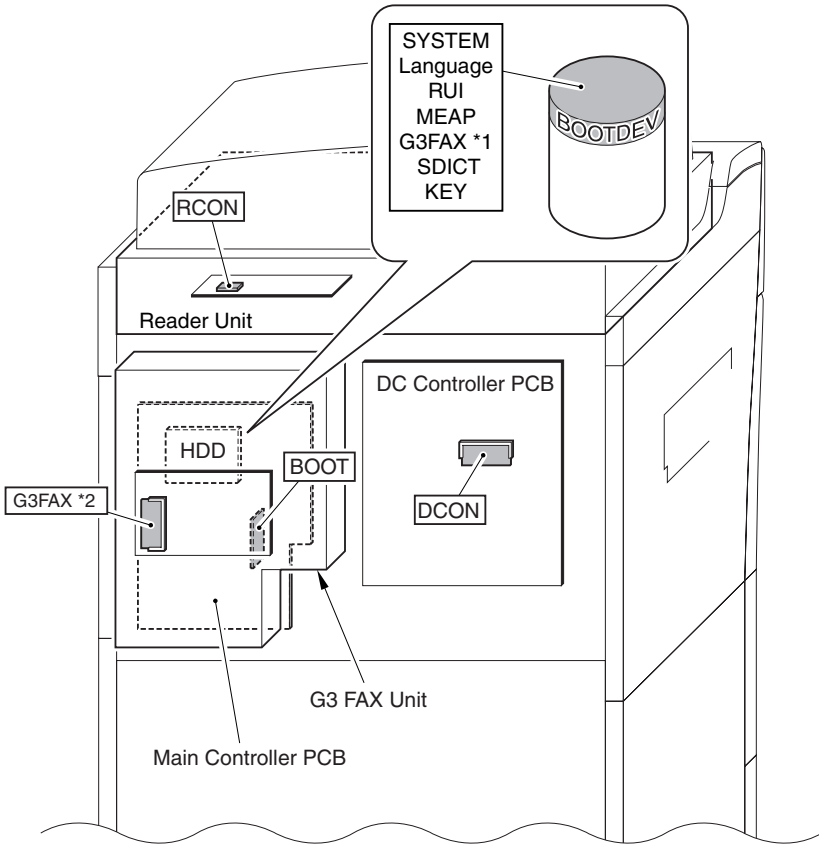


F-4-3

The following shows the construction of the machine's system software:

T-4-4

System Software	Description	Location	Remarks
System	System module (controls mechanism as a whole)	HDD (BOOTDEV)	
Language	Language module (controls LCD indications)	HDD (BOOTDEV)	
RUI	Remote user interface module	HDD (BOOTDEV)	
Boot	Starts up the machine	Boot ROM	DIMM
G3FAX	Controls G3 Fax (2-port)	G3 Fax board	DIMM
	Controls G3 Fax (1-port)	HDD (BOOTDEV)	
Dcon	Controls the DC controller	DC controller PCB	Flash ROM (soldered)
Rcon	Controls the Reader controller	Reader controller PCB	Flash ROM (soldered)
Meapcont	Controls MEAP applications	HDD (BOOTDEV)	
SDICT	OCR dictionary	HDD (BOOTDEV)	
KEY	encryption communication key	HDD (BOOTDEV)	



F-4-4

\*1: 1-port FAX

\*2: 2-port FAX



## 4.3 Start-Up Sequence

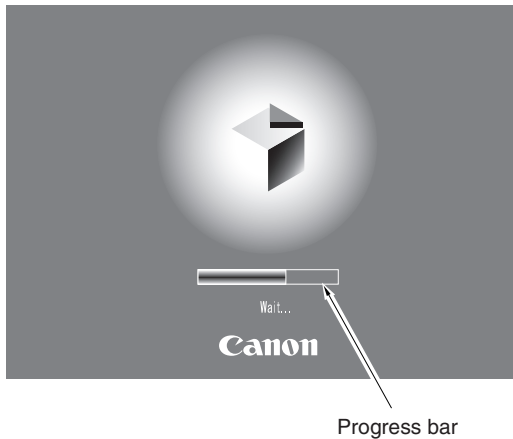
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### 4.3.1 Overview

The system software used to control the machine is stored on the HDD.

When the machine is started, the CPU on the main controller PCB reads the system software from the HDD according to the instructions of the boot ROM boot program, and writes it to the image memory (SDRAM) of the controller PCB.

While the CPU reads the system software from the HDD to the image memory (DRAM), the control panel shows the following screen, using a progress bar to indicate the progress of the start-up sequence.



F-4-5



Do not turn off the main power while the progress bar is indicated, as access is being made to the HDD. Turning off the power can cause a fault on the HDD (identified by E602).

---

## 4.3.2 Start-Up Sequence

### <Boot ROM Area>

#### - Self Diagnosis Program (interval 1)

The self-diagnosis program is run by the CPU on the main controller PCB when the main power switch is turned on.

The program is used to check the condition of the image memory (SDRAM) and the HDD. The machine will indicate an error code if it finds a fault while running the program.

#### - Boot Program (interval 2)

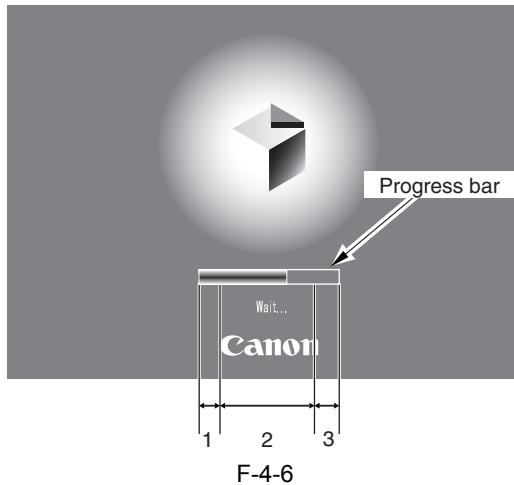
When the self-diagnosis program ends normally, the CPU on the main controller PCB executes the boot program.

The program is used to read the system software from the HDD to write it into the image memory (SDRAM).

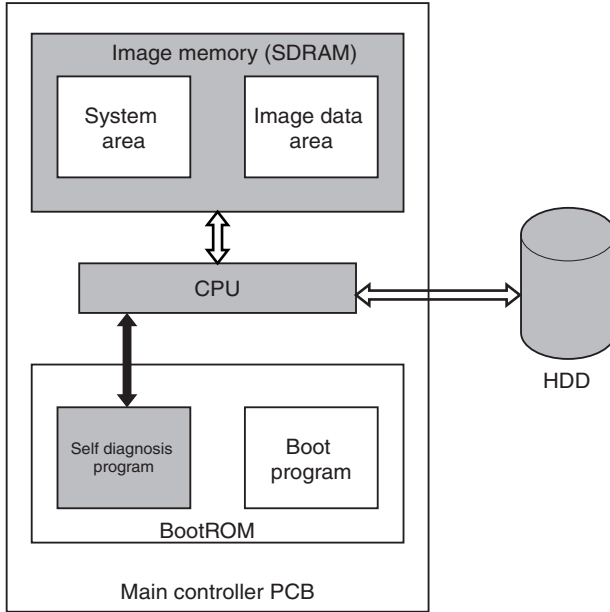
#### - Image Memory (SDRAM) Area (interval 3)

The system software written by the boot program initializes the various functional blocks (e.g., I/F settings of the main controller).

When all the foregoing ends normally, the machine becomes ready to accept a job (i.e., the control panel shows the Operation screen, and the LED on the Start key changes from red to green).



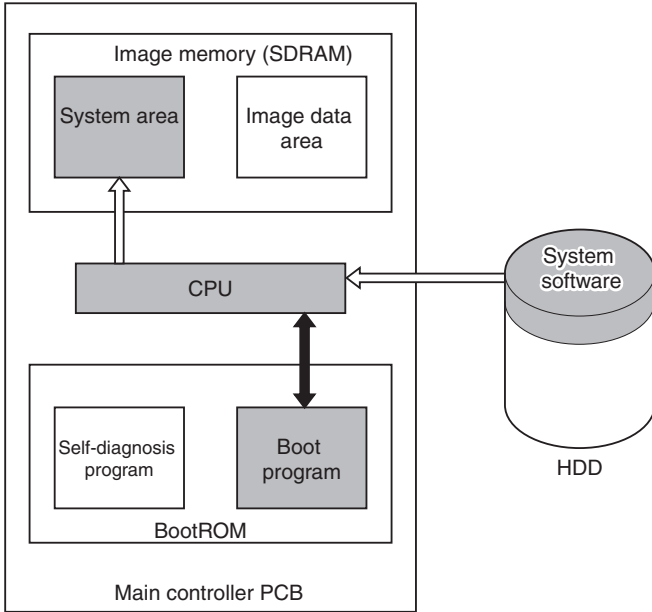
- While the Self-Diagnosis Program Is Being Executed



↔ : access to the program during execution  
↔ : access for checking

F-4-7

- While the Boot Program Is Being Run



↔ : access to the program during execution.

⇐ : flow of the system program.

F-4-8

## 4.4 Shut-Down Sequence

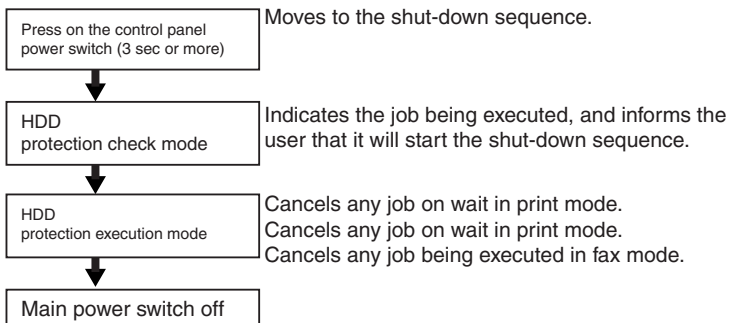
---

### 4.4.1 Overview

If the main power switch is turned off while the machine is accessing its HDD, damage can well occur on the HDD. To avoid such damage, the machine is provided with a shut-down sequence.

### 4.4.2 Flow of Operation

The following diagram shows the flow of shut-down operation:

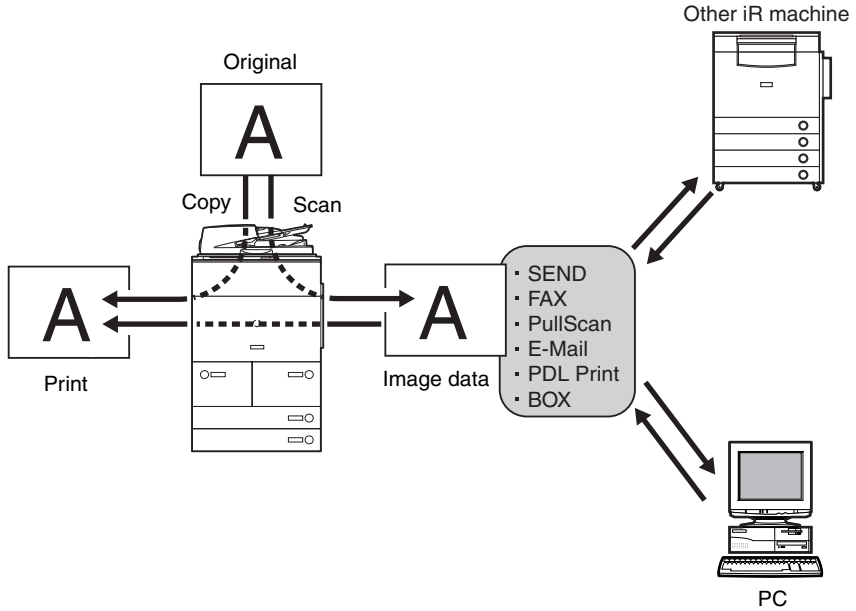


F-4-9

## 4.5 Image Processing

### 4.5.1 Overview of the Image Flow

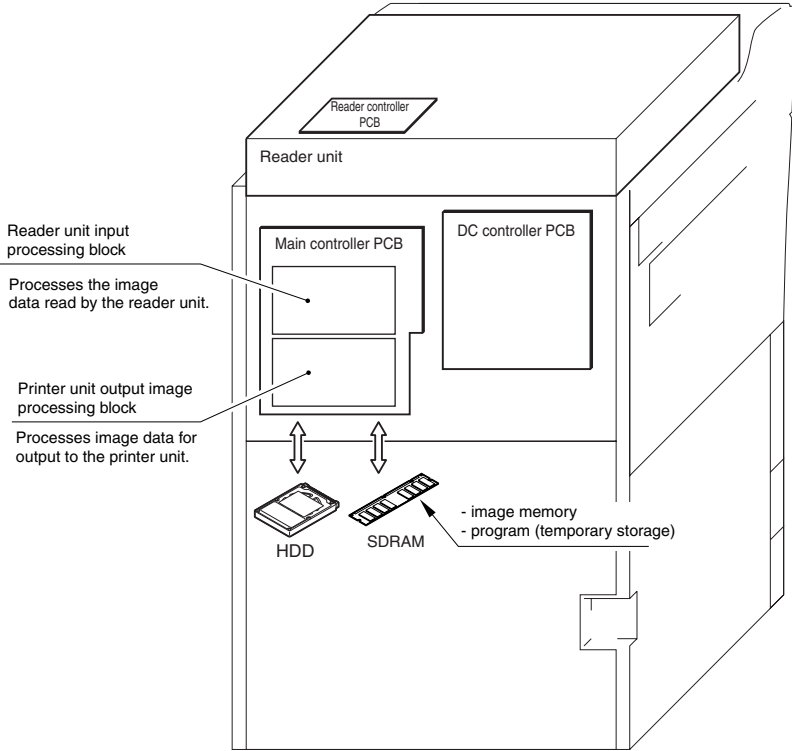
The following shows the flow of images in relation to the machine's functions:



F-4-10

### 4.5.2 Construction of the Image Processing Module

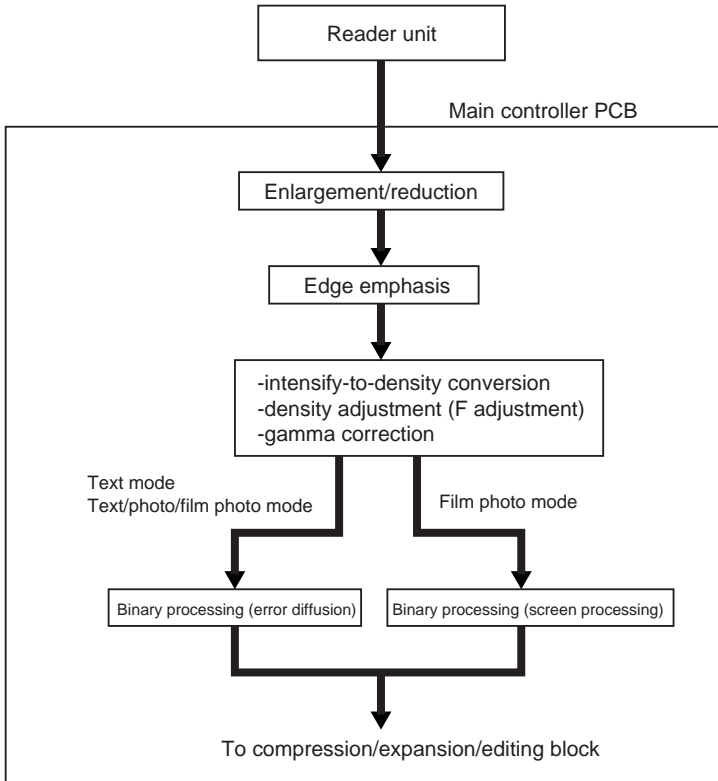
The machine's major image processing is executed by the main controller PCB. The following shows the construction of the modules associated with image processing:



F-4-11

### 4.5.3 Reader Unit Input Image Processing

The image data collected by the contact image sensor is processed by the main controller PCB.

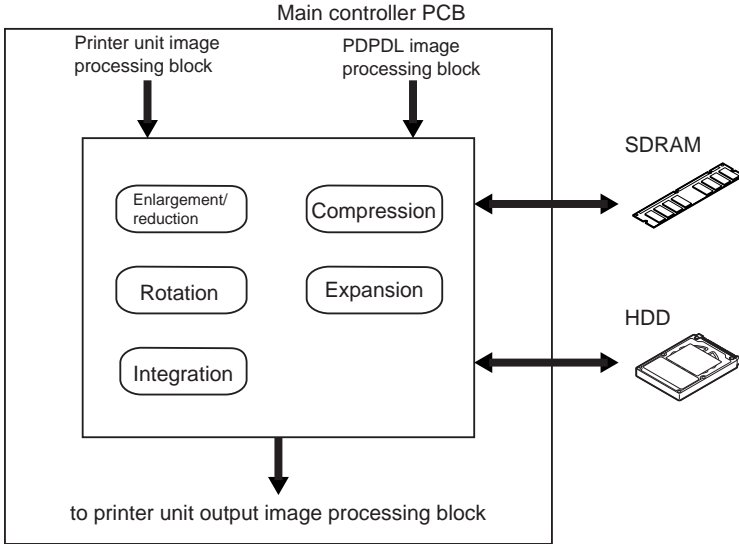


F-4-12



### 4.5.4 Compression/ Extension/ Editing Block

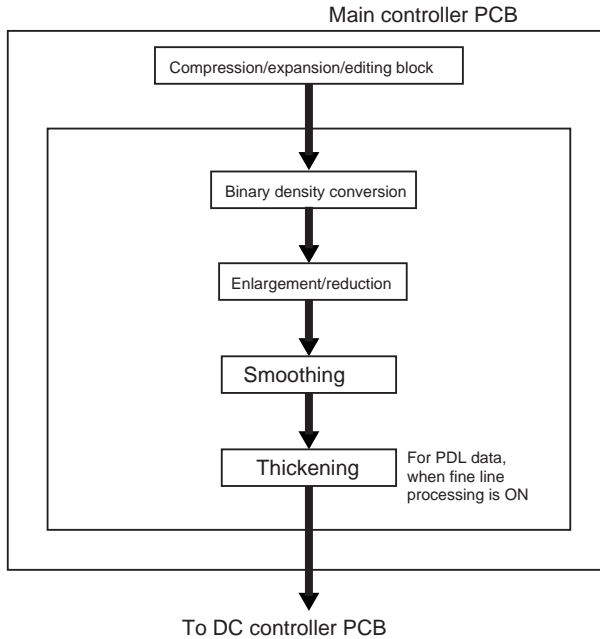
Here, image data is processed for compression, extension, and editing.



F-4-13

### 4.5.5 Printer unit Output Image Processing

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

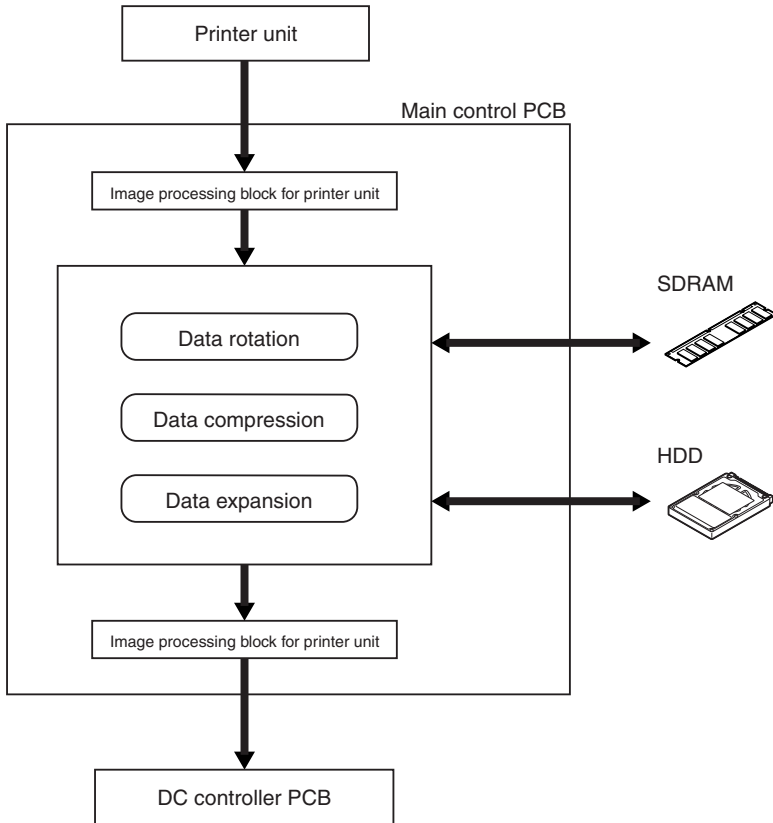


F-4-14

## 4.6 Flow of Image Data

### 4.6.1 Flow of Image Data According to Copy Functions

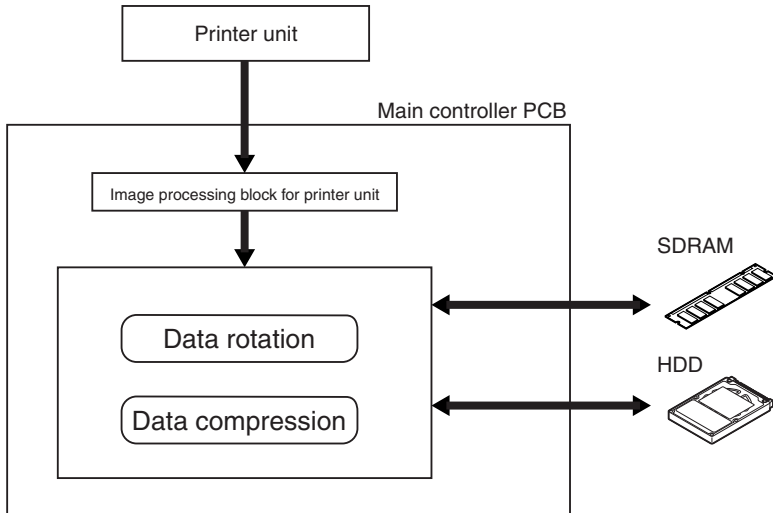
The following is the flow of image data when the Copy Function is in use:



F-4-15

## 4.6.2 Flow of Image Data for the Box Function

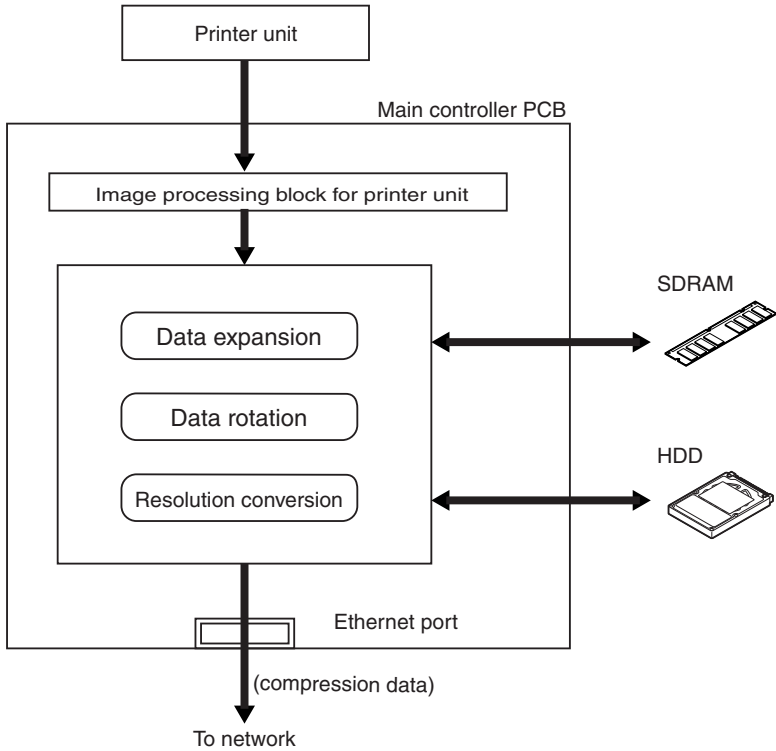
The following is the flow of image data when the Box function is in use:



F-4-16

### 4.6.3 Flow of Image Data for the SEND Function

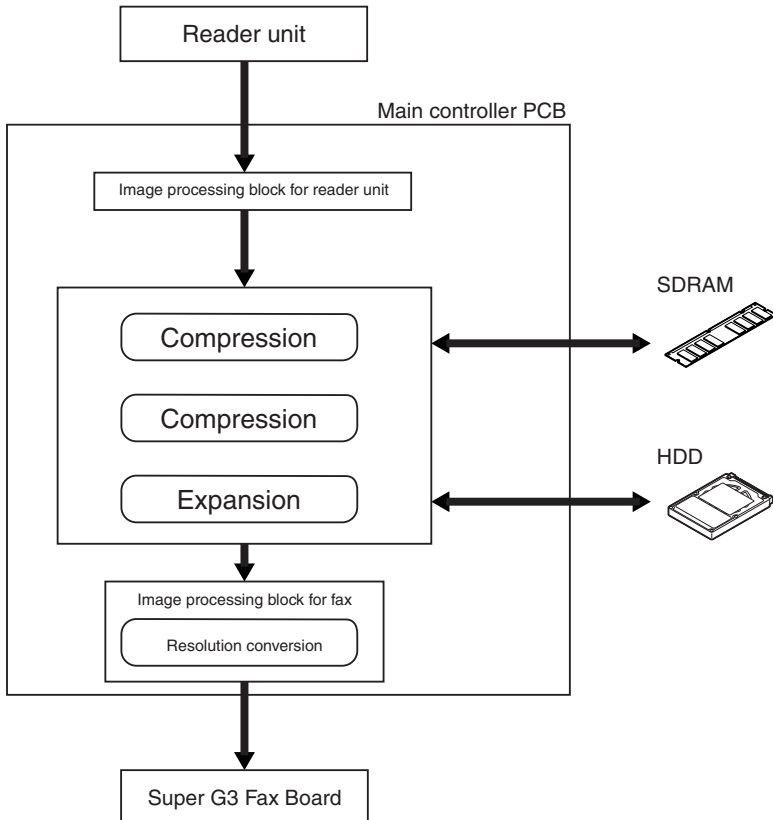
The following is the flow of image data when the SEND function is in use.



F-4-17

#### 4.6.4 Flow of Image Data for the Fax Transmission

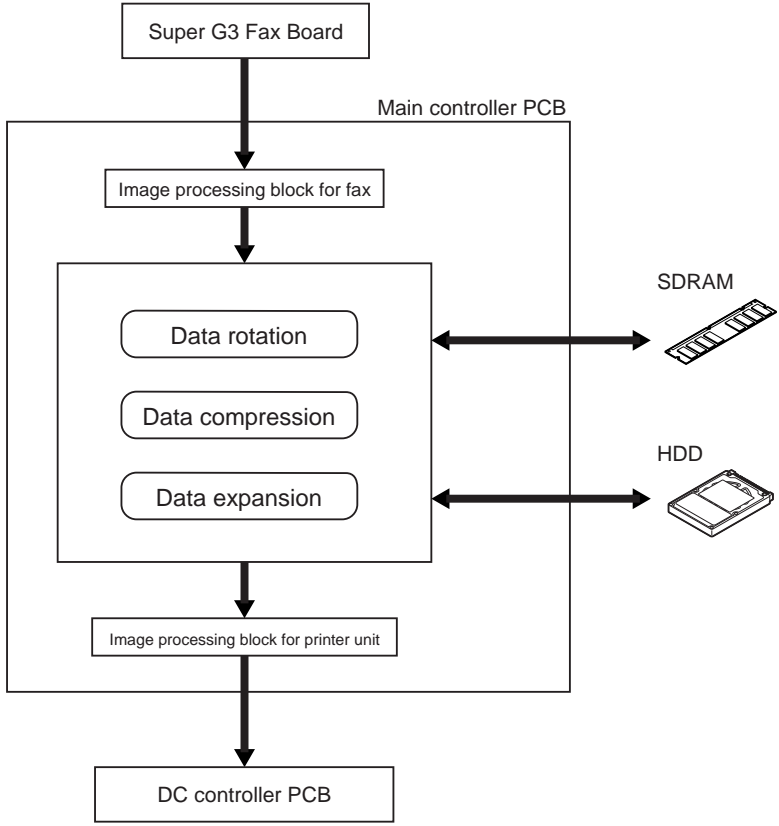
The following is the flow of image data when the fax transmission function is in use:



F-4-18

### 4.6.5 Flow of Image Data for the Fax Reception Function

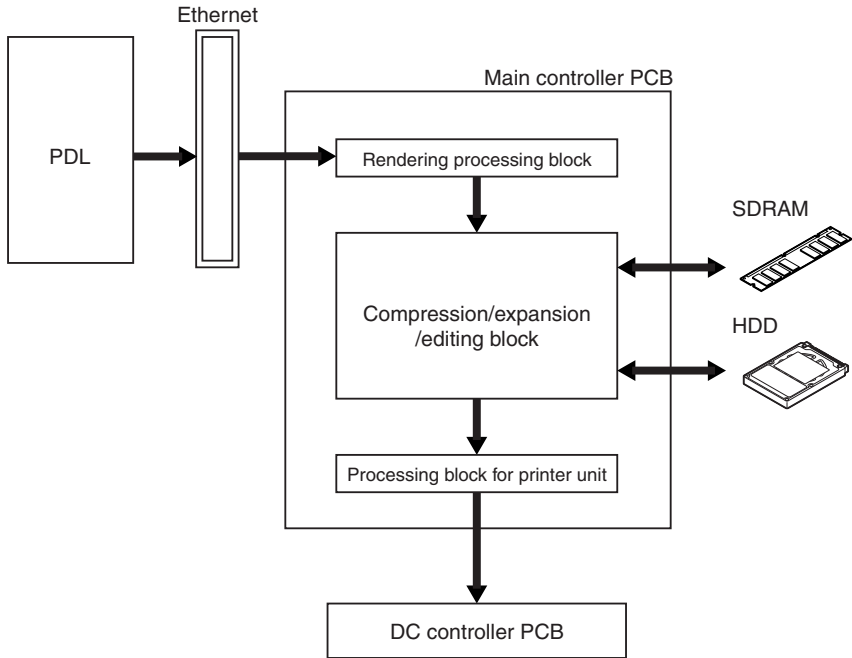
The following is the flow of image data when the fax reception function is in use:



F-4-19

## 4.6.6 Flow of Image Data for the PDL Function

The following is the flow of image data when the PDL function is in use:



F-4-20

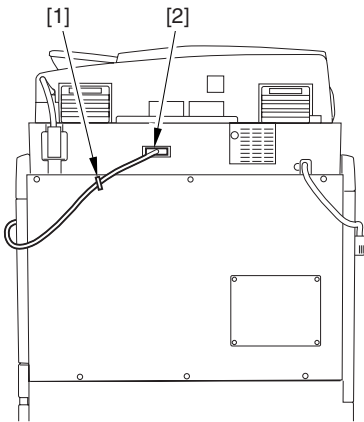


## 4.7 Parts Replacement Procedure

### 4.7.1 Main Controller Box

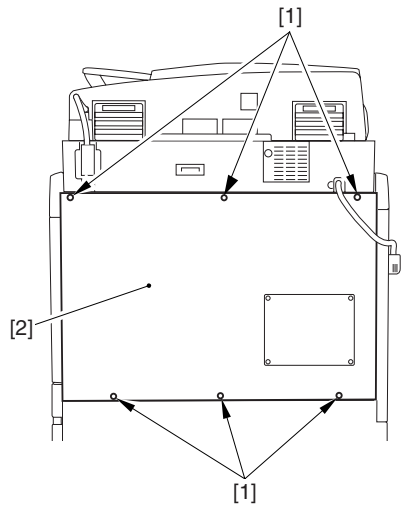
#### 4.7.1.1 Removing the Rear Cover (upper)

- 1) Open the cable clamp [1], and free the reader unit communications cable [2].



F-4-21

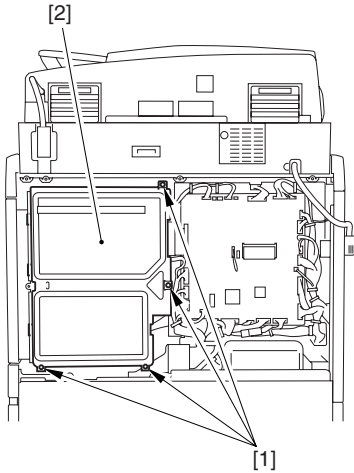
- 2) Remove the 6 screws [1], and detach the upper rear cover [2].



F-4-22

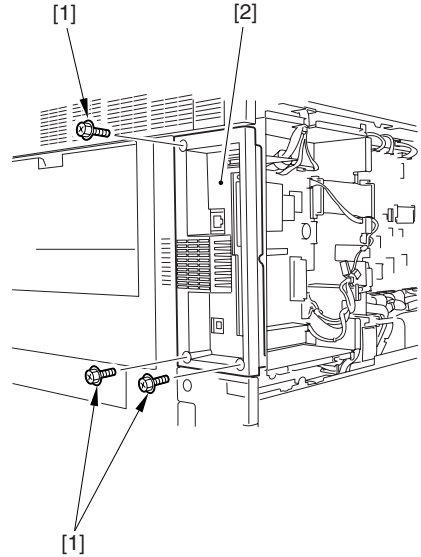
#### 4.7.1.2 Removing the Main Controller Box

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



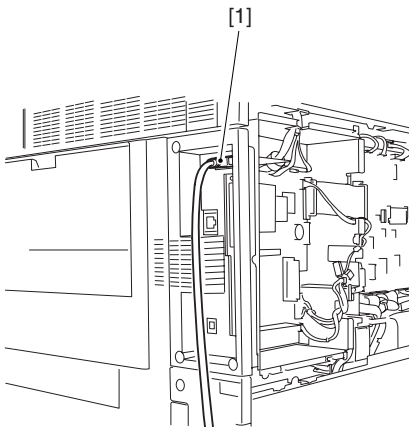
F-4-23

- 2) Disconnect the connector [1] of the reader unit communications cable.



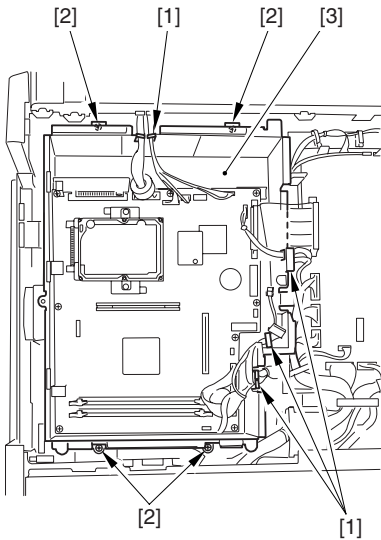
F-4-25

- 4) Disconnect all connectors of the main control PCB, and free all harnesses from the 4 wire saddles [1]; then, detach the main controller box [3].

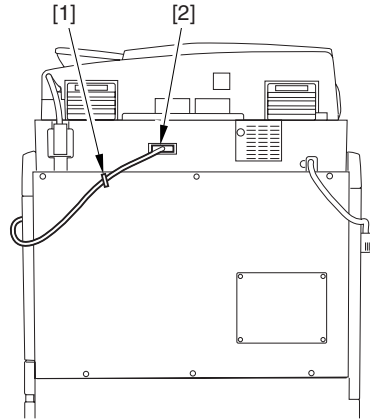


F-4-24

- 3) Remove the 3 screws [1], and detach the upper rear right cover [2].



F-4-26



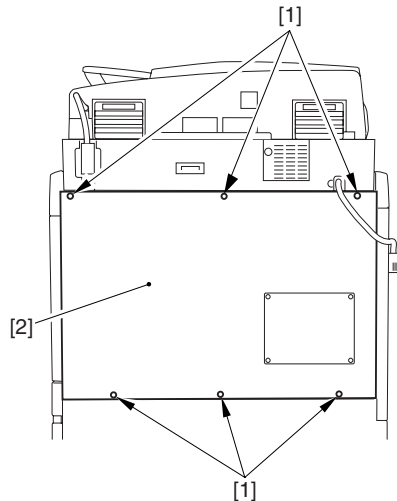
F-4-27

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

## 4.7.2 Main Controller PCB

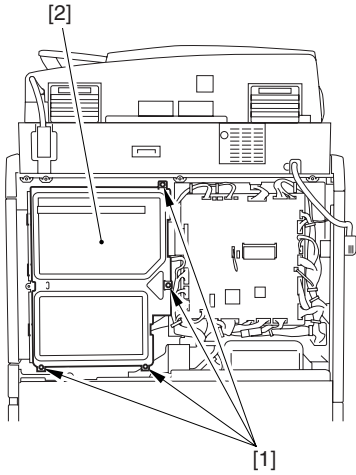
### 4.7.2.1 Removing the Main Controller PCB

- 1) Free the reader unit combinations cable from the wire saddle [1] of the upper rear cover; then, disconnect the connector [2].



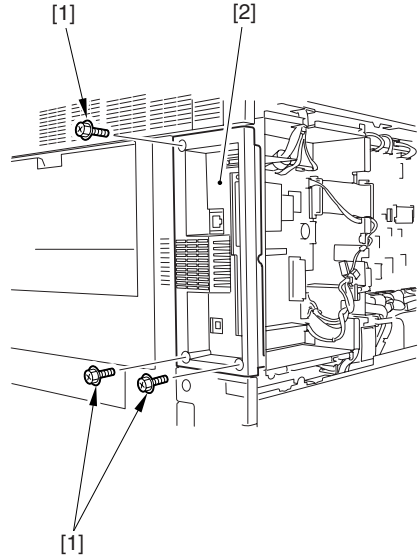
F-4-28

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



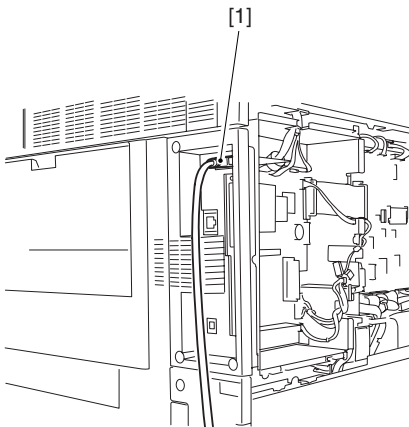
F-4-29

- 4) Disconnect the connector [1] of the reader unit communications cable.



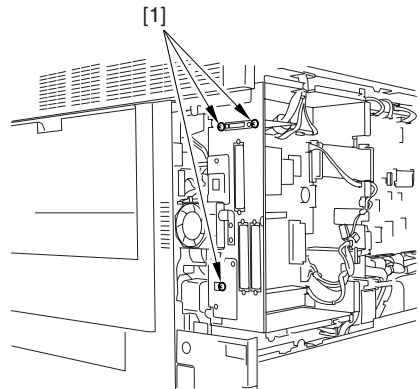
F-4-31

- 6) Remove the 3 screws [1].



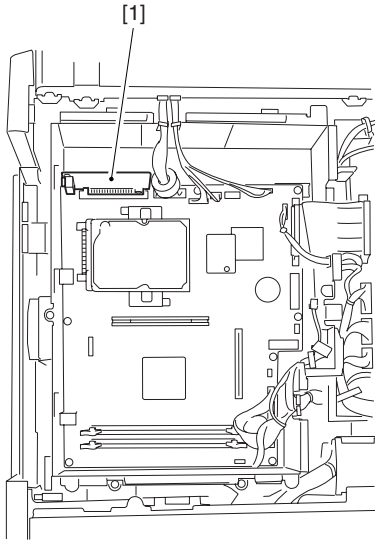
F-4-30

- 5) Remove the 3 screws [1], and detach the upper rear right cover [2].



F-4-32

- 7) Detach the reader unit relay PCB [1] from the main controller PCB.

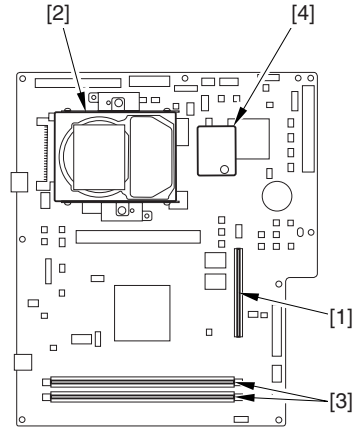


F-4-33

8) Disconnect all connectors from the main controller PCB, and remove the 8 screws [1]; then, detach the main controller PCB [2].

#### 4.7.2.2 After Replacing the Main Controller PCB

If you are replacing the main controller PCB, be sure to transfer the following components from the old to new PCB:



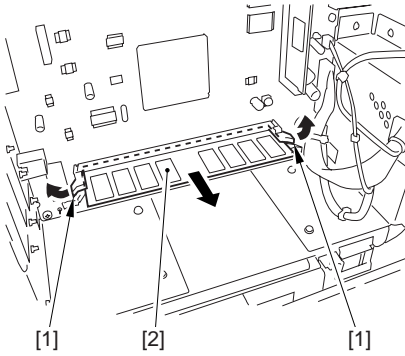
F-4-34

- [1] Boot ROM
- [2] HDD
- [3] image memory (SDRAM)
- [4] counter memory PCB

### 4.7.3 SDRAM

#### 4.7.3.1 Removing the SDRAM

- 1) Remove the upper rear cover.
- 2) Remove the main controller box cover.
- 3) Open the 2 arms [1], and release the lock; then, detach the SDRAM [2].

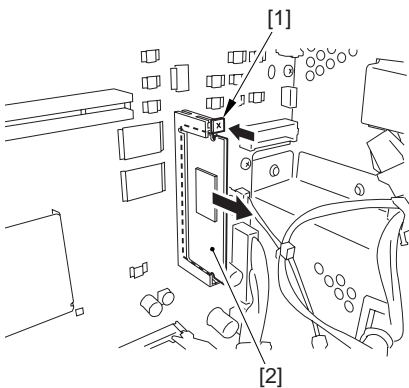


F-4-35

## 4.7.4 Boot ROM

### 4.7.4.1 Removing the Boot ROM

- 1) Remove the upper rear cover.
- 2) Remove the main controller box cover.
- 3) Push in the lock release lever [1] to free the boot ROM [2]; then, detach it.

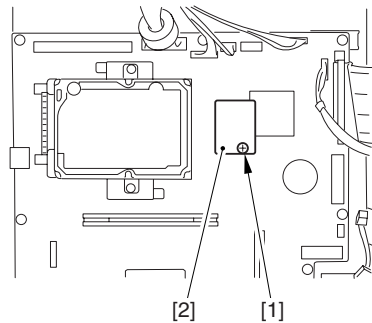


F-4-36

## 4.7.5 HDD

### 4.7.5.1 Removing the HDD

- 1) Remove the upper rear cover.
- 2) Remove the main controller box cover.
- 3) Remove the screw [1], and detach the counter memory PCB [2].

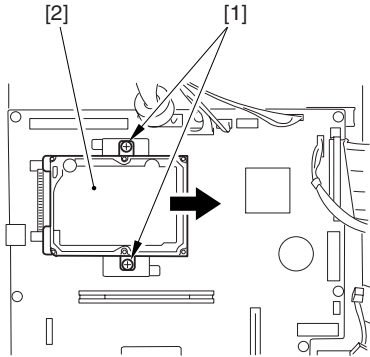


F-4-37



Be sure to remove the counter memory PCB. If you hit the hard disk against the memory PCB, the impact can leave appreciable damage.

- 4) Remove the 2 screws [1], and detach the hard disk [2] in the direction of the arrow.



F-4-38

#### 4.7.5.2 After Replacing the HDD

##### 1) Format the HDD.

Start up the machine in safe mode (i.e., while holding down the 2 and 8 keys, turn on the main power).

Using the HD format function of the SST, format all partitions (\$); for details, see the descriptions given for upgrading.

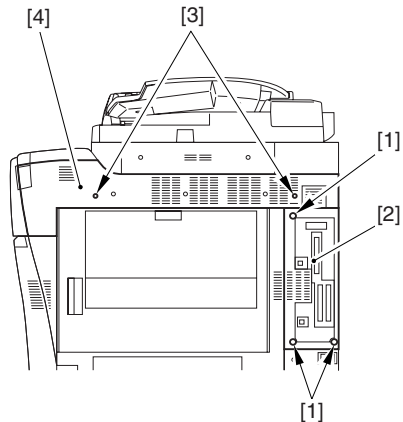
##### 2) Download the system software.

Using the SST, download the following: LANGUAGE, RUI, PS-FRONT, OCR dictionary, SSL coding key, SSL CA certificate, MEAP content.

### 4.7.6 Controller Fan

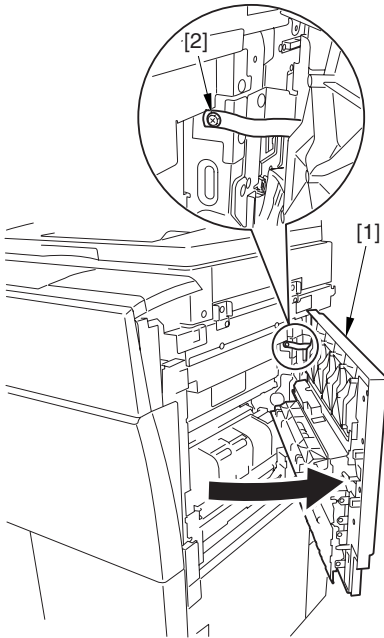
#### 4.7.6.1 Removing the Controller Cooling Fan

1) Remove the 3 screws [1], and detach the upper rear right cover [2]; then, remove the 2 screws [3], and detach the upper right cover [4].



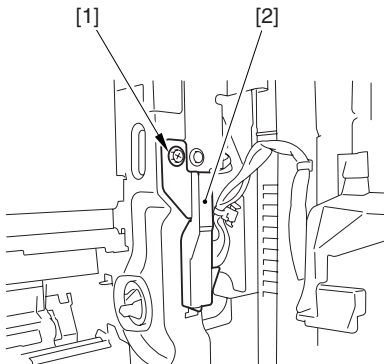
F-4-39

2) Open the right door [1], and remove the screw [2].



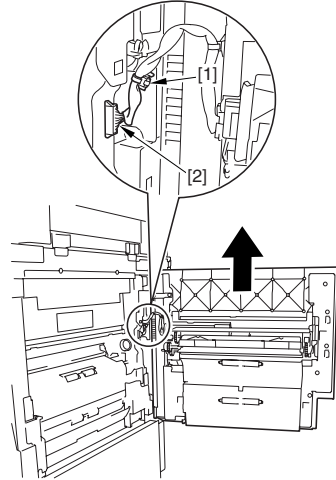
F-4-40

- 3) Remove the screw [1], and detach the connector cover [2].



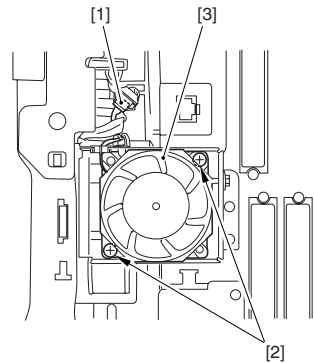
F-4-41

- 4) Detach the reuse band [1], and disconnect the connector [2]; then, lift the right door to detach.



F-4-42

- 5) Disconnect the connector [1], and free the fan harness from the clamp; then, remove the 2 screws [2], and detach the controller cooling fan [3].



F-4-43



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# Chapter 5

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Original  
Exposure  
System

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## 5.1 Construction

### 5.1.1 Specifications, Controls, and Functions

The specifications, controls, and functions of the machine's original exposure system are as follows:

T-5-1

Item	Description
Scanning lamp	xenon lamp
Original scanning	book mode: by moving the scanner
	ADF mode: by moving original
Original reading resolution	600 x 600 dpi (main scanning x sub scanning)
Halftone	256 gradations
Scanning position detection	by scanner HP sensor
lens	single-focal point, fixed type
Magnification	[1] in platen mode: 25% to 400%
	main scanning direction: image processing by controller block
	sub scanning direction: scanning speed variation (No. 1 mirror base; 100% or higher) in combination with image processing by reader block (50% or higher and lower than 100%)
	in combination with image processing in reader block and controller block (lower than 50%)
	[2] ADF mode: 25% to 200%
	main scanning direction: image processing in controller block
	sub scanning direction: original movement speed variation (50% or higher); in combination with image processing in controller block (lower than 50%)

Item	Description
Scanner drive control	No. 1/2 mirror base: control by pulse motor
Scanning lamp control	[1]activation control by pulse motor
	[2]error detection control
Original size detection	[1]book mode
	sub scanning direction: by reflection type sensor
	main scanning direction: by CCD
	[2] ADF mode
	main scanning direction: by slide guide in ADF
	sub scanning direction: by photosensor in ADF

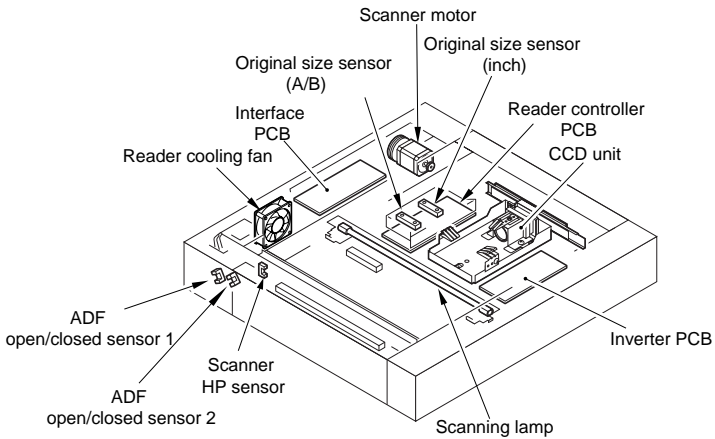
### 5.1.2 Major Components

The major components of the original exposure system are as follows:

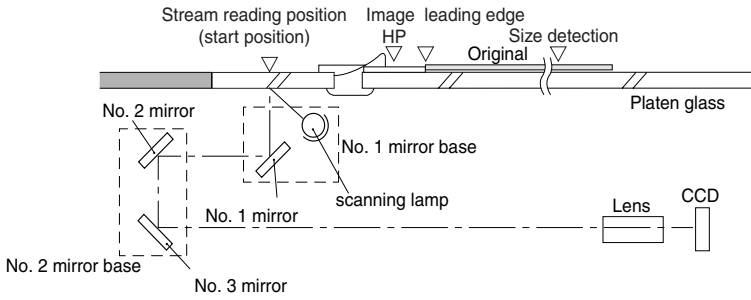
T-5-2

Item	Notation	Description
Scanning lamp	LA1	xenon lamp (90,000 lx)
Scanner motor	M501	2-phase pulse motor (pulse control)
Reader Cooling fan	FM501	cools the reader block
ADF open/closed sensor 1	PS501	detects the state (open/closed) of the ADF; at 5 deg
Scanner HP sensor	PS502	detects scanner home position
ADF open/closed sensor 2	PS503	detects the state (open/closed) of the ADF (detects timing of size detection at 25 deg)
Original size sensor (AB)	---	detects the size in sub scanning direction (AB-configuration)

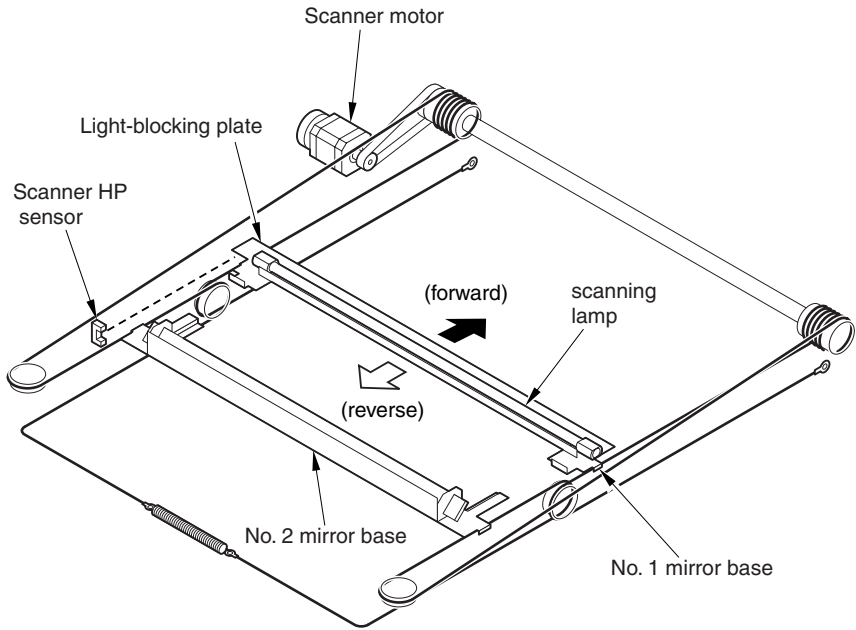
Item	Notation	Description
Original size sensor (inch)	---	detects size in sub scanning direction (inch)
Mirror	---	No. 1, 2, 3 mirrors
Inverter PCB	---	drives the scanning lamp
CCD unit	---	collects image data, performs analog image processing
Reader controller PCB	---	controls the reader unit as a whole, performs digital image processing



F-5-1



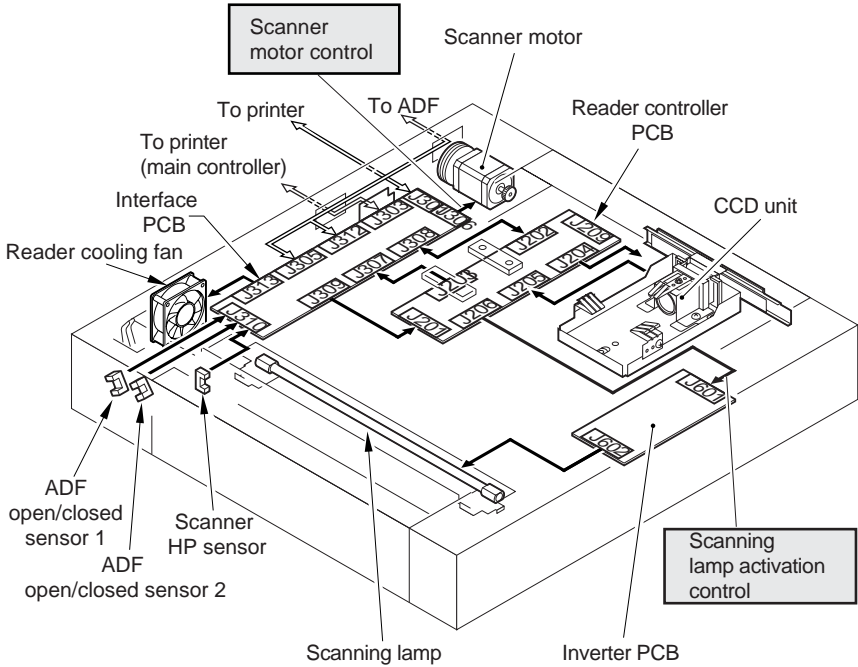
F-5-2



F-5-3

### 5.1.3 Construction of the Control System

The construction of the control system of the machine's original exposure system is as follows:

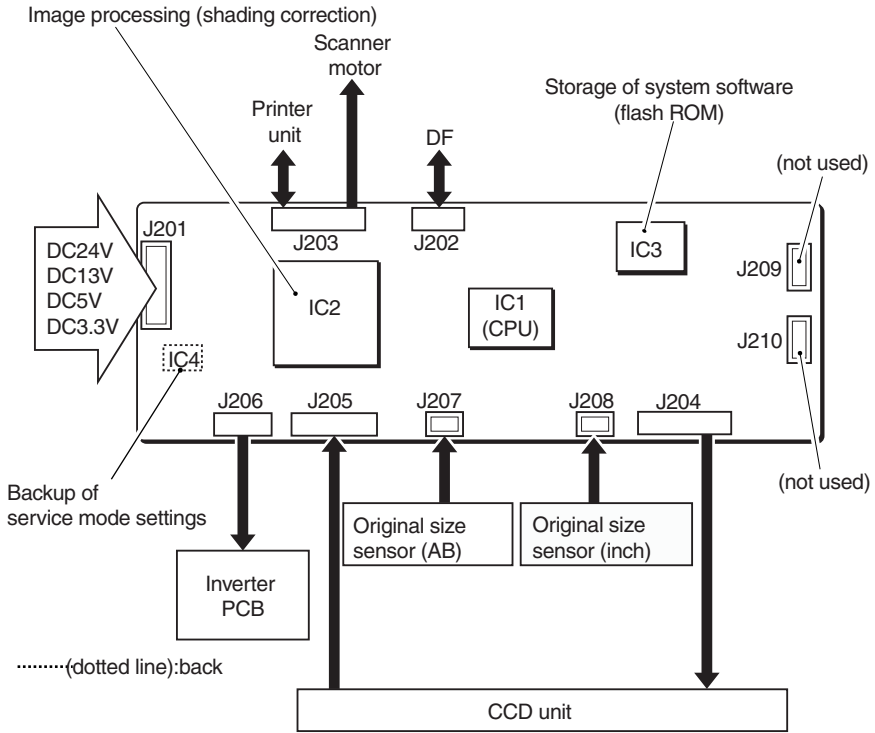


F-5-4



### 5.1.4 Reader Controller PCB

The functional construction of the reader controller PCB is as follows:



F-5-5

T-5-3

Jack	Description
J201	used for input of power from the machine (printer unit)
J202	used for communication with the ADF (sensor signal input, fan control, scanner motor control, controller)

<b>Jack</b>	<b>Description</b>
J203	used for communication with the printer unit; connects to the scanner motor; used for communication with the ADF; used for input of image signals
J204	used for connection with the CCD unit.
J205	used for communication with the CCD unit.
J206	used for connection with the inverter PCB.
J207	used for connection with the original size sensor (AB).
J208	used for connection with the original size sensor (inch).
J209	not used
J210	not used.

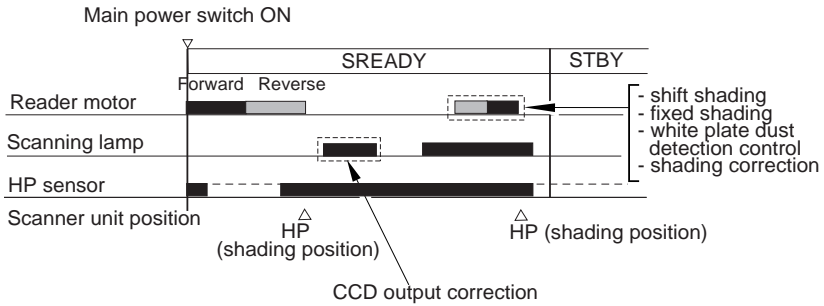
## T-5-4

<b>IC</b>	<b>Description</b>
IC1	CPU (holds boot program)
IC2	ASIC (holds RAM)
IC3	flash ROM (stores firmware)
IC4	EEPROM (backs up service mode settings)

## 5.2 Basic Sequence

### 5.2.1 Basic Sequence of Operations

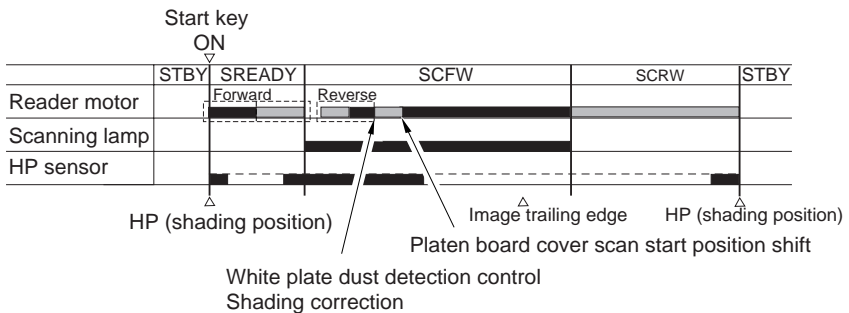
Basic Sequence of Operation at Power-On



F-5-6

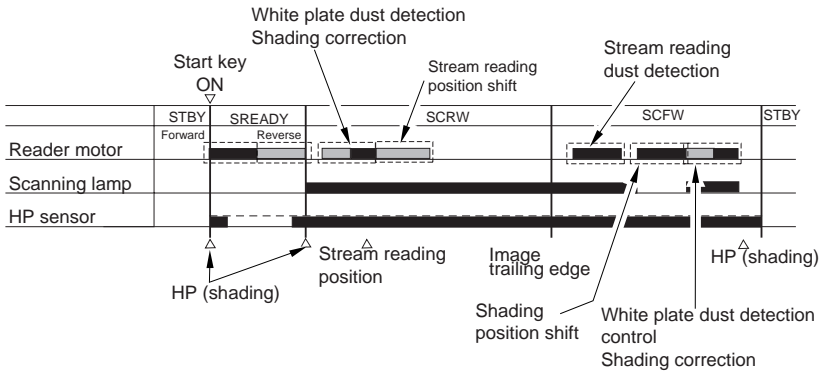
### 5.2.2 Basic Sequence of Operation in Response to a Press on the Start Key

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



F-5-7

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



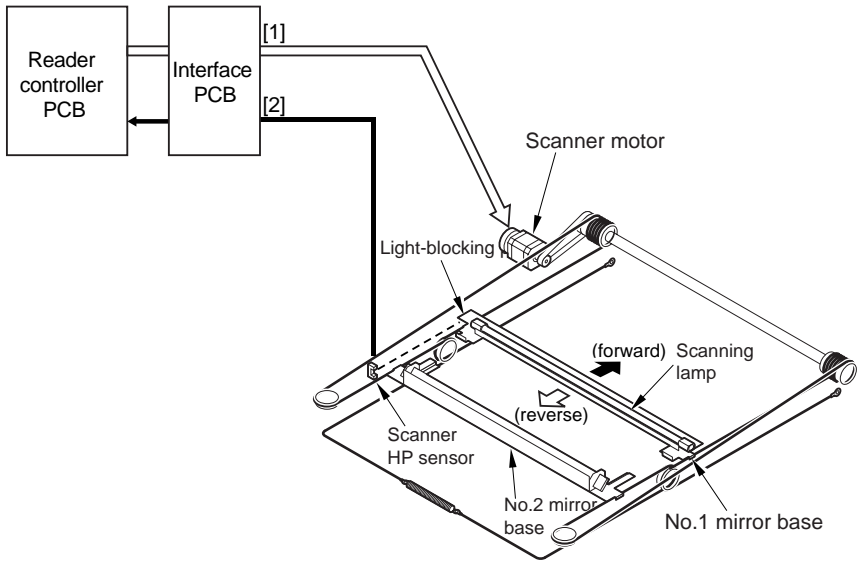
F-5-8

## 5.3 Various Control

### 5.3.1 Controlling the Scanner Drive System

#### 5.3.1.1 Overview

The following shows the components associated with the scanner drive system:



F-5-9

[1] Scanner Motor M501 Drive Signal

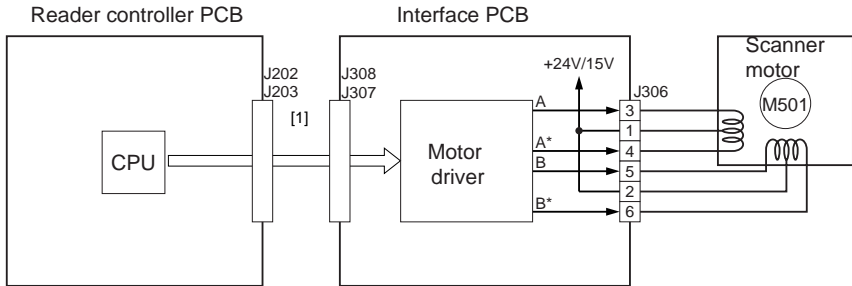
starts/stops the motor; controls the direction and speed of its rotation

[2] Scanner HP Detection Signal

detects the presence of the No. 1 mirror base at home position

### 5.3.1.2 Controlling the Scanner Motor

The configuration of the system used to control the scanner motor is as follows; the motor driver on the interface PCB operates according to the signals from the CPU to start/stop the scanner motor and to control the direction and speed of its rotation



[1] Scanner motor control signal

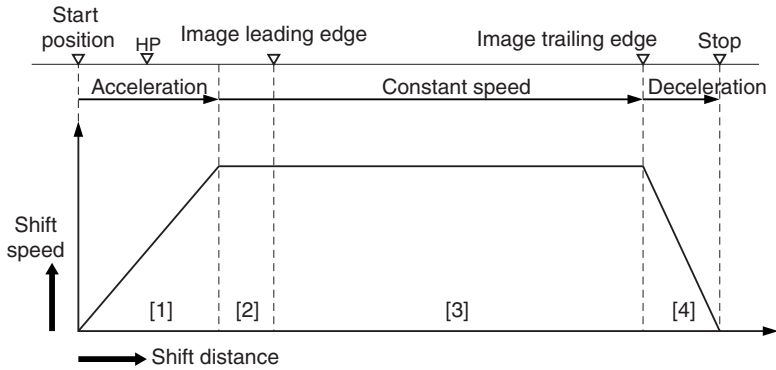
F-5-10

#### a. Reverse Movement After a Scan

After an image scan, the No. 1 mirror base is moved in reverse as far as the shading position at 234 mm/sec regardless of the selected magnification.

#### b. Forward Movement During a Scan

During an image scan, the No. 1 mirror base is controlled at the speed indicated in the following figure; the No. 1 mirror base is moved forward at 325 mm/sec for 100% magnification.



- [1] Acceleration interval: accelerates up to scan speed
- [2] Run-up interval: run-up margin used to ensure stable speed
- [3] Image read interval: segment over which images are read
- [4] Deceleration interval: at the image trailing edge, decelerates and stops as soon as possible

F-5-11

**ERROR CODE:**

**E202 (HP detection error)**

- 0001: when the No. 1 mirror base is moving forward, it fails to reach the HP sensor within a specific period of time
- 0002: when the No. 1 mirror base is moving in reverse, it fails to reach the HP sensor within a specific period of time

**SERVICE MODE:**

**COPIER>ADJUST>ADJ-XY>ADJ-X (scanner image leading edge position adjustment)**

Enter a value to adjust the image leading edge position.  
 settings range: 0 to 2970 (a change of '12' causes a shift of 1 mm)

**COPIER>AJST>ADJ-XY>ADJ-S (scanner home position)**

Do not change the setting.

## 5.3.2 Enlargement/Reduction

### 5.3.2.1 Changing the Magnification in Main Scanning Direction

To change the magnification in main scanning direction (for both platen and ADF modes), the machine reads the image at 100% and applies appropriate image processing in the main controller block.

### 5.3.2.2 Changing the Magnification in Sub Scanning Direction

To change the magnification in sub scanning direction, the machine changes the speed at which it moves the scanner/original.

For reduction, the machine also performs image data skipping (on main controller PCB and reader controller PCB).

[1] In platen mode, the machine changes the speed at which the mirror base is shifted for a ratio between 25% and 400%.

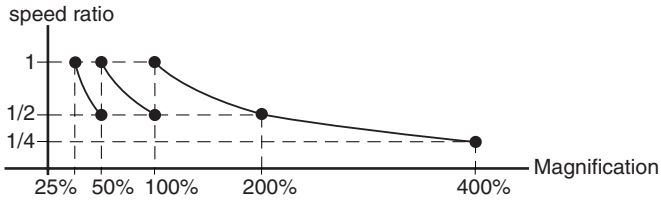
T-5-5

#### Description

25-49%	<p>increases the mirror base speed. collects image data at the same speed as for a ratio between 100% and 196%. uses data skipping on the reader controller PCB (50%) uses data skipping on the main controller PCB (50%)</p>
50-99%	<p>increases the mirror base speed. e.g.: at 50%, reads images at twice the speed of 100%; also, uses data skipping on image data read at a ratio between 100% and 198% on the reader controller PCB (50%).</p>
100%	325 mm/sec
101-200%	<p>decreases the mirror base speed. e.g., at 200%, collects images at 1/2 the speed for 100%.</p>
201-400%	<p>decreases the mirror base speed. e.g., at 200%, collects images at 1/2 the speed for 100%.</p>

The following shows the speeds at which the mirror base is moved:





F-5-12

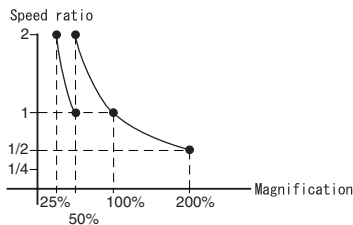
[2] In ADF mode, the machine changes the speed at which the original is moved for a ratio between 25% and 200%.

T-5-6

**Description**

25-49%	increases the speed used to move the original (as compared to 100%). collects image data at the same speed as for a ratio between 100% and 196%. uses data skipping on the main controller PCB (50%).
50-99%	increases the speed at which the original is moved. e.g., at 50%, collects the image at twice the speed for 100%.
100%	325 mm/sec
101-200%	decreases the speed at which the original is moved. e.g., at 200%, collects image data at 1/2 the speed for 100%.

The following shows the speeds at which the original is moved:



F-5-13

### 5.3.3 Controlling the Scanning Lamp

#### 5.3.3.1 Overview

The following shows the items of control and the components of the control system associated with the activation of the scanning lamp:

##### 1) Controlling the Activation

The machine turns on or off the scanning lamp using the drive signal (XE-ON) generated by the CPU on the reader controller PCB. In response to the signal, the inverter PCB generates high-frequency high voltage in the activation motor circuit using the drive voltage (+24 V) supplied by the reader controller PCB, thus turning on the scanning lamp.

##### 2) Detecting an Error

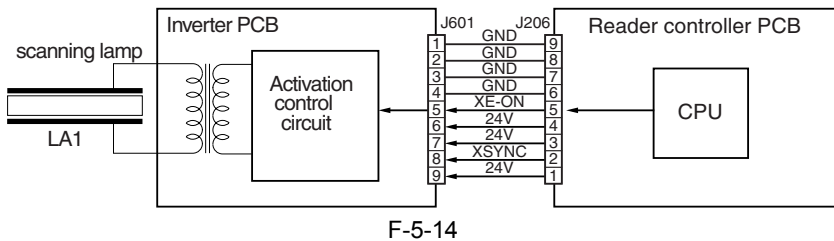
The machine identifies an error in the intensity of light as an activation error occurring when the lamp is initially turned on (shading correction).

#### ERROR CODE:

##### E225

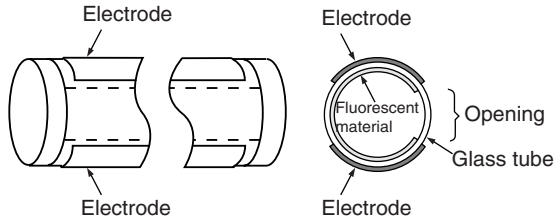
-0001: at time of shading, the detected intensity of light falls short of a specific level.

-0002: in ADF mode, the intensity of light between originals falls short of a specific level.



### 5.3.3.2 Scanning Lamp

The machine's scanning lamp is a xenon lamp consisting of a tube in which xenon gas is sealed. On the inner side of the glass tube are 2 electrodes running parallel to the tube axis, while the inner side is coated with fluorescent material. When high-frequency high voltage is applied to the electrodes, the gas inside the tube starts to discharge, thus illuminating the fluorescent material.



F-5-15

### 5.3.3.3 Controlling the Activation

The machine turns on or off the scanning lamp using the drive signal (XE\_ON) from the CPU on the reader controller PCB. In response to the signal, 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, thus turning on the xenon lamp.

## 5.3.4 Detecting the Size of Originals

### 5.3.4.1 Overview

The machine identifies the size of an original with reference to the combination of measurements taken of the light reflected at specific points of the CCD and the output of a reflection type sensor. It takes measurements at 2 points for individual sizes to ensure correct identification even in the event that the original is displaced while the ADF is being closed.

- for main scanning direction, by the CCD (for AB, 8 points; for inch-configuration, 6 points)
- for sub scanning direction, by a reflection type photosensor (for AB-configuration, 1 point; for inch-configuration, 1 point)

The machine identifies the size of an original as follows:

#### 1) External Light (main scanning direction only)

While keeping the scanning lamp off, the machine measures the CCD level at individual points of measurement in main scanning direction.

#### 2) Sensor Output Level

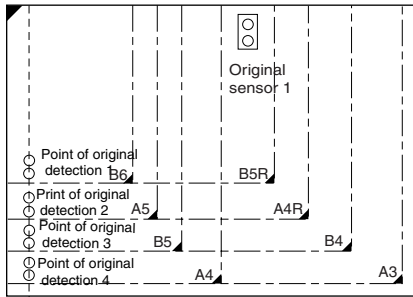
The machine turns on the scanning lamp, and measures the CCD level at individual points of measurement in main scanning direction. Also, the machine turns on the LED of the reflection type photosensor in sub scanning direction to measure the sensor output.

It uses the combination of the measurement and the output to identify the size of the original in question.

### 5.3.4.2 Points of Measurement Used for Original Size Identification

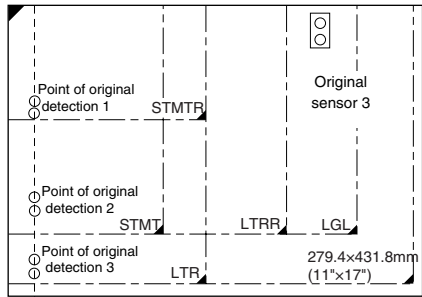
For main scanning direction, the machine moves the No. 1 mirror base to the point of CCD original detection to measure the CCD level at individual points of measurement. For sub scanning direction, the machine uses the outputs of original sensors 1 and 3.

AB-Configuration



CCD original detection position

Inch-configuration

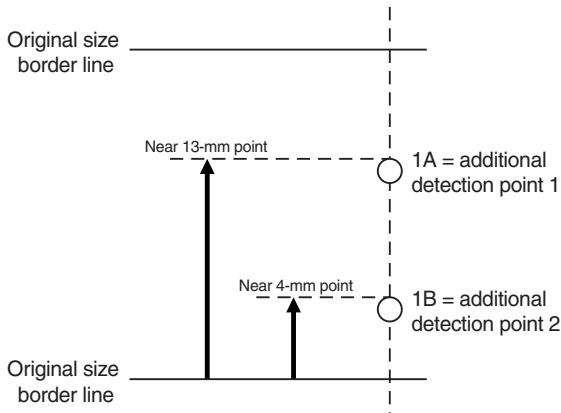


CCD original detection position

F-5-16

### 1. Checking the Presence/Absence of an Original at 2 Points (individual points of detection)

For main scanning direction, the machine identifies the presence/absence of an original with reference to the CCD output at 2 points (nearest).



F-5-17

## T-5-7

Result of movement		Result of identification
A	B	
no	no	original absent
yes	no	original present
no	yes	original present
yes	yes	original present

Note:

Change in the Signal in Response to ADF Open -> Closed

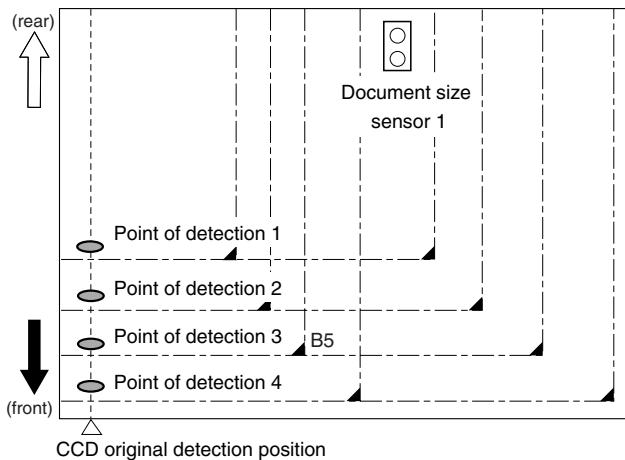
change present: no

other: yes

The OR argument is applied to the outputs at 2 points.

## 2. Priority on the Presence of an Original at the Front

If the machine detects the absence of an original at the rear in spite of detection of the presence at the front for main scanning direction, the machine will identify the size of the original upholding the result of detection at the front.



F-5-18

EX (B5 original)

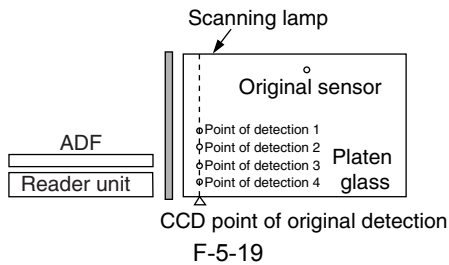
T-5-8

Point of detection	Result of detection present/absent	Result of identification
1	present	present
2	absent	present
3	present	present
4	absent	absent
		B5

### 5.3.4.3 Overview of Operation

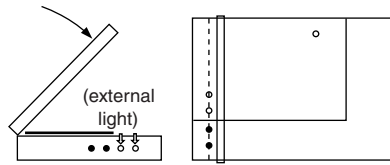
#### 1. In a Wait State

No. 1 mirror base: at shading position  
 scanning lamp: off  
 original sensor



#### 2. ADF Being Opened

No.1 mirror base: moves to a specific point of original detection  
 scanning lamp: off  
 original sensor: off



F-5-20

### 3. ADF Being Closed

No. 1 mirror base: at point of original detection

scanning lamp: off -> on

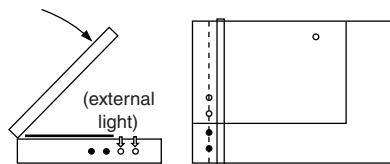
original sensor: original detection operation

- When the ADF is at 25 deg or lower, the external light within the width of any original is kept out of external light, thus causing the machine to assume the absence of an original at points of external light detection (external light search operation).

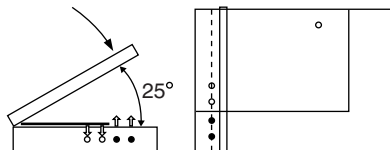
The ADF open/closed sensor 2 identifies the state as being "closed," and the machine starts original size detection.

Here, B5, B4, A4, and A3 are eliminated from the list of possible sizes.

- When the external light search is over, the machine turns on the xenon lamp for the main scanning lamp, and checks the CCD (4 points) for external light. For sub scanning direction, the machine starts to operate the original sensor.



F-5-21



F-5-22



#### 4. ADF Fully Closed (5 deg or less)

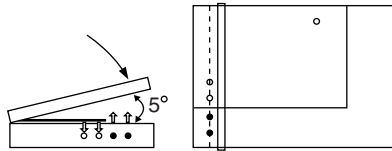
No. 1 mirror base: at point of original detection

scanning lamp: on

original sensor: original detection operation

The machine looks for a change in the output level of individual sensors for a period of 2 sec after the ADF open/closed sensor 1 has identified the current state as being "closed." The absence of a change in the level causes the machine to assume the presence of an original at the point in question.

The machine uses the combination of changes in the levels of 5 points to identify the size of the original in question.



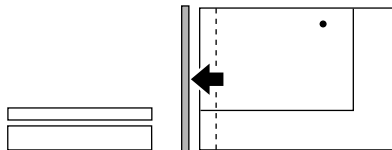
F-5-23

#### 5. In a Wait State (for a press on the Start key)

No.1 mirror base: at point of original detection

scanning lamp: off

original sensor: off



F-5-24

AB-Configuration							Inch-configuration						
Original size	CCD point of detection				Original sensor 1		Original size	CCD point of detection				Original sensor 3	
	1		2					3		4			
	A	B	A	B	A	B	A	B	A	B	A	B	
A3	○	○	○	○	○	○	○	○	○	○	○	○	
B4	○	○	○	○	●	●	○	○	○	○	○	○	
A4R	○	○	○	○	●	●	○	○	○	○	○	○	
A4	○	○	○	○	○	○	●	●	○	○	○	○	
B5	○	○	○	○	○	○	○	○	○	○	○	○	
B5R	○	○	●	●	●	●	○	○	○	○	○	○	
A5	○	○	○	○	○	○	○	○	○	○	○	○	
B6	○	○	○	○	○	○	○	○	○	○	○	○	
none	●	●	●	●	●	●	○	○	○	○	○	○	

○:change absent    ●:change present

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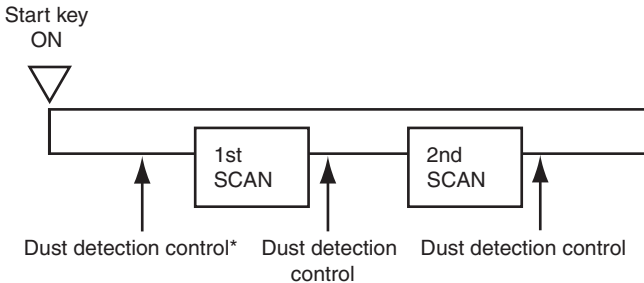
### 5.3.5 Dirt Sensor Control

#### 5.3.5.1 Dust Detection in Stream Reading Mode

The machine uses the dust detection control mechanism to check for dust on the platen glass and the ADF platen roller, thus preventing reproduction of dust, if any, in output images.

Timing of Control

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



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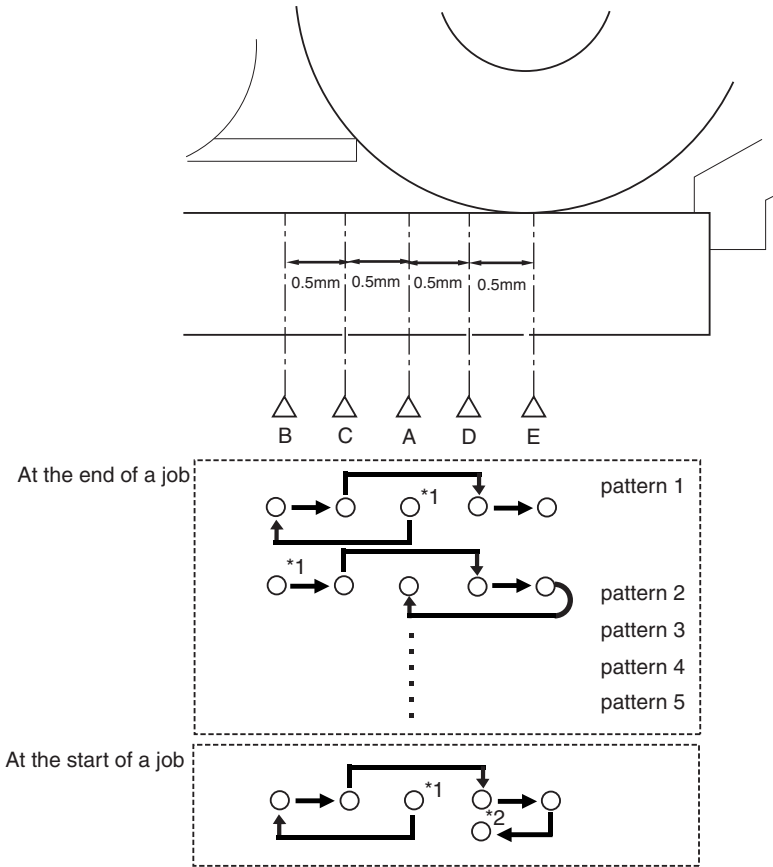
\*Executed only if dust has been detected at all points (A, B, C, D, E) during the previous job. In such a case, the machine will use the point subjected to least dust, and executes

correction before starting a read operation.

**Particulars of Control**

- At the End of a Job (changing the stream reading dust read position)

The machine measures the light reflected by the surface of the platen roller, and detects the presence/absence of dust with reference to its intensity. If the presence of dust is detected, the machine moves to the next point (5 points max.; A -> B -> C -> D -> E). The machine uses the first point at which the absence of dust is detected as the read point for the next job.



If dust is detected at all 5 points (A, B, C, D, E), the machine will issue an alert in response

to the placement of an original in the ADF, thus promoting the user to clean the points.

**Alert Message:**

The machine may read the dust, which may show as lines in the output image. Clean the narrow segment of glass indicated in the drawing with a soft cloth moistened with water (and well wrung).

Press the Close button to reset the alert.

At the start of a job, the machine executes dust detection once again, and will use a point with little or no dust as the read point.

\*1: read point at the end of the previous job.

\*2: point with little or no dust.

T-5-9

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

- Between Sheets (dust correction)

The machine does not move the scanning lamp on account of dust detection.

If dust is detected between sheets, the machine corrects the fact with reference to the pixels on both sides of the area of dust.

**SERVICE MODE:**

**COPIER>OPTION>BODY>DFDST-L1 (level 1)**

use it to adjust dust detection level between sheets

**COPIER>OPTION>BODY>DFDST-L2 (level 2)**

use it to adjust dust detection level at the end of a job

### 5.3.5.2 White Plate Dust Detection Control

The white plate can collect stray dust inside the reader unit, causing lines in images, and the machine is equipped with a mechanism to check for dust on the plate and correct it to limit its effects on output images.

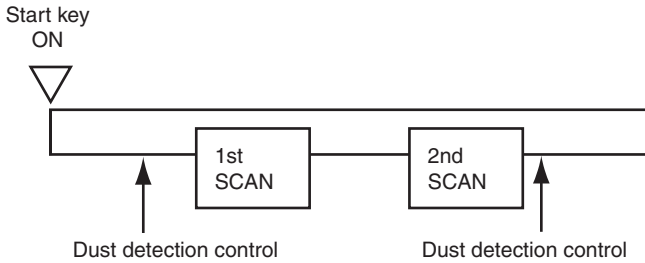
#### Timing of Control

1. Before a Job

- white plate dust detection
- white plate dust correction

2. After a Job

- white plate dust detection
- white plate dust correction



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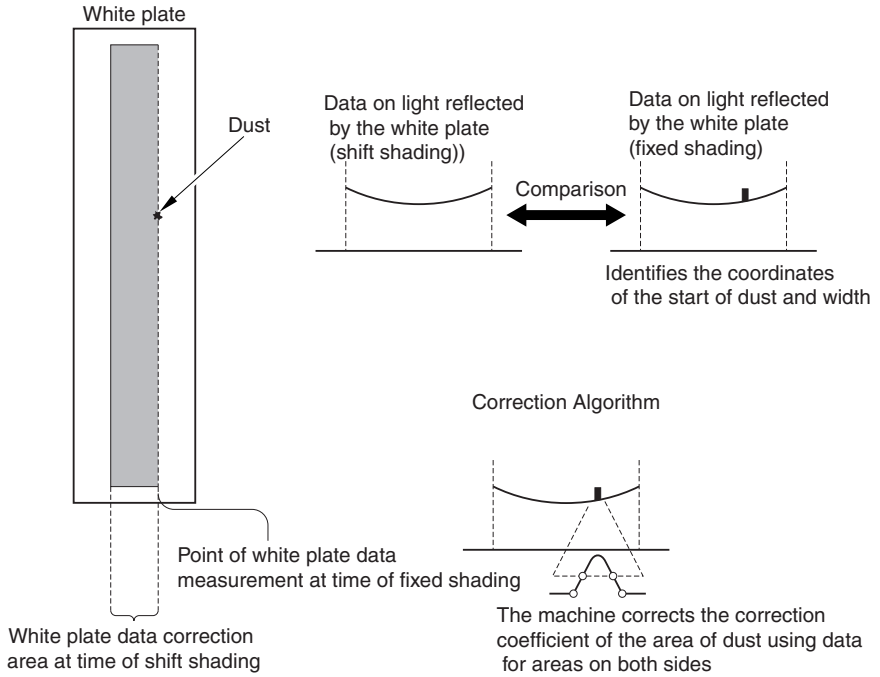
#### Particulars of Control

- White Plate Dust Detection

The machine compares the data on the light reflected by the white plate at time of fixed shading and shift shading to check for dust on the white plate while at the same time identifying the coordinates and width of the area of dust.

- White Plate Dust Correction

If the machine detects the presence of dust, it corrects the shading correction coefficient of the area of dust by means of a correction coefficient used for both sides of the area with dust, thus limiting the effects of the dust.



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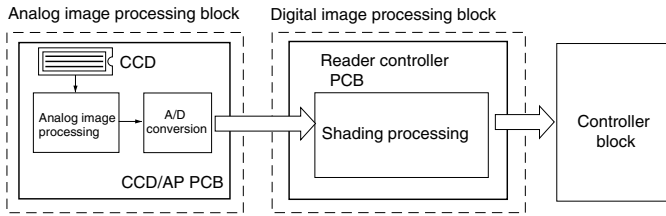
### 5.3.6 Image Processing

#### 5.3.6.1 Overview

The PCBs used in the image processing system have the following functions:

CDD/AP PCB: CCD drive, analog image processing, A/D conversion

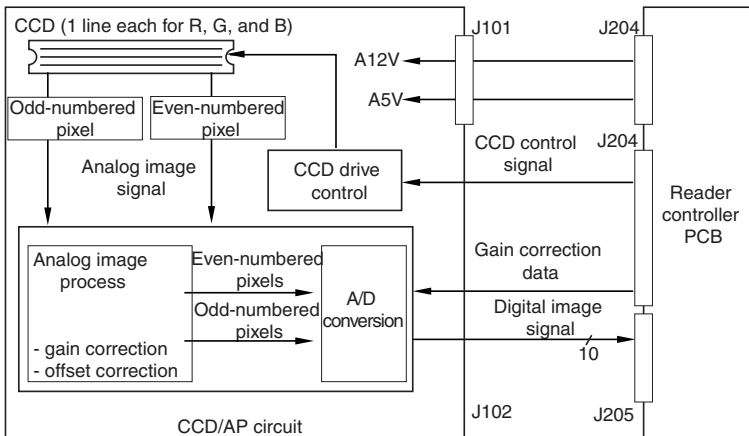
Reader controller PCB: shading correction



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#### 1. Analog Image processing

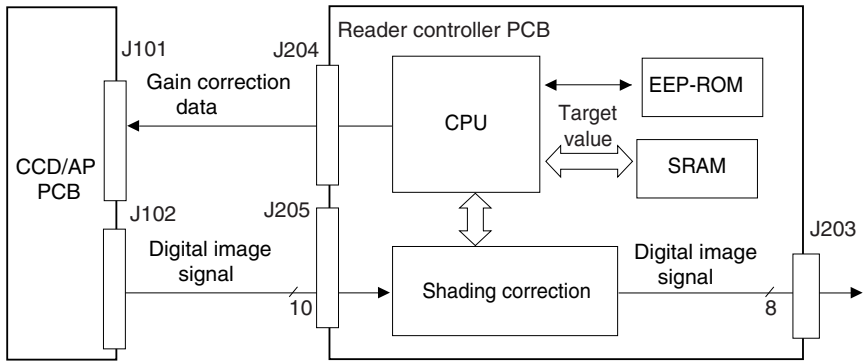
- CCD drive
- CCD output gain correction, offset correction
- CCD output A/D conversion



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## 2. Digital Image Processing

### - shading correction



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### 5.3.6.2 CCD Drive

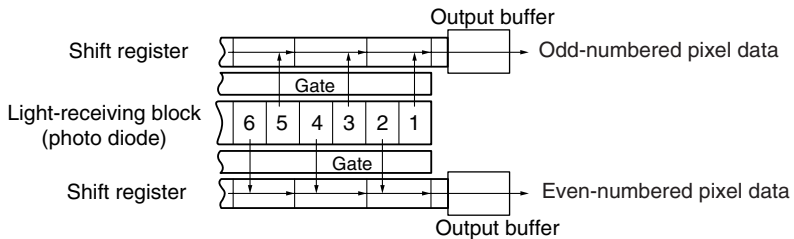
#### 1. CCD

The CCD used in the machine is a 1-line linear image sensor.

- Number of pixels: 7450
- Size of a pixel: 4.7 x 4.7  $\mu\text{m}$

#### 2. CCD Drive

The signals converted by the light-receiving block are sent out in 2 analog video signal channels (even-numbered pixels, odd-numbered pixels).



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### 5.3.6.3 CCD Output Gain Correction, Offset Correction

The machine processes the analog video signals from the CCD so that the rate of their amplitude is a specific level. The machine also makes sure that the output voltage in the absence of incident light is of a specific level (offset correction).

### 5.3.6.4 CCD Output A/D Conversion

The odd-numbered and even-numbered pixel analog video signals after correction are further converted into 10-bit digital signals representing specific pixel voltage levels by the A/D converter.

### 5.3.6.5 Outline of Shading Correction

The machine executes shading correction so that the CCD output will be even when the density of the original is even.

The output of the CCD may not necessarily be even because of the following factors even if the density of the original is perfectly even:

1. variation in the sensitivity of the individual pixels of the CCD
2. difference in the degree of light passing through the center of the lens and through its edge
3. difference in the intensity of light between the center and ends of the scanning lamp
4. deterioration of the scanning lamp

The machine executes shading correction to make up for the variation in the output of the CCD.

Shading correction may be shading adjustment executed to determine a service mode target value or shading correction executed for every job.

### 5.3.6.6 Shading Adjustment

In shading adjustment, the machine measures the density of a white sheet of paper and the standard white plate, and stores the measurements in memory. The machine then computes these measurements for use as the target value for shading correction. Shading adjustment is executed at time of machine installation or scanning lamp replacement, or when a change has occurred in the intensity of light over time.

Service Mode:

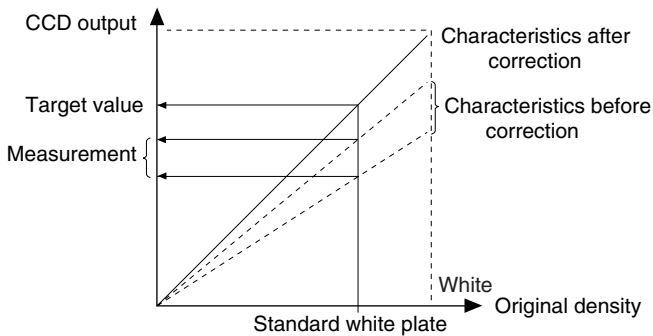
**COPIER>FUNCTION>CCD>CCD-ADJ**

### 5.3.6.7 Shading Correction

The machine executes shading correction for every scan of an original.

The machine shines the light of the scanning lamp against the standard white plate, and measures the light reflected by the plate; it then uses the analog image processing block of the CCD/AP PCB to turn the measurements into digital data, which will be sent to the shading correction circuit of the reader controller PCB in the form of a shading coefficient. In the shading correction circuit, the shading coefficient is compared against the target value stored in memory, and the machine uses the differences as the shading correction value.

The shading correction value is used to make up for the variation among individual pixels of the CCD occurring at each scan, thus evening out the image density level.



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## 5.4 Parts Replacement Procedure

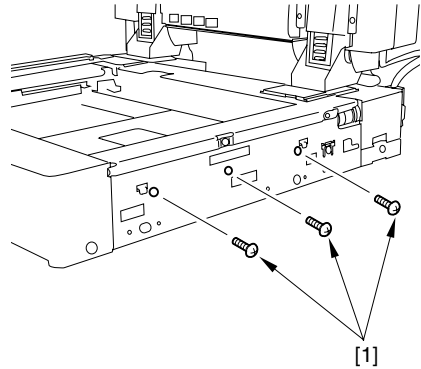
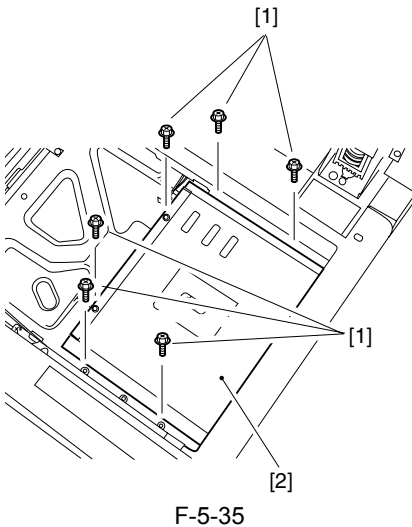
### 5.4.1 CCD Unit

#### 5.4.1.1 Removing the Copyboard Glass

Refer to Procedure 5.4.2

#### 5.4.1.2 Removing the CCD Unit Cover

- 1) Remove the 9 screws [1], and detach the CCD unit cover [2].



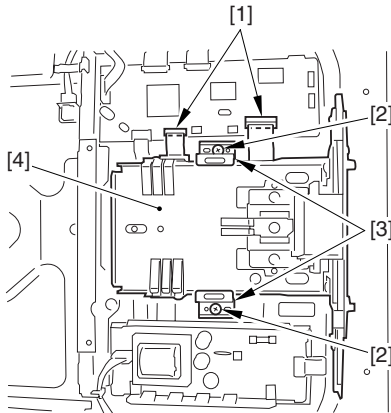
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#### 5.4.1.3 Removing the Original Size Sensor Unit

Refer to Procedure 5.10.4.3

#### 5.4.1.4 Removing the CCD Unit

- 1) Disconnect the 2 flat cables [1] of the reader controller PCB, and remove the 2 screws [2] and the 2 leaf springs [3]; then, detach the CCD unit [4].



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#### 5.4.1.5 When Replacing the CCD Unit

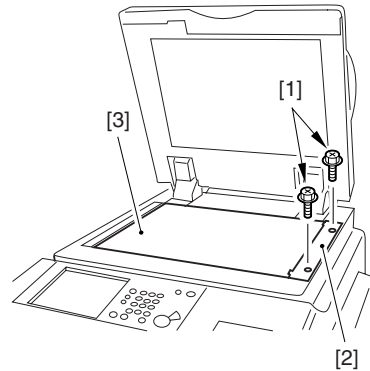
Execute the following in service mode:

- 1) white plate data adjustment (COPIER>FUNCTION>CCD>CCD-ADJ)
- 2) ADF white level adjustment (COPIER>FUNCTION>CCD>DF-WLVL1/2)



Be sure to perform white plate data adjustment before performing ADF white level plate.

- 2) Remove the 2 screws [1], and detach the right glass retainer [2]; then, detach the copyboard glass [3].



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When detaching 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.)

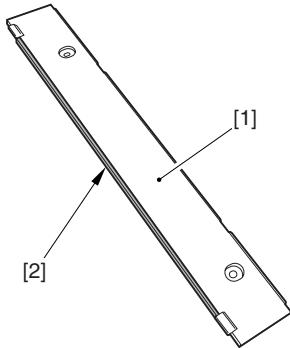


Take care not to deform the sponge attached to the right glass retainer [1].

## 5.4.2 Copyboard glass

### 5.4.2.1 Removing Copyboard Glass

- 1) Open the ADF.



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#### 5.4.2.2 When Replacing the Platen Board Glass

Execute the following in service mode:

- 1) white plate data adjustment (COPIER>FUNCTION> CCD> CCD-ADJ)
- 2) ADF white level adjustment (COPIER>FUNCTION> CCD> DF-WLVL1/2)



Be sure to perform white plate data adjustment before performing ADF white level adjustment.

---

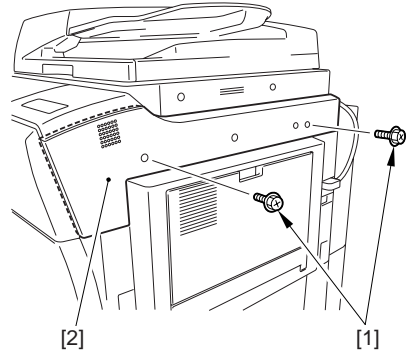
### 5.4.3 Scanning Lamp

#### 5.4.3.1 Removing the Copyboard Glass

Refer to Procedure 5.4.2

#### 5.4.3.2 Removing the Right Cover (upper)

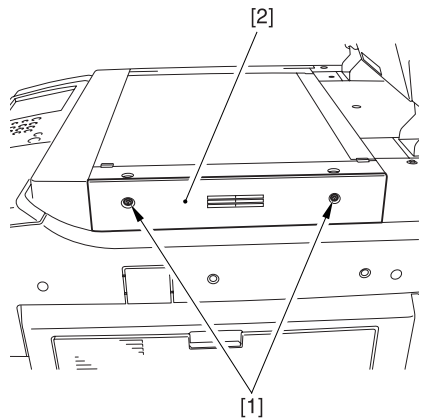
- 1) Remove the 2 screws [1], and detach the right cover (upper) [2].



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#### 5.4.3.3 Removing the Reader Right Cover

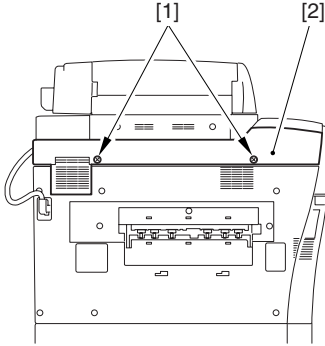
- 1) Remove the 2 screws [1], and detach the reader right cover [2].



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#### 5.4.3.4 Removing the Left Cover (upper)

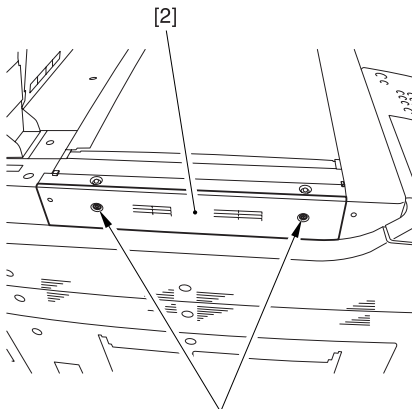
- 1) Remove the 3 screws [1], and detach the left cover (upper) [2].



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#### 5.4.3.5 Removing the Reader Left Cover

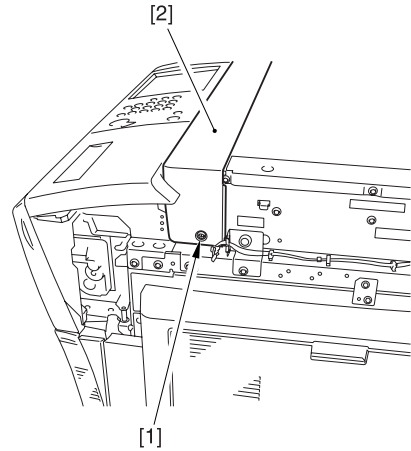
- 1) Remove the 2 screws [1], and detach the reader left cover [2].



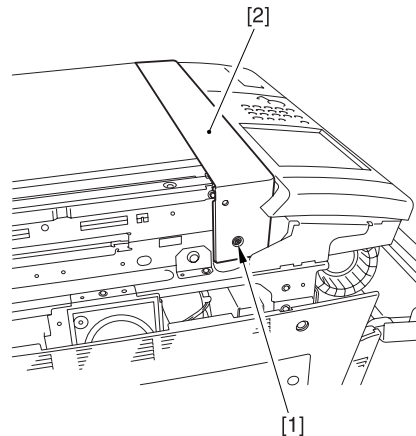
F-5-43

#### 5.4.3.6 Removing the Reader Front Cover

- 1) Remove the screw [2] (1 pc. each) from the left and right of the reader front cover [1].

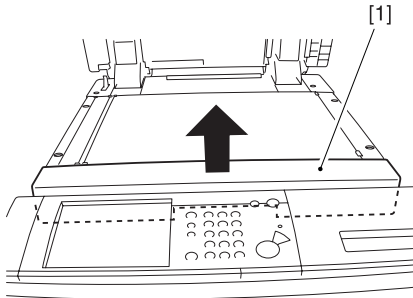


F-5-44



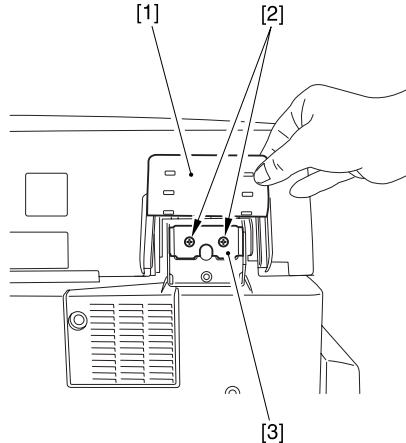
F-5-45

- 2) Detach the reader front cover [1] in upward direction [1].



F-5-46

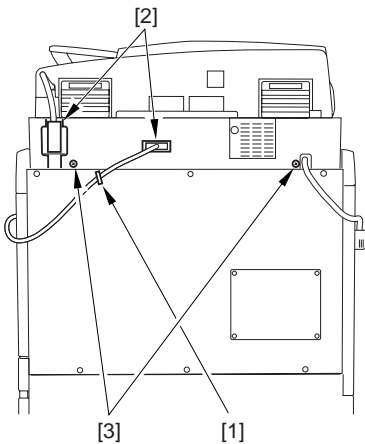
- 4) Bend up the rubber cover [1], and remove the 2 screws [2] each; then, detach the 2 angle guide plates [3].



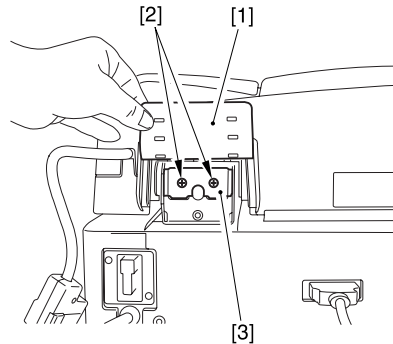
F-5-48

### 5.4.3.7 Removing the Reader Unit Rear Cover

- 1) Open the cable clamp [1].
- 2) Disconnect the 2 connectors [2].
- 3) Remove the 2 screws [3].



F-5-47

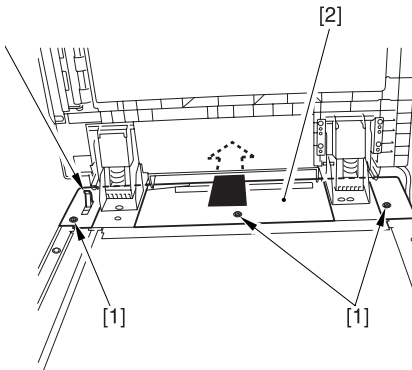


F-5-49

- 5) Fully open the ADF.
- 6) Remove the 3 screws [1], and slide the reader unit rear cover [2] to the rear to detach.



Take care not to damage the ADF open/closed sensor arm [3].



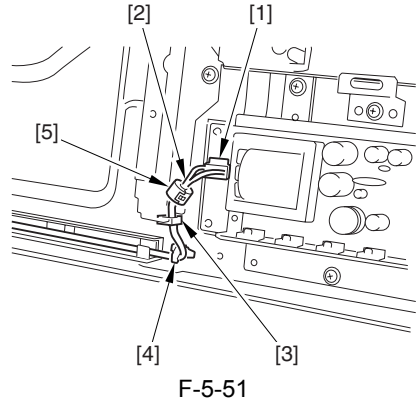
F-5-50

#### 5.4.3.8 Removing the CCD Unit Cover

**Refer to Procedure 5.4.1.2**

#### 5.4.3.9 Removing the Scanning Lamp

- 1) Disconnect the connector [1], and free the cable [2] from the cable guide [3] and the snap band [4].
- 2) Open the ferrite core [5] to detach. (100/230V machine)



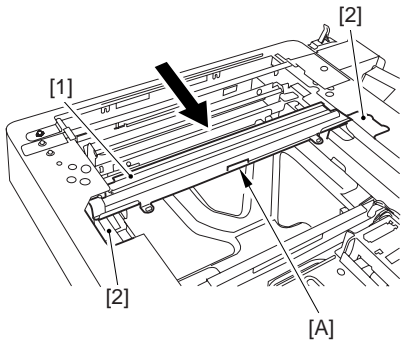
When replacing the scanning lamp, be sure to fit the removed ferrite core to the new lamp. (100/230V machine)

- 3) Slide the No. 1 mirror base [1] to the right so that it matches against the cut-off [2] of the frame.



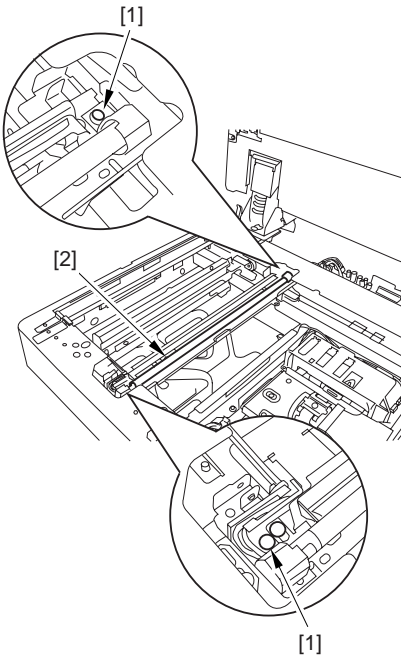
When detaching the No. 1 mirror base, be sure to hold it by the bend [A] on the mirror stay.





F-5-52

- 
- 4) Remove the 2 screws [1], and detach the scanning lamp [2].



F-5-53

### 5.4.3.10 When Replacing the Scanning Lamp

Execute the following in service mode:

- 1) white plate data adjustment (COPIER>FUNCTION>CCD>CCD-ADJ)
  - 2) ADF white level adjustment (COPIER>FUNCTION>CCD>DF-WLVL1/2)
- 



Be sure to perform white plate data adjustment before performing ADF white level adjustment.

---

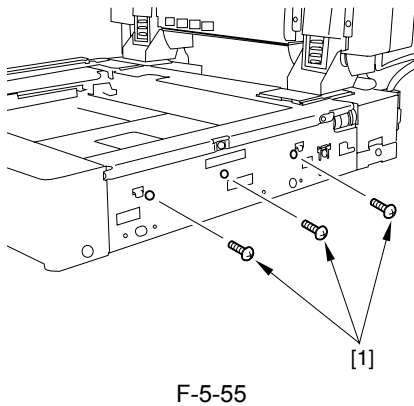
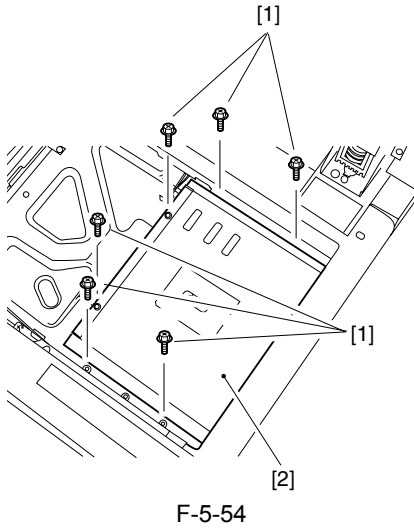
## 5.4.4 Reader Controller PCB

### 5.4.4.1 Removing the Copyboard Glass

**Refer to Procedure 5.4.2**

### 5.4.4.2 Removing the CCD Unit Cover

- 1) Remove the 9 screws [1], and detach the CCD unit cover [2].

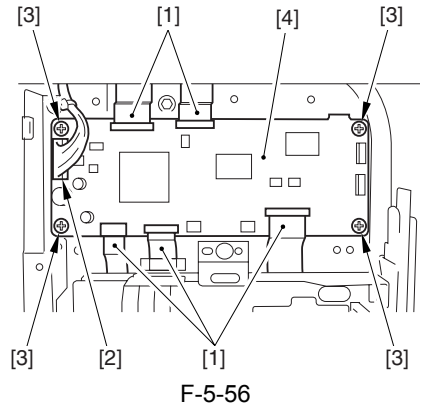


#### 5.4.4.3 Removing the Original Size Sensor Unit

Refer to Procedure 5.10.4.3

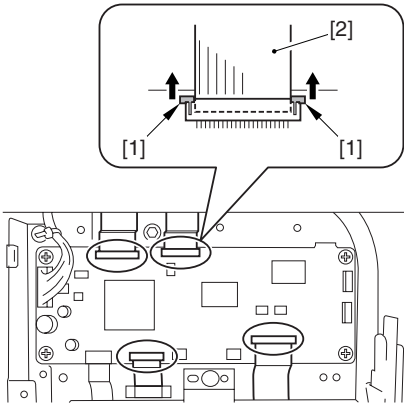
#### 5.4.4.4 Removing the Reader Controller PCB

1) Disconnect the 5 flat cables [1] and the connector [2]; then, remove the 4 screws [3], and detach the reader controller PCB [4].



#### How to Disconnect the Flat Cable

Slide the locking lever [1] in the direction of the arrow to release; then, disconnect the flat cable [2].



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#### 5.4.4.5 After Replacing the Reader Controller PCB



Be sure to generate the latest P-PRINT printout before replacing the reader controller PCB

- If you are initializing the RAM on the reader controller without replacing the PCB,

Using the SST, upload the backup data of R-CON; initialize the RAM, and then download the data, thus eliminating the need for the following.

1) Using the SST, download the latest system software (R-CON).

2) Make the following selections in service mode: COPIER> FUNCTION> CLEAR> R-CON. Then, press the OK key to execute RAM initialization. Thereafter, turn off and then back on the main power.

3) Enter the appropriate settings for the following items in service mode:

a. settings indicated on the service label (found behind the reader unit front cover)

a-1 image read start position adjustment (X direction; in fixed reading mode)  
COPIER>ADJUST>ADJ-XY>ADJ-X

a-2 image read start position adjustment (Y direction; in fixed reading mode)  
COPIER>ADJUST>ADJ-XY>ADJ-Y

a-3 shading position adjustment (in fixed reading mode)

COPIER>ADJUST>ADJ-XY>ADJ-S

a-4 feeder mode main scanning position adjustment

COPIER>ADJUST>ADJ-XY>ADJ-Y-DF

a-5 ADF stream reading CCD reading position

COPIER>ADJUST>ADJ-XY>STRD-POS



The machine retains ADF-related service data in the RAM of its reader controller, thus necessitating ADF adjustment

whenever you have replaced the reader controller or initialized the RAM.

b. original stop position adjustment

FEEDER>ADJSUT>DOCST

c. original feed speed (magnification) adjustment

FEEDER>ADUST>LA-SPEED

4) Make adjustments using the following service mode items:

a. ADF sensor sensitivity adjustment

FEEDER>FUNCTION>SENS-INT

b. tray width adjustment

FEEDER>FUNCTION>TRY-A4

FEEDER>FUNCTION>TRY-A5R

FEEDER>FUNCTION>TRY-LTR

FEEDER>FUNCTION>TRY-LTRR

c. white plate data adjustment

COPIER>FUNCTION>CCD>CCD-ADJ

d. ADF white level adjustment

COPIER>FUNCTION>CCD>DF-WLVL1

COPIER>FUNCTION>CCD>DF-WLVL2



Be sure to perform white plate data adjustment before performing ADF white level adjustment.

After having made the foregoing adjustments, put the P-PRINT printout in

the service book case, replacing the previous P-PRINT printout.

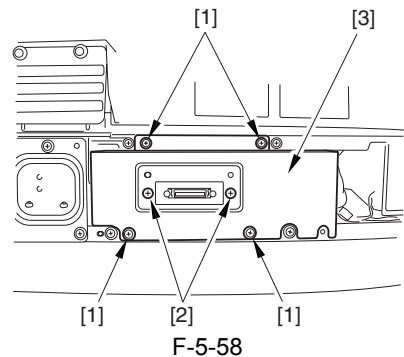
## 5.4.5 Interface PCB

### 5.4.5.1 Removing the Reader Unit Rear Cover

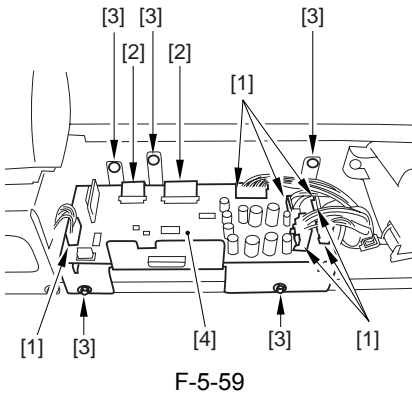
**Refer to Procedure 5.4.3.7**

### 5.4.5.2 Removing the Interface PCB

1) Remove the 4 RS tightening screws [1] and the 2 binding screws [2]; then, detach the IF PCB cover [3].

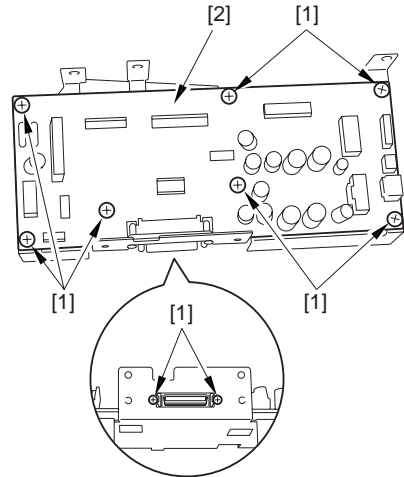


2) Disconnect the 7 connectors [1], disconnect the 2 flat cables [2], and remove the 5 screws [3]; then, detach the interface PCB unit [4].



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interface PCB [2].

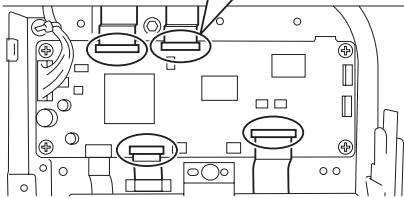
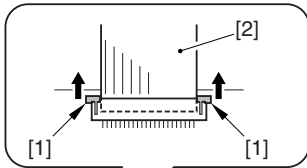


F-5-61



**How to Disconnect the Flat Cable**

Slide the locking lever [1] in the direction of the arrow; then, disconnect the flat cable.



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**5.4.6 Inverter PCB**

**5.4.6.1 Removing the Copyboard Glass**

**Refer to Procedure 5.4.2**

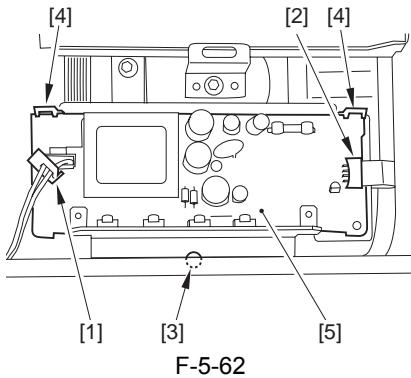
**5.4.6.2 Removing the CCD Unit Cover**

**Refer to Procedure 5.4.1.2**

**5.4.6.3 Removing the Inverter PCB**

- 1) Disconnect the connectors [1], disconnect the flat cable [2], and remove the screw [3]; then, release the 2 PCB supports [4], and detach the inverter PCB [5].

3) Remove the 9 screws [1], and detach the



#### 5.4.6.4 When Replacing the Inverter PCB

Execute the following service mode items:

- 1) white plate data adjustment (COPIER>FUNCTION>CCD>CCD-ADJ)
- 2) ADF white level adjustment (COPIER>FUNCTION>CCD>DF-WLV1/2)



Be sure to perform white plate data adjustment before performing ADF white level adjustment.

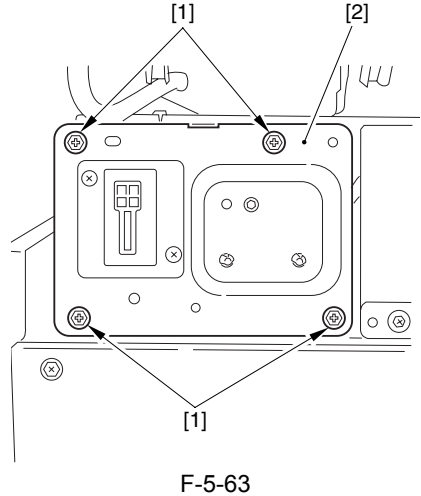
### 5.4.7 Scanner Motor

#### 5.4.7.1 Removing the Reader Unit Rear Cover

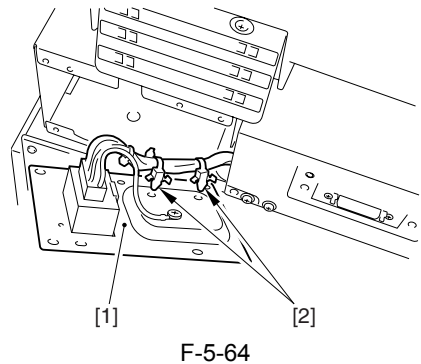
Refer to Procedure 5.4.3.7

#### 5.4.7.2 Removing the Scanner Motor

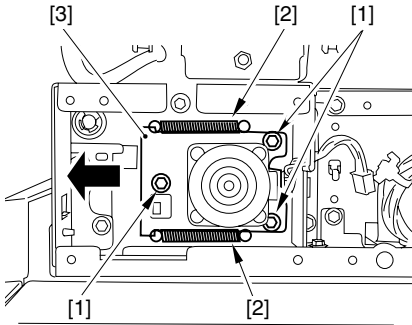
- 1) Remove the 4 screws [1], and detach the cover [2].



- 2) Remove the 2 harness retainers [2] for the back of the cover [1] to free the cover.

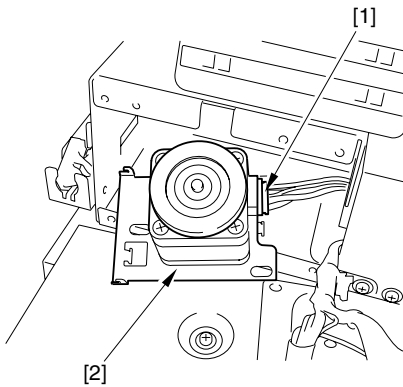


- 3) Remove the 3 screws [1] and the 2 springs [2]; then, shift the scanner motor [3] in the direction of the arrow to detach.



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- 4) Disconnect the connector [1], and detach the scanner motor [2].

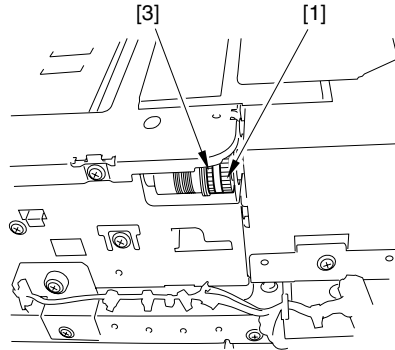


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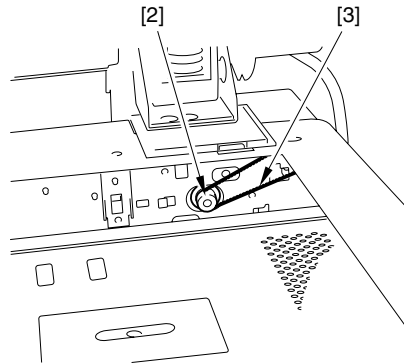
### 5.4.7.3 Mounting the Scanner Motor

When mounting the scanner motor, check to make sure that the timing belt [3] is

properly fitted to the scanner pulley [1] and the motor shaft [2].



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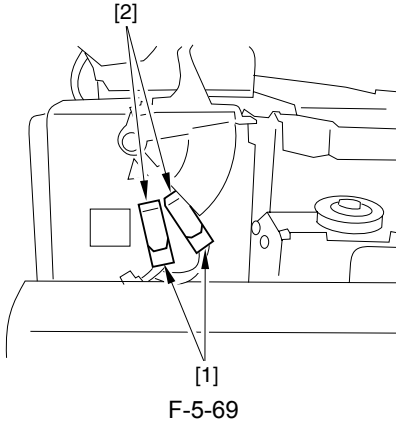
## 5.4.8 ADF Open/Close Sensor

### 5.4.8.1 Removing the Reader Unit Rear Cover

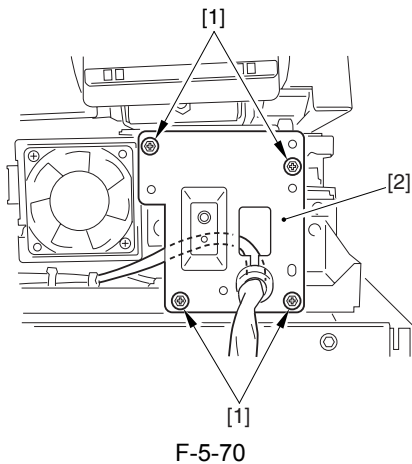
**Refer to Procedure 5.4.3.7**

### 5.4.8.2 Removing the ADF Open/Closed Sensor

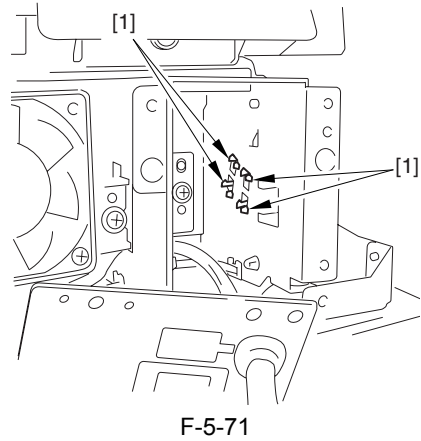
- 1) Disconnect the connector [1].



- 2) Remove the 4 screws [1], and detach the reinforcing plate [2].



- 3) Remove the hook [1], and detach the ADF open/closed sensor (1, 2).



## 5.4.9 Scanner HP Sensor

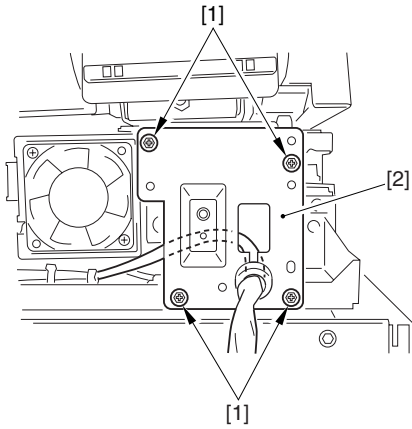
### 5.4.9.1 Removing the Reader Unit Rear Cover

**Refer to Procedure 5.4.3.7**

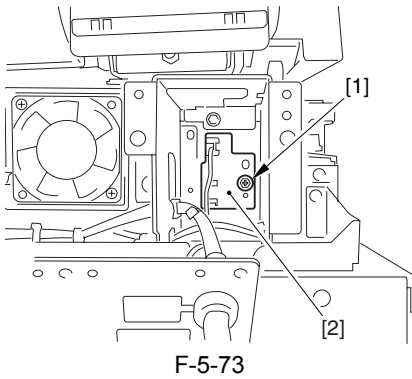
### 5.4.9.2 Removing the Mirror Base Home Position Sensor

- 1) Remove the 4 screws [1], and detach the plate [2].

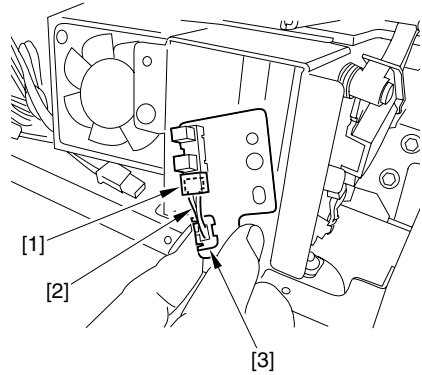




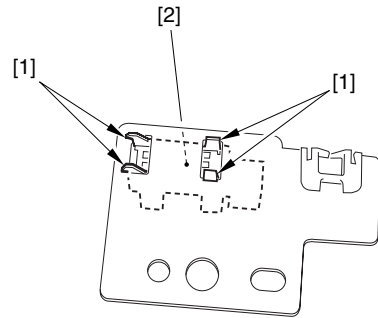
2) Remove the screw [1], and detach the sensor base [2].



3) Disconnect the connector [1], and detach the home position sensor [1].



4) Remove the hook [1], and detach the home position sensor [2].



## 5.4.10 Original Size Sensor

### 5.4.10.1 Removing the Copyboard Glass

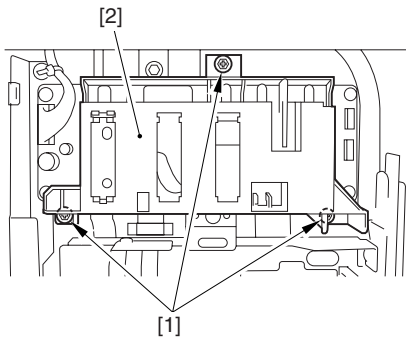
**Refer to Procedure 5.4.2**

### 5.4.10.2 Removing the CCD Unit Cover

**Refer to Procedure 5.4.1.2**

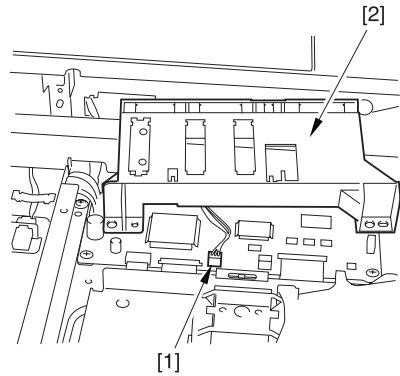
### 5.4.10.3 Removing the Original Size Sensor Unit

- 1) Remove the 3 screws [1], and shift the original size sensor unit [2].



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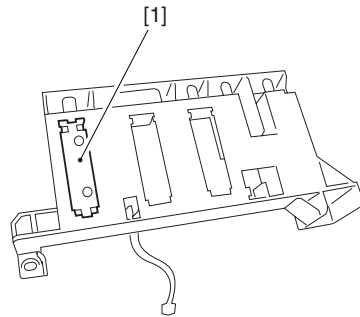
- 2) Disconnect the connector [1], and detach the original size sensor unit [2].



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### 5.4.10.4 Removing the Original Size Sensor

- 1) While freeing the claw at the edge, remove the original size sensor [1].



F-5-78

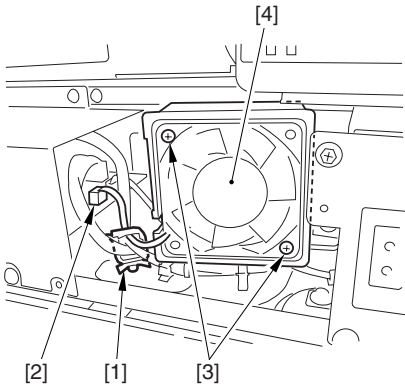
## 5.4.11 Cooling Fan

### 5.4.11.1 Removing the Reader Unit Rear Cover

**Refer to Procedure 5.4.3.7**

### 5.4.11.2 Removing the Cooling Fan

- 1) Open the wire saddle [1], and disconnect the connector [2].
- 2) Remove the 2 screws [3], and detach the cooling fan [4].



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## 5.4.12 Scanner Drive Cable

### 5.4.12.1 Outline

Be sure to have the following nearby when replacing the scanner drive cable:

- mirror positioning tool

### 5.4.12.2 Removing the Copyboard Glass

**Refer to Procedure 5.4.2**

### 5.4.12.3 Removing the Right Cover (upper)

**Refer to Procedure 5.4.3.2**

### 5.4.12.4 Removing the Reader Right Cover

**Refer to Procedure 5.4.3.3**

### 5.4.12.5 Removing the Left Cover (upper)

**Refer to Procedure 5.4.3.4**

### 5.4.12.6 Removing the Reader Left Cover

**Refer to Procedure 5.4.3.5**

### 5.4.12.7 Removing the Reader Front Cover

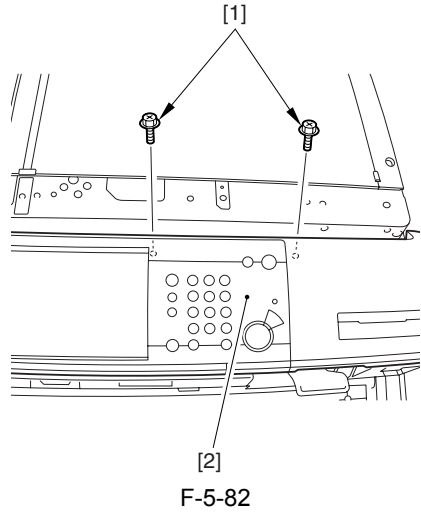
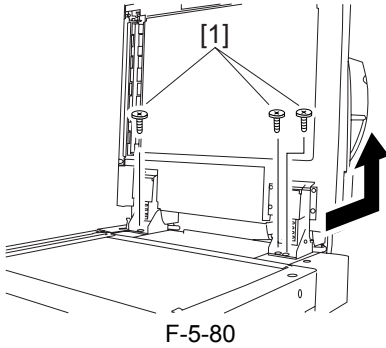
**Refer to Procedure 5.4.3.6**

### 5.4.12.8 Removing the Reader Unit Rear Cover

**Refer to Procedure 5.4.3.7**

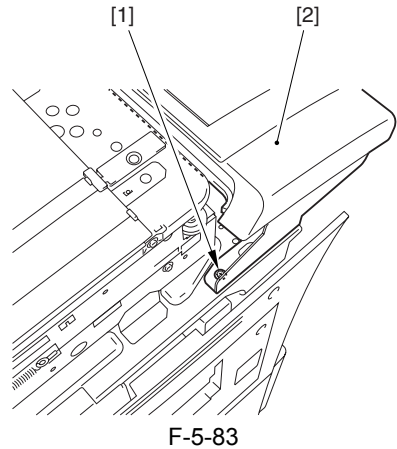
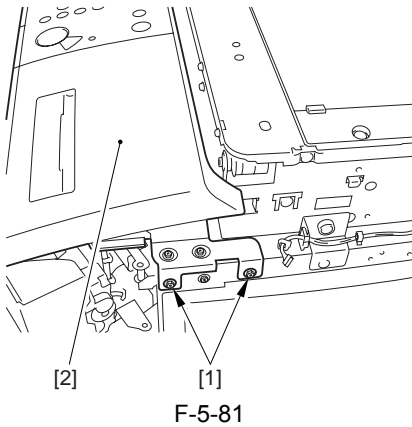
### 5.4.12.9 Removing the ADF

- 1) Remove the 3 knurled screws [1]; then, slide it to the front, and lift it to detach.

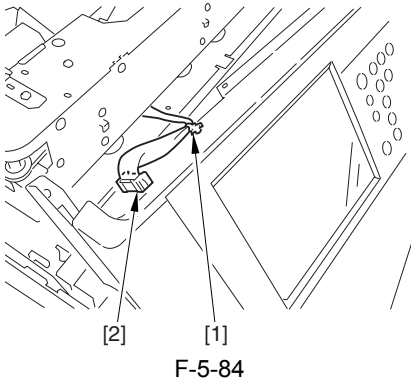


### 5.4.12.10 Removing the Control Panel

- 1) Open the hopper front cover [1].
- 2) Remove the 5 screws [1].



- 3) Shift the control panel [1] together with the cover; then, remove the snap band [2], and disconnect the connector [3].



#### 5.4.12.11 Removing the Scanner Drive Cable

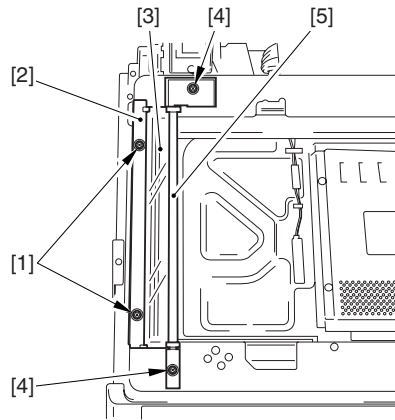
1) Remove the 2 screws [1], and detach the reading glass retainer [2].

---

**!**  
When detaching the reading glass retainer, be sure to take care so that the leaf spring will not come off.

---

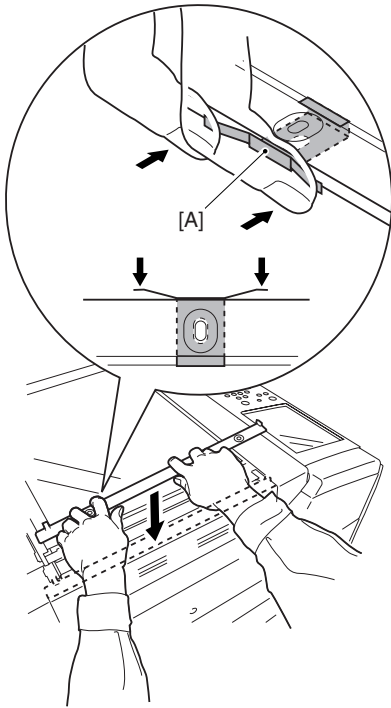
2) Remove the reading glass [3].  
3) Remove the 3 screws [4], and detach the left glass retainer [5].



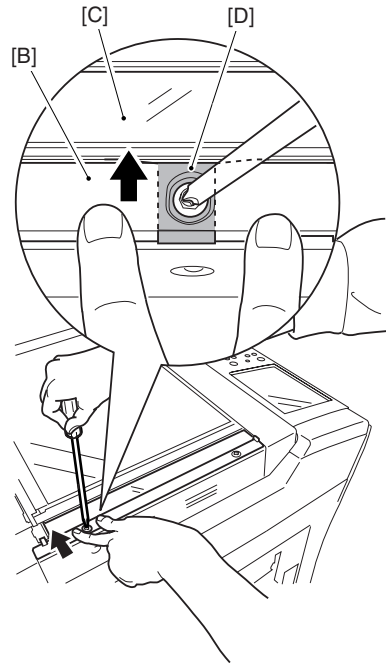
F-5-85

**!**  
When mounting the reading glass retainer, be sure to hold down both edges of the left spring [A] while fixing it in place. (Take care not to bend the sponge.)  
Be sure to mount it while butting the reading glass retainer [B] against the reading glass [C].  
Check to be sure that the side of the reading glass is in contact with the leaf spring [D] of the reading glass retainer.  
If not, dust can collect on the reading glass, causing lines in output images.

---

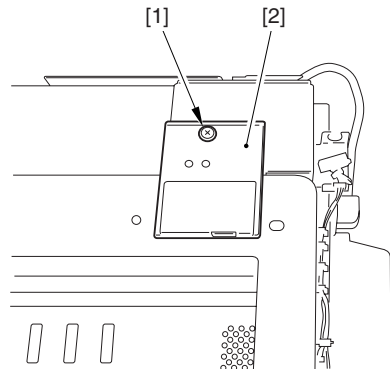


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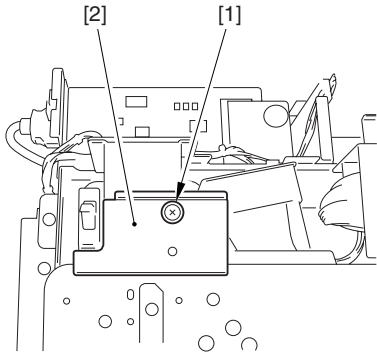
F-5-87

- 4) Remove the screw [1], and detach the ADF right screw cover [2].



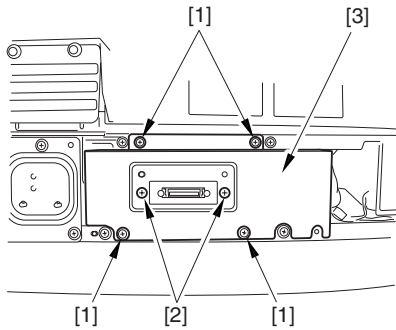
F-5-88

- 5) Remove the screw [1], and detach the ADF left screw cover [2].



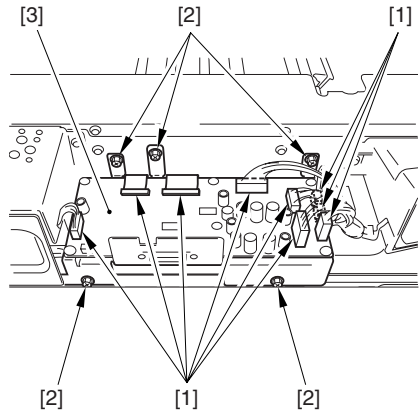
F-5-89

- 6) Remove the 6 screws [1], and detach the interface PCB cover.



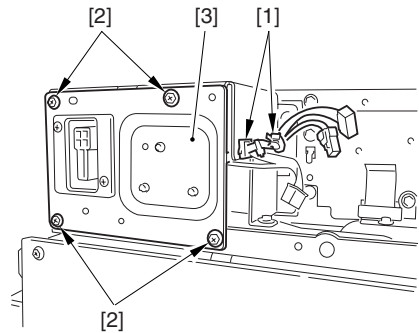
F-5-90

- 7) Disconnect the 9 connectors [1], and remove the 5 screws [2]; then, detach the interface PCB [3] together with its base



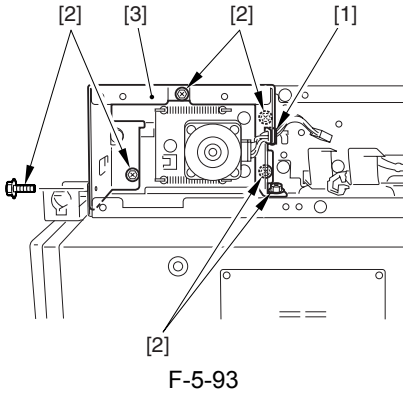
F-5-91

- 8) Open the 2 wire saddles [1].  
9) Remove the 4 screws [2], and detach the motor cover [3] together with the harness.

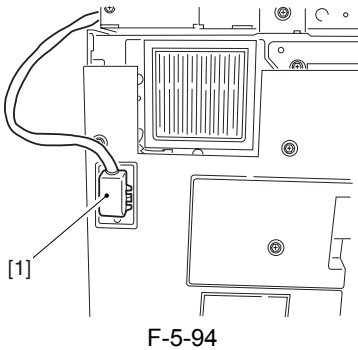


F-5-92

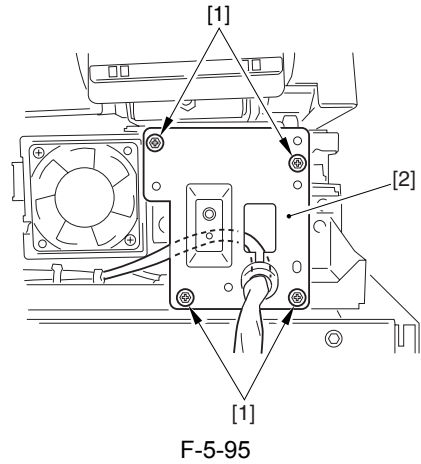
- 10) Free the harness from the wire saddle [1], and remove the 6 screws [2]; then, detach the motor frame [3].



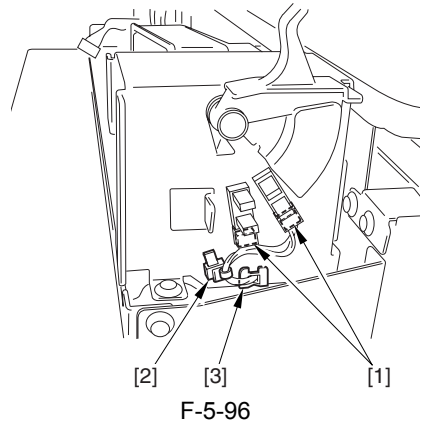
11) Disconnect the connectors [1] of the reader unit communications cable.



12) Remove the 4 screws [1], and shift the ADF open/closed sensor cover [2] to the front.

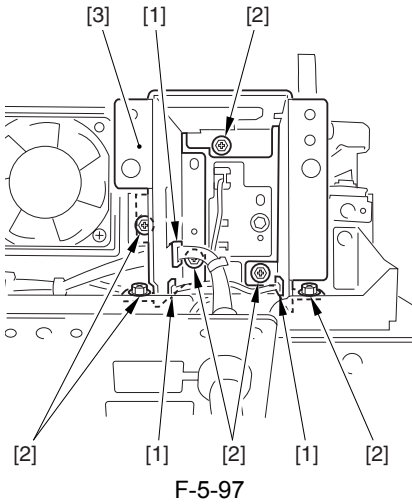


13) Disconnect the 2 connectors [1], and remove the snap band [2]; then, free the harness from the wire saddle [3].

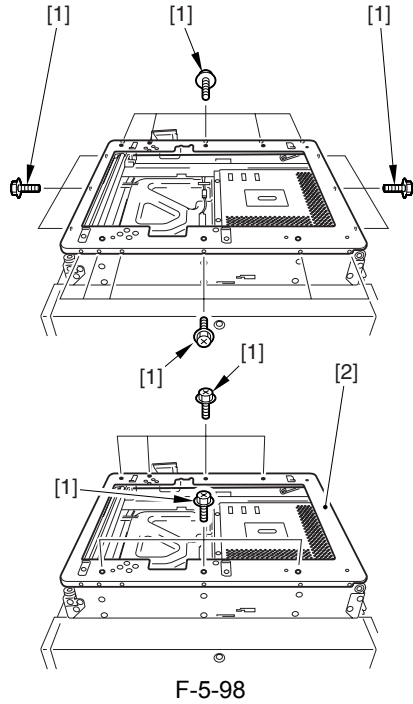


14) Free the harness from the 3 wire saddles [1], and remove the 6 screws [2]; then, detach the ADF open/closed sensor base [3].

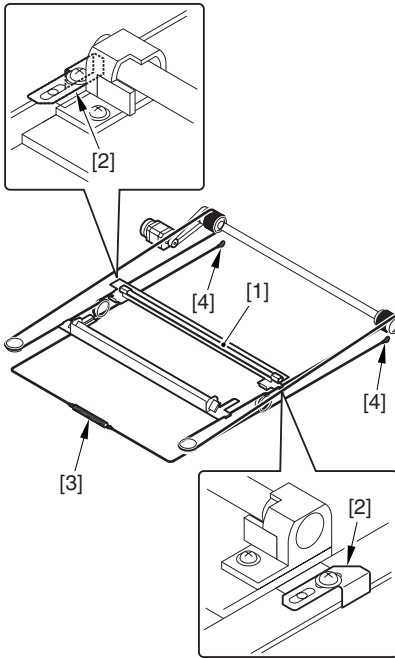




15) Remove the 24 screws [1], and detach the reader upper frame [2].



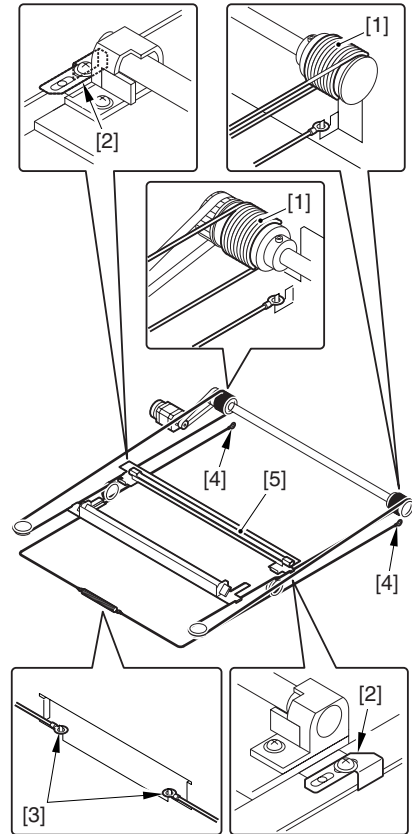
- 16) Remove the 2 cable fixing screws [2] of the No. 1 mirror base [1].
- 17) Remove the cable fixing screws [3].
- 18) Free the 2 hooks [4] of the cable from the right side of the reader unit frame.
- 19) Detach the cable for the pulleys.



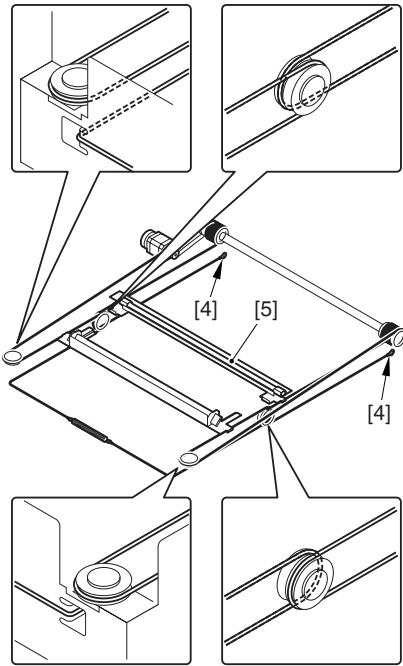
F-5-99

#### 5.4.12.12 Fitting the Scanner Drive Cable

- 1) Put the ball of the cable into the hole of the drive pulley [1], and wind the cable (4 times inside; 5 times outside); then, tape it in place. At this time, make sure that the cable fixing [2] is on the inside.
- 2) Fit the cable on the pulleys; then, fit one end on the left side hook [3] and the other end on the right side hook [4].
- 3) Temporarily fix the cable fixing plate [2] in place on the No. 1 mirror base [5].
- 4) Mount the reader unit upper frame.



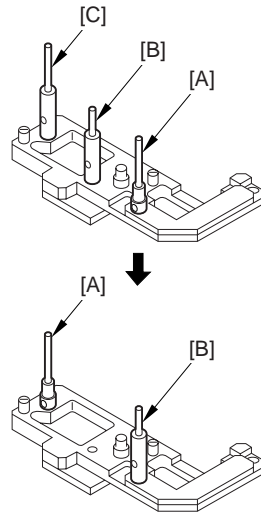
F-5-100



F-5-101

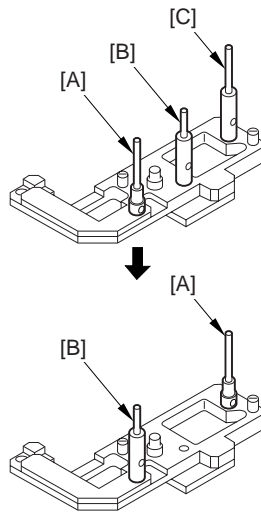
### 5.4.12.13 Adjusting the Position of the No. 1/ No. 2 Mirror Base

- 1) Arrange the mirror positioning tool (FY9-3009-040) so that it is ready for use in the machine (by changing the pin position; REAR).



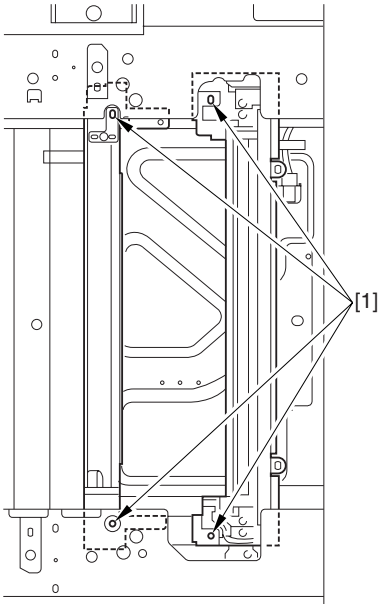
F-5-102

- 2) Arrange the mirror positioning tool so that it is ready for use in the machine (by changing the pin position; FRONT).

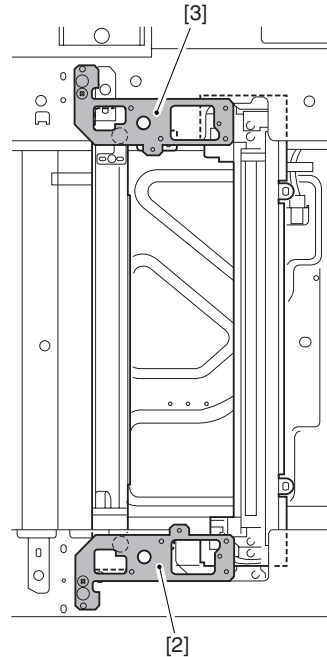


F-5-103

- 3) Fit the pins of the mirror positioning tool (front [2]; rear [3]) into the appropriate holes of the No. 1/No. 2 mirror base).



F-5-104



F-5-105

- 4) Secure the end of the cable that has temporarily been fixed in place on the hook of the reader unit frame.
- 5) Fully tighten the screws on the cable fixing plate both at the front and the rear.
- 6) Detach the mirror positioning tool (FRONT, REAR).
- 7) Put the detached parts back on by reversing the foregoing steps.

---

# Chapter 6

---

## Laser Exposure

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## 6.1 Construction

### 6.1.1 Overview

The machine's laser exposure system consists of the laser unit that serves as the source of light and the laser scanning unit that uses a polygon mirror to control the beam of laser light (for main scanning direction).

1. The video signal from the controller block is converted into a laser drive signal by the DC controller PCB, and is sent to the laser drive PCB. The laser drive signal is used to turn on the laser unit for generation of a laser beam.
2. The laser beam will assume a specific scanning direction upon hitting the polygon mirror rotating at a high speed.
3. The surface of the photosensitive drum is charged to a positive potential. When the laser beam hits specific areas of the drum surface, a static image occurs as a result.

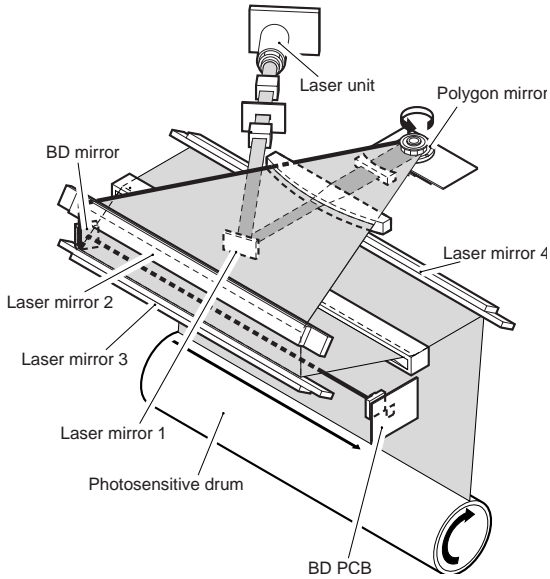
In addition, the laser beam is also used for blank exposure applied to non-imaging areas.

#### T-6-1

Item	Description
Laser intensity control	[1] laser power auto control (APC control) [2] optimum intensity control to suit drum surface potential
Laser scanning method synchronization control	scanning by semi-conductor laser main scanning direction: control by BD signal sub scanning direction: controlled by laser write start signal
Laser scanner motor control	[1] constant speed rotation control [2] full/standby speed switchover

### 6.1.2 Major Components

The machine's laser exposure system consists of the following major components:  
 The machine uses a small-diameter 12-facet polygon mirror and a wide-area lens to enable scanning at high speed, at low power consumption, and at low operating noise. The laser unit is a single-beam unit.



F-6-1

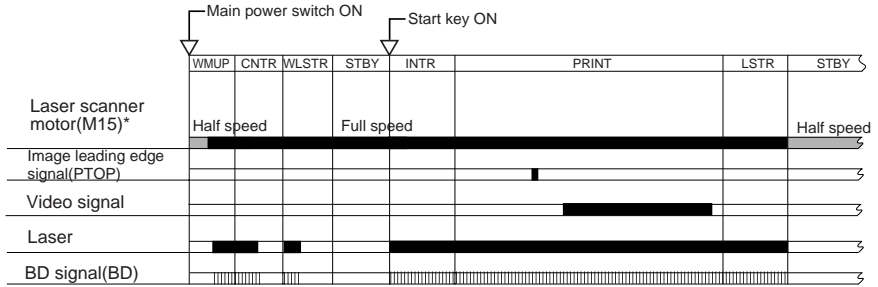
T-6-2

Item	Description
Laser semi-conductor	visible laser light (about 660 nm), single beam
Laser scanner motor	DC motor, 2-speed control (at full speed, about 34300 rpm)
Polygon mirror	12 facets
BD mirror/BD PCB	laser beam detection
laser driver PCB	Laser activation control
DC controller PCB	laser scanner motor rotation control



## 6.2 Basic Sequence

### 6.2.1 Basic Sequence of Operation (laser exposure)



F-6-2

## 6.3 Various Controls

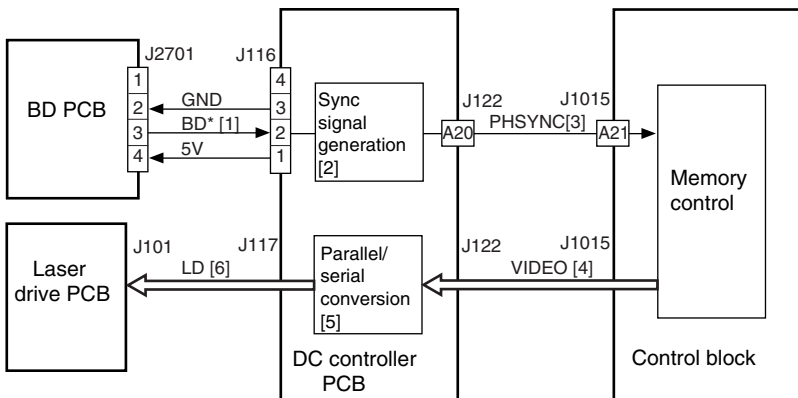
### 6.3.1 Controlling the Laser Activation Timing

#### 6.3.1.1 Generating the Sync Signal

The BD signal used to synchronize the video signal in laser scanning direction is generated by the BD PCB with reference to the laser beam reflected by the BD mirror mounted on the laser beam optical path. The CCD/AP PCB reads the image signal from the CCD, and sends it to the controller block. The controller block, in response, executes image processing, and sends the result as a video signal to the laser driver PCB by way of the DC controller PCB and as the laser intensity control signal to the laser unit.

#### 6.3.1.2 Flow of the Sync Signal

- [1] BD signal (upon detection of laser light, '0').
- [2] phase matching is executed with reference to the printer, and the synch signal is generated.
- [3] reads the image data from the image memory in keeping with the printer sync signal.
- [4] video signal
- [5] converts the 2-pixel parallel signal into a signal-pixel serial signal.
- [6] laser drive signal (drives the laser unit according to the video signal).



F-6-3

**ERROR DODE:****E100**

Issued when the BD signal is not detected within a specific period of time after the laser has been turned on.

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## 6.3.2 Controlling the Intensity of Laser Light

### 6.3.2.1 Controlling the Laser Intensity

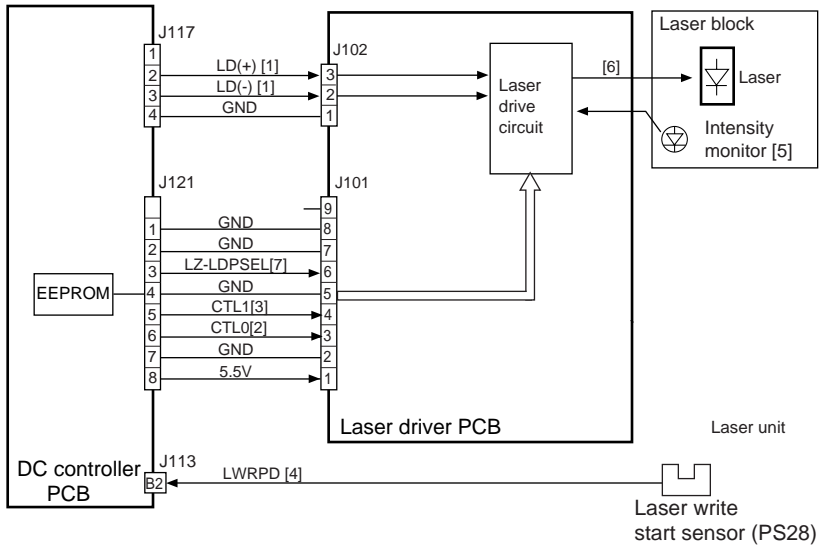
The laser driver circuit serves to drive the semi-conductor laser with reference to the laser drive signal (LD) coming from the DC controller PCB.

The laser drive circuit is associated with the following items of control:

1. laser activation control
2. laser intensity control (APC control)
3. laser intensity control to suit the drum surface potential

The various signals have the following meanings and functions:

- [1] laser drive signal
- [2] sample laser activation signal; for each scan, it turns on the laser for sampling of light intensity (for imaging)
- [3] laser activation enable signal; after the Start key has been pressed, it goes '0' when the laser is ready for activation.
- [4] laser write start signal; when paper reaches the laser write start sensor (PS28) mounted in front of the registration roller, the machine starts laser write operation.
- [5] the machine monitors the intensity of laser light upon its activation (for sampling), and feeds the appropriate value to the laser drive circuit.
- [6] the machine controls the output so that the value that has been fed and the reference value from the DC controller are identical.
- [7] laser intensity reference signal; it serves as the laser activation reference (determined as a result of potential control by the DC controller).



F-6-4

**MEMO:**

1. The laser power is adjusted automatically when the laser unit is replaced.
2. When the manual feed tray is used as the source of paper, the write operation starts when the registration paper sensor (PS29) detects paper.

**SERVICE MODE:**

**DISPLAY> DPOT> LLMT-P**

indicates the laser power voltage control value for printer (PDL) imaging.

**DISPLAY> DPOT> LLMT**

indicates the laser power voltage control value for copier imaging.

**DISPLAY> DPOT> LPOWER-P**

indicates the result of potential control for the laser intensity used during printer (PDL) imaging.

**DISPLAY> DPOT> LPOWER-C**

indicates the result of potential control for the laser intensity used during copier imaging.

**DISPLAY> MISC> LPOWER**

indicates the laser intensity in real time.

**ADJUST> LASER> PVE-OFST**

used to adjust the laser incident point.

**FUNCTION> LASER> POWER**

used to turn on laser light.

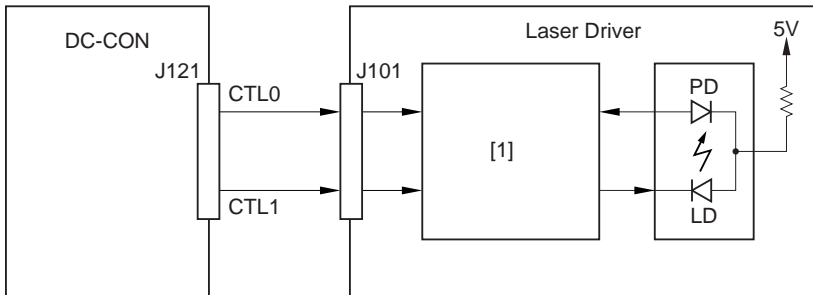
**6.3.2.2 APC Control**

The machine executes APC control so that the laser light will remain at a constant level by adjusting the output of the laser diode mounted on the laser driver.

The control mechanism takes place on the DC control PCB.

The DC controller sends the laser control signal (CTL0=0, CTL1=1) to the laser driver IC on the laser driver PCB.

In response, the laser driver IC sets APC mode, and forces the laser diode (LD) to emit light. While all this is under way, the laser driver IC monitors the laser diode (LD) by means of a photo diode (PD), and adjusts the output of the laser diode unit so that the intensity is at a specific level.



F-6-5

[1] Laser drive IC

DC-CON: DC controller PCB

### 6.3.3 Controlling the Laser Scanner Motor

#### 6.3.3.1 Controlling the Laser Scanner Motor

The machine controls the laser scanner motor so that the motor always rotates at a specific speed.

The control mechanism takes place in the motor speed control block on the DC controller PCB and the reference signal generation block.

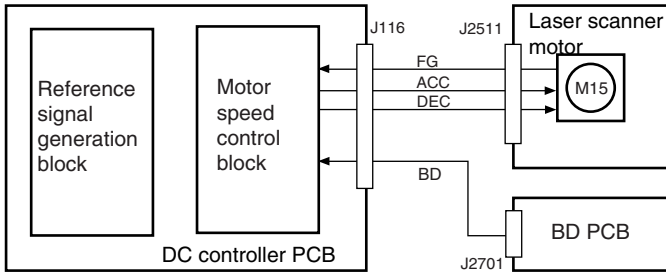
The motor speed control block detects the speed detection signal (FG, BD), and compares it against the reference signal generated by the reference signal generation block; it then controls the acceleration signal (ACC) and the deceleration signal (DEC) so that the motor will rotate at a specific speed.

The machine switches over speed detection to suit the current printer state, thereby reducing the time used to control the scanner motor.

The FG signal is a detection signal used for rough adjustment of the motor speed, while the BD signal is a detection point signal used to fine-tune the motor speed.

T-6-3

Start-up	startup -> half speed	FG control
	half speed -> full speed	FG -> BD control
STBY	half speed	FG control
Imaging	full speed	BD control
Deceleration	full speed -> half speed	BD -> FG control
	half speed -> stop	FG control



F-6-6

**ERROR CODE:****E110** (scanner motor error)

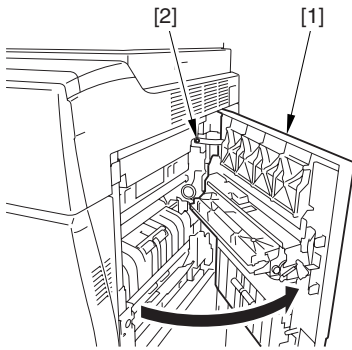
-0001: after the scanner motor has been started up, the FG signal is not detected within a specific period of time, or while the scanner motor is rotating at a stable speed, the FG signal is not detected.

## 6.4 Parts Replacement Procedure

### 6.4.1 Laser Scanner Unit

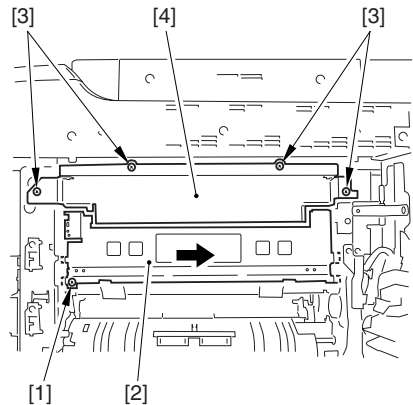
#### 6.4.1.1 Removing the Laser Scanner Unit

1) Open the manual feed tray cover [1]; then, remove the screw [2] from the door strap, and fully open the manual feed tray cover [1].



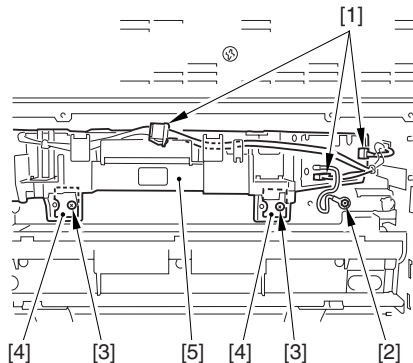
F-6-7

2) Remove the screw [1], and slide the developing assembly locking unit [2] in the direction of the arrow to detach.  
 3) Remove the 4 screws [3], and detach the scanner cover [4].



F-6-8

4) Disconnect the 3 connectors [1].  
 5) Remove the screw [2].  
 6) Remove the 2 screws [3] together with the inside spacer; then, detach the 2 leaf springs [4].  
 7) Hold the front of the laser scanner unit [5], and lift and slide it out.



F-6-9



### 6.4.1.2 When Replacing the Scanner Unit

If the temperature of the fixing assembly is 150 deg C or higher when the main power switch is tuerned on, the machine will not execute potential control. If such is the case after replacing the scanner unit, manually execute potential control in service mode as follows:

- 1) Make the following selections in service mode: COPIER> FUNCTION> DPC> DPC; then, enter '1', and press [OK].
- 2) Turn off and then back on the main power switch.

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# Chapter 7

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## Image Formation

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## 7.1 Construction

### 7.1.1 Overview

The following shows the functions of and the methods used by the machine's image formation system:

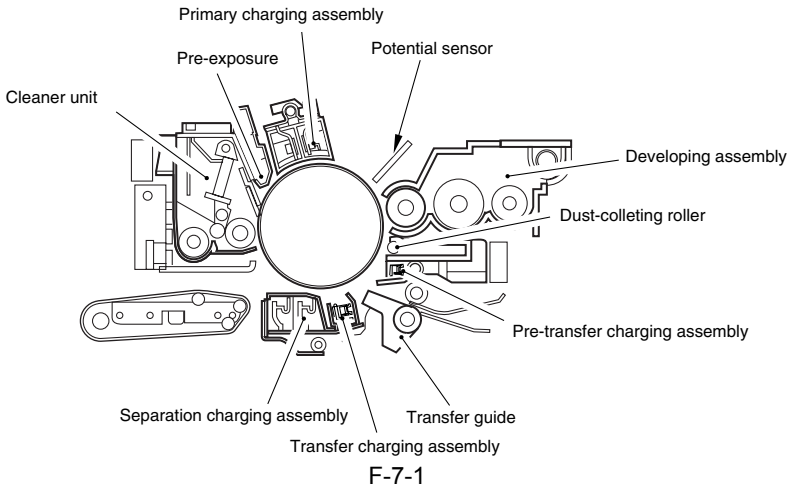
T-7-1

<b>Item</b>	<b>Description</b>
Photosensitive drum	amorphous silicon (80-mm dia.) cleaning: by blade
Developing assembly	developing cylinder (24.5-mm dia.) developing method: dry, 1-component toner projection toner: magnetic negative toner
Pre-exposure	LED array on/off control
Potential sensor	potential control [1] sets primary current [2] sets laser output [3] sets developing bias (DC)
wire auto cleaning	[1] primary charging wire [2] pre-transfer charging wire [3] transfer charging wire [4] separation charging wire
Primary charging control	DC constant current control: set by result of potential control
Grid bias control	fixed voltage control; fixed by varistor
Developing bias control	AC constant voltage control: on/off control only DC constant voltage control: set by result of potential control
dust-collecting roller bias control	DC non-control

Item	Description
pre-transfer charging control	AC constant voltage control: fuzzy control by environment sensor DC constant current control: on/off only
Transfer charging control	DC constant current control: fuzzy control by environment sensor
Separation charging control	AC constant voltage control DC constant current control: fuzzy control based on output of environment sensor and drum surface potential

### 7.1.2 Major Components

The following shows the major components of the machine's image formation system:



## 7.2 Image Formation Process

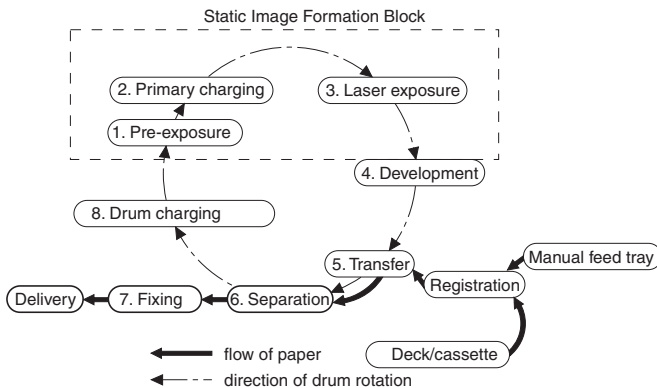
### 7.2.1 Overview

The machine's image formation process consists of the following 8 steps:

T-7-2

step 1	pre-exposure
step 2	primary charging (positive DC)
step 3	laser exposure*
step 4	development (AC + positive DC)
step 5	transfer (negative DC)
step 6	separation (AC + positive DC)
step 7	fixing
step 8	drum cleaning

\*Toner is deposited. The machine also executes black exposure using its laser unit.

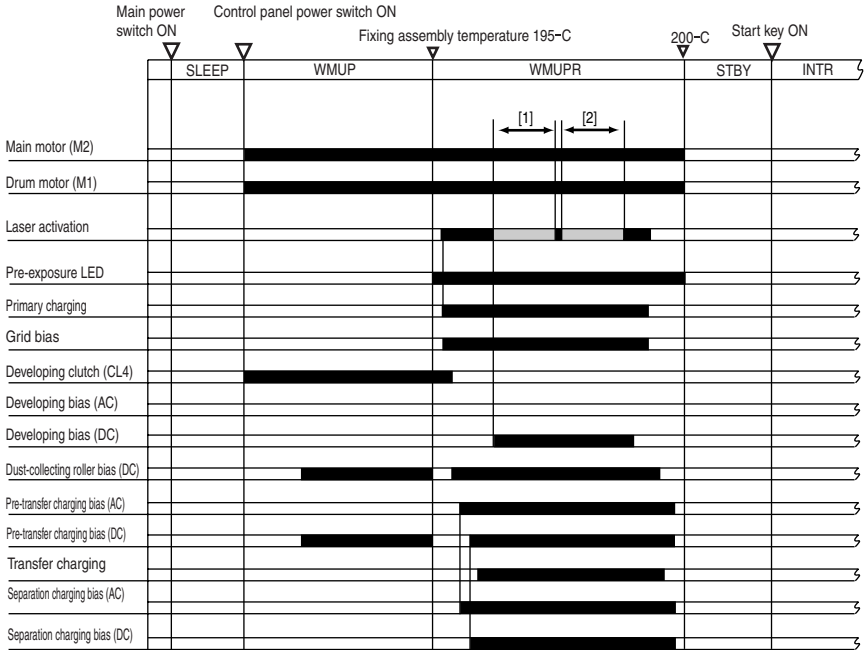


F-7-2

## 7.3 Basic Sequence

### 7.3.1 At Power-On

- 1 original, 2 prints



F-7-3

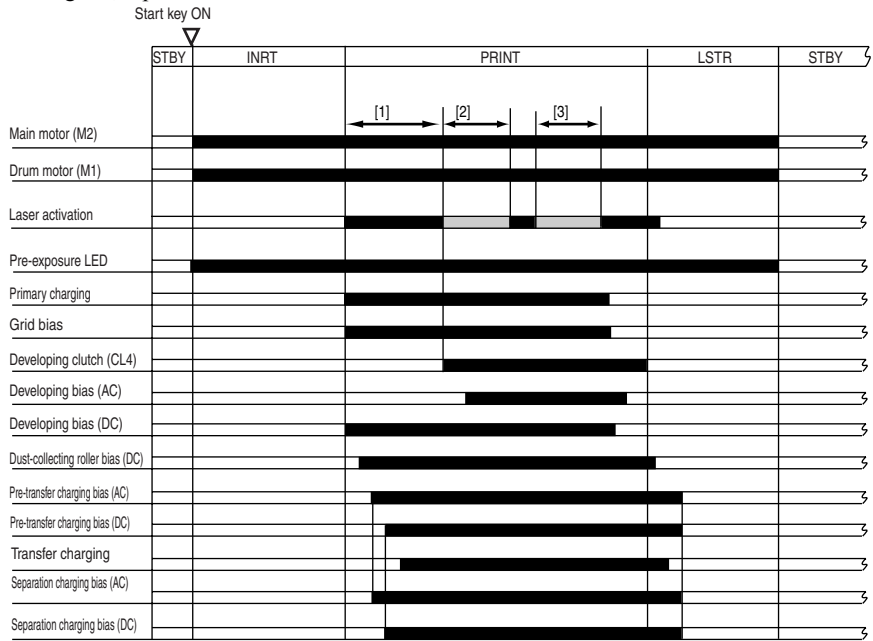
The sequence of operation is as follows:

- [1] The machine executes copier potential control.
- [2] The machine executes printer potential control.



### 7.3.2 At Time of Printing

- 1 original, 2 prints



F-7-4

The following shows the sequence of operation:

- [1] The machine executes a series of charging operations prior to an image formation session, thus stabilizing the potential of the drum.
- [2] The machine executes image formation 1.
- [3] The machine executes image formation 2.

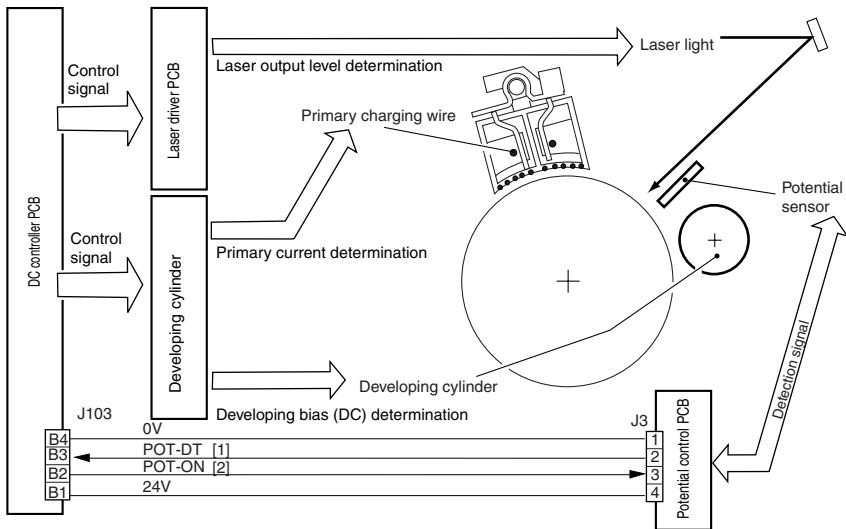
## 7.4 Potential Control

### 7.4.1 Overview

The machine uses the following functions and control mechanisms associated with its potential control system:

1. copier/printer potential control
2. APC (auto power control) correction
3. primary current determination (VD control)
4. laser output determination (VL control)
5. post-laser illumination potential measurement (VDC control)

The following shows the construction of the machine's control system associated with potential control:



F-7-5

The following signals are associated with potential control:

- [1] POT-DT, drum surface potential measurement
- [2] POT-ON, if '1', turns on the potential sensor

## 7.4.2 Copier/Printer Potential Control

The machine's potential control consists of copier potential control mechanisms and printer potential control mechanisms.

The machine uses VD=390V for both copier and printer control mechanisms.

The timing of potential control is as follows:

### T-7-3

<b>At time of warm-up</b>	
Purpose	to execute potential control for copier/printer mode to determine a constant value for copier/printer mode
Operating condition	- the temperature of the fixing assembly is 50 deg C or lower when the main power switch is on - when the first image is being formed 60 min after warm-up
Operation length	10 sec (approx.)
Service mode	may be enabled or disabled using the following: COPIER>OPTION>BODY>PO-CNT
Default	ON (potential control for both copier and printer modes)

If enabled in service mode, potential control starts 10 min and 60 min after the main power switch is turned on or when the door is opened and closed. The timing and particulars of potential control are as follows:

### T-7-4

<b>10 min and 60 min after the main power switch is turned on</b>	
Purpose	to control sensitivity, thus making up for changes in drum temperature to accommodate changes in charging efficiency
Operating conditions	- start of the 1st job 10 min and 60 min after the main power switch has been turned on - the door is opened and closed
Operation length	off: is not executed (default)

- The following is the sequence of operation at time of warm-up:

#### F-7-6

The sequence and particulars of potential control are as follows:

[1] copier potential control: VD = 8 times max.; VL1 = 8 times max.; VL2 = once

[2] printer potential control: VD = 8 times max.; VL1 = 8 times max.; VL2 = once

---

#### **SERVICE MODE:**

**COPIER>OPTION>BODY>PO-CNT (enable/disable potential control)**

0: disable potential control

1: enable potential control

---

[3] standard mode: execute both copier and printer potential control in succession

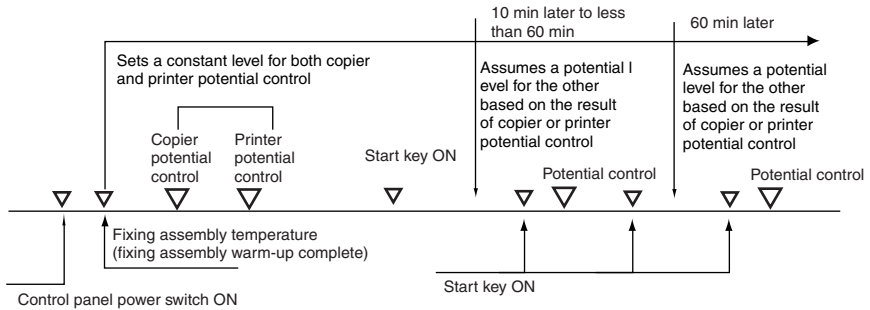
- Short Mode (as selected in service mode)

The machine executes one of the 2 potential modes, and makes an assumption for the other mode.

For warm-up after power-on, the machine refers to the primary current level, laser output level, and developing bias DC level for both copier potential control and printer potential control, thereby computing and saving the resulting rate.

In the course of potential control after power-on, the machine executes one of the 2 potential control modes, thus computing the other in relation to the rate it obtained at time of power-on and after power-on.

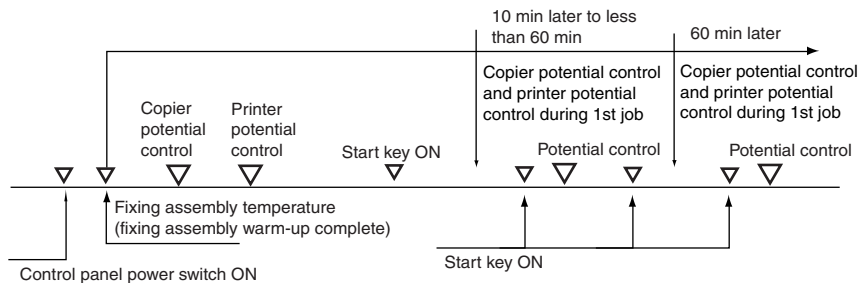
The following is the sequence of operation used for short mode:



F-7-7

- Standard Mode (as enabled in service mode)

The machine executes both copier potential control and printer potential control in succession.



F-7-8

In addition to standard mode and short mode, the machine also offers 30-sec mode executed for 30-sec start-up.

- 30-sec Mode

The machine executes 30-sec mode in a power save state and when it is turned on for the first time for the day.

The machine uses the value of the previous control session to initiate laser exposure, measuring the post-laser illumination potential (VLM) and determining the developing bias DC (Vdc).

---

**SERVICE MODE:**

**COPIER> OPTION> BODY> PO-CNT (turning off the potential control mechanism)**

0: disable potential control

1: enable potential control (default)

**COPIER> OPTION> BODY> PO-CNTMD (selecting potential control mode)**

0: 10 min, 60 min potential control OFF (default)

1: 10 min, 60 min short mode

2: 10 min, 60 min normal mode

**COPIER> OPTION> TEMPO> F-POT-SW**

Enter '1' if a transfer separation fault occurs because of a fault in the potential sensor (as a tentative remedy until the replacement of the sensor).

**COPIER> OPTION> TEMPO> F-POT-D**

Enabled when '1' is set for the following: COPIER>OPTION>TEMPO>F-POT-SW.

0: if user primarily uses originals with low image ratio (text original; default)

1: if user primarily uses originals with high image ratio (photo original)

2: if re-transfer (drop-out at 50 mm of leading edge) occurs

**COPIER> OPTION> TEMPO> F-HUM-SW**

Enter '1' if the environment sensor is faulty (as a tentative remedy until replacement of the sensor).

**COPIER> OPTION> TEMPO> F-HUM-D**

Enabled if '1' is set for the following: COPIER>OPTION>TEMPO>F-HUM-SW.

Enter the humidity reading of the site of installation (between 30% and 99%; default being 35%).

**COPIER> FUNCTION> DPC> DPC (forcing potential control)**

ON: execute potential control

**COPIER> ADJUST> V-CONT> EPOTOFST** (setting potential sensor offset value)

**COPIER> ADJUST> V-CONT> DE-OFST** (adjusting copy Vdc)

**COPIER> ADJUST> V-CONT> VD-OFST** (setting copy VD target potential offset value)

**COPIER> ADJUST> V-CONT> DE-OFS-P** (adjusting printer Vdc)

**COPIER> ADJUST> V-CONT> VD-OFS-P** (setting printer VD target potential offset value)

Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB.

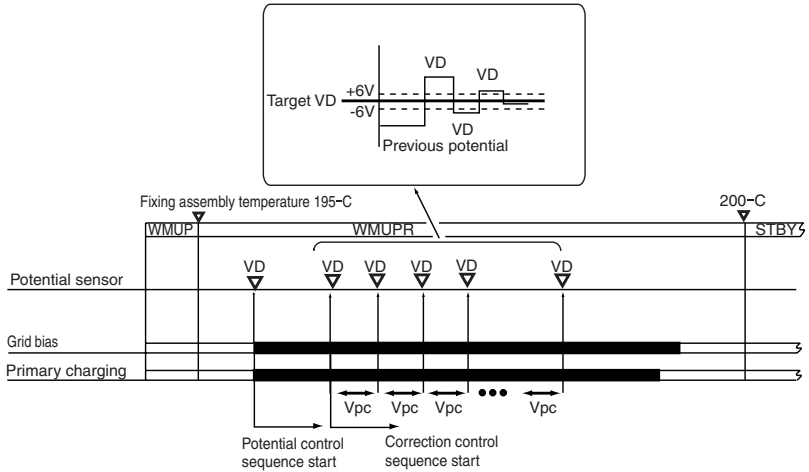
**COPIER> FUNCTION> DPC>OFST** (adjusting potential sensor offset)

For the method of adjustment, see "Standards and Adjustments."

---

### 7.4.3 Determining the Primary Current

To measure the dark area potential (VD) for the first time after the power switch is turned on, the machine uses the most recently measured current level, and measures the drum surface potential using the potential sensor. The DC controller PCB compares the drum surface potential and the target potential; as a result, if the measured potential is  $\pm 6$  V of the target value, the machine corrects the primary current and measures the potential once again. The machine executes potential measurement a maximum of 8 times, and also corrects the primary current as many times.

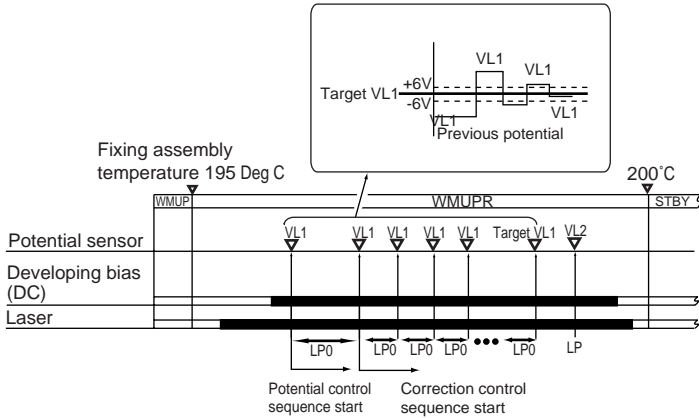


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### 7.4.4 Determining the Laser Output

To measure the light area potential (VL1) for the first time after the power switch is turned on, the machine uses the most recent laser output level (LP0), and measures the drum surface potential using the potential sensor. The DC controller PCB compares the drum source potential and the target potential; if the measured potential is +/-10V of the target value, the machine corrects the potential of the laser output, and measures the potential once again. The machine executes potential measurement a maximum of 8 times, and also corrects the lower output level as many times. In addition, the machine measures the light area (VL2) for the developing bias for use in determining the laser output (LP) needed to attain the target potential.





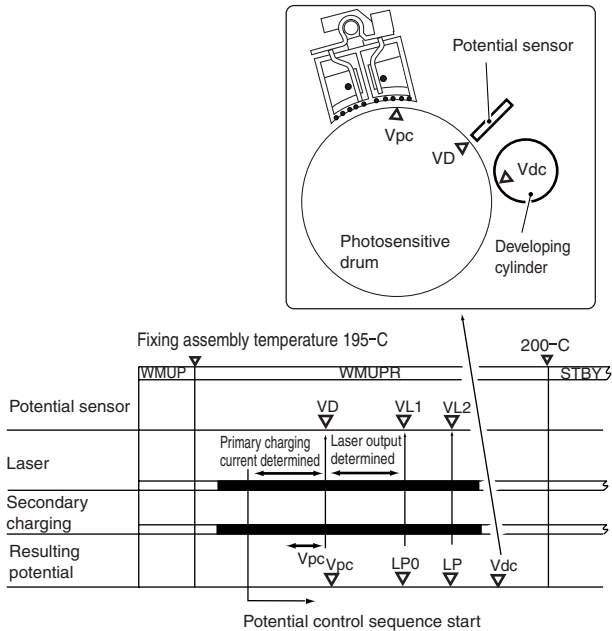
### 7.4.5 Determining the Developing Bias

The machine determines the developing bias (VDC) as follows with reference to the drum surface potential (VL2):

$$\text{VDC} = \text{VL2} + \text{delta VDC}$$

For copier potential, delta VDC=110 V

For printer potential, delta VDC=85 to 110 V (i.e., the printer potential varies to suit the reading of the environment sensor, thus ensuring the reproduction of correct line width)



F-7-11

## 7.4.6 APC Correction

Changes in the laser output cause changes in the surface potential. To maintain a specific level of surface potential, the machine corrects the laser output control value. The following shows the type and the particulars of laser output control value correction:

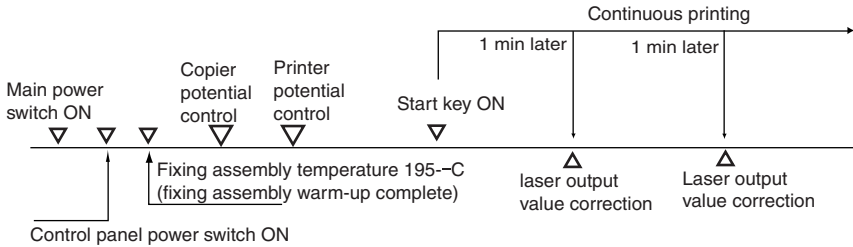
### 1. Between-Sheet APC Control

**Purpose:** to maintain a specific level of surface potential without lowering the productivity during a continuous job; the machine measures the potential after laser output between sheets, and corrects the laser output control value.

**Timing:** over the 1st interval between sheets every 1 min after the start of a continuous print job.

**Potential measurement:** the drum potential varies in drum peripheral direction; thus, the machine computes the average drum surface potential in drum peripheral direction. It uses the result of computation to determine the laser output correction value. If measurement is not possible because of conditions imposed by the need for measurement between sheets,

the machine will continue measurement for an additional 1 min.



F-7-12

## 2. Initial Rotation APC Control

**Purpose:** to make up for the changes in the VL potential of the laser output occurring after an appreciable time, the machine measures the drum potential and corrects the laser output control value.

**Timing:** during initial rotation of the 1st job 60 min after the end of a job.

**Potential measurement:** the drum potential varies in peripheral direction, and the machine computes the average drum potential in peripheral direction. The machine uses the result of computation to obtain the appropriate laser output correction value.

## 3. Last Rotation APC Control

**Purpose:** when intermittent printing is repeated at short intervals, the absence of potential control can cause changes in the VL potential of the laser output. To make up for the changes, the machine computes a correction value for the laser output control value and uses the result for the next job.

**Timing:** during last rotation for the 1st job 30 min after the most recent laser output correction.

**Potential measurement:** the drum potential varies in peripheral direction. The machine computes the average drum potential in peripheral direction, and obtains the appropriate laser output correction value using the result of computation.

## SERVICE MODE:

### COPIER>OPTION>BODY>LAPS-SW (switching laser correction)

0: ON (left alone for 10 min -> initial rotation APC)

1: ON (left alone for 60 min -> initial rotation APC; default)

2: ON (left alone for 120 min -> initial rotation APC)

- 3: OFF only for initial rotation APC
  - 4: OFF
- 

### 7.4.7 Adjusting the Density in Various Modes

The machine corrects the development bias determined as a result of potential control for the following operating modes, and uses the result as the target value for the individual modes:

#### 1. Density Adjustment for Copying

Purpose: to obtain the density suited to the user's needs.

Method of correction: uses the developing bias and image processing (binary density processing) according to the F-value setting

#### 2. Density Adjustment for Printing

Purpose: to obtain the density suited to the user's needs.

Method of correction: uses the developing bias and image processing (thickening) to suit the F-value setting.

#### Adjusting the Density for Copying

The machine increases the developing bias to decrease the copy density. If increased in excess, the bias can cause light images; if decreased in excess, on the other hand, the background can develop fogging. In light of this, the machine executes density processing using changes in the developing bias and image processing (binary density processing).

T-7-5

F value	Developing DC bias standard value (V)	Shift (V)	Image processing	Image density
1	240	60	yes	lighter

F value	Developing DC bias standard value (V)	Shift (V)	Image processing	Image density
2	220	40	no	↑ ↓
3	180	0	no	
4	140	-40	no	
5	120	-60	yes	

### Adjusting the Density for Printing

The machine increases the developing bias to increase the print density. If increased in excess, the background can develop fogging. At the lower limit of the developing bias, the machine uses the changes in the developing bias and image processing (thickening processing) to ensure appropriate density.

#### T-7-6

F value	Developing DC bias standard value (V)	Shift (V)	Thickening*1	Image density
1	218	48	no	light
2	205	35	no	↑ ↓
3	194	24	no	
4	182	12	no	
5	170	0	no	
6	153	-17	no	
7	137	-33	no	
8	120	-50	no	
9	120	-50	yes	

\*1: Thickening processing may be enabled for all F values in user mode ('correct fine line').

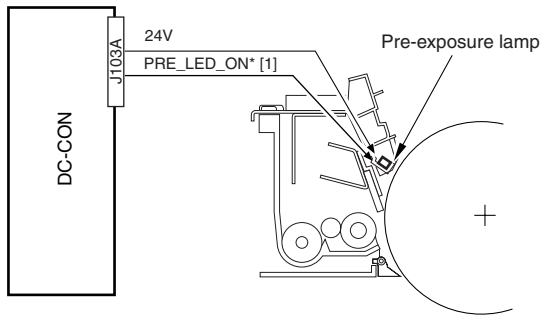
## 7.5 Charging Mechanism

### 7.5.1 Controlling Pre-Exposure LED

#### 7.5.1.1 Pre-Exposure LED Control

The machine is equipped with a pre-exposure LED used to prevent adhesion of excess toner on the photosensitive drum because of residual charges. The following is an item associated with the pre-exposure LED control system:

1. turning on/off the pre-exposure LED



F-7-13

The following is the signal associated with the mechanism:

- [1] Pre-exposure LED control signal; when '0', LED goes on

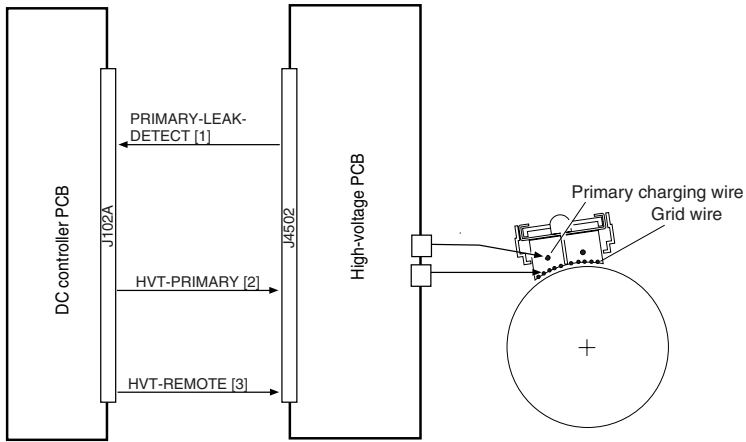
### 7.5.2 Primary Charging Mechanism

#### 7.5.2.1 Overview

The following items are associated with the primary charging control system:

1. turning on/off the primary corona current
2. controlling the constant current level of the primary corona current
3. controlling the constant voltage level of the grid bias (fixed to 850 V by a

The following shows the construction of the control system associated with the primary charging control system:



F-7-14

The following signals are associated with the mechanism:

- [1] Primary charging leakage detection signal; when '0', if the current is too high or too low
- [2] Primary corona current control signal; used to control the primary charging current generated by the high-voltage PCB
- [3] High-voltage remote signal; turning on/off the primary charging corona current output

### 7.5.2.2 Primary Charging Assembly Cleaning Mechanism

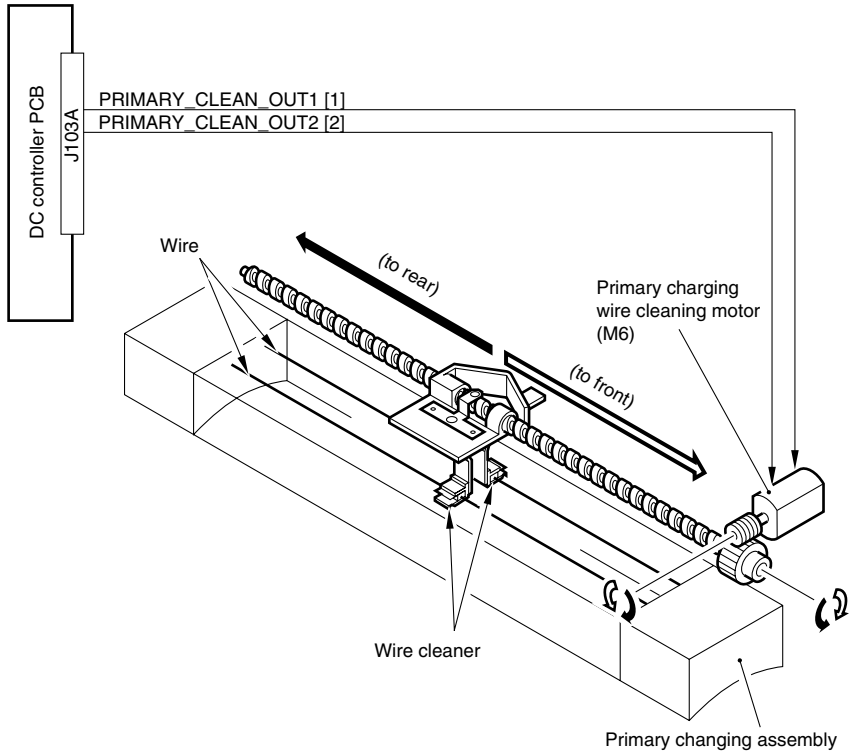
The primary charging wire cleaning mechanism is turned on at the following timing, and the construction of the control system is as shown:

Timing of Cleaning

1. when the wire cleaning mechanism is executed in user mode
2. when the wire cleaning mechanism is executed in service mode:
  - COPIER>FUNCTION>CLEANING>WIRE-CLN\*1
3. after the end of cleaning, at the end of every 2,000 prints\*2
4. in a low temperature or high humidity environment, if the fixing roller is 160 deg C or less when the power is turned on

\*1: The machine executes it when the primary charging wire or the transfer charging wire has been replaced.

\*2: The default cleaning interval may be changed in service mode (COPIER> OPTION> BODY> W-CLN-P).



F-7-15

The following signals are associated with the mechanism:

- [1] Primary charging wire cleaning motor reverse direction signal; when '1', the wire cleaner moves toward the rear.
- [2] Primary changing wire cleaning motor normal direction signal; when '1', the wire cleaner moves toward the front.



### 7.5.2.3 Others

#### **SERVICE MODE:**

#### **COPIER>FUNCTION>CLEANING>WIRE-CLN**

Use it so that the machine causes the wire cleaner to make 5 round trips to automatically clean the charging wire when the primary charging wire or the transfer wire has been replaced.

#### **COPIER>OPTION>BODY>W-CLN-P**

Use it to specify the interval at which the primary charging wire is automatically cleaned in terms of the number of prints made.

## 7.5.3 Dust-Collecting Roller Bias

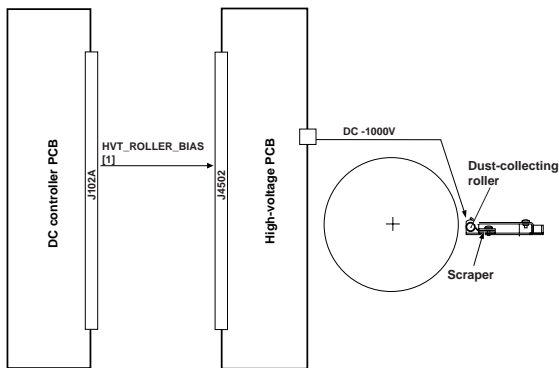
### 7.5.3.1 Overview

The machine is equipped with a dust-collecting roller to collect stray toner occurring after development. The toner collected on its surface is removed by the work of a scraper.

The following item is associated with the dust-collecting roller bias control system:

1. turning on/off the dust-collecting roller bias

The following shows the construction of the dust-collecting roller bias:



F-7-16

The following signal is associated with the mechanism:

[1] dust-collecting roller bias remote signal; if '1', the dust-collecting roller bias turns on.

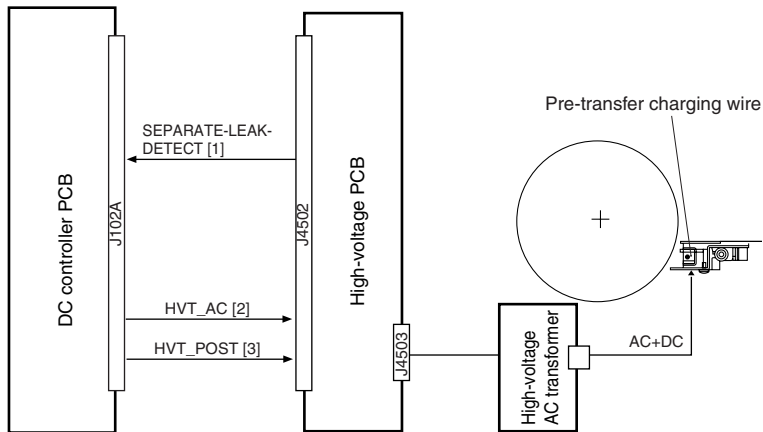
### 7.5.4 Pre-Transfer Charging Mechanism

#### 7.5.4.1 Outline

The following items are associated with the pre-transfer charging control system:

1. controlling the constant current level of the DC bias
2. controlling the fixed voltage level of the AC bias
3. controlling the output to suit the environment (fuzzy control)

The following shows the construction of the system associated with the pre-transfer charging control mechanisms:



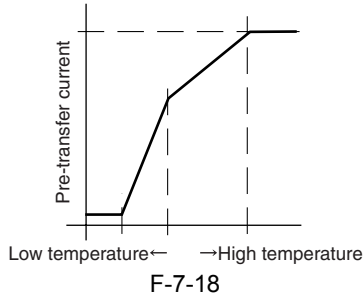
F-7-17

The following signals are associated with the mechanism:

- [1] Pre-transfer/separation charging leakage detection signal; when the current is too high or too low, '0'.
- [2] Pre-transfer charging control signal; controls the DC bias current and AC bias voltage generated by the high-voltage PCB.
- [3] Pre-transfer/separation charging remote signal; turns on/off the pre-transfer/separation current output.

### 7.5.4.2 Controlling the Output to Suit the Environment (fuzzy control)

The pre-transfer charging current is optimized to suit the environment (i.e., reading of the environment sensor):



#### SERVICE MODE:

#### COPIER>OPTION>BODY>FUZZY (turning on/off fuzzy control)

- 0: enable fuzzy control (default)
- 1: low humidity mode (for pre-transfer charging current level lower than standard)
- 2: normal humidity mode
- 3: high humidity mode (for pre-transfer charging current higher than standard)

When set to '1' through '3', the machine executes the appropriate modes independently of the reading of the environment sensor.

### 7.5.4.3 Pre-Transfer Charging Assembly Cleaning Mechanism

The machine executes pre-transfer charging wire cleaning as follows using its associated mechanism:

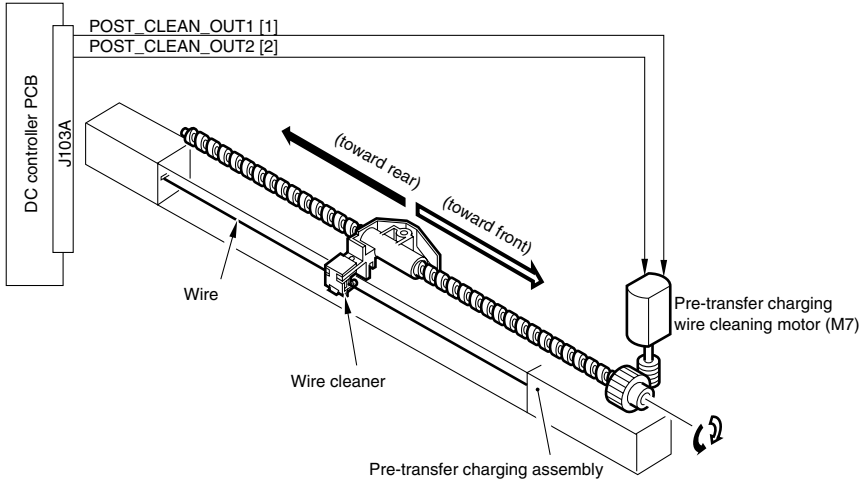
#### Timing

1. when wire cleaning is executed in user mode.
2. when wire cleaning is executed in service mode (COPIER> FUNCTION> CLEANING> WIRE-CLN)\*1.
3. after the end of cleaning, every 2,000 prints\*2.

4. in a low temperature or high humidity environment, if the fixing roller is 160 deg C or less when the power is turned on.

\*1: The machine executes cleaning when the primary charging wire or the transfer charging wire has been replaced.

\*2: The default cleaning interval may be changed in service mode: COPIER> OPTION> BODY> W-CLN-P.



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The following signals are associated with the mechanism:

[1] Pre-transfer charging wire cleaning motor normal direction signal; when '1', the wire cleaner moves toward the rear.

[2] Pre-transfer charging wire cleaning motor reverse direction signal, when '1', the wire cleaner moves toward the front.

#### 7.5.4.4 Others

---

**SERVICE MODE:**

**COPIER>ADJUST>HV-TR>PRE-TR (entering output adjustment value for pre-transfer charging current)**

Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB.

**COPIER>ADJUST>HV-TR>H-PRE-TR (entering offset value for pre-transfer high-voltage output of high-voltage unit)**

Enter the value indicated on the label attached to the new high-voltage unit if you have replaced the high-voltage unit or initialized the RAM on the DC controller PCB.

**COPIER>ADJUST>HV-TR>D-PRE-TR (entering offset value for pre-transfer high-voltage output of DC controller PCB)**

Enter the value indicated on the label attached to the new DC controller PCB if you have replaced the DC controller PCB or initialized the RAM on the DC controller PCB.

**COPIER>OPTION>BODY>W-CLN-P**

Use it to set the interval of automatic cleaning of the pre-transfer charging wire in terms of the number of prints.

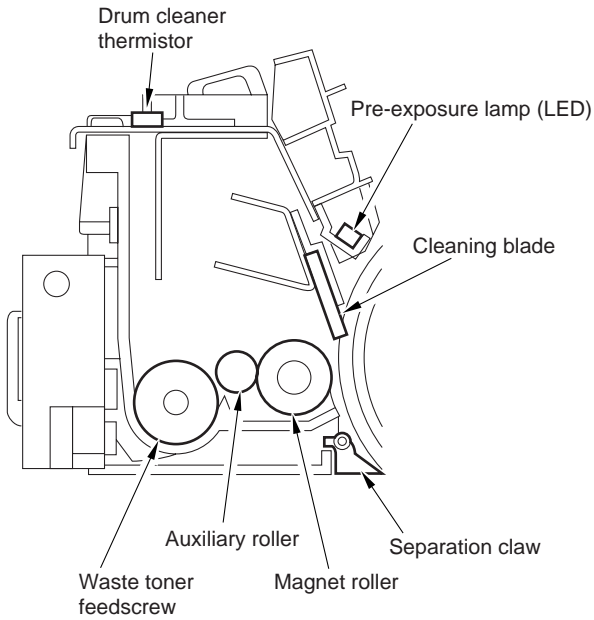
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## 7.6 Drum Cleaner Unit

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### 7.6.1 Outline

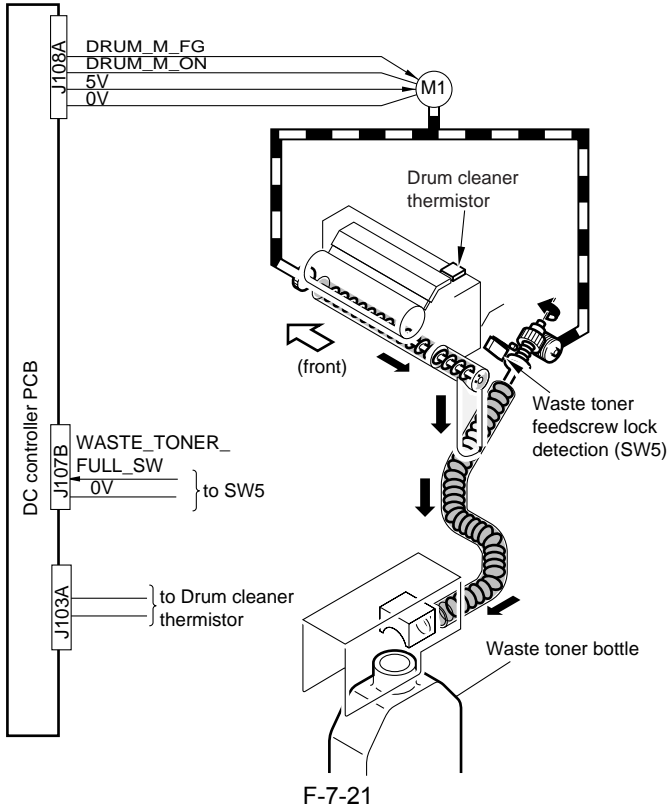
The following shows the components found in the drum cleaner unit:



F-7-20

## 7.6.2 Detecting the State (full) of the Waste Toner Case

The following shows the control mechanism used to see if the waste toner case has become full:



### ERROR CODE:

#### E013-0001

Indicated if the waste toner feedscrew sensor (MSW2) has remained on for 5 sec or more.

#### E821-0001

The reading of the drum cleaner thermistor is 55 deg C at least once, causing the machine to assume that the inside of the cleaner is clogged with toner.

**SERVICE MODE:**

**COPIER>COUNTER>MISC>WASTE-TNR**

waste toner counter; when its reading reaches '250,000', the machine will issue an alarm on the User screen.

Dispose of the waste toner, and reset the error code.

---

---

**MEMO:**

The waste toner bottle can hold toner good for a maximum of 500,000 prints. The machine will indicate a waste toner bottle full alarm when the counter reading reaches '250,000'.

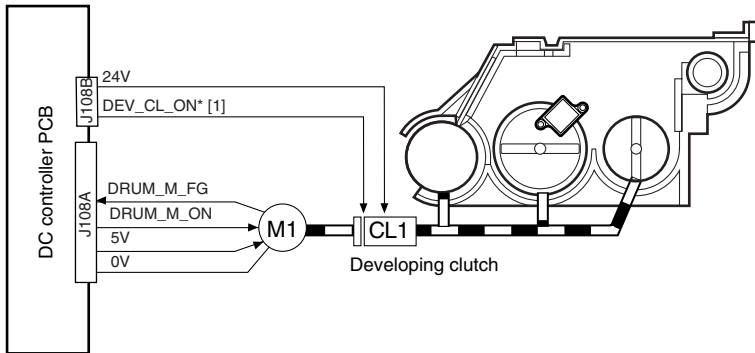
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## 7.7 Developing Assembly

### 7.7.1 Controlling the Developing Assembly Drive

The following shows the construction of the developing assembly drive control system:



F-7-22

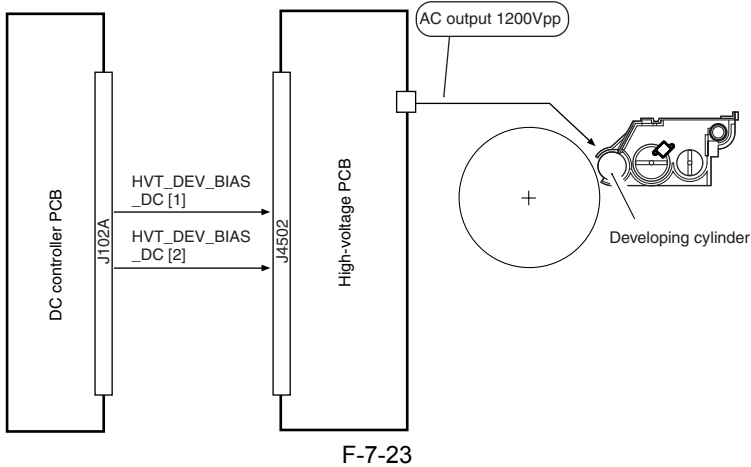
The following signal is associated with the developing assembly control mechanism:

[1] Developing clutch drive signal; when '0', the drive of the main motor (M1) is transmitted to the developing assembly.

## 7.7.2 Controlling the Developing Bias

The following items are associated with the developing bias control system:

- [1] Controlling the DC bias constant voltage
- [2] Controlling the AC bias constant voltage



The following signals are used in association with the developing bias control mechanism:

- [1] Developing DC bias current control signal; controls the DC component of the developing bias generated by the high-voltage power supply PCB.
- [2] turns on/off the developing bias current output.

---

### SERVICE MODE:

#### COPIER>ADJUST>DEVELOP>BIAS

(entering developing bias)

Enter the value indicated on the service label if you have initialized the DC controller PCB.  
setting range: 0 (darker) to 600 (lighter)

#### COPIER> ADJUST> DEVELOP> HVT-DE

(entering offset value for developing high-voltage output of high-voltage unit)

Enter the value indicated on the label attached to the new high-voltage unit if you have replaced the DC controller PCB or initialized the RAM on the DC controller PCB.  
setting range: -100 (lighter) to +100 (darker)

**COPIER> ADJUST> DEVELOP> D-HV-DE**

(entering offset value for developing high-voltage output of DC controller PCB)

Enter the value indicated on the label attached to the DC controller PCB if you have replaced the DC controller PCB or initialized the RAM on the DC controller PCB.

setting range: -100 (lighter) to +100 (darker)

**COPIER> ADJUST> V-CONT> DE-OFST**

(adjusting VDC for copier)

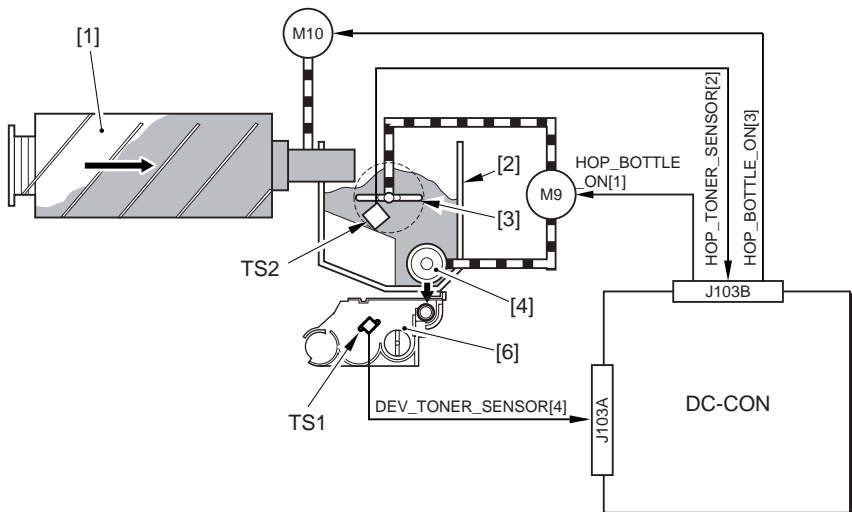
**COPIER> ADJUST> V-CONT> DE-OFS-P**

(adjusting VDC for printer)

Enter the value indicated on the service label if you have initialized the RAM on the DC control PCB.

### 7.7.3 Detecting the Toner Level and Controlling Toner Supply

The following shows the components associated with the toner supply control system:



F-7-24

- [1] Toner bottle
- [2] Hopper assembly
- [3] Toner stirring plate
- [4] Toner feedscrew
- [5] Toner feed pipe
- [6] Developing assembly
- M9: Hopper stirring motor
- M10: Toner supply motor
- TS1: Toner level sensor
- TS2: Inside hopper toner level sensor
- DC-CON: DC controller (components used to detect level of remaining toner)

### **Toner Supply Sequence**

The toner inside the developing assembly is monitored by the developing assembly toner sensor (TS1); when the toner inside the developing assembly falls below a specific level, the developing assembly toner level signal goes '0' so that the DC controller PCB recognizes it.

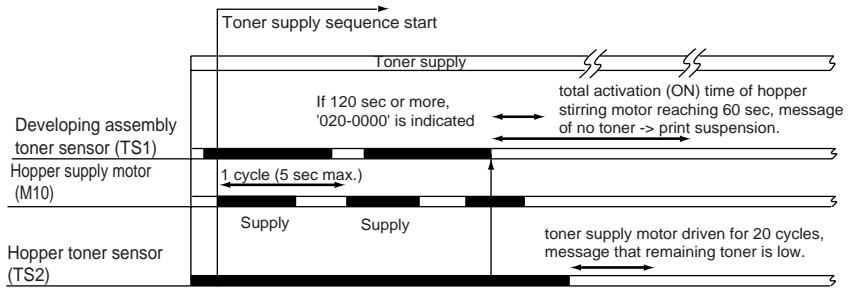
If the DC controller PCB detects the developing assembly toner level signal for 0.3 sec or more, it generates the hopper motor drive signal so that the hopper assembly will start supplying toner.

When the toner inside the developing assembly reaches a specific level and, as a result, the developing assembly toner level signal remains '1' for 0.7 sec or more, the hopper supply motor stops.

When the toner inside the hopper drops below a specific level, the hopper toner level detection signal goes '0'. If the signal remains '0' when the toner supply motor has been turned on and off 20 times after the detection of the signal state by the DC controller, the machine issues a message that the remaining toner is low.

Total rotating time reaches 60 seconds after the toner sensor in the developing assembly senses no toner, the machine issues a message of no toner and stops the ongoing printing operation.

When the toner bottle is replaced, the hopper supply motor and the stirring motor are turned on, and the developing assembly inside toner level detection signal goes '1', the machine resets the message of no toner and resumes printing.



F-7-25

**ERROR CODE:****E020-0000**

Indicated while the output of the hopper toner sensor (TS2) points to the presence of toner and the output of the toner sensor (TS1) inside the developing assembly points to the absence of toner for 120 sec or more.

## 7.8 Transfer Mechanism

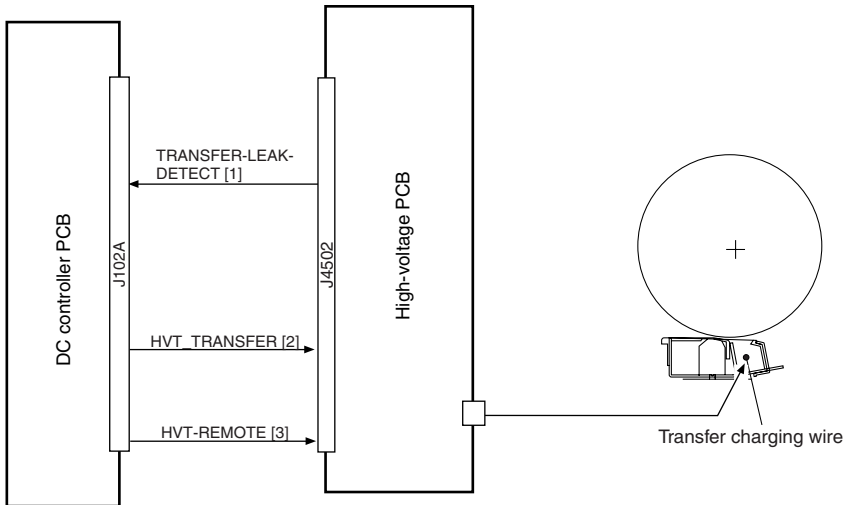
### 7.8.1 Transfer Charging Mechanism

#### 7.8.1.1 Outline

The following items are associated with the transfer charging control system:

1. controlling the DC bias constant current
2. controlling the output to suit the environment (fuzzy control)

The following shows the construction of the transfer charging control system:



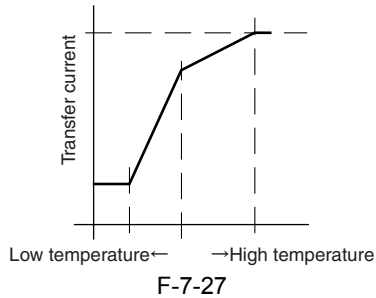
F-7-26

The following signals are associated with the transfer charging control mechanism:

- [1] Transfer charging leakage detection signal; when the current is too high or too low, '0'
- [2] Transfer charging current control signal; used to control the transfer current generated by the high-voltage PCB
- [3] High-voltage remote signal; turns on/off the transfer current output

### 7.8.1.2 Controlling the Output to Suit the Environment (fuzzy control)

The transfer charging current is optimized to suit the environment (i.e., reading of the environment sensor).



#### SERVICE MODE:

#### COPIER>OPTION>BODY>FUZZY (turning on/off fuzzy control)

- 0: turns off fuzzy control (default)
- 1: low humidity mode (for lower transfer charging current than standard)
- 2: normal humidity mode
- 3: high humidity mode (for higher transfer charging current than normal)

When set to '1' through '3', the machine executes the appropriate modes independently of the reading of the environment sensor.

### 7.8.1.3 Transfer Charging Assembly Cleaning Mechanism

The following shows the timing at which transfer charging wire cleaning is executed and the construction of the associated system:

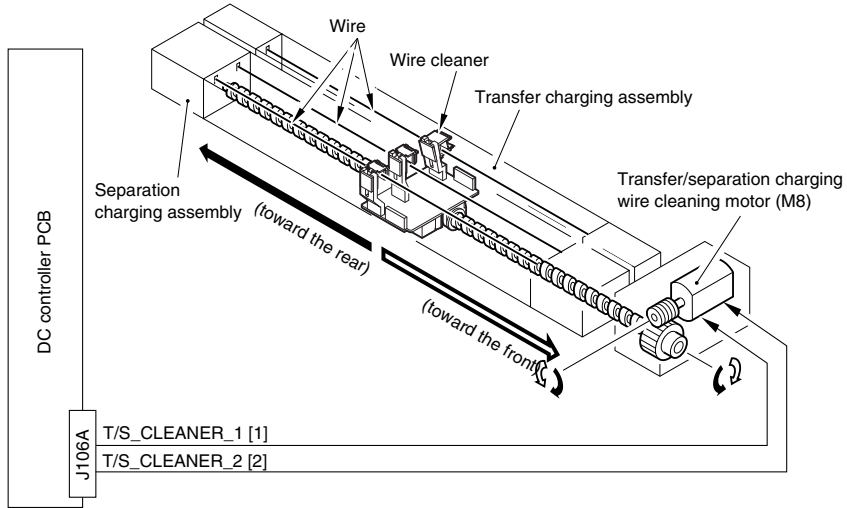
#### <Timing>

- 1. when wire cleaning is executed in user mode
- 2. when wire cleaning is executed in service mode (COPIER> FUNCTION> CLEANING> WIRE-CLN)\*1
- 3. at the end of every 2,000 prints after the end of cleaning\*2

4. if the fixing roller is 160 deg C or less in a low temperature or high humidity environment

\*1: The machine executes wire cleaning when the primary charging wire or the transfer charging wire has been replaced.

\*2: The default cleaning interval may be adjusted in service mode: COPIER> OPTION> BODY> W-CLN-P.



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The following signals are used in association with the cleaning mechanism:

[1] Transfer charging wire cleaning motor normal direction signal; when '1', the wire cleaner moves toward the rear.

[2] Transfer charging wire cleaning motor reverse direction signal; when '1', the wire cleaner moves toward the front.

#### 7.8.1.4 Others

#### SERVICE MODE:

**COPIER> ADJUST> HV-TR> TR-N1**

(adjusting the transfer charging current output for the 1st side of a duplex print or for a simplex print using plain paper)

**COPIER> ADJUST> HV-TR> TR-N2**



(adjusting the transfer charging current output for the 2nd side of a duplex print using plain paper)

**COPIER> ADJUST> HV-TR> HVT-TR**

(entering the offset value of the transfer high-voltage output of the high-voltage unit)

Enter the value indicated on the label attached to the new high-voltage unit if you have replaced the high-voltage unit or initialized the RAM on the DC controller PCB.

**COPIER> ADJUST> HV-TR> D-HV-TR**

(entering the offset value for the transfer high-voltage output of the DC controller PCB)

Enter the value indicated on the label attached to the new DC controller PCB if you have replaced the DC controller PCB or initialized the RAM on the DC controller PCB.

**COPIER> FUNCTION> CLEANING> WIRE-CLN**

Use it so that the machine automatically causes its wire cleaner to make 5 round trips if you have replaced the primary charging wire or the transfer charging wire.

**COPIER> OPTION> BODY> W-CLN-P**

Use it to set the interval of automatically cleaning the pre-transfer charging wire in terms of the number of prints.

**COPIER> OPTION> BODY> TR-SP-C1**

(switching over the transfer/separation output value for pickup from the right deck)

**COPIER> OPTION> BODY> TR-SP-C2**

(switching over the transfer/separation output value for pickup from the left deck)

**COPIER> OPTION> BODY> TR-SP-C3**

(switching over the transfer/separation output value for pickup from the cassette 4)

**COPIER> OPTION> BODY> TR-SP-C4**

(switching over the transfer/separation output for pickup from the manual feed tray)

**COPIER> OPTION> BODY> TR-SP-MF**

(Use it to switch the transfer/separation output for pickup from the manual feed tray.)

**COPIER> OPTION> BODY> TR-SP-DK**

(switching over the transfer/separation output value for pickup from the side paper deck)

As necessary, switch over the transfer/separation output value for pickup from various sources of paper by way of correcting various faults:

0: normal (default)

1: prevent re-transfer

2: prevent separation fault

3: prevent transfer fault

---

## 7.9 Separation Mechanism

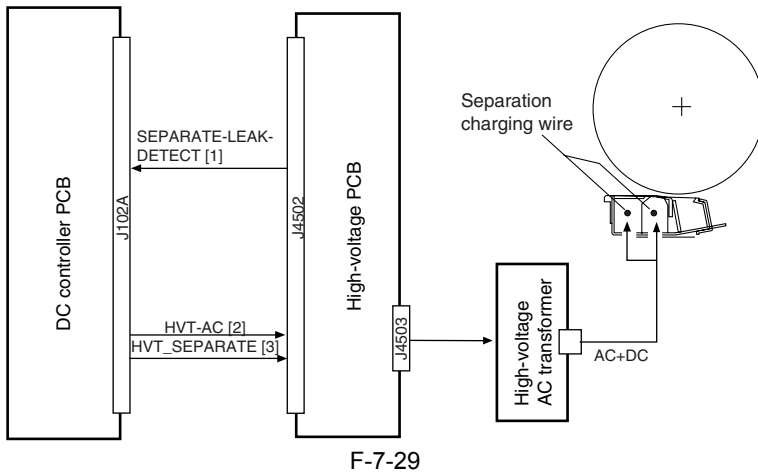
### 7.9.1 Separation Charging Mechanism

#### 7.9.1.1 Outline

The following items are associated with the separation charging control system:

1. controlling the constant current of the DC bias
2. controlling the constant voltage of the AC bias
3. correcting the output to suit the environment and drum surface potential (fuzzy control)

The following shows the construction of the separation charging control system:

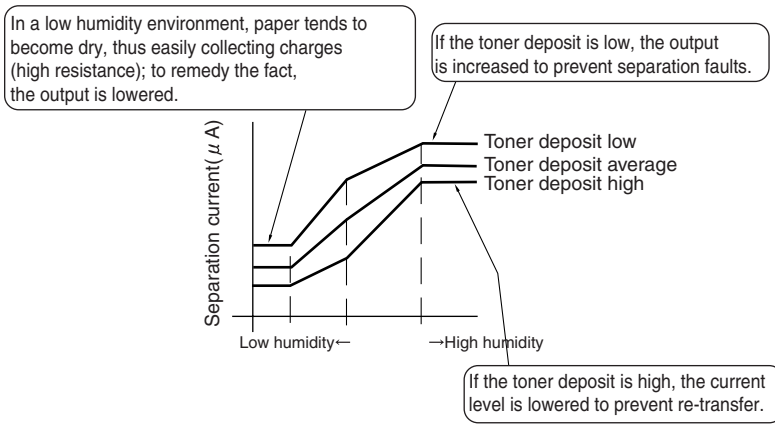


The following signals are associated with the separation charging control mechanisms:

- [1] Separation charging leakage detection signal; if the current is too high or too low, '0'.
- [2] Separation charging current control signal; used to control the DC bias current and the AC bias voltage generated by the high-voltage PCB.
- [3] Separation charging remote signal; turns on/off the separation current output.

### 7.9.1.2 Correcting the Output to Suit the Environment and the Drum Surface Potential

The separation current output is optimized to suit the environment (i.e., reading of the environment sensor) and the deposit of toner (either of 3 levels; low, average, high, as determined by the count of black pixels).



F-7-30

- [1] In a low humidity environment, paper tends to become dry, thus tending to collect charges (high resistance). The output is decreased.
- [2] If the drum surface potential is low, the output is increased to prevent separation faults.
- [3] If the drum surface potential is high, the current level is lowered to prevent re-transfer.

#### SERVICE MODE:

##### COPIER> OPTION> BODY> FUZZY (turning off/on fuzzy control)

0: enable fuzzy control (default)

1: low humidity mode (for higher pre-transfer charging current than normal)

2: normal humidity mode

3: high humidity mode (for higher pre-transfer charging current than normal)

If '1' through '3' is set, the machine executes the individual modes independently of the reading of the environment sensor.

### 7.9.1.3 Others

---

**Service Mode:**

**COPIER> ADJUST> HV-SP> SP-N1**

(adjusting the output of the 1st side of a duplex print or for a simplex print using plain paper)

**COPIER> ADJUST> HV-SP> SP-N2**

(adjusting the output of the 2nd side of a duplex print using plain paper)

If the RAM on the DC controller PCB has been cleared, enter the value indicated on the service label.

**COPIER> ADJUST> HV-SP> HVT-SP**

(entering the offset value for the separation high-voltage output of the high-voltage unit)

Enter the value indicated on the label attached to the new high-voltage unit if you have replaced the high-voltage unit or initialized the RAM on the DC controller PCB.

**COPIER> ADJUST> HV-SP> D-HV-SP**

(entering the offset value for the separation high-voltage output of the DC controller PCB)

Enter the value indicated on the label attached to the new DC control PCB if you have replaced the DC controller PCB or initialized the RAM on the DC controller PCB.

**COPIER> OPTION> BODY> TR-SP-C1**

(switching over the transfer/separation output value for pickup from the right deck)

**COPIER> OPTION> BODY> TR-SP-C2**

(switching over the transfer/separation output value for pickup from the left deck)

**COPIER> OPTION> BODY> TR-SP-C3**

(switching over the transfer/separation output value for pickup from the cassette 3)

**COPIER> OPTION> BODY> TR-SP-C4**

(switching over the transfer/separation output value for pickup from the manual feed tray)

**COPIER> OPTION> BODY> TR-SP-MF**

(switching over the transfer/separation output value for pickup from the manual feed tray)

**COPIER> OPTION> BODY> TR-SP-DK**

(switching over the transfer/separation output value for pickup from various sources of paper to suit various faults)

The transfer/separation output value is switched for each source of paper to prevent various problems:

0: normal (default)

1: prevent re-transfer

2: prevent separation

3: prevent transfer faults

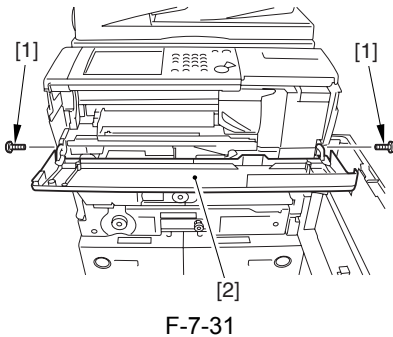
---

## 7.10 Parts Replacement Procedure

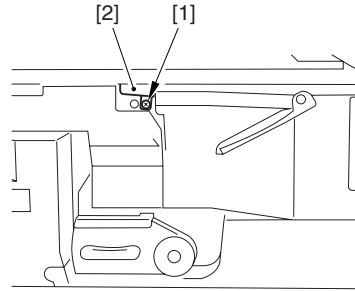
### 7.10.1 Process Unit

#### 7.10.1.1 Removing the Primary Fan Duct

- 1) Open the front cover.
- 2) Open the toner supply cover.
- 3) Remove the toner supply cover [2] using the two screws [1].

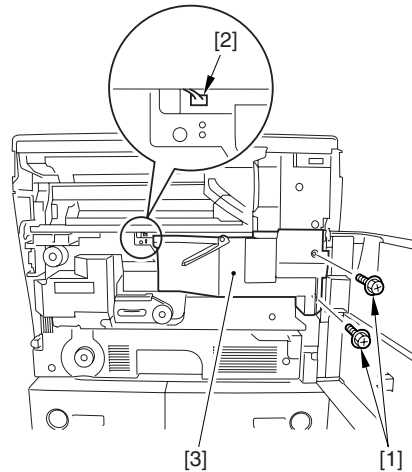


- 4) Remove the connector cover [2] using the screw [1].



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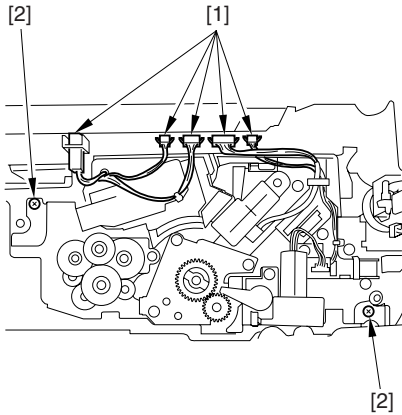
- 5) Remove the two screws [1] and the connector [2], and pull out the primary fan duct [3].



F-7-33

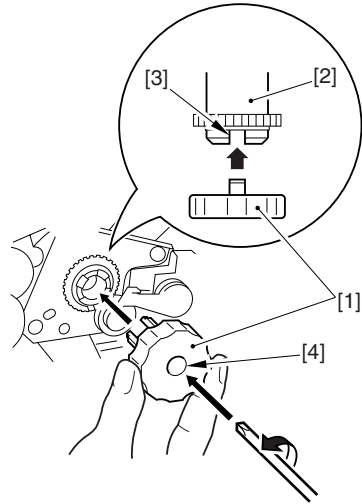
#### 7.10.1.2 Removing the Process Unit

- 1) Disconnect the five connectors [1], and remove the two mounting screws [2].



F-7-34

- 2) Insert the drum rotating tool [1] that comes with the unit into the slit [3] in the drum shaft [2]. While keeping the drum in place so that it will not rotate counterclockwise, insert a screwdriver into the center opening [4] in the drum rotating tool to remove the drum fixing screw.



F-7-35



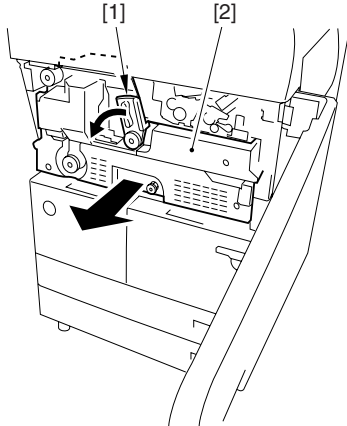
If the drum is let to rotate counterclockwise, the cleaning blade will not come into contact with the drum correctly, leading to cleaning faults. Be sure to fix the drum in place first before removing the drum fixing screw to avoid the problem.

**MEMO:**

If the hopper assembly is re-leased but not removed, be sure to open the right upper cover and the right lower cover so that there will be space.

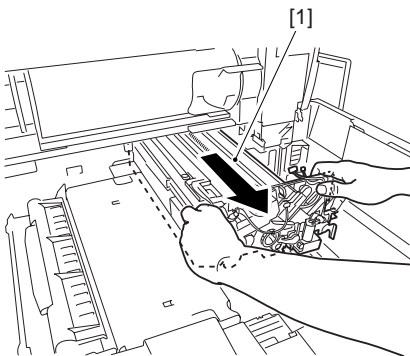
- 3) Turn the fixing feed unit releasing lever

[1] counterclockwise to release the lock; then, hold the lever [1], and slide out the fixing feed unit [2] toward the front until it stops. (At this time, the duplexing feed unit will also slide out.)



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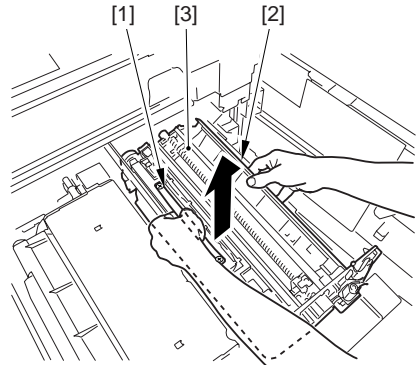
- 4) Slide out the process unit [1] until it stops.



F-7-37

- 5) Holding the left grip [1] and right grip

[2] of the process unit [3] as indicated, take it out.

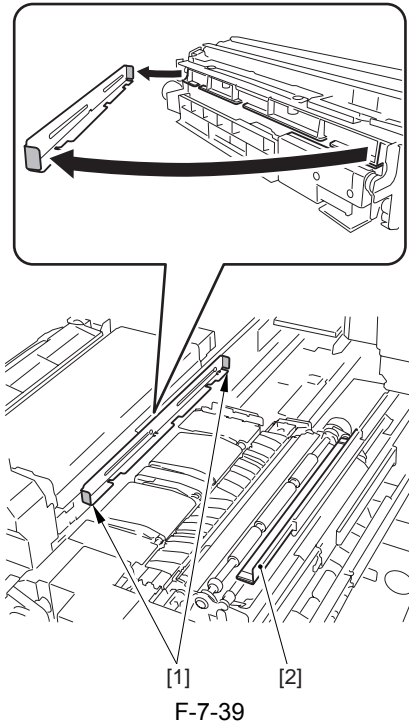


F-7-38

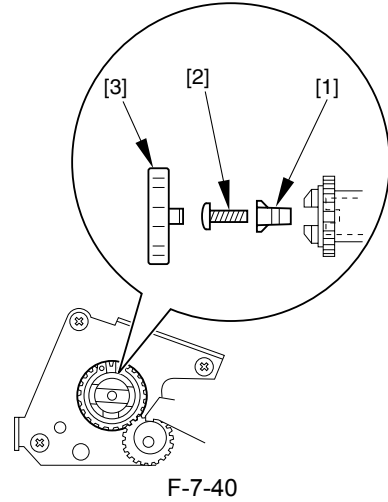
### 7.10.1.3 Mounting the Process Unit

Mount the process unit by reversing the steps used to remove it with the following in mind:

- 1) On the left rail, place the process rail along the guide plate [1] at the front/rear of the rail.
- On the right rail [2], place the process unit on the L-shaped stay.



2) After sliding the process unit into the machine, insert the drum fixing tool [1], and fit the mounting screw [2] into the drum shaft. Then, match the slot in the drum shaft and the slot in the drum using the drum rotating tool [3]; then, tighten the mounting screw [2].



## 7.10.2 Pre-Exposure Lamp

### 7.10.2.1 Removing the Primary Fan Duct

**Refer to Procedure 7.10.1.1**

### 7.10.2.2 Removing the Process Unit

**Refer to Procedure 7.10.1.2**

### 7.10.2.3 Removing the Primary Charging Assembly

**Refer to Procedure 7.10.3**

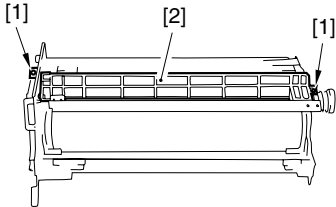


### 7.10.2.4 Removing the Potential Sensor Assembly

Refer to Procedure 7.10.17

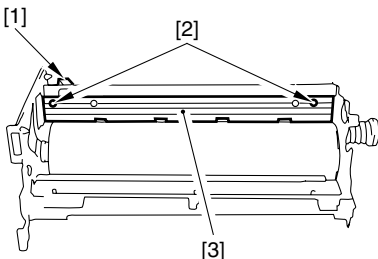
### 7.10.2.5 Removing the Pre-Exposure Lamp Unit

- 1) Remove the two mounting screws [1], and remove the potential sensor rail stay [2].



F-7-41

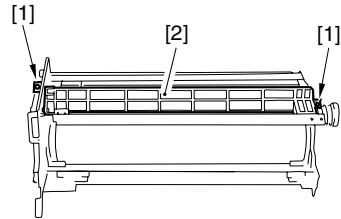
- 2) Disconnect the connector [1], and remove the two mounting screws [2]; then, detach the pre-exposure lamp unit [3].



F-7-42

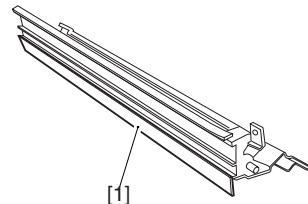
### 7.10.2.6 Cleaning the Primary Anti-Stray Sheet

- 1) Remove the process unit.
- 2) Remove the two screws [1], and remove the potential sensor rail stay [2].



F-7-43

- 3) Clean the primary anti-stray sheet [1].



F-7-44

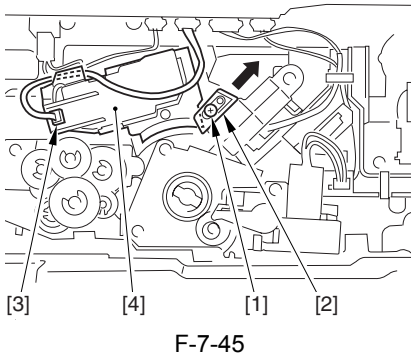
## 7.10.3 Primary Charging Assembly

### 7.10.3.1 Removing the Primary Fan Duct

Refer to Procedure 7.10.1.1

### 7.10.3.2 Removing the Primary Charging Assembly

- 1) Loosen the screw [1], move the corona assembly fixture [2] to the direction of the arrow (upper right), and fix again.
- 2) Remove the connector [3] and pull out the primary corona assembly [4].



If you have replaced the primary charging wire or the primary charging assembly, be sure to execute the following in service mode to clean the wire:

```
COPIER> FUNCTION> CLEANING>  
WIRE-CLN.
```

Further, be user to use a strengthened polishing pad (blue holder) as the cleaning pad.

---

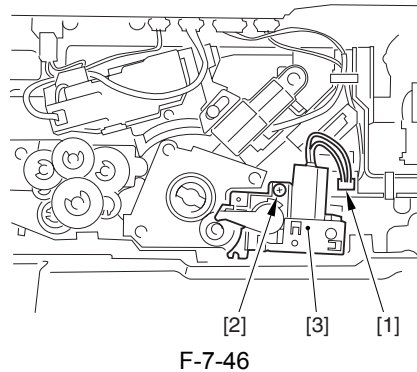
### 7.10.4 Pre-Transfer Charging Assembly

#### 7.10.4.1 Removing the Primary Fan Duct

**Refer to Procedure 7.10.1.1**

#### 7.10.4.2 Removing the Pre-Transfer Charging Assembly

- 1) Remove the mounting screw [2], and disconnect the connector [1]; then, detach the pre-transfer assembly [3].



When you have mounted the pre-transfer charging assembly, be sure to execute 'wire cleaning' in user mode.

---

## 7.10.5 Photosensitive Drum

### 7.10.5.1 Points to Note

#### When Handling the Photosensitive Drum

The machine's photosensitive drum is made of high-sensitivity amorphous silicon, and its sensitivity can start to deteriorate depending on how and where it is placed, requiring the following:

1. Whenever the process unit is removed from the machine or the photosensitive drum is removed from the process unit, be sure to protect the photosensitive drum against light. Use the photosensitive drum protective sheet or wrap six or more sheets of A3 or larger paper.
2. Do not place the process unit or the photosensitive drum in an area subject to the direct rays of the sun.
3. Do not place the process unit or the photosensitive drum in an area subject to high or low temperature or humidity or where temperature or humidity tend to fluctuate rapidly.
4. Do not place the process unit or the photosensitive drum in an area subject to dust, ammonium gas, or organic solvent/gas.

The foregoing requirements commonly apply to all photosensitive drums.

### 7.10.5.2 Removing the Primary Fan Duct

**Refer to Procedure 7.10.1.1**

### 7.10.5.3 Removing the Process Unit

**Refer to Procedure 7.10.1.2**

### 7.10.5.4 Removing the Primary Charging Assembly

**Refer to Procedure 7.10.3**

### 7.10.5.5 Removing the Pre-Transfer Charging Assembly

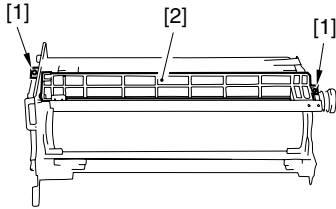
**Refer to Procedure 7.10.4**

### 7.10.5.6 Removing the Potential Sensor Assembly

**Refer to Procedure 7.10.17**

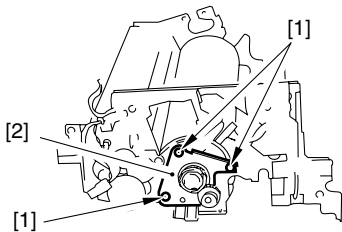
### 7.10.5.7 Removing the Drum Unit

- 1) Remove the two mounting screws [1], and remove the potential sensor rail stay [2].



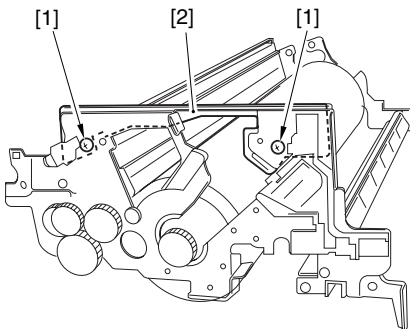
F-7-47

- 2) Remove the three mounting screws [1], and detach the gear plate [2].



F-7-48

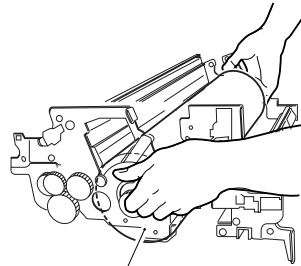
- 3) Remove the two mounting screws [1], and detach the front side stay [2].



F-7-49

- 4) Holding it as indicated, detach the

photosensitive drum [1].



F-7-50



Take care not to damage the photosensitive drum when removing it. The bearing at the rear and the gear at the front of the drum need not be removed.

---



If the temperature of the fixing assembly is 50 deg C or higher when replacing the drum unit, be sure to execute the following in service mode; otherwise, potential control will not be executed:  
COPIER> FUNCTION> DPC> DPC.

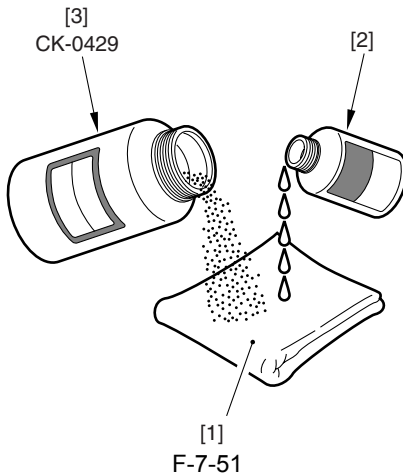
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### 7.10.5.8 Cleaning the Photosensitive Drum



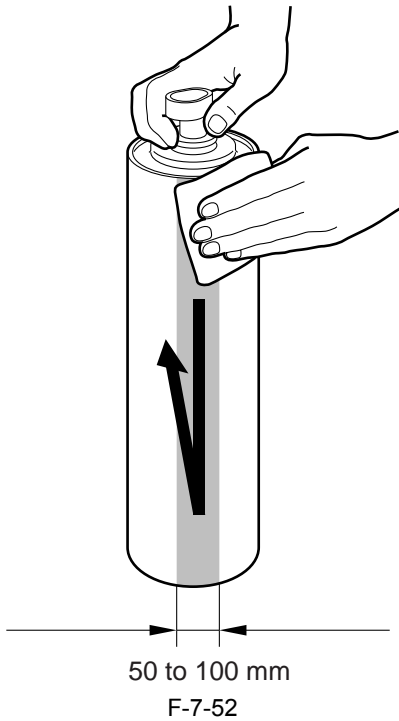
Do not rotate the magnet roll during work. Otherwise, waste toner may fall through the cleaner assembly.

- 1) Slide out the process unit.
- 2) Take out the photosensitive drum.
- 3) Moisten lint-free paper [1] with 5 to 10 cc of alcohol [2]; then, pour 0.2 to 0.3 g of drum cleaning powder (CK-0429) [3] on the lint-free paper.
- 4) While butting the lint-free paper relatively strongly against the photosensitive drum, wipe the surface of the drum from the front to the rear and from the rear to the front.



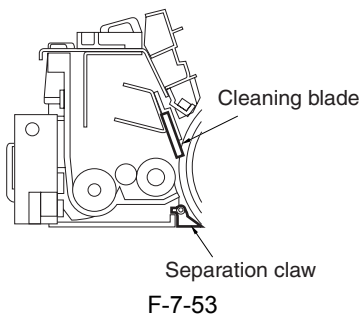
- Keep the widths of cleaning to 5 to 10 cm in the peripheral direction of the drum.
- Move the lint-free paper back and forth 15 to 20 times over a single area.  
Forcing the lint-free paper will not affect the life of the drum.

- 5) When the alcohol has evaporated, dry wipe the surface with lint-free paper. If the area is uneven, go back to step 4), and increase the back-and-forth movements.
- 6) Rotate the drum for the width (50 to 100 mm), and repeat steps 3) through 5) until the entire area of the surface has been cleaned.



## 7.10.6 Drum Cleaner Unit

### 7.10.6.1 Construction

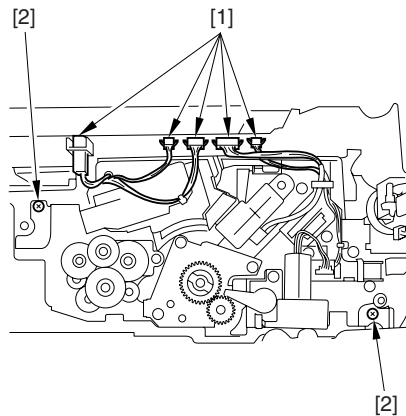


### 7.10.6.2 Removing the Primary Fan Duct

Refer to Procedure 7.10.1.1

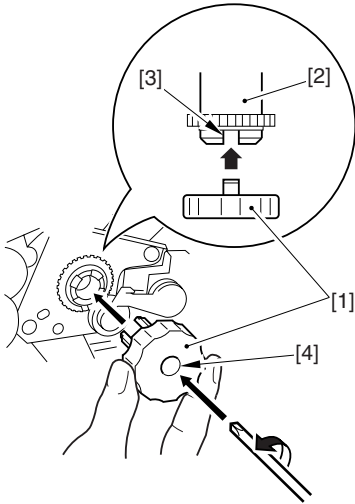
### 7.10.6.3 Sliding Out the Process Unit

- 1) Disconnect the five connectors [1], and remove the two mounting screws [2].



F-7-54

- 2) Insert the drum rotating tool [1] that comes with the unit into the slit [3] in the drum shaft [2]. While keeping the drum in place so that it will not rotate counterclockwise, insert a screwdriver into the center opening [4] in the drum rotating tool to remove the drum fixing screw.



F-7-55

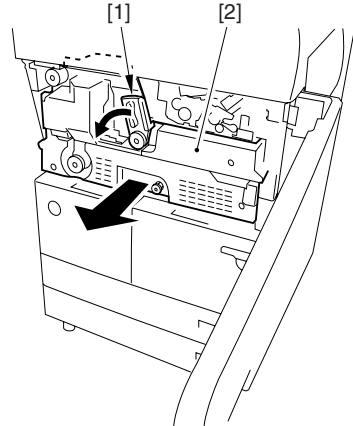


If the drum is let to rotate counterclockwise, the cleaning blade will not come into contact with the drum correctly, leading to cleaning faults. Be sure to fix the drum in place first before removing the drum fixing screw to avoid the problem.

**MEMO:**

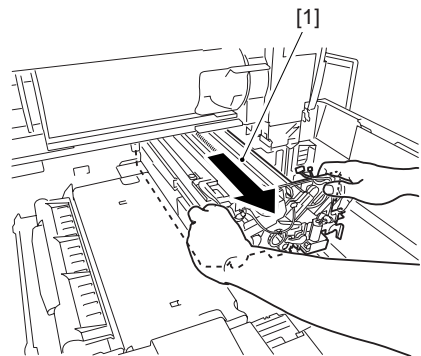
If the hopper assembly is re-leased but not removed, be sure to open the right upper cover and the right lower cover so that there will be space.

[1] counterclockwise to release the lock; then, hold the lever [1], and slide out the fixing feed unit [2] toward the front until it stops. (At this time, the duplexing feed unit will also slide out.)



F-7-56

4) Slide out the process unit [1] until it stops.

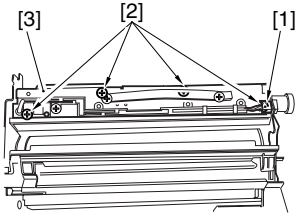


F-7-57

3) Turn the fixing feed unit releasing lever

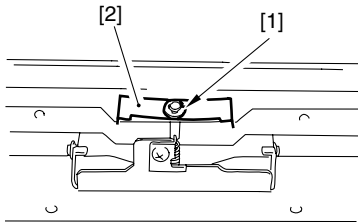
### 7.10.6.4 Removing the Cleaning Blade

- 1) Disconnect the connector [1] of the AC line of the drum heater.
- 2) Remove the four mounting screws [2], and detach the cleaning blade assembly [3].



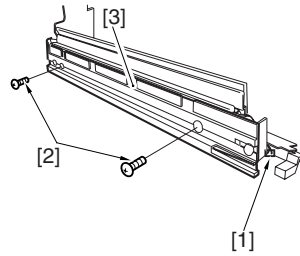
F-7-58

- 3) Remove the E-ring [1] from under the cleaning blade assembly, and detach the pressure spring [2].



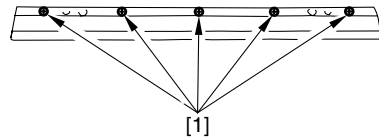
F-7-59

- 4) Disconnect the connector [1], and remove the two screws [2]; then, detach the pre-exposure LED assembly [3].



F-7-60

- 5) Loosen the five mounting screws [1], and detach the blade support plate from the cleaning blade.

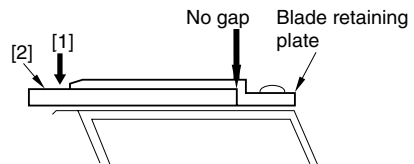


F-7-61

### 7.10.6.5 Mounting the Cleaning Blade

When mounting the cleaning blade, be sure that the side with the marking [1] will be the face.

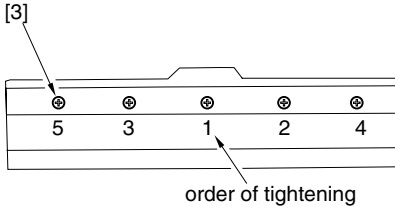
- 1) Push in the cleaning blade [2] until it butts slightly against the rear.



F-7-62



- 2) Tighten the five mounting screws [3] lightly, stopping to turn them when resistance is felt.
- 3) Turn the screws tightened lightly in step 2) about 20 deg to 30 deg in the order indicated, tightening them fully.



F-7-63



After mounting the cleaning blade, check to make sure that the edge of the blade is not appreciably bent.

Further, be sure to clean the groove in the blade support plate before mounting the blade, as toner or the like in the groove can start to bend the blade.

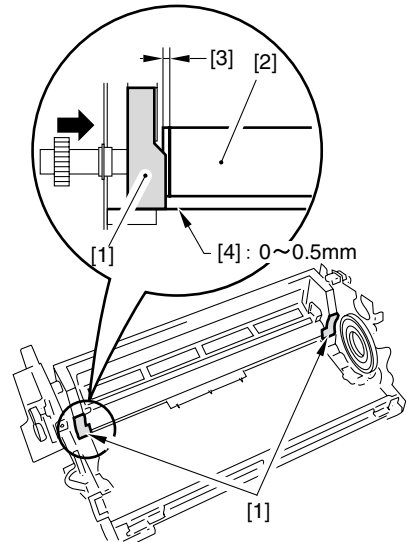
#### 7.10.6.6 Mounting the Side Seal

- 1) Mount the side seal [1] to the cleaner housing where indicated (both ends). AT this time, be sure that the edge of the side seal is positioned as follows:
  - When replacing the side seal [1] at the front, push the magnet roller [2] toward the rear and then make sure that the

inner end of the side seal is within the area [3] of the washer.

- When replacing the side seal [1] at the rear, push the magnet roller [2] toward the front and then make sure that the inner end of the side seal is within the area [3] of the washer.

- 2) The bottom end of each side seal [1] must be 0 to 0.5 mm from the corner of the cleaner housing; i.e., point of reference [4].
- 3) Attach the side seal [1] at the front and the rear to the cleaner housing while making sure its position is as indicated.

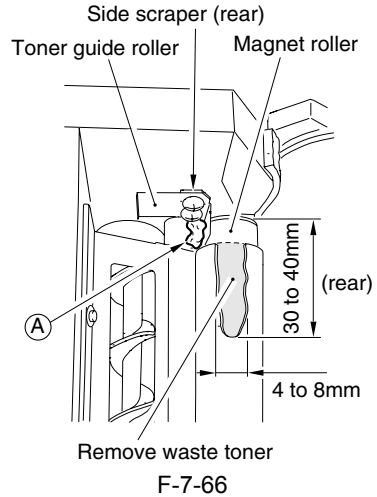
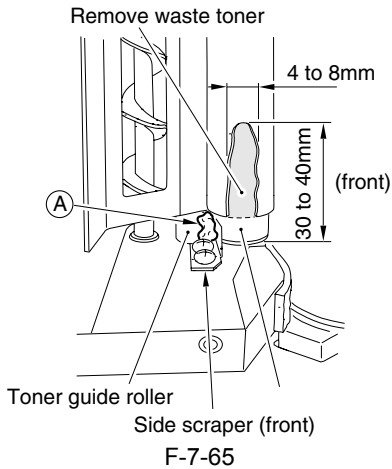


F-7-64

#### 7.10.6.7 Cleaning the Cleaner Side Scraper

- 1) Remove the cleaning blade.

- 2) Remove any paper lint collecting at the tip of the side scraper (A, i.e., between magnet roller and toner guide roller) using tweezers or the like.
- 3) Remove the toner from the surface of the magnet roller. (Roll paper into a U to scoop it up.)

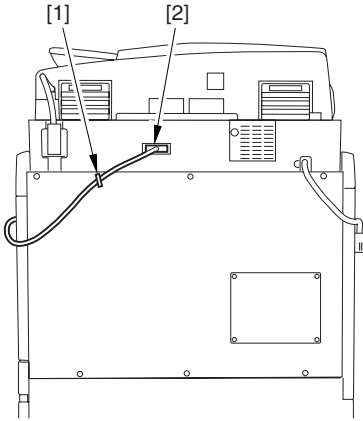


- 4) Turn the magnet roller clockwise (viewing from the front).
- 5) Repeat steps 3) through 5) until the area from which toner was removed in step 3) is once again coated with an even layer of toner.

## 7.10.7 Drum Motor

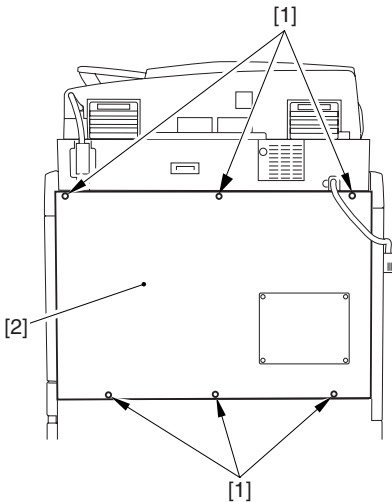
### 7.10.7.1 Removing the Rear Cover (upper)

- 1) Open the cable clamp [1], and free the reader unit communications cable [2].



F-7-67

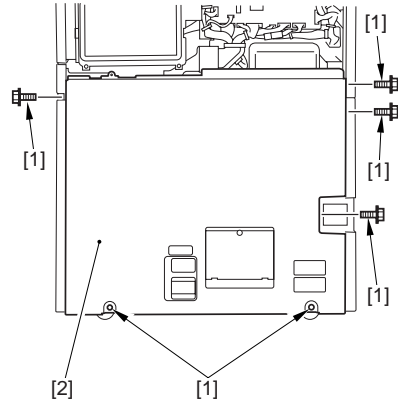
- 2) Remove the 6 screws [1], and detach the upper rear cover [2].



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### 7.10.7.2 Removing the Rear Cover (lower)

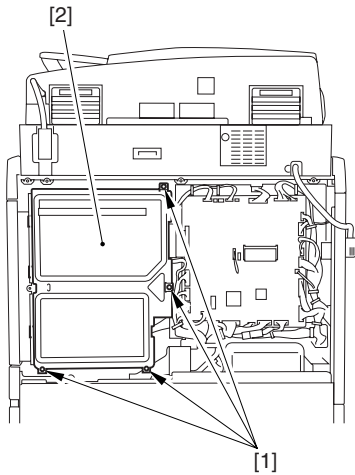
- 1) Remove the 6 screws [1], and detach the rear cover (lower) [2].



F-7-69

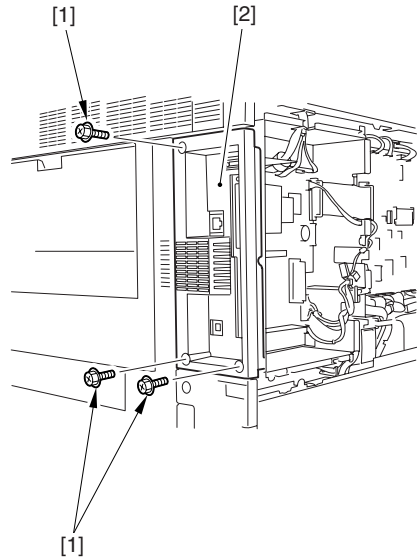
### 7.10.7.3 Removing the Main Controller Box

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



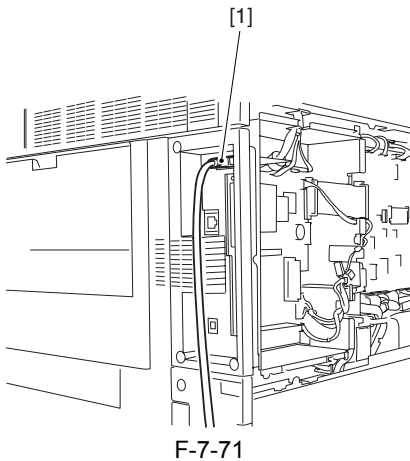
F-7-70

2) Disconnect the connector [1] of the reader unit communications cable.



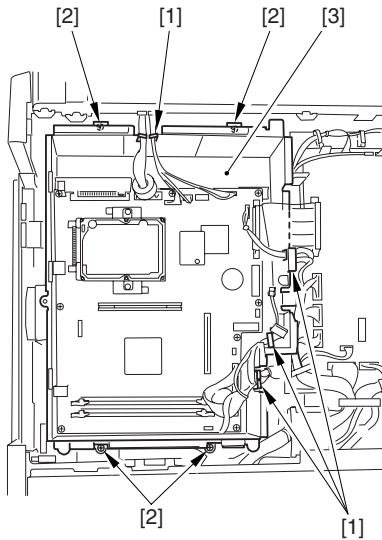
F-7-72

4) Disconnect all connectors of the main control PCB, and free all harnesses from the 4 wire saddles [1]; then, detach the main controller box [3].

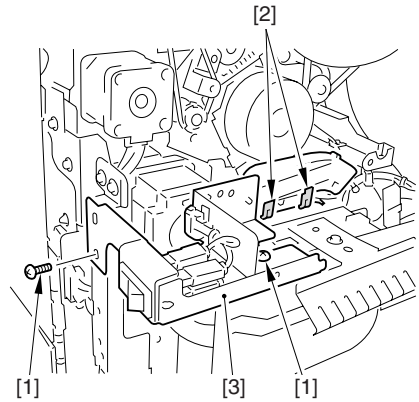


F-7-71

3) Remove the 3 screws [1], and detach the upper rear right cover [2].



F-7-73

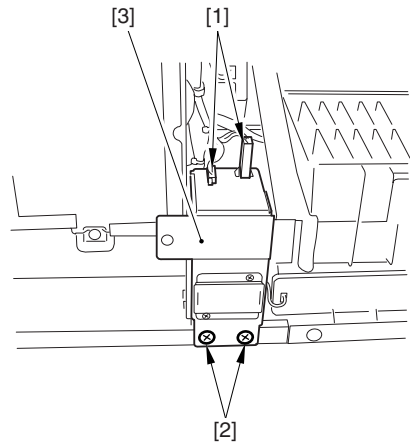


F-7-74

- 3) Disconnect the 2 connectors [1], and remove the 2 screws [2]; then, detach the connector base [3].

#### 7.10.7.4 Removing the Waste Toner Bottle Holder

- 1) Remove the waste toner bottle.
- 2) Remove the 2 screws [1], and remove the 2 clamps [2]; then, move the main power switch base [3] to the side.

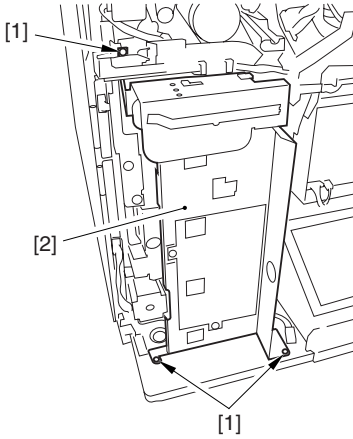


F-7-75

- 4) Remove the 2 screws [1], and detach the waste toner bottle holder [2].



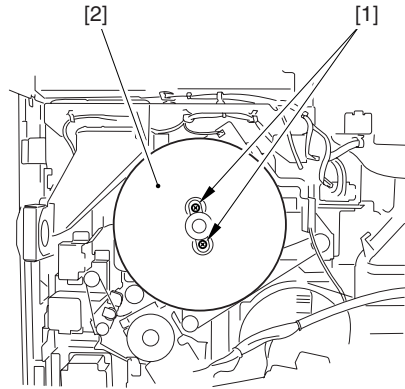
Take care not to spill the waste toner.



F-7-76

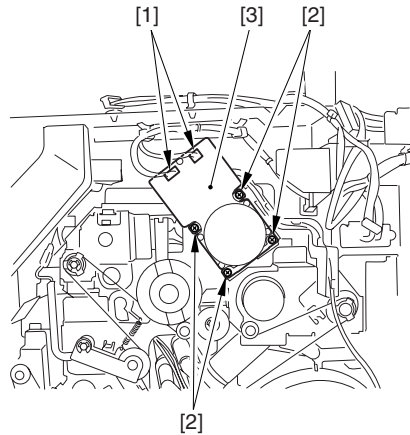
### 7.10.7.5 Removing the Drum Motor

1) Remove the 2 screws [1], and remove the flywheel [2].



F-7-77

2) Disconnect the two connectors [1], remove the 4 screws [2], and remove the drum motor [3].



F-7-78

## 7.10.8 Photosensitive Drum Heater

### 7.10.8.1 Points to Note When Handling the Photosensitive Drum

**Refer to Procedure 7.10.5.1**

### 7.10.8.2 Removing the Primary Fan Duct

**Refer to Procedure 7.10.1.1**

### 7.10.8.3 Removing the Process Unit

**Refer to Procedure 7.10.1.2**

### 7.10.8.4 Removing the Primary Charging Assembly

**Refer to Procedure 7.10.3**

### 7.10.8.5 Removing the Pre-Transfer Charging Assembly

**Refer to Procedure 7.10.4**

### 7.10.8.6 Removing the Potential Sensor Assembly

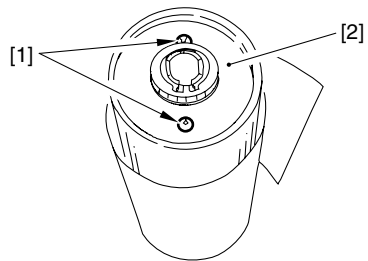
**Refer to Procedure 7.10.17**

### 7.10.8.7 Removing the Drum Unit

**Refer to Procedure 7.10.5.7**

### 7.10.8.8 Replacing the Drum Heater

- 1) Remove the two mounting screws [1], and detach the flange [2] from the front.

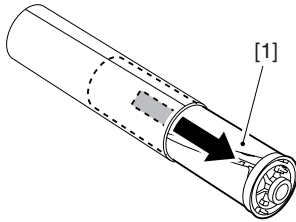


F-7-79



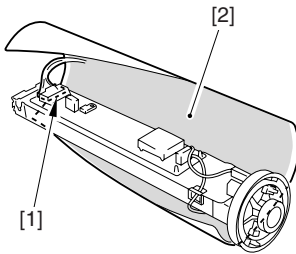
Protect the removed photosensitive drum against dirt and scratches with five to six sheets of paper or with the drum protective sheet stored near the waste toner case.

- 2) Remove the drum heater unit [1] from the rear.



F-7-80

- 3) Disconnect the connector [1], and detach the drum heater [2].



F-7-81

### 7.10.8.9 Mounting the Drum Heater

Mount the photosensitive drum by reversing the steps used to remove it; however, be sure not to soil or scratch the drum and not to trap the cable of the drum heater.

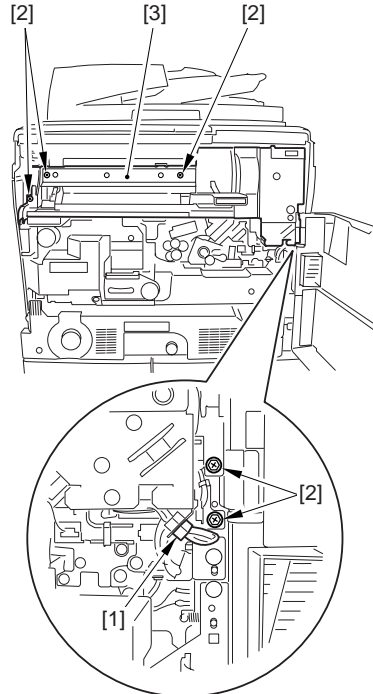
## 7.10.9 Hopper Assembly

### 7.10.9.1 Removing the Primary Fan Duct

**Refer to Procedure 7.10.1.1**

### 7.10.9.2 Removing the Hopper Assembly

- 1) Displace the toner bottle.
- 2) Disconnect the connector [1], remove the 5 screws [2], and remove the hopper assembly [3].



F-7-82

## 7.10.10 Hopper Supply Motor

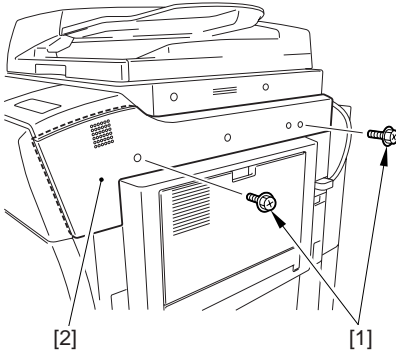
### 7.10.10.1 Removing the Primary Fan Duct

**Refer to Procedure 7.10.1.1**



### 7.10.10.2 Removing the Right Cover (upper)

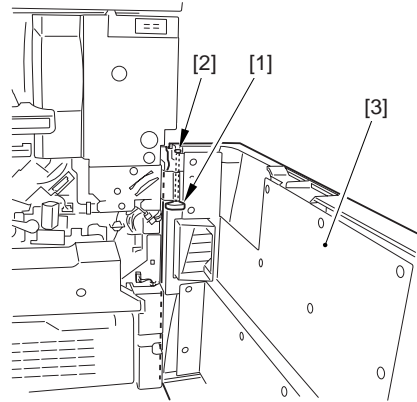
- 1) Remove the 2 screws [1], and detach the right cover (upper) [2].



F-7-83

### 7.10.10.3 Removing the Front Cover

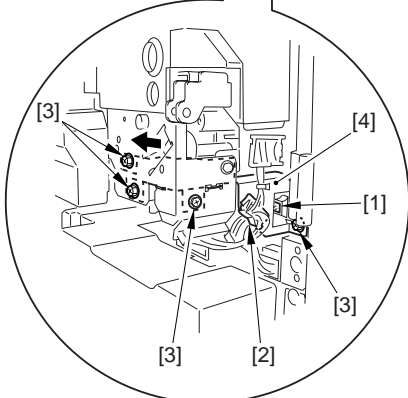
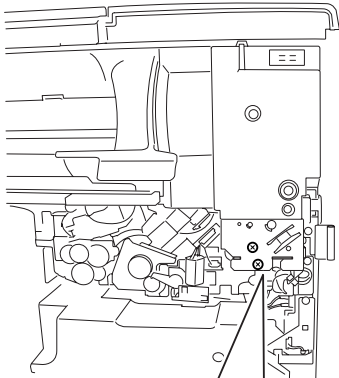
- 1) Remove the stopper [4], and detach the hinge shaft [5] by pulling it up.
- 2) Pull the front cover up at an angle to detach.



F-7-84

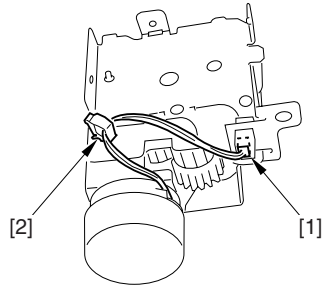
### 7.10.10.4 Removing the Hopper Supply Motor

- 1) Disconnect the connector [1], and free the harness from the cord guide [2].
- 2) Remove the 4 screws [3], and slide the hopper drive unit [4] in the direction of the arrow to detach.



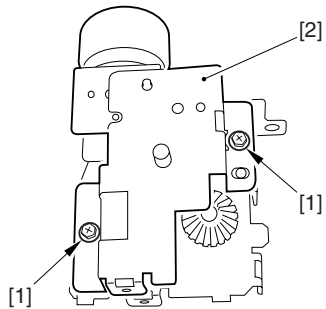
F-7-85

3) Disconnect the connector [1], and free the harness from the wire saddle [2].



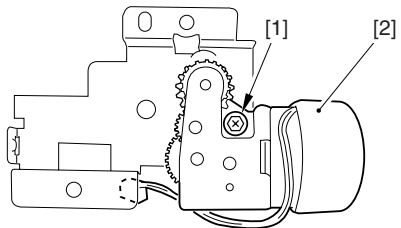
F-7-86

4) Remove the 2 screws [1], and detach the hopper supply motor [2] together with the base plate.



F-7-87

5) Remove the screw [1], and detach the hopper supply motor [2].



F-7-88

## 7.10.11 Hopper String Motor

### 7.10.11.1 Removing the Primary Fan Duct

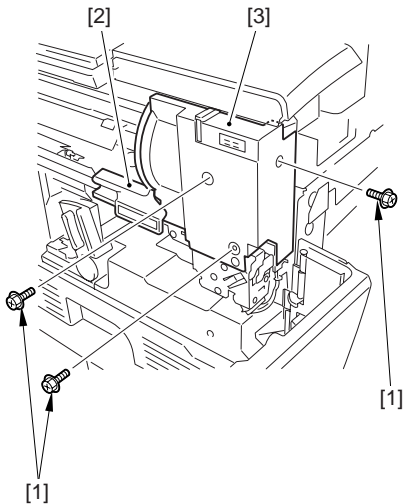
Refer to Procedure 7.10.1.1

### 7.10.11.2 Removing the Right Cover (upper)

Refer to Procedure 7.10.10.2

### 7.10.11.3 Removing the Hopper Stirring Motor

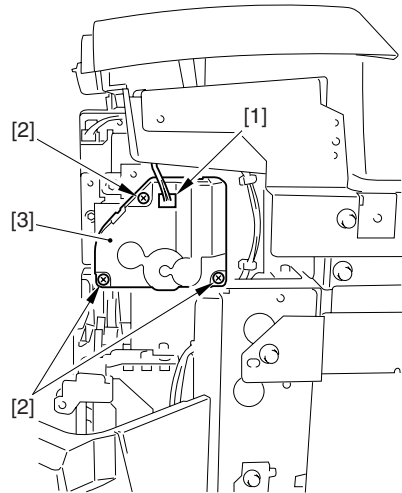
- 1) Open the manual feed tray cover.
- 2) Remove the 2 screws [2].
- 3) Slide the lever [2] slightly upward, and detach the hopper front cover [3].



F-7-89

- 4) Disconnect the connector [1], and

remove the 3 screws [2]; then, detach the hopper stirring motor [3].



F-7-90

## 7.10.12 Developing Assembly

### 7.10.12.1 Removing the Developing Assembly



The machine's developing assembly is not equipped with a cover to protect the developing cylinder.

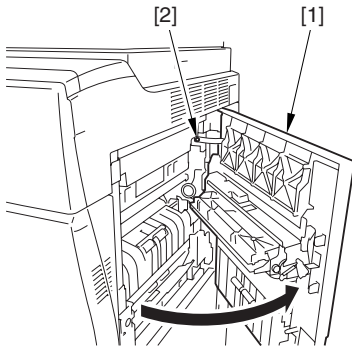
If you must remove the developing assembly, be sure to exercise care not to damage the developing cylinder.

When the developing assembly is outside the machine, be sure not to mount the developing assembly locking assembly.

The toner collecting in the path from the

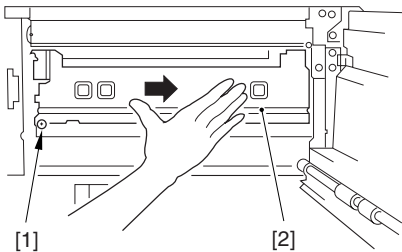
hopper to the developing assembly can start to move astray because of the vibration occurring during inspection or repair work.

- 1) Open the manual feed tray cover [1], remove the screw [2] from the door tape, and fully open the manual feed tray cover [1].



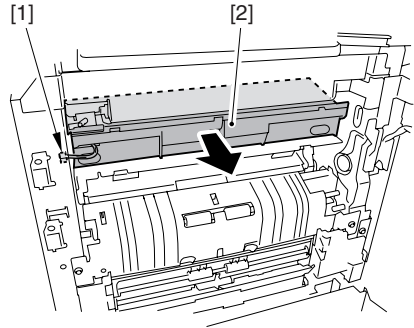
F-7-91

- 2) Remove the mounting screw [1], and push the developing locking assembly [2] in the direction of the arrow to detach.



F-7-92

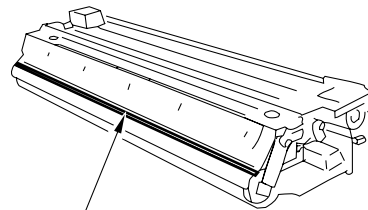
- 3) Disconnect the connector [1], and take the developing assembly [2] out of the machine slowly.



F-7-93

### 7.10.12.2 Cleaning the Developing Anti-Stray Sheet

- 1) Remove the developing assembly, and clean the developing anti-stray sheet [1].



F-7-94

## 7.10.13 Developing Cylinder

### 7.10.13.1 Removing the Developing Assembly

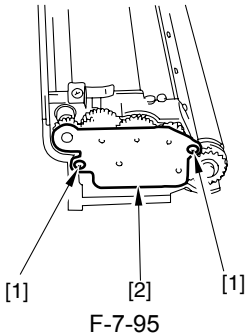
Refer to Procedure 7.10.12

### 7.10.13.2 Removing the Blade Unit

Refer to Procedure 7.10.14

### 7.10.13.3 Removing the Developing Cylinder

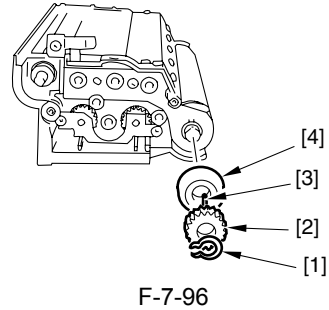
- 1) Remove the two mounting screws [1], and detach the gear unit [2] together with the gear.



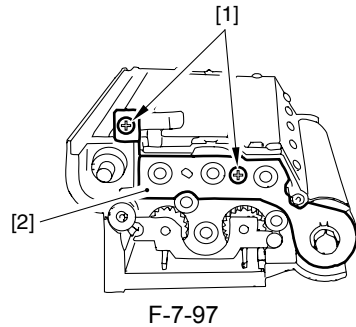
When removing the gear unit, be sure to take care, as the gear attached to the screw will become free.

- 2) Remove the grip ring [1] mounted to the

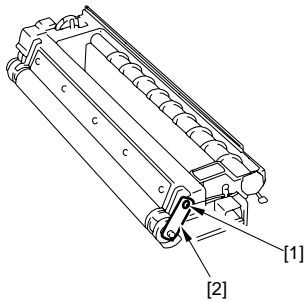
cylinder shaft at the rear; then, remove the gear [2], parallel pin [3], and push-on roll [4].



- 3) Remove the two mounting screws [1], and detach the electrode plate [2].

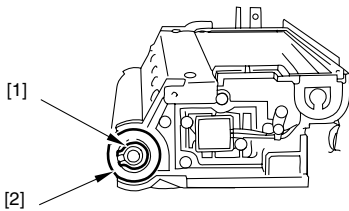


- 4) Remove the mounting screw [1], and detach the magnetic positioning plate [2].



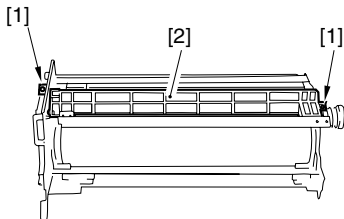
F-7-98

- 5) Remove the grip ring [1] mounted to the cylinder shaft at the front, and detach the push-on roll [2].



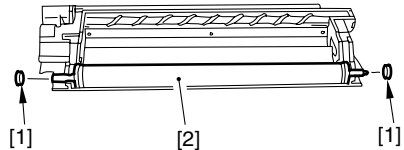
F-7-99

- 6) Remove the two mounting screws [1], and detach the blade [2] together with its mounting plate.



F-7-100

- 7) Remove the bearing [1] at the front and the rear, and detach the developing cylinder [2].



F-7-101



Do not leave fingerprints or oils on the surface of the developing cylinder. Otherwise, dry wipe it with lint-free paper. (Do not use solvent.)

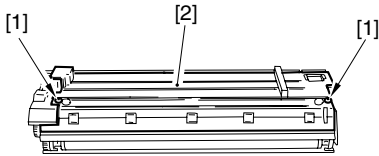
## 7.10.14 Developing Blade

### 7.10.14.1 Removing the Developing Assembly

**Refer to Procedure 7.10.12**

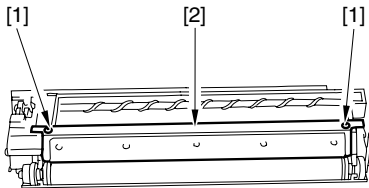
### 7.10.14.2 Removing the Blade Unit

- 1) Remove the two mounting screws [1], and detach the developing assembly cover [2].



F-7-102

- 2) Place a newspaper on the floor or a desk, and pour out the toner onto the newspaper from the developing assembly.
- 3) Remove the two mounting screws [1], and detach the blade unit [2] together with its mounting base.



F-7-103



The blade must be mounted with a high accuracy. Do not remove it on its own in the field (i.e., be sure to remove it intact with its mounting base).

### 7.10.14.3 Mounting the Blade

Mount the blade by reversing the steps used to remove it.

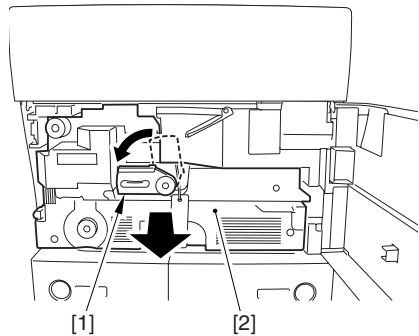
- 1) Push the blade mounting base against the developing assembly, and tighten the two mounting screws.

When mounting the blade, place paper on the developing cylinder first to protect the developing cylinder.

## 7.10.15 Transfer/Separation Charging Assembly

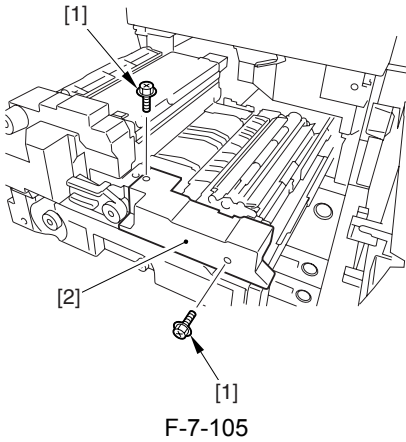
### 7.10.15.1 Removing the Transfer/Separation Charging Assembly

- 1) Turn the fixing feeder assembly release lever [1] in the direction of the arrow (left) to release the transfer/separation charging assembly. Slide out the fixing feeder unit [2] to the front.



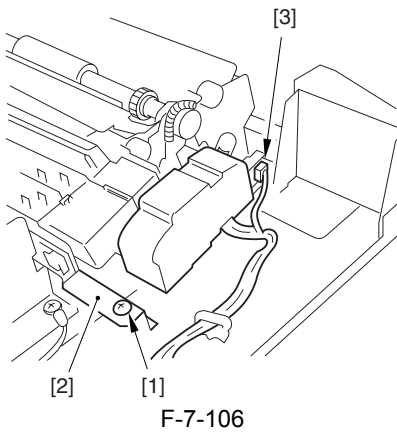
F-7-104

- 2) Detach the feeder assembly front cover (Right) [2] using the two screws [1].



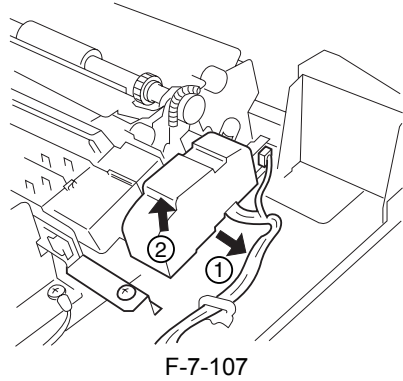
F-7-105

- 3) Remove the screw [1] and the fixture [2], and then remove the connector [3].



F-7-106

- 4) Pushing the front and the rear of the transfer/separation charging assembly, pull out the assembly to the front and remove it in the direction of upper left.



F-7-107



Be aware not to cut the nylon wire by coming into contact the transfer/separation charging assembly to the transfer guide.

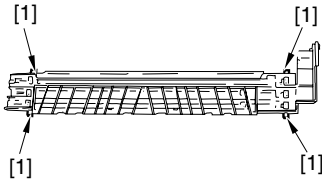
### 7.10.15.2 Mounting the Transfer/Separation Charging Assembly

Mount the transfer/separation charging assembly by reversing the steps used to remove it while keeping the following in mind.

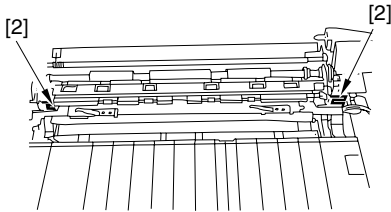
- 1) Make sure that the four protrusions [1] on the transfer/separation charging assembly are correctly fitted into the cut-offs [2] in the fixing/feeding unit.
- 2) Make sure that the leaf spring [3] of the fixing/feeding unit comes in contact with the frame of the transfer/separation



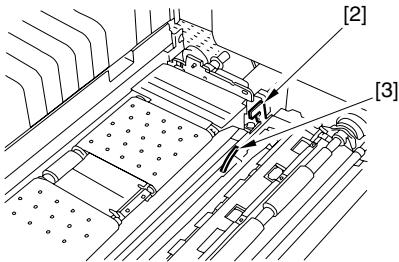
charging assembly (slide from the front).



F-7-108

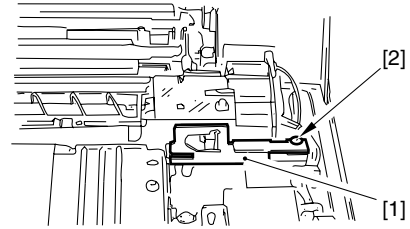


F-7-109



F-7-110

3) Mount the fixing guide plate [1] with a mounting screw [2].



F-7-111

4) If you have replaced the transfer charging wire or the transfer/separation charging assembly be sure to execute the following in service mode to clean the wire:

COPIER> FUNCTION> CLEANING>  
WIRE-CLN.



Further, be sure to use a strengthened polishing pad (blue holder) as the cleaning pad.

## 7.10.16 Separation Claw/ Separation Claw Drive Assembly

### 7.10.16.1 Removing the Primary Fan Duct

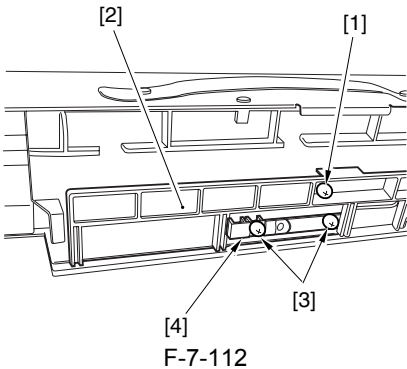
**Refer to Procedure 7.10.1.1**

### 7.10.16.2 Removing the Process Unit

Refer to Procedure 7.10.1.2

### 7.10.16.3 Removing the Separation Claw Holder

- 1) Remove the screw [1], and detach the cover [2].
- 2) Remove the two screws [3], and detach the claw holder [4].




Take care not to break the separation claw.

---

following 4 parts:

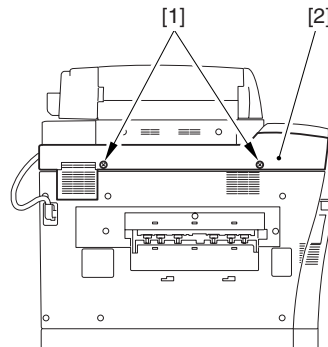
- potential control PCB
  - potential sensor
  - potential sensor relay harness (between relay connector and potential control PCB)
  - potential sensor harness (between potential sensor and relay connector)
- 

 Be sure that the potential sensor and the potential control PCB are always replaced at the same time.

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### 7.10.17.2 Removing the Left Cover (upper)

- 1) Remove the 3 screws [1], and detach the left cover (upper) [2].



F-7-113

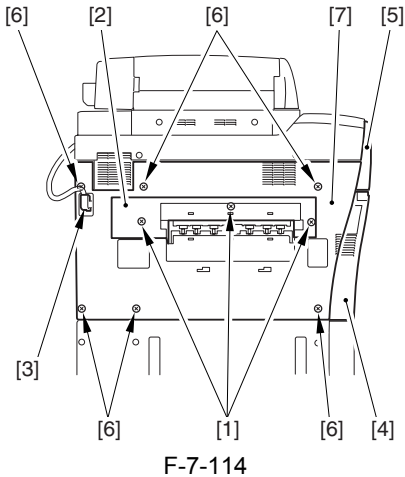
## 7.10.17 Potential Sensor Unit

### 7.10.17.1 Outline

The potential sensor unit includes the

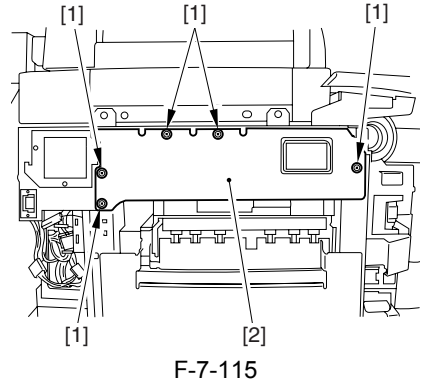
### 7.10.17.3 Removing the Left Cover (middle)

- 1) Remove the 3 screws [1], and detach the delivery cover [2].
- 2) Disconnect the reader power cable [3].
- 3) Open the front cover [4].
- 4) Open the hopper cover [5].
- 5) Remove the 6 screws [6], and detach the left cover (middle) [7].

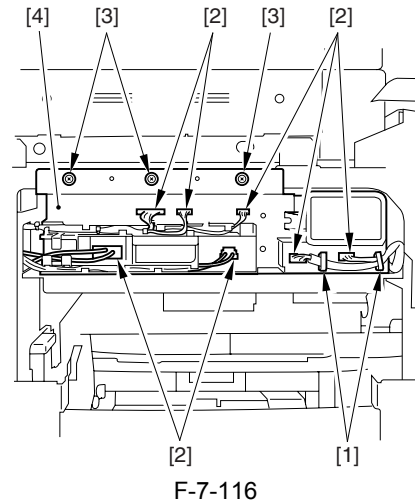


### 7.10.17.4 Removing the Fixing Heater Power Supply Unit

- 1) Remove the 5 screws [1], and detach the PCB cover [2].

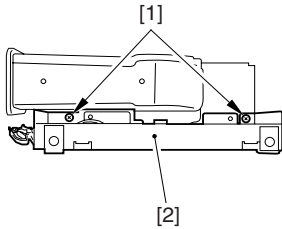


- 2) Open the 2 wire saddles [1].
- 3) Disconnect the 7 connectors [2].
- 4) Remove the 3 screws [3], and detach the fixing heater power supply unit [4].



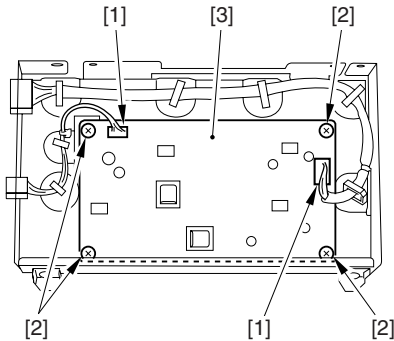
### 7.10.17.5 Removing the Potential Control PCB

- 1) Remove the two screws [1], and detach the potential control PCB [2] with the frame.



F-7-117

- 2) Disconnect the 2 connectors [1], and remove the four screws [2]; then, detach the potential control PCB [3].



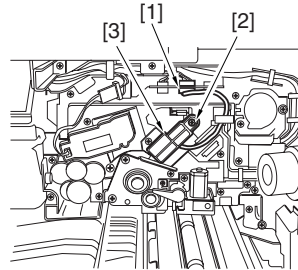
F-7-118

### 7.10.17.6 Removing the Primary Fan Duct

**Refer to Procedure 7.10.1.1**

### 7.10.17.7 Removing the Potential Sensor Assembly

- 1) Disconnect the connector [1], and remove the screw [2]; then, detach the potential sensor assembly [3].



F-7-119

## 7.10.18 Charging Wire

### 7.10.18.1 Outline

The photosensitive drum is surrounded by three charging wires (for primary charging, pre-transfer, and transfer/separation).

These charging wires are newly adopted brown wires (0.06 mm in diameter). Do not use a gold-plated wire, which has been used in the past; otherwise, image faults may occur.

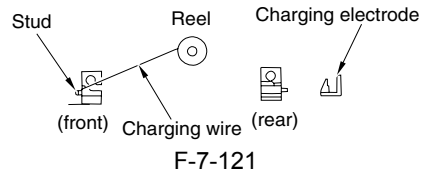
Further, be sure to use a strengthened polishing pad (in a blue holder) as the cleaning pad for the primary charging assembly and the transfer charging assembly.

around a hex key once, and turn the hex key three to four times; then, twist the charging wire.

d wire)  
re way;  
harging

- 4) Cut the end (excess) of the twisted charging wire.
- 5) Hook the loop on the stud.

t, right)  
prevent  
primary  
o work  
late and  
do not  
of both  
)



- 6) At the rear, hook the charging wire on the charging wire positioner; then, hook the charging wire tension spring on the charging wire where indicated to the following figure.

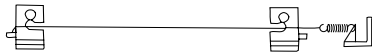


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m.  
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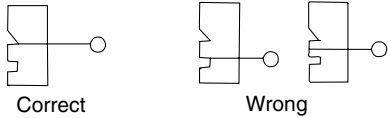
- 7) Cut off the excess of the charging wire with nippers.
- 8) Pick the end of the charging wire tension spring with tweezers, and hook it on the charging power supply electrode.

In the case of the pre-transfer charging assembly, hook the spring on the pin at the front.

g wire

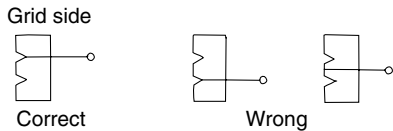


F-7-123



Correct

Wrong



Grid side

Correct

Wrong

F-7-124



Make sure of the following:

- The charging wire must not be bent or twisted.
- The charging wire must be fitted in the V-groove of the charging wire positioner.

- 9) Attach a cushion in front of the charging wire. (This does not apply to the primary charging assembly.)
- 10) Mount the shielding plate (left, right).



For other charging assemblies, mount the two lids.

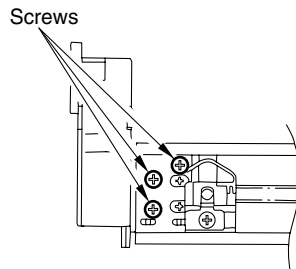
- 11) Mount the wire cleaner. At this time,

pay attention to make sure that the wire cleaner is oriented correctly.

- 12) Wipe the charging wire with lint-free paper moistened with alcohol.

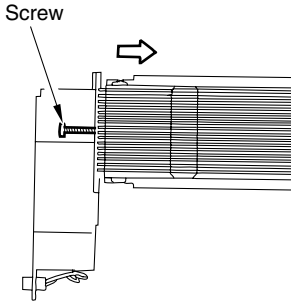
### 7.10.18.3 Routing the Grid for the Primary Charging Assembly

- 1) Loosen the two mounting screws used to secure the left and right shielding plates in place.
- 2) Loosen the three mounting screws used to secure the motor unit in place at the front.



F-7-125

- 3) Loosen the mounting screw, and move it in the direction indicated; then, fix it in place temporarily.
- 4) Free a length of about 5 cm of charging wire from the charging wire reel (0.1 mm in diameter), and form a loop at its end with a diameter of about 2 mm.

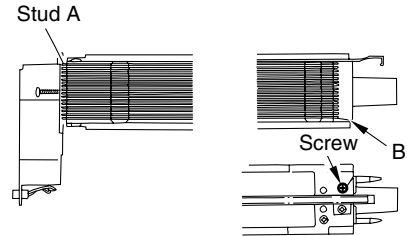


F-7-126

**MEMO:**

To form a loop, wind the charging wire around a hex key once, and turn the hex key three to four times; then, twist the charging wire.

- 5) Cut the twisted charging wire (excess) with nippers.
- 6) Hook the loop on stud A.
- 7) After routing the wire for 31 runs, lead it through section B, and give it a half turn; then, put it between the washer and the motor unit, and wind it once around the mounting screw (clockwise), and secure it in place with a mounting screw.



F-7-127

- 8) Cut the excess of the charging wire with nippers.
- 9) Tighten the mounting screw loosened in step 3).  
Keep tightening until the tension of the grid wire is even.  
Be sure to pay attention to avoid deformation (slack) of the charging assembly (as by tightening the mounting screw found on the front of the left/right shielding plate early).
- 10) Tighten the mounting screws loosened in steps 1) and 2).
- 11) Wipe the grid wire with lint-free paper moistened with alcohol.

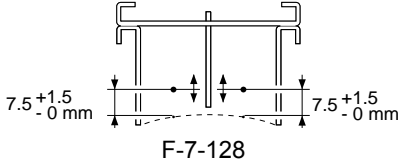


1. Check to make sure that the grid wire is free of bending and twisting.
2. Be sure that the runs are laid at equal intervals (i.e., the wire is in the groove of the block).

7.10.18.4 Adjusting the Height of the Charging Wire

[1] Primary Charging assembly

Height of charging wire

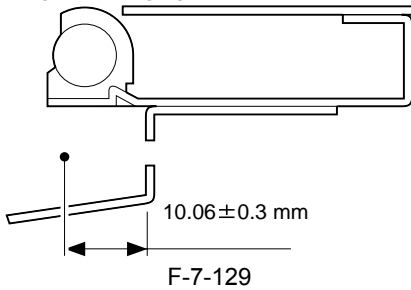


<Tolerance>

-/+1 mm

[2] Pre-transfer Charging assembly

Height of charging wire

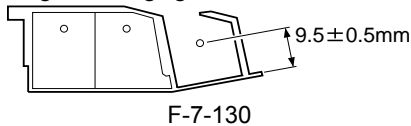


<Tolerance>

No height adjusting mechanism

[3] Transfer Charging assembly

Height of charging wire

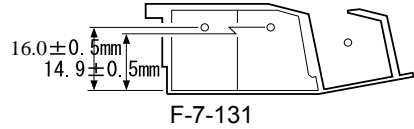


<Tolerance>

-/+2 mm

[4] Separation Charging assembly

Height of charging wire



<Tolerance>

-/+2 mm

**MEMO:**

The height (position) of the primary charging wire and the transfer charging wire may be adjusted by turning the screw found at the back of the charging assembly; a single turn changes the position of the charging wire by about 0.7 mm.



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# Chapter 8

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## Pickup/ Feeding System

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## 8.1 Construction

### 8.1.1 Specifications and construction

The following shows the functions and the construction of the machine's pickup/feed system:

T-8-1

Item	Description	
Paper movement reference	center	
Paper capacity	paper deck (right, left)	1,500 sheets each (80 g/m <sup>2</sup> )
	front cassette (3, 4)	550 sheets each (80 g/m <sup>2</sup> )
	manual feed tray	50 sheets (80 g/m <sup>2</sup> )
Paper size switchover	paper deck (right, left)	by service person
	front cassette 3, 4	by user
	manual feed tray	by user
Duplexing method	through path	
Related user mode	auto cassette selection on/off	
	paper type registration	
Related mechanical adjustment	deck side registration adjustment	
	cassette horizontal registration adjustment	
	manual feed tray horizontal registration adjustment	



## T-8-2

<b>Notation</b>	<b>Name</b>	<b>Notation</b>	<b>Name</b>
PS4	fixing claw jam sensor	PS30	duplex pre-registration sensor
PS19	right deck retry sensor	PS31	duplex horizontal registration sensor
PS20	left deck retry sensor	PS32	right deck pull-off sensor
PS21	cassette 3 retry sensor	PS33	left deck pull-off sensor
PS22	cassette 4 retry sensor	PS34	duplex paper sensor
PS23	manual feed paper sensor	PS35	inside delivery sensor
PS24	vertical path 1 sensor	PS36	outside delivery sensor
PS25	vertical path 2 sensor	PS37	reversal sensor 1
PS26	vertical path 3 sensor	PS38	reversal sensor 2
PS27	vertical path 4 sensor	PS46	delivery assembly jam sensor
PS28	write check sensor	PS51	fixing inlet sensor
PS29	registration sensor	PS52	fixing outlet sensor

The following shows the major rollers of the machine:

## T-8-3

<b>Ref.</b>	<b>Name</b>	<b>Ref.</b>	<b>Name</b>
[1]	manual feed roller	[17]	curl-imparting roller
[2]	manual feed separation roller	[18]	duplexing outlet roller
[3]	manual feed pull-off roller	[19]	pickup vertical path 1 roller
[4]	registration roller	[20]	right deck pickup roller
[5]	fixing upper roller	[21]	right deck feed roller
[6]	fixing lower roller	[22]	right deck separation roller
[7]	inside delivery roller	[23]	pickup vertical path 2 roller

Ref.	Name	Ref.	Name
[8]	outside delivery roller	[24]	pickup vertical path 3 roller
[9]	delivery auxiliary roller	[25]	cassette 3 pickup roller
[10]	reversing roller	[26]	cassette 3 feed roller
[11]	duplexing feed left roller	[27]	cassette 3 separation roller
[12]	duplexing feed right roller	[28]	pickup vertical path 4 roller
[13]	left deck pickup roller	[29]	cassette 4 pickup roller
[14]	left deck feed droller	[30]	cassette 4 feed roller
[15]	left deck separation roller	[31]	cassette 4 separation roller
[16]	left deck pull-off roller		

### 8.1.3 Outline of the Pickup Control System

The paper inside the deck/cassette is held up by the work of the lifter, and its surface remains in contact with the pickup roller, which is driven by the pickup motor (M11, M12, M24).

When the pickup motor (M11, M12, M24) goes on, the pickup roller starts to rotate to feed paper into the machine.

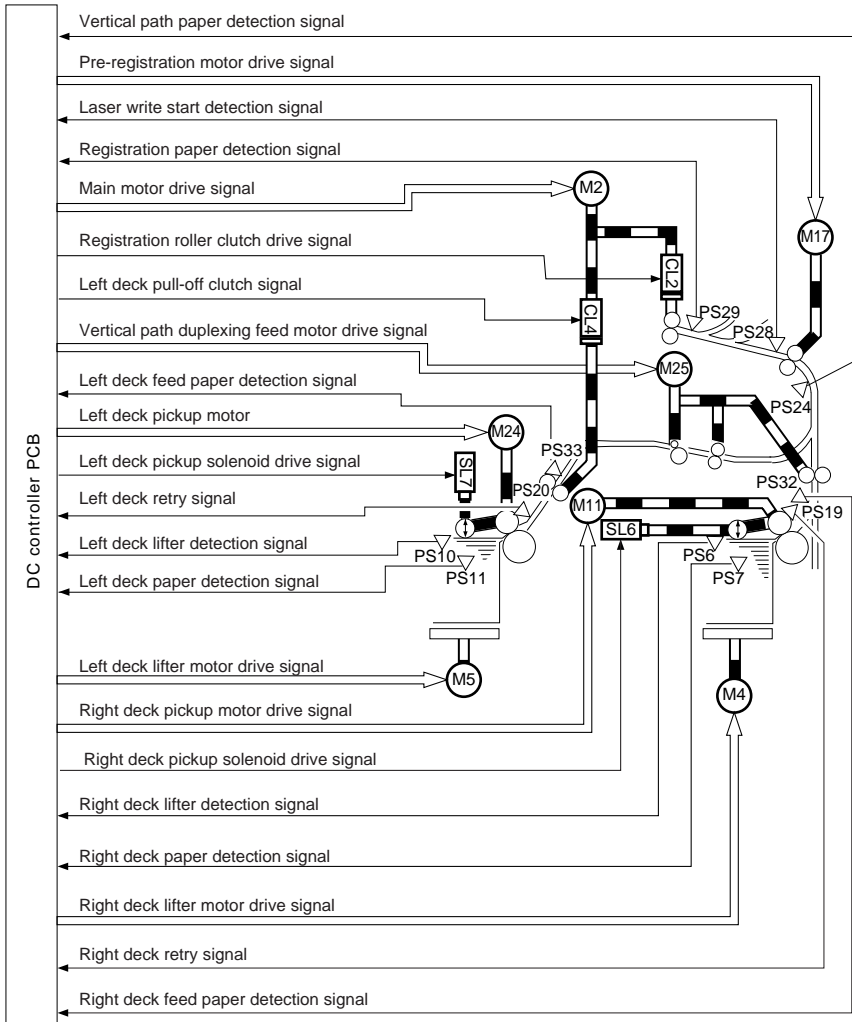
When the pickup solenoid (SL3, SL4, SL6, SL7) goes on, the pickup roller leaves the surface of the paper.

The feed roller and the separation roller make sure that only a single sheet of paper is moved to the paper path; the sheet is then moved through the vertical path to reach the registration roller.

The machine's pickup motor (M11, M12, M24) is equipped with a mechanism to facilitate the separation of paper. The use of a stepping motor enables the machine to slow down pickup speed.

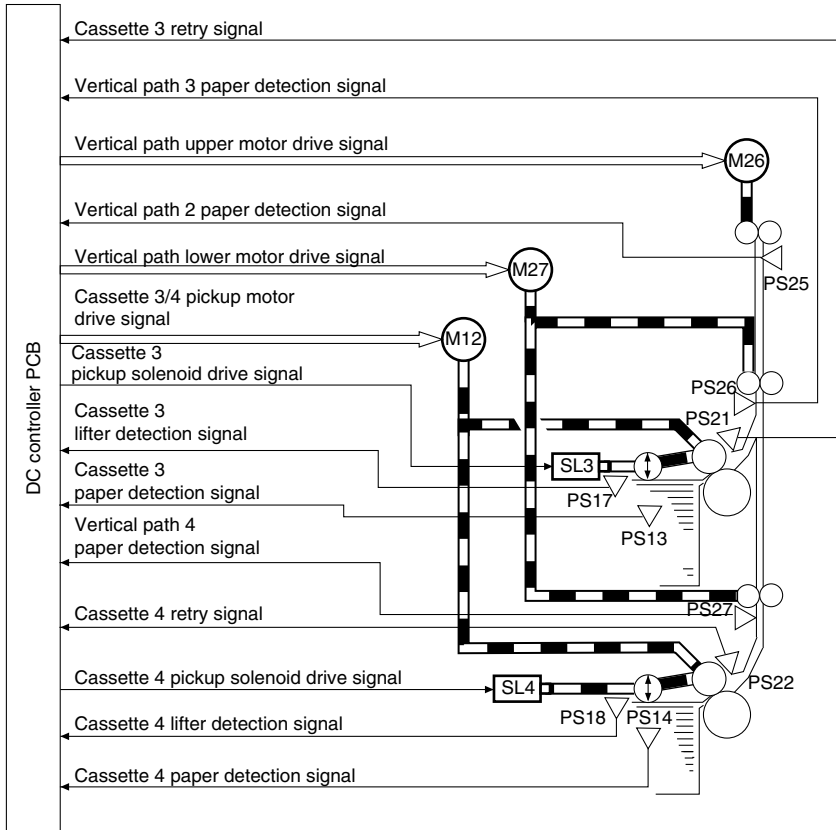
The following is a diagram of the pickup control system used for the deck:





F-8-2

The following is a diagram of the machine's cassette pickup control system:



F-8-3

## 8.1.4 Outline of the Pickup Assembly Motor Control System

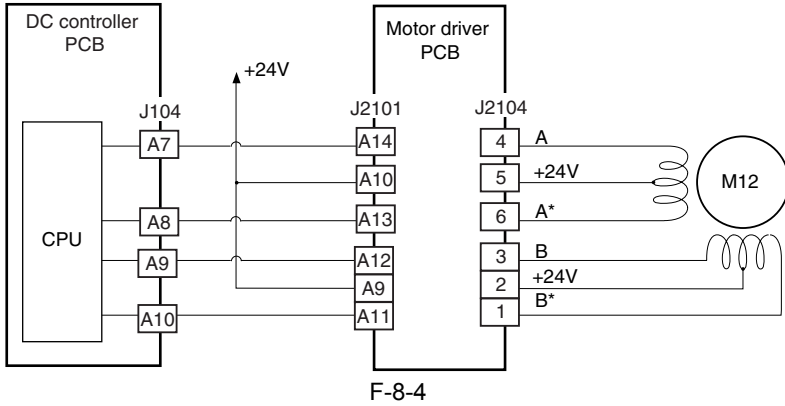
The machine uses 12 stepping motors of a 2-phase excitation type.

Each of these motors is supplied with 24-V power by the motor drive PCB, and is turned on and off by the pulse signals from the DC controller PCB; its direction of rotation is also controlled by the DC controller PCB.

The following shows the motors used in the machine's pickup assembly, and the diagram that follows shows the control circuit used for the cassette 3/4 pickup motor (representative of all pickup motor control circuits):

T-8-4

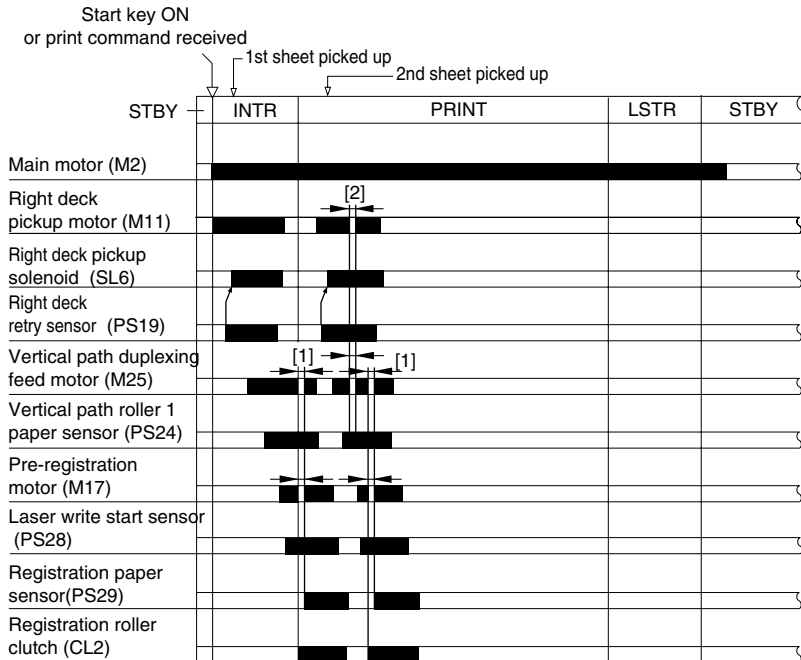
Location	Motor	Remarks
Pickup system	right door pickup motor (M11)	error in motor leads to paper jam
	left deck pickup motor (M24)	same as above
	cassette 3/4 pickup motor (M12)	same as above
Vertical path system	vertical path upper motor (M26)	same as above
	vertical path lower motor (M27)	same as above
	vertical path duplex feed motor (M25)	same as above
Reversal/ duplexing system	reversal motor (M14)	same as above
	duplexing feed left motor (M19)	same as above
	duplexing feed right motor (M18)	same as above
	duplexing horizontal registration motor (M16)	error code "E051"
	pre-registration motor (M17)	error in motor leads to paper jam
others	delivery motor (M13)	same as above



## 8.2 Basic Sequence

### 8.2.1 Pickup from the Right Deck

- A4, 2 Prints, Continuous



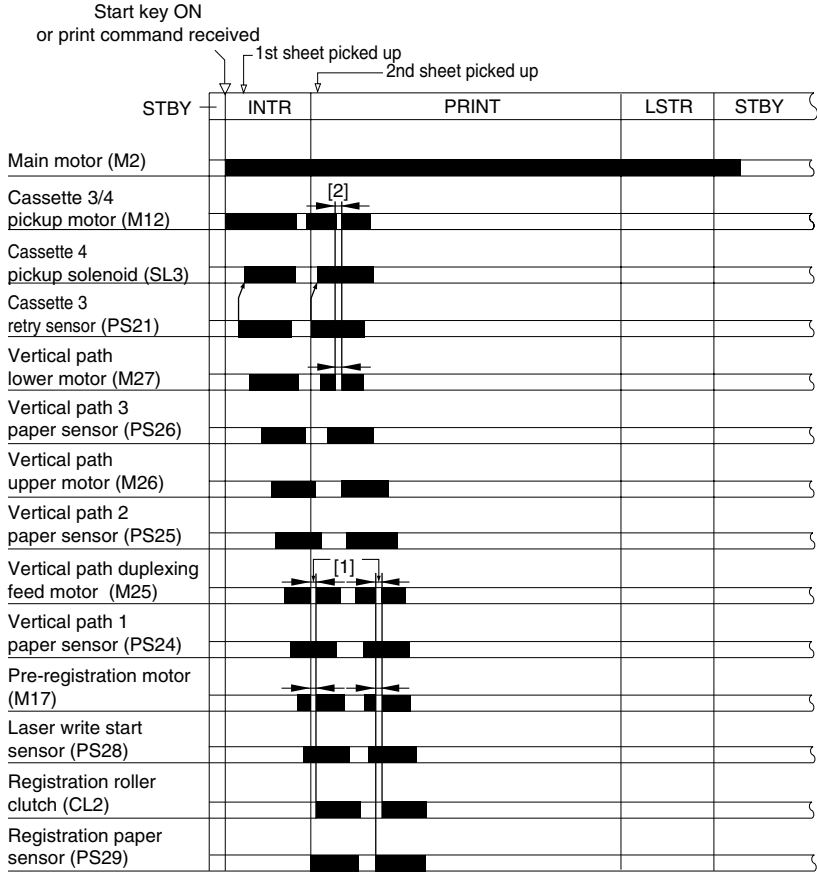
[1]: stops to arch the paper at the registration roller.

[2]: for 2nd and subsequent jobs, stops at 20 mm from the vertical path 1 roller to control the sheet-to-sheet distance.

F-8-5

## 8.2.2 Pickup from the Cassette 3

- A4, 2 Prints, Continuous



[1] : stops to arch the paper at the registration roller.

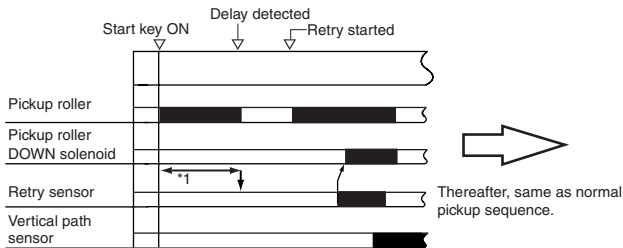
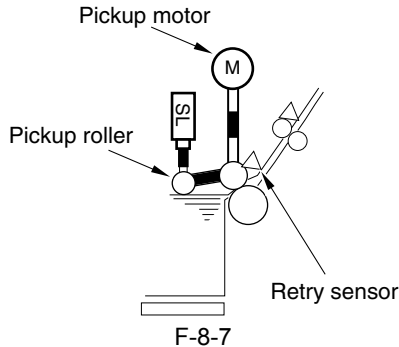
[2] : for 2nd and subsequent jobs, stops at 20 mm from the vertical path 3 roller to control the sheet-to-sheet distance.

F-8-6

### 8.2.3 Pickup Retry Operation

If, because of wear on the pickup roller for example, the retry sensor (PS19, PS20, PS21, PS22) detects a delay, the machine executes a pickup retry operation. If a delay is once again detected after the retry operation, the machine will indicate the presence of a jam on the control panel.

The machine executes a retry operation as follows and at the following timing:



\*1 : Period of detection, determined by the clock pulses from the motor.

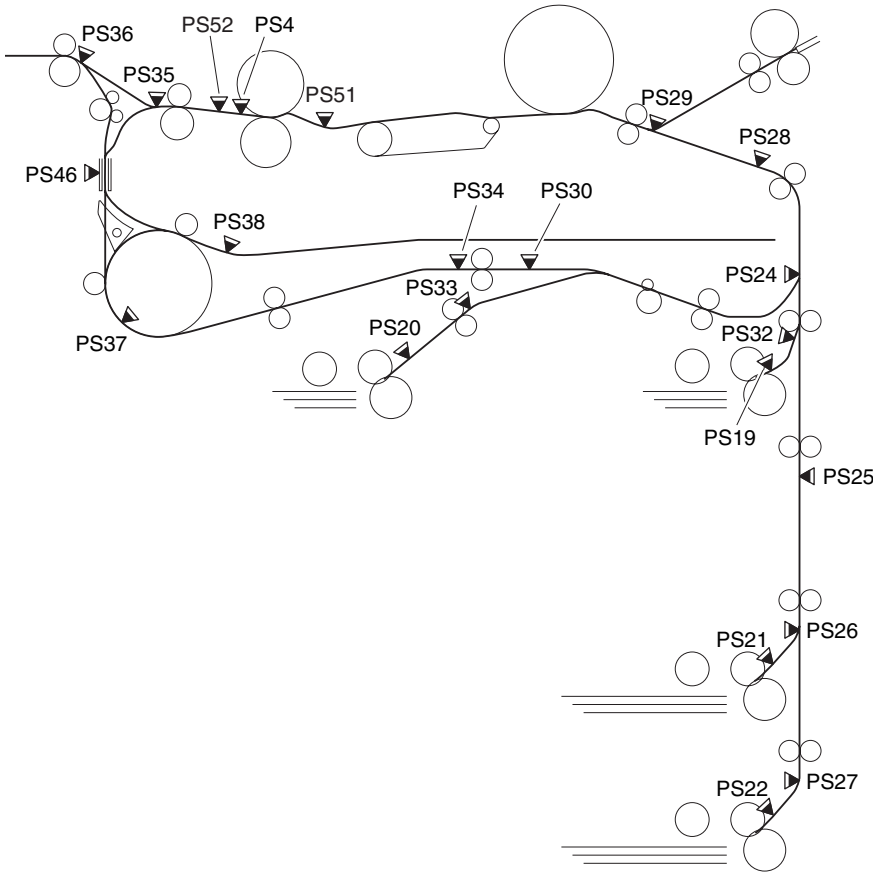
F-8-8

## 8.3 Detecting Jams

### 8.3.1 Jam Detection Outline

#### 8.3.1.1 Outline

##### Arrangement of the Jam Sensors



F-8-9



## Types of Jams

T-8-5

Sensor	Notation	Delay jam	Stationary jam	Power-on stationary jam
Right deck retry sensor	PS19	yes	no	no
Left deck retry sensor	PS20	yes	no	no
Cassette 3 retry sensor	PS21	yes	no	no
Cassette 4 retry sensor	PS22	yes	no	no
Right deck pull-off sensor	PS32	yes	yes	yes
Left deck pull-off sensor	PS33	yes	yes	yes
Vertical path 1 sensor	PS24	yes	yes	yes
Vertical path 2 sensor	PS25	yes	yes	yes
Vertical path 3 sensor	PS26	yes	yes	yes
Vertical path 4 sensor	PS27	yes	yes	yes
Write check sensor	PS28	yes	yes	yes
Registration sensor	PS29	yes	yes	yes
Fixing inlet sensor	PS51	no	no	yes
Fixing claw jam sensor	PS4	no	yes	yes
Fixing outlet sensor	PS52	yes	no	yes
Inside delivery sensor	PS35	yes	yes	yes
Outside delivery sensor	PS36	yes	yes	yes
Reversal sensor 1	PS37	yes	yes	yes
Reversal sensor 2	PS38	yes	yes	yes
Duplexing paper sensor	PS34	yes	yes	yes
Duplexing pre-registration sensor	PS30	yes	yes	yes
Delivery assembly jam sensor	PS46	no	no	yes

### 8.3.1.2 Jam History

The machine has a mechanism to keep a record of jams that occur inside it, permitting the service person to check its history of jams in service mode.

---

**SERVICE MODE:**

**COPIER>DISPLAY>JAM**

Use it to indicate jam data.

**COPIER>FUNCTION>CLEAR>JAM-HITS**

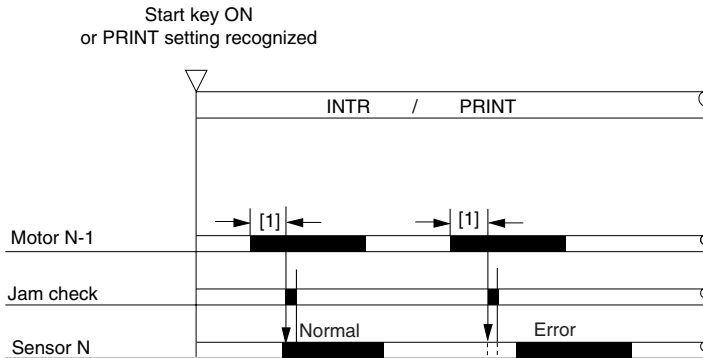
Use it to indicate the machine's jam history.

---

### 8.3.2 Delay Jams

#### 8.3.2.1 Cassette Pickup Assembly (right deck, left deck, cassette 3/4)

If the leading edge of paper does not reach the sensor within a specific period of time after the motor goes on, the machine will identify the condition as being a delay jam.



[1] specific length of time of feed

F-8-10

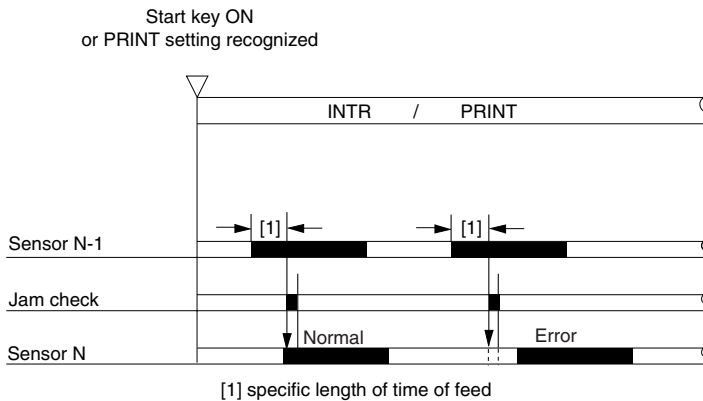
## T-8-6

Pickup assembly	Motor N-1	Delay jam sensor N
right deck	right deck pickup motor(M11)	right deck retry sensor(PS19)
left deck	Left deck pickup motor(M24)	left deck retry sensor(PS20)
Cassette 3	Cassette 3/4 pickup motor(M12)	cassette 3 retry sensor(PS21)
Cassette 4	cassette 3/4 pickup motor(M12)	cassette 4 retry sensor(PS22)

## 8.3.2.2 Other Delay Jam

The machine identifies a delay jam occurring outside its cassette/deck pickup assembly as follows:

The length of time during which paper is moved from the sensor N-1 to the appropriate delay jam sensor N is monitored. If the appropriate delay jam sensor N does not go on within a specific period of time after the sensor NB has gone on, the machine will identify the condition as being a delay jam.



F-8-11

T-8-7

**Sensor**

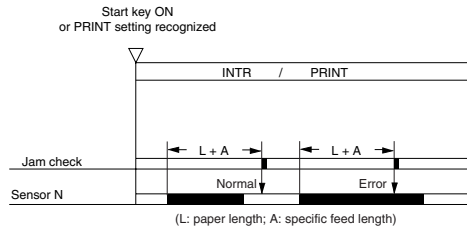
---

right deck pull-off sensor (PS32)  
left deck pull-off sensor (PS33)  
vertical path 1 sensor (PS24)  
vertical path 2 sensor (PS25)  
vertical path 3 sensor (PS26)  
vertical path 4 sensor (PS27)  
write check sensor (PS28)  
registration sensor (PS29)  
fixing outlet sensor (PS52)  
inside delivery sensor (PS35)  
outside delivery sensor (PS36)  
reversal sensor 1 (PS37)  
reversal sensor 2 (PS38)  
duplexing paper sensor (PS34)  
duplexing pre-registration sensor (PS30)

## 8.3.3 Stationary Jams

### 8.3.3.1 Common Delay Jams

If the sensor N does not go off within a specific period of time after it has gone on, the machine will identify the condition as being a stationary jam.



F-8-12

T-8-8

#### Sensor

---

- right deck pull-off sensor (PS32)
- left deck pull-off sensor (PS33)
- vertical path 1 sensor (PS24)
- vertical path 2 paper sensor (PS25)
- vertical path 3 paper sensor (PS26)
- vertical path 4 paper sensor (PS27)
- write check sensor (PS28)
- registration sensor (PS29)
- fixing claw jam sensor (PS4)
- inside delivery sensor (PS35)
- outside delivery sensor (PS36)
- reversal sensor 1 (PS37)
- reversal sensor 2 (PS38)
- duplexing paper sensor (PS34)
- duplexing pre-registration sensor (PS30)

### 8.3.3.2 Power-On Stationary Jam

The machine will identify a power-on stationary jam if paper exists over any of the following sensors when it starts initial multiple rotation at power-on:

T-8-9

**Sensor**

---

- right deck pull-off sensor (PS32)
- left deck pull-off sensor (PS33)
- vertical path 1 sensor (PS24)
- vertical path 2 sensor (PS25)
- vertical path 3 sensor (PS26)
- vertical path 4 sensor (PS27)
- write check sensor (PS28)
- registration sensor (PS29)
- fixing inlet sensor (PS51)
- fixing claws jam sensor (PS4)
- fixing outlet sensor (PS52)
- inside delivery sensor (PS35)
- outside delivery sensor (PS36)
- reversal sensor 1 (PS37)
- reversal sensor 2 (PS38)
- duplexing paper sensor (PS34)
- duplexing pre-registration sensor (PS30)
- delivery assembly jam sensor (PS46)

## 8.4 Cassette Pick-Up Unit

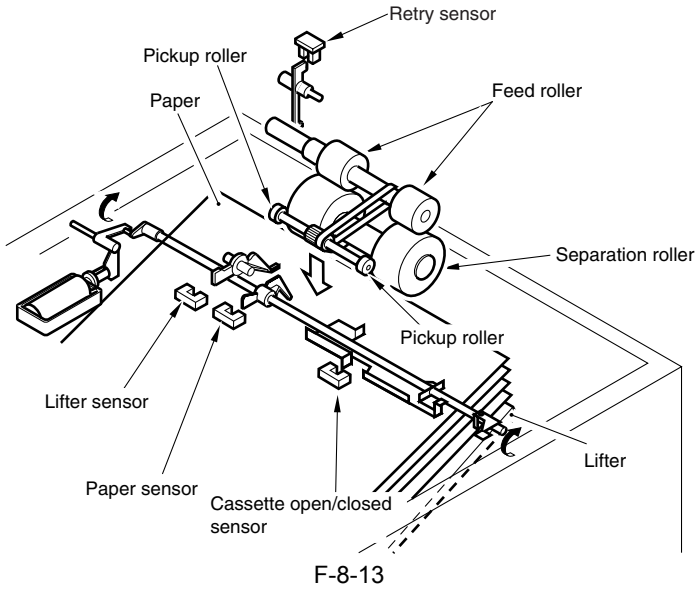
### 8.4.1 Lifter Operation (cassette 3/4)

When the cassette is pushed into the machine, the cassette open/closed sensor goes on and, at the same time, the pickup roller starts to move down. At this time, the light-blocking plate leaves the lifter sensor, causing the cassette lifter motor to go on and the lifter to move up. When the lifter moves up and the lifter sensor detects the surface of paper, its ascent stops. When the open button of the cassette is pressed, the drive gear of the lifter becomes disengaged, letting the lifter to move down under its own weight.

T-8-10

	Cassette 3	Cassette 4
Cassette opening/ closing	cassette 3 opening/closing	cassette 4 opening/closing
Detection	sensor (PS15)	sensor (PS16)
Lifter position detection	cassette 3 lifter sensor (PS17)	cassette 4 lifter sensor (PS18)
Paper detection	cassette 3 paper sensor (PS13)	cassette 4 paper sensor(PS14)
Paper level detection	cassette 3 paper level detection PCB	cassette 4 paper level detection PCB
	(variable resistor)	(variable resistor)
Lifter ascent limiter	---	---
drive motor	cassette 3 lifter motor (M20)	cassette 4 lifter motor(M21)

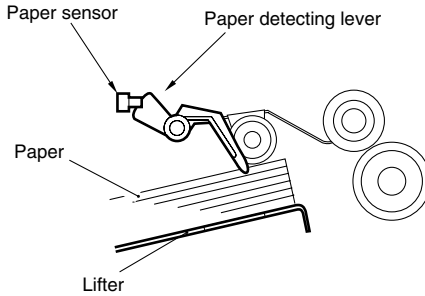
The following diagram shows the components of the cassette pickup unit:



### 8.4.2 Detecting the Presence/Absence of Paper

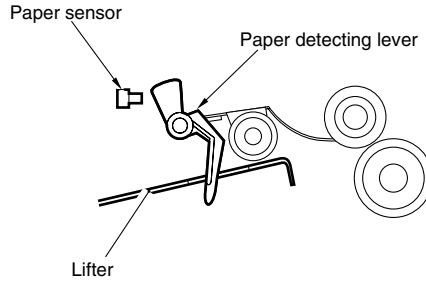
The presence/absence of paper inside the deck or the cassette is checked by the cassette paper sensor.

- Paper Present





- Paper Absent



F-8-15

### 8.4.3 Outline of the Paper Level Detection Mechanism

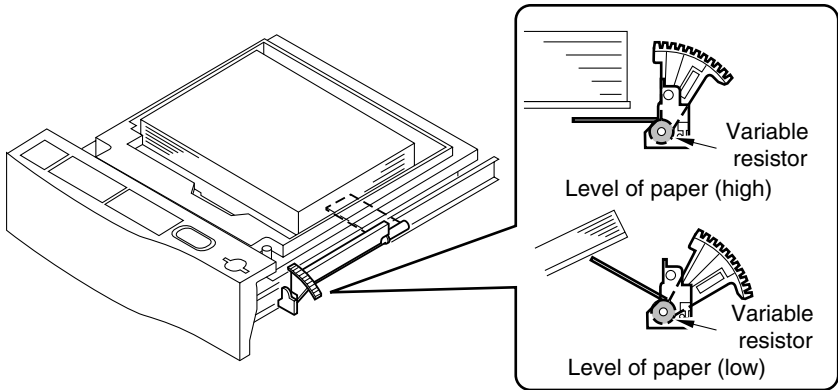
The machine indicates the amount of paper inside the deck and the cassette in terms of 4 levels (including absence of paper) on its control panel:

T-8-11

≡	3 bars	100% to about 50% of capacity
≡	2 bars	about 50% to about 10% of capacity
≡	1 bar	10% or less of capacity
┌	no bar	no paper

### 8.4.4 Paper Level Detection (cassette 3/4)

The machine checks the amount of paper remaining based on the reading of a variable resistor that operates in conjunction with the movement of the lifter drive shaft.



F-8-16

---

**SERVICE MODE:**

**COPIER> ADJUST> CST-ADJ> C3-LVOL**

Indicates the value when 50 sheets of paper exist in cassette 3.

**COPIER> ADJUST> CST-ADJ> C3-HVOL**

Indicates the value when 275 sheets of paper exist in cassette 3.

**COPIER> ADJUST> CST-ADJ> C4-LVOL**

Indicates the value when 50 sheets of paper exist in cassette 4.

**COPIER> ADJUST> CST-ADJ> C4-HVOL**

Indicates the value when 275 sheets of paper exist in cassette 4.

---

## 8.4.5 Identifying the Size of Paper (cassette 3/4)

### Outline

The machine uses the paper size sensor mounted to the rear of the cassette holder to identify the size of paper inside the cassette.

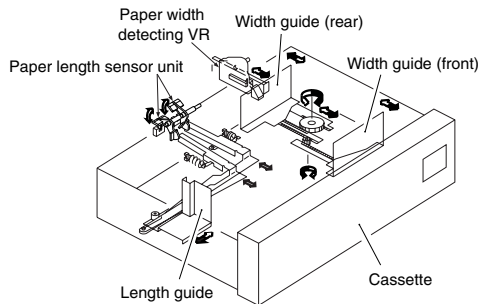
When the cassette is slid into the cassette holder, the paper size sensor is pushed by the boss on the cassette, permitting the machine to detect the width and the length of paper. The DC controller PCB identifies the size of the paper with reference to the combination of its width and length, and communicates the result of identification to the controller unit and the reader unit.

The boss pushing the paper size sensor works in conjunction with the guide plate inside the cassette, and its location is determined when the guide plate is set to suit a specific paper size.

### Identifying the Size Paper

The paper length sensor consists of 2 photointerrupters, and the combination of its 2 outputs is used to find out the length of paper.

The paper width sensor, on the other hand, is a variable resistor, and the machine refers to the reading (resistance) of the sensor to find out the width of paper.



F-8-17

T-8-12

	Cassette 3	Cassette 4
Paper length detection	UN18	UN19
Paper width detection	UN16	UN17

### 8.4.6 Markings on the Width Guide Rail

The width guide rail mounted inside the cassette is provided with paper size detecting holes identified by means of markings from A through M.

If the user reports skew movement, for instance, ask him/her to communicate the marking so that you will know if the paper width is correctly set.

(The purpose of these markings is not disclosed to the user.)

T-8-13

Marking	Paper	Remarks
A	STMT-R	
B	A5-R	
C	B5-R	
D	KLGL-R	
E	GLTR-R	
F	G-LGL	U3
G	A4-R	
H	LGL/LTR-R	
I	FLSC	U2
J	B4/B5	
K	G-LTR	U1
L	279.4 x 431.8mm (11" x 17" )/ LTR	U4
M	A3/A4	

## 8.4.7 Paper Size

The CPU on the DC controller PCB identifies the size of paper used based on paper width and paper length. The result of identification is communicated to the controller unit.

Paper width sensor (slice level) Unit: mm	Paper length sensor	PS102/ PS104	PS101/ PS103	PS102/ PS104	PS101/ PS103	PS102/ PS104	PS101/ PS103	PS102/ PS104	PS101/ PS103
	Signal	SZ 2	SZ 1	SZ 2	SZ 1	SZ 2	SZ 1	SZ 2	SZ 1
	ON/ OFF	0	0	0	1	1	0	1	1
288.5		A4		-		A3		-	
		(U4)		-		279.4 x 431.8mm (11"x17")		-	
273.7		(U1)		-		-		-	
261.8		B5		-		B4		-	
238.0		STMT		LTRR		LGL		(U2)	
212.9		A5		A4R		-		(U3)	
206.6		G-LTRR		-		-			
196.6		K-LGLR		-		-		-	
186.0		B5R		-		-		-	
165.2		A5R		-		-		-	
144.1		STMTR		-		-		-	

F-8-18

The following sizes are grouped and specified in service mode. A size identified by an asterisk is a default paper size as selected at time of shipment from the factory.

## T-8-14

Group		Size
U1	*	G-LTR
		K-LGL
U2	*	FOOLSCAP
		OFFICIO
		E-OFFI
		A-OFFI
		M-OFI
U3	*	G-LGL
		FOLIO
		AUS-FLS
	*	LTR
		A-LTR

**SERVICE MODE:****COPIER> OPTION> CST> CST-U1**

31: G-LTR \*, 22: K LGL

**COPIER> OPTION> CST> CST-U2**

24: FLSC \*, 26: OFI, 27: E-OFI, 36: A-OFI, 37: M-OFI

**COPIER> OPTION> CST> CST-U3**

34: G-LGL \*, 35: FOLI, 25: A-FLS

**COPIER> OPTION> CST> CST-U4**

18: LTR \*, 29: A-LTR

\*: factory setting

**COPIER> ADJUST> CST-ADJ> C3-STMTR**

Use it to change the paper width basic value for STMTR in cassette 3.

**COPIER> ADJUST> CST-ADJ> C3-A4R**

Use it to change the paper width basic value A4R in cassette 3.

**COPIER> ADJUST> CST-ADJ> C4-STMTR**

Use it to change the paper width basic value for STMTR in cassette 4.

**COPIER> ADJUST> CST-ADJ> C4-A4R**

Use it to change the paper width basic value for A4 in cassette 4.

## - Paper Types That May Be Used for the Machine

## T-8-15

<b>Name</b>	<b>Notation</b>	<b>Size (vertical x horizontal; mm)</b>
A3	A3	(297 +/- 1) x (420 +/- 1)
A4R	A4R	(210 +/- 1) x (297 +/- 1)
A4	A4	(297 +/- 1) x (210 +/- 1)
A5	A5	(210 +/- 1) x (148.5 +/- 1)
A5R	A5R	(148.5 +/- 1) x (210 +/- 1)
B4	B4	(257 +/- 1) x (364 +/- 1)
B5R	B5R	(182 +/- 1) x (257 +/- 1)
B5	B5	(257 +/- 1) x (182 +/- 1)
11 x 17	11 x 17	(279 +/- 1) x (432 +/- 1)
LTRR	LTRR	(216 +/- 1) x (279 +/- 1)
LTR	LTR	(279 +/- 1) x (216 +/- 1)
STMT	STMT	(216 +/- 1) x (139.5 +/- 1)
STMTR	STMTR	(139.5 +/- 1) x (216 +/- 1)
LEGAL	LGL	(216 +/- 1) x (356 +/- 1)
Korean Government	K-LGL	(265 +/- 1) x (190 +/- 1)
Korean Government R	K-LGLR	(190 +/- 1) x (265 +/- 1)
FOOLSCAP	FLSC	(216 +/- 1) x (330 +/- 1)
Australian Australian Foolscap	A-FLS	(206 +/- 1) x (337 +/- 1)
OFICIO	OFI	(216 +/- 1) x (317 +/- 1)
Ecuadorian Officio	E-OFI	(220 +/- 1) x (320 +/- 1)
Bolivian Officio	B-OFI	(216 +/- 1) x (355 +/- 1)
Argentine LTR	A-LTR	(280 +/- 1) x (220 +/- 1)

<b>Name</b>	<b>Notation</b>	<b>Size (vertical x horizontal; mm)</b>
Argentine LTRR	A-LTRR	(220 +/- 1) x (280 +/- 1)
Government LTR	G-LTR	(267 +/- 1) x (203 +/- 1)
Government LTRR	G-LTRR	(203 +/- 1) x (267 +/- 1)
Argentine LGL	A-LGL	(220 +/- 1) x (340 +/- 1)
Government LGL	G-LGL	(203 +/- 1) x (330 +/- 1)
FOLIO	FOLI	(210 +/- 1) x (330 +/- 1)
Argentine Officio	A-OFI	(220 +/- 1) x (340 +/- 1)
Mexico Officio	M-OFI	(216 +/- 1) x (341 +/- 1)



## 8.5 Manual Feed Pickup Unit

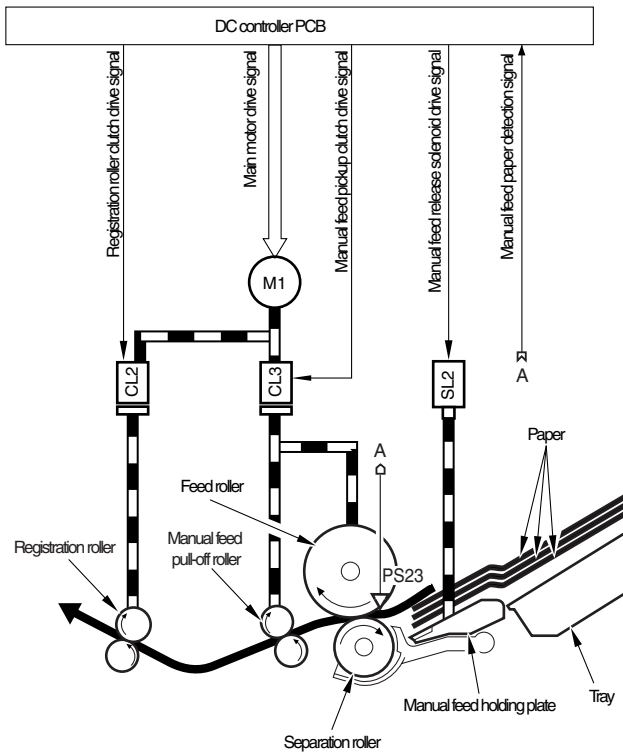
### 8.5.1 Pickup Operation

The presence/absence of paper in the manual feed tray is detected by the manual feed paper sensor (PS23). The manual feed pull-off roller is operated by the drive coming from the main motor by way of the manual feed pickup clutch (CL3).

When the clutch engages, the holding plate solenoid goes on so that the manual feed holding plate moves up.

In response, the gear of the feed roller receives the drive of the main motor, causing the feed roller to make a single rotation for movement of paper.

While the feed roller is rotating, the paper is moved by the manual feed roller as far as the registration roller.



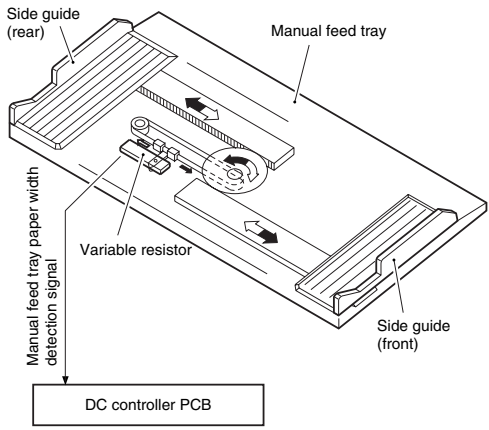
F-8-19

### 8.5.2 Detecting the Size of Paper in the Manual Feed Tray

The user may set the side guide of the manual feed tray to suit the width of paper he/she is using. The reading of the variable resistor that operates in conjunction with the movement of the side guide is monitored by the DC controller PCB for detection of paper width. The machine does not have a specific mechanism to detect the length of paper, requiring the user to specify it.

The width that has been detected is used when the machine executes laser exposure control. The machine refers to the length of time during which the manual feed paper sensor (PS23) remains on to find out the length of paper when the manual feed tray is used.

If the variable resistor has been replaced, the paper width basic value must be registered newly.



F-8-20

---

#### SERVICE MODE:

##### **COPIER> ADJUST> CST-ADJ> MF-A4R**

Use it to change the paper width basic value for A4R in the manual feed tray.

##### **COPIER> ADJUST> CSRT-ADJ> MF-A6R**

Use it to change the paper width basic value for A6R in the manual feed tray.

##### **COPIER> ADJUST> CST-ADJ> MF-A4**

Use it to change the paper width basic value for A4 in the manual feed tray.

---

## 8.6 Deck

### 8.6.1 Lifter Operation (right/left deck)

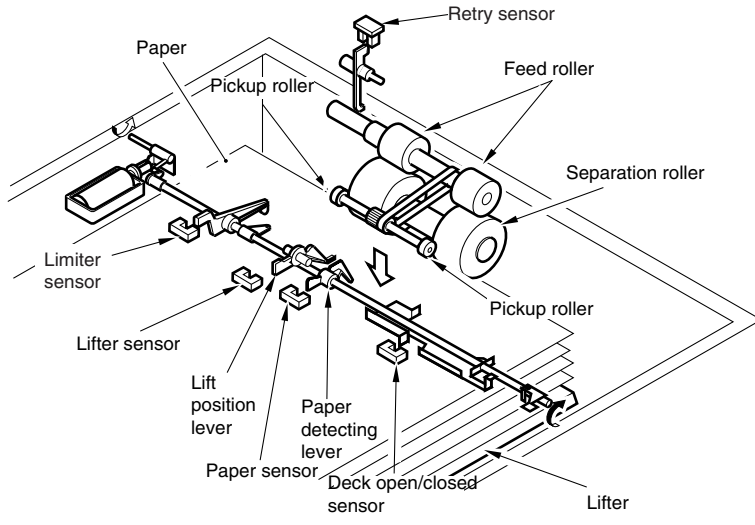
When the deck is slid into the machine, the deck open/closed sensor goes on and, at the same time, the pickup roller starts to move down. While all this goes on, the light-blocking plate leaves the lifter sensor, causing the deck lifter motor to go on and the lifter to move up. The lifter stops to move up when the lifter sensor detects the surface of paper. The left/right deck, further, is equipped with a limiter to make sure that the lifter stops before it moves past the lifter sensor.

When the open button of the deck or the cassette is pushed, the drive gear of the lifter becomes disengaged, letting the lifter to move down under its own weight.

T-8-16

	Right deck	Left deck
Cassette opening/ closing	right deck	left deck
Detection	open/closed sensor (PS5)	open/closed sensor (PS9)
Lifter position detection	Right deck lifter sensor(PS6)	left deck lifter sensor (PS10)
Paper detection	right deck paper sensor (PS7)	left deck paper sensor (PS11)
Paper level sensor	right deck paper level upper sensor (PS47)	left deck paper level upper sensor (PS49)
	right deck paper level lower sensor (PS48)	left deck paper level lower sensor(PS50)
Lifter upper limiter	right deck limit sensor (PS8)	left deck limit sensor(PS12)
Drive motor	right deck lifter motor (M4)	left deck lifter motor(M5)

The following diagram shows the components of the deck:



F-8-21

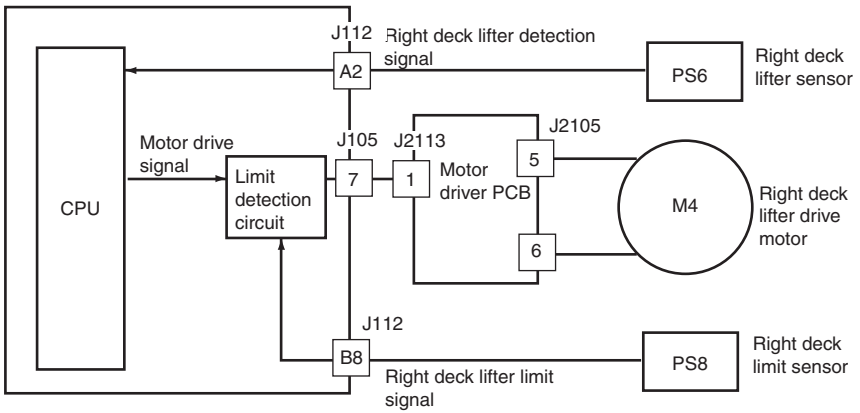
### 8.6.2 Lifter Limiter (right/left deck) Control Circuit

When the CPU on the DC controller PCB generates the motor drive signal, the lifter motor in response starts to rotate to move the lifter. When the deck reaches the lifter sensor, the deck lifter detection signal arrives at the CPU, causing the CPU to stop the deck lifter drive motor.

The machine is equipped with a deck limit sensor to make sure that the lifter will not go away. When the surface of paper reaches the deck limit sensor, the limit signal arrives at the DC controller PCB to cut off the drive signal, thereby stopping the limit motor.

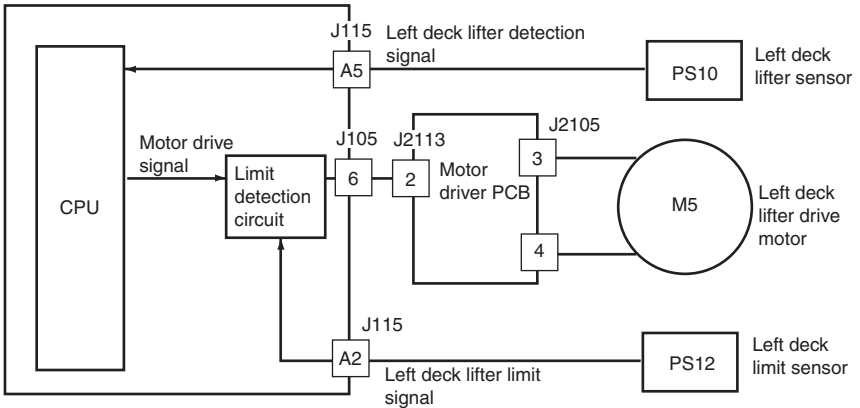
The following block diagram shows the control circuit:

DC controller PCB



F-8-22

DC controller PCB

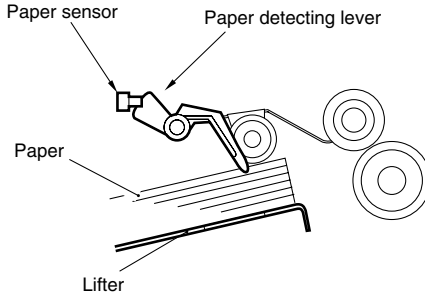


F-8-23

### 8.6.3 Detecting the Presence/Absence of Paper

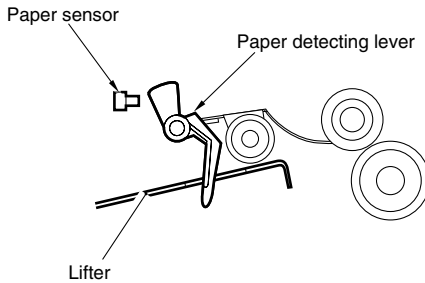
The presence/absence of paper inside the deck or the cassette is checked by the cassette paper sensor.

- Paper Present



F-8-24

- Paper Absent







F-8-25

## 8.6.4 Outline of Paper Level Detection

The machine indicates the amount of paper inside the deck and the cassette in terms of 4 levels (including absence of paper) on its control panel:

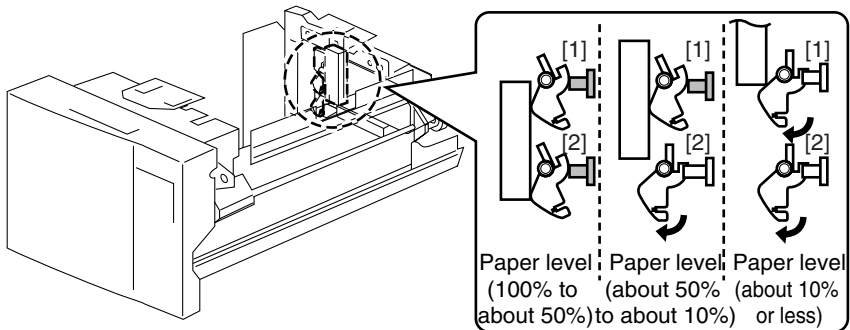
T-8-17

	3 bars	100% to about 50% of capacity
	2 bars	about 50% to about 10% of capacity
	1 bar	10% or less of capacity
	no bar	no paper

## 8.6.5 Paper Level Detection Operation (right/left deck)

The machine uses 2 sensors to check the position of the deck bottom plate, and checks the level of paper based on the combination of sensor states (on/off).

The machine uses a special sensor to check the presence/absence of paper.



F-8-26

## T-8-18

	Right deck			Left deck		
Paper level	[1] sensor (PS47)	[2] sensor (PS48)	sensor (PS7)	[1] sensor (PS49)	[2] sensor (PS50)	sensor (PS11)
100% to about 50%	ON	ON	ON	ON	ON	ON
about 50% to about 10%	OFF	ON	ON	OFF	ON	ON
about 10% or less	OFF	OFF	ON	OFF	OFF	ON
no paper	OFF	OFF	OFF	OFF	OFF	OFF

### 8.6.6 Identifying the Size of Paper (right/left deck)

The right/left deck does not possess a mechanism to detect the size of paper, and the machine finds out the size of paper as follows:

(A4, B5, LTR)

[1] The position of the paper size guide plate of the cassette is changed.

[2] A paper size is registered in service mode.

#### SERVICE MODE:

##### COPIER> OPTION> CST> P-SZ-C1

Use it to specify a paper size for the right deck.

Settings:

6: A4, 15: B5, 18: LTR

##### COPIER> OPTION> CST> P-SZ-C2

Use it to specify a paper size for the left deck.

Settings

6: A4, 15: B5, 18: LTR

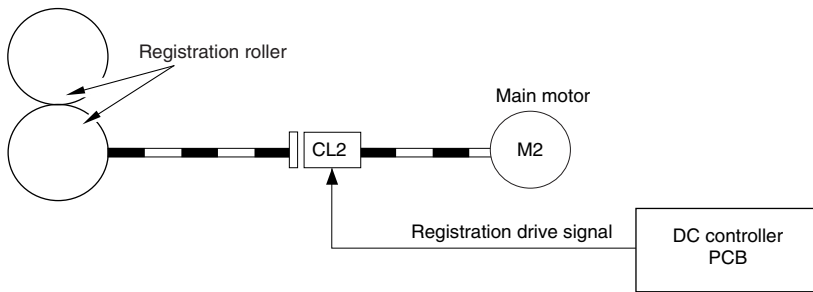


## 8.7 Registration Unit

### 8.7.1 Outline

The registration clutch serves to make sure that the print paper and the image on the drum will match at a specific point. The timing at which the registration roller clutch goes on may be varied in service mode (ADJUST>FEED-ADJ>REGIST).

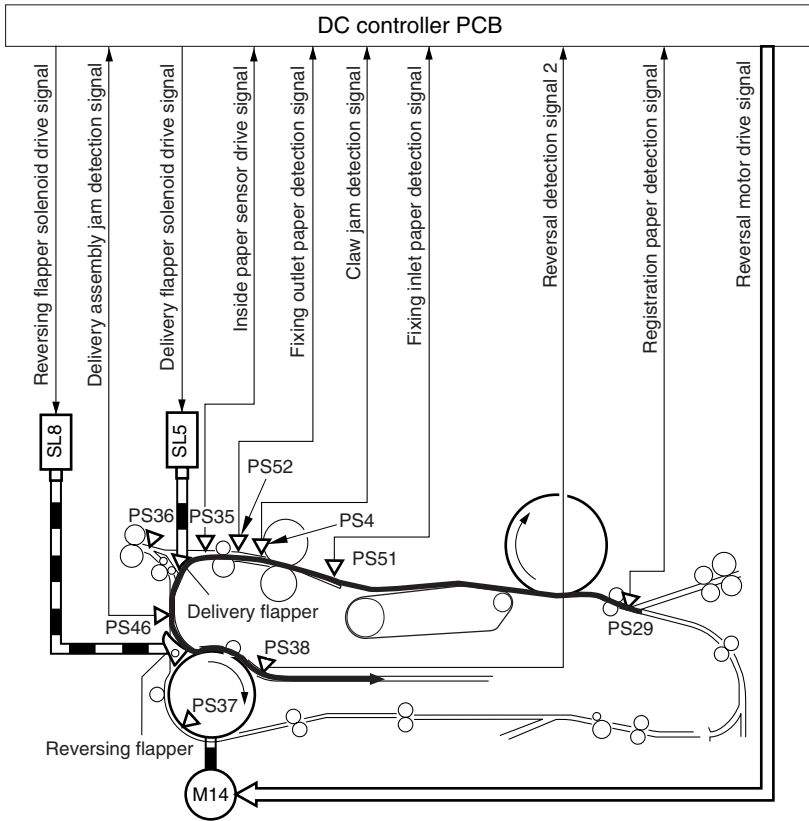
### 8.7.2 Control System



F-8-27

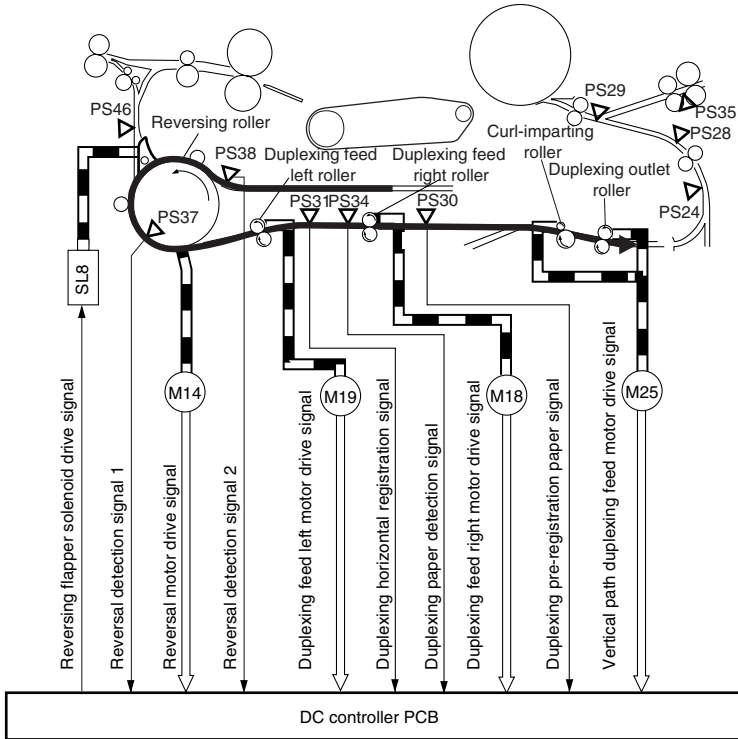
## 8.8 Duplex Feeding Unit

### 8.8.1 Moving the Paper to the Reversing Assembly After Printing on the 1st Side



F-8-28

## 8.8.2 Moving the Paper to the Duplexing Feed Assembly From the Reversing Assembly



F-8-29

### 8.8.3 Outline

The paper path for the 1st side of a duplex print is formed when the reversing flapper solenoid (SL8) goes on to move up the reversing flapper.

When printing on the 1st side is done and the leading edge of paper reaches the delivery assembly jam detection sensor (PS4), the reversing flapper solenoid goes on. When the delivery assembly jam sensor (PS46) goes on and the paper arrives at a specific point, the reversal motor (M14) starts to rotate to move the paper to the duplexing reversing assembly. When the paper reaches the reversal sensor 2 (PS38) and then a specific point, the reversal motor (M14) stops to rotate so that the paper is kept on hold at the reversing assembly.

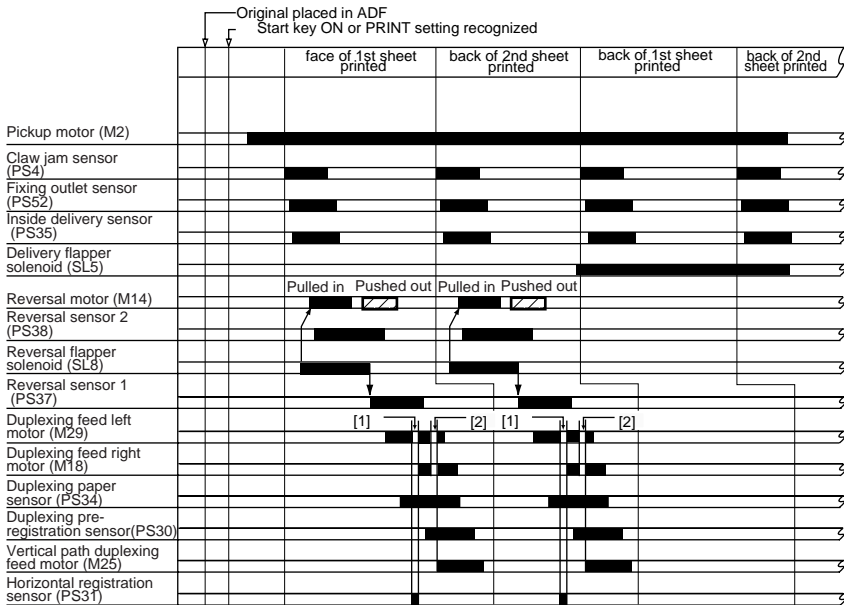
Thereafter, when the reversal motor (M14) starts to rotate in reverse, the paper in the reversing assembly is moved toward the duplexing wait point by the work of the duplexing feed left/right roller, which is operated by the drive from the duplexing feed left/right motor (M19, M18). When the paper reaches the duplexing repickup point (before 40mm of the curling roller), the paper stops and the horizontal registration operation is executed. The paper is then moved to the duplexing wait point as soon as the duplexing feed left/right motor (M19, M18) starts to rotate again.

**MEMO:**

The paper is not arched. (both case thick paper mode and plain paper mode)

### 8.8.4 Sequence of Printing Operation

A4, 4 Originals, Duplexing



[1] stops for arching at the duplexing feed right roller.  
 [2] stops to control the sheet-to-sheet distance at the duplexing wait point.

F-8-30

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## 8.8.5 Outline of Through-Path Operation

The through-path mechanism is used to move paper to the duplexing feed assembly after fixing (and after the paper has been moved to the reversing assembly by the work of the reversing flapper).

The machine is designed to reorder pages in its memory for printing, being free of the need to print originals in sequence and being, therefore, able to reduce the time during which paper is kept on hold, ultimately bringing about faster duplexing operation. As many as 2 sheets of paper may exist at once between the registration sensor and the duplex paper sensor.

---

### SERVICE MODE:

**COPIER> ADJUST> FEED-ADJ> ADJ-REFE**

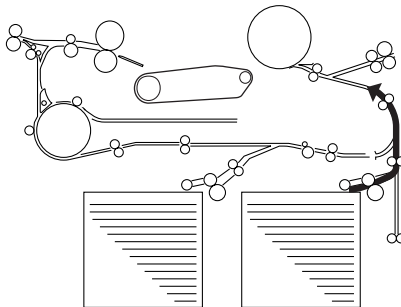
Use it to adjust the write start position in main scanning direction at time of re-pickup.  
(-50 to 50 mm)

---

## 8.8.6 Through-Path Operation

The following cites through-path operation when making duplex prints of 10 originals:

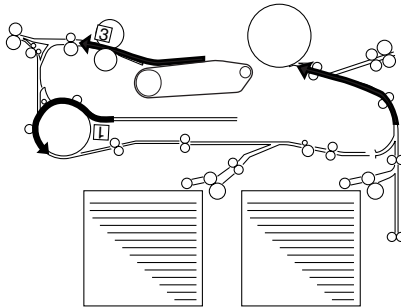
1. The 1st sheet is picked up from the right deck.



F-8-31



4. The 1st sheet is moved to the duplexing feed assembly.

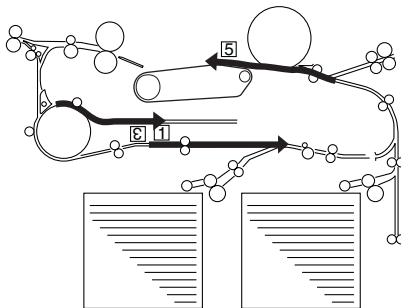


F-8-34

5. The 1st sheet is moved to the duplexing wait point.

The 2nd sheet is moved to the reversing assembly.

The 5th side is printed on the 3rd sheet.

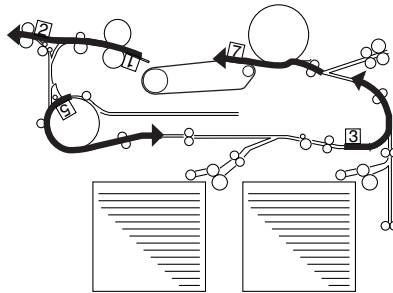


F-8-35





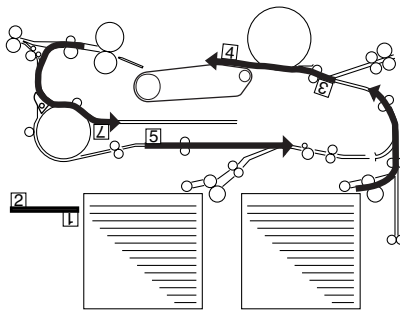
8. The 7th side is printed on the 4th sheet, and the 1st sheet is delivered.



F-8-38

9. The 4th side is printed on the 2nd side, and the 3rd sheet is kept on hold at the duplexing wait point.

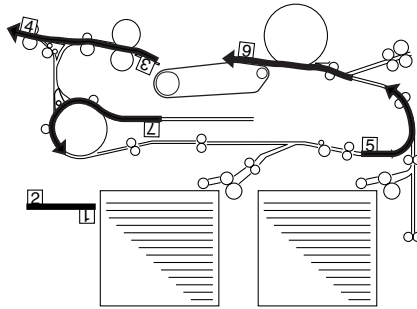
The 5th sheet is picked up.



F-8-39

10. The 2nd sheet is delivered.

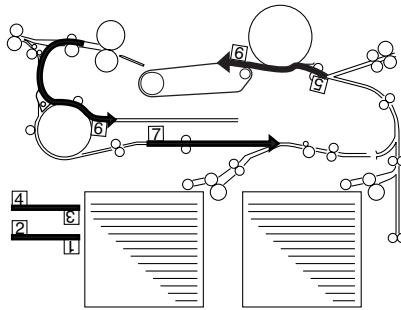
The 9th side is printed on the 5th sheet.



F-8-40

11. The 6th side is printed on the 3rd sheet.

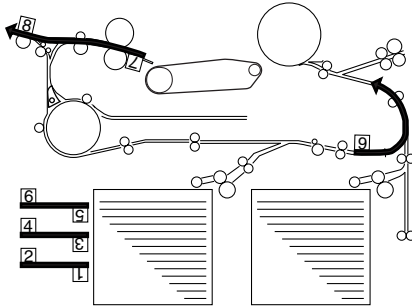
The 4th sheet is kept on hold at the duplexing wait point.



F-8-41

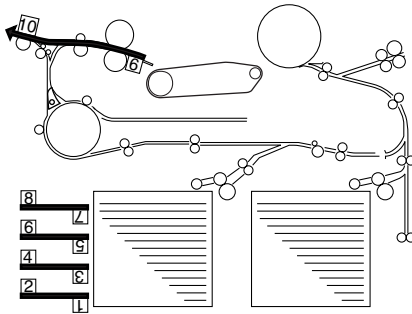


14. The 4th sheet is delivered, and the 10th side is printed on the 5th sheet.



F-8-44

15. The 5th sheet is delivered.

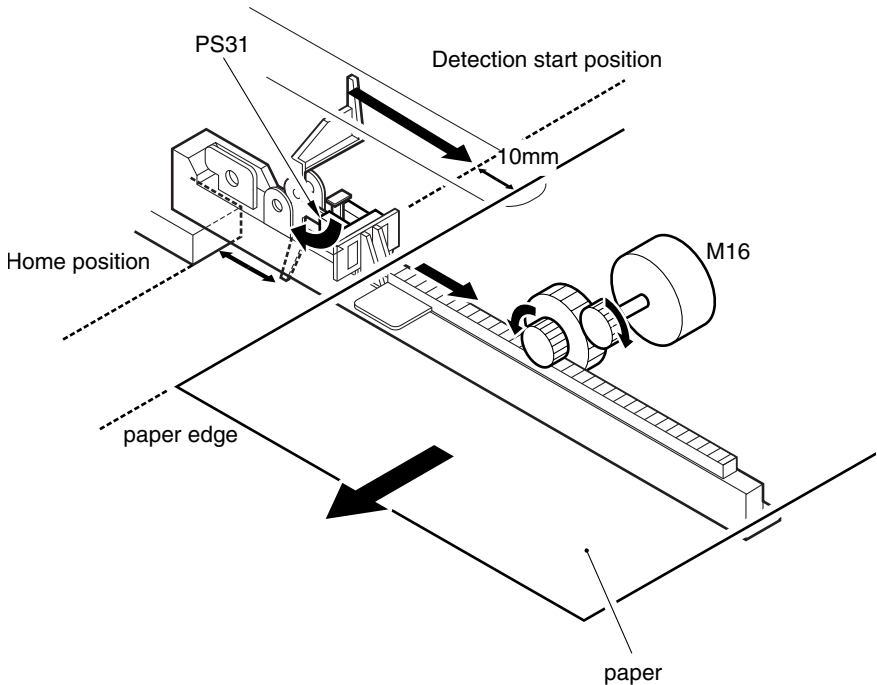


F-8-45

## 8.8.7 Outline of Horizontal Registration Position

T-8-19

Paper position detection	duplexing horizontal registration sensor (PS31)
Timing of start of detection	after duplexing paper sensor (PS34) goes on
Source of drive	duplexing horizontal registration motor (M16)
Position measurement	by controlling pulses of duplexing horizontal registration motor (1 pulse = about 0.16 mm)
Related service mode	COPIER> ADJUST> FEED-ADJ> ADJ-REFE



F-8-46

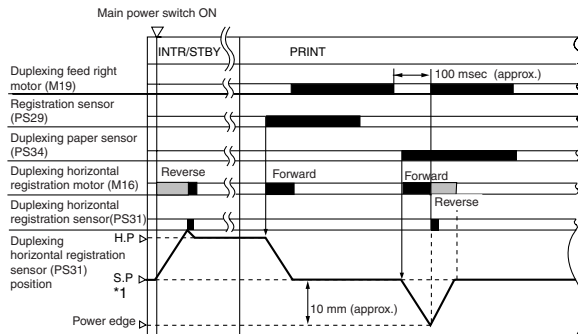
## 8.8.8 Horizontal Registration Position Detection Operation

The machine executes home position detection of the duplexing horizontal registration sensor when the main power switch is turned on, when jam recovery is started, or when the front cover is closed. The registration sensor goes on, and moves to the start position (A4 detection position).

When the paper moves from the duplexing feed assembly and reaches the duplex paper sensor (PS34), the horizontal registration motor (M16) goes on, and the duplex horizontal registration sensor (PS31) starts to check the edge of paper while the paper stops at the duplexing repickup point and for each duplexing session.

The machine checks the paper width indicated by the slide guide of the manual feed tray assembly and the cassettes size when the registration sensor goes on, to determine the point at which detection is to be started (a point about 10 mm from the edge of paper assuming ideal movement of paper).

The start position is used as the point of reference, and the machine identifies the paper position taking into account the likely displacement based on the number of drive pulses from the motor (1 pulse = about 0.16 mm).



F-8-47

\*1: The edge of paper and the contact with the sensor are detected in the absence of the light-blocking plate.

\*2: The start position (SP) varies as the paper edge position varies depending on the size of paper.

HP: start position of the duplexing horizontal registration sensor.

SP: start position of the duplexing horizontal registration sensor.

## 8.9 Delivery

### 8.9.1 Reversal Delivery Operation

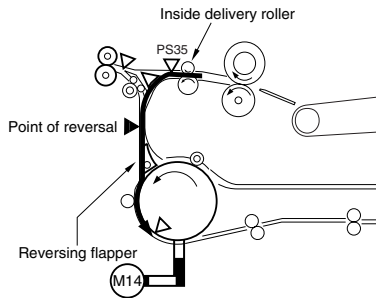
The machine offers both face-up delivery and face-down delivery.

T-8-20

Delivery mode	Operation mode
Face-up	<ul style="list-style-type: none"> <li>- making multiple prints of a single original</li> <li>- for the following, when the manual feed tray is used as the source of paper: with a default paper size selected and paper other than plain paper used</li> </ul>
Face-down	<ul style="list-style-type: none"> <li>- operation modes other than the above</li> </ul>

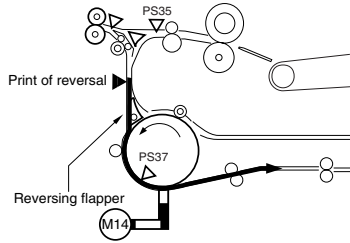
The following shows the operation of the machine at time of reversal delivery in face-down delivery mode.

1. The sheet is moved to the duplexing feed assembly.



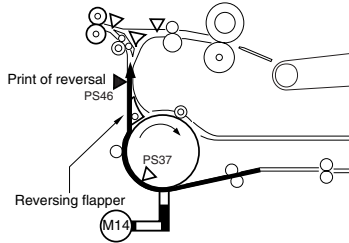
F-8-48

2. The inside delivery sensor (PS35) goes on and the paper moves over a specific distance; then, the reversal motor (M14) goes on to stop the trailing edge of paper at the point of reversal, timed to coincide with the activation of the reversal sensor 1 (PS37).



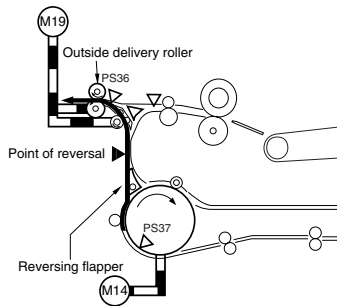
F-8-49

3. The reversal motor (M14) starts to rotate once again, and the trailing edge of paper is moved in the direction of delivery.



F-8-50

4. When the trailing edge of paper moves past the reversing roller coinciding with the activation of the outside delivery sensor (PS36), the reversal motor (M14) stops. The delivery motor (M13) starts to rotate to move the paper to the outside delivery roller, which discharges the paper to the outside of the machine.



F-8-51



## 8.10 Parts Replacement Procedure

### 8.10.1 Pickup Roller

#### 8.10.1.1 Removing the Right Deck/ Cassette Pickup Assembly

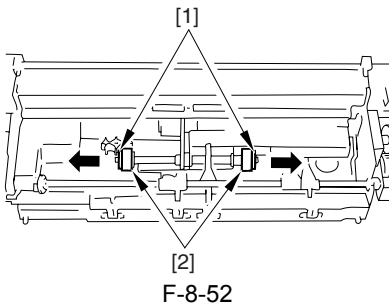
**Refer to Procedure 8.10.7**

#### 8.10.1.2 Removing the Left Deck Pickup Assembly

**Refer to Procedure 8.10.8**

#### 8.10.1.3 Removing the Pickup Roller

- 1) Remove the two resin E-rings [1] on the outside, and detach the pickup roller [2] in the direction of the arrow.

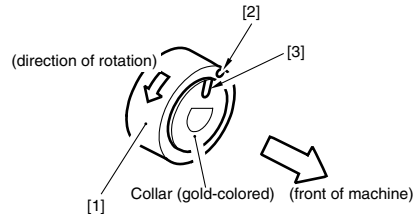


#### 8.10.1.4 Orientation of the Deck/Cassette Pickup Roller

The pickup roller may be mounted by reversing the steps used to remove it; however, be sure to keep the following in mind:

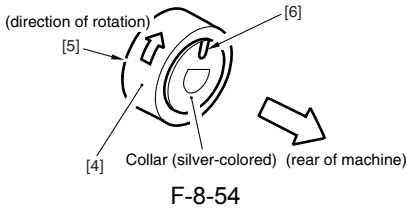
- The pickup rollers used at the front and the rear of the machine are not interchangeable.
- The collar of the pickup roller used at the front of the machine is gold-colored.

When mounting the pickup roller [1] to the pickup assembly, make sure that the round marking [2] found on the side of the roller and the round marking [3] found on the collar (gold-colored) are toward the front of the machine.



- The collar of the pickup roller used at the rear of the machine is silver-colored. When mounting the pickup roller [4] to the pickup assembly, make sure that the round marking [5] found on the side of the roller is toward the front of the machine while the round marking on the collar (silver-colored) is toward the rear

of the machine.



## 8.10.2 Cassette Pickup Assembly

### 8.10.2.1 Removing the Right Deck/ Cassette Pickup Assembly

The removal procedure of a right door and a left door is the same. An illustration makes a right door an example and explains it.

- 1) Slide out the right deck / cassette3 / cassette4.
- 2) Open the right upper cover and the right lower cover.

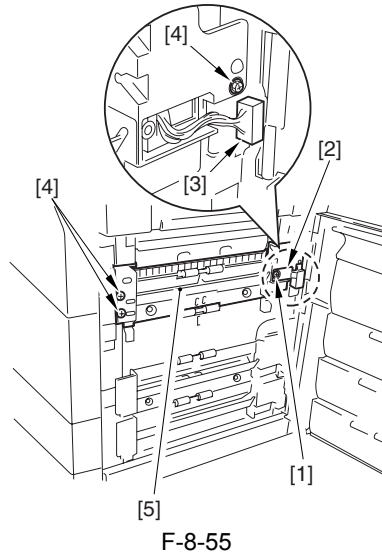


An attempt to remove the pickup assembly without removing the deck will cause the lifter to get trapped, not holding the pickup assembly from sliding out.

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- 3) Remove the mounting screw [1], and detach the connector cover [2]; then, disconnect the connector [3].
- 4) Remove the three mounting screws [4],

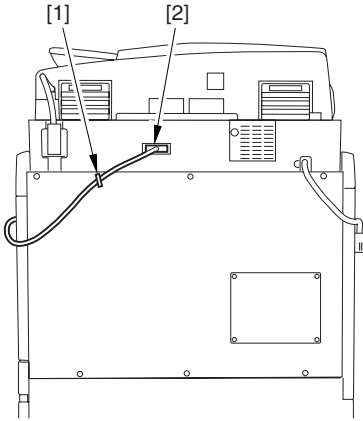
and detach the pickup assembly [5].



## 8.10.3 Cassette Pickup Motor

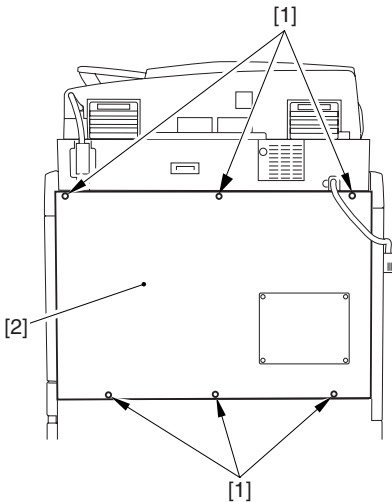
### 8.10.3.1 Removing the Rear Cover (upper)

- 1) Open the cable clamp [1], and free the reader unit communications cable [2].



F-8-56

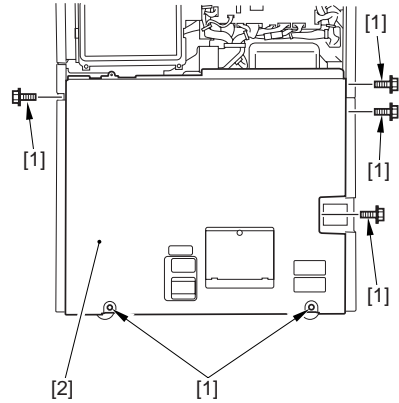
- 2) Remove the 6 screws [1], and detach the upper rear cover [2].



F-8-57

### 8.10.3.2 Removing the Rear Cover (lower)

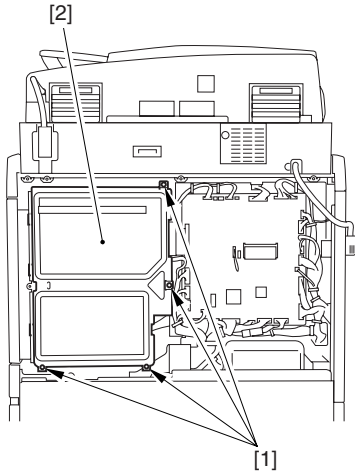
- 1) Remove the 6 screws [1], and detach the rear cover (lower) [2].



F-8-58

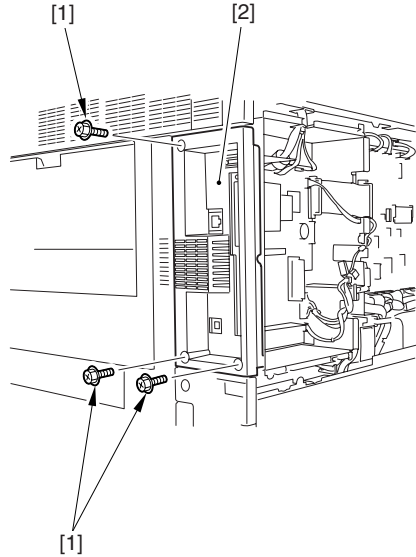
### 8.10.3.3 Removing the Main Controller Box

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



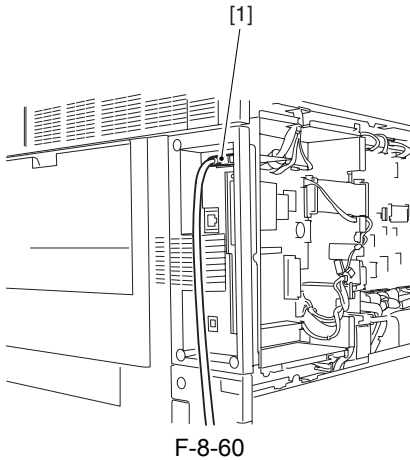
F-8-59

2) Disconnect the connector [1] of the reader unit communications cable.



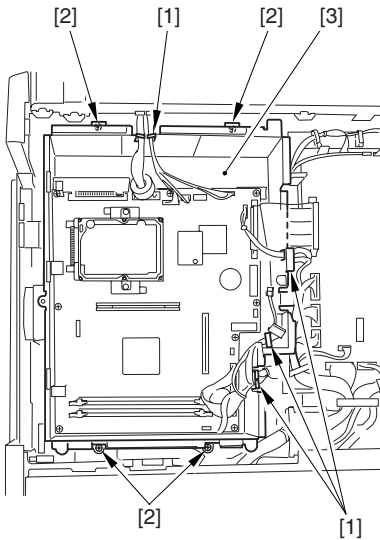
F-8-61

4) Disconnect all connectors of the main control PCB, and free all harnesses from the 4 wire saddles [1]; then, detach the main controller box [3].



F-8-60

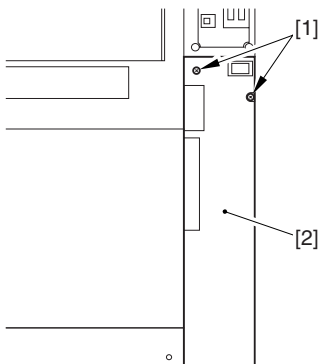
3) Remove the 3 screws [1], and detach the upper rear right cover [2].



F-8-62

#### 8.10.3.4 Removing the Right Cover (lower rear)

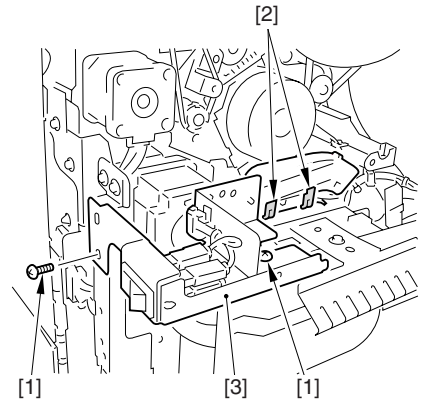
- 1) Remove the 2 screws [1], and detach the right cover (lower rear) [2].



F-8-63

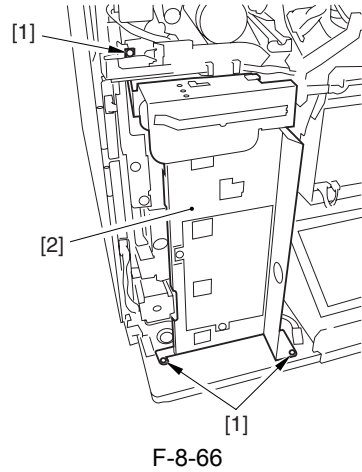
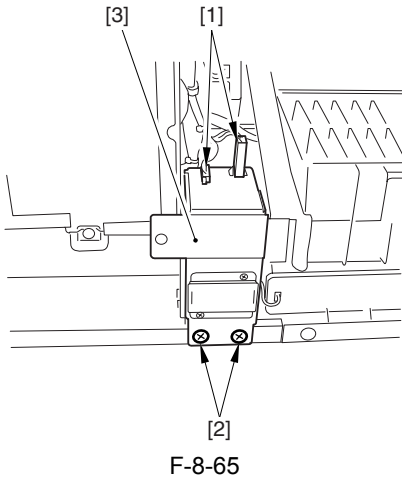
#### 8.10.3.5 Removing the Waste Toner Bottle Holder

- 1) Remove the waste toner bottle.
- 2) Remove the 2 screws [1], and remove the 2 clamps [2]; then, move the main power switch base [3] to the side.



F-8-64

- 3) Disconnect the 2 connectors [1], and remove the 2 screws [2]; then, detach the connector base [3].



4) Remove the 2 screws [1], and detach the waste toner bottle holder [2].

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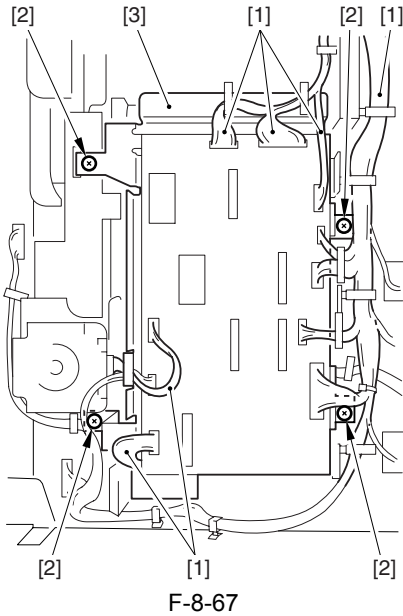
Take care not to spill the waste toner.

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### 8.10.3.6 Removing the Motor Driver PCB Base

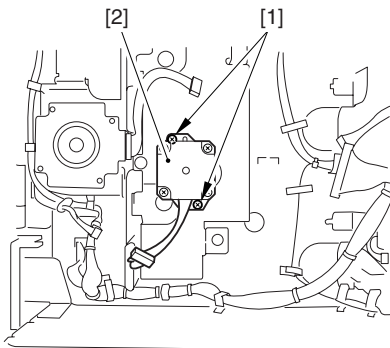
- 1) Disconnect the 10 connectors, and free the harness [1] from the 9 wire saddles.
- 2) Remove the 4 screws [2], and detach the motor driver PCB together with its base [3].

## 8.10.4 Cassette Lifter Motor



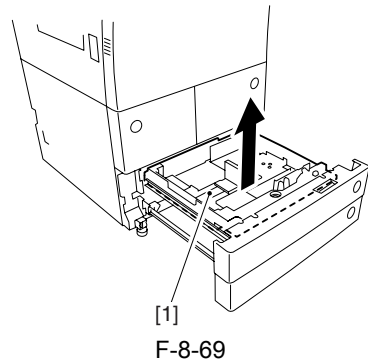
### 8.10.3.7 Removing the Cassette Pickup Motor

- 1) Remove the two screws [1], and detach the cassette pickup motor [2].

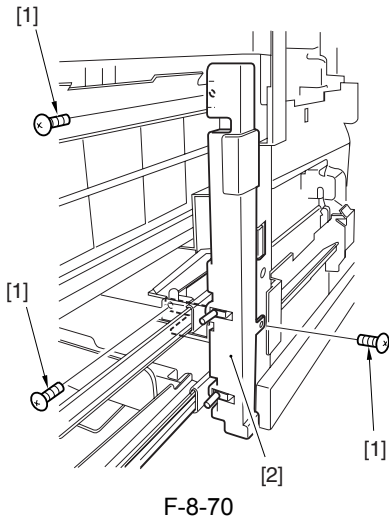


### 8.10.4.1 Removing the cassette right cover

- 1) Slide out the right deck and the cassette 3/4.
- 2) Remove the bucket [1] of the cassette 3.

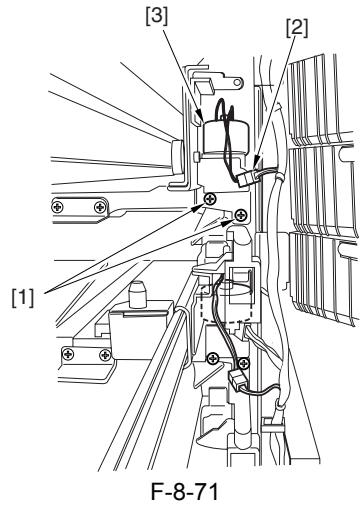


- 3) Open the right lower cover.
- 4) Remove the three screws [1], and detach the cassette right cover [2].



#### 8.10.4.2 Removing the Lifter Motor M20 of the Cassette 3

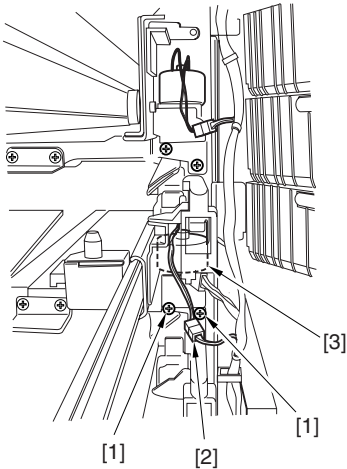
- 1) Remove the two fixing screws [1] of the lifter motor M20, and disconnect the connector [2]; then, detach the lifter motor [3].



#### 8.10.4.3 Removing the Lifter Motor M21 of the Cassette 4

- 1) Remove the two fixing screws [1] of the lifter motor M21, and disconnect the connector [2]; then, detach the lifter motor [3].

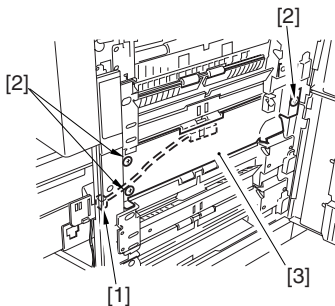




F-8-72

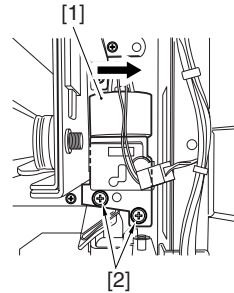
#### 8.10.4.4 Adjusting the Position of the Lifter Motor M20 (M21) of the Cassette 3 (cassette 4)

- 1) Disconnect the connector [1], and remove the three screws [2]; then, detach the guide plate [3].



F-8-73

- 2) While keeping the lifter motor M20 (M21) [1] to the right, tighten the screw [2] temporarily.



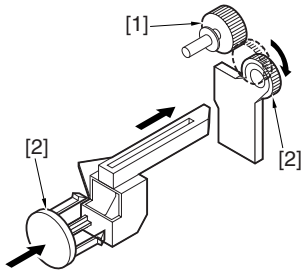
F-8-74

- 3) Set the cassette 3 (cassette 4) in the machine without paper.
- 4) Check to make sure that the lifter drive gear [1] is engaged with the lifter motor gear [2] from the right side of the machine; then, check also to make sure that the lifter drive gear is fully away from the lifter gear when the release button [3] of the cassette 3 (cassette 4) is pressed halfway.



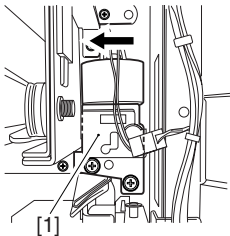
The expression "pressing the release button halfway" means the following:

- The separation roller moves down.
- The cassette is about to slide out.



F-8-75

- 5) If the filter drive gear is not fully away from the lifter motor gear, move the left motor M20 (M21) [1] to the left, and press the release button halfway once again to make a check.



F-8-76

- 6) Fully tighten the two screws of the lifter motor M20 (M21).  
 7) Mount back the removed parts, and turn on the machine.  
 8) Press the cassette release button under the following conditions, and turn on the machine:
- the cassette contains no paper.
  - the cassette contains about 550 sheets of paper.

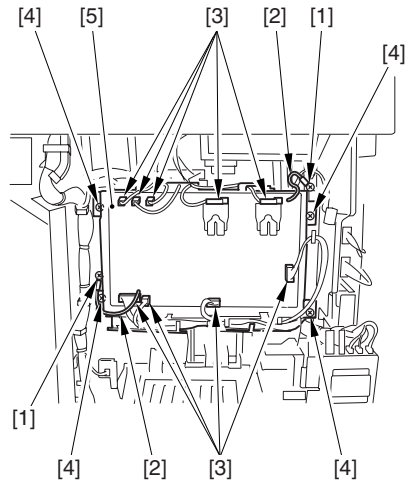
## 8.10.5 Left Deck Lifter Motor

### 8.10.5.1 Removing the Rear Cover (lower)

**Refer to Procedure 8.10.3.2**

### 8.10.5.2 Removing the HVT PCB

- 1) Remove the 2 screws [1], and detach the 2 grounding wires [2].
- 2) Disconnect the 9 connectors [3].
- 3) Remove the 4 screws [4], and detach the high-voltage power supply PCB [5].



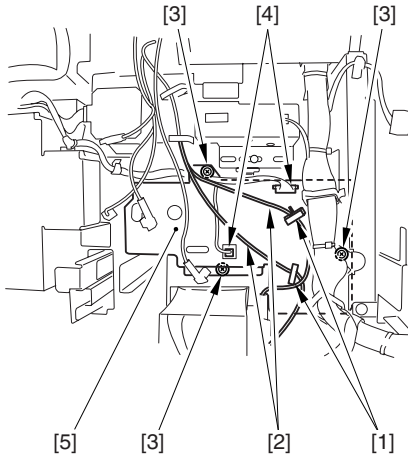
F-8-77

### 8.10.5.3 Removing the Left Deck Lifter Motor

- 1) Open the two wire saddle [1], make free

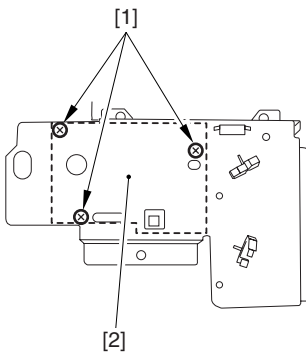
the two harnesses [2].

- 2) Disconnect the two connectors [4], remove the 3 screws [3], and detach the left deck lifter drive assembly [5].



F-8-78

- 3) Remove the 3 screws [1], and detach the left deck lifter motor [2].



F-8-79

## 8.10.6 Right Deck Lifter Motor

### 8.10.6.1 Removing the Rear Cover (upper)

**Refer to Procedure 8.10.3.1**

### 8.10.6.2 Removing the Rear Cover (lower)

**Refer to Procedure 8.10.3.2**

### 8.10.6.3 Removing the Main Controller Box

**Refer to Procedure 8.10.3.3**

### 8.10.6.4 Removing the Right Cover (lower rear)

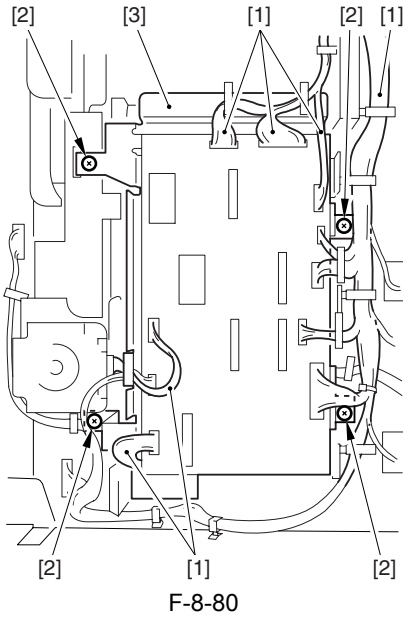
**Refer to Procedure 8.10.3.4**

### 8.10.6.5 Removing the Waste Toner Bottle Holder

**Refer to Procedure 8.10.3.5**

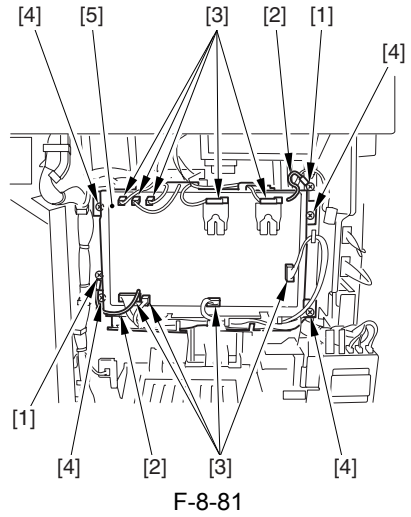
### 8.10.6.6 Removing the Motor Driver PCB Base

- 1) Disconnect the 10 connectors, and free the harness [1] from the 9 wire saddles.
- 2) Remove the 4 screws [2], and detach the motor driver PCB together with its base [3].



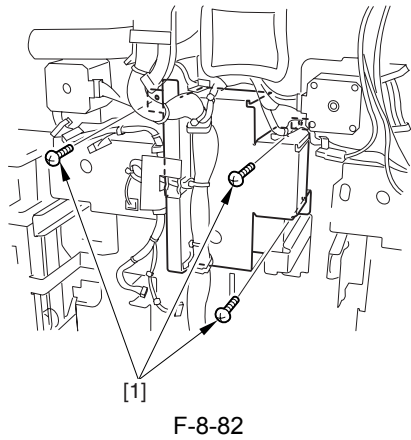
### 8.10.6.7 Removing the High-Voltage Power Supply PCB

- 1) Remove the 2 screws [1], and detach the 2 grounding wires [2].
- 2) Disconnect the 9 connectors [3].
- 3) Remove the 4 screws [4], and detach the high-voltage power supply PCB [5].



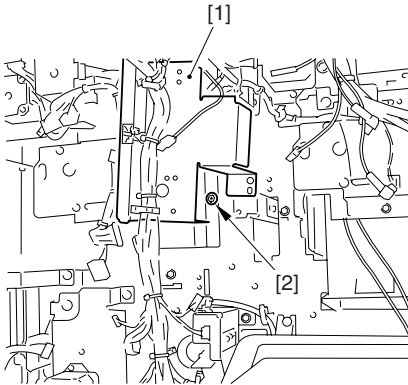
### 8.10.6.8 Removing the Right Deck Lifter Motor

- 1) Remove the 3 screws [1].



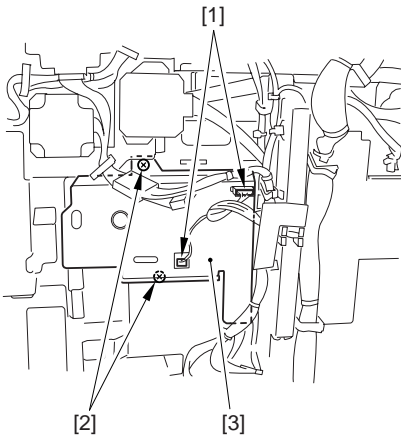
- 2) Slide the cable fixing plate [1], and

remove the screw [2].



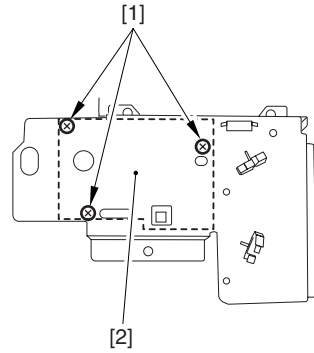
F-8-83

- 3) Disconnect the 2 connectors [1], and remove the 2 screws [2]; then, detach the right deck lifter drive assembly [3].



F-8-84

- 4) Remove the 3 screws [1], and detach the right deck lifter motor [2].



F-8-85

## 8.10.7 Right Deck Pickup Assembly

### 8.10.7.1 Removing the Right Deck/ Cassette Pickup Assembly

The removal procedure of a right door and a left door is the same. An illustration makes a right door an example and explains it.

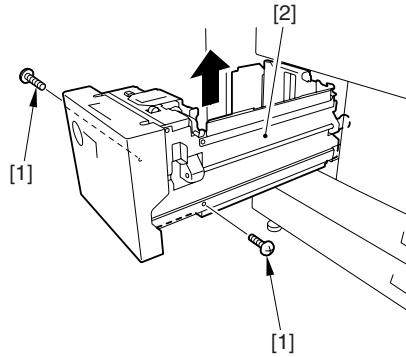
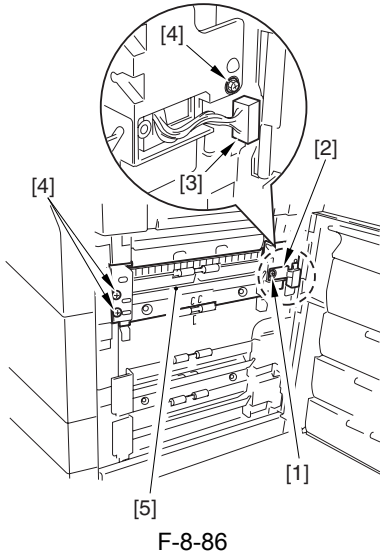
- 1) Slide out the right deck / cassette3 / cassette4.
- 2) Open the right upper cover and the right lower cover.



An attempt to remove the pickup assembly without removing the deck will cause the lifter to get trapped, not holding the pickup assembly from sliding out.

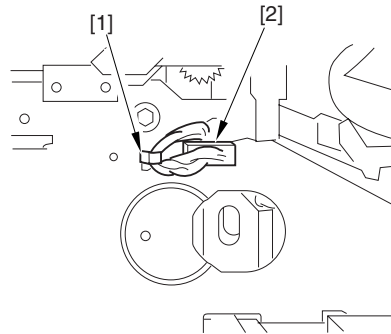
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- 3) Remove the mounting screw [1], and detach the connector cover [2]; then, disconnect the connector [3].
- 4) Remove the three mounting screws [4], and detach the pickup assembly [5].



F-8-87

- 3) Open the front cover.
- 4) Disconnect the connector [1] from inside the machine, and remove the locking support [2].



F-8-88

## 8.10.8 Left Deck Pickup Assembly

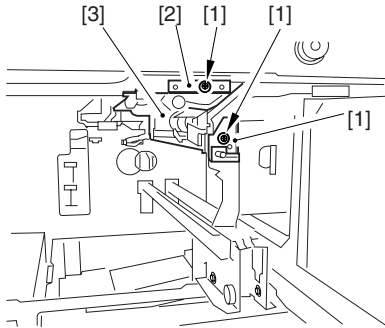
### 8.10.8.1 Removing the Left Deck Pickup Assembly

- 1) Slide out the left deck.
- 2) Remove the two screws [1] found on the left and right sides of the left deck [2]; then, detach the left deck [2].

- 5) Remove the two screws [1], and detach the two pickup fixing plates [2]; then, detach the left deck pickup assembly [3].



Keep supporting the pickup assembly; otherwise, the pickup assembly could drop when the fixing plate is removed.



F-8-89

## 8.10.9 Left Deck Pickup Motor

### 8.10.9.1 Removing the Rear Cover (lower)

**Refer to Procedure 8.10.3.2**

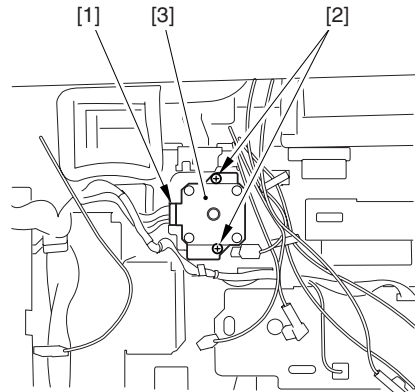
### 8.10.9.2 Removing the High-Voltage Power Supply PCB

**Refer to Procedure 8.10.6.7**

### 8.10.9.3 Removing the Left Deck Pickup Motor

- 1) Disconnect the connector[1], and

remove the screw[2]; then, remove the left deck pickup motor[3].



F-8-90

## 8.10.10 Right Deck Pickup Motor

### 8.10.10.1 Removing the Rear Cover (upper)

**Refer to Procedure 8.10.3.1**

### 8.10.10.2 Removing the Rear Cover (lower)

**Refer to Procedure 8.10.3.2**

### 8.10.10.3 Removing the Main Controller Box

**Refer to Procedure 8.10.3.3**

8.10.10.4 Removing the Right Cover (lower rear)

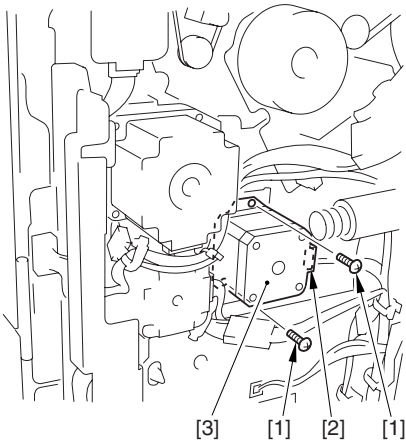
**Refer to Procedure 8.10.3.4**

8.10.10.5 Removing the Waste Toner Bottle Holder

**Refer to Procedure 8.10.3.5**

8.10.10.6 Removing the Right Deck Pickup Motor

- 1) Disconnect the connector [2], remove the two screw [1], and detach the right deck pickup motor [3].



F-8-91

8.10.11 Left Deck Pickup Solenoid

8.10.11.1 Removing the Rear Cover (lower)

**Refer to Procedure 8.10.3.2**

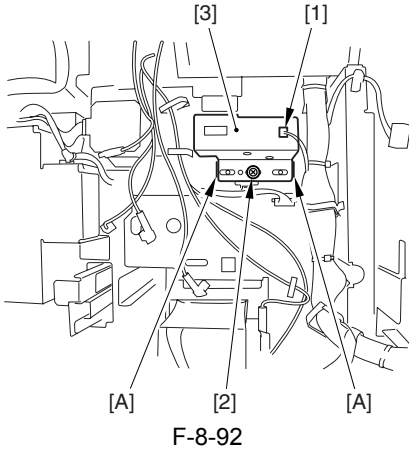
8.10.11.2 Removing the High-Voltage Power Supply PCB

**Refer to Procedure 8.10.6.7**

8.10.11.3 Remove the Left Deck Pickup Solenoid

- 1) Mark the positions of the 2 mounting plates [A].
- 2) Disconnect the connector [1], and remove the screw [2]; then, detach the left deck pickup drive solenoid [3] together with the mounting plate.



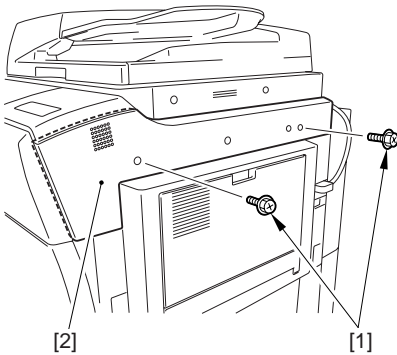


F-8-92

## 8.10.12 Manual Feed Unit

### 8.10.12.1 Removing the Manual Feed Unit

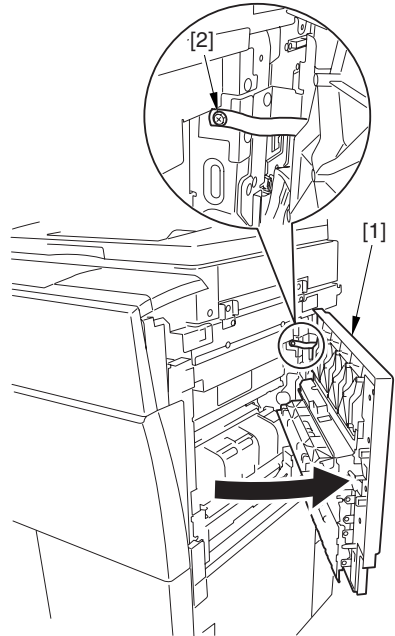
1) Remove the 2 screws [1], and detach the upper right cover [2].



F-8-93

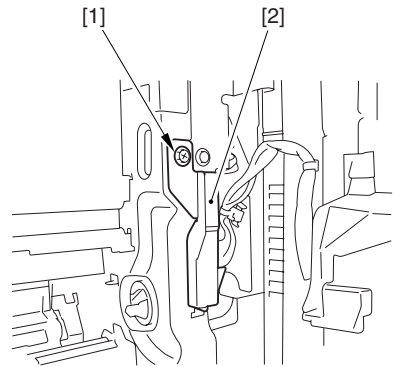
2) Open the right door [1], and remove the

screw [2].



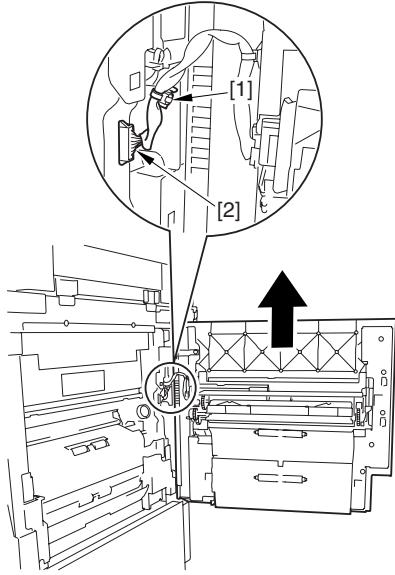
F-8-94

3) Remove the screw [1], and detach the connector cover [2].

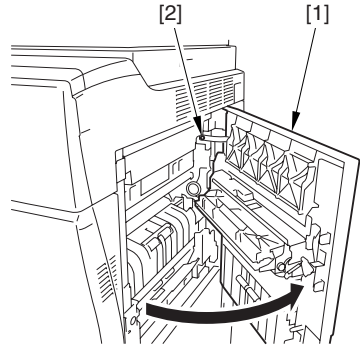


F-8-95

- 4) Detach the reuse band [1], and disconnect the connector [2]; then, lift the right door to detach.



F-8-96



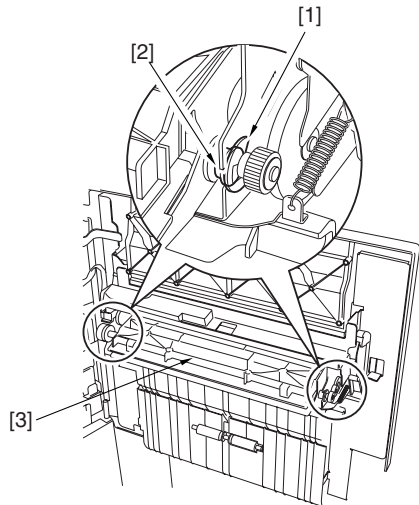
F-8-97

- 2) Remove the two stop rings [1] (left, right), and shift the two bushings [2]; then, detach the manual feed pull-out roller unit.

### 8.10.13 Manual Feed Pull-Out Roller Unit

#### 8.10.13.1 Removing the Manual Feed Pull-Out Roller Unit

- 1) Open the manual feed tray cover [1]; then, remove the screw [2] from the door strap, and fully open the manual feed tray cover [1].



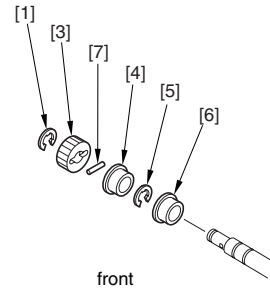
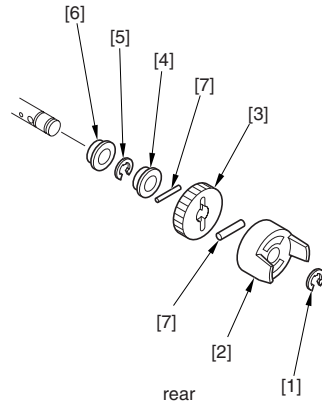
F-8-98

### 8.10.13.2 Removing the Manual Feed Pull-Out Roller

- 1) Remove the two E-rings [1] (left, right).
- 2) Remove the stopper [2], two gears [3], and two bushings [4].
- 3) Remove the two E-rings [5] and two bushings [6]; then, detach the manual feed pull-out roller.



When removing the stopper [2] and the gear [3], take care not to lose the three parallel pins [7]; they will slip off.



F-8-99

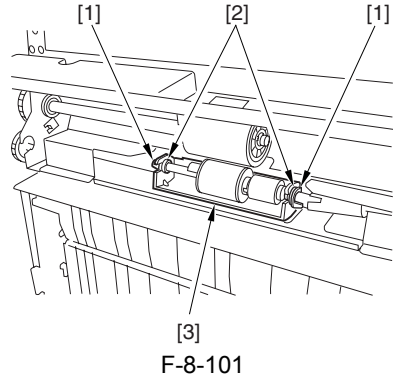
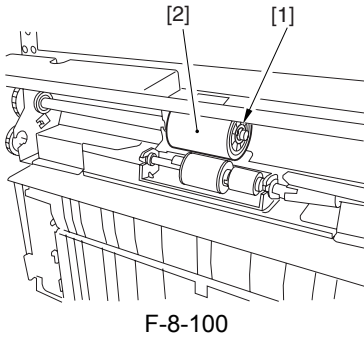
### 8.10.14 Manual Feed Roller

#### 8.10.14.1 Removing the Manual Feed Pull-Out Roller Unit

**Refer to Procedure 8.10.13**

### 8.10.14.2 Removing the Manual Feeding Roller

- 1) Remove the stop rings [1], and detach the feeding roller [2].



- 2) Disengage the hook [1] of the separation roller assembly, and detach the separation roller [2].

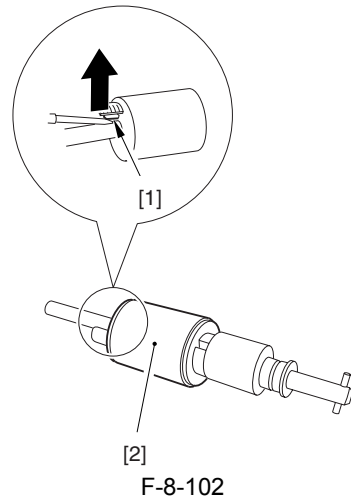
### 8.10.15 Manual Separation Roller

#### 8.10.15.1 Removing the Manual Feed Pull-Out Roller Unit

Refer to Procedure 8.10.13

#### 8.10.15.2 Removing the Separation Roller

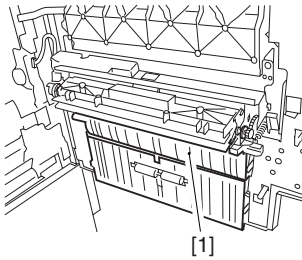
- 1) Remove the two stop rings [1] (left, right), and remove the two bushings [2]; then, detach the separation roller assembly [3].



### 8.10.15.3 Adjusting the Pressure of the Separation Roller of the Manual Feed Tray

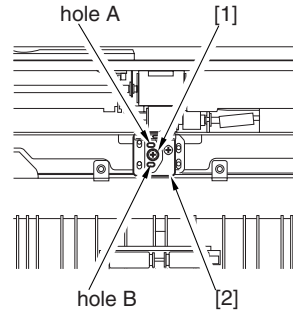
If double feeding or pickup failure occurs during pickup, adjust the position of the pressure spring of the separation roller.

- 1) Remove the right upper cover.
- 2) Remove the upper guide [1].



F-8-103

- If double feeding occurs, remove the mounting screw [1], and lower the mounting base [2]; then, tighten the mounting screw [1] in hole A.
- If pickup failure occurs, remove the mounting screw [1], and raise the mounting base [2]; then, tighten the mounting screw [1] in hole B.

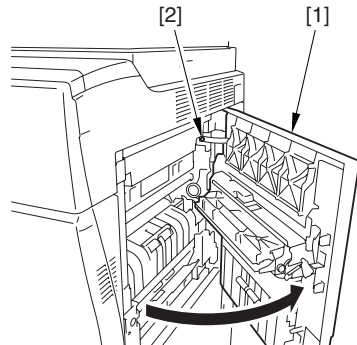


F-8-104

### 8.10.16 Manual Feed Tray sensor

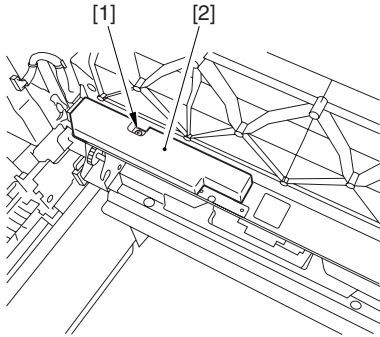
#### 8.10.16.1 Removing the Manual feed Tray Paper Sensor

- 1) Open the manual feed tray cover [1]; then, remove the screw [2] from the door strap, and fully open the manual feed tray cover [1].

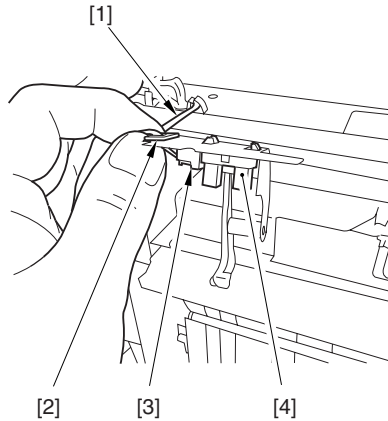


F-8-105

- 2) Remove the mounting screw [1], and detach the cover [2].

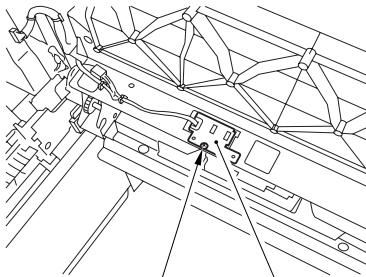


F-8-106



F-8-108

- 3) Remove the mounting screw [1], and detach the sensor unit [2].



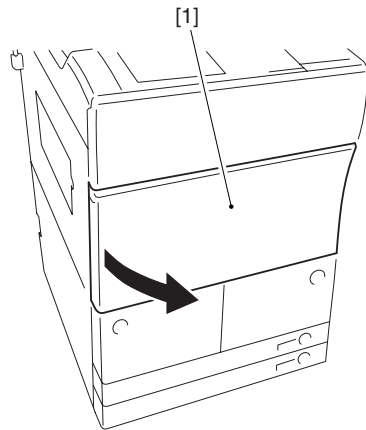
F-8-107

- 4) Free the harness [1] from the harness guide [2], and disconnect the connector [3].
- 5) Remove the sensor [4].

## 8.10.17 Registration Roller

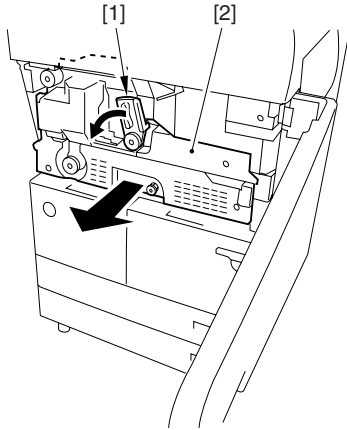
### 8.10.17.1 Removing the Fixing Upper Unit

- 1) Open the front cover [1].



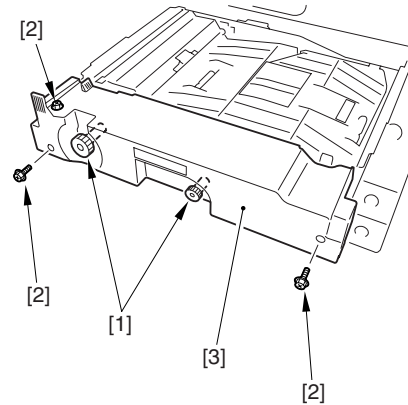
F-8-109

- 2) Turn the fixing feed unit releasing lever [1] counterclockwise to release the lock; then, hold the lever [1], and slide out the fixing feed unit [2] toward the front until it stops. (At this time, the duplexing feed unit will also slide out.)



F-8-110

- 3) Remove the 2 jam removal levers [1] of the duplexing feed unit; then, remove the 3 screws [2], and detach the duplexing feed front cover [3].



F-8-111

- 4) While pushing the hook shaft [1] found at the rear of the fixing feed unit in the direction of the arrow (i.e., toward the machine's front), turn the fixing feed unit releasing lever [2] clockwise to lock it in place.

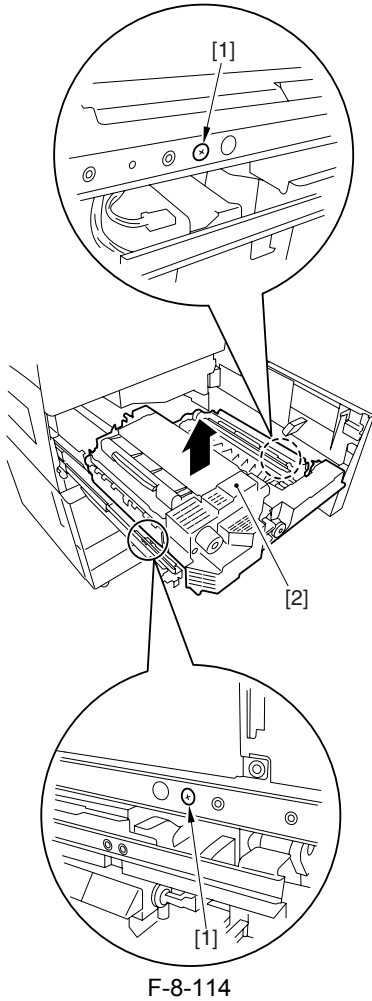
2

2 stopper plates [1] of  
y of the fixing feed unit  
side, slide out the fixing  
to the front.

F-8-113

6) Remove the 2 screws [1], and detach the  
fixing feed unit [2] from the rail.



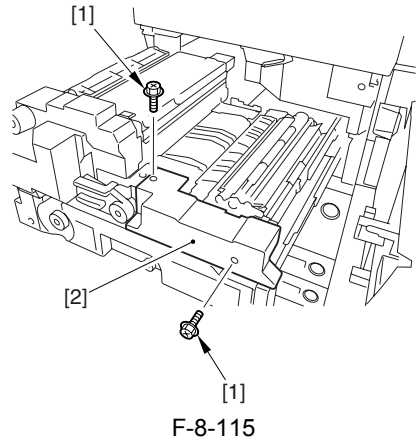


F-8-114

### 8.10.17.2 Removing the Transfer/Separation Corona Assembly

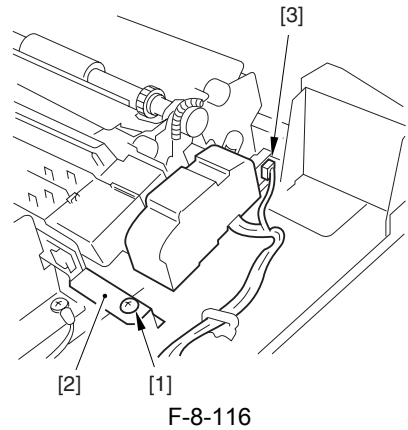
- 1) Remove the two screws [1], and detach the feeding right cover of the fixing/

feeding unit [2].



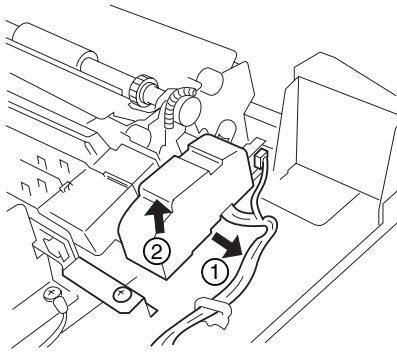
F-8-115

- 2) Remove the screw [1] and the fixture [2], and then remove the connector [3].

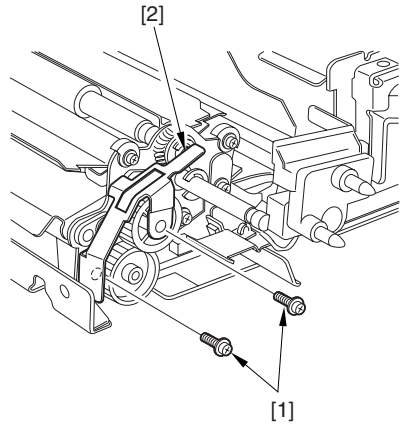


F-8-116

- 3) Pushing the front and the rear of the transfer/separation corona assembly, pull out the assembly to the front and remove it in the direction of upper left.



F-8-117



F-8-118



Be aware not to cut the nylon wire by coming into contact the transfer/separation corona assembly to the transfer guide.

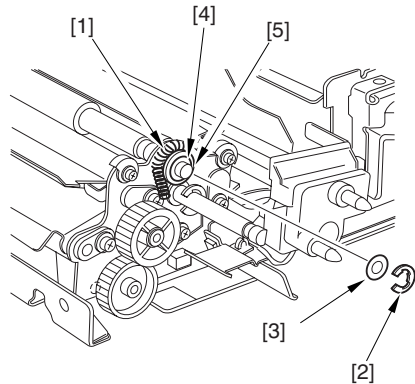
- 2) Remove the following from the back:
  - spring [1]
  - E-ring [2]
  - spacer [3]
  - bearing [4]
  - stopper [5]

### 8.10.17.3 Removing the Registration Clutch

Refer to Procedure 8.10.19

### 8.10.17.4 Removing the Registration Roller

- 1) Remove the two mounting screws [1], and detach the protection cover [2].

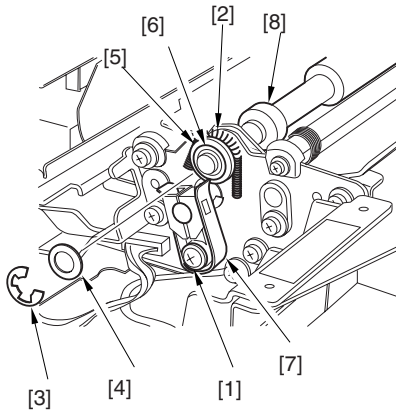


F-8-119

3) Remove the following from the front:

- screw [1]
- spring [2]
- E-ring [3]
- spacer [4]
- bearing [5]
- stopper [6]
- break [7]

4) Remove the registration roller [8].



F-8-120

## 8.10.18 Pre-Registration Motor

8.10.18.1 Removing the Rear Cover (upper)

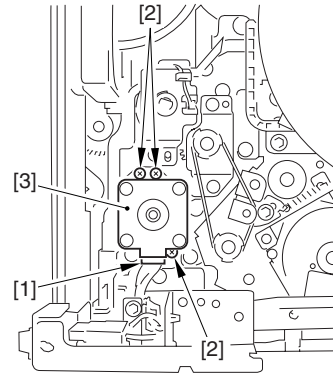
**Refer to Procedure 8.10.3.1**

8.10.18.2 Removing the Main Controller Box

**Refer to Procedure 8.10.3.3**

## 8.10.18.3 Removing the Pre-Registration Motor

1) Disconnect the connector [1], and remove three screws [2]; then, remove the pre-registration motor.



F-8-121

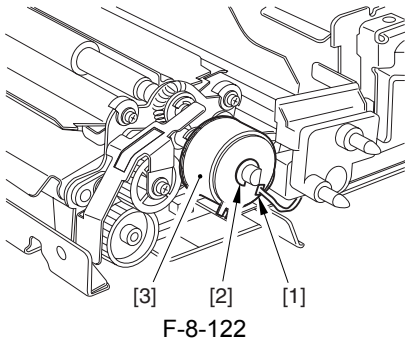
## 8.10.19 Registration Clutch

8.10.19.1 Removing the Fixing Feed Unit

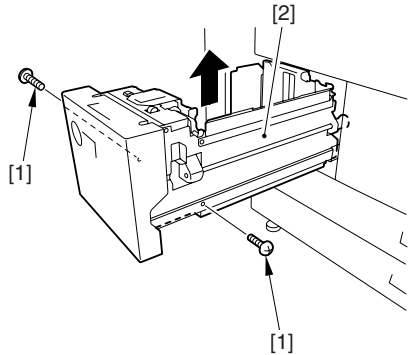
**Refer to Procedure 8.10.25.1**

8.10.19.2 Removing the Registration Clutch

1) Disconnect the connector [1], and remove the E-ring [2]; then, remove the registration clutch [3].



F-8-122



F-8-123

### 8.10.20 Feeding Roller

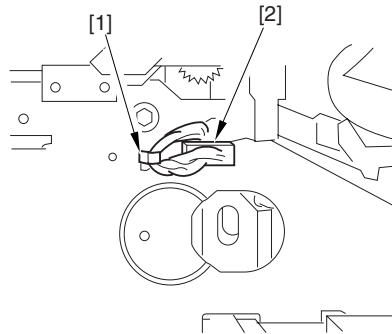
#### 8.10.20.1 Removing the Right Deck/ Cassette Pickup Assembly

Refer to Procedure 8.10.7

#### 8.10.20.2 Removing the Left Pickup Assembly

- 1) Slide out the left deck.
- 2) Remove the two screws [1] found on the left and right sides of the left deck[2]; then, detach the left deck[2].

- 3) Open the front cover.
- 4) Disconnect the connector [1] from inside the machine, and remove the locking support [2].

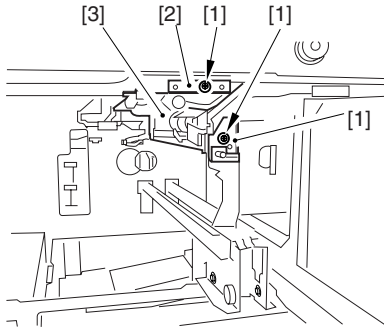


F-8-124

- 5) Remove the two screws [1], and detach the two pickup fixing plates [2]; then, detach the left deck pickup assembly [3].



Keep supporting the pickup assembly; otherwise, the pickup assembly could drop when the fixing plate is removed.

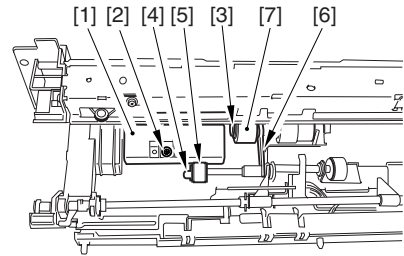


F-8-125

### 8.10.20.3 Removing the Feeding Roller

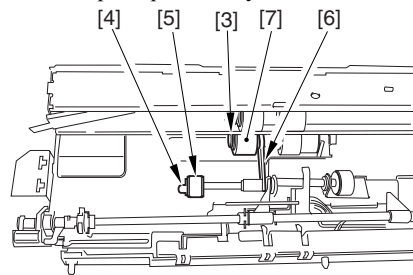
- 1) Remove the screw [2], and detach the feeding roller cover [1]. (For the left deck pickup assembly, skip this step.)
- 2) Remove the resin E-ring [3] found at the front of the feeding roller.
- 3) Remove the resin E-ring [4] found at the front and the pickup roller [5]; then, detach the feeding roller [7] together with the timing belt [6].

### cassette 3/4, right deck pickup assembly



F-8-126

### left deck pickup assembly



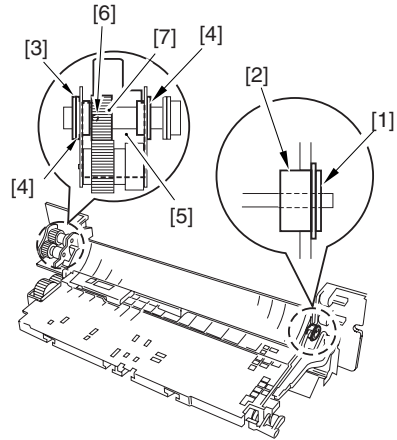
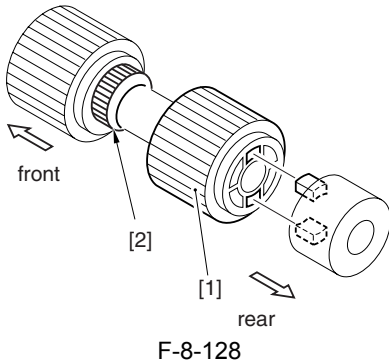
F-8-127

### 8.10.20.4 Orientation of the Feeding Roller of the Deck/Cassette Pickup Assembly

When mounting the feeding roller assembly [1] to the cassette pickup assembly, be sure that the belt pulley [2] is at the front of the machine.



Check to make sure that the protrusion in the roller plate and the roller are engaged securely.



### 8.10.21 Vertical Path Roller

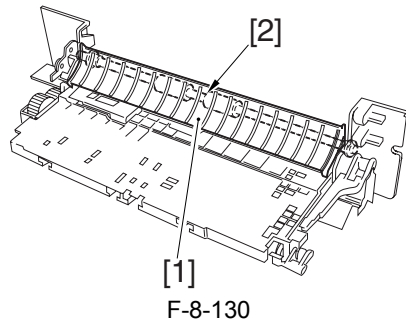
#### 8.10.21.1 Removing the Right Deck/ Cassette Pickup Assembly

Refer to Procedure 8.10.7

#### 8.10.21.2 Removing the Vertical Path Roller 1

- 1) Remove the following from the front:
  - E-ring [1], 1 pc.
  - bearing [2], 1 pc.
- 2) Remove the following from the rear:
  - E-ring [3], 1 pc.
  - bushing [4], 2 pc.
  - roller base [5]
  - blue gear [6]
  - parallel pin [7]

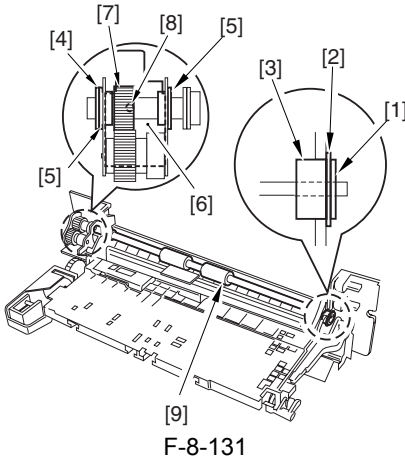
- 3) Remove the guide plate [1], and detach the vertical path roller 1 [2].



#### 8.10.21.3 Removing the Vertical Path Roller 3/4

- 1) Remove the following from the front:
  - E-ring [1], 1 pc.
  - spacer [2], 1 pc.
  - bearing [3], 1 pc.

- 2) Remove the following from the rear:
  - E-ring [4], 3 pc.
  - bushing [5], 2 pc.
  - roller mount [6]
  - blue gear [7]
  - parallel pin [8]
- 3) Remove the vertical path roller 2/3 [9].



## 8.10.22 Vertical Path Motor

- ### 8.10.22.1 Removing the Rear Cover (upper)

**Refer to Procedure 8.10.3.1**

- ### 8.10.22.2 Removing the Rear Cover (lower)

**Refer to Procedure 8.10.3.2**

- ### 8.10.22.3 Removing the Main Controller Box

**Refer to Procedure 8.10.3.3**

- ### 8.10.22.4 Removing the Right Cover (lower rear)

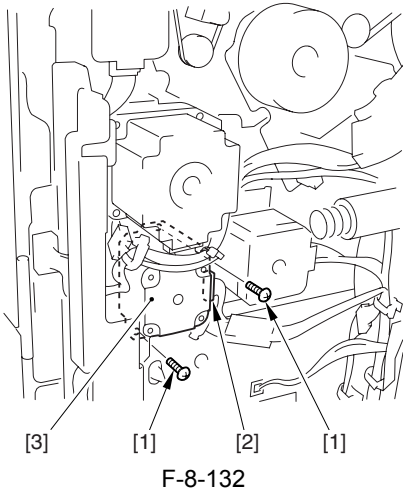
**Refer to Procedure 8.10.3.4**

- ### 8.10.22.5 Removing the Waste Toner Bottle Holder

**Refer to Procedure 8.10.3.5**

- ### 8.10.22.6 Removing the Vertical Path Upper Motor

- 1) Disconnect the connector [2], remove the two screws [1], and detach the vertical path upper motor [3].

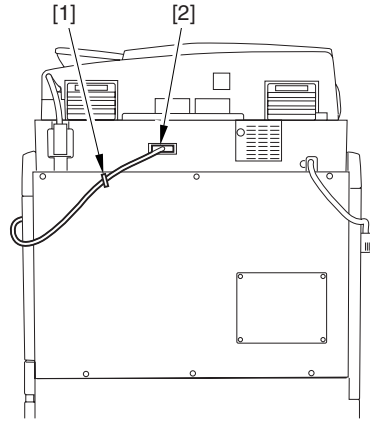


F-8-132

### 8.10.23 Vertical Path Duplex Motor

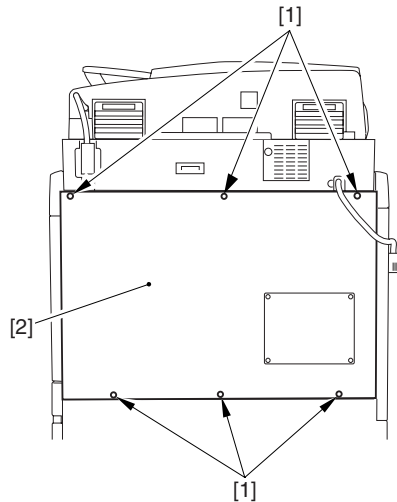
#### 8.10.23.1 Removing the Rear Cover (upper)

1) Open the cable clamp [1], and free the reader unit communications cable [2].



F-8-133

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



F-8-134



### 8.10.23.2 Removing the Rear Cover (lower)

**Refer to Procedure 8.10.3.2**

### 8.10.23.3 Removing the Main Controller Box

**Refer to Procedure 8.10.3.3**

### 8.10.23.4 Removing the Right Cover (lower rear)

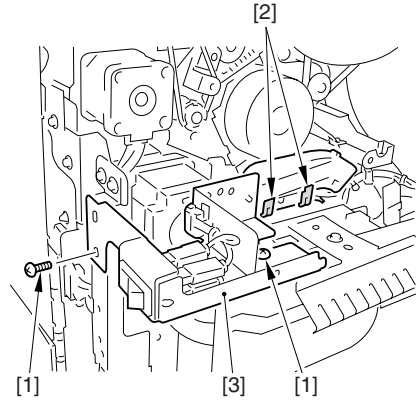
**Refer to Procedure 8.10.3.4**

### 8.10.23.5 Removing the Waste Toner Bottle Holder

**Refer to Procedure 8.10.3.5**

### 8.10.23.6 Removing the Vertical Path Duplex Motor

- 1) Disconnect the connector [2], remove the 3 screws [1], and detach the vertical path duplex motor [3].



F-8-135

## 8.10.24 Vertical Path Lower Motor

### 8.10.24.1 Removing the Rear Cover (upper)

**Refer to Procedure 8.10.3.1**

### 8.10.24.2 Removing the Rear Cover (lower)

**Refer to Procedure 8.10.3.2**

### 8.10.24.3 Removing the Main Controller Box

**Refer to Procedure 8.10.3.3**

### 8.10.24.4 Removing the Right Cover (lower rear)

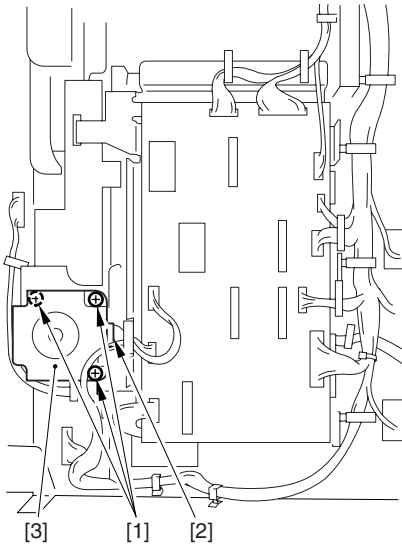
**Refer to Procedure 8.10.3.4**

### 8.10.24.5 Removing the Waste Toner Bottle Holder

Refer to Procedure 8.10.3.5

### 8.10.24.6 Removing the Vertical Path Lower Motor

- 1) Disconnect the connector [2], remove the 3 screws [1], and detach the vertical path lower motor [3].

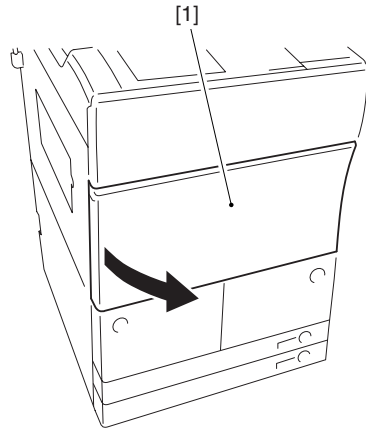


F-8-136

### 8.10.25 Fixing Feeding Unit Releasing Lever Sensor

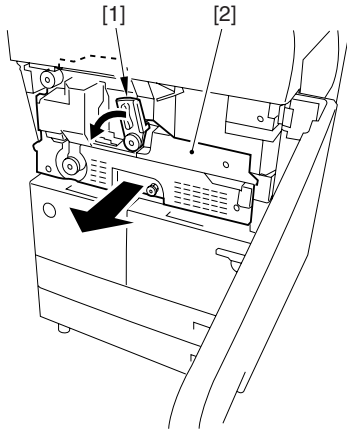
#### 8.10.25.1 Removing the Fixing Feed Unit

- 1) Open the front cover [1].



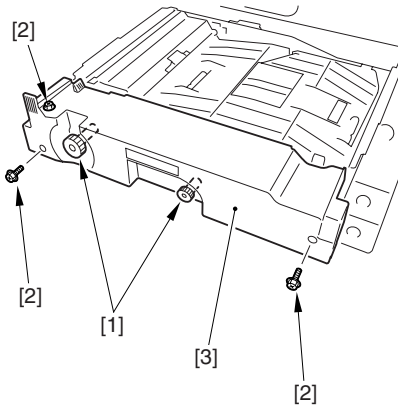
F-8-137

- 2) Turn the fixing feed unit releasing lever [1] counterclockwise to release the lock; then, hold the lever [1], and slide out the fixing feed unit [2] toward the front until it stops. (At this time, the duplexing feed unit will also slide out.)



F-8-138

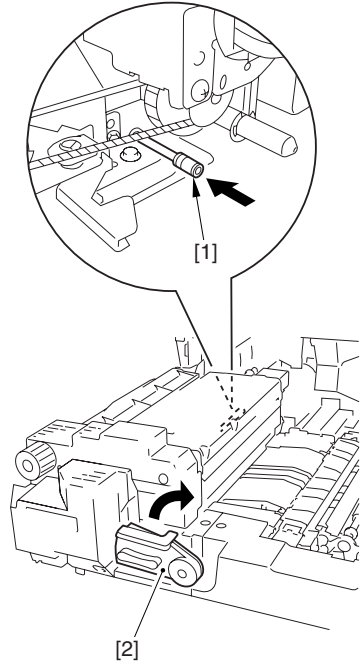
- 3) Remove the 2 jam removal levers [1] of the duplexing feed unit; then, remove the 3 screws [2], and detach the duplexing feed front cover [3].



F-8-139

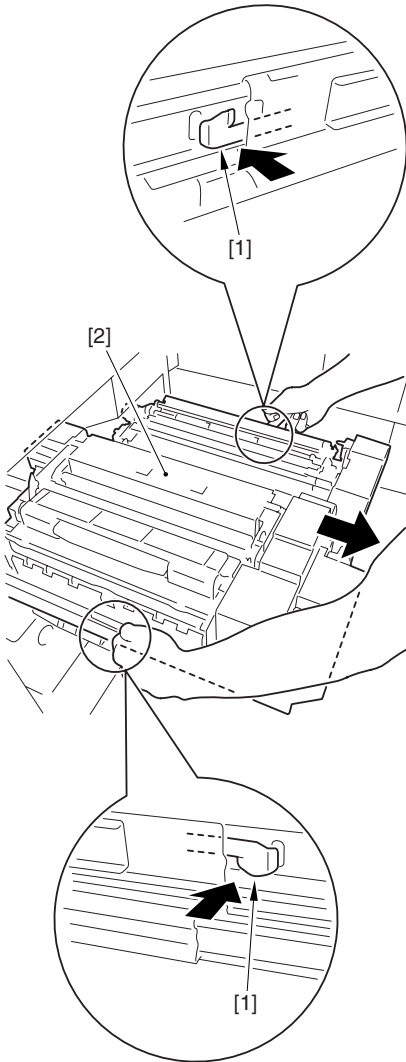
- 4) While pushing the hook shaft [1] found at the rear of the fixing feed unit in the direction of the arrow (i.e., toward the

machine's front), turn the fixing feed unit releasing lever [2] clockwise to lock it in place.



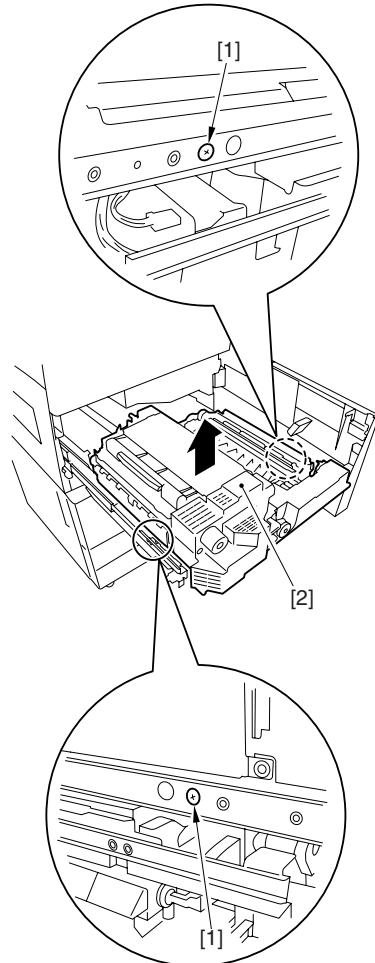
F-8-140

- 5) While pushing the 2 stopper plates [1] of the rail assembly of the fixing feed unit toward the inside, slide out the fixing feed unit [2] to the front.



F-8-141

6) Remove the 2 screws [1], and detach the fixing feed unit [2] from the rail.

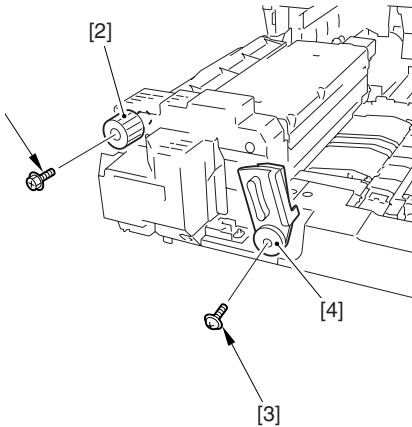


F-8-142

### 8.10.25.2 Removing the fixing Feed unit front cover

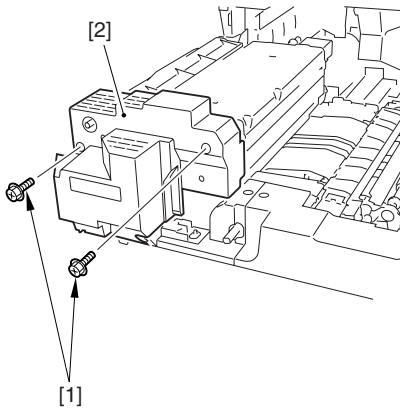
1) Remove the screw [1], and detach the knob [2]; then, remove the screw [3],

and detach the fixing feed unit releasing lever [4].



F-8-143

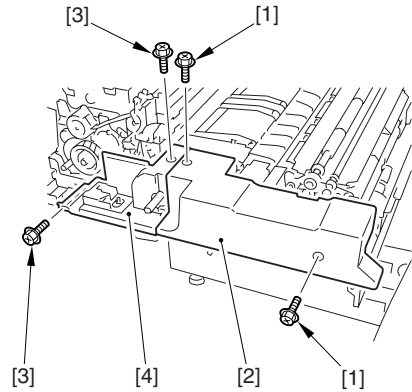
2) Remove the 2 screws [1], and detach the fixing front cover [2].



F-8-144

3) Remove the 2 screws [1], and detach the fixing feed unit front cover [2]; then, remove the 2 screws [3], and detach the

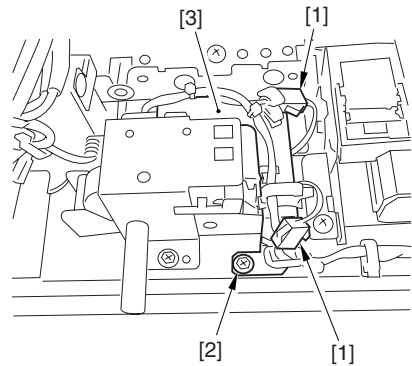
fixing feed unit middle cover [4].



F-8-145

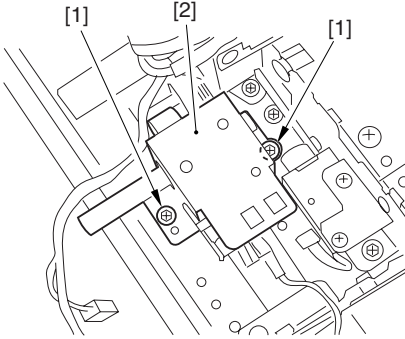
### 8.10.25.3 Removing the Fixing Feed Unit Releasing Lever Switch

1) Disconnect the two connectors [1], and remove the screw [2]; then, detach the harness guide [3].



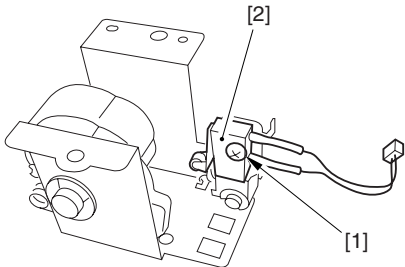
F-8-146

- 2) Remove the two mounting screws [1], and detach the fixing feeding unit releasing lever support [2].



F-8-147

- 3) Remove the mounting screw [1], and detach the releasing lever switch [2].



F-8-148

## 8.10.26 Feeding Belt

### 8.10.26.1 Removing the Fixing Feed Unit

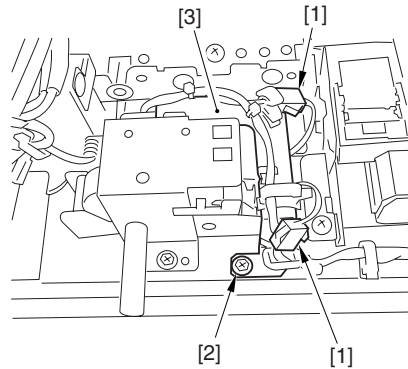
Refer to Procedure 8.10.25.1

### 8.10.26.2 Removing the fixing Feed unit front cover

Refer to Procedure 8.10.25.2

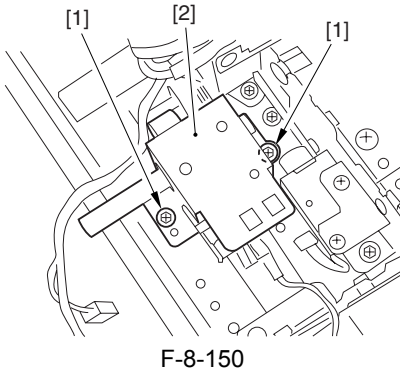
### 8.10.26.3 Removing the Feeding Belt

- 1) Disconnect the two connectors [1], and remove the screw [2]; then, detach the harness guide [3].

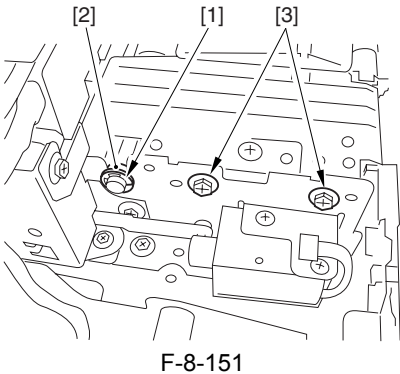


F-8-149

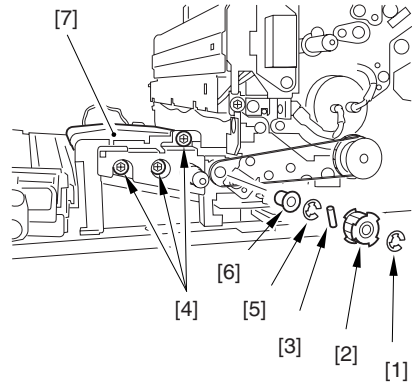
- 2) Remove the two mounting screws [1], and detach the fixing feeding unit releasing lever support [2].



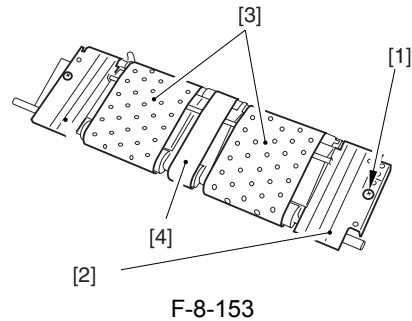
- 3) Remove the E-ring [1], bearing [2], and two screws [3] from the front.



- 4) Remove the E-ring [1], pulley [2], pin [3], three screws [4], E-ring [5], and bearing [6]; then, detach the feeding belt unit [7].



- 5) Remove the mounting screw [1], and detach the cover [2].  
6) Detach the feeding belt [3] and the postcard belt [4].



## 8.10.27 Duplexing Unit

### 8.10.27.1 Removing the Duplex Unit

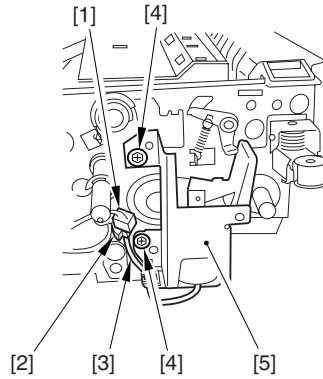
- 1) Slide the duplex unit out of the machine.  
2) Remove the three screws [1] and two

knobs [2]; then, detach the front cover [3].

- 3) Holding the left and right grips [4] of the duplex unit, take it out of the machine.



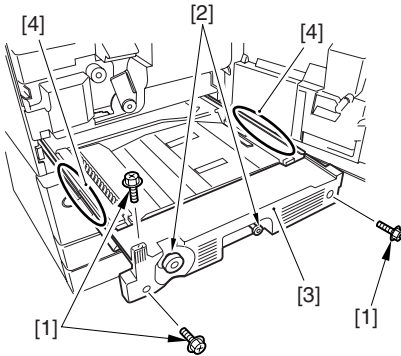
Take care not to trap your hand between the grip and the rail. Further, do not place the duplex unit where it may suffer damage.



F-8-155

### 8.10.27.3 Adjusting the Position of the Reversing Flapper Solenoid(SL8)

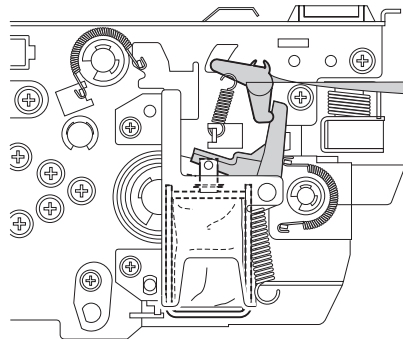
- 1) Adjust the position of the solenoid so that the drive lever [1] is pushed fully when the solenoid turns on (i.e., when the plunger is drawn).



F-8-154

### 8.10.27.2 Removing the Reversing Flapper Solenoid

- 1) Disconnect the connector [1], and free the harness [3] from the guide [2].
- 2) Remove the two mounting screws [4], and detach the reversing flapper solenoid [5].

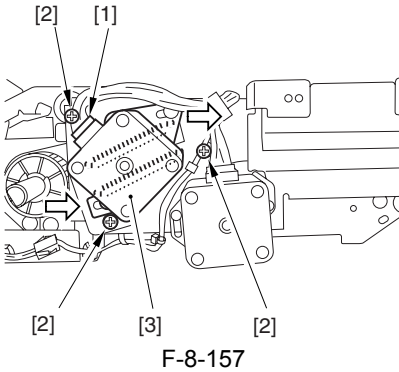


F-8-156

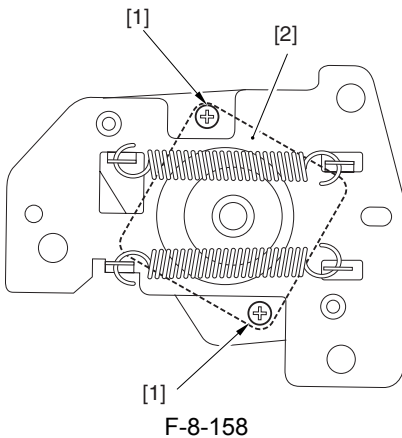


### 8.10.27.4 Removing the Reversal Motor

- 1) Disconnect the connector [1].
- 2) Remove the three mounting screws [2], and detach the reversal motor [3] together with its support plate.

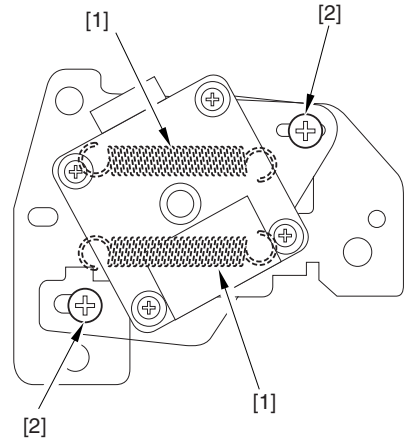


- 3) Remove the two mounting screws [1], and detach the reversal motor [2] from the support plate.

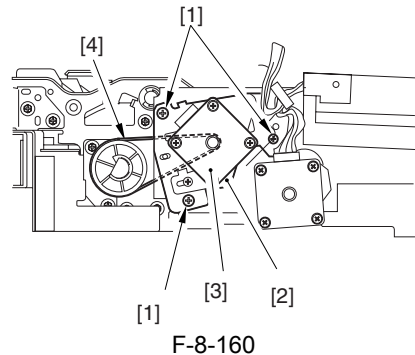


### 8.10.27.5 Mounting the Reversal Motor

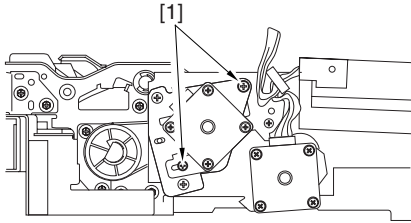
- 1) While the spring [1] has most tension, tighten the two mounting screws [2] temporarily.



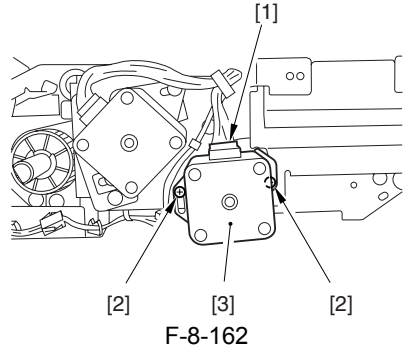
- 2) Mount the support plate [2] (2 pc.) and the motor [3] using three mounting screws [1]; then, attach the timing belt [4].



- 3) Loosen the two screws [1] that have been tightened temporarily, and check to make sure that the spring provides tension; then, tighten the screws [1].



F-8-161



F-8-162

### 8.10.27.7 Removing the Duplex Feeding Right Motor

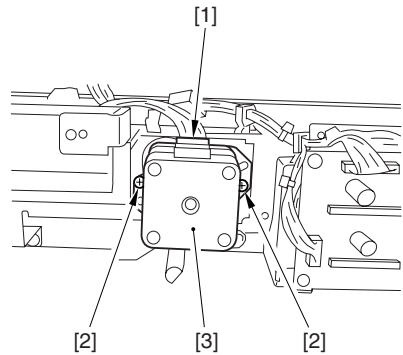
- 1) Disconnect the connector [1], and remove the two screws [2]; then, detach the duplex feeding right motor [3].



At the end, be sure the timing belt has tension.

### 8.10.27.6 Removing the Duplexing Feeding Left Motor

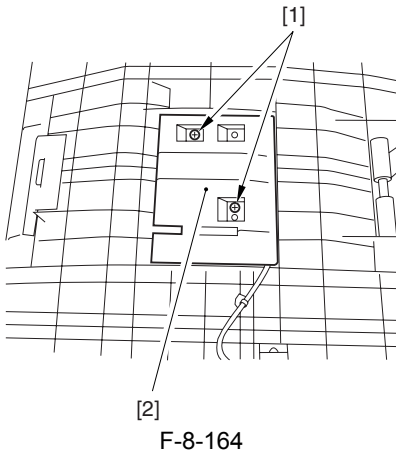
- 1) Disconnect the connector [1], and remove the two screws [2]; then, detach the duplex feeding left motor [3].



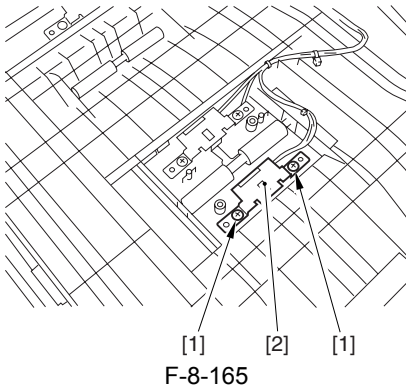
F-8-163

### 8.10.27.8 Removing the Duplex Pre-Registration Sensor

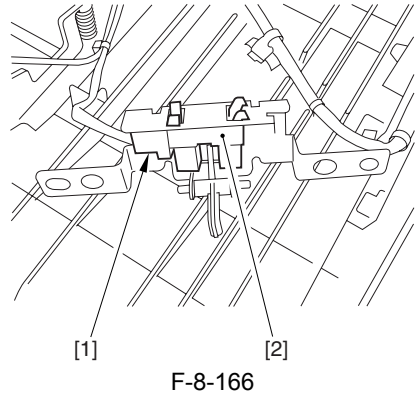
- 1) Remove the two mounting screws [1], and detach the cover [2].



- 2) Remove the two mounting screws [1], and detach the sensor together with its base [2].

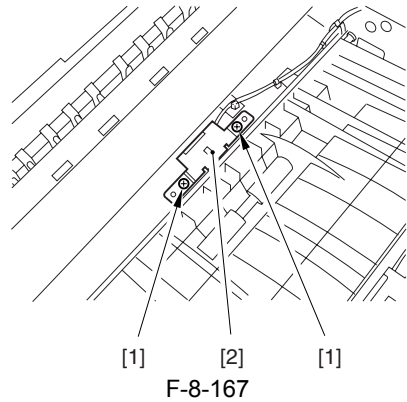


- 3) Disconnect the connector [1], and remove the sensor [2].

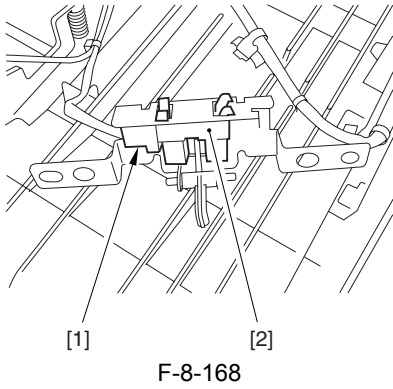


### 8.10.27.9 Removing the Reversal Sensor 1

- 1) Remove the two mounting screws [1], and detach the sensor together with its base [2].

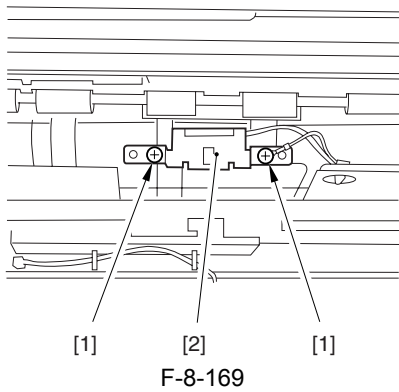


- 2) Disconnect the connector [1], and detach the sensor [2].

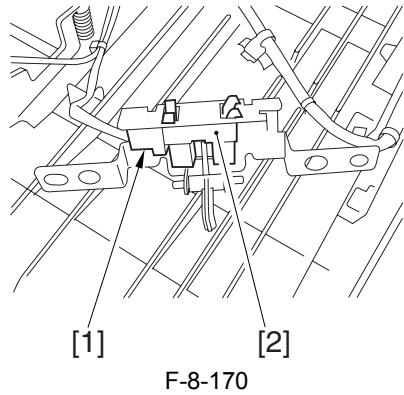


8.10.27.10 Removing the Reversal Sensor 2

- 1) Remove the two mounting screws [1], and detach the sensor together with its base [2].

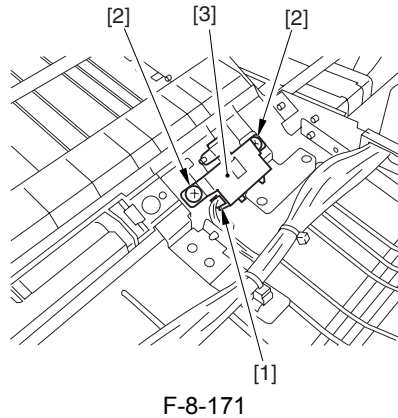


- 2) Disconnect the connector [1], and remove the sensor [2].

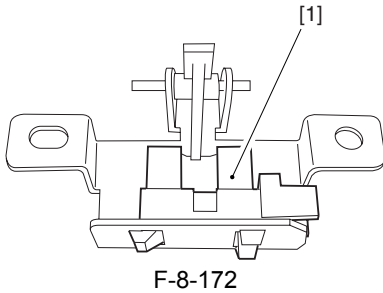


8.10.27.11 Removing the Left Deck Feed Paper Sensor

- 1) Disconnect the connector [1] and remove the two mounting screws [2] from the bottom of the duplex unit; then, detach the sensor together with its base [3].

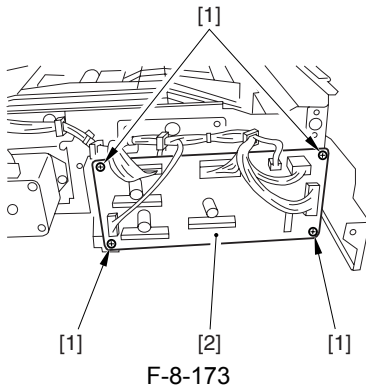


- 2) Remove the left deck feed paper sensor [1].



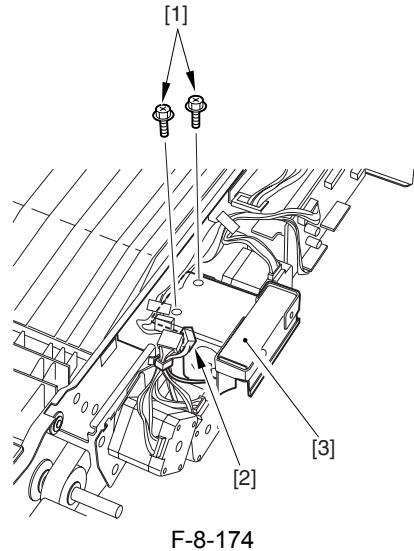
### 8.10.27.12 Removing the Duplex Driver PCB

- 1) Disconnect all connectors from the duplex driver PCB.
- 2) Remove the four mounting screws [1], and detach the duplex driver PCB [2].



### 8.10.27.13 Removing the Duplex Feeding Fan

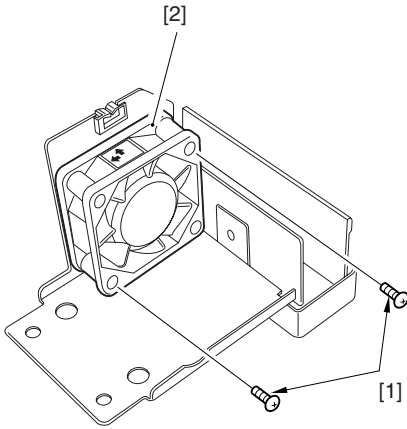
- 1) Remove the two mounting screws [1], and disconnect the connector [2]; then, detach the fan together with its base [3].



- 2) Remove the two mounting screws [1], and detach the duplex feeding fan [2].



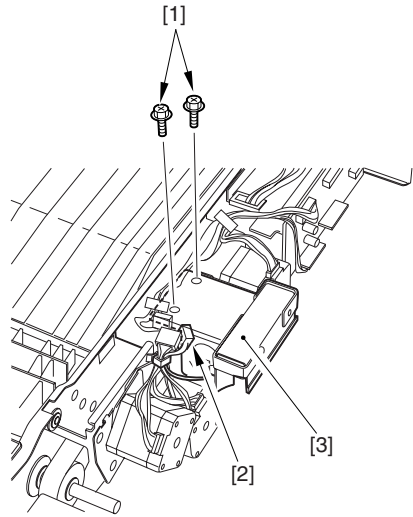
Be sure that the arrow indicating the direction of air is as indicated when mounting the duplex feeding fan.



F-8-175

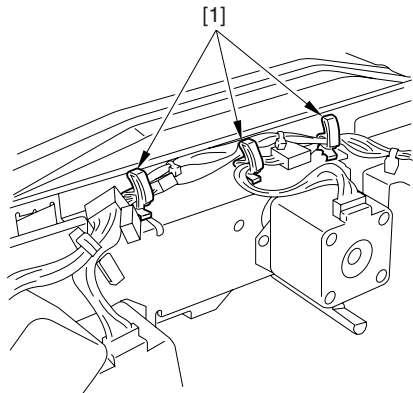
### 8.10.27.14 Removing the Horizontal Registration Unit

1) Remove the two mounting screws [1], and disconnect the connector [2]; then, detach the fan together with its base [3].



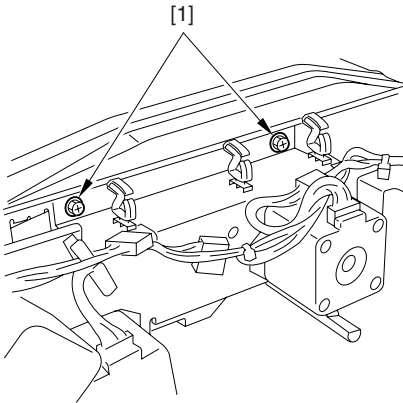
F-8-176

2) Free the cable from the tree clamps [1].



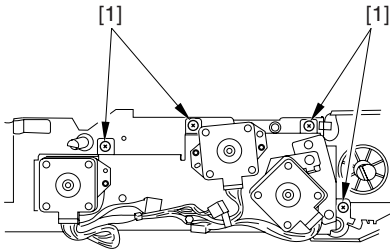
F-8-177

3) Remove the two mounting screws [1].



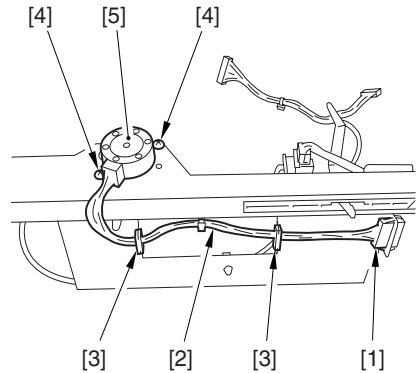
F-8-178

- 4) Turn the duplex unit inside out.
- 5) Remove the four mounting screws [1], and move the duplex unit



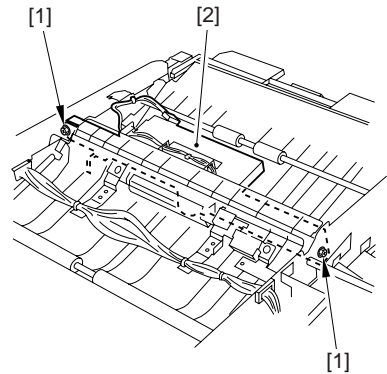
F-8-179

- 6) Disconnect the connector [1] from the rear, and free the cable from the two edge saddles.



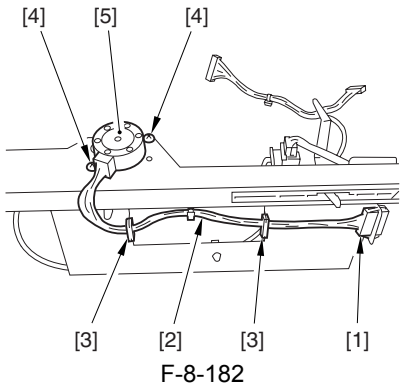
F-8-180

- 7) Remove the two mounting screws [1], and detach the horizontal registration unit [2].



F-8-181

- 8) Disconnect the connector [1], and free the cable [2] from the two clamps [3].
- 9) Remove the two mounting screws [4], and detach the horizontal registration motor [5].



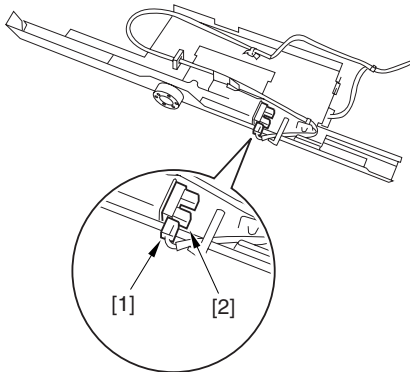
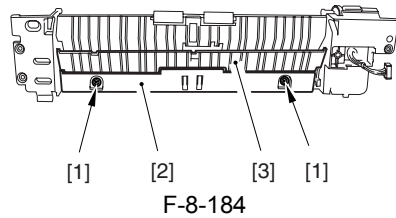
### 8.10.28.2 Removing the Left Deck Pickup Assembly

Refer to Procedure 8.10.8

### 8.10.28.3 Removing the Separation Roller

- 1) Remove the two mounting screws [1], and detach the feed guide plate [2]; then, detach the open/close guide [3]. (Skip this step for the left deck pickup assembly.)

- 10) Disconnect the connector [1], and detach the horizontal registration sensor [2].



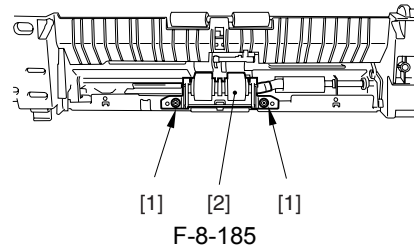
- 2) Remove the two mounting screws [1], and detach the separation roller assembly [2] from the joint. (For the left deck pickup assembly, remove one screw [3].)

- Right Deck/ Cassette Pickup Assembly 3,4

## 8.10.28 Separation Roller

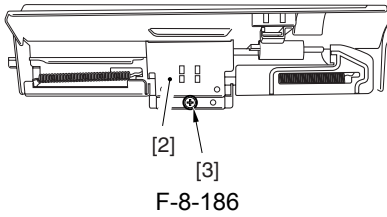
### 8.10.28.1 Removing the Right Deck/ Cassette Pickup Assembly

Refer to Procedure 8.10.7

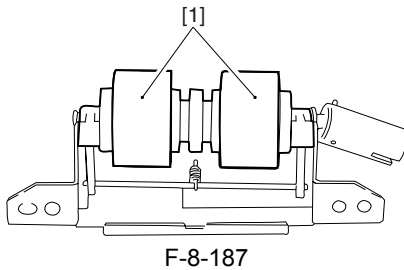




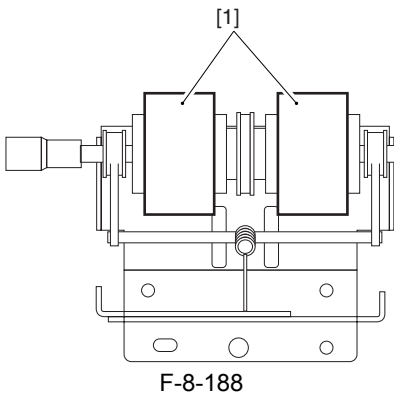
## - Left Deck Pickup Assembly



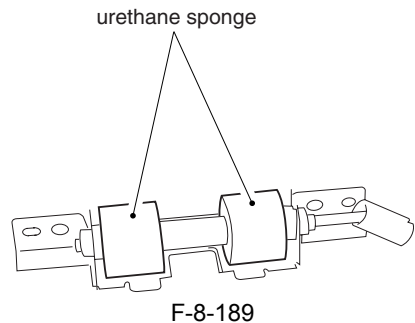
3) Detach the separation roller [1] from the separation roller shaft support.

- Right Deck/ Cassette Pickup Assembly<sup>3,4</sup>

## - Left Deck Pickup Assembly



The urethane sponge used in the part is pink at the beginning, and changes to yellow over time (accelerated if exposed to light; it may appear to change to orange before turning pink). This is a common characteristic of urethane sponge, and does not indicate physical deterioration (performance). In addition, note that the part is not classified by color.

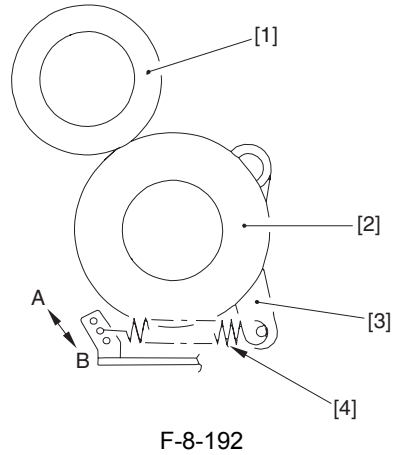
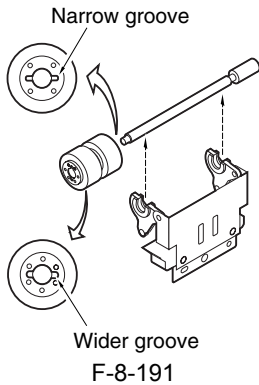
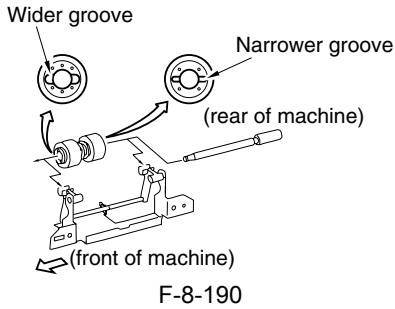


## 8.10.28.4 Orientation of the Separation Roller

When replacing the separation roller, be sure it is oriented as follows:



Mounting the separation roller in the wrong orientation will lead to interference against crimping washer. Make sure it is mounted in the correct orientation.



- [1] Feeding roller
- [2] Separation roller
- [3] Pressure lever
- [4] Pressure spring

### 8.10.28.5 Adjusting the Pressure of the Separation Roller of the Deck/Cassette

If double feeding or pickup failure occurs during pickup, change the position of the pressure spring of the separation roller:

- If double feeding occurs, move the hook of the spring in the direction of B.
- If pickup failure occurs, move the hook of the spring in the direction of A.

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# Chapter 9

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## Fixing System

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## 9.1 Construction

### 9.1.1 Specifications, Control Mechanisms, and Functions

The following shows the major functions of the machine's fixing system:

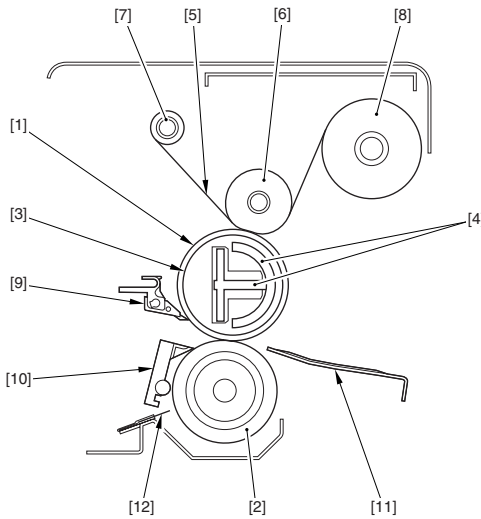
T-9-1

Item	Description
Fixing method	IH fixing
Fixing heater	IH heater
Fixing roller	40 mm dia., 0.65 mm thick
Pressure roller	38 mm outside dia.
Control temperature	decreased gradually from 205 deg C (at standby, 17 deg C or higher) decreased gradually from 215 deg C (at standby, lower than 17 deg C)
Fixing drive control	by fixing roller speed control (speed control according to paper type)
Fixing temperature detention	- Main Thermistor (THM1, contact) fixing roller center; 12 mm reciprocating width temperature control, error detection
	- Sub Thermistor (THM2, contact) fixing roller rear; no reciprocating mechanism shutter control, error detection
	- Shutter thermistor (THM3; contact) fixing roller rear; 12 mm reciprocating width shutter control, error detection
Protective mechanism	Executes the following error detection; in response to an error, cuts power to the fixing heater:
	- thermistor temperature detention (THM1/THM2/THM3)  - thermal switch (TP1) operating temperature: 200 +/-5 deg C
Separation claw	upper separation claw: contact type (3 mm reciprocating width) lower separation claw: contact type (no reciprocating mechanism)
Bias application	no
Static eliminator	yes; for both fixing roller and pressure roller

Item	Description
Cleaning mechanism	oil application by web
Inlet guide	re-configured according to paper type/length
Extra-small size support	control of heating area by flux blocking plate (shutter)
Pressure release mechanism	no

### 9.1.2 Major Components

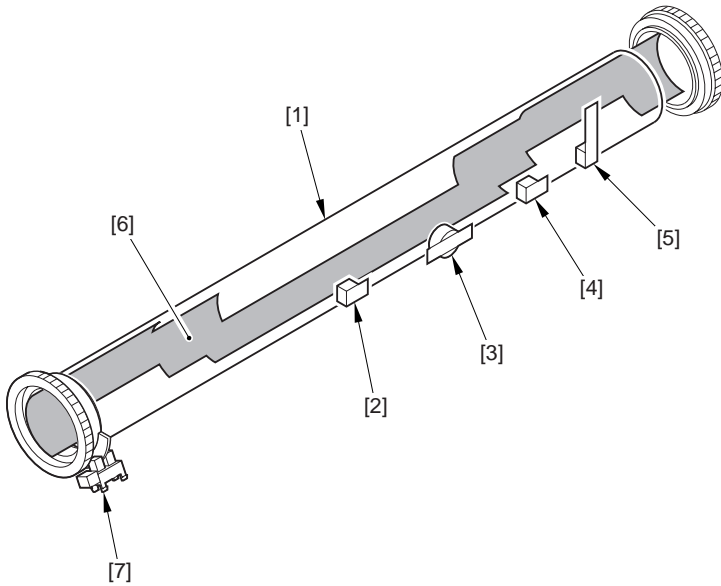
The following shows the major components of the machine's fixing system:



F-9-1

T-9-2

- |                                  |                            |
|----------------------------------|----------------------------|
| [1] Fixing roller                | [7] Web takeup roller      |
| [2] Pressure roller              | [8] Web feed roller        |
| [3] Heater unit                  | [9] Upper separation claw  |
| [4] Heater assembly (coil, core) | [10] Lower separation claw |
| [5] Fixing cleaning web          | [11] Fixing inlet guide    |
| [6] Web roller                   | [12] Static eliminator     |



F-9-2

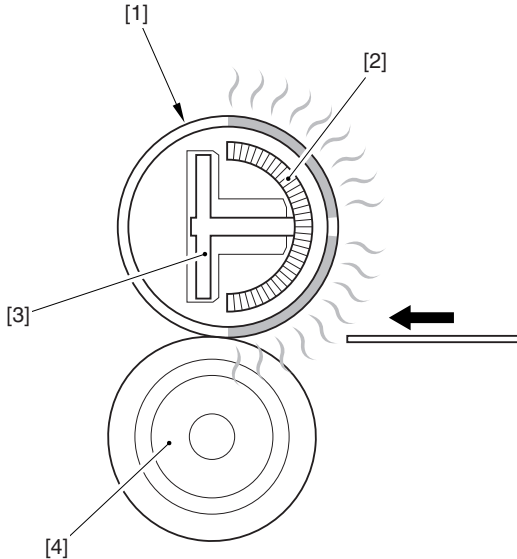
T-9-3

- |                               |                                   |
|-------------------------------|-----------------------------------|
| [1] Fixing roller             | [5] Sub thermistor (THM2)         |
| [2] Main thermistor (THM1)    | [6] Flux blocking plate (shutter) |
| [3] Thermal switch (TP1)      | [7] Shutter HP sensor (PS53)      |
| [4] Shutter thermistor (THM3) |                                   |



### 9.1.3 IH Fixing Method (outline)

The machine uses the IH fixing method.

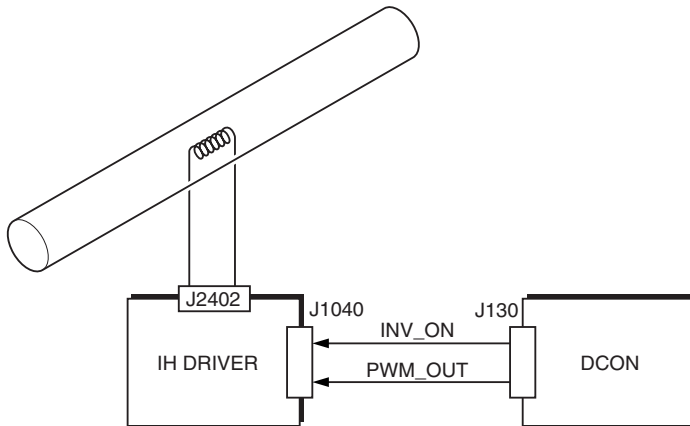


F-9-3

- [1] Fixing roller
- [2] Excitation coil
- [3] Core
- [4] Pressure roller

Note:

The arrow in the figure shows the direction of paper movement.



F-9-4

INV\_ON: fixing heater power ON signal

PWM\_OUT: fixing heater power supply control signal

DCON: DC controller PCB

IH DRIVER: fixing heater driver PCB

### MEMO:

The term IH stands for "induction heating."

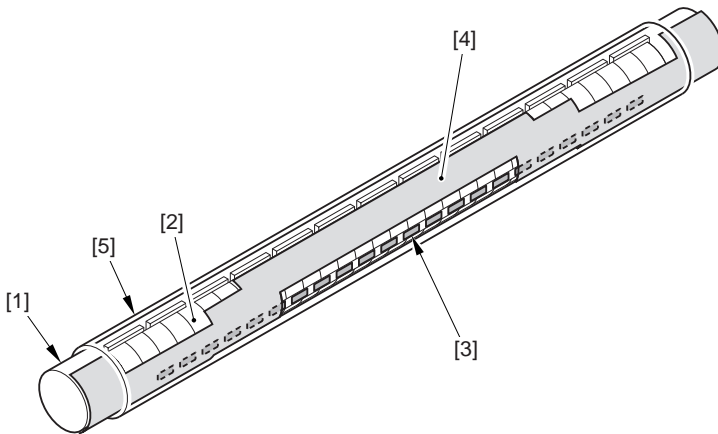
When high-frequency current is supplied to a coil arranged inside a heater unit, a high-frequency magnetic field develops around the coil. The field serves to permit the flow of eddy current (induction current) to the fixing roller, causing the roller to heat on its own.

### Characteristics:

The use of the IH method enables the fixing roller to warm up quickly, permitting a reduction in warm-up time (30 sec) as well as of power consumption.

### 9.1.4 Limiting the Rise in Temperature at the Roller Edges by Use of a Flux blocking Plate (shutter)

When small-size paper is used, the temperature of the areas of the fixing roller surface with which the paper will not come into contact will increase (overheating of the edges). To limit such a rise to a minimum, the machine is equipped with a flux blocking plate (shutter; made of non-magnetic material), and the fact helps maintain a high level of productivity when small-size paper is used.



F-9-5

- [1] Heater coil
- [2] Coil
- [3] Core
- [4] Shutter (The figure shows the position of the shutter for small-size paper.)
- [5] Fixing roller

## 9.2 Basic Sequence

### 9.2.1 Outline

T-9-4

State	Sequence	Description
At power-on	30-sec start-up mode	When all the following conditions exist: - the environment temperature is 17 deg C or higher - the site is a low-humidity environment - the temperature of the fixing roller is 70 deg C or lower
	Low-temperature start-up mode	When all the following conditions exist: - the site is a high-humidity environment - the temperature of the fixing roller is 70 deg C or lower
	High humidity environment start-up mode	This mode is used when all the following conditions exist: - the site is in a high humidity environment. - the temperature of the fixing roller is 70 deg C or lower.
	Recovery mode	The temperature of the fixing roller is 70 deg C or higher.
In wait	Standby mode	To limit power consumption, the target temperature is decreased at specific time intervals after the end of start-up.
	Power save mode	To limit power consumption, the target temperature is decreased.
	Sleep mode	To limit power consumption, the target temperature is decreased at specific time intervals after the end of start-up.
In normal use	Copier/printer mode	To limit power consumption, the target temperature is decreased at specific time intervals after the end of start-up.
	Down sequence	None

State	Sequence	Description
Special mode	Fixing enhancement mode	To enhance fixing, the machine changes the start-up sequence and the control temperature.
	Heavy paper mode	To ensure fixing on heavy paper, the machine changes the target temperature and copying/printing speed.
	Transparency mode	To ensure fixing on transparencies, the target temperature is increased.
	Bond paper mode	To ensure fixing for bond paper, machine increases the target temperature in a low-temperature environment while decreasing the copying/printing speed.

### 9.2.2 30-Sec Start-Up Mode

<Conditions of Use>

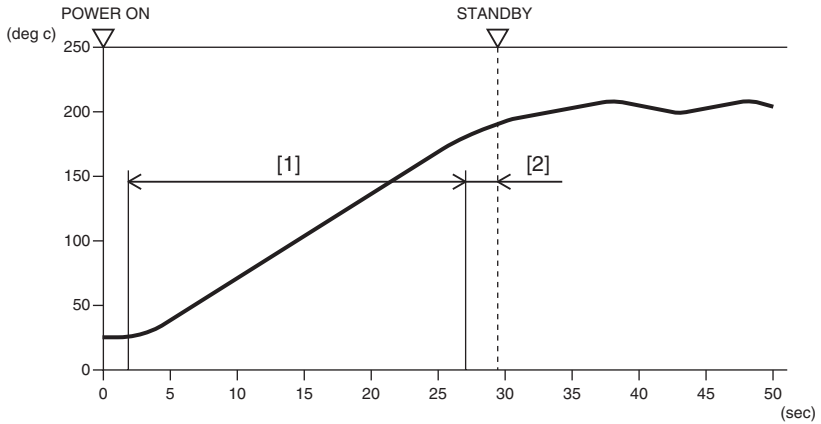
When all the following conditions exist:

- the environment temperature is 17 deg C or higher.
- the site is a low-humidity environment (absolute moisture content is 13 g or less)
- the temperature of the fixing roller is 70 deg C or less

<Characteristics>

The target temperature of the fixing roller is 205 deg C.

However, the machine shifts to standby mode regardless of whether the temperature of the fixing roller reaches the target or not when 29.5 sec passes after power-on.



F-9-6

[1] Fixing roller 1/4-speed rotation

[2] Fixing roller 1/1-speed rotation

### 9.2.3 Low-Temperature Environment Start-Up Mode

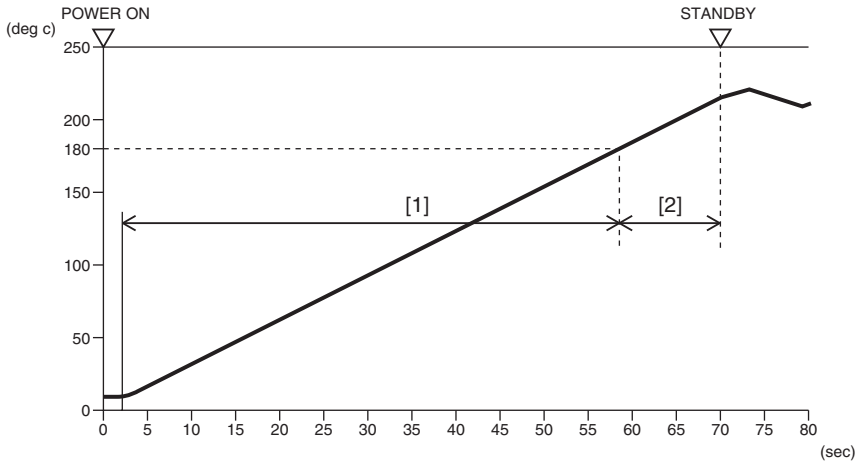
#### <Conditions of Use>

When all the following conditions exist:

- the environment temperature is lower than 17 deg C
- the temperature of the fixing roller is 70 deg C or lower

#### <Characteristics>

- The target temperature for the fixing roller is 215 deg C.
- If all the following conditions exist, the machine shifts to standby mode:
  - the temperature of the fixing roller has reached the target temperature.
  - potential control has ended
- The machine takes 75 sec or less to move from power-on to standby states. (reference only)



F-9-7

- [1] Fixing roller 1/4-speed rotation
- [2] Fixing roller 1/1-speed rotation

### 9.2.4 High-Humidity Environment Start-Up Mode

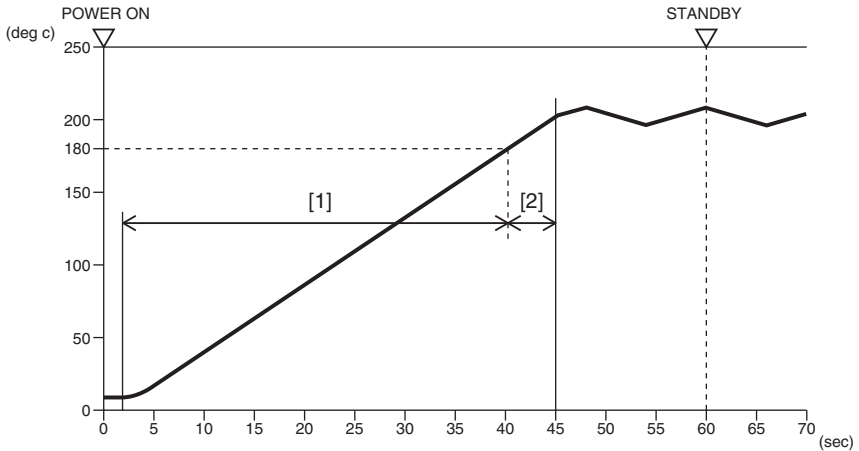
<Conditions of Use>

When all the following conditions exist:

- the site is a high-humidity environment (absolute moisture content is 13 g or more)
- the temperature of the fixing roller is 70 deg C or lower

<Characteristics>

- The target temperature for the fixing roller is 205 deg C.
- If all the following condition exist, the machine shifts to standby mode:
  - the temperature of the fixing roller has reached the target temperature.
  - drum potential control has ended.
  - 60 sec (\*1) has passed from power-on.



F-9-8

[1] Fixing roller 1/4-speed rotation

[2] Fixing roller 1/1-speed rotation

## 9.2.5 Recovery Mode

<Conditions of Use>

- The temperature of the fixing roller is 70 deg C or higher.

<Characteristics>

- The target temperature of the fixing roller varies according to the environment temperature.

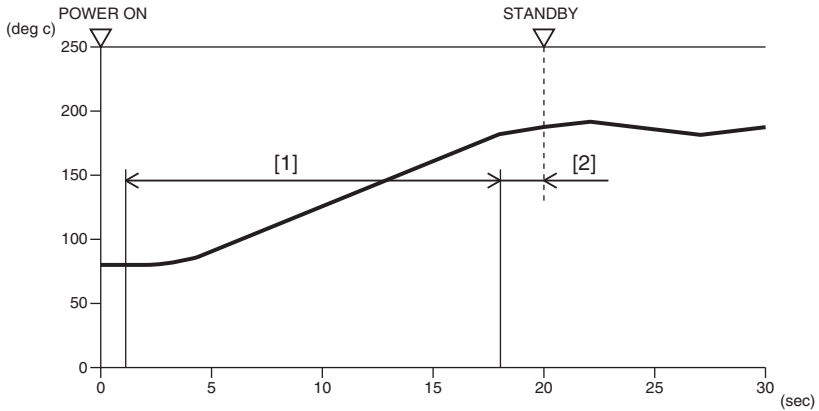
185 deg C if the environment temperature is 17 deg C or higher

195 deg C if the environment temperature is lower than 17 deg C

- When the temperature of the fixing roller reaches the target temperature, the machine shifts to standby mode.

- It takes 30 sec less for the machine to shift from power-on to standby states.





F-9-9

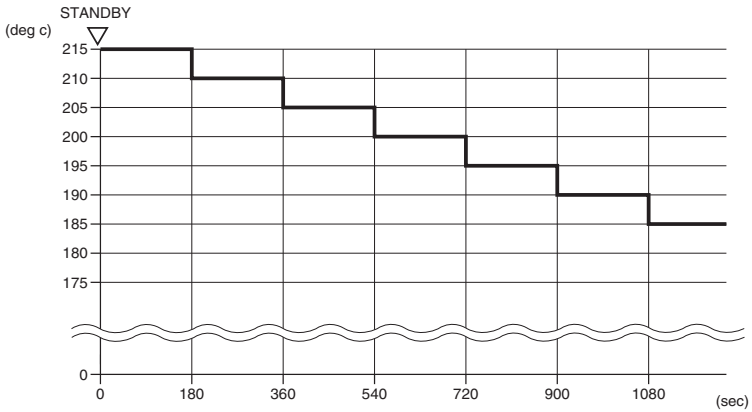
[1] Fixing roller 1/4-speed rotation

[2] Fixing roller 1/1-speed rotation

## 9.2.6 Standby Mode

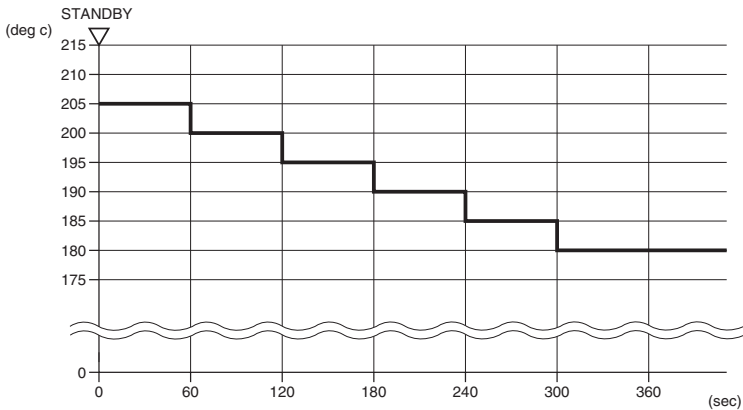
<Characteristics>

- The machine decreases the target temperature by 5 deg C at specific time intervals after a shift to standby mode (to limit power consumption).
- The target temperature and the timing at which it is changed vary depending on the environment temperature (lower than or higher than 17 deg C).
- The target temperature is decreased in steps and, thereafter, maintained to the following:
  - 185 deg C if the environment temperature is less than 17 deg C
  - 180 deg C if the environment temperature is 17 deg C or higher
- If the environment temperature is lower than 17 deg C,



F-9-10

- If the environment temperature is 17 deg C or higher,



F-9-11

---

**MEMO:**

The time that passes from a shift to standby mode is monitored continuously while a copy/print job is under way, and is used for temperature control for copying/printing. (See the descriptions under "Copying/Printing Mode.")

---

### 9.2.7 Power Save Mode

<Characteristics>

- The machine uses the appropriate target temperature for the fixing roller to suit the selected rate of power saving (in user mode).
- The machine uses the appropriate target temperature for the fixing roller to suit the selected rate of power saving (in user mode).

T-9-5

Rate of saving	Standard temperature	Time length to standby
-10% (default)	170 deg C	4 sec or less
-25%	160 deg C	6 sec or less
-50%	140 deg C	8 sec or less

### 9.2.8 Sleep Mode

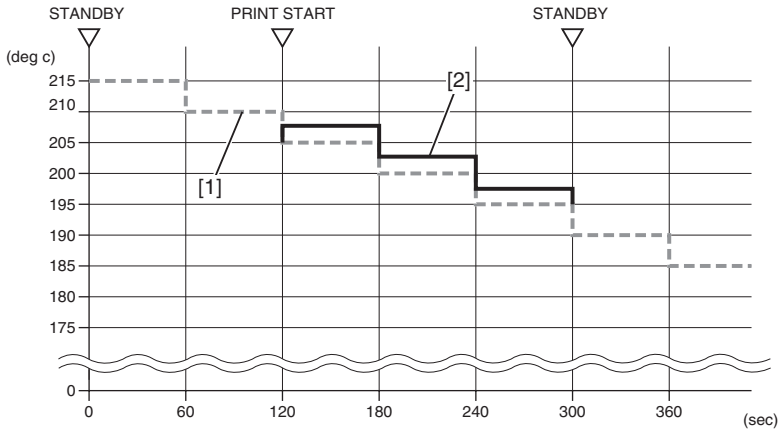
<Characteristics>

- The power to the fixing assembly is cut.
- When the sleep mode is disabled, the machine shifts to standby mode through the start-up mode effective at time of power-on (30-sec start-up, low-temperature environment start-up, high-humidify start-up, recovery).

### 9.2.9 Copying/Printing Mode

<Characteristics>

- The target temperature used while copying/printing is under way is +2 deg C in relation to the temperature used for standby.
- If the environment temperature is lower than 17 deg C

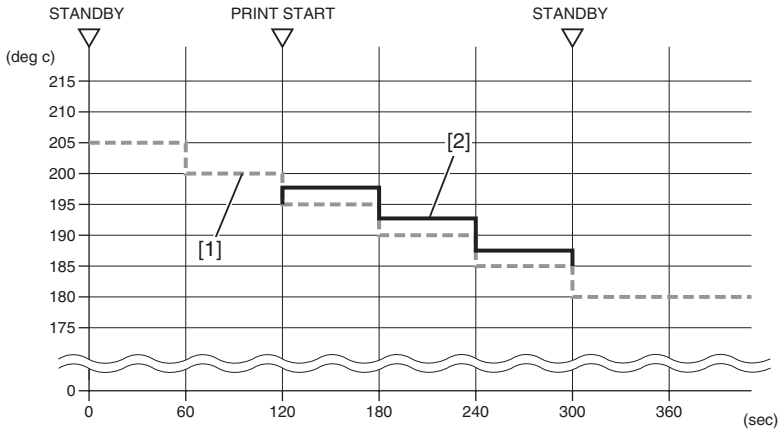


F-9-12

[1] temperature of the fixing roller (deg C)

[2] control temperature during copying

- If the environment temperature is 17 deg C or higher



F-9-13

[1] temperature of the fixing roller (deg C)

[2] control temperature during copying

### 9.2.10 Down Sequence

The machine does not have a down sequence.

### 9.2.11 Enhanced Fixing Mode

To ensure good fixing, the machine changes the control temperature between start-up sequence and standby.

<Conditions of Use>

The mode (i.e., enhanced fixing mode) is selected in service mode.

<Characteristics>

The machine uses different target temperatures between start-up sequence and standby mode.

T-9-6

		at power-on		target temperature for standby mode
		start-up sequence	time used (ref.)	
normal mode	if the temperature of the environment is 17 deg C or higher	30-sec start-up mode, or high humidity environment start-up mode	60 sec (in high humidity environment start-up mode)	See descriptions under "Standby Mode."
	if the temperature of the environment is lower than 17 deg C	low temperature environment start-up mode	75 sec or less	
fixing enhancement mode	if the temperature of the environment is 17 deg C or higher	high humidity environment start-up mode	60 sec	normal standby mode + 10 deg C
	if the temperature of the environment is lower than 17 deg C	low temperature environment start-up mode	120 sec or less	same as normal mode

**SERVICE MODE:****COPIER>OPTION>BODY>FSPD-S1 (Category 2)**

Use it to select enhanced fixing mode:

0: normal (default)

1: enhanced fixing mode

2: not used

---

---

**MEMO:**

If both enhanced fixing mode and heavy paper mode (or, transparency mode) are selected at the same time, heavy paper mode (transparency mode) will be given priority.

---

---

## 9.2.12 Heavy Paper Mode

The machine increases fixing temperature and changes the copying/printing speed to ensure fixing on heavy paper.

## &lt;Conditions of Use&gt;

A cassette for which heavy paper has been selected is used as the source of paper.

## &lt;Characteristics&gt;

- The target temperature differs depending on the environment temperature:
  - if the environment temperature is 17 deg C or higher,
    - > +12 deg C in relation to the target temperature.
  - if the environment temperature is lower than 17 deg C,
    - > 217 deg C.
- The machine starts to feed paper when the reading of the main thermistor becomes identical to the target temperature.
- The copying/printing speed is as follows:
  - pickup from the cassette
    - > 55 cpm/ppm
  - pickup from the manual feeder

-> 44 cpm/ppm

- If the environment temperature is lower than 17 deg C, the machine decreases the target temperature by 5 deg C every 3 min after paper feed (to as low as 192 deg C).
- If the environment temperature is 17 deg C or higher, the machine decreases the target temperature by 5 deg C every 1 min after paper feed (to as low as 192 deg C).
- If the environment temperature is less than 17 deg C, the machine executes idle rotation of the fixing roller for 1 min (to collect heat in the fixing assembly) before starting copying/printing operation.
- If heavy paper exists together with plain paper for output, the machine holds paper at the point of registration until the target temperature for heavy paper is reached.
- If plain paper is picked up while the machine is in heavy paper mode, the machine will use the target temperature for heavy paper for fixing.

### 9.2.13 Transparency Mode

The machine increases the fixing temperature to ensure good fixing on transparencies.

<Conditions of Use>

- The paper type is identified as being "transparency" for the manual feed tray while the tray is used as the source of paper.

<Characteristics>

The target temperature of the fixing roller is 217 deg C.

- The machine starts paper feed d when the reading of the main thermistor becomes identical to the target temperature.
- the copying/printing speed is 44 cpm/ppm.
- if the environment temperature is lower than 17 deg C, the machine starts output 1 min after the end of start-up mode (executes initial rotation for 1 min).
- If a transparency exists among plain paper for output, the machine will hold the paper at the point of registration until the target temperature is reached.
- If plain paper is picked up while the machine is in transparency mode, the machine will continue to use the target temperature for transparencies for fixing.

If a transparency tends to wrap around the fixing roller when the machine is in transparency mode, you can improve separation by decreasing the fixing target temperature for

transparency mode using the following service mode item:

---

**SERVICE MODE:**

**COPIER>OPTION>BODY>OHP-TEMP (Category 2)**

0: normal (default)

1: -5 deg C

2: -10 deg C

3: -15 deg C

4: -20 deg C

---

## 9.2.14 Bond Paper Mode

The machine increases the fixing temperature while decreasing the copying/printing speed in a low-temperature environment to ensure fixing on bond paper.

<Conditions of Use>

A cassette selected for bond paper is used as the source of paper.

<Characteristics>

- if the environment temperature is 17 deg C or higher,  
the target temperature is 205 deg C (same as normal copying/printing mode)
- if the environment temperature is lower than 17 deg C,  
the target temperature is 210 deg C
- the copying/printing speed is 30 cpm/ppm

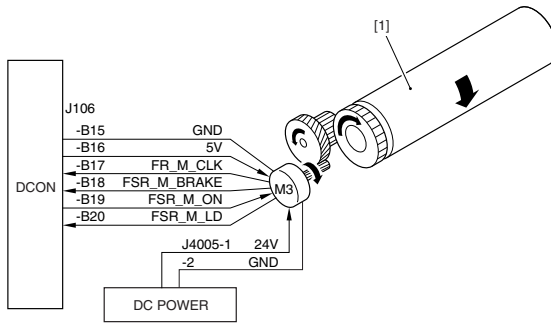


## 9.3 Various Control Mechanisms

### 9.3.1 Fixing Drive System

#### 9.3.1.1 Controlling the Drive of the Fixing Roller

The following shows the construction of the mechanisms used to control the drive of the fixing roller:



F-9-14

- FR\_M\_CLK: fixing motor clock signal
- FSR\_M\_BRAKE: fixing motor brake signal
- FSR\_M\_ON: fixing motor drive signal
- FSR\_M\_LD: fixing motor drive lock signal

- [1] Fixing roller
- M3: fixing motor
- DICON: DC controller PCB
- DC POWER: DC power supply PCB

#### ERROR CODE:

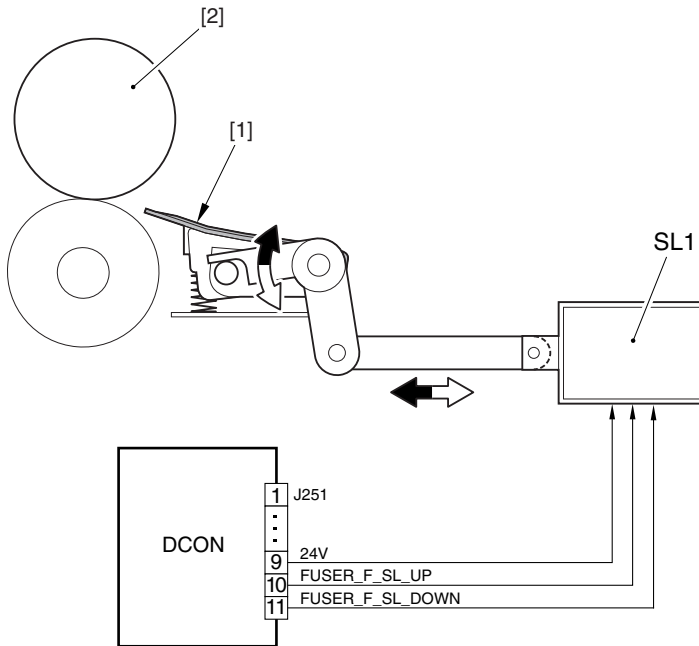
##### E014 (fixing motor error)

0000 After the fixing motor has gone on, the machine does not detect the phase lock signal for the fixing motor for 2 sec or more.

### 9.3.1.2 Controlling the Drive of the Fixing Inlet Guide

The machine controls the height of the fixing inlet guide to suit the type and size of paper being in use, thus preventing the trailing edge of paper from snapping up, rubbing, or wrinkling.

The following shows the mechanisms associated with the drive of the fixing inlet guide.



F-9-15

FUSER\_F\_SL\_UP: fixing inlet guide UP signal

FUSER\_F\_SL\_DOWN: fixing inlet guide DOWN signal

[1] Fixing inlet guide

[2] Fixing roller

DCON: DC controller PCB

SL1: Fixing inlet guide solenoid

The following shows the position (up/down) of the fixing inlet guide controlled to suit the type/size of paper being in use:

T-9-7

Paper type	Paper length	Inlet guide position
Plain paper	less than 257 mm	down
	257 mm or more	up
Heavy paper	-	down

---

**ERROR CODE:**

**E841 (fixing inlet guide solenoid connection detection error)**

0001 At power-on, the connection of the fixing inlet guide solenoid is not detected.

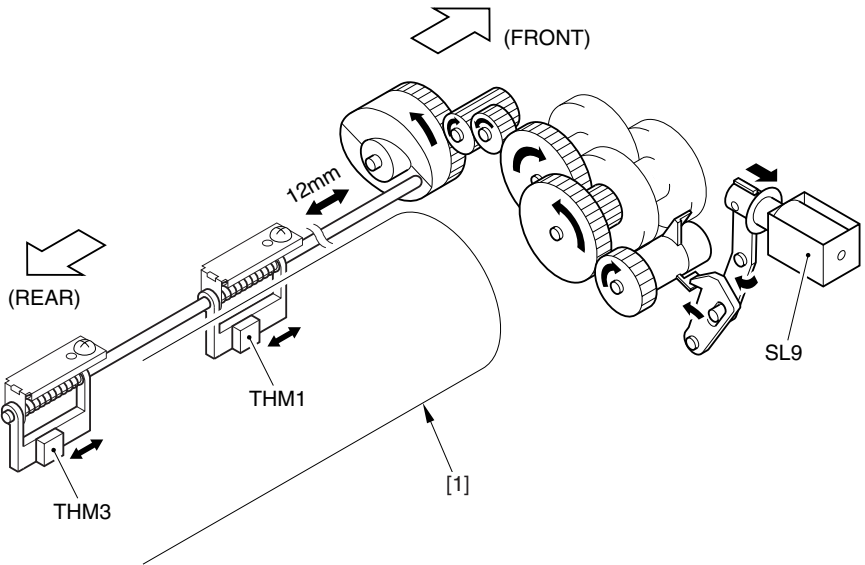
---

**9.3.1.3 Controlling the Reciprocating Movement of the Thermistor**

To prevent damage to the fixing roller by the main thermistor (THM1) or the shutter thermistor (THM3), the thermistor is moved in the axial direction of the fixing roller over a distance of about 12 mm.

The thermistor is moved by the drive from the web drive solenoid (SL9), transmitted to the reciprocating cam by way of a one-way arm.

The following shows the components associated with the mechanism used to control the thermistor reciprocating mechanism:



F-9-16

[1] Fixing roller

SL9: web drive solenoid

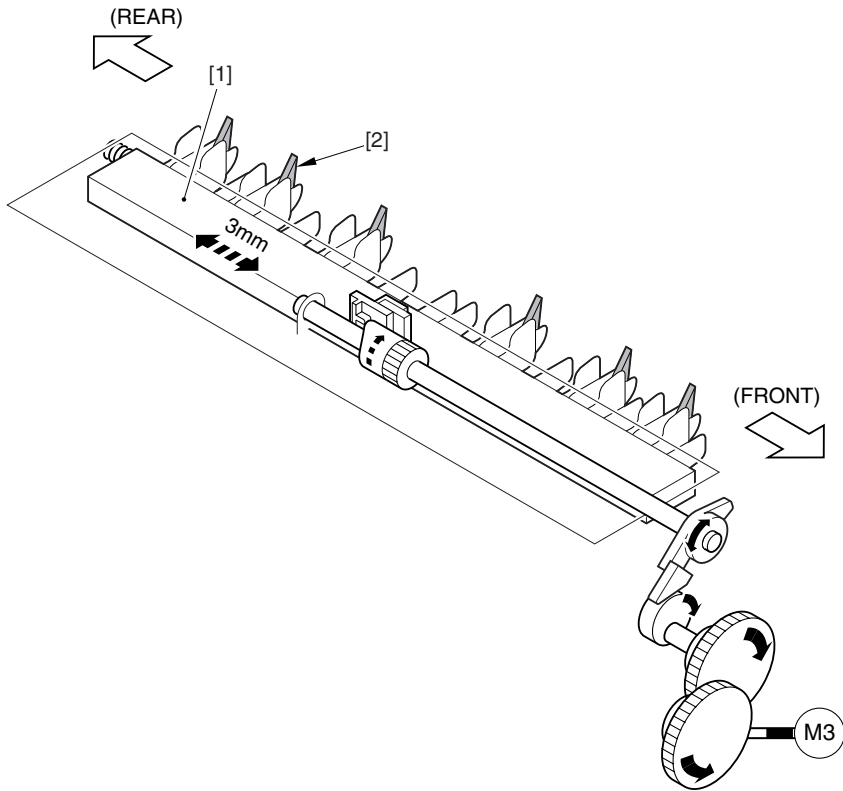
THM1: main thermistor

THM3: shutter thermistor

#### 9.3.1.4 Controlling the Reciprocating Mechanism of the Upper Separation Claw

To prevent damage to the fixing roller by the upper separation claw, the upper separation claw is moved back and forth over a distance of 3 mm in the axial direction of the fixing roller.

The following shows the construction of the components used to control the upper separation claw reciprocating mechanism.



F-9-17

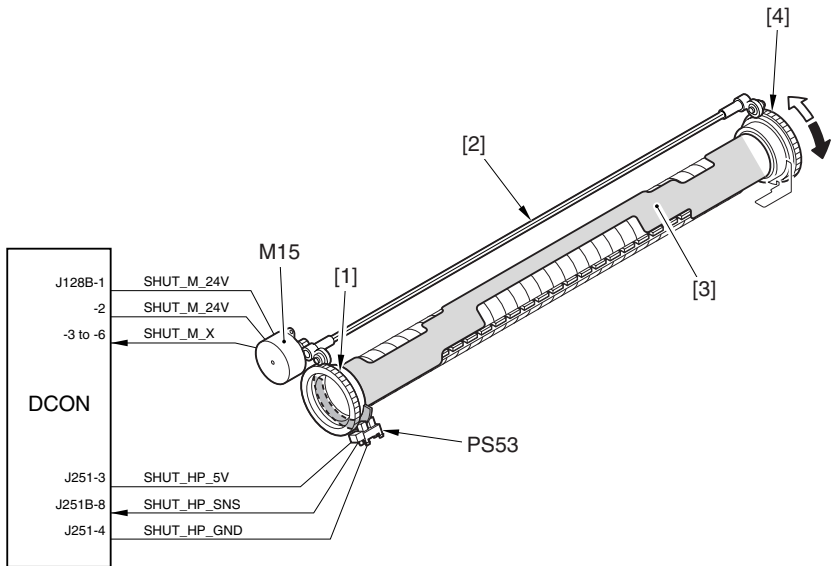
[1] Upper separation claw unit

[2] Upper separation claw

M3: Fixing motor

### 9.3.1.5 Controlling the Drive of the Shutter

The following shows the construction of the mechanisms used to control the drive of the shutter:



F-9-18

SHUT\_M\_X: shutter motor drive signal

SHUT\_HP\_SNS: shutter HP sensor signal

[1] Shutter drive gear (front)

[2] Drive axis

[3] Shutter

[4] Shutter drive gear (rear)

DCON: DC controller PCB

M15: shutter motor

PS53: shutter HP sensor

The shutter is driven by the shutter motor (stepping motor), and the shutter HP sensor (PS53) is used to check to see if the shutter is set at the appropriate position.

**ERROR CODE:**

**E840 (shutter error)**

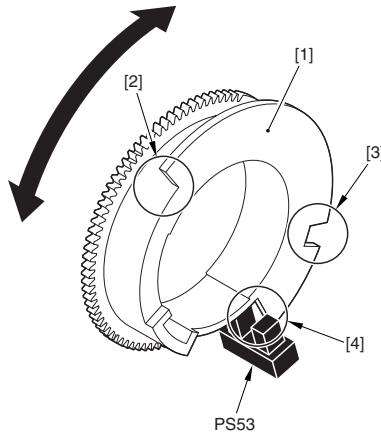
0001 Indicates that the HP sensor signal is not detected when the shutter is operating, after executing 3 retry operations.

0002 The interval of ON-OFF detection by the sensor in response to shutter operation is shorter than a specific time period.

---

**9.3.1.6 Controlling the Shutter Position**

The shutter is set to the appropriate position by driving the shutter motor (stepping motor) for a specific number of steps. A cut-off is found in the periphery of the shutter gear (front) operating in conjunction with the shutter; the machine checks to see if the shutter is set to the appropriate position with reference to the output of the shutter HP sensor (PS53), i.e., whether the sensor has detected the cut-off.



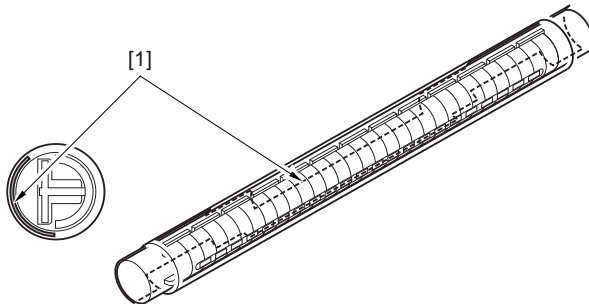
F-9-19

- [1] Shutter drive gear (front)
  - [2] Cut-off (for HP detection)
  - [3] Cut-off (for medium-size paper detection)
  - [4] Cut-off (for small-size paper detection)
- PS53: shutter HP sensor

The following shows the position of the shutter (3 steps). The machine moves the shutter to the appropriate position to suit the size of the paper and the reading of the thermistor in question.

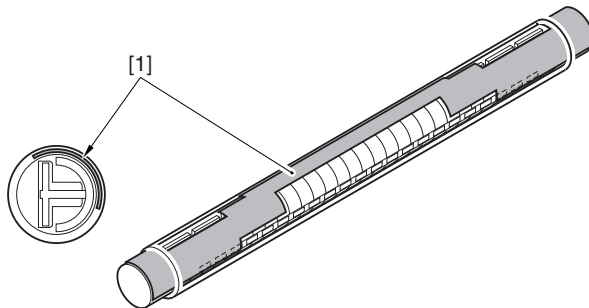
([1] in the diagram indicates the shutter.)

- Home Position (HP)



F-9-20

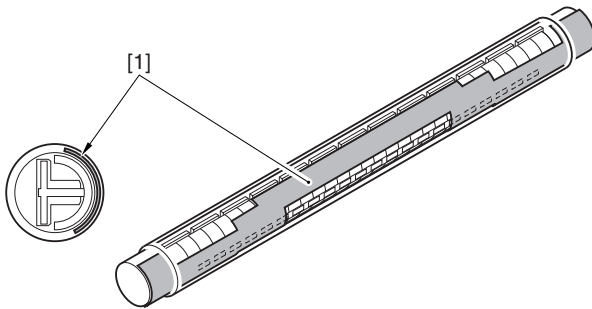
- Medium-Size Paper Position



F-9-21



- Small-Size Paper Position

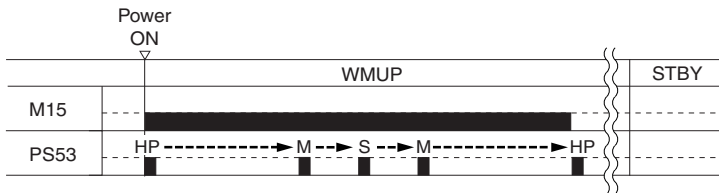


F-9-22

<Sequence of Shutter Operation>

- At Power-On

The machine moves the shutter (round trip) between home position and small-size paper position to check shutter operation.



F-9-23

HP : shutter position (home position)

M : shutter position (medium-size paper position)

S : shutter position (small-size paper position)

M15 : shutter motor

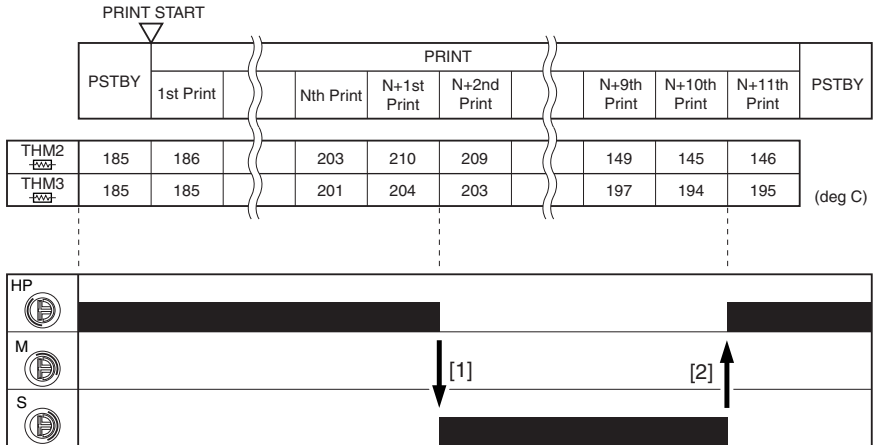
PS53: shutter HP sensor

- During Copying/Printing

At time of standby, the machine sets the shutter to its home position; during copying/printing, on the other hand, the machine controls the shutter position according to the selected paper size and the readings of the sub thermistor and the shutter thermistor.

After copying/printing, the machine moves the shutter back to its home position.

Here, the discussion is based on shutter operation when the machine is making A5R prints in continuous mode.



- [1] When printing starts, the readings of the sub thermistor (THM2) and the shutter thermistor (THM3) are both above specific levels (THM2/THM3  $\geq$  203 deg C); as a result, the machine moves the shutter to small-size paper position (S).
- [2] The machine continues printing operation. Consequently, the readings of both thermistor are below specific levels ( $120 \text{ deg C} \leq \text{THM2} < 150 \text{ deg C}$ ,  $165 \text{ deg C} \leq \text{THM3} < 195 \text{ deg C}$ ); as a result, the machine moves the shutter to home position.

#### MEMO:

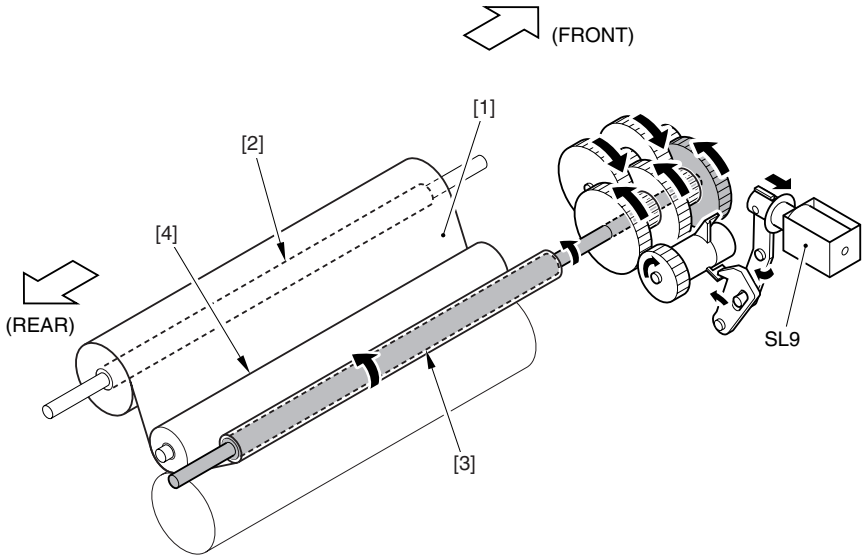
The foregoing chart has been prepared to illustrate the operation of the shutter, and the readings of the thermistor do not necessarily fluctuate as shown in the chart.

## 9.3.2 Cleaning

### 9.3.2.1 Controlling the Drive of the Cleaning Web

The machine removes toner remaining on the fixing roller by means of cleaning web (impregnated with silicone oil) to prevent fixing offset.

The cleaning web is taken up by the takeup roller when the drive from the fixing web solenoid (SL9) reaches the web takeup roller drive gear by way of a one-way clutch.



F-9-25

- [1] Cleaning web
- [2] Web feed roller
- [3] Web takeup roller
- SL9: web drive solenoid

The length of takeup is determined by the size of the paper used and the number of prints (within a single job).

## T-9-8

Paper		Number of web SL activations
small-size*1	1st sheet	once
	2nd sheet	once
	3rd sheet	0 times
	- - -	Thereafter, repeated.
Large-size*2	1st sheet	twice
	2nd sheet	once
	3rd sheet	once
	- - -	Thereafter, repeated.

\*1: A4/A4R/B5/B5R/A5R/LTR/LTRR

\*2: A3/B4/LGR/LGL

If paper exits in the fixing assembly because of a jam or error, the machine turns on the web solenoid 5 times at time of recovery (so as to prevent wrapping of the cleaning web around the fixing roller).

---

**ERROR CODE:**

**E005 (fixing web solenoid connection detection error)**

0001 Indicates that, at time of power-on, the connection of the fixing web solenoid is not detected.

**SERVICE MODE:**

**COPIER>OPTION>BODY>CBLTINVL**

Use it to set the number of times the fixing web solenoid goes on.

Use it if an image fault occurs as a result of soiling on the pressure roller.

0: normal (default)

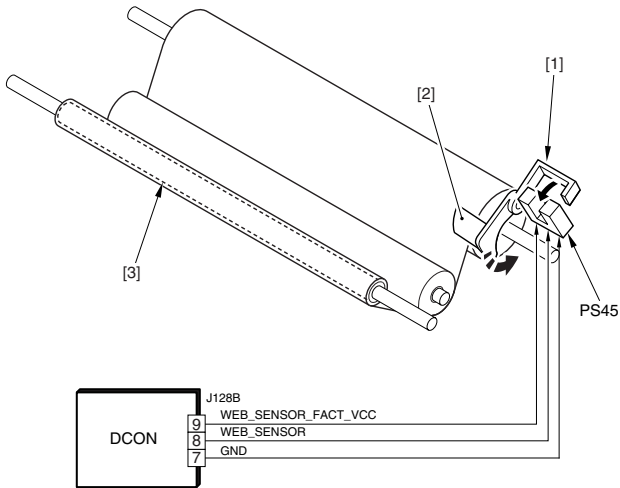
1: twice as often as normal

---

### 9.3.2.2 Controlling the Mechanism Used to Detect the Remaining Length of the Cleaning Web

The remaining length of the cleaning web is detected as follows:

- 1) The fixing web comes wrapped around the web feed roller, and is collected by the web takeup roller as copies/prints are made.
- 2) When the fixing web on the web feed roller decreases to a specific length, the cut-off in the web length detecting arm starts to move in the direction of the arrow, causing the arm to block the optical path of the web length sensor (PS45). The machine will issue a fixing web length warning message on the control panel when the fixing web solenoid goes on 4 times after the sensor has gone on.



F-9-26

WEB\_SENSOR: fixing web length detection signal

- [1] Web length detecting arm
- [2] Cut-off
- [3] Web takeup roller

DON: DC controller PCB

PS45: web length sensor

- 3) When copies/prints are made after the message has been issued, the machine starts to monitor the count (COPIER>COUNTER>MISC>FIX-WEB; fixing web counter). When the count reaches '2000' (in terms of A4, 3000 copies/prints), the machine issues error code 'E005'.
- 

**SERVICE MODE:****COPIER>OPTION>USER>WEB-DISP**

Use it to enable/disable the web length warning message:

0: off (however, the message will be indicated on the service mode screen)

1: on (default)

**COPIER>COUNTER>MISC>FIX-WEB****COPIER>COUNTER>DRBL-1>FX-WEB**

fixing web counter

---



If you have replaced the fixing web, be sure to reset the following counter readings to '0':

- **COPIER>COUNTER>MISC>FIX-WEB**

- **COPIER>COUNTER>DRBL-1>FX-WEB**

---

**ERROR CODE:****E005 (no web)**

0000 Indicates that the absence of the fixing web is detected for 5 sec or more.

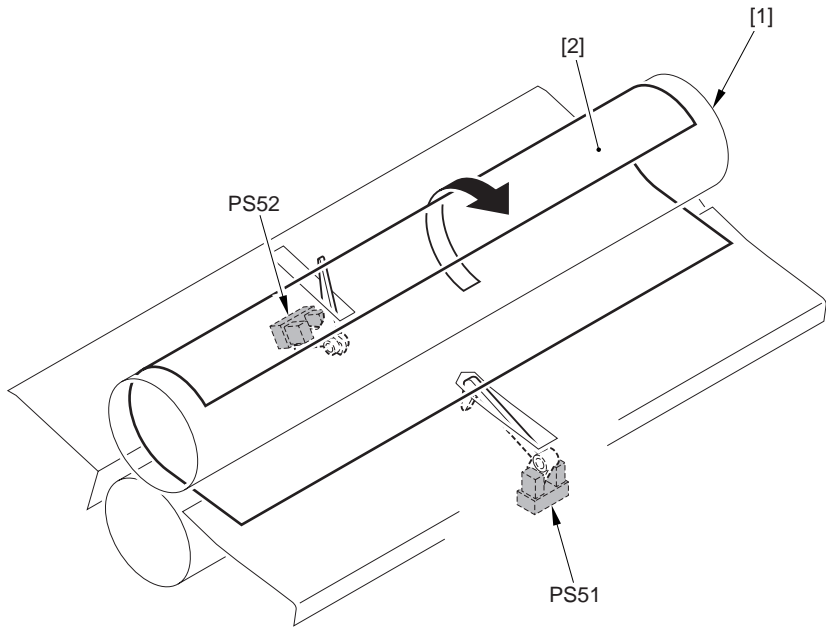
---

### 9.3.3 Detecting the Passage of Paper

#### 9.3.3.1 Preventing Wrapping of Paper

To prevent warping of paper around the fixing roller, the machine will execute an emergency stop on the fixing motor if paper exits inside the fixing assembly with a delay jam at the outlet of the assembly.

The presence/absence of paper inside the fixing assembly is assumed with reference to the history of detection (paper at the fixing inlet sensor, i.e., in terms of whether paper has moved past the sensor).



F-9-27

[1] Fixing roller

[2] Paper

PS51: fixing inlet sensor

PS52: fixing outlet sensor

## 9.4 Protective Functions

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### 9.4.1 Detecting an Error Using the Thermistor

In the event of the following, the machine will set the DC power (+12 V) used to drive the AC relay (found on the fixing heater power supply PCB), thereby stopping the AC power to the fixing heater.

- the main thermistor (TH1)/sub thermistor (TH2)/shutter thermistor (TH3) has detected overheating.
- the difference between readings of the main thermistor and the sub thermistor or between the main thermistor and the shutter thermistor has deviated from a specific value.

### 9.4.2 Detecting an Error Using the Thermal Switch

In response to a deviation in temperature (200 +/-5 deg C), bimetal contact of the thermal switch (TP1; non-contact type) will open to cut the power supply line (+12 VDC) used to drive the AC relay on the fixing heater power supply PCB, thereby stopping the AC power to the fixing heater.

---



Once open, the contact of the thermal switch will not reset itself even when the temperature drops to normal; be sure to replace the thermal switch after removing the error.

---

### 9.4.3 Errors

---

#### **ERROR CODE:**

#### **E000 (low temperature detection error)**

0000 after power-on, the reading of the main thermistor is not 70 deg C or higher within 20 sec .

0010 the power has been turned off and then on without resetting the error in question.



**E001 (abnormal rise in temperature)**

- 0001 the main thermistor or the sub thermistor has been identified as being faulty, or an open circuit has been detected.
- 0002 the reading of the main thermistor or that of the sub thermistor is 230 deg C or higher for 2 sec.
- 0003 the reading is not 150 deg C or higher or 210 deg C or lower within 30 sec (at time of a remedial job).
- 0010 the power has been turned off and then on without resetting of the error in question.

**E002 (faulty rise in temperature)**

- 0000 the reading of the main thermistor is in excess of 70 deg C and, thereafter, it does not reach 150 deg C within 12 sec.
- 0001 the reading of the main thermistor is in excess of 100 deg C and, thereafter, it does not reach 150 deg C within 15 sec.
- 0010 the power has been turned off and then on without resetting of the error in question.

**E003 (faulty rise in temperature)**

- 0000 the reading of the main thermistor is in excess of 100 deg C and, thereafter, is lower than 70 deg C for 2 sec or more.
- 0010 the power has been turned off and then on without resetting of the error in question.

**E004 (fixing heater power supply error (IH power supply))**

- 0101 there is a mismatch between the input voltage and the IH power supply ID.
- 0102 the fault IH current is faulty (current leakage).
- 0103 the IH current is faulty (absence of current).
- 0104 there is overcurrent.
- 0105 the input voltage is too high.
- 0106 the IH input voltage is too low.
- 0201 when the power is turned on (or while the IH drive is suspended), the IH control mechanisms is not in an initial state.
- 0202 at time of IH start-up, the IH control enable flag is not set within 1 sec after the start flag has been set.
- 0203 when IH is stored, the IH control ongoing flag is not released within 1 sec.
- 0204 the 12-V power supply (IH relay) is identified as being OFF.

0205 at IH start-up, the PWM ON signal data has an error.

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If E000 through E004 is indicated, the error code will not be reset even when you turn off the main power switch, requiring you to use service mode (COPIER > FUNCTION > CLEAR > ERR).

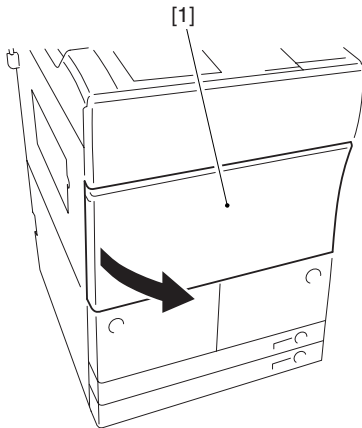
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## 9.5 Parts Replacement Procedure

### 9.5.1 Fixing/Feeding Assembly

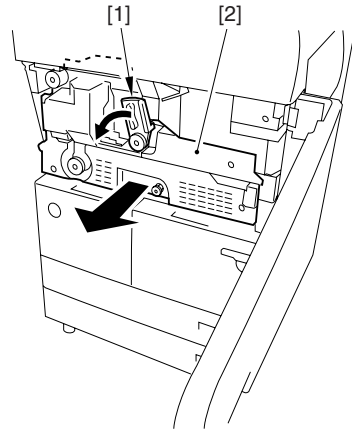
#### 9.5.1.1 Removing the Fixing Feed Unit

1) Open the front cover [1].



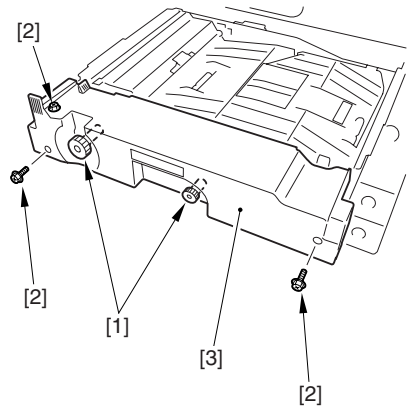
F-9-28

2) Turn the fixing feed unit releasing lever [1] counterclockwise to release the lock; then, hold the lever [1], and slide out the fixing feed unit [2] toward the front until it stops. (At this time, the duplexing feed unit will also slide out.)



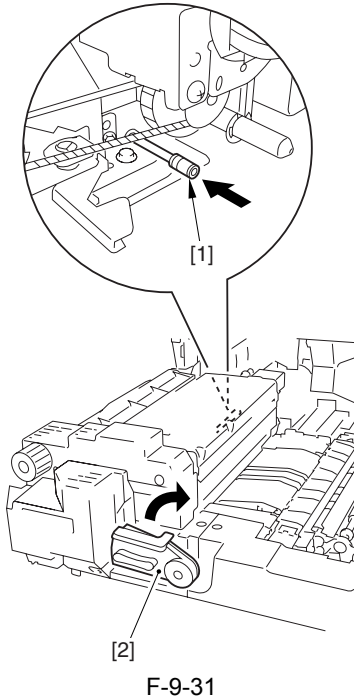
F-9-29

3) Remove the 2 jam removal levers [1] of the duplexing feed unit; then, remove the 3 screws [2], and detach the duplexing feed front cover [3].

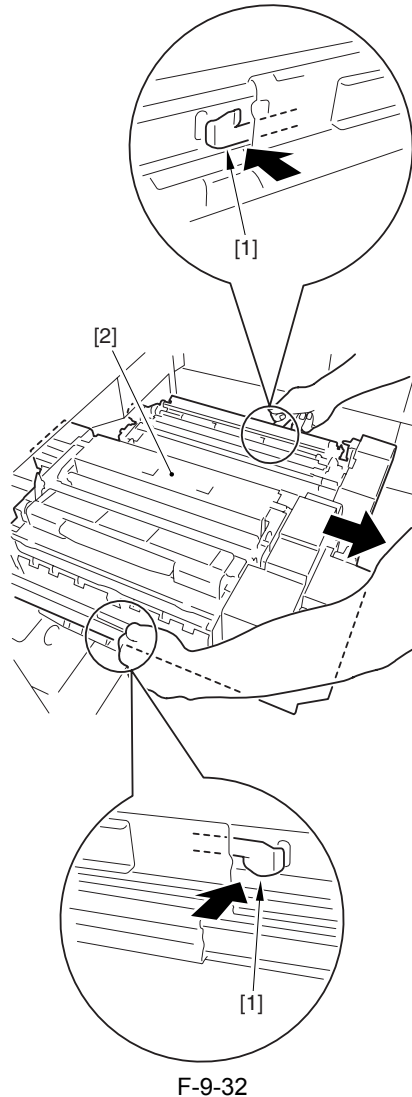


F-9-30

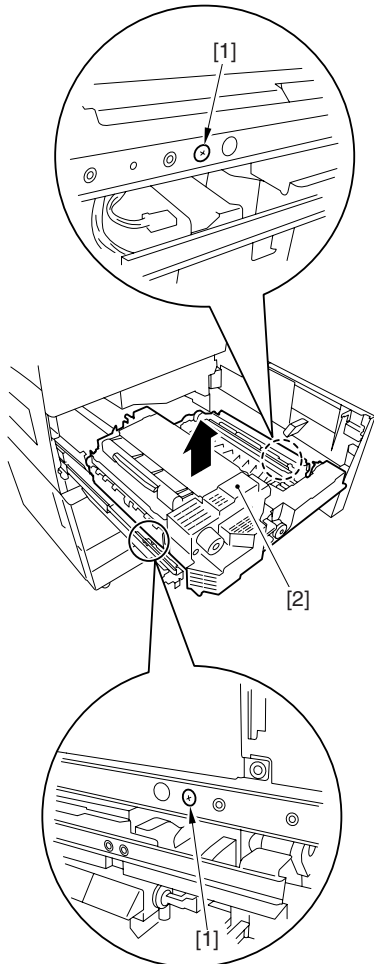
- 4) While pushing the hook shaft [1] found at the rear of the fixing feed unit in the direction of the arrow (i.e., toward the machine's front), turn the fixing feed unit releasing lever [2] clockwise to lock it in place.



- 5) While pushing the 2 stopper plates [1] of the rail assembly of the fixing feed unit toward the inside, slide out the fixing feed unit [2] to the front.



- 6) Remove the 2 screws [1], and detach the fixing feed unit [2] from the rail.

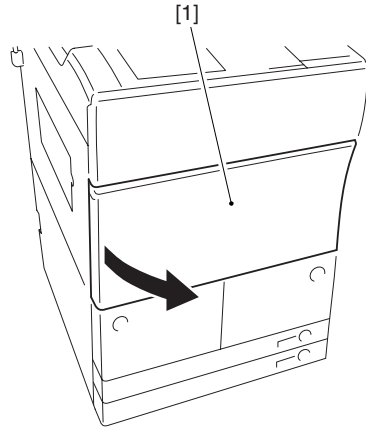


F-9-33

## 9.5.2 Fixing Unit

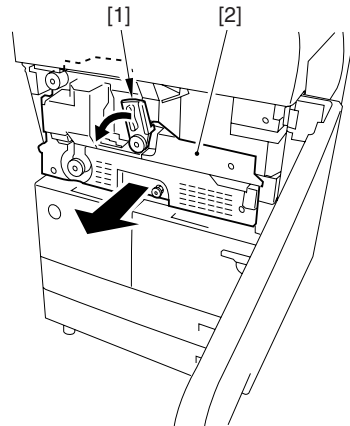
### 9.5.2.1 Removing the Fixing Upper Unit

1) Open the front cover [1].



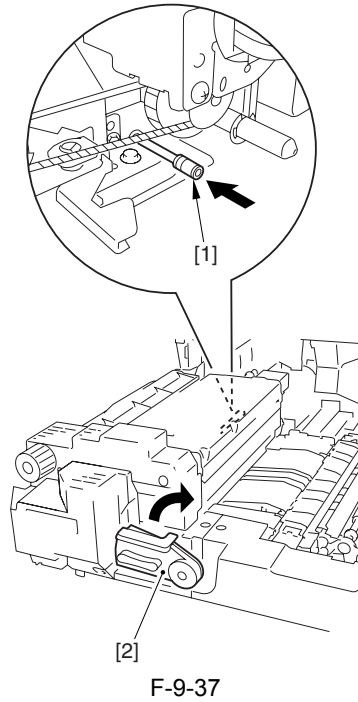
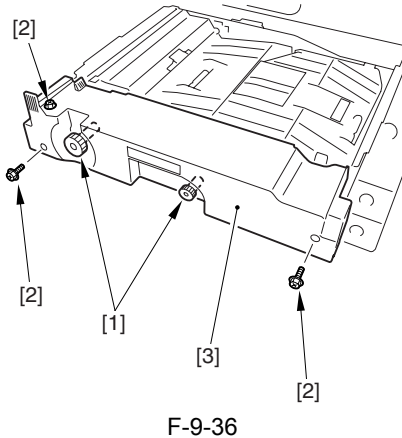
F-9-34

2) Turn the fixing feed unit releasing lever [1] counterclockwise to release the lock; then, hold the lever [1], and slide out the fixing feed unit [2] toward the front until it stops. (At this time, the fixing feed unit will also slid out.)



F-9-35

- 3) Remove the 2 jam removing levers [1] of the duplexing feed unit; then, remove the 3 screws [2], and detach the duplexing feed front cover [3].

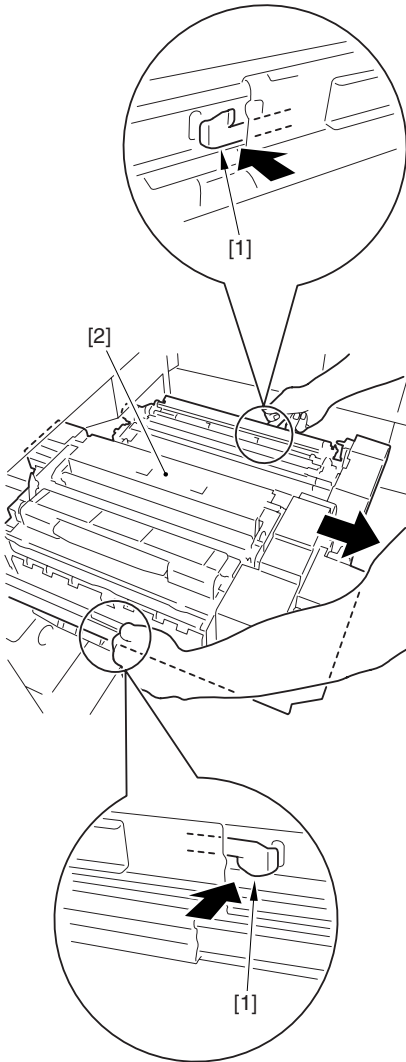


**Memo:**

The work in step 3) is in preparation for step 5), thereby facilitating the sliding out farther of the fixing feed unit in step 5).

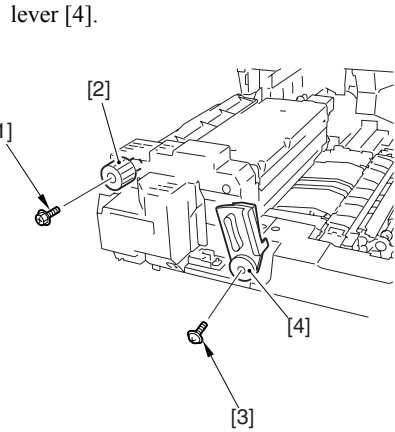
- 4) While pushing the hook shaft [1] found at the rear of the fixing feed unit in the direction of the arrow (i.e., toward the machine's front), turn the fixing feed unit releasing lever [2] clockwise to lock it in place.

- 5) While pushing the 2 stopper plates [1] and the rail assembly of the fixing feed unit toward the inside, slide out the fixing feed unit [2] to the front.



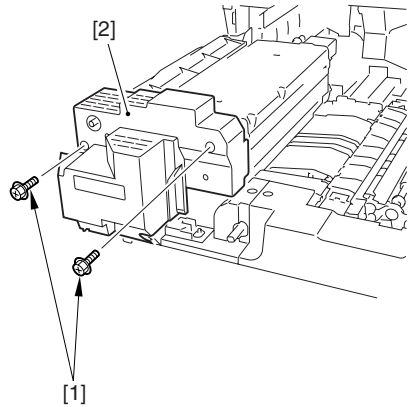
F-9-38

6) Remove the screw [1], and detach the knob [2]; then, remove the screw [3], and detach the fixing feed unit releasing



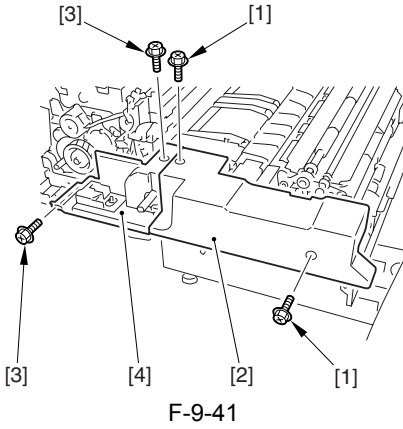
F-9-39

7) Remove the 2 screws [1], and detach the fixing front cover [2].



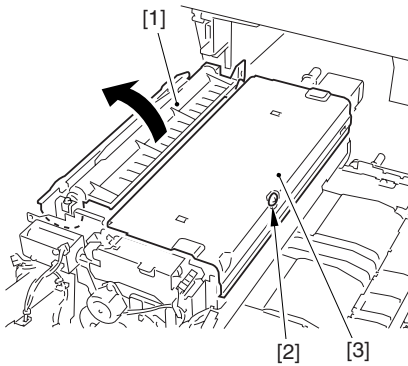
F-9-40

8) Remove the 2 screws [1], and detach the fixing feed unit front cover [2]; then, remove the 2 screws [3], and detach the fixing feed unit middle cover [4].



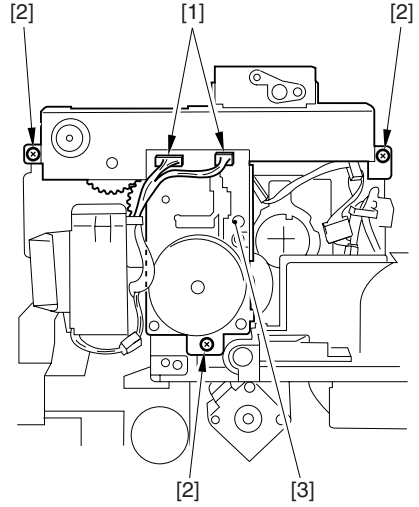
F-9-41

- 9) Open the delivery unit [1]; then, remove the screw [2], and detach the fixing upper cover [3].



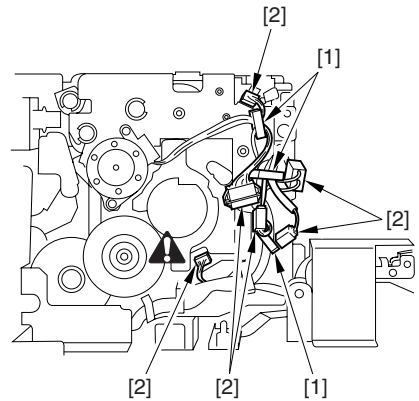
F-9-42

- 10) Disconnect the 2 connectors [1]; then, remove the 3 screws [2], and detach the fixing drive assembly [3].



F-9-43

- 11) Release the 3 locks of the harness guide [1], and free the harness from the harness guide; then, disconnect the 6 connectors.



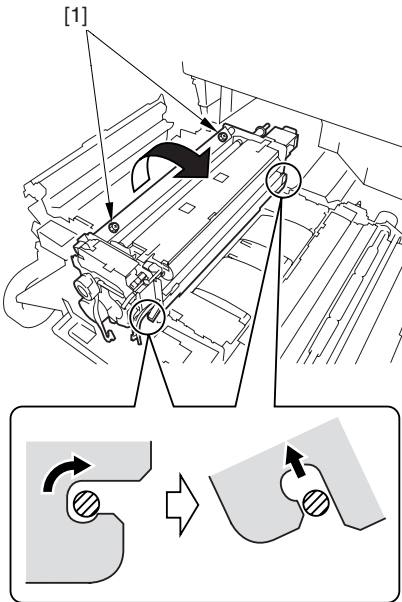
F-9-44





Be sure to disconnect the connector of the shutter HP sensor. If you try to detach the fixing upper unit later without first disconnecting the connector, you can deform the shutter sensor base plate or damage the connector.

12) Remove the 2 screws [1], and detach the fixing upper unit [2] in the direction of the arrow.

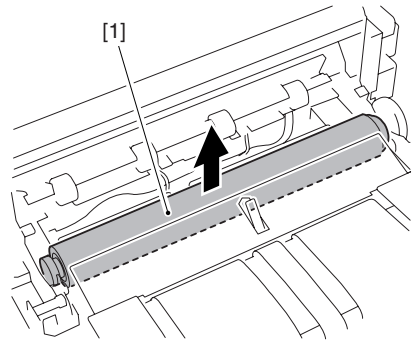


F-9-45

## 9.5.3 Pressure Roller

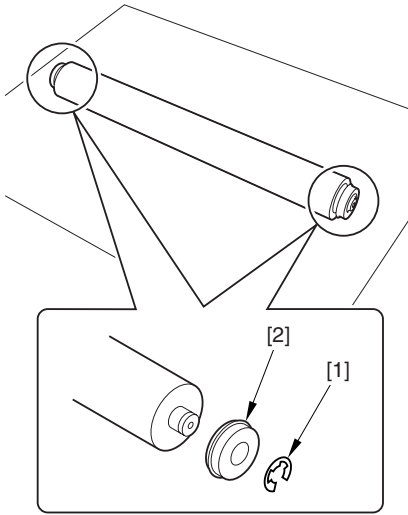
### 9.5.3.1 Removing the Pressure Roller

- 1) Remove the fixing upper unit.
- 2) Remove the lower separation claw unit.
- 3) Remove the pressure roller assembly [1]. (Temporarily put the pressure roller assembly aside on paper.)



F-9-46

- 4) Remove the 2 E-rings [1] and the 2 bearings [2] from both ends of the pressure roller assembly.



F-9-47

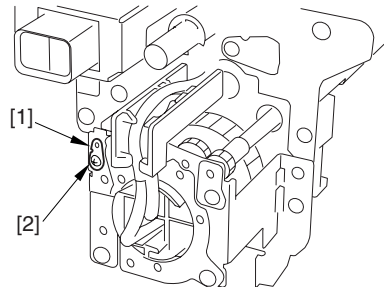


As the pressure roller is used more and more, its rubber surface can start to become discolored because of heat; the change, however, will not affect the roller performance or images. Also, the roller surface can start to show wrinkling or peeling of tubing because of its physical properties; you need not, however, replace the roller unless the machine shows faults in fixing or images.

## 9.5.4 Upper Fixing Roller

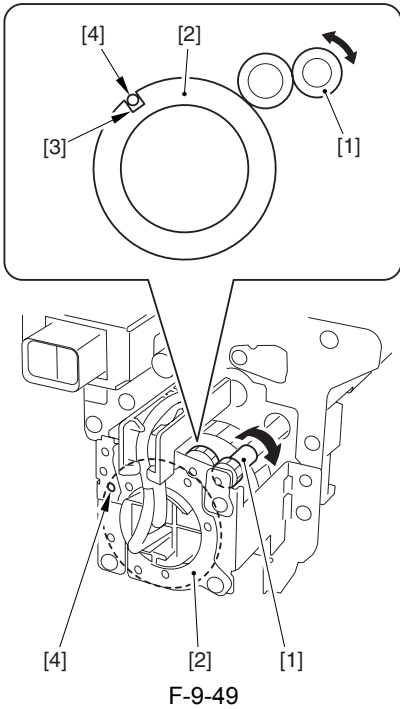
### 9.5.4.1 Removing the Fixing Roller

- 1) Remove the fixing upper unit.
- 2) Remove the web unit.
- 3) Remove the fixing web. (At this time, clean the surface of the silicone oil tray.)
- 4) Remove the screw [1], and detach the pin [2]. (You will be using the removed screw and pin later in step 6.)

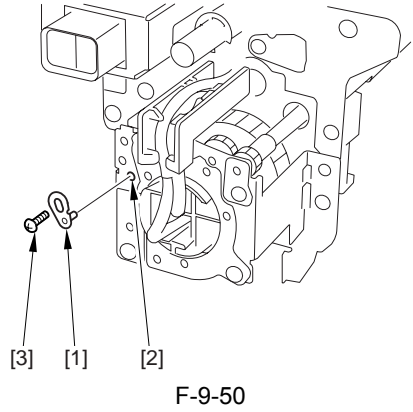


F-9-48

- 5) Turn the shutter drive gear [1] by your finger so that the shutter gear [2] will rotate until the cut-off [3] of the shutter gear matches the hole [4] in the plate.

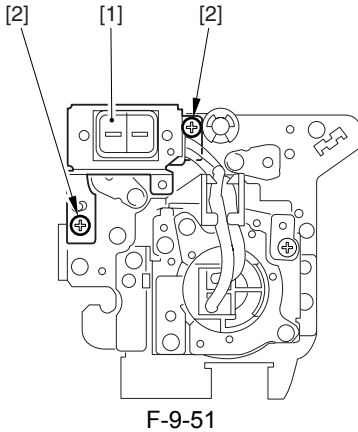


6) Fit the pin [1] you removed in step 4) into the hole [2]; then, fix it in place using a screw [3].



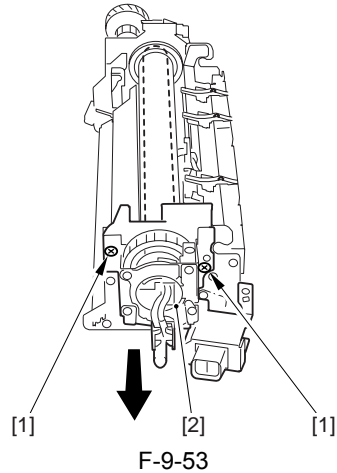
When you have completed the foregoing steps, be sure to put the pin back to its initial location before putting the fixing upper unit back into the machine.

7) Remove the 2 screws [2] used to keep the AC connector support plate [1] in place.

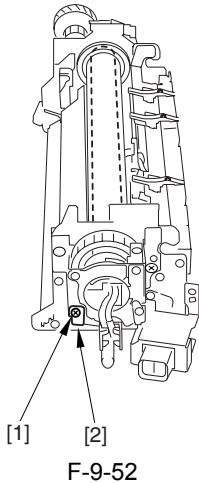


F-9-51

- 8) Turn the fixing upper unit upside down.  
 9) Remove the screw [1], and detach the shutter drive gear shaft support plate [2].



F-9-53



F-9-52

- 10) Remove the 2 screws [1], and slide out the heater unit [2] to detach.



The shutter is thin (0.5 mm) and, therefore, can easily deform. Deformation could well lead to damage to the surface of the fixing roller by interference. Take full care not to deform the shutter.

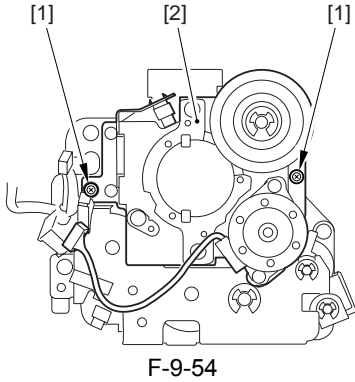
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As wear grows, the surface of the shutter may become discolored because of heat or show scratches because of friction. These symptoms, however, are least likely to affect the performance of the shutter.

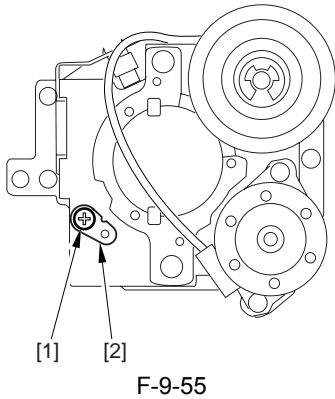
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- 11) Remove the 2 screws [1], and detach the core positioning plate (front) [2].



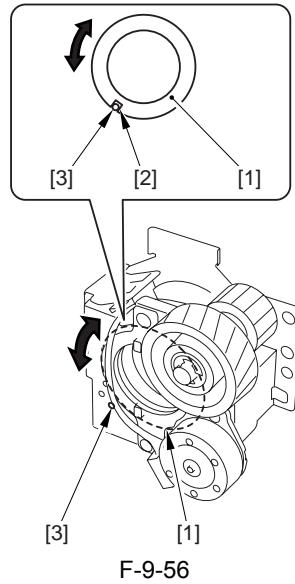
F-9-54

12) Remove the screw [1], and remove the pin [2]. (You will be using the removed screw and pin later in step 14.)



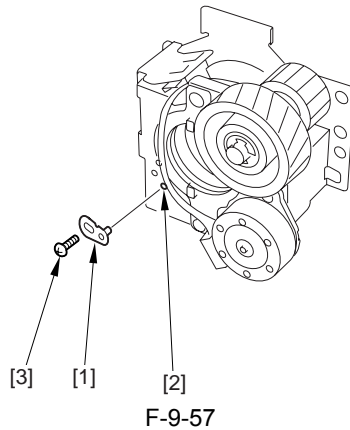
F-9-55

13) Turn the shutter drive gear [1] with your finger until the cut-off [2] of the shutter gear matches the hole [3] in the plate.



F-9-56

14) Put the pin [1] you removed in step 12) in the hole [2]; then, fix it in place using a screw [3].

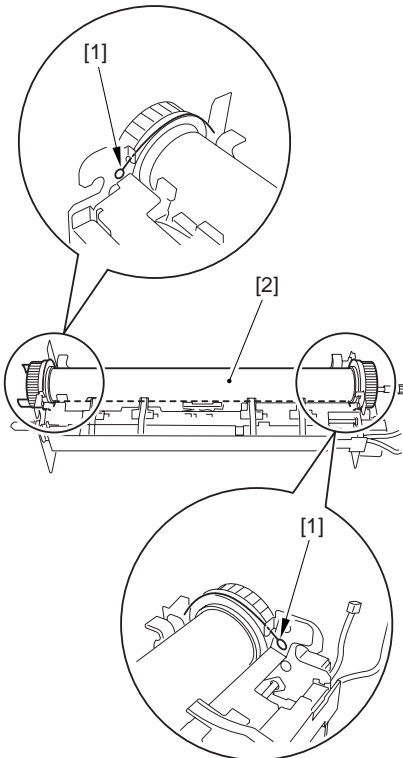


F-9-57



When you have completed the foregoing series of steps, be sure to put back the pin in its initial location before putting the fixing upper unit back in the machine.

- 15) Release the 2 hooks [1] used to hold the bearings on both ends of the fixing roller in place; then, detach the fixing roller assembly [2].



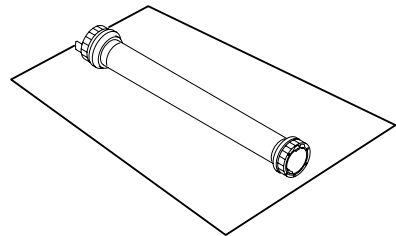
F-9-58



If you are replacing only the gear, bushing, or bearing (i.e., not replacing the fixing roller), be sure to wrap paper around the roller before starting the work. This is to prevent damage to the surface of the roller in the event that the bearing falls on it during the work.

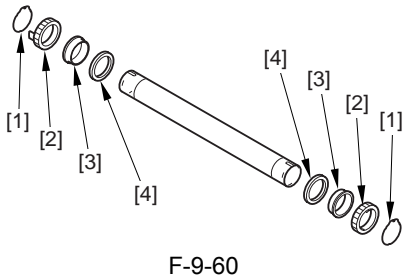


If you need put aside the fixing roller somewhere for a while, be sure to put it on paper.



F-9-59

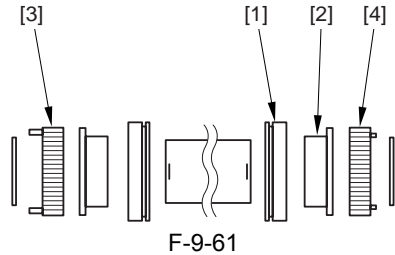
- 16) Remove the 2 C-rings [1], 2 gears [2], and 2 bearings [4] from the fixing roller assembly.



that the side of the bearing with a groove is toward the inside, and the collar of the bushing faces outside. Also, the rear and front fixing gears are different from each other; be sure to mount the gear [3] (w/ larger protrusion) is at the rear while the other gear [4] (w/ smaller protrusion) is at the front.



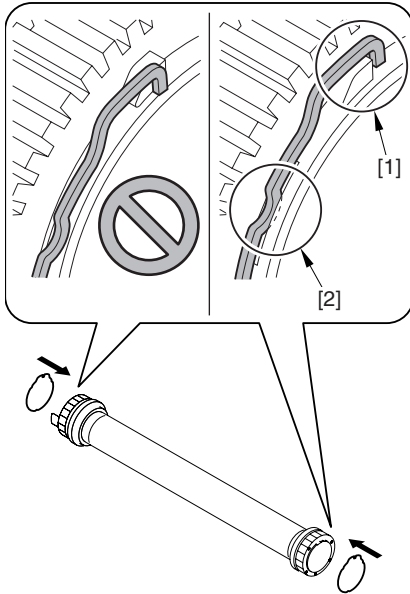
As wear grows, the surface of the fixing roller tends to become discolored. This phenomenon, however, will not affect the performance of the roller. The color of the roller varies depending on its manufacture, but the performance of the roller is the same.



- When attaching the C-ring [1], be sure to fit the 3 protrusions [2] of the ring properly into the 3 grooves [3] of the fixing roller.

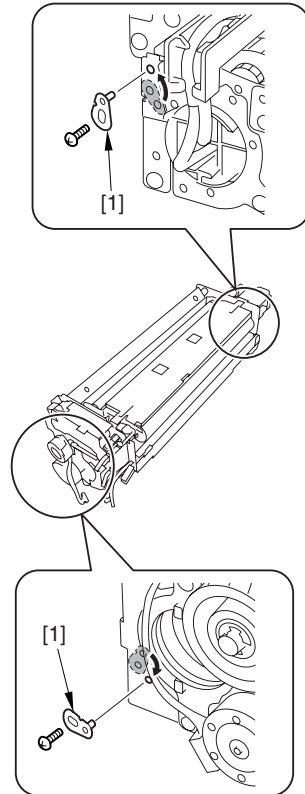
### 9.5.4.2 Points to Note When Mounting the Fixing Roller

- A new fixing roller comes wrapped in paper. Be sure NOT to remove the paper until you have placed the fixing roller in its correct location in the fixing upper unit and have fixed the bearings in place on both its ends using hooks, thus avoiding damage possibly occurring if any of the bearings falls on the roller.
- Pay attention to the orientation of the bearing [1] and the bushing [2]. Be sure



F-9-62

- When mounting the fixing roller, be sure to take care not to hit the thermal switch with the roller.
- After mounting the fixing roller to the fixing unit, be sure to remove the paper you have wrapped around the roller.
- Be sure to put the 2 pins [1] back to their initial positions. If you turn on the main power switch without putting them back, 'E840' will occur. If you turn on the main power switch after putting back only one of them, such will not only cause an error associated with 'E840' but also deform the shutter.

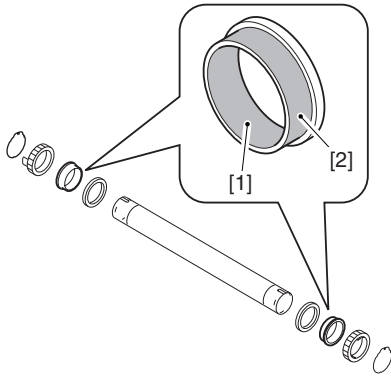


F-9-63

#### 9.5.4.3 Applying Grease After Replacing the Fixing Roller

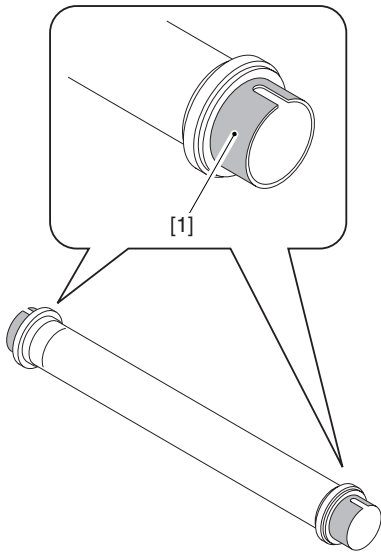
- Apply about 20 mg of grease (Molykote) on the inner [1] and outer [2] surfaces of the bushing until there is a white coating covering the entire sources.





F-9-64

- There will likely be adhesion of grease on the ends [1] of the fixing roller when the bushing is fitted to the roller. Be sure to remove the adhesion.



F-9-65

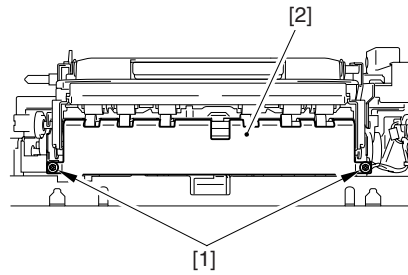
### 9.5.4.4 Adjusting the Nip Width

There is no need for adjustment of the nip width.

## 9.5.5 External Delivery Roller

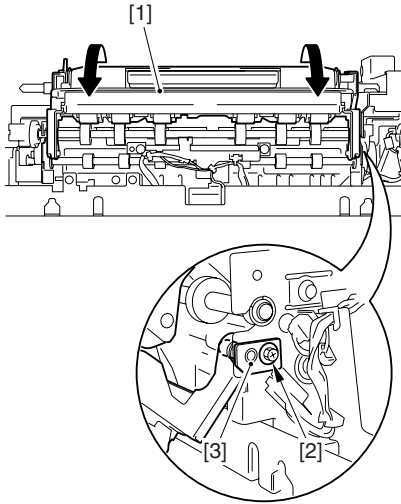
### 9.5.5.1 Removing the Outside Delivery Roller

- 1) Remove the fixing feed unit from the machine.
- 2) Remove the 2 screws [1], and detach the delivery roller guide [2].



F-9-66

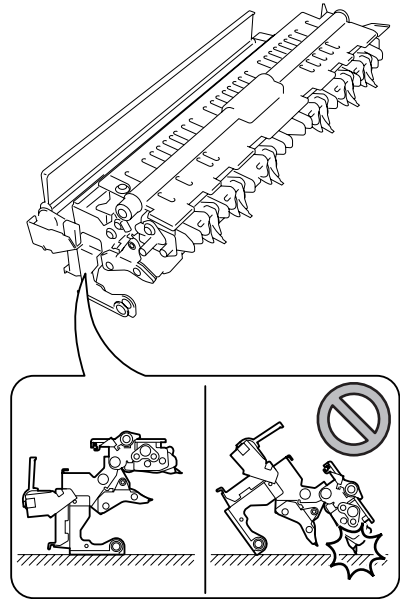
- 3) Remove the screw [1], and detach the delivery unit [3].



F-9-67

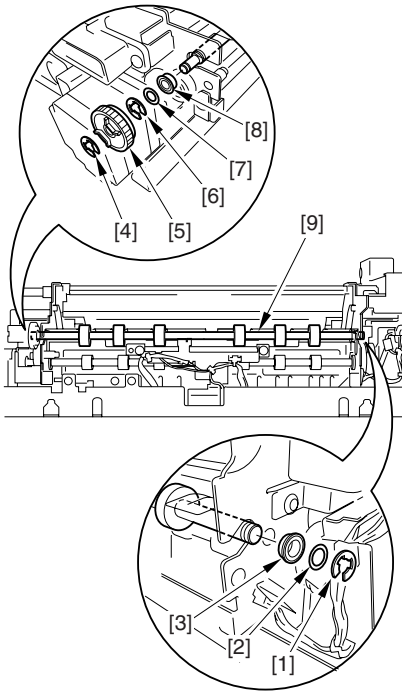


If you need to temporarily put aside the removed delivery unit, be sure to orient it as shown. You can damage the separation claws if you place it with the claws against the floor.



F-9-68

- 4) Remove the E-ring [1], O-ring [4], and bushing [3] (at the front), and then remove the E-ring [4], gear [5], E-ring [6], and bushing [8] (at the rear); then, detach the outside delivery roller [9].



F-9-69

## 9.5.6 Internal Delivery Roller

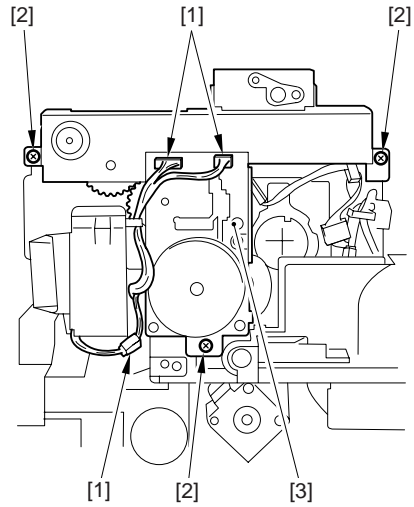
### 9.5.6.1 Removing the Inside Delivery Roller

- 1) Remove the fixing feeding unit from the machine.
- 2) Detach the lower separation claw support plate.

Note:

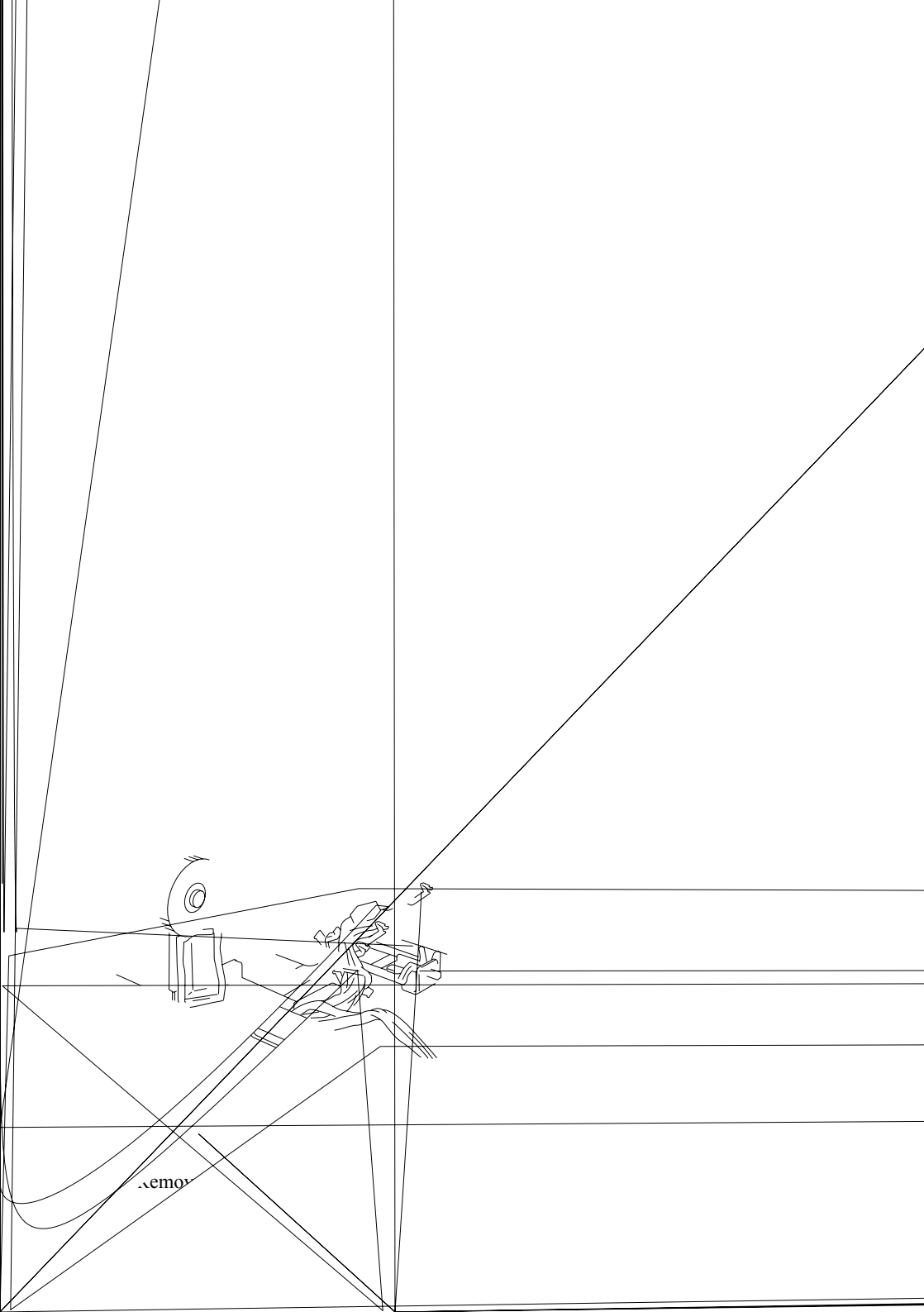
Of the following steps, steps 3) through 6) are performed at the front of the machine:

- 3) Disconnect the 3 connectors [1], and free the harness from all clamps; then, remove the 3 screws [2], and detach the motor support plate [3].

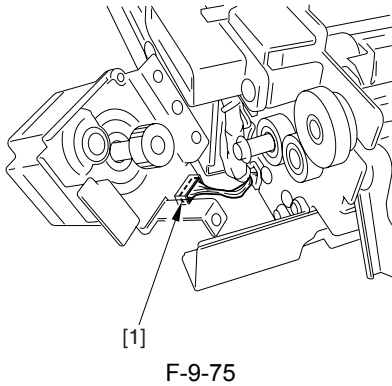


F-9-70

- 4) Disconnect the 3 connectors [1], and remove the 3 screws [2]; then, slide out the fixing heat discharge fan assembly [3] toward the outside.

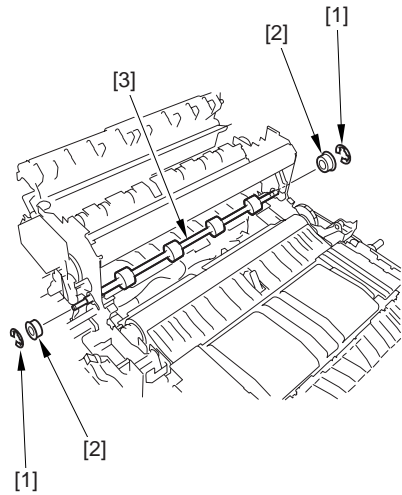


remov



F-9-75

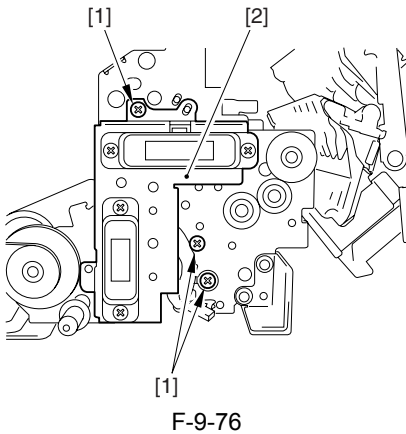
8) Remove the 3 screws [1], and shift the connector support plate [2] toward the outside. (You need not detach it.)



F-9-77

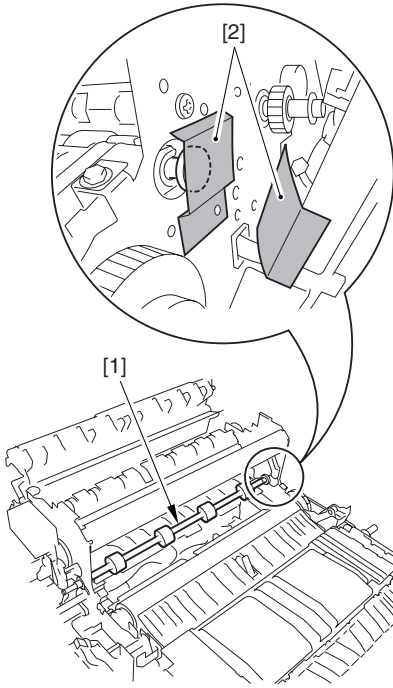
### 9.5.6.2 Points to Note When Mounting the Inside Delivery Roller

- A harness is found on the edge (rear) of the inside delivery roller shaft, and 2 plastic sheets are attached to protect the harness. When fitting or removing the inside delivery roller, be sure to take care so that you will not detach the plastic sheets. If you inadvertently detached them, be sure to put them back on.



F-9-76

9) Remove the 2 E-rings [1], and remove the 2 bearings [2]; then, detach the inside delivery roller [3].

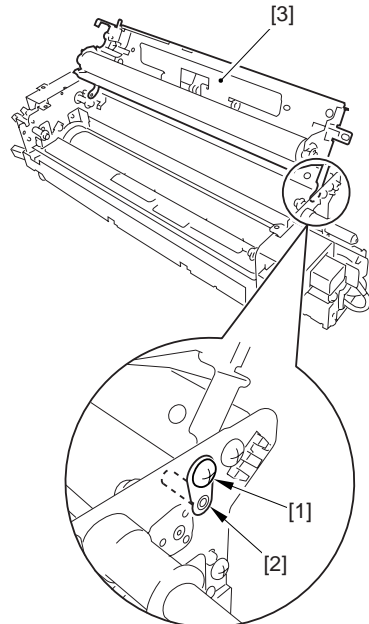


F-9-78

## 9.5.7 Main Thermistor

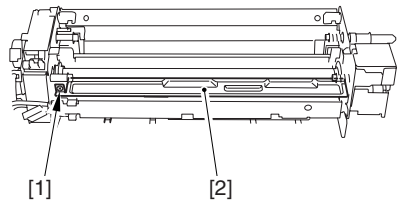
### 9.5.7.1 Removing the Main Thermistor/ Shutter Thermistor

- 1) Remove the fixing upper unit.
- 2) Remove the fixing web.
- 3) Remove the screw [1], and pull out the busing [2]; then, detach the web unit [3].



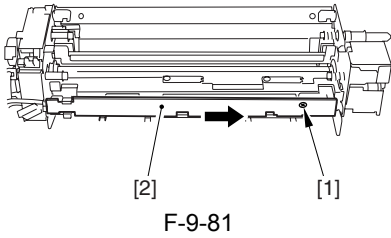
F-9-79

- 4) Remove the screw [1], and detach the silicone oil tray [2].



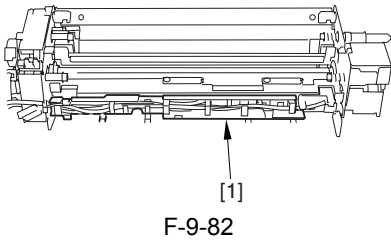
F-9-80

- 5) Remove the screw [1], and detach the harness retaining cover [2].



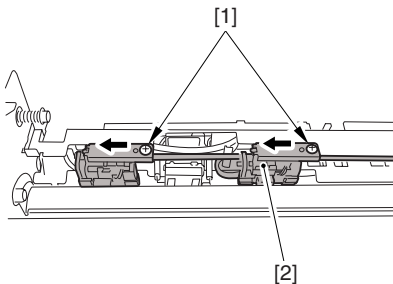
F-9-81

6) Free the harness for the harness guide assembly [1].



F-9-82

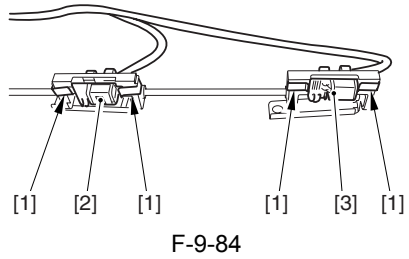
7) Remove the 2 screws [1], and slide the thermistor mounting shaft [2] to detach it from the bushing.



F-9-83

8) Remove the 2 leaf springs each [1], and detach the shutter thermistor [2] and the

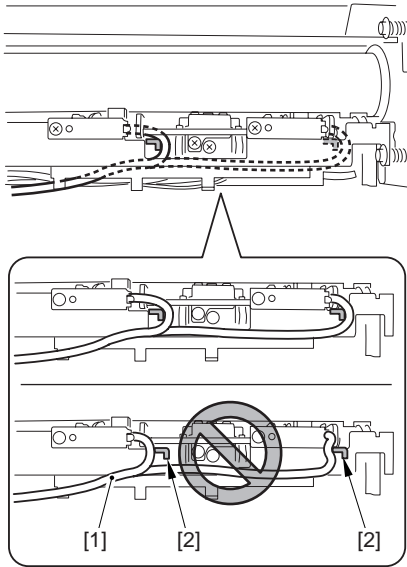
main thermistor [3].



F-9-84

### 9.5.7.2 Points to Note When Mounting the Thermistor/Shutter Thermistor

- If you have to replace the main thermistor/shutter thermistor, be sure to wrap paper around the fixing roller to protect the roller surface. Also, be sure to remove the paper after mounting the thermistor.
- Be sure to route the harness of the thermistor as shown, seeing to it that the harness [1] is outside (rear) of the guide pin [2].

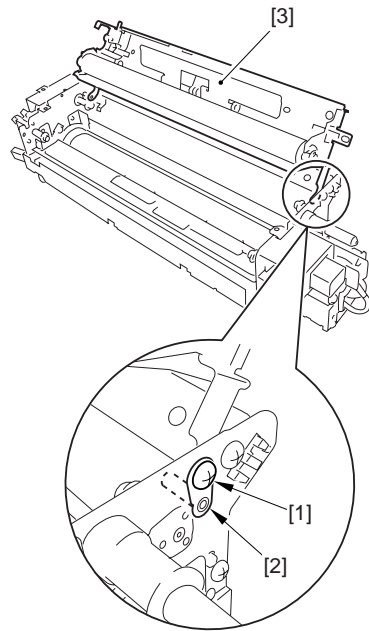


F-9-85

## 9.5.8 Sub Thermistor

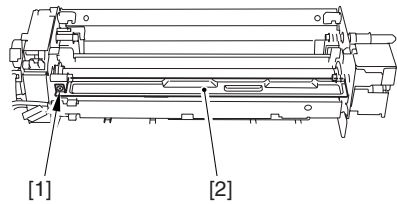
### 9.5.8.1 Removing the Sub Thermistor

- 1) Remove the fixing upper unit.
- 2) Remove the fixing web.
- 3) Remove the screw [1], and pull out the bushing [2]; then, detach the web unit [3].



F-9-86

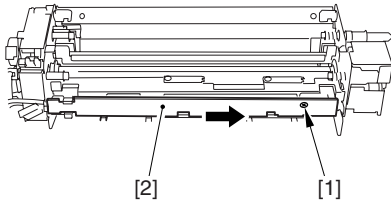
- 4) Remove the screw [1], and detach the silicone oil tray [2].



F-9-87

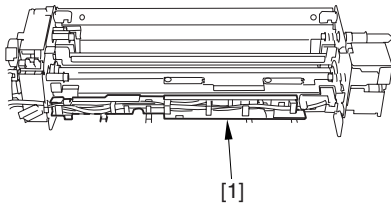
- 5) Remove the screw [1], and detach the harness retaining cover [2].





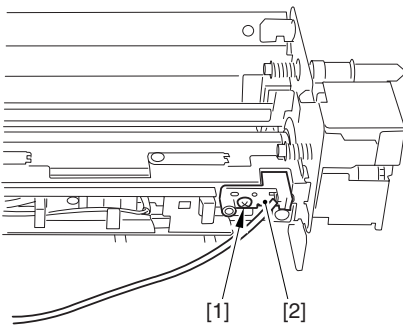
F-9-88

6) Free the harness from the harness guide assembly [1].



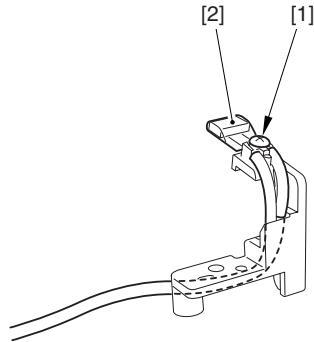
F-9-89

7) Remove the screw [1], and detach the sub thermistor assembly [2].



F-9-90

8) Remove the screw [1], and detach the sub thermistor [2].

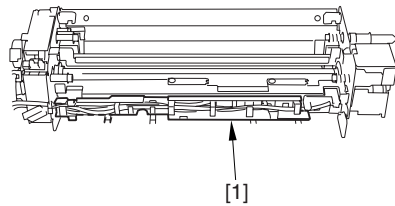


F-9-91

## 9.5.9 Thermal Switch

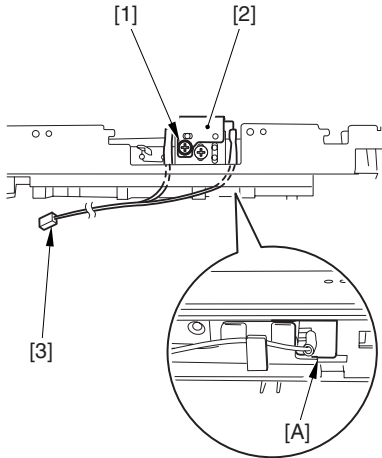
### 9.5.9.1 Removing the Thermal Switch

- 1) Remove the fixing upper unit.
- 2) Remove the main thermistor/shutter thermistor assembly.
- 3) Free the harness of the thermal switch from the harness guide.



F-9-92

- 4) Remove the screw [1], and detach the thermal switch [2]. (Detach the harness [3] by leading it through the opening [A].)

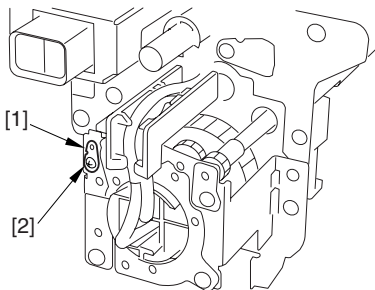


F-9-93

## 9.5.10 Fixing Heater

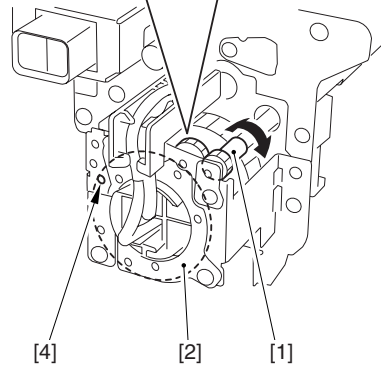
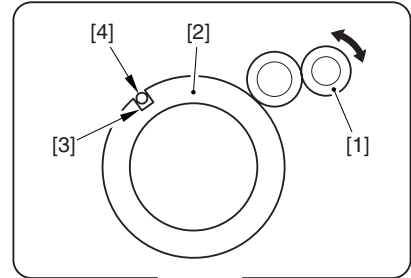
### 9.5.10.1 Removing the Fixing Heater Unit

- 1) Remove the fixing upper unit.
- 2) Remove the screw [1], and remove the pin [2]. (You will be using the removed screw and pin later in step 4.)



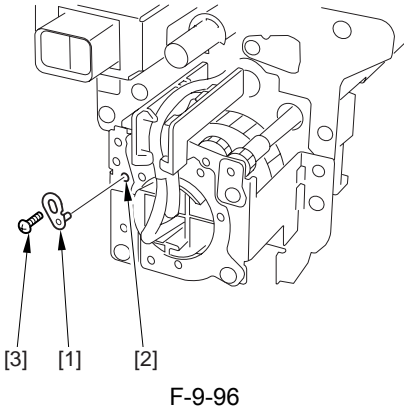
F-9-94

- 3) Turn the shutter drive gear [1] with your finger so that the shutter gear [2] will rotate until the cut-off [3] matches the hole [4] in the plate.



F-9-95

- 4) Fit the pin [1] you removed in step 2) in the hole [2]; then, fix it in place using the screw [3].

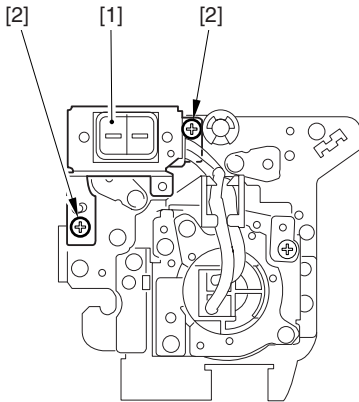


F-9-96



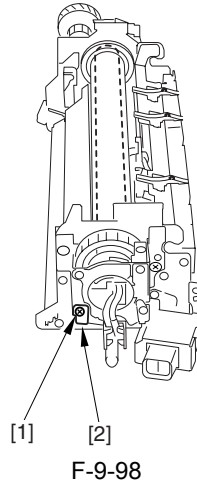
When you have finished the foregoing series of steps, be sure to put the pins back into their initial positions.

5) Remove the 2 screws [2] used to hold the AC connector support plate [1] in place.



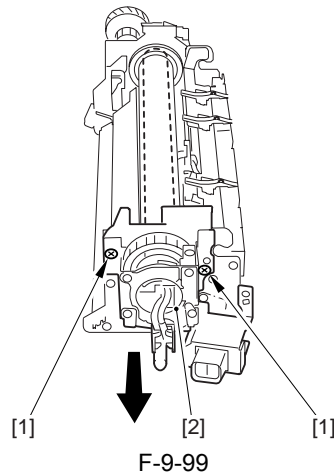
F-9-97

- 6) Turn the fixing upper unit upside down.
- 7) Remove the screw [1], and detach the shutter drive gear shaft support plate [2].



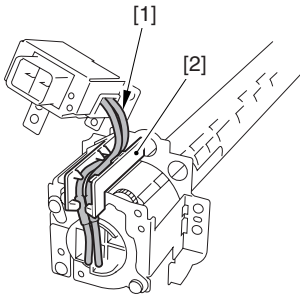
F-9-98

8) Remove the 2 screws [1], and slide out the heater unit [2] to detach.



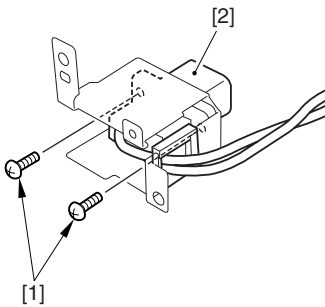
F-9-99

- 9) Free the AC harness [1] from the harness guide [2].



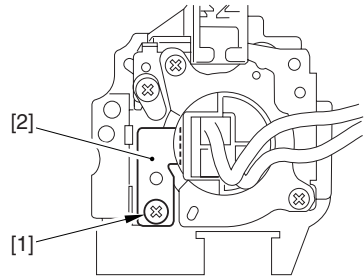
F-9-100

- 10) Remove the 2 screws [1], and free the AC harness from the clamp; then, detach the AC inlet [2].



F-9-101

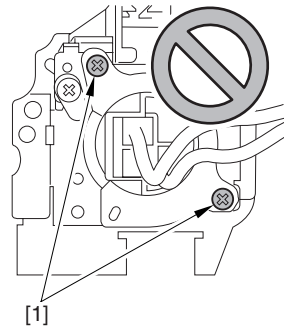
- 11) Remove the screw [1], and detach the fixing heater unit stopper plate [2].



F-9-102



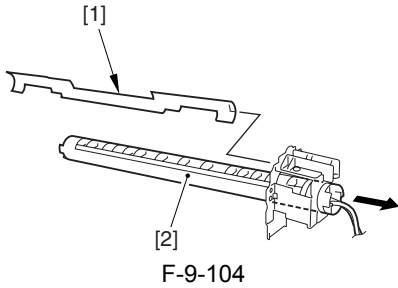
Do not loosen or remove the 2 screws [1] (glued in place).



F-9-103

- 11) Remove the screw [1], and detach the fixing heater unit stopper plate [2].

- 12) Remove the shutter [1], and move the fixing heater unit [2] in the direction of the arrow to detach.



F-9-104



The shutter is thin (0.5 mm thick) and, therefore, can easily deform. Deformation will cause it to interfere with the fixing roller, leading to damage on the roller surface. Be sure to take full care during the work.

**MEMO:**

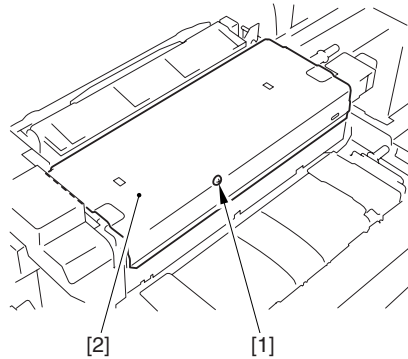
As wear grows, the shutter surface is likely to become discolored because of heat or can show scratches. The fact, however, will not affect the performance of the shutter.

### 9.5.11 Fixing Cleaning Belt

#### 9.5.11.1 Removing the Fixing Web

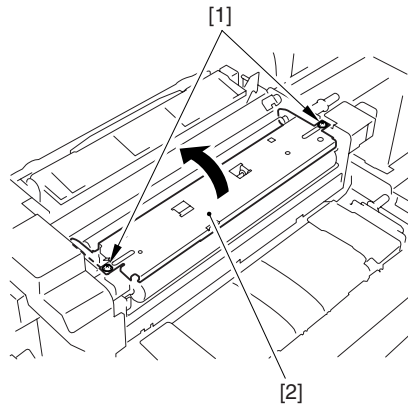
- 1) Open the front cover.
- 2) Slide out the fixing feeding unit.
- 3) Remove the screw [1], and detach the

fixing upper cover [2].



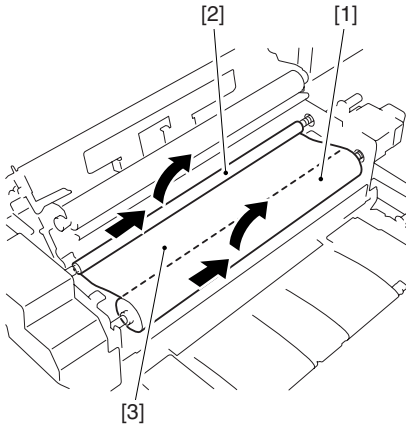
F-9-105

- 4) Remove the 2 screws [1], and open the web unit [2].



F-9-106

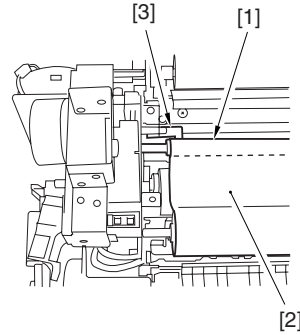
- 5) Push the web feed roller [1] and the web takeup roller [2] toward the rear, and detach the fixing web [3].



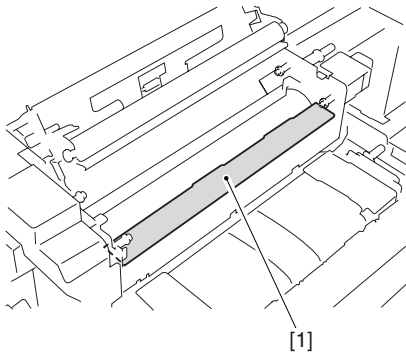
F-9-107

6) Clean the surface of the silicone oil tray.

winding it at the front, make sure that the arm guide plate [3] is outside of the takeup roller. Also, at this time, check to make sure that the area of contact with the roller is impregnated with oil.)



F-9-109



F-9-108

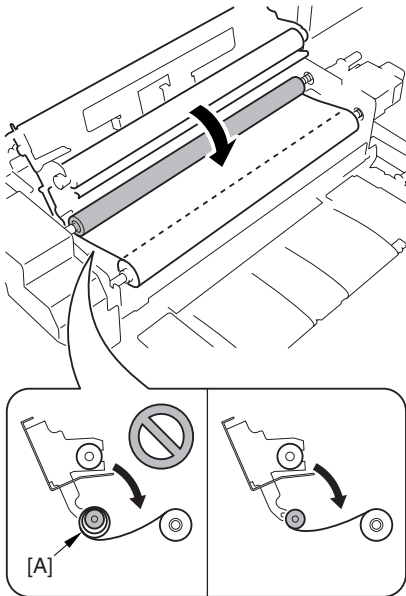


Check to make sure that the fixing web is not a skew and is free of slack [A] and wrinkling.

### 9.5.11.2 Fitting the Fixing Web

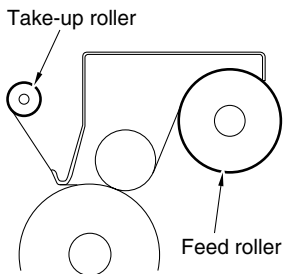
Fit the fixing web back on using the steps to detach it but only in reverse.

1) Wind the web [2] around the fixing takeup roller [1] 2 to 3 times. (While



F-9-110

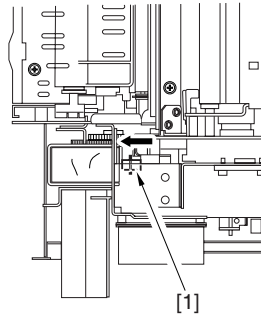
Also, check to make sure that the fixing web is wound in the following direction and orientation:



F-9-111

2) When you have fitted the fixing web,

move the plunger [1] of the solenoid in the direction of the arrow until the fixing web is free of slack.



F-9-112

### 9.5.11.3 After Replacing the Fixing Web

- If you have replaced the fixing web, be sure to reset the counter reading to '0' using the following service mode items:

**COPIER>COUNTER>MISC>FIX-WEB**

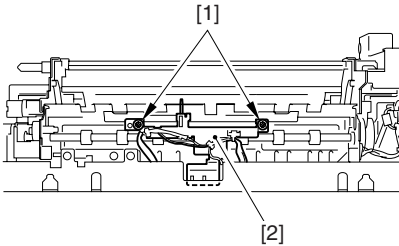
**COPIER>COUNTER>DRBL-1>FIX-WEB**

## 9.5.12 Fixing Jam Sensor

### 9.5.12.1 Removing the Delivery Jam Sensor

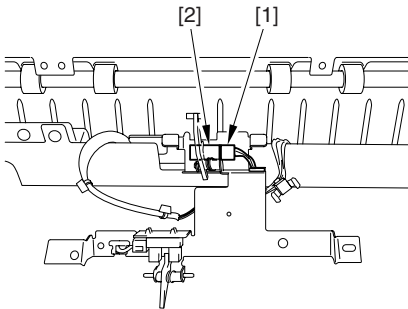
- 1) Remove the fixing feeding unit from the machine.
- 2) Remove the outside delivery roller.
- 3) Remove the 2 screws [1], and pull out

the sensor support plate toward the outside.

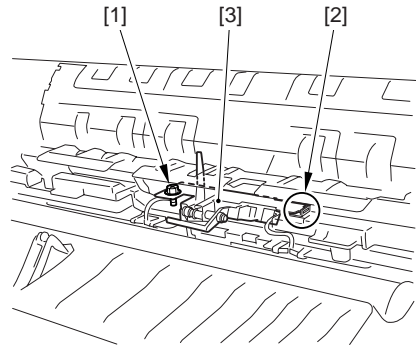


F-9-113

- 4) Disconnect the connector [1], and detach the delivery jam sensor [2] from the sensor support plate.

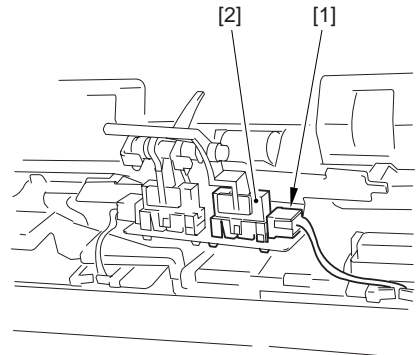


F-9-114



F-9-115

- 3) Disconnect the connector [1], and detach the claw jam sensor [2] from the sensor support plate.



F-9-116

## 9.5.13 Claw Jam Sensor

### 9.5.13.1 Removing the Claw Jam Sensor

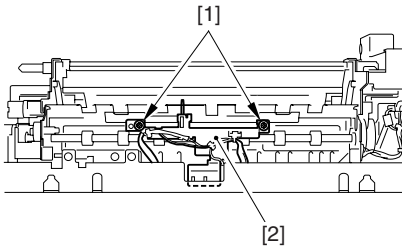
- 1) Remove the inside paper roller.
- 2) Remove the screw [1], and remove the protrusion [2]; then, pull out the sensor support plate [3] toward the outside.



### 9.5.14 External Delivery Sensor

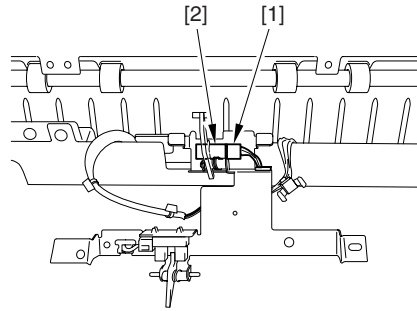
#### 9.5.14.1 Removing the Outside Delivery Sensor

- 1) Remove the fixing feeding unit from the machine.
- 2) Remove the outside delivery roller.
- 3) Remove the 2 screws [1], and pull out the sensor support plate toward the outside.



F-9-117

- 4) Disconnect the connector [1], and detach the outside delivery jam sensor [2] from the sensor support plate.

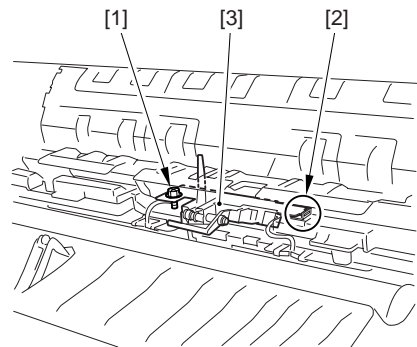


F-9-118

### 9.5.15 Internal Delivery Sensor

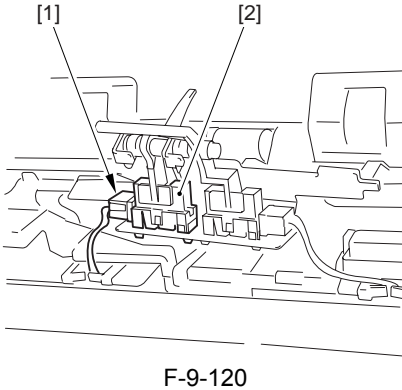
#### 9.5.15.1 Removing the Inside Delivery Sensor

- 1) Remove the inside delivery roller.
- 2) Remove the screw [1], and remove the protrusion [2]; then, pull out the sensor support plate [3] toward the outside.



F-9-119

- 3) Disconnect the connector [1], and detach the inside delivery sensor [2] from the sensor support plate [2].

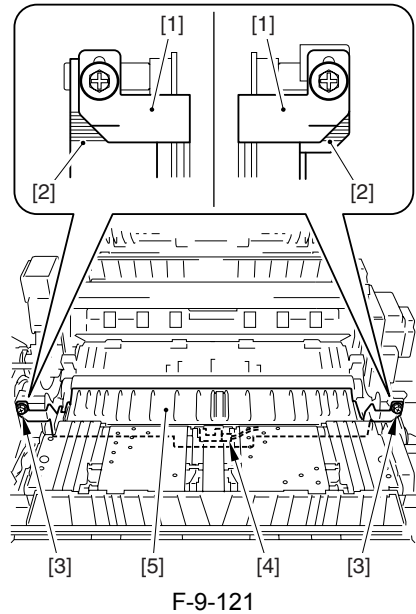


F-9-120

## 9.5.16 Fixing Inlet Sensor

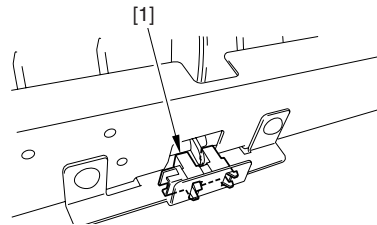
### 9.5.16.1 Removing the Fixing Inlet Sensor

- 1) Slide out the fixing feeding unit.
- 2) Check the position (front, rear) of the fixing inlet guide base. (Locate the marking line [1] of the fixing inlet guide base in relation to the indexes [3] of the height adjusting support plate. Thereafter, remove the 2 screws [3], and disconnect the connector [4]; then, detach the fixing inlet guide base [5].



F-9-121

- 3) Detach the fixing inlet sensor [1] from the fixing inlet guide base.



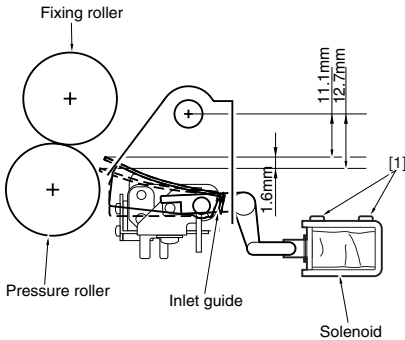
F-9-122



Be sure to mount the fixing inlet guide base where it was in step 1).

### 9.5.16.2 Adjusting the Fixing Inlet Guide

- Adjust the position of the solenoid using the two screws [1] so that the fixing inlet guide will be positioned as indicated when the solenoid turns on.



F-9-123

#### <Points to Note When Making Adjustments in th Field>

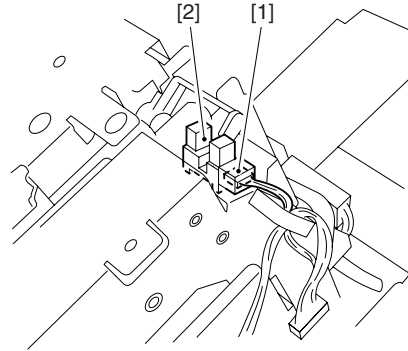
- The inlet guide is in low position when the solenoid (SL1) goes on.
- The height of the inlet guide must be such that the difference between the front and the rear must be 0.2 mm or less.
- As necessary, adjust the height of the inlet guide by loosening the fixing screw on the height adjusting support plate.

### 9.5.17 Fixing web sensor

#### 9.5.17.1 Removing the Fixing Web Sensor

- 1) Slide out the fixing feeding unit.

- 2) Remove the fixing front cover.
- 3) Remove the fixing drive assembly.
- 4) Disconnect the connector [1], and detach the fixing web sensor [2].

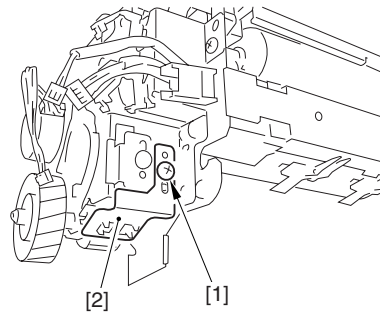


F-9-124

### 9.5.18 Fixing shutter sensor

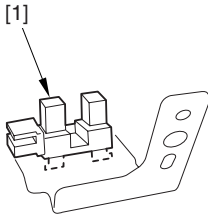
#### 9.5.18.1 Removing the Shutter Sensor

- 1) Remove the fixing upper unit.
- 2) Remove the screw [1], and detach the shutter sensor support plate [2].



F-9-125

- 3) Remove the shutter sensor [1] from the shutter sensor support plate.

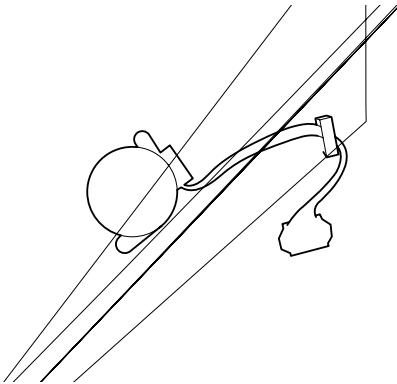


F-9-126

## 9.5.19 Fixing shutter motor

### 9.5.19.1 Removing the Shutter Motor

- 1) Slide out the fixing feeding unit.
- 2) Remove the fixing front cover.
- 3) Remove the fixing drive assembly.
- 4) Free the harness from the harness guide [1], disconnect the connector [2], and remove the 2 screws [3]; then, detach the shutter motor [4].



F-9-127

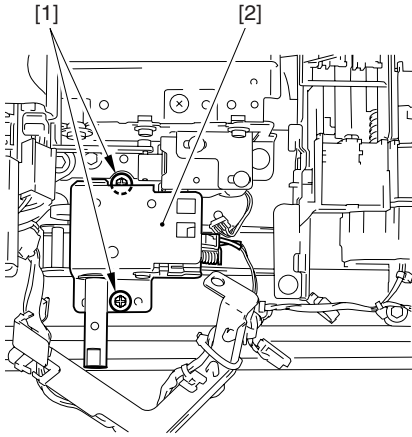
## 9.5.20 Fixing Inlet Guide Solenoid

### 9.5.20.1 Removing the Fixing Inlet Guide Solenoid (SL1)

- 1) Slide out the fixing feeding unit.
- 2) Remove the fixing right, left, and front covers.
- 3) Disconnect the connector [1], and remove the screw [2]; then, free the harness from the clamp of the harness support plate [3].

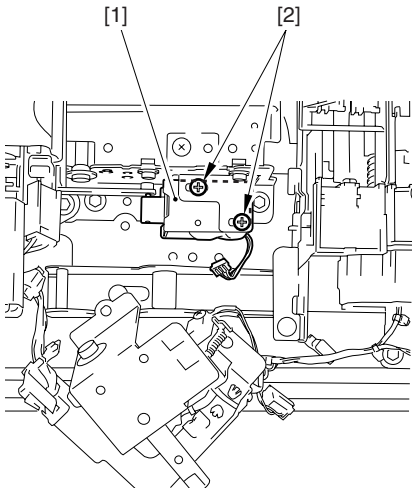
F-9-128

- 4) Remove the 2 screws [1], and detach the fixing feeding unit releasing lever support plate [2].



F-9-129

5) Remove the 2 screws [1], and detach the solenoid [2].

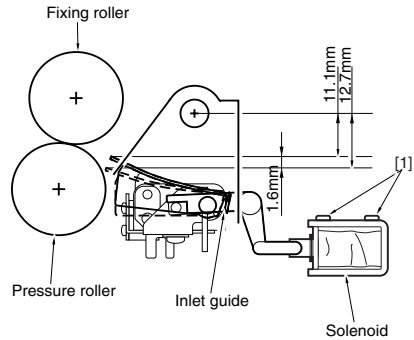


F-9-130

9.5.20.2 Adjusting the Position of the Fixing

Inlet Guide Solenoid (SL1)

Turn the screw [1] to adjust the position of the solenoid so that the guide will be as shown in the figure when the solenoid goes on.



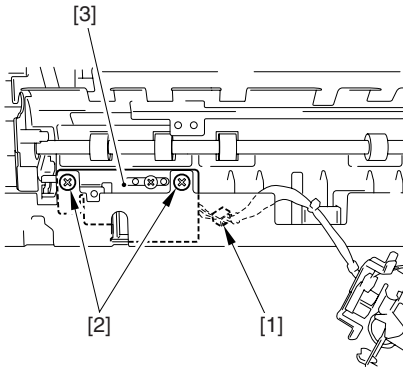
F-9-131

9.5.21 Delivery Flapper Solenoid

9.5.21.1 Removing the Delivery Flapper Solenoid (SL5)

- 1) Remove the fixing feeding unit from the machine.
- 2) Remove the outside delivery roller.
- 3) Remove the sensor support plate (outside delivery sensor/delivery assembly jam sensor) [1].
- 4) Disconnect the connector [1], and remove the 2 screws [2]; then, slide the delivery flapper solenoid [3] to the side

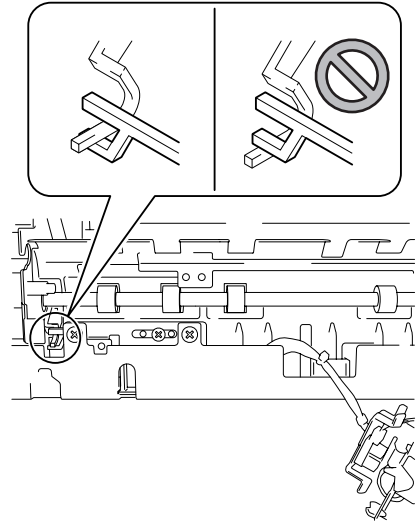
to detach.



F-9-132

#### 9.5.21.2 Points to Note when Mounting the Delivery Flapper Solenoid (SL5)

- When mounting the delivery flapper solenoid, be sure to pay attention to the spatial relationship between the arm [1] of the delivery flapper solenoid and the arm [2] of the sensor.

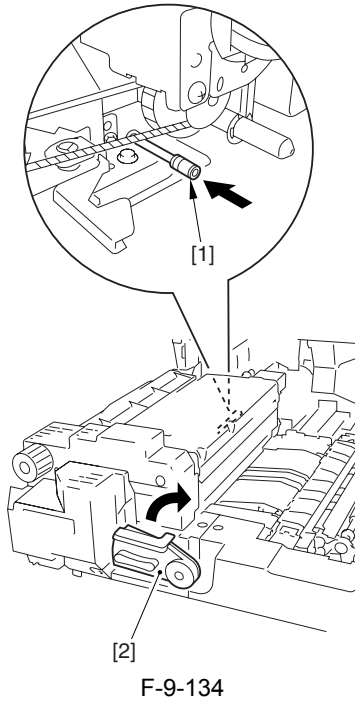


F-9-133

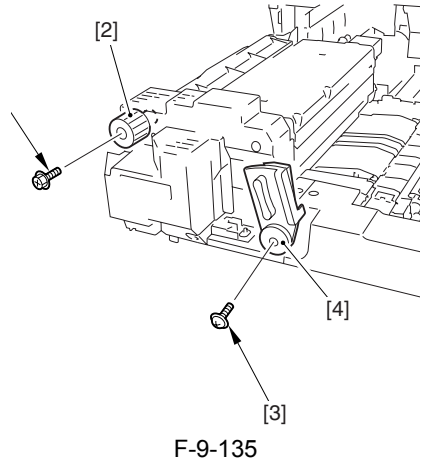
### 9.5.22 Fixing Cleaning Web Solenoid

#### 9.5.22.1 Removing the Fixing Web Solenoid (SL9)

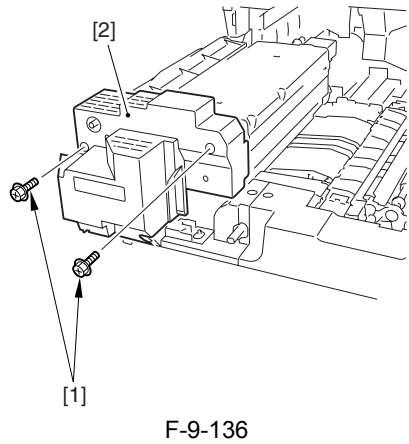
- 1) Slide out the fixing feeding unit.
- 2) While pushing the hook shaft [1] found at the rear of the fixing feeding unit in the direction of the arrow (i.e., toward the front of the machine), turn the fixing feeding unit releasing lever [2] clockwise to lock it in place.



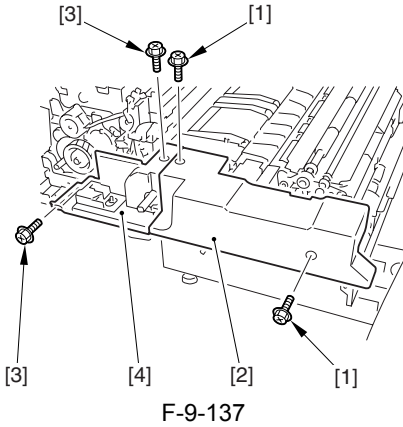
3) Remove the screw [1], and detach the knob [2]; then, remove the screw, and detach the fixing feeding unit releasing lever [4].



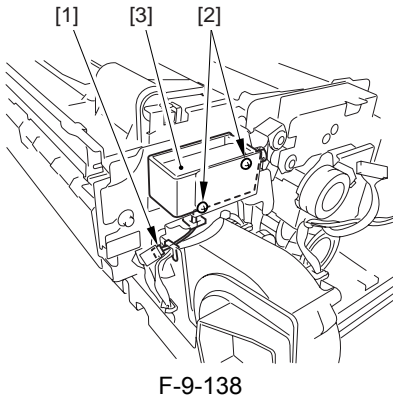
4) Remove the 2 screws [1], and detach the fixing front cover [2].



5) Remove the 2 screws [1], and detach the fixing feeding unit front cover [2]; then, remove the 2 screws [3], and detach the fixing feeding unit middle cover [4].



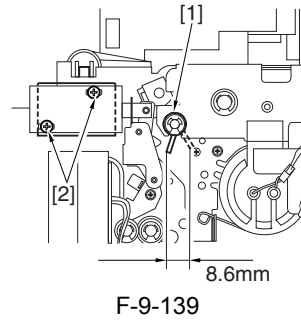
- 6) Disconnect the connector [1], and remove the 2 screws [2]; then, detach the fixing web solenoid [3].



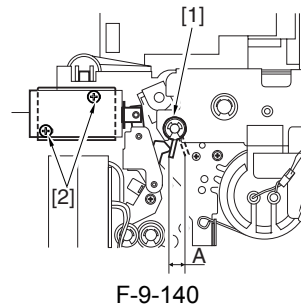
### 9.5.22.2 Adjusting the Position of the Fixing Web Solenoid (SL9)

- a. If the fixing web is new,  
Turn the screw [2] to adjust the position

of the solenoid so that the shift distance of the drive lever [1] is 8.6 mm.



- b. If the fixing web has been used at all,  
Before removing the solenoid, check the position of the drive lever as found when the solenoid goes on. After replacing the solenoid, turn the screw [2] so that the drive lever [1] is located as it was before the replacement.

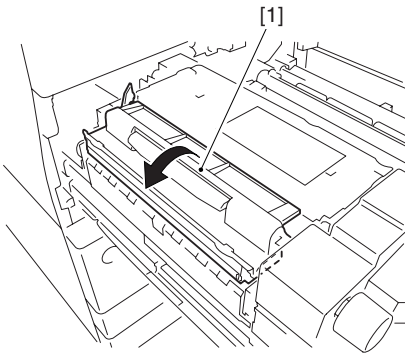




## 9.5.23 Upper Separation Claw

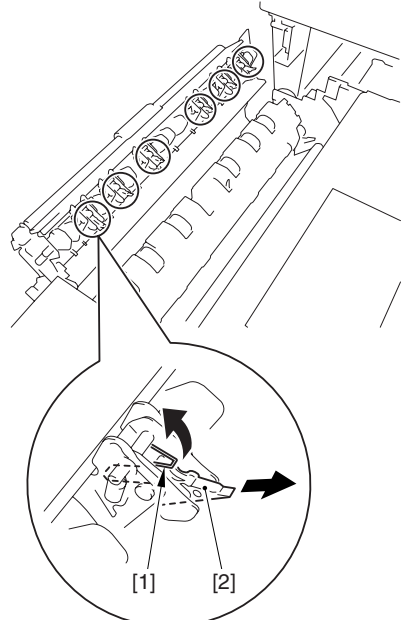
### 9.5.23.1 Removing the Upper Separation Claw

- 1) Open the front cover.
- 2) Slide out the fixing feeding unit.
- 3) Open the delivery unit cover [1].



F-9-141

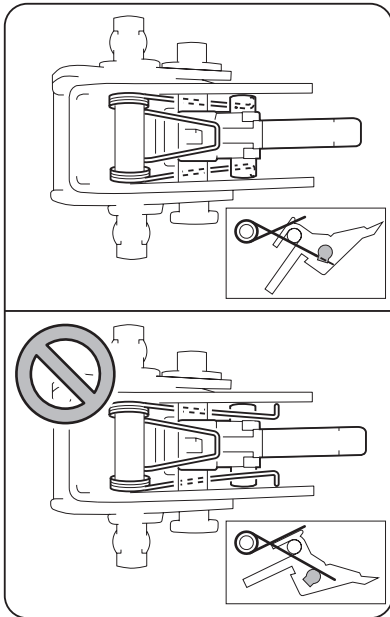
- 4) While lifting the spring [1], detach the upper separation claw [2].



F-9-142

### 9.5.23.2 Points to Note When Mounting the Upper Separation Claw

- When mounting the upper separation claw, be sure to pay attention to the spatial relationship between the claw and the spring.

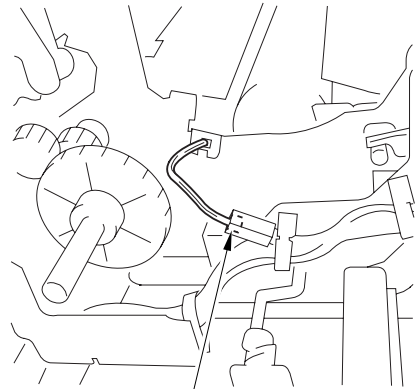


F-9-143

## 9.5.24 Lower Separation Claw

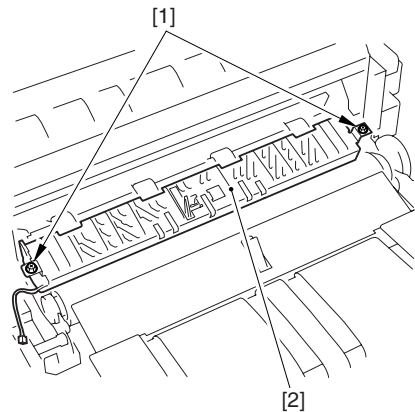
### 9.5.24.1 Removing the Lower Separation Claw Unit

- 1) Remove the fixing upper unit.
- 2) Free the harness from the clamps, and disconnect the connector [1].



[1]  
F-9-144

- 3) Remove the 2 screws [1], and detach the lower separation claw unit [2].

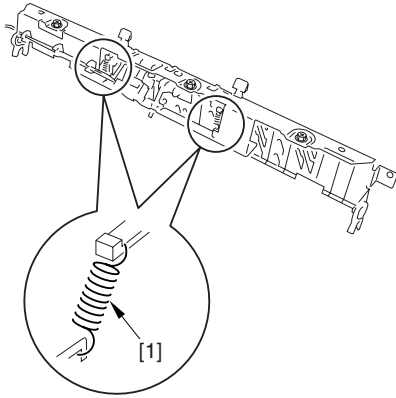


[1]  
[2]  
F-9-145

### 9.5.24.2 Removing the lower Separation Claw

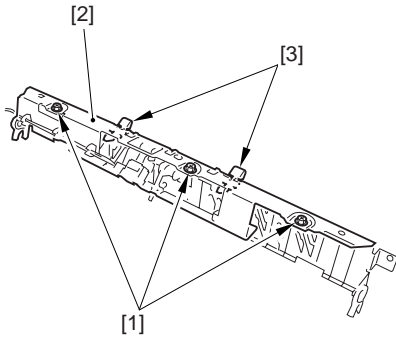
- 1) Remove the fixing upper unit.
- 2) Remove the lower separation claw unit.

3) Remove the spring [1].



F-9-146

4) Remove the 3 screws [1], and detach the lower separation claw support plate [2]; then, detach the lower separation claw [3].



F-9-147

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# Chapter 10

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## External and Controls

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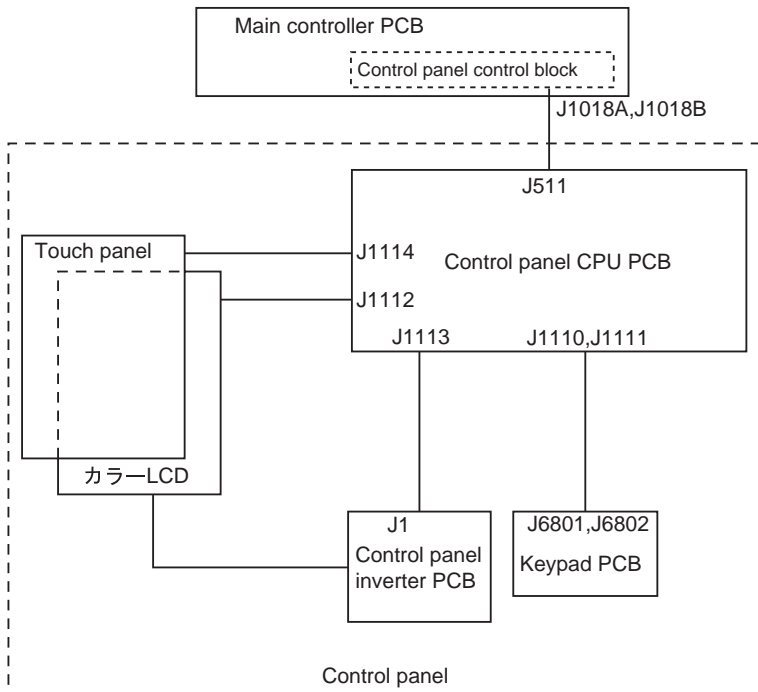
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## 10.1 Control Panel

### 10.1.1 Overview

The machine's control panel consists of the following PCBs, LCD, and touch panel, and possesses the following principal functions:

- LCD indication
- contrast adjustment
- touch switch input
- hard key input



F-10-1

### 10.1.2 LCD Indication Processing

The CPU found on the main controller PCB serves to feed data (display data) to the control panel CPU on the control panel according to program instructions.

The data goes through the control panel CPU PCB to reach the color LCD.

### 10.1.3 Adjusting the LCD Contrast

The machine is equipped with a density control volume (VR6801) on its keypad PCB so that the user can adjust the contrast of the LCD to suit individual needs.

### 10.1.4 Functions of the Control Panel CPU

- Monitoring Key Inputs

It communicates the inputs from the keypads and function keys to the CPU on the main control PCB.

- Monitoring the Touch Panel Inputs

It communicates the inputs from the touch panel to the CPU on the main controller PCB.

- Controlling the Buzzer Sound

- Turning On Control Panel LEDs

---

**MEMO:**

The color LCD is operated by the main controller, and the control panel CPU PCB serves to relay the drive signal.

---



## 10.2 Counters

### 10.2.1 Soft Counters

The machine possesses soft counters used to keep track of the number of prints it has made. The counter readings are indicated in response to a press on the Check key on the control panel.

The counters are controlled by the main controller PCB, and the readings are incremented in response to detection of paper by the following sensors at time of copier/printer operation:

T-10-1

<b>Copier/printer operation</b>	<b>Counter name</b>
Simplex mode	inside delivery paper sensor (PS35)
Duplex mode	duplex pre-registration sensor (PS30)
Finisher mode	delivery sensor

The counters may be grouped into 8 types, a total of 16 individual types when further divided according to paper size (large and small); specifically,

T-10-2

<b>Copier/printer mode</b>	<b>Large size</b>	<b>Small size*1</b>
Local copy	A	B
PDL print	C	D
Box print	E	F
Remote copy print	G	H
Fax reception print	I	J
Report print	K	L
Duplex print	M	N
Scan	O	P

\*1: at time of shipment, B4 or smaller.

If the user wants B4 to be counted as a large size, the setting may be changed in service mode.

The following shows the default counter types valid at time of shipment:

T-10-3

100V

Counter	Description*1	Default	Change
counter 1	total (A through L)	ON	not possible
counter 2	-	OFF	possible
counter 3	-	OFF	possible
counter 4	-	OFF	possible
counter 5	-	OFF	possible
counter 6	-	OFF	possible

T-10-4

120 V, 230 V (outside Europe)

Counter	Description*1	Default	Change
counter 1	total (A through L)	ON	not possible
counter 2	total, large (ACEGIK)	ON	possible
counter 3	copy (total 1; ABGH)	ON	possible
counter 4	copy (large; AG)	ON	possible
counter 5	-	OFF	possible
counter 6	-	OFF	possible

T-10-5

230V (inside Europe)

<b>Counter</b>	<b>Description*1</b>	<b>Default</b>	<b>Change</b>
counter 1	total (A through L)	ON	not possible
counter 2	total, large (ACEGIK)	ON	possible
counter 3	total, small (BDFHJL)	ON	possible
counter 4	scan (total 1; OP)	ON	possible
counter 5	-	OFF	possible
counter 6	-	OFF	possible

\*1: the notation in parentheses indicates the support mode of the basic counter.

\*2: the counter type may be changed or counter display may be enabled or disabled in service mode (not applicable to counter 1).

## 10.3 Fans

### 10.3.1 Arrangement, Functions, and Error Codes

#### T-10-6

The following shows the names of the fans mounted to the machine and the functions and error codes associated with them:

#### T-10-7

<b>Notation</b>	<b>Name</b>	<b>Function</b>	<b>2-speed control (voltage)</b>	<b>Error code</b>
FM1	feed fan	keeps print paper to feed belt	yes (24/12 V)	E805-0002
FM2	primary charging cooling fan	cools the primary charging assembly and the cleaner	yes (24/12 V)	E824-0001
FM3	heat discharge fan	discharges exhaust of fans outside the machine	yes (24/12 V)	E805-0001
FM4	controller cooling fan	cools the laser unit, developing block drive block, and controller	yes (24/12 V)	E121-0001
FM5	curl-removing fan	removes curl from print paper after fixing	yes (24/12 V)	-
FM6	DC power supply fan	cools power supply PCB	yes (24/12 V)	E804-0000
FM7	fixing heater power supply cooling fan	cools fixing power supply	yes (24/12 V)	E804-0001
FM8	duplex feed fan	cools the duplex feed motor	non (24 V)	-

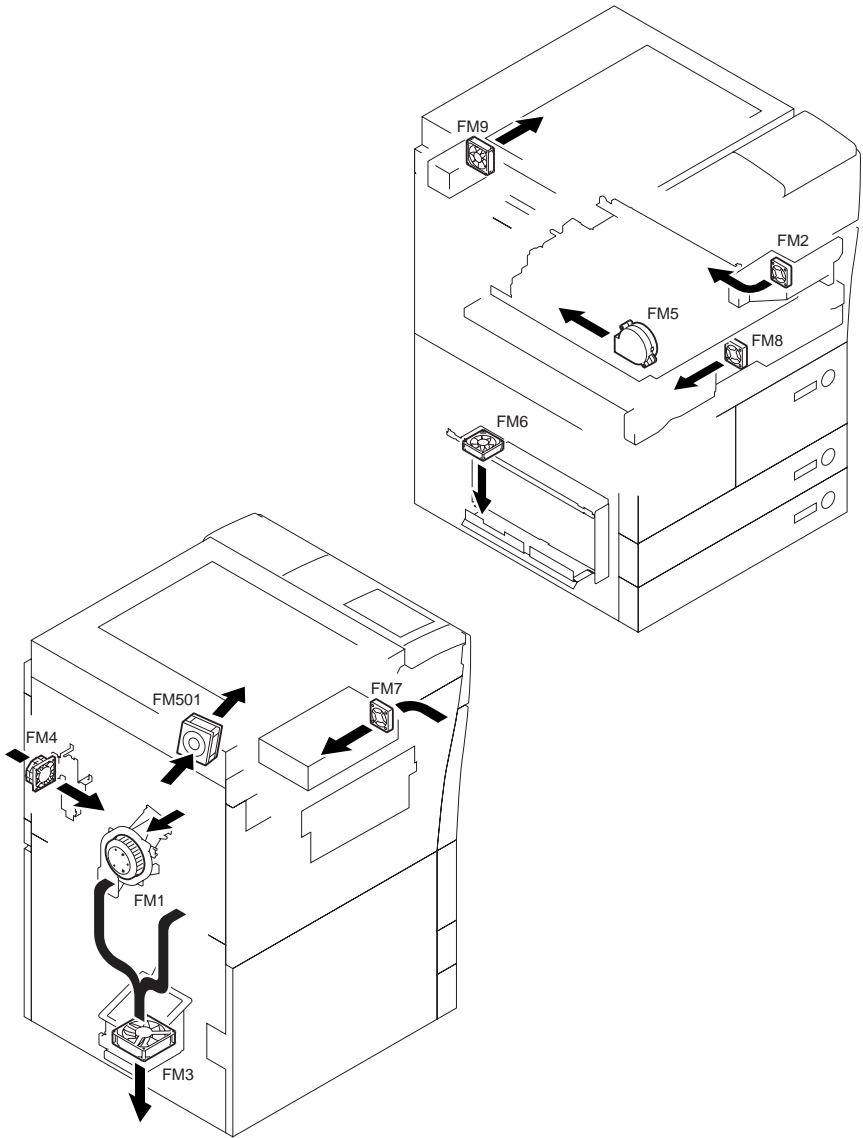
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<b>Notation</b>	<b>Name</b>	<b>Function</b>	<b>2-speed control (voltage)</b>	<b>Error code</b>
FM9	circulation duct fan	cools the inside of the machine	yes (24/12 V)	-
FM501	reader unit cooling fan	cools the reader unit	no (24 V)	-

## T-10-8

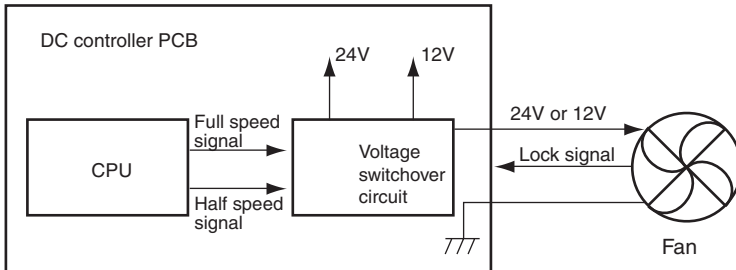
The following shows the arrangement of the fans and the direction of air current:



F-10-2

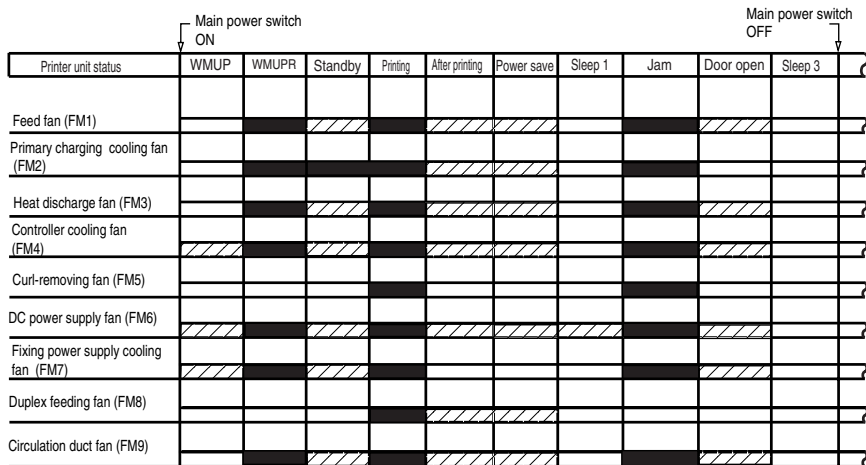
### 10.3.2 Controlling the Speed of the Fans

Some of the fans mounted in the machine are controlled to 2 different speeds, switched over by the voltage switchover circuit of individual fans.



F-10-3

### 10.3.3 Sequence of Operation



■: full speed    ▨: half speed

F-10-4

## 10.4 Power Supply System

### 10.4.1 Power Supply

#### 10.4.1.1 Overview

The supply of DC power of the machine is controlled by the DC power supply PCB. The following shows the various PCBs and components associated with the supply of DC power:

T-10-9

Name	Description
DC power supply PCB	-generates DC power from AC power -protects against overcurrent
Rush current prevention PCB	-limits rush current for the fixing feed unit, duplex unit, and high-voltage PCB
Main power switch (SW1)	-serves as the power switch for loads other than the drum heater (H3), cassette heater (H4), and deck heater (H5)
Environment switch (SW3)	-turns on/off the drum heater (H3), cassette heater (H4), and deck heater (H5)
Cassette heater switch (SW4)	- turns on/off the cassette heater (H4) and the deck heater

#### 10.4.1.2 Distribution of Power and the Switches

The various loads of the machine are supplied with power by means of the following switches:



## 1. 100V Model

T-10-10

	Main power switch OFF		Sleep		Warm-up (other than initial)		Standby/power save		Copying/printing	
Env. switch	OFF									
Main switch	OFF		ON							
Cassette switch	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Latch relay	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON
Drum heater	OFF	OFF	OFF	OFF	OFF	OFF	ON/ OFF	ON/ OFF	ON/ OFF	ON/ OFF
Cassette heater	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Reader unit heater	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

T-10-11

	Main power switch OFF		Sleep		Warm-up (other than initial)		Standby/power save		Copying/printing	
Env. switch	ON									
Main switch	OFF		ON							
Cassette switch	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Latch relayRL	ON	ON	OFF	OFF	ON	ON	ON	ON	ON	ON

	Main power switch OFF		Sleep		Warm-up (other than initial)		Standby/power save		Copying/printing	
Env. switch	ON									
Main switch	OFF		ON							
Cassette switch	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Drum heater	ON	ON	ON/OFF	ON/OFF	OFF	OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF
Cassette heater	OFF	ON	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
Reader unit heater	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF

2. 120/230V Model

T-10-12

	Main power switch OFF		Sleep		Warm-up (other than initial)		Standby/power save		Copying/printing	
Env. switch	OFF									
Main power switch	OFF		ON							
Cassette switch	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Control relay	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
Drum heater	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
Cassette heater	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

	Main power switch OFF		Sleep		Warm-up (other than initial)		Standby/power save		Copying/printing	
Env. switch	OFF									
Main power switch	OFF		ON							
Cassette switch	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Reader unit heater	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

## T-10-13

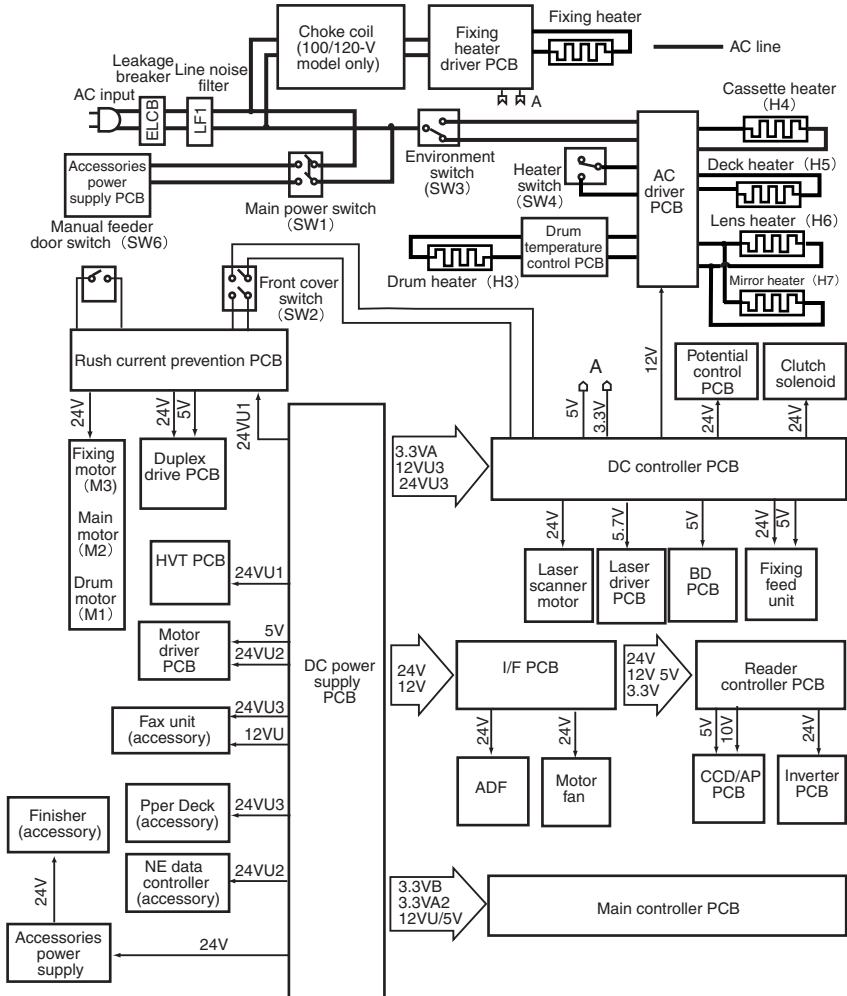
	Main power supply switch OFF		Sleep		Warm-up (other than initial)		Standby/power save		Copying/printing	
Env. switch	ON									
Main switch	OFF		ON							
Cassette switch	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Control relay	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
Drum heater	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Cassette heater	OFF	ON	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
Reader unit heater	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF

The following shows the default settings of the machine's environment switch (SW3) and cassette heater switch (SW4):

T-10-14

<b>Default setting</b>	<b>100-V model</b>	<b>120-V model</b>	<b>230-V model</b>
Environment switch	ON	OFF	OFF
Cassette heater switch	OFF	not present	OFF

The following shows the distribution of power inside the machine:



F-10-5

## 10.4.2 Rated Output of the DC Power Supply PCB

### 10.4.2.1 Rated Output of the Power Supply PCB

The following shows the ratings and the power supply tolerances of the DC power supply PCB:

T-10-15

<b>Output</b>	<b>5VA</b>	<b>3VA1 3VA2 3VA3</b>	<b>3VB</b>	<b>24VU1 24VU2 24VU3 24VU4</b>	<b>12VU</b>
Uninterruptive/ interruptive	interruptive	interruptive	uninterruptive	interruptive	interruptive
Rated output	+5.10V	+3.40V	+3.50V	+24.0V	+12.0V
Power supply tolerance	+/-3%	3.25-3.46V	+/-2% (1.0-2.0A)	+/-5%	+/-5%

### 10.4.2.2 Rated Output of the Accessories Power Supply PCB

The following shows the ratings and the power supply tolerances of the accessories power supply PCB:

T-10-16

<b>Output</b>	<b>24VA</b>
Uninterruptive/ interruptive	interruptive
Rated output	24V
Power supply tolerance	+7-5%

## 10.4.3 Protection Function

### 10.4.3.1 Protective Functions

The machine's DC power supply PCB and the power supply PCB for its accessories are equipped with overcurrent and overvoltage protective functions that will cut off power to prevent damage to circuitry in the event of an overcurrent or overvoltage occurring as a result of a short circuit or other fault.

A fault in 3VB (uninterruptive power supply) will cut off all power of the machine; on the other hand, a fault in any other power supply will cut off all power to loads other than 3VB (uninterruptive power supply).

If a fault has occurred in 3VB (uninterruptive power supply), turn off the main power switch of the printer unit, and remove the cause that has activated the protective circuit; then, replace the DC power supply PCB. (The fuse on the DC power supply PCB is likely to have blown.)

Other than that, turn off the main power switch of the printer unit, and remove the cause that has activated the protective circuit; then, leave the machine alone for about 3 min or more, and turn the power back on to reset the protective circuit.

## 10.4.4 Backup Battery

### 10.4.4.1 Backup Battery

The machine's main controller PCB is equipped with a lithium battery that serves as a source of backup power to retain various data in the event of a power outage or disconnection of the power plug.

#### T-10-17

Main control PCB	manganese dioxide lithium battery (3 V, 1000 mAh)
Battery life	main controller PCB: about 8.8 yr (with power plug disconnected)
Battery replacement	not possible in the field on its own



You must always be sure that the battery is replaced correctly. Be sure to replace it with a battery of a type indicated by the manufacturer of the unit (bearing the same model name or equivalent).

Be sure also to dispose of the removed battery as instructed by the manufacturer of the battery.

---

## 10.4.5 Energy-Saving Function

### 10.4.5.1 Outline

#### 1. Standby State

When the machine is in a standby state, all its loads are supplied with power and the machine is ready to start operation at any time.

#### 2. Sleep State

##### 2-1. Sleep 1

When the machine is in sleep 1, its laser scanner will not rotate even when a key on the control panel is pressed.

##### 2-2. Sleep 3

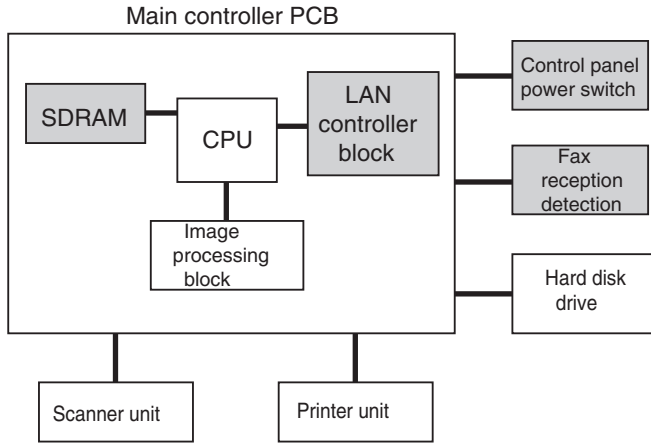
When the machine is in sleep 3, only 3VB on the DC power supply PCB is supplied with power.

The machine moves from sleep 3 to standby in response to the following:

- print job
- press on the control panel power switch
- fax reception
- fax delayed transmission

The following shows the loads that remain supplied with power when the machine is in sleep 3.





F-10-6

### 3. AC Off State

The machine is in an AC off state when its main power switch remains off, with all its power supplies and heater control mechanisms also remaining off.

### 4. Power Supply Arrangement

The following shows how the various loads of the machine are supplied with power while the machine is in individual states:

T-10-18

Operation set		AC off	Sleep 3	Front door open		Sleep 1	Standby, copying, power save
Input	Main power switch	OFF	ON	ON	ON	ON	ON
	Front door switch	-	-	OFF	OFF	ON	ON
	RMT1*	-	0	1	-	1	-
	RMT2*	-	0	0	1	0	1
Output	3VB	OFF	ON	ON	ON	ON	ON
	3VB	OFF	OFF	ON	ON	ON	ON
	5V	OFF	OFF	ON	ON	ON	ON
	12VU	OFF	OFF	ON	ON	ON	ON
	24VU1	OFF	OFF	OFF	ON	OFF	ON
	24VU2/3/4	OFF	OFF	OFF	OFF	OFF	ON

\*Output from the main controller PCB.

## 10.5 Parts Replacement Procedure

### 10.5.1 Left Deck Drive Assembly

#### 10.5.1.1 Removing the Rear Cover (lower)

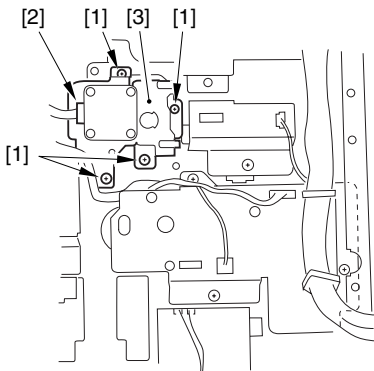
Refer to Procedure 10.5.2.2

#### 10.5.1.2 Removing the High-Voltage Power Supply PCB

Refer to Procedure 10.5.12.2

#### 10.5.1.3 Left Deck Drive Assembly

- 1) Remove the 4 screws [1], and disconnect the connector [2]; then, detach the left deck drive assembly [3].

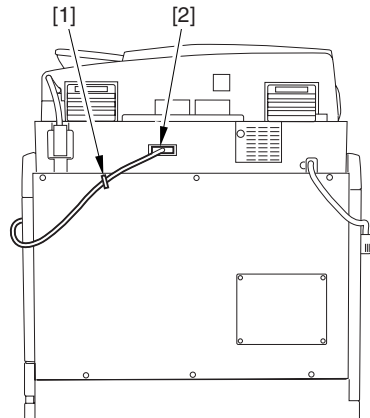


F-10-7

### 10.5.2 Manual Feed Pickup Drive Assembly

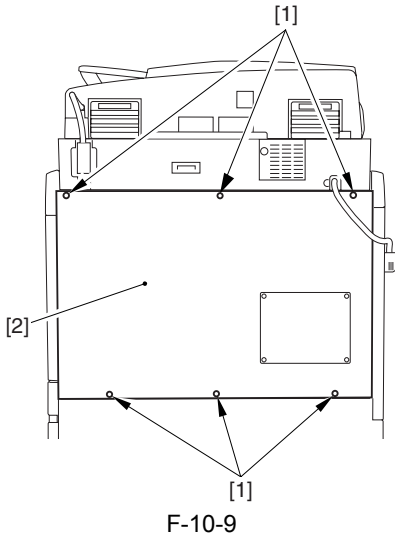
#### 10.5.2.1 Removing the Rear Cover (upper)

- 1) Open the cable clamp [1], and free the reader unit communications cable [2].



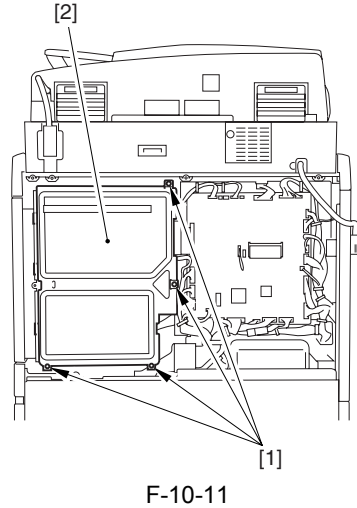
F-10-8

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



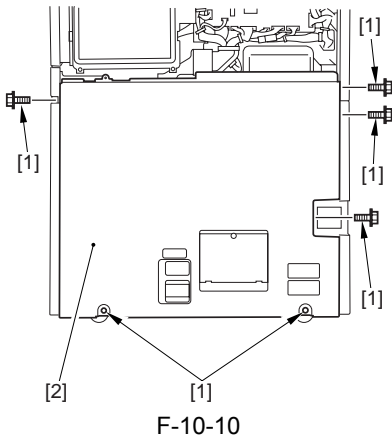
### 10.5.2.3 Removing the Main Controller Box

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

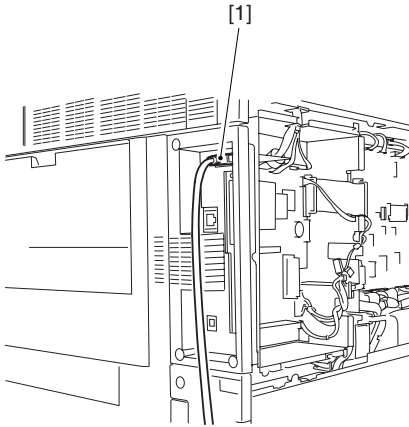


### 10.5.2.2 Removing the Rear Cover (lower)

- 1) Remove the 6 screws [1], and detach the rear cover (lower) [2].

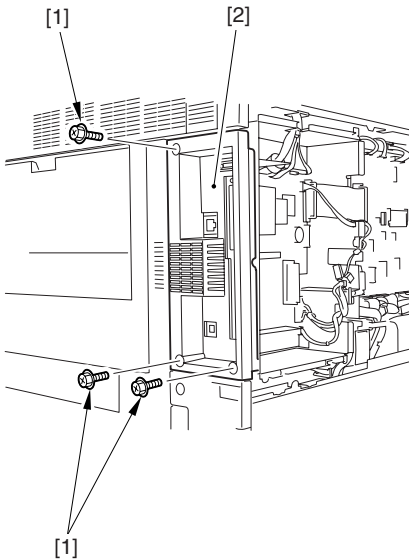


- 2) Disconnect the connector [1] of the reader unit communications cable.



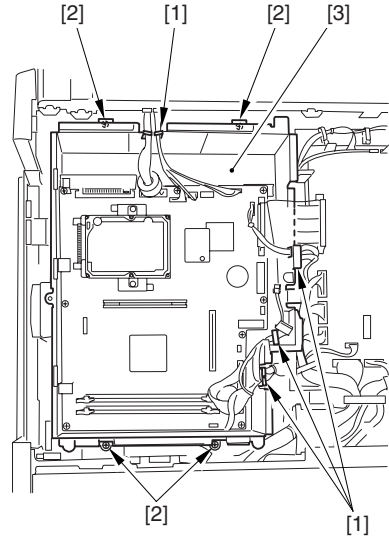
F-10-12

- 3) Remove the 3 screws [1], and detach the upper rear right cover [2].



F-10-13

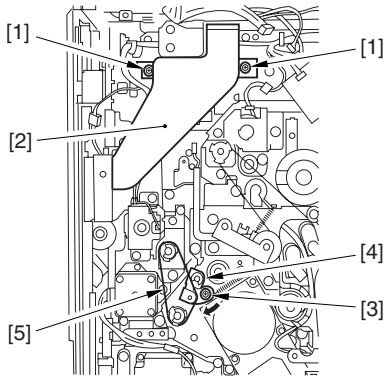
- 4) Disconnect all connectors of the main control PCB, and free all harnesses from the 4 wire saddles [1]; then, detach the main controller box [3].



F-10-14

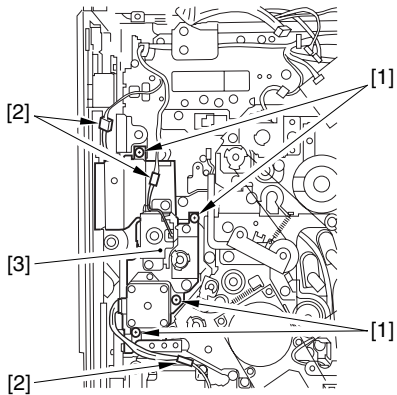
#### 10.5.2.4 Removing the Manual Feeder Pickup Drive Assembly

- 1) Remove the 2 screws [1], and detach the scanner fan duct [2].
- 2) Loosen the screw [3] to release the belt tensioner [4]; then, detach the belt [5].



F-10-15

3) Remove the 4 screws [1], and disconnect the 3 connectors [2]; then, detach the manual feed pickup drive assembly [3].



F-10-16

### 10.5.3 Vertical Path Drive Assembly

#### 10.5.3.1 Removing the Rear Cover (upper)

**Refer to Procedure 10.5.2.1**

#### 10.5.3.2 Removing the Rear Cover (lower)

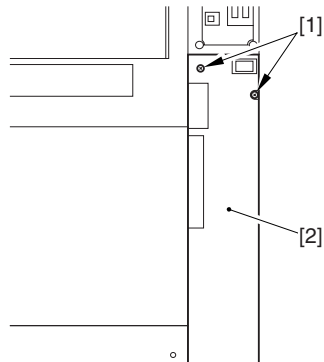
**Refer to Procedure 10.5.2.2**

#### 10.5.3.3 Removing the Main Controller Box

**Refer to Procedure 10.5.2.3**

#### 10.5.3.4 Removing the Right Cover (lower rear)

1) Remove the 2 screws [1], and detach the right cover (lower rear) [2].



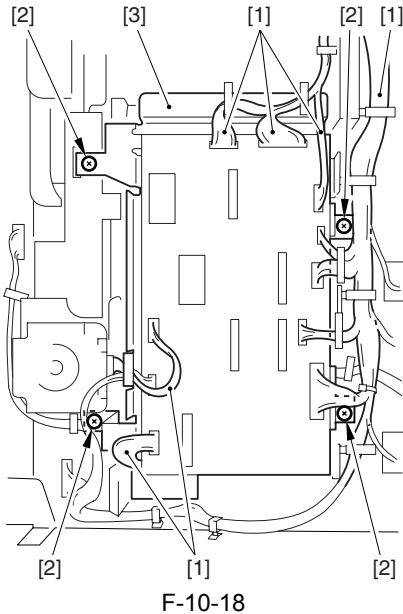
F-10-17

### 10.5.3.5 Removing the Waste Toner Bottle Holder

**Refer to Procedure 10.5.4.4**

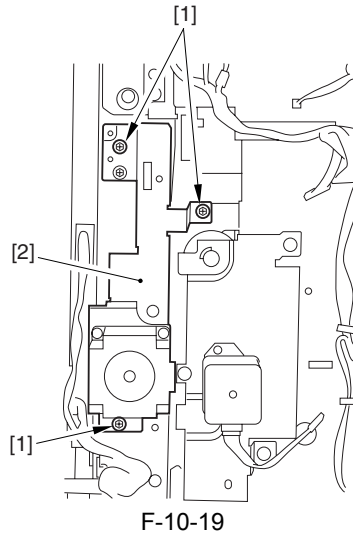
### 10.5.3.6 Removing the Motor Driver PCB Base

- 1) Disconnect the 10 connectors, and free the harness [1] from the 9 wire saddles.
- 2) Remove the 4 screws [2], and detach the motor driver PCB together with its base [3].



### 10.5.3.7 Removing the Vertical Path Drive Assembly

- 1) Remove the 3 screws [1], and detach the vertical path drive assembly [2].



## 10.5.4 Waste Toner Drive Assembly

### 10.5.4.1 Removing the Rear Cover (upper)

**Refer to Procedure 10.5.2.1**

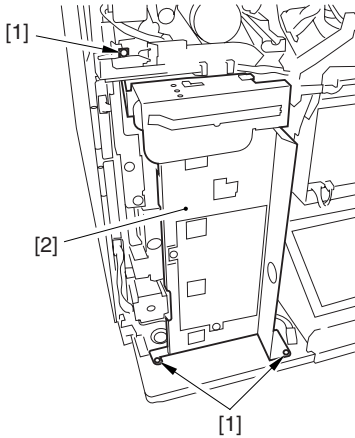
### 10.5.4.2 Removing the Rear Cover (lower)

**Refer to Procedure 10.5.2.2**

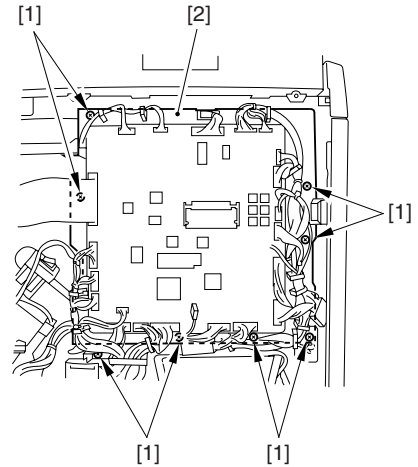
### 10.5.4.3 Removing the Main Controller Box

**Refer to Procn1 153c2.**





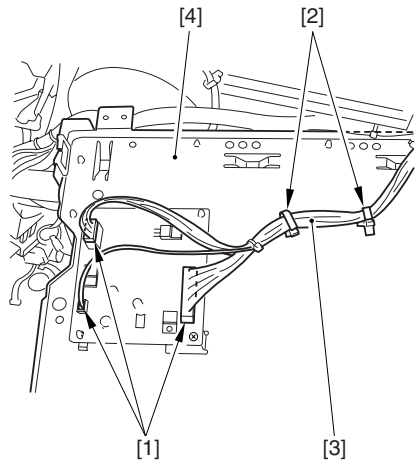
F-10-22



F-10-23

#### 10.5.4.5 Removing the DC Controller Base

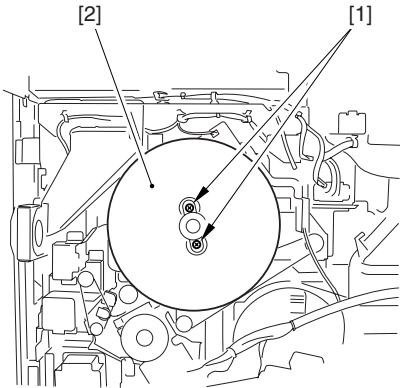
- 1) Disconnect the 27 connectors, and free the harness from the wire saddle.
- 2) Remove the 8 screws [1], and detach the DC controller base [2]; then, turn it over.
- 3) Disconnect the 3 connectors [1], and free the harness [3] from the 2 cable clamps [2]; then, detach the DC controller base [4].



F-10-24

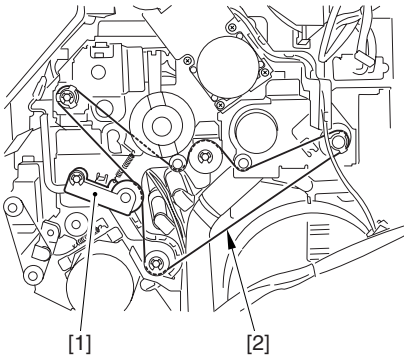
### 10.5.4.6 Removing the Waste Toner Drive Assembly

- 1) Remove the 2 screws [1], and detach the fly wheel [2].



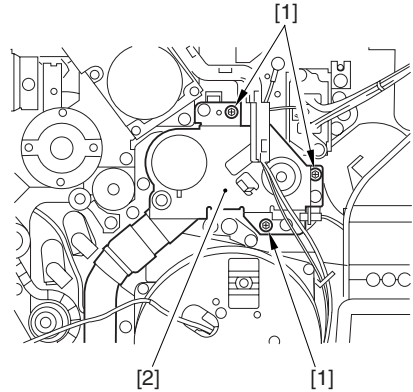
F-10-25

- 2) Loosen the belt tensioner [1], and detach the main motor belt [2].



F-10-26

waste toner drive assembly [2].



F-10-27

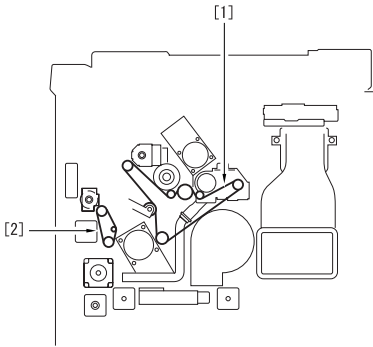
## 10.5.5 Main Drive Assembly

### 10.5.5.1 Fitting the Drive Belt

Be sure that the drive belt is fitted to the pulley and the rollers as shown in the following figure:

- [1] Main drive belt
- [2] Pickup drive belt

- 3) Remove the 3 screws [1], and detach the



F-10-28

## 10.5.6 Cassette Pickup Drive Assembly

### 10.5.6.1 Removing the Rear Cover (upper)

**Refer to Procedure 10.5.2.1**

### 10.5.6.2 Removing the Rear Cover (lower)

**Refer to Procedure 10.5.2.2**

### 10.5.6.3 Removing the Main Controller Box

**Refer to Procedure 10.5.2.3**

### 10.5.6.4 Removing the Right Cover (lower rear)

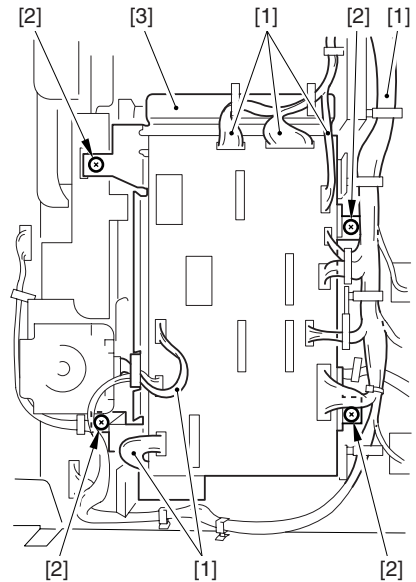
**Refer to Procedure 10.5.3.4**

### 10.5.6.5 Removing the Waste Toner Bottle Holder

**Refer to Procedure 10.5.4.4**

### 10.5.6.6 Removing the Motor Drive Base

- 1) Disconnect the 10 connectors, and free the harness [1] from the 9 wire saddles.
- 2) Remove the 4 screws [2], and detach the motor driver PCB together with its base [3].



F-10-29

### 10.5.6.7 Cassette Pickup

#### Assembly

The removal procedure of a right door and a left door is the same. An illustration makes a right door an example and explains it.

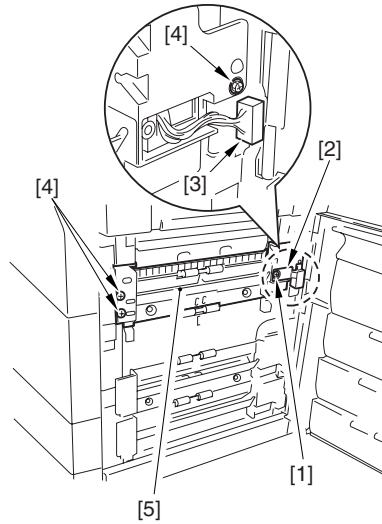
- 1) Slide out the right deck / cassette3 / cassette4.
  - 2) Open the right upper cover and the right lower cover.
- 



An attempt to remove the pickup assembly without removing the deck will cause the lifter to get trapped, not holding the pickup assembly from sliding out.

---

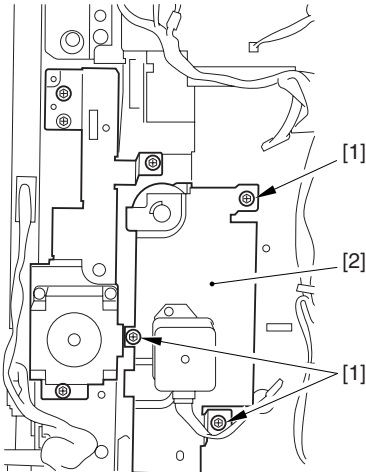
- 3) Remove the mounting screw [1], and detach the connector cover [2]; then, disconnect the connector [3].
- 4) Remove the three mounting screws [4], and detach the pickup assembly [5].



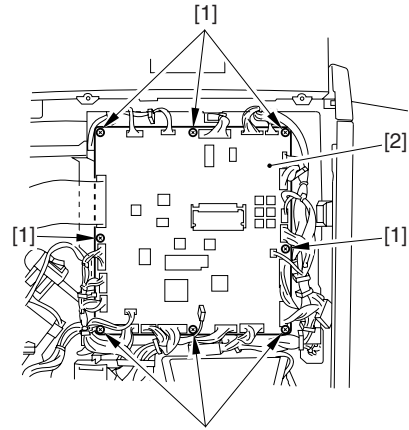
F-10-30

### 10.5.6.8 Removing the Cassette Pickup Drive Assembly

- 1) Remove the 3 screws [1], and detach the cassette pickup drive assembly [2].



F-10-31



F-10-32

## 10.5.7 DC Controller PCB

### 10.5.7.1 Removing the Rear Cover (upper)

**Refer to Procedure 10.5.2.1**

### 10.5.7.2 Removing the DC Control PCB

- 1) Disconnect the 27 connectors, and remove the 8 screws [1]; then, detach the DC controller PCB [2].

### 10.5.7.3 When Replacing the DC Controller PCB

Be sure to perform the following when replacing the DC controller PCB:

- 1) Transfer the 6 EEPROMs from the existing PCB to the new PCB. Refer to the color of the round label to make sure that the ROM is positioned correctly.
- 2) Enter the values indicated on the label [1] of the new PCB using the following service mode items:

```
COPIER> ADJUST> HV-TR> D-  
PRE-TR
```

```
COPIER> ADJUST> HV-TR> D-  
HV-TR
```

```
COPIER> ADJUST> HV-SP> D-  
HV-SP
```

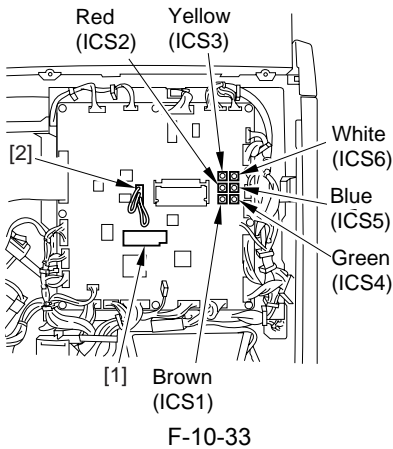
```
COPIER> ADJUST> DEVELOP>
```

D-HV-DE

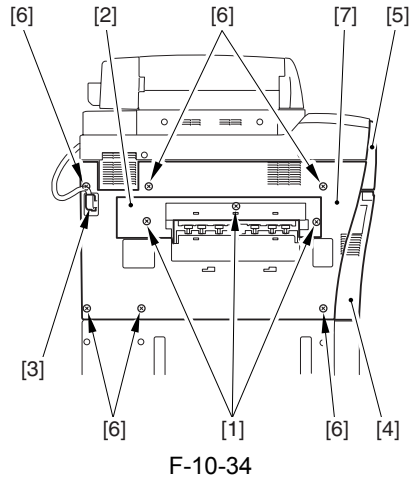
- 3) Move the J303 shorting connector from the existing to new PCB.



Take full care. Failure to connect the shorting connector will cause the control panel display to fail.



- 5) Remove the 6 screws [6], and detach the left cover (middle) [7].



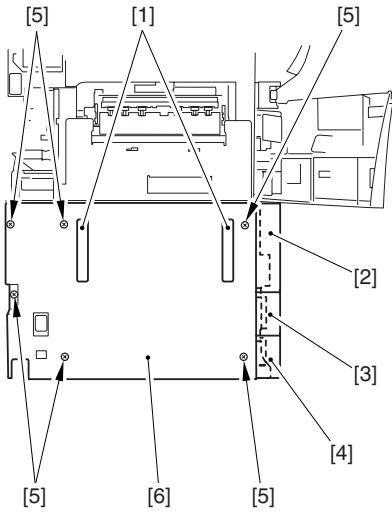
### 10.5.8.2 Removing the Lower Left Cover (lower)

- 1) Remove the 2 grip covers [1].
- 2) Slide out the left deck [2], cassette 3 [3], and cassette 4 [4].
- 3) Remove the 6 screws [5], and detach the left cover (lower) [6].

## 10.5.8 Removing the Printer Power Supply PCB

### 10.5.8.1 Removing the Left Cover (middle)

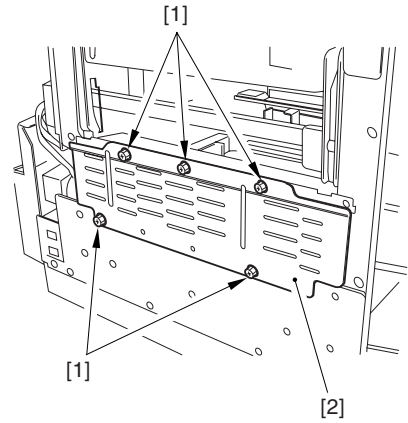
- 1) Remove the 3 screws [1], and detach the delivery cover [2].
- 2) Disconnect the reader power cable [3].
- 3) Open the front cover [4].
- 4) Open the hopper cover [5].



F-10-35

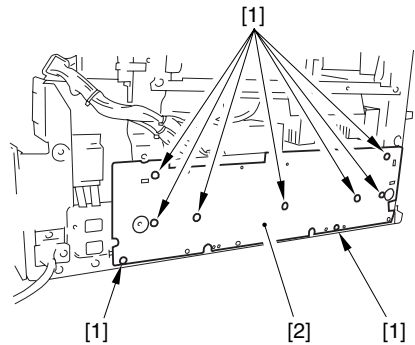
### 10.5.8.3 Removing the Printer Power Supply PCB

- 1) Remove the 5 screws [1], and detach the shielding plate [2].



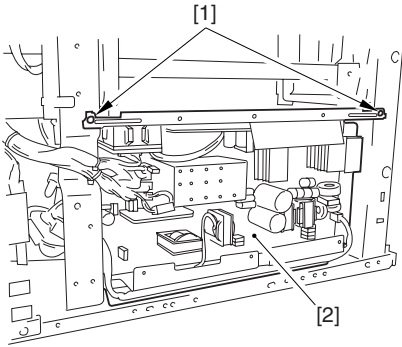
F-10-36

- 2) Remove the 9 screws [1], and detach the power supply cover [2].

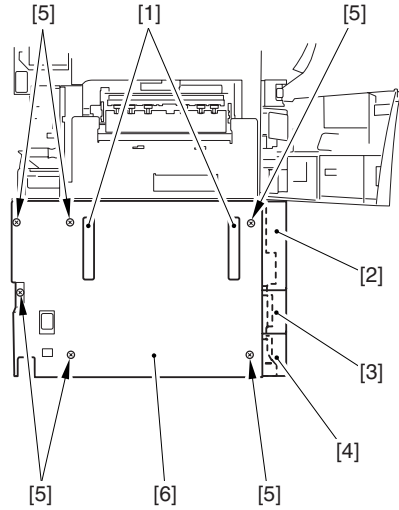


F-10-37

- 3) Disconnect the 14 connectors, and remove the 2 screws [1]; then, detach the printer power supply PCB [2].



F-10-38



F-10-39

## 10.5.9 Option Power Supply PCB

### 10.5.9.1 Removing the Rear Cover (lower)

Refer to Procedure 10.5.2.2

### 10.5.9.2 Removing the Left Cover (middle)

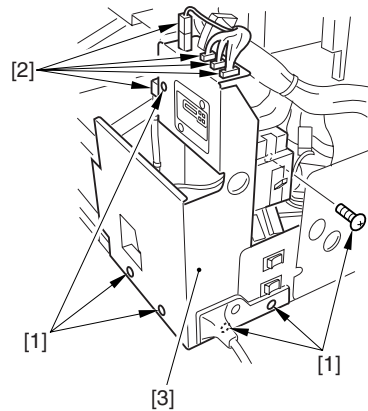
Refer to Procedure 10.5.8.1

### 10.5.9.3 Removing the Lower Left Cover

- 1) Remove the 2 grip covers [1].
- 2) Slide out the left deck [2], cassette 3 [3], and cassette 4 [4].
- 3) Remove the 6 screws [5], and detach the left cover (lower) [6].

### 10.5.9.4 Accessories Power Supply PCB

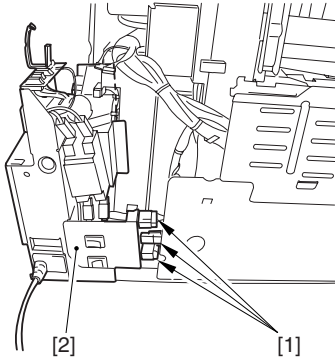
- 1) Remove the 5 screws [1], and disconnect the 5 connectors [2]; then, slide the power cord base [3].



F-10-40

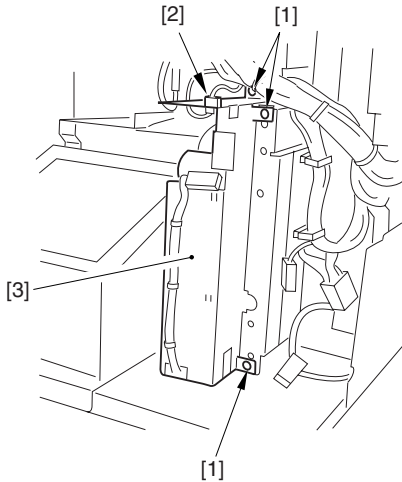


- 2) Disconnect the 3 connectors [1], and detach the power cord base [2].



F-10-41

- 3) Remove the 3 screws [1], and disconnect the 2 connectors [2]; then, detach the accessories power supply PCB [3].

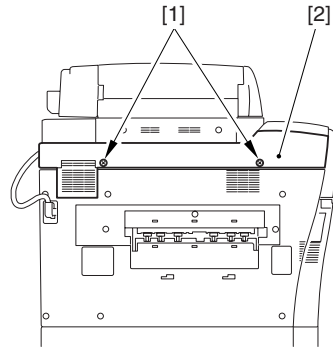


F-10-42

## 10.5.10 Fixing Heater Power Supply PCB

### 10.5.10.1 Removing the Left Cover (upper)

- 1) Remove the 3 screws [1], and detach the left cover (upper) [2].



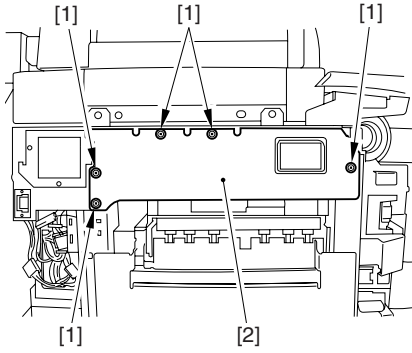
F-10-43

### 10.5.10.2 Removing the Left Cover (middle)

**Refer to Procedure 10.5.8.1**

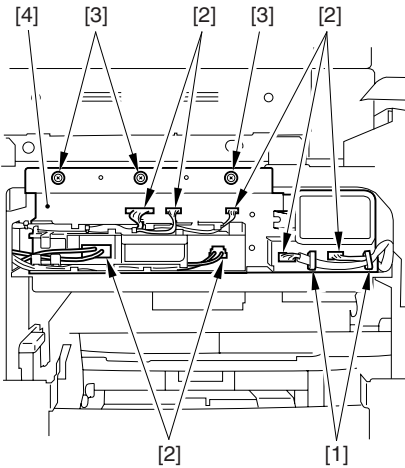
### 10.5.10.3 Removing the Fixing Heater Power Supply Unit

- 1) Remove the 5 screws [1], and detach the PCB cover [2].



F-10-44

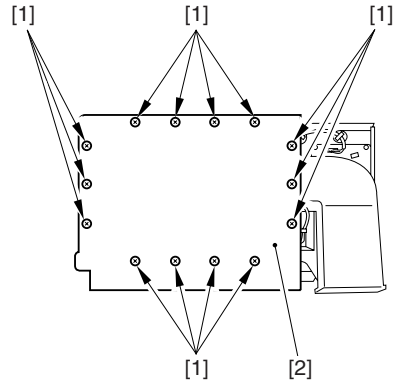
- 2) Open the 2 wire saddles [1].
- 3) Disconnect the 7 connectors [2].
- 4) Remove the 3 screws [3], and detach the fixing heater power supply unit [4].



F-10-45

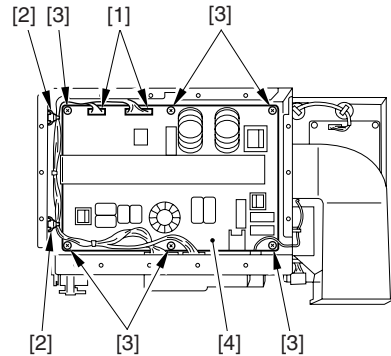
### 10.5.10.4 Removing the Fixing Heater Power Supply PCB

- 1) Remove the 14 screws [1], and detach the cover [2].



F-10-46

- 2) Disconnect the 2 connectors [1], and detach the 2 locking supports [2].
- 3) Remove the 6 screws [3], and detach the fixing heater power supply PCB [4].



F-10-47

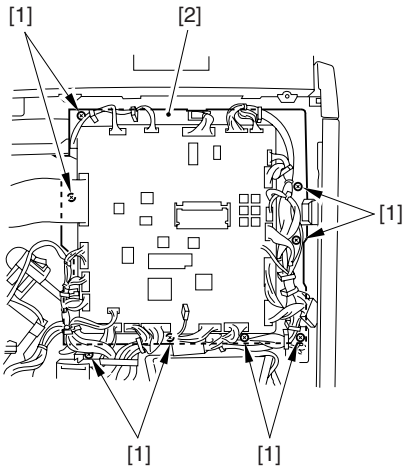
## 10.5.11 Anti-Rush Current PCB

### 10.5.11.1 Removing the Rear Cover (upper)

**Refer to Procedure 10.5.2.1**

### 10.5.11.2 Removing the Rush Current Prevention PCB

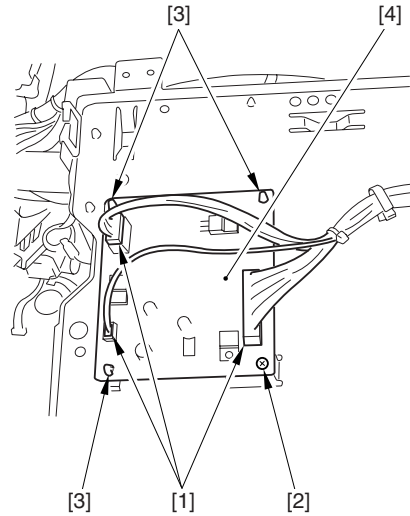
- 1) Disconnect the 27 connectors, and free the harness from the wire saddle.
- 2) Remove the 8 screws [1], and detach the DC controller PCB base [2]; then, turn it over.



F-10-48

- 3) Disconnect the 3 connectors [1], and remove the screw [2]; then, detach the rush current prevention PCB [4] while

releasing the 3 PCB supports [3].



F-10-49

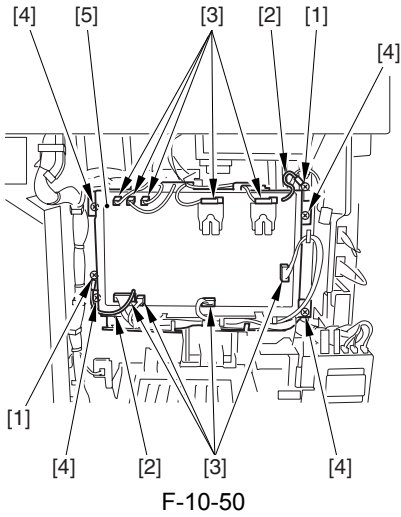
## 10.5.12 HVT PCB

### 10.5.12.1 Removing the Rear Cover (lower)

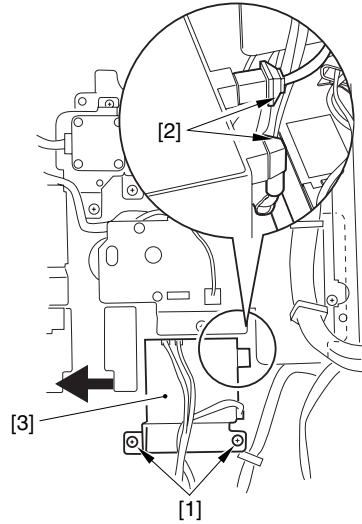
**Refer to Procedure 10.5.2.2**

### 10.5.12.2 Removing the High-Voltage Power Supply PCB

- 1) Remove the 2 screws [1], and detach the 2 grounding wires [2].
- 2) Disconnect the 9 connectors [3].
- 3) Remove the 4 screws [4], and detach the high-voltage power supply PCB [5].



F-10-50

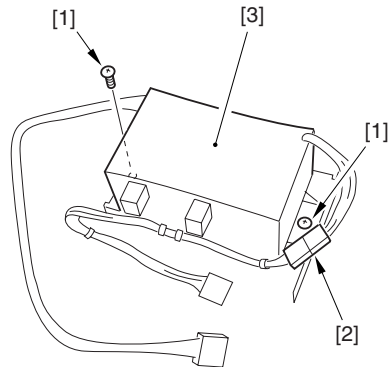


F-10-51

### 10.5.12.3 Removing the High-Voltage Transformer

1) Remove the screw [1], and disconnect the 2 connectors [2]; then, slide the transfer unit [3] to the left to detach.

2) Remove the 2 screws [1], and disconnect the connector [2]; then, detach the transformer [3].

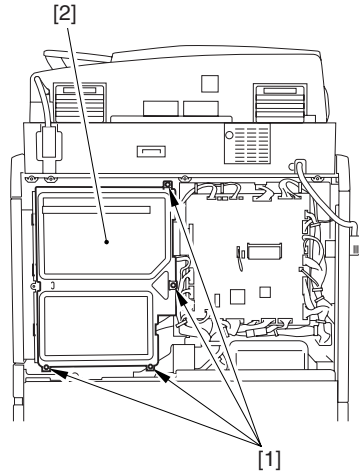


F-10-52

### 10.5.12.4 When Replacing the HVT PCB

Enter the values indicated on the label of the HVT PCB using the following service mode items:

```
COPIER>ADJUST>HV-TR>H-PRE-TR
COPIER>ADJUST>HV-TR>HVT-TR
COPIER>ADJUST>HV-SP>HVT-SP
COPIER>ADJUST>DEVELOP>HVT-DE
```



F-10-53

### 10.5.13 Motor Driver PCB

#### 10.5.13.1 Removing the Rear Cover (upper)

**Refer to Procedure 10.5.2.1**

#### 10.5.13.2 Removing the Rear Cover (lower)

**Refer to Procedure 10.5.2.2**

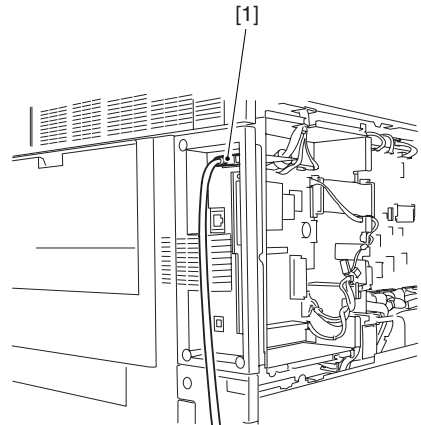
#### 10.5.13.3 Removing the Right Cover (lower rear)

**Refer to Procedure 10.5.3.4**

#### 10.5.13.4 Removing the Main Controller Box

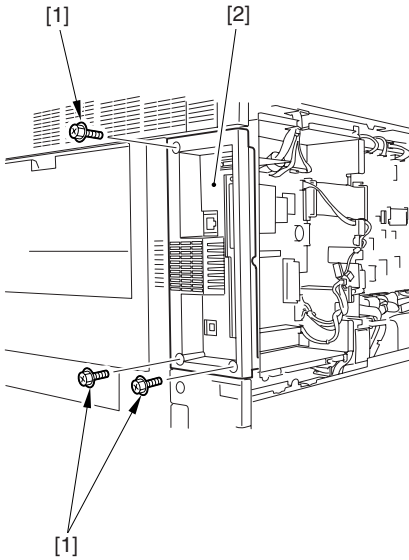
1) Remove the 4 screws [1], and detach the main controller box cover [2].

2) Disconnect the connector [1] of the reader unit communications cable.

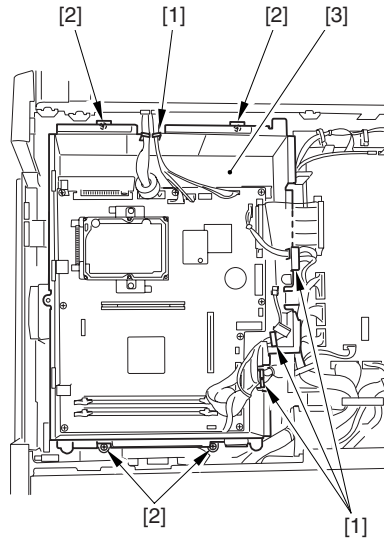


F-10-54

3) Remove the 3 screws [1], and detach the upper rear right cover [2].



F-10-55



F-10-56

4) Disconnect all connectors of the main control PCB, and free all harnesses from the 4 wire saddles [1]; then, detach the main controller box [3].

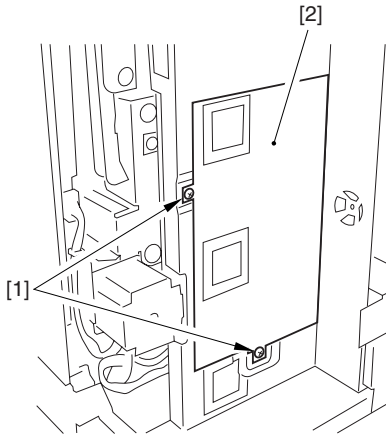
### 10.5.13.5 Removing the Motor Drive PCB

- 1) Remove the waste toner bottle.
- 2) Remove the 2 screws [1], and detach the PCB cover [2].

## 10.5.14 Primary Charging Assembly Fan

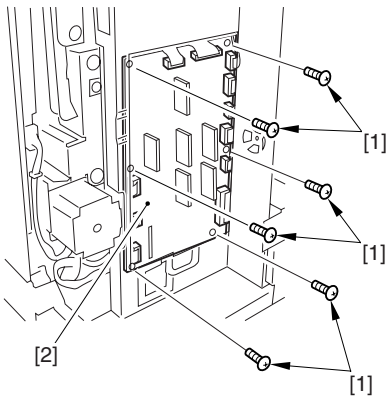
### 10.5.14.1 Removing the Primary Charging Cooling Fan

- 1) Open the front cover.
- 2) Open the toner supply cover.
- 3) Remove the 2 screws [1], and detach the toner supply cover [2].

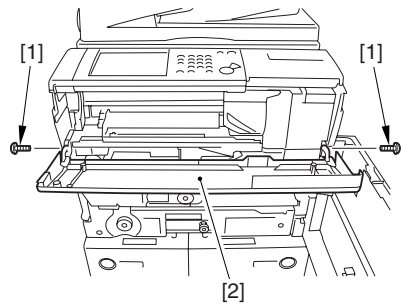


F-10-57

- 3) Remove the 6 screws [1], and disconnect the 10 connectors; then, detach the motor driver PCB [2].

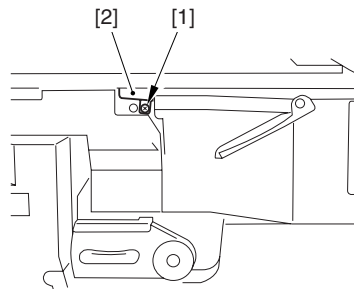


F-10-58



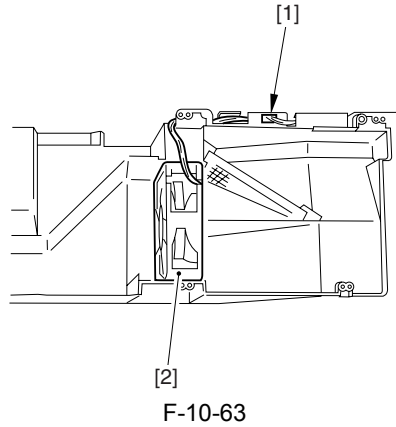
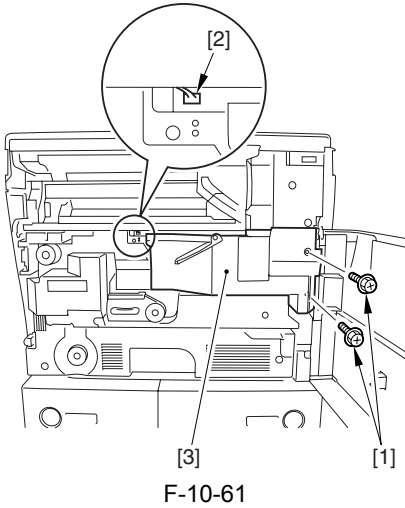
F-10-59

- 4) Remove the screw [1], and detach the connector cover [2].



F-10-60

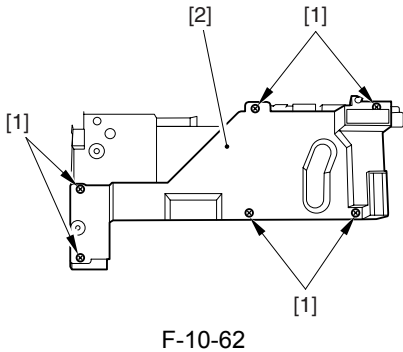
- 5) Remove the 2 screws [1], and disconnect the connector [2]; then, detach the primary fan duct [3].



### 10.5.15 De-Curling Fan

#### 10.5.15.1 Removing the Curl-Removing Fan

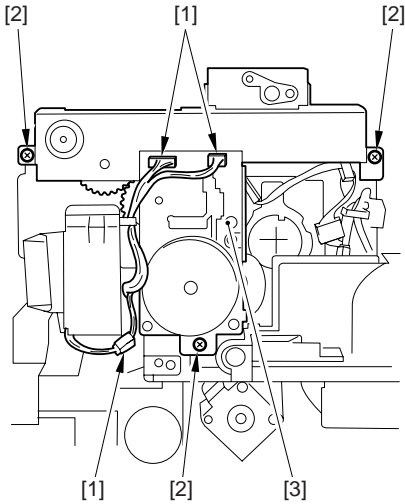
- 6) Remove the 6 screws [1], and detach the fan cover [2].



- 1) Slide out the fixing/feed unit.
- 2) Remove the fixing front cover.
- 3) Disconnect the 3 connectors [1], and remove the 3 screws [2]; then, detach the fixing drive assembly [3].

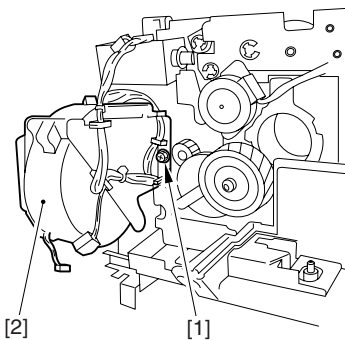
- 7) Disconnect the connector [1] from behind, and detach the primary charging cooling fan [2].





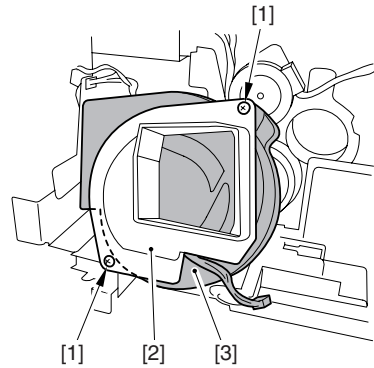
F-10-64

- 4) Remove the screw [1], and slide out the curl-removing fan assembly [2] toward the front.



F-10-65

- 5) Remove the 2 screws [1], and separate the fan duct [2] and the curl-removing fan [3].



F-10-66

## 10.5.16 Feeding Fan

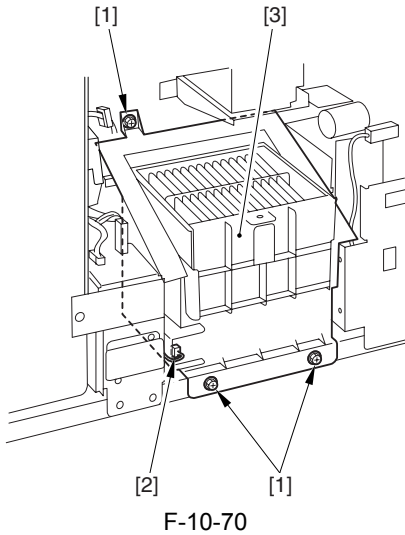
### 10.5.16.1 Removing the Rear Cover (upper)

**Refer to Procedure 10.5.2.1**

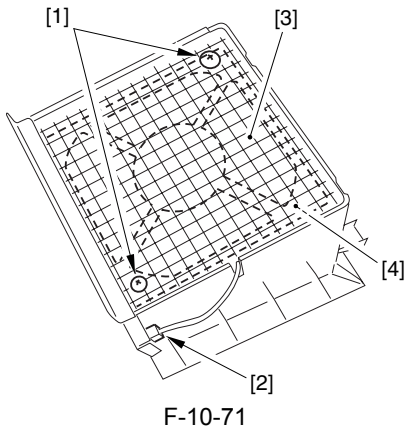
### 10.5.16.2 Removing the DC Controller PCB Base

- 1) Disconnect the 27 connectors, and free the harness from the wire saddle.
- 2) Remove the 8 screws [1], and detach the DC controller base [2]; then, turn it over.





- 2) Remove the 2 screws [1], and disconnect the connector [2]; then, detach the fan grid [3], and detach the exhaust fan [4].



## 10.5.18 DC Power Supply Fan

### 10.5.18.1 Removing the Left Cover (middle)

**Refer to Procedure 10.5.8.1**

### 10.5.18.2 Removing the Lower Left Cover

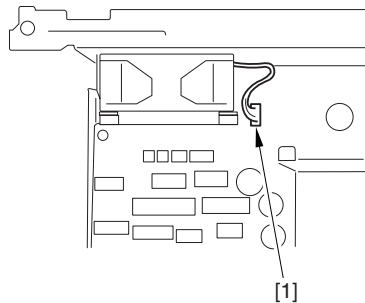
**Refer to Procedure 10.5.9.3**

### 10.5.18.3 Removing the Printer Power Supply PCB

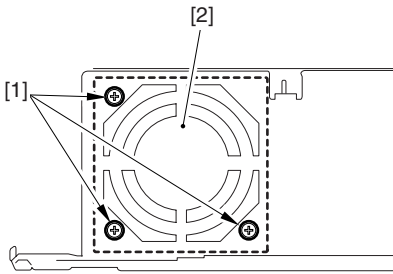
**Refer to Procedure 10.5.8**

### 10.5.18.4 DC Power Supply Fan

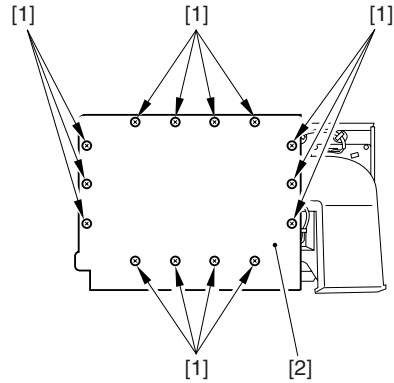
- 1) Disconnect the connector [1].



- 2) Remove the 3 screws [1], and detach the DC power supply fan [2].



F-10-73



F-10-74

### 10.5.19 Fixing Heater Power Supply Cooling Fan

#### 10.5.19.1 Removing the Left Cover (upper)

Refer to Procedure 10.5.10.1

#### 10.5.19.2 Removing the Left Cover (middle)

Refer to Procedure 10.5.8.1

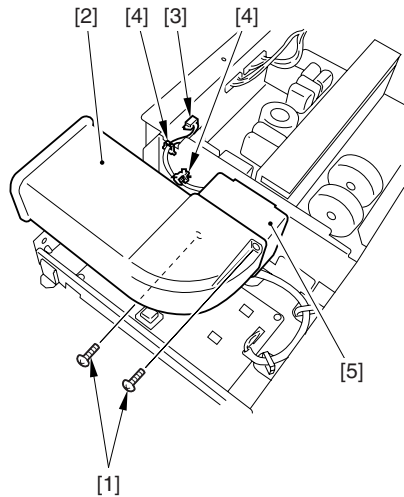
#### 10.5.19.3 Removing the Fixing Heater Power Supply Unit

Refer to Procedure 10.5.10.3

#### 10.5.19.4 Removing the Fixing Heater Power Supply Cooling Fan

1) Remove the 14 screws [1], and detach the cover [2].

- 2) Remove the 2 screws [1], and detach the duct [2].
- 3) Disconnect the connector [3], and free the harness from the 2 cable clamps [4]; then, detach the fixing heater power supply fan [5].

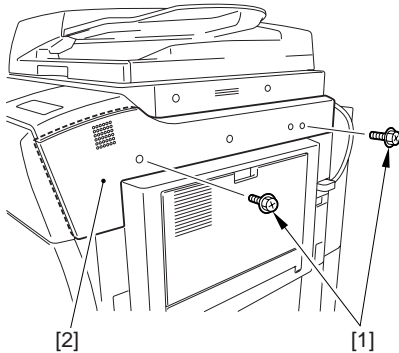


F-10-75

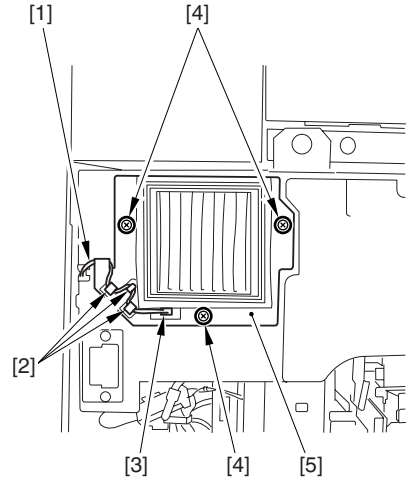
## 10.5.20 Circulation Duct Fan

### 10.5.20.1 Removing the Right Cover (upper)

- 1) Remove the 2 screws [1], and detach the right cover (upper) [2].



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F-10-77

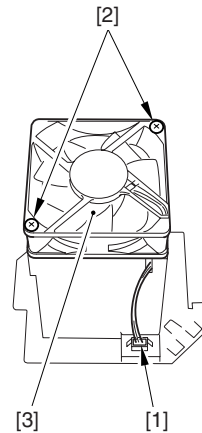
- 4) Disconnect the connector [1].
- 5) Remove the 2 screws [2], and detach the circulation duct fan [3].

### 10.5.20.2 Removing the Left Cover (middle)

**Refer to Procedure 10.5.8.1**

### 10.5.20.3 Removing the Circulation Duct Fan

- 1) Free the harness [1] from the harness guide [2].
- 2) Disconnect the connector [3].
- 3) Remove the 3 screws [4], and detach the fixing heater power supply cooling fan [5] together with its duct [5].



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## 10.5.21 Motor of Main Drive Assembly

### 10.5.21.1 Removing the Rear Cover (upper)

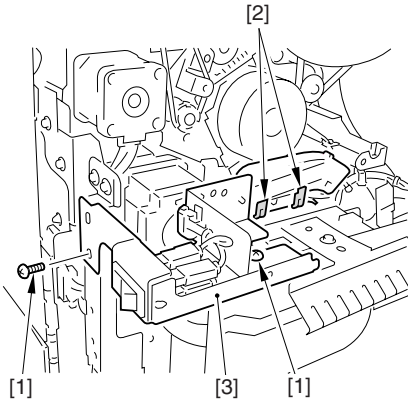
Refer to Procedure 10.5.2.1

### 10.5.21.2 Removing the Right Cover (lower rear)

Refer to Procedure 10.5.3.4

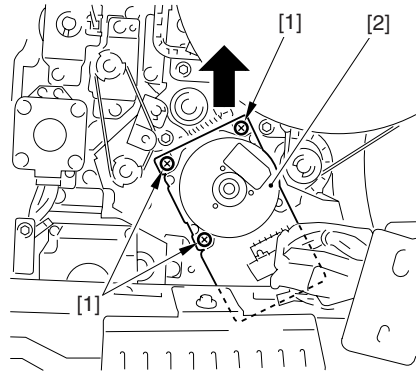
### 10.5.21.3 Removing the Main Motor

1) Remove the 2 screws [1], and remove the 32 clamps [3]; then, move the main power switch base [3] to the side.



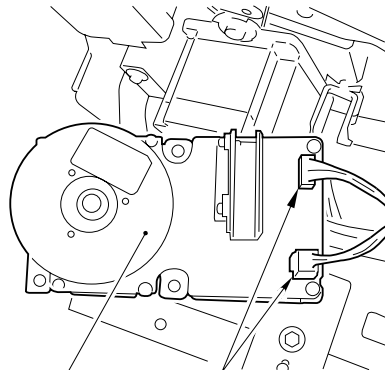
F-10-79

2) Remove the 3 screws [1], and slide the main motor [2] upward.



F-10-80

3) Disconnect the 2 connectors [1], and detach the main motor [2].

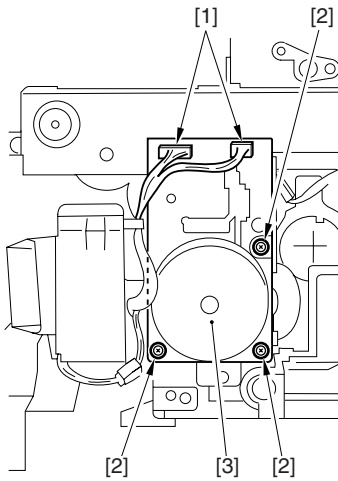


F-10-81

## 10.5.22 Fixing Driver Motor

### 10.5.22.1 Removing the Fixing Motor

- 1) Slide out the fixing/feed unit.
- 2) Remove the fixing front cover.
- 3) Disconnect the 2 connectors [1], and remove the 3 screws [2]; then, detach the fixing motor assembly [3].



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# Chapter 11

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MEAP



# Contents

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## 11.1 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.

## 11.2 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-11-1

Type	Count item
forced	total
	total (black-and-white 1)
	total (black-and-white 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

---

Type	Count item
	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.

---

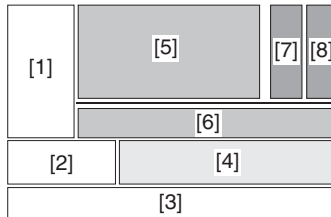
## 11.3 Construction of the MEAP Platform

---

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-11-1

- [1] User Interface Control Block  
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 12

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## Maintenance and Inspection

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## 12.1 Periodically Replaced Parts

### 12.1.1 Outline

Some parts of the machine must be replaced on a periodical basis for the machine to maintain a specific level of performance. They must be replaced regardless of the presence/absence of external changes or damage, as the performance of the machine will be considerably affected once they fail.

If possible, plan any replacement to coincide with a scheduled visit.



The intervals indicated may vary depending on the site environment and user habit.

#### - Checking the Timing of Replacement

The timing of replacement may be checked using the following service mode items:

COPIER > COUNTER > PRDC-1

### 12.1.2 Reader Unit

The reader unit does not have parts that require periodical replacement.

### 12.1.3 Printer Unit

#### T-12-1

No.	Part name	Part No.	Q'ty	Life	Remarks
1	Primary, pre-transfer, transfer, separation charging wire	FB4-3687-000	AR	500,000	(*)
2	Primary grid wire	FY1-0833-000	AR	500,000	
3	thermistor unit	FK2-0809-000	1	500,000	Composition of main shutter thermister
4	Sub thermistor	FM2-4161-000	1	500,000	



No.	Part name	Part No.	Q'ty	Life	Remarks
5	Primary charging wire cleaner 1	FF5-6883-000	2	500,000	Strengthened polish type (blue)
6	Primary charging wire cleaner 2	FF2-6884-000	2	500,000	Strengthened polish type (blue)
7	Transfer charging wire cleaner 1	FF5-6883-000	1	500,000	Strengthened polish type (blue)
8	Transfer charging wire cleaner 2	FF5-6884-000	1	500,000	Strengthened polish type (blue)
9	Separation charging wire cleaner	FF5-3090-000	1	500,000	
10	Pre-transfer charging wire cleaner	FF5-3090-000	1	500,000	
11	Air filter 1	FC6-3482-000	1	500,000	
12	Air filter 2	FC6-3483-000	1	500,000	
13	Ozone filter	FC6-3693-000	1	500,000	

\*: Do not use the old type (gold plated). After replacement of the charge wire, be sure to execute wire cleaning in service mode. (COPIER > FUNCTION > CLEANING > WIRECLN)

## 12.2 Durables and Consumables

### 12.2.1 Outline

Some parts of the machine may have to be replaced once or more over the period of machine warranty because of wear or damage. Replace them as needed by referring to the table of estimated lives (expressed in terms of the number of prints they make).



The intervals indicated may vary depending on the site environment and user habit.

#### Making Checks When Replacing Durables

Use the following service mode items to find out when to replace parts:

- Machine

**COPIER > COUNTER > DRBL-1**

- Accessory

**COPIER > COUNTER > DRBL-2**

### 12.2.2 Reader Unit

The reader unit does not have parts that are classified as "consumables" or "durables."

### 12.2.3 Printer Unit

T-12-2

As of December 2004

No.	Part name	Part No.	Q'ty	Life	Remarks
1	Developing cylinder	FM2-3082-000	1	1,000,000	
2	Developing assembly roll	FB6-6569-000	2	1,000,000	
3	Cleaner separation claw	FB2-6899-000	3	500,000	

As of December 2004

No.	Part name	Part No.	Q'ty	Life	Remarks
4	Cleaning blade	FA9-3995-000	1	1,000,000	Both edges are used; each for 500,000; apply toner upon replacement
5	Primary corona assembly	FM2-3069-000	1	1,000,000	
6	Transfer/separation corona assembly	FG6-5911-000	1	1,000,000	
7	Pre-transfer corona assembly	FM2-4217-000	1	1,000,000	
8	Pre-separation charging assembly scraper	FA4-1867-000	1	500,000	
9	Fixing roller	FC6-3566-000	1	500,000	*1
10	Pressure roller	FC6-3838-000	1	500,000	*2
11	Fixing web	FY1-1157-000	1	500,000	
12	Insulating bushing	FC6-3502-000	2	500,000	*3
13	Delivery upper separation claw	FB5-3625-000	6	500,000	
14	Delivery lower separation claw	FA2-9037-000	2	1,000,000	
15	Pickup roller	FF5-1220-000	8	250,000	Real use number of sheets (Each holder uses 2 pc.)
16	Pickup/feeding roller (deck, cassette)	FF5-9779-000	8	250,000	Real use number of sheets (Each holder uses 2 pc.)
17	Separation roller (deck, cassette)	FB2-7777-020	4	250,000	Real use number of sheets (Each holder uses 1 pc.)
18	Pickup/feeding roller (manual feed roller)	FB1-8581-000	1	120,000	Real use number of sheets
19	Separation roller (manual feed tray)	FB5-0873-000	1	120,000	Real use number of sheets



As of December 2004

No.	Part name	Part No.	Q'ty	Life	Remarks
					<p>*1 As the fixing roller is used more and more, its surface tends to become discolored because of heat. The change, however, will not affect the performance of the roller. Also, note that the roller surface varies in color among manufacturers and the fact will not affect the roller performance.</p> <p>*2As the pressure roller is used more and more, its rubber surface can start to become discolored because of heat; the change, however, will not affect the roller performance or images. Also, the roller surface can start to show wrinkling or peeling of tubing because of its physical properties; you need not, however, replace the roller unless the machine shows faults in fixing or images.</p> <p>*3 Replace simultaneously with fixing roller. When you replace bushings, apply about 20 mg of grease on the inner and outer surfaces of the bushing until there is a white coating covering the entire sources.</p>

## 12.3 Scheduled Servicing Basic Procedure

---

### 12.3.1 Scheduled Servicing Basic Procedure



- As a rule, provide scheduled servicing every 250,000 prints.
- Check with the Service Book before setting out for a scheduled service visit, and take parts for which replacement is expected.
- If the power plug is left connected for a long time in a place subject to dust, humidity, or oil smoke, a fire hazard is a possibility (i.e., the dust collecting around the plug can absorb moisture, resulting in insulating failure). Be sure to disconnect the power plug on a periodical basis, and wipe off the dust and dirt collecting around it.

<Work Procedure>

- 1) Report to the person in charge, and check the general condition.
- 2) Record the counter reading, and check the faulty prints.
- 3) Make the following checks, and clean/adjust the items that are indicated:

#### T-12-3

##### Items

---

Test copy	against image density standard	
	for soiling of back of paper	
	for clarity of characters	
	for margin	
	for fixing	misplaced registration, soiled back of paper
	for margin standards (single-sided print)	leading edge: 4.0+1.5/-1.0mm
		left edge: 2.5+/- 1.5mm
	(double-sided print)	leading edge: 4.0+1.5/-1.0mm
		left edge: 2.5+/- 2.0mm

4) Check the waste toner case.

If half full or more, dispose of the waste toner in a vinyl bag or the like for collection; or, replace the waste toner case.

---



- If you need to dispose of the waste toner, be sure to do so in strict accordance with the regulations imposed by the local authorities.

- Do not dispose of waste toner in a fire. Doing so may cause an explosion.

---

5) Clean the copyboard glass and the reading glass.

6) Make test copies.

7) Make sample copies.

8) Check the operation of the leakage breaker.

With the power switch at ON, push the test switch of the leakage breaker to see that it operates normally (i.e., the breaker switch shifts to the OFF side to cut off the power).

If the leakage breaker fails to operate normally, replace it, and run a check once again.

<Resetting the Breaker>

When you have made the check, turn off the main power switch, and turn on the breaker switch, and then turn the main power switch back on.

9) Put the sample copies in order, and clean up the area around the machine.

10) Record the final counter reading.

11) Fill out the Service Book, and report to the person in charge. Be sure to update the history of checks on the leakage breaker in the Service Book.

### 12.3.2 Periodical Servicing Chart Reader Unit

---



Do not use solvents or oils other than those indicated.

---

T-12-4

Unit	Location	Intervals	Remarks
		as needed	
Original exposure system	Copyboard glass	clean	
	ADF reading glass	clean	
	Scanner rail	clean/lubricate	Silicone oil (FY9-6011)
	Scanner mirror (No.1 through No.3 mirrors)	clean	
	Reflecting plate	clean	

### 12.3.3 Periodical Servicing Chart Printer Unit



Do not use solvents or oils other than those indicated.

T-12-5

Unit name	Part	Intervals				Remarks
		Upon installation	every 250,000	every 500,000	every 1,000,000	
Externals/controls	Ozone filter			Replace		
	Air filter 1			Replace		
	Air filter 2			Replace		
	Dust-proofing filter		Clean			Remove dust from surface.
Laser optical path	Dust-proof glass		Clean			

Unit name	Part	Intervals				Remarks
		Upon installation	every 250,000	every 500,000	every 1,000,000	
Charging assembly	Charging wire (primary, pre-transfer, transfer / separation)	Clean		Replace		After replacement, execute wire cleaning 5 times.
	Charging wire (primary, pretransfer, transfer/ separation)			Replace		Replace with charging wire simultaneously.
	Grid wire (primary)	Clean	Clean	Replace		
	Charging assembly shielding plate (each charging assembly)	Clean	Clean			
	Primary antistray toner sheet		Clean			
	Roller electrode	Clean	Clean			
Photosensitive drum	Photosensitive drum		Clean			Use alcohol and drum cleaning powder (CK-0429).
	Electrode (for slip ring of drum heater)				Clean / Lubricate	Clean with alcohol; 1) electrode, 2) protruding wall of electrode (where FY9-6008 is applied). - Charge collecting brush



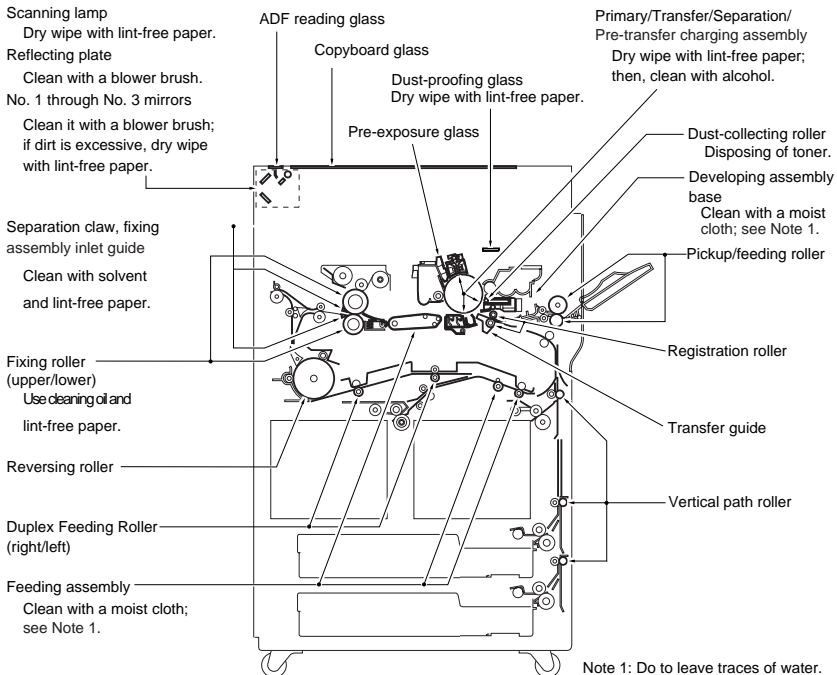
Unit name	Part	Intervals				Remarks
		Upon installation	every 250,000	every 500,000	every 1,000,000	
Developing assembly	Developing cylinder	Inspect				
	Developing assembly roll		Clean			
	Anti stray toner sheet		Clean			
Cleaner	Side scraper			Clean		
	toner bottle dish		Clean			
Fixing assembly	Inlet guide		Clean			
	Web	Inspect				
	Oil dish			Clean		
	Thermistor unit		Clean	Replace		
	Sub thermistor		Clean	Replace		
Delivery assembly	Separation claw (upper, lower)		Clean			
	Internal delivery roll		Clean			
	External delivery roll		Clean			
Waste toner collection area	Waste toner box		Inspect			Inspect case, and remove toner.
Pickup/feeding assembly	Transfer guide		Clean			
	Registration roller (upper, lower)		Clean			
	Feeding belt		Clean			
	Feeding rollers		Clean			

### 12.3.4 Points to Note for Periodical Servicing

Unless otherwise instructed, clean with lint-free paper and alcohol.



- Make a thorough check of the block (front, rear) for melting by leakage, deformation by heat, cracking, discoloration (yellowing). If a fault is found, replace the part with a new one immediately.
- Check the block (front, rear) including its inside.
- Do not use a cloth on which metal powder is found.
- If you have used solvent, make sure that the part has dried completely before mounting it back to the machine.
- Do not use a moist cloth unless specifically indicated.
- Be sure to provide scheduled servicing/replacement at the specified intervals.



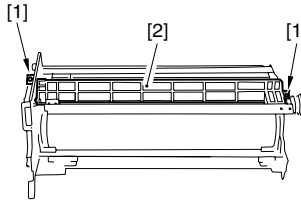
F-12-1

## 12.4 Cleaning

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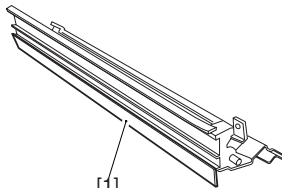
### 12.4.1 Cleaning the Primary Anti-Stray Sheet

- 1) Remove the process unit.
- 2) Remove the two screws [1], and remove the potential sensor rail stay [2].



F-12-2

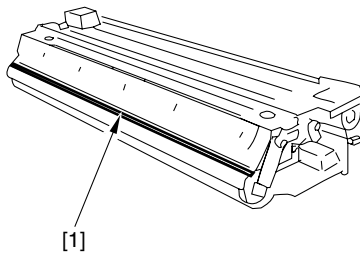
- 3) Clean the primary anti-stray sheet [1].



F-12-3

### 12.4.2 Cleaning the Developing Anti-Stray Sheet

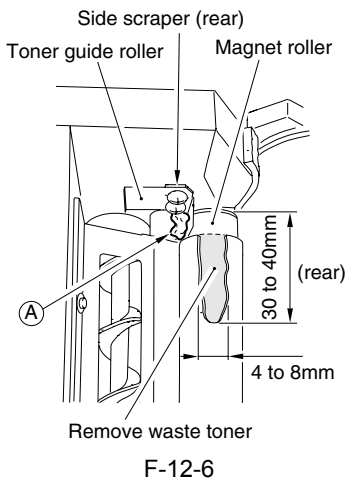
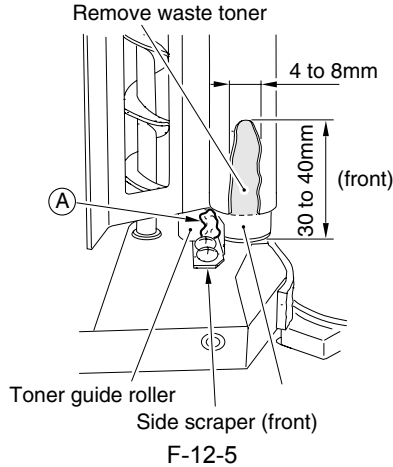
- 1) Remove the developing assembly, and clean the developing anti-stray sheet [1].



F-12-4

### 12.4.3 Cleaning the Cleaner Side Scraper

- 1) Remove the cleaning blade.
- 2) Remove any paper lint collecting at the tip of the side scraper (A, i.e., between magnet roller and toner guide roller) using tweezers or the like.
- 3) Remove the toner from the surface of the magnet roller. (Roll paper into a U to scoop it up.)



- 4) Turn the magnet roller clockwise (viewing from the front).
- 5) Repeat steps 3) through 5) until the area from which toner was removed in step 3) is once again coated with an even layer of toner.

### 12.4.4 Cleaning the Photosensitive Drum

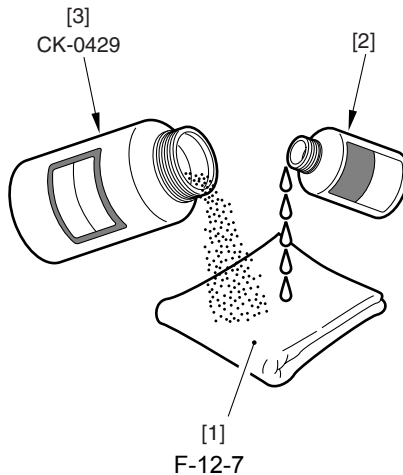
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Do not rotate the magnet roll during work. Otherwise, waste toner may fall through the cleaner assembly.

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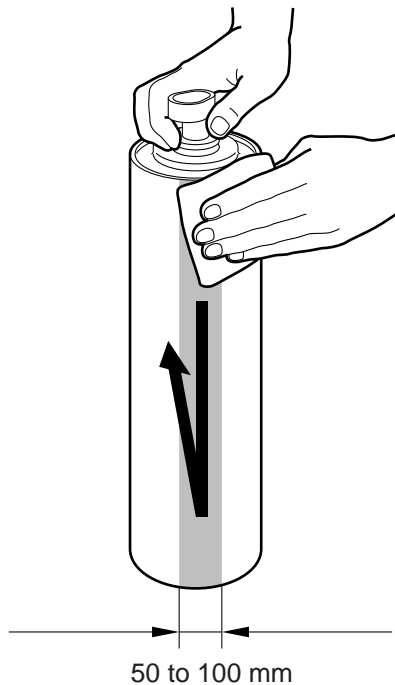
- 1) Slide out the process unit.
- 2) Take out the photosensitive drum.
- 3) Moisten lint-free paper [1] with 5 to 10 cc of alcohol [2]; then, pour 0.2 to 0.3 g of drum cleaning powder (CK-0429) [3] on the lint-free paper.
- 4) While butting the lint-free paper relatively strongly against the photosensitive drum, wipe the surface of the drum from the front to the rear and from the rear to the front.





- Keep the widths of cleaning to 5 to 10 cm in the peripheral direction of the drum.
  - Move the lint-free paper back and forth 15 to 20 times over a single area.  
Forcing the lint-free paper will not affect the life of the drum.
- 

- 5) When the alcohol has evaporated, dry wipe the surface with lint-free paper. If the area is uneven, go back to step 4), and increase the back-and-forth movements.
- 6) Rotate the drum for the width (50 to 100 mm), and repeat steps 3) through 5) until the entire area of the surface has been cleaned.



F-12-8

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# Chapter 13

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## Standards and Adjustments

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## 13.1 Image Adjustment Basic Procedure

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### 13.1.1 Making Pre-Checks

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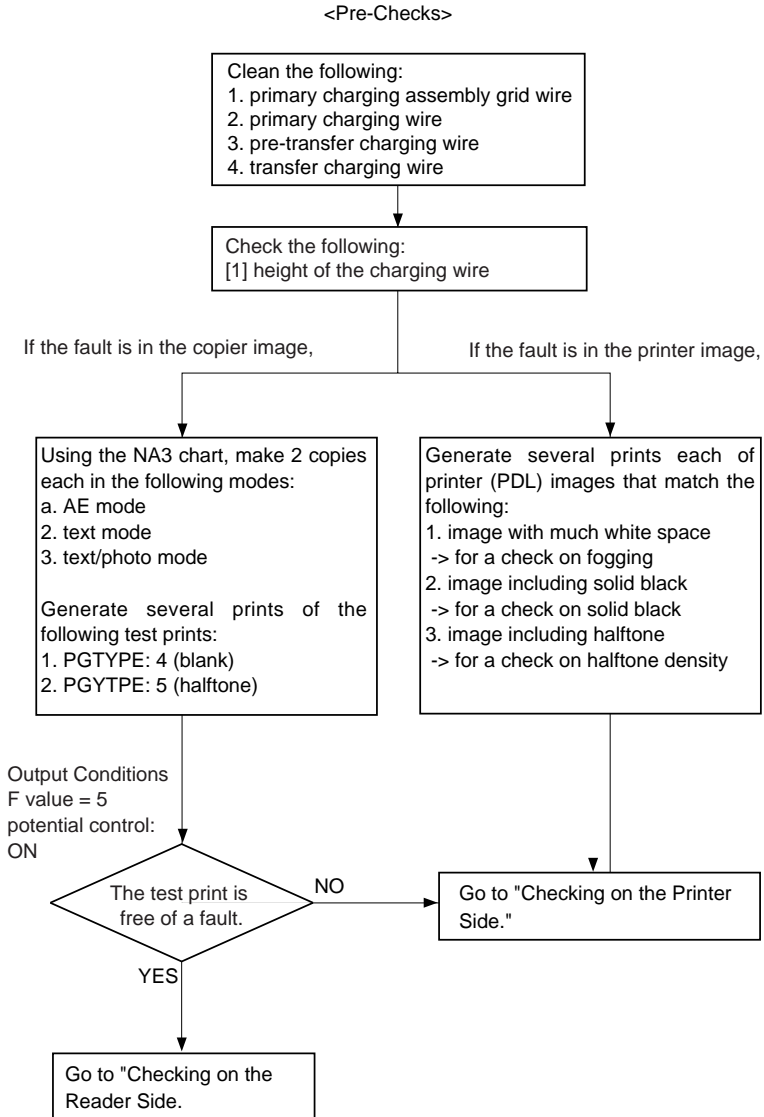


#### **Points to Note When Making a Check on the Printer Side**

The machine's potential control mechanisms consist of those for copier image output and those for printer (PDL) image output, and permit independent adjustment of service mode potential control parameters.

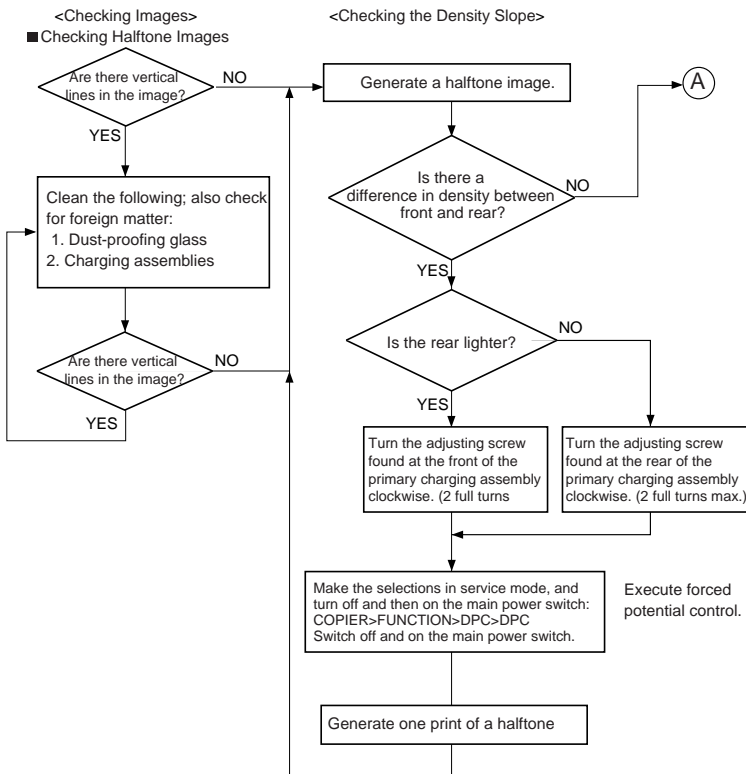
If an image fault occurs, be sure to first find out which is at fault, prepare an image (data) accordingly, and then make appropriate adjustments.

---



F-13-1

## 13.1.2 Making Checks on the Printer Unit (1/2)



F-13-2

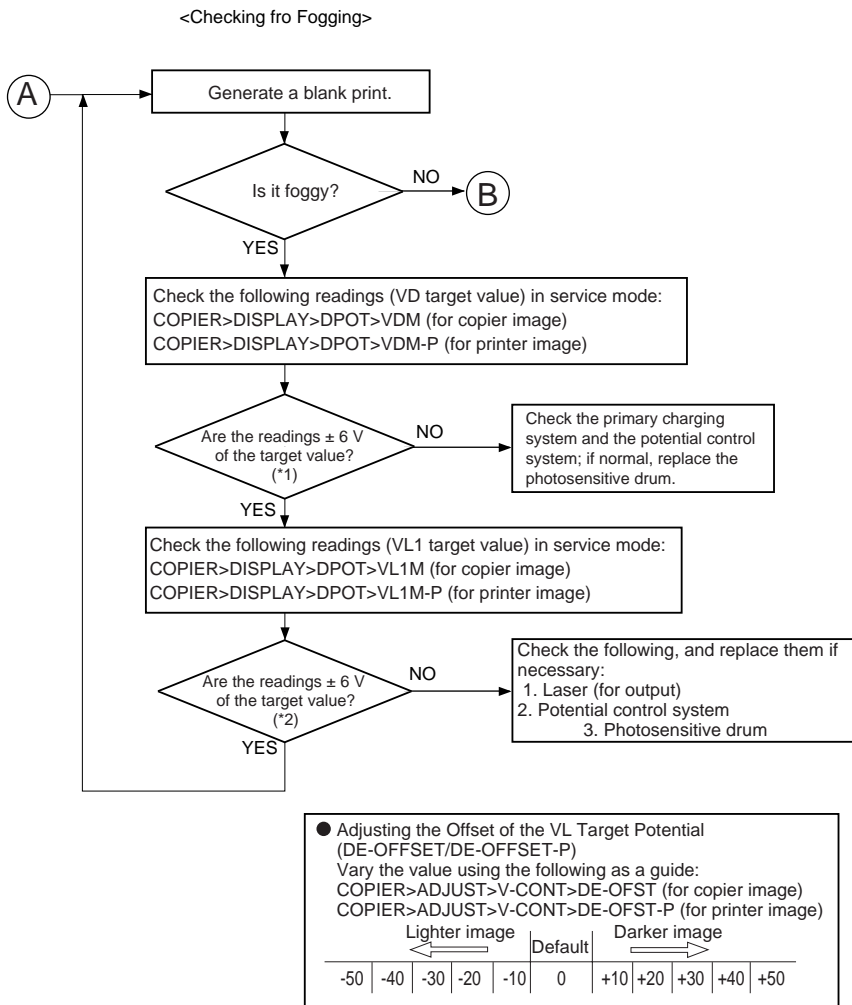


1. If there still is a difference in density after giving the adjusting screw 2 turns (each turn causing a change of about 0.7 mm), check the scanning lamp and the scanner for soiling.
2. When making a clockwise turn, be sure that the intervals between wire grid runs are not larger than 9 mm.

When making a counterclockwise turn, be sure that the intervals between wire grid runs are not smaller than 7.5 mm.

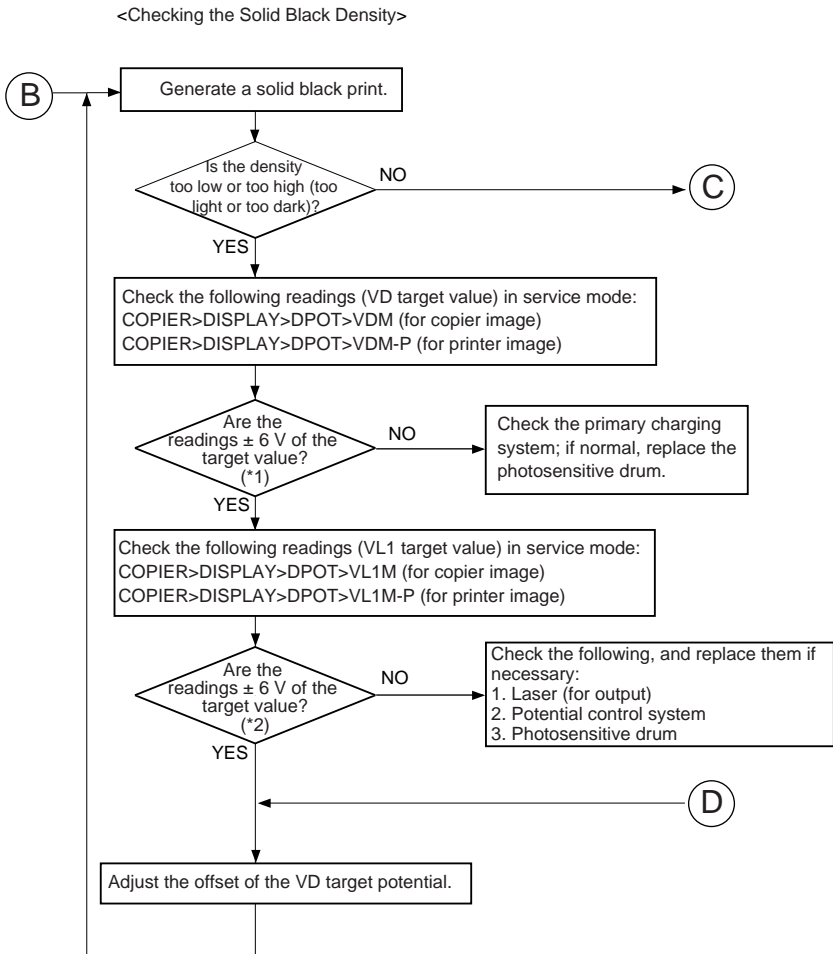
**MEMO:**

Moving the wire from the photosensitive drum causes the image to be lighter, while moving it closer causes the images to be darker.

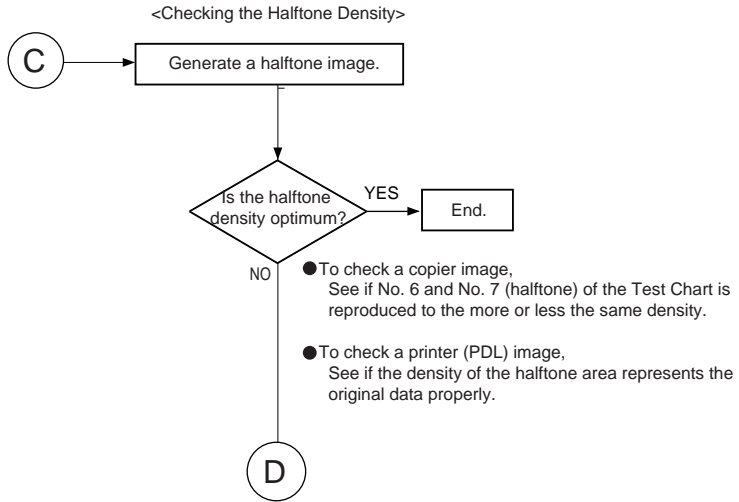


F-13-3

## 13.1.3 Making Checks on the Printer Unit (2/2)



F-13-4

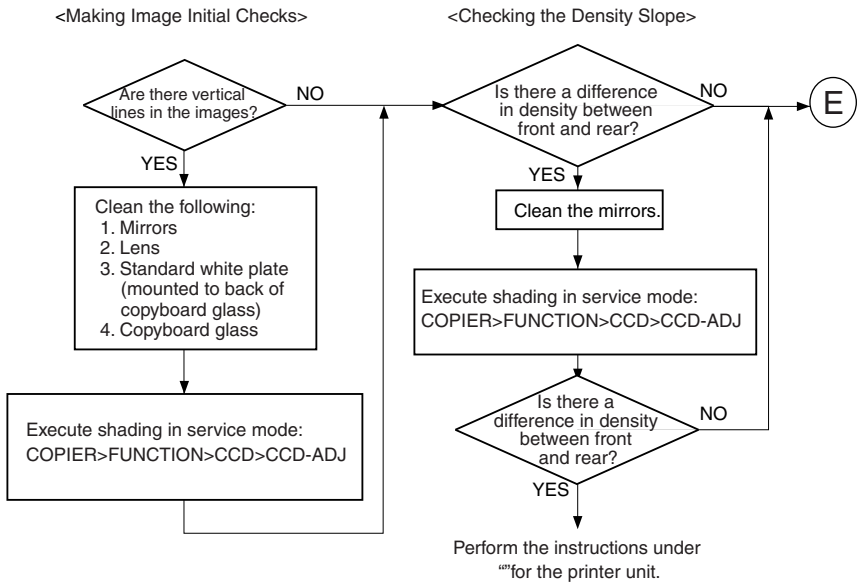


● Adjusting the Offset Value of the VD Target Potential (VD-OFFSET/VD-OFFSET-P)  
 COPIER>ADJUST>V-CONT>VD-OFST (for copier image)  
 COPIER>ADJUST>V-CONT>VD-VD-OFST-P (for printer image)

Lighter image					Default	Darker image				
←	←	←	←	←		→	→	→	→	→
-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5

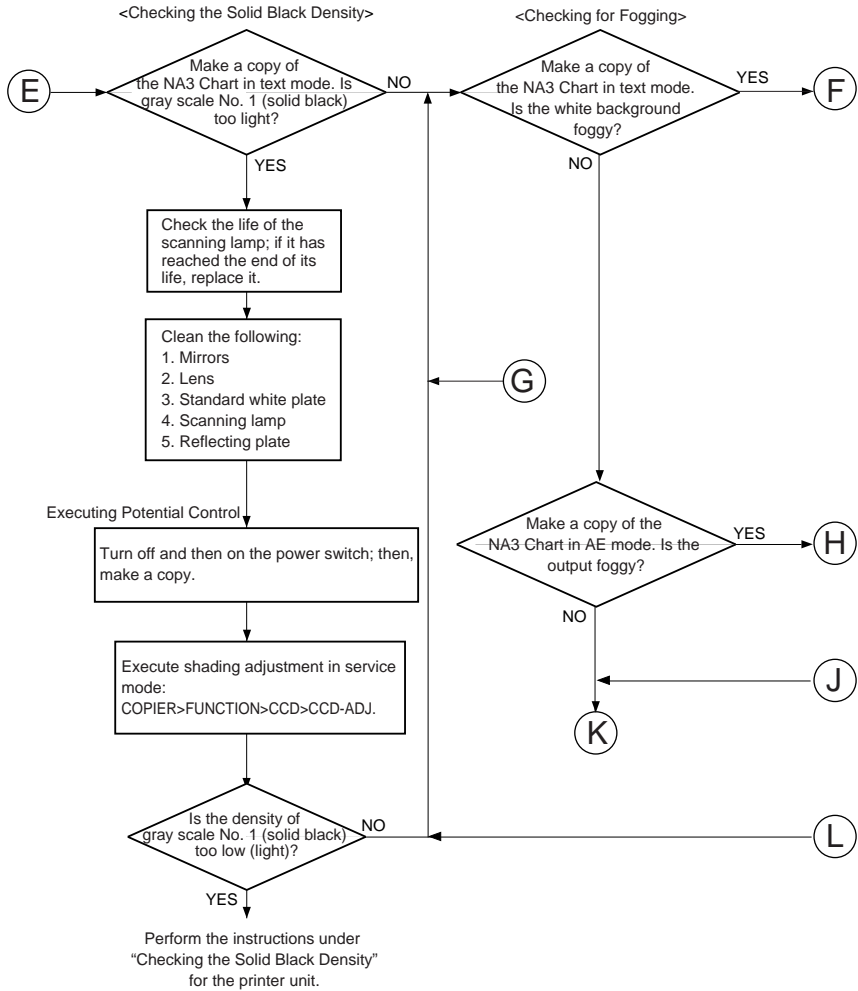
F-13-5

## 13.1.4 Making Checks on the Reader Unit

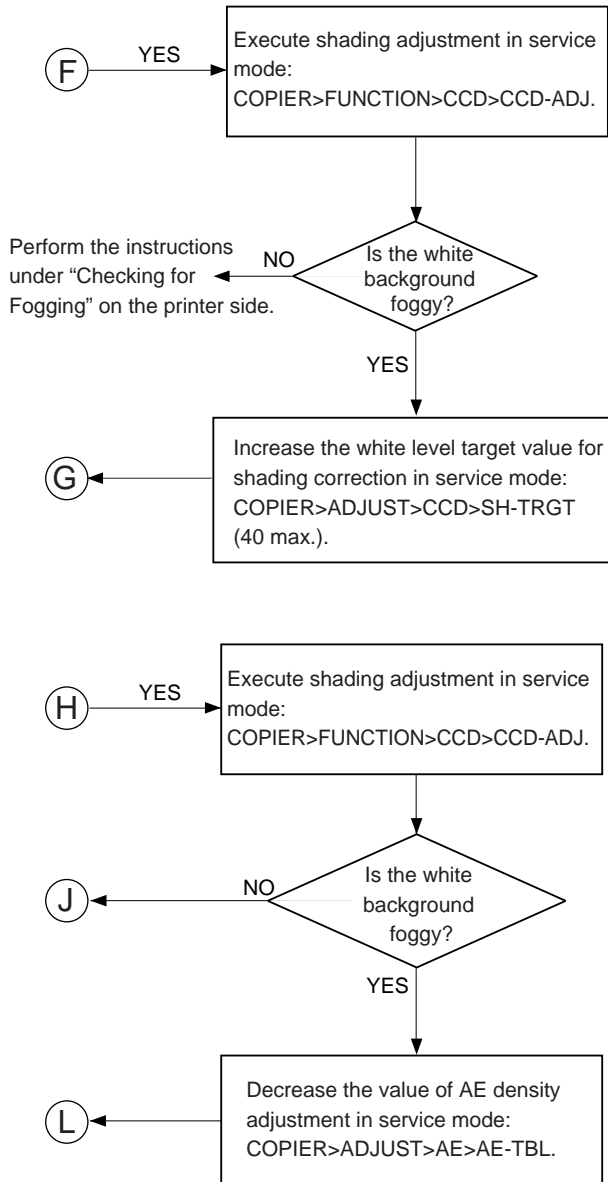


F-13-6



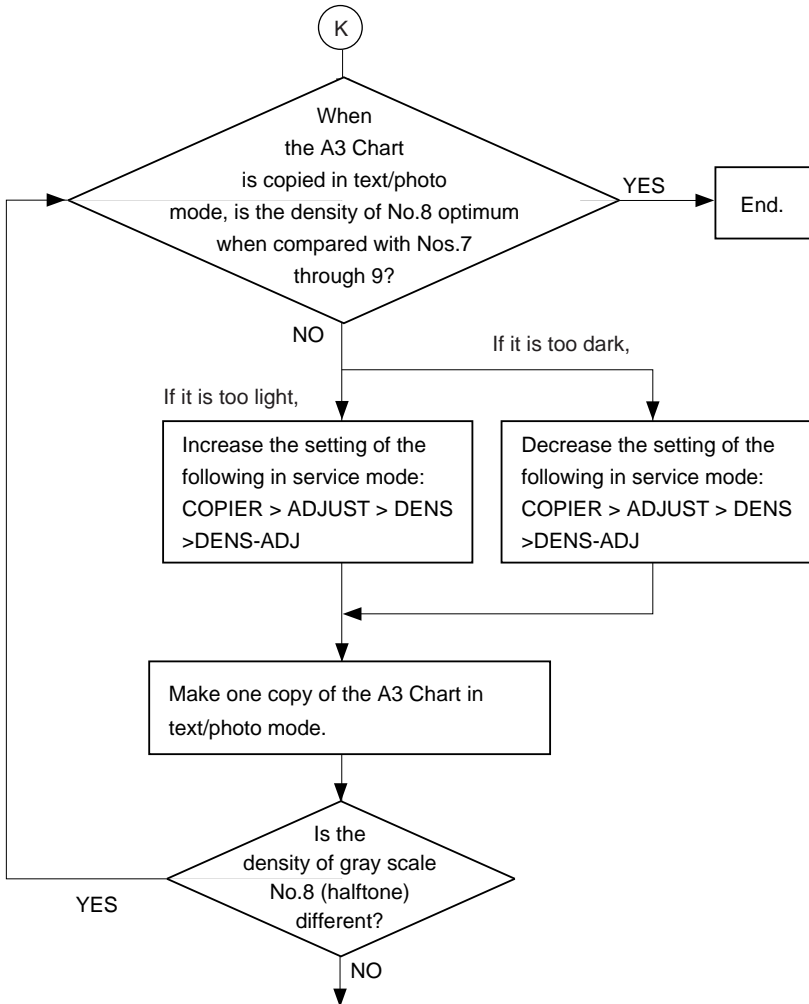


F-13-7



F-13-8

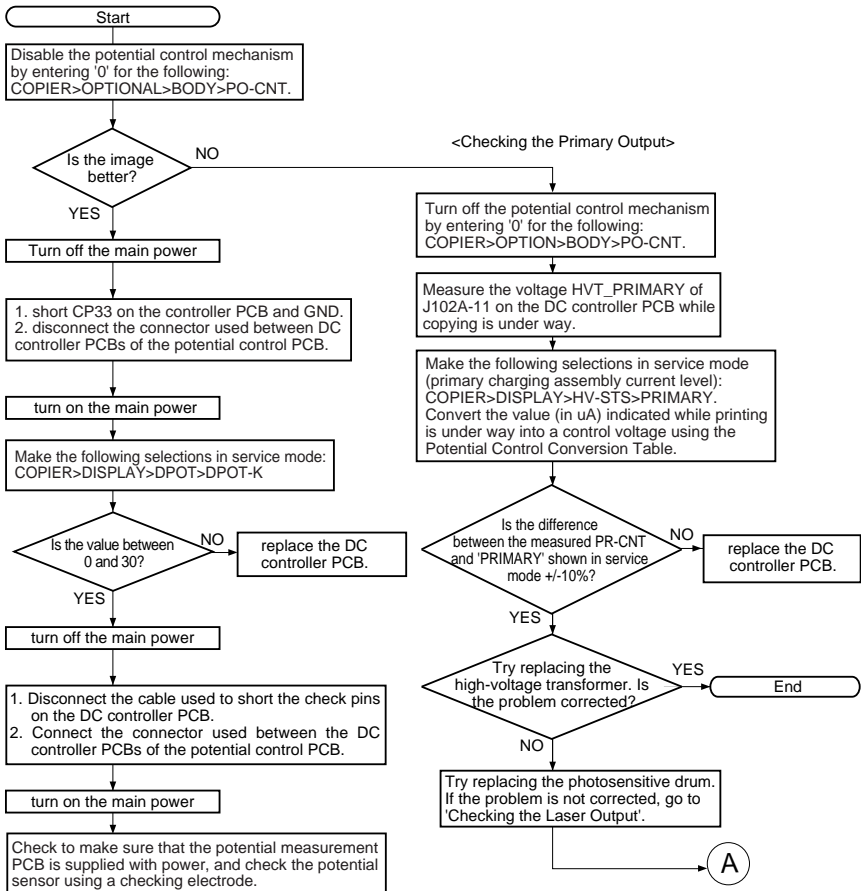
<Checking Halftone Density>



Go to "Checking the Solid Black Density" for the printer unit.

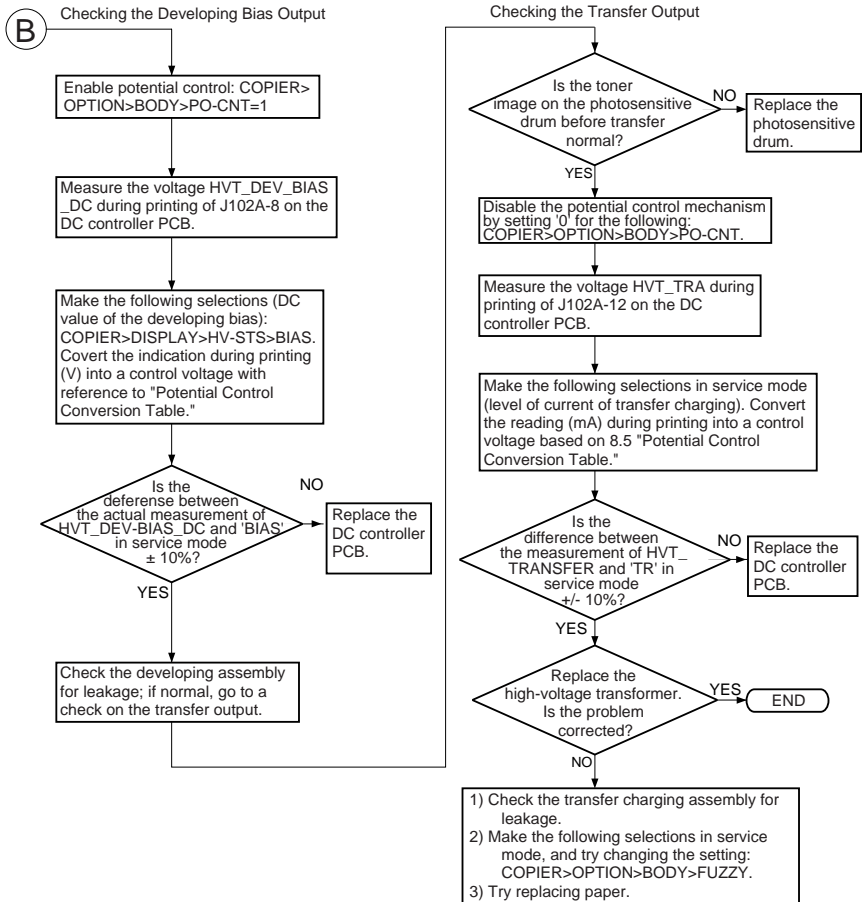
F-13-9

## 13.1.5 Checking the Potential System



F-13-10





F-13-12

## 13.1.6 Checking the Surface Potential Control System

### 1. Outline

If an image fault occurs, it is necessary to find out whether the cause is in the static image formation block including the photosensitive drum and the potential control system or if it is caused at time of development or transfer.

An image fault may be isolated by finding out whether the surface potential is correct using service mode.

### 2. Disabling the Auto Control Mechanisms

As a means of checking the potential control system, the auto control mechanism may be disabled (hereafter, non-auto control mode).

If the image fault in question is more or less corrected when the machine is in non-auto control mode, you can suspect the potential measurement unit and the DC controller PCB as the cause of the fault.

You can also take advantage of non-auto control mode as a tentative remedy when the auto control mechanism has a fault.

---



When the machine is in non-auto control mode, all settings used for corona current control, laser power control, and developing bias control will be automatically be set to default settings.

---

#### Using Non-Auto Control Mode

1) Make the following selections in service mode, enter '0', and press the OK key:

COPIER>OPTION>BODY>PO-CONT.

2) Press the Reset key twice.

3. Making a Zero-Level check

A "zero-level check" is a check made to see if the control mechanism of the DC controller PCB is identifying a 0-V level without fail when the drum surface potential is 0 V.

A zero-level check may be made in either of 2 ways, and you can use it to decided whether the DC controller PCB and the potential measurement PCB is free of error:

Method 1: use it to find out if the level shift circuit on the DC controller PCB is free of a fault

Method 2: use it to find out if the potential control circuit is free of a fault

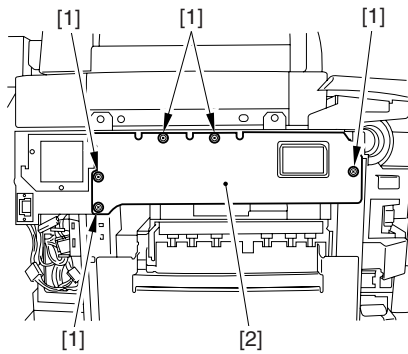
**(1) Method 1**

- 1) Turn off the main power switch.
- 2) Remove the upper rear over.
- 3) Short GP33 on the DC controller PCB and GND using a cable equipped with an alligator clips or probes on both ends.



When shorting CP33 and GND, take full care to avoid contact between the clip/probe and the pattern of the PCB and other elements.

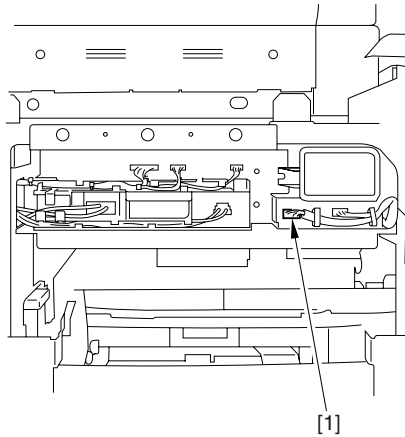
- 4) Remove the left cover (upper), delivery cover, and left cover (middle).
- 5) Remove the 5 screws [1], and detach the PCB cover [2].



F-13-13

- 6) Disconnect the connector [1] connected to the DC controller PCB of the potential control PCB.



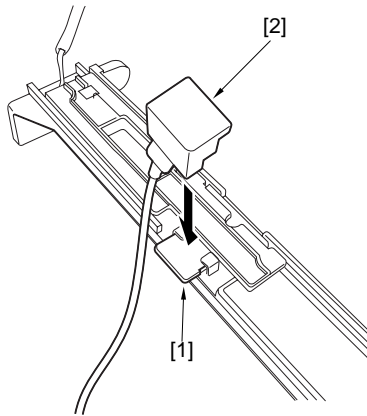


F-13-14

- 7) Close the front door, and turn on the main power switch.
- 8) Make the following selections in service mode:  
COPIER>DISPLAY>DPOT>DPOT-K; then, check to see that the indication during initial rotation is between 0 and 30. If not, suspect a fault in the DC controller PCB.
- 9) Turn off the main power switch.
- 10) Remove the jumper wire found on the DC control PCB.
- 11) Connect the connector of the potential control PCB.
- 12) Mount the PCB cover, left cover (middle), delivery cover, and left cover (upper); then, close the front cover.
- 13) Mount the upper rear cover.
- 14) Turn on the main power switch.

**(2) Method 2**

- 1) Disable the potential control mechanism so that the machine is in non-auto control mode.
- 2) Turn off the main power switch.
- 3) Remove the potential sensor from the machine.
- 4) Connect the connector of the potential sensor to the connector of the machine.
- 5) Fit the potential sensor checking electrode (FY9-3012) [2] to the potential sensor [1].

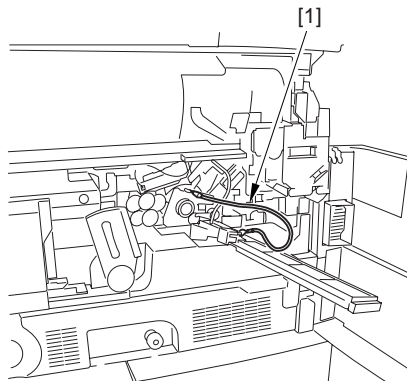


F-13-15



When fitting the checking electrode to the potential sensor, take full care so that the electrode will not come into contact with the potential sensor cover.

6) Connect the clip [1] of the checking electrode to the machine frame (GND).



F-13-16



Be sure never to bring the clip [1] into contact with the sensor cover. Also, be sure to fit it sufficiently away from the sensor window.

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- 7) Fit the door switch actuator into the door switch assembly.
  - 8) Turn on the main power switch.
- 



When you have turned on the main power switch, be sure never to touch the potential sensor.

---

- 9) Make the following selections in service mode:  
COPIER>DISPLAY>DPOT>DPOT-K. Then, check to see that the indication during initial rotation is between 0 and 30.
- 

**MEMO:**

1. If the result of Method 1 is as indicated but that of Method 2 is not, suspect soiling of the sensor and a fault in the potential measurement unit.
  2. If the results of both Methods 1 and 2 are as indicated, assume that the signal path and operation from the potential sensor unit to the microprocessor on the DC controller PCB are normal.
- 

- 10) Turn off the main power switch.
- 11) Detach the potential sensor checking electrode.
- 12) Mount the potential sensor.
- 13) Turn on the main power switch.
- 14) Enable the potential control mechanism.

### 13.1.7 Potential Control System Conversion Table

T-13-1

<b>Control (V)</b>	<b>Primary (uA)</b>	<b>Developing bias (V)</b>	<b>Pre-transfer (uA)</b>	<b>Transfer (uA)</b>	<b>Separation (uA)</b>
3.00	1,400	0	0	440	100
3.05	1,391	3	-2	437	96
3.10	1,382	7	-4	434	92
3.15	1,373	11	-6	431	88
3.20	1,365	15	-8	429	85
3.25	1,356	18	-10	426	81
3.30	1,347	22	-12	426	77
3.35	1,338	26	-14	420	73
3.40	1,330	30	-16	418	70
3.45	1,321	33	-18	415	66
3.50	1,312	37	-20	412	62
3.55	1,303	41	-22	409	58
3.60	1,295	45	-24	407	55
3.65	1,286	48	-26	404	51
3.70	1,277	52	-28	401	47
3.75	1,268	56	-30	398	43
3.80	1,260	60	-33	396	40
3.85	1,251	63	-35	393	36
3.90	1,242	67	-37	390	32
3.95	1,233	71	-39	387	28
4.00	1,225	75	-41	385	25
4.05	1,216	78	-43	382	21

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<b>Control (V)</b>	<b>Primary (<math>\mu</math>A)</b>	<b>Developing bias (V)</b>	<b>Pre-transfer (<math>\mu</math>A)</b>	<b>Transfer (<math>\mu</math>A)</b>	<b>Separation (<math>\mu</math>A)</b>
4.10	1,207	82	-45	379	17
4.15	1,198	86	-47	376	13
4.20	1,190	90	-49	374	10
4.25	1,181	93	-51	371	6
4.30	1,172	97	-53	368	2
4.35	1,163	101	-55	365	-1
4.40	1,155	105	-57	363	-5
4.45	1,146	108	-59	360	-8
4.50	1,137	112	-61	357	-12
4.55	1,128	116	-63	354	-16
4.60	1,120	120	-66	352	-20
4.65	1,111	123	-68	349	-23
4.70	1,102	127	-70	346	-27
4.75	1,093	131	-72	343	-31
4.80	1,085	135	-74	341	-35
4.85	1,076	138	-76	338	-38
4.90	1,067	142	-78	335	-42
4.95	1,058	146	-80	332	-46
5.00	1,050	150	-82	330	-50
5.05	1,041	153	-84	327	-53
5.10	1,032	157	-86	324	-57
5.15	1,023	161	-88	321	-61
5.20	1,015	165	-90	319	-65
5.25	1,006	168	-92	316	-68
5.30	997	172	-94	313	-72

<b>Control (V)</b>	<b>Primary (uA)</b>	<b>Developing bias (V)</b>	<b>Pre-transfer (uA)</b>	<b>Transfer (uA)</b>	<b>Separation (uA)</b>
5.35	938	176	-96	310	-76
5.40	980	180	-99	308	-80
5.45	971	183	-101	305	-83
5.50	962	187	-103	302	-87
5.55	953	191	-105	299	-91
5.60	945	195	-107	297	-95
5.65	936	198	-109	294	-98
5.70	927	202	-111	291	-102
5.75	918	206	-113	288	-106
5.80	910	210	-115	286	-110
5.85	901	213	-117	283	-113
5.90	892	217	-119	280	-117
5.95	883	221	-121	277	-121
6.00	875	225	-123	275	-125
6.05	866	228	-125	272	-128
6.10	857	232	-127	269	-132
6.15	848	236	-129	266	-136
6.20	840	240	-132	264	-140
6.25	831	243	-134	261	-143
6.30	822	247	-136	258	-147
6.35	813	251	-138	255	-151
6.40	805	255	-140	253	-155
6.45	796	258	-142	250	-158
6.50	787	262	-144	247	-162
6.55	778	266	-146	244	-166

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<b>Control (V)</b>	<b>Primary (<math>\mu</math>A)</b>	<b>Developing bias (V)</b>	<b>Pre-transfer (<math>\mu</math>A)</b>	<b>Transfer (<math>\mu</math>A)</b>	<b>Separation (<math>\mu</math>A)</b>
6.60	770	270	-148	242	-170
6.65	761	273	-150	239	-173
6.70	752	277	-152	236	-177
6.75	743	281	-154	233	-181
6.80	735	285	-156	231	-185
6.85	726	288	-158	228	-188
6.90	717	292	-160	225	-192
6.95	708	296	-162	222	-196
7.00	700	300	-165	220	-200
7.05	691	303	-167	217	-203
7.10	682	307	-169	214	-207
7.15	673	311	-171	211	-211
7.20	665	315	-173	209	-215
7.25	656	318	-175	204	-218
7.30	647	322	-177	203	-222
7.35	638	326	-179	200	-226
7.40	630	330	-181	198	-230
7.45	621	333	-183	195	-233
7.50	612	337	-185	192	-237
7.55	603	341	-187	189	-241
7.60	595	345	-189	187	-245
7.65	586	348	-191	184	-248
7.70	577	352	-193	181	-252
7.75	568	356	-195	178	-256
7.80	560	360	-198	176	-260

<b>Control (V)</b>	<b>Primary (<math>\mu</math>A)</b>	<b>Developing bias (V)</b>	<b>Pre-transfer (<math>\mu</math>A)</b>	<b>Transfer (<math>\mu</math>A)</b>	<b>Separation (<math>\mu</math>A)</b>
7.85	551	363	-200	173	-263
7.90	542	367	-202	170	-267
7.95	533	371	-204	167	-271
8.00	525	375	-206	165	-275
8.05	516	378	-208	162	-278
8.10	507	382	-210	159	-282
8.15	498	386	-212	156	-286
8.20	490	390	-214	154	-290
8.25	481	393	-216	151	-293
8.30	472	397	-218	148	-297
8.35	463	401	-220	145	-301
8.40	455	405	-222	143	-305
8.45	446	408	-224	140	-308
8.50	437	412	-226	137	-312
8.55	428	416	-228	134	-316
8.60	420	420	-231	132	-320
8.65	411	423	-233	129	-323
8.70	402	427	-235	126	-327
8.75	393	431	-237	123	-331
8.80	385	435	-239	121	-335
8.85	376	438	-241	118	-338
8.90	367	442	-243	115	-342
8.95	358	446	-245	112	-346
9.00	350	450	-247	110	-350
9.05	341	453	-249	107	-353



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<b>Control (V)</b>	<b>Primary (<math>\mu</math>A)</b>	<b>Developing bias (V)</b>	<b>Pre-transfer (<math>\mu</math>A)</b>	<b>Transfer (<math>\mu</math>A)</b>	<b>Separation (<math>\mu</math>A)</b>
9.10	332	457	-251	104	-357
9.15	323	461	-253	101	-361
9.20	315	465	-255	99	-365
9.25	306	468	-257	96	-368
9.30	297	472	-259	93	-372
9.35	288	476	-261	90	-376
9.40	280	480	-264	88	-380
9.45	271	483	-266	85	-383
9.50	262	487	-268	82	-387
9.55	253	491	-270	79	-391
9.60	245	495	-272	77	-395
9.65	236	498	-274	74	-398
9.70	227	502	-276	71	-402
9.75	218	506	-278	68	-406
9.80	210	510	-280	66	-410
9.85	201	513	-282	63	-413
9.90	192	517	-284	60	-417
9.95	183	521	-286	57	-421
10.00	175	525	-288	55	-425
10.05	166	528	-290	52	-428
10.10	157	532	-292	49	-432
10.15	148	536	-294	46	-436
10.20	140	540	-297	44	-440
10.25	131	543	-299	41	-443
10.30	122	547	-301	38	-447

<b>Control (V)</b>	<b>Primary (uA)</b>	<b>Developing bias (V)</b>	<b>Pre-transfer (uA)</b>	<b>Transfer (uA)</b>	<b>Separation (uA)</b>
10.35	113	551	-303	35	-451
10.40	105	555	-305	33	-455
10.45	96	558	-307	30	-458
10.50	87	562	-309	27	-462
10.55	78	566	-311	24	-466
10.60	70	570	-313	22	-470
10.65	61	573	-315	19	-473
10.70	52	577	-317	16	-477
10.75	43	581	-319	13	-481
10.80	35	585	-321	11	-485
10.85	26	588	-323	8	-488
10.90	17	592	-325	5	-492
10.95	8	596	-327	2	-496
11.00	0	600	-330	0	-500

### 13.1.8 Emergency Measures for a Fault in the Potential Sensor

If the potential sensor goes out of order and, as a result, a transfer separation fault occurs, use the following service mode item to avoid problems; be sure, however, that this is merely a tentative remedy to be used until the potential sensor is replaced:

1. COPIER>OPTION>TEMPO>F-POT-SW (Category 2)

Set '1' if a transfer separation fault occurs when the potential sensor has gone out of order.

2. COPIER>OPTION>TEMPO>F-POT-D (Category 2)

This is enabled when '1' is set for the foregoing service mode item.

0: if the user primarily uses originals with a low image ratio (text original). (default)

1: if the user primarily uses originals with a high image ratio (photo originals)

2: if re-transfer (drop-out about 50 mm of leading edge) occurs.

## 13.2 Image Adjustments

### 13.2.1 Standards of Image Position

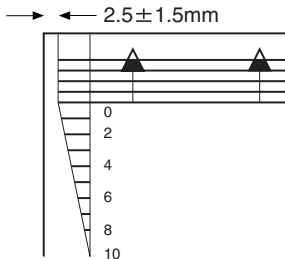
The image margin/non-image width of a print made in direct must be as follows:

Image Leading Edge Margin



F-13-17

Left/Right Image Margin



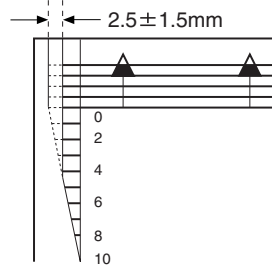
F-13-18

Leading Edge Non-Image Width



F-13-19

Left/Right Non-Image Width



F-13-20

### 13.2.2 Checking the Image Position

Make prints using the following as the source of paper (10 prints each), and check to see that the image margin and the non-image width are as indicated:

- Each cassette
- Front deck (left, right)
- Manual feed tray
- Duplex feeding unit
- Side paper deck

If not as indicated, adjust the image position in the following order:

1. Adjusting the left/right image margin (registration)
2. Adjusting the image leading edge margin (registration)
3. Adjusting the left/right non-image width (CCD read start position)
4. Leading edge non-image width (scanner image leading edge position)

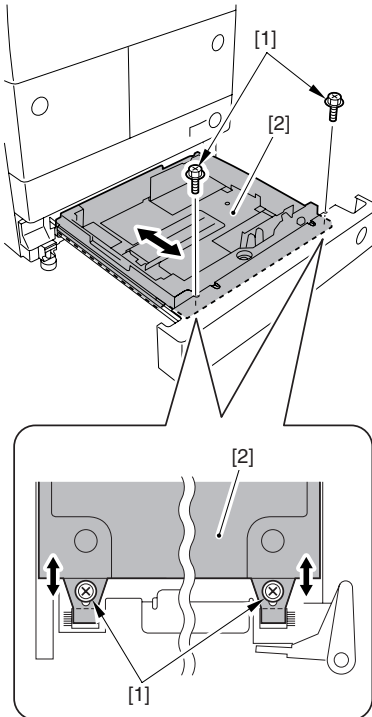
## 13.2.3 Adjusting Side Registration

### <Cassette 3/4>

- 1) Press the release button to draw out the cassette 3/4.
- 2) Loosen the 2 fixing screws [1] on both sides of the cassette.
- 3) Move the cassette body forward or backward to adjust.

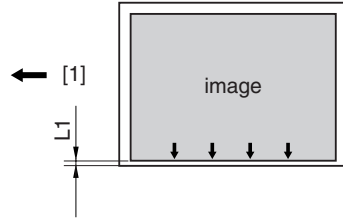
Backward: The side registration value (left margin) is decreased.

Frontward: The side registration value (left margin) is increased.



F-13-21

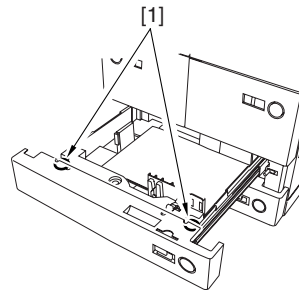
- 4) Make sure that the side registration values (left and right margins) of a copy made from the cassette 3/4 are  $L1 = 2.5 \pm 1.5\text{mm}$  respectively.



F-13-22

[1] Paper feed direction

- 5) Tighten back the 2 fixing screws [1] after the adjustment.



F-13-23

- 6) Put back the cassette 3/4 to the machine.
- 7) Perform the following service mode after the adjustment.

Cassette 3

COPIER > FUNCTION > CST > C3-STMTR/A4R

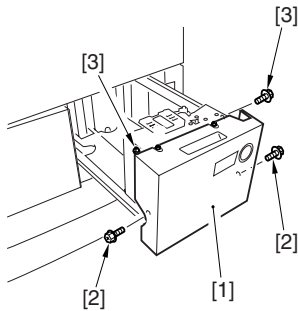
Cassette 4

COPIER > FUNCTION > CST > C4-

STMTR/A4R

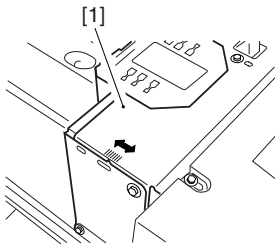
<Front Deck Left/Right>

- 1) Press the release button to draw out the front deck left/right.
- 2) Loosen the 2 screws [2] and 2 fixing screws [3] of the deck front cover [1].



F-13-24

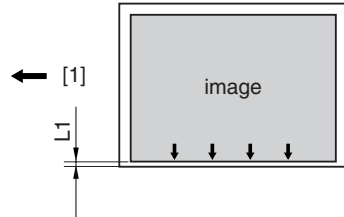
- 3) Move the cassette plate (front) [1] forward or backward to adjust.  
 Backward: The side registration value (left margin) is decreased.  
 Frontward: The side registration value (left margin) is increased.



F-13-25

- 4) Make sure that the side registration

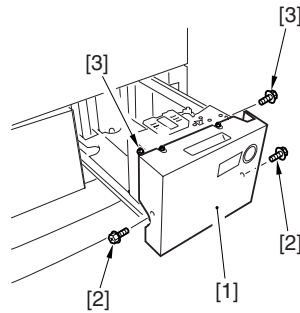
values (left and right margins) of a copy made from the front deck left/right are  $L1 = 2.5 \pm 1.5\text{mm}$  respectively.



F-13-26

[1] Paper feed direction

- 5) Tighten the 2 screws [2] and 2 fixing screws [3] of the deck front cover [1].

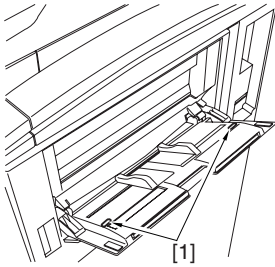


F-13-27

- 6) Put back the front deck left/right to the machine.

<Manual Feed Tray>

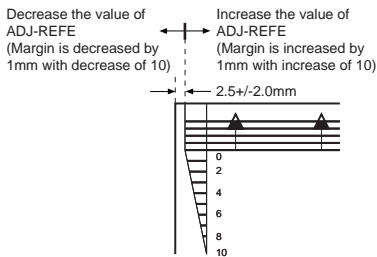
- 1) Move the side plates [1] to the center.  
 Loosen the 2 mounting screws [2] of the manual feed tray, and adjust the position of the manual feed tray.



F-13-28

### <Duplexing Feeder Unit>

- 1) Select the following service mode  
COPIER > ADJUST > FEED-ADJ >  
ADJ-REFE, and make an adjustment so  
that margin on the 2nd side image will  
be within specs.

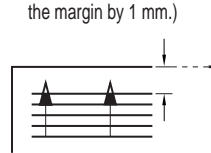


F-13-29

### 13.2.4 Adjusting the Image Leading Edge Margin

- 1) Adjust the image margin in service  
mode so that it is as indicated:  
COPIER> ADJUST> FEED-ADJ>  
REGIST.

Decreasing the REGIST setting  
(A decrease by '10' will increase  
the margin by 1 mm.)



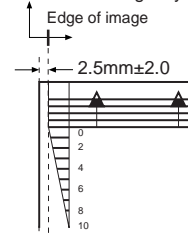
Increasing the REGIST setting  
(An increase by '10' will decrease  
the margin by 1 mm.)

F-13-30

### 13.2.5 Adjusting the Left/Right Non- Image Width

- 1) Adjust the non-image width in service  
mode so that it is as indicated:  
COPIER> ADJUST> ADJ-XY> ADJ-  
Y.

Decreasing the ADJ-Y setting  
(A decrease by '10' will  
decrease the margin by 1 mm.)

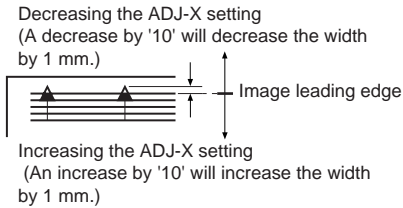


Increasing the ADJ-Y setting  
(An increase by '10' will increase  
the non-image width by 1 mm.)

F-13-31

### 13.2.6 Adjusting the Leading Edge Non-Image Width

- 1) Adjust the non-image width in service mode so that it is as indicated: COPIER> ADJUST> ADJ-XY> ADJ-X.



F-13-32

---

## 13.3 Scanning System

---

### 13.3.1 After Replacing the Reader Controller PCB



Be sure to generate the latest P-PRINT printout before replacing the reader controller PCB

- If you are initializing the RAM on the reader controller without replacing the PCB,

Using the SST, upload the backup data of R-CON; initialize the RAM, and then download the data, thus eliminating the need for the following.

- 
- 1) Using the SST, download the latest system software (R-CON).
  - 2) Make the following selections in service mode: COPIER> FUNCTION> CLEAR> R-CON. Then, press the OK key to execute RAM initialization. Thereafter, turn off and then back on the main power.
  - 3) Enter the appropriate settings for the following items in service mode:
    - a. settings indicated on the service label (found behind the reader unit front cover)

a-1 image read start position adjustment (X direction; in fixed reading mode)  
COPIER>ADJUST>ADJ-XY>ADJ-X

a-2 image read start position adjustment (Y direction; in fixed reading mode)  
COPIER>ADJUST>ADJ-XY>ADJ-Y

a-3 shading position adjustment (in fixed reading mode)  
COPIER>ADJUST>ADJ-XY>ADJ-S

a-4 feeder mode main scanning position adjustment  
COPIER>ADJUST>ADJ-XY>ADJ-Y-DF

a-5 ADF stream reading CCD reading position  
C O P I E R > A D J U S T > A D J - X Y > S T R D - P O S



The machine retains ADF-related service data in the RAM of its reader controller, thus necessitating ADF adjustment whenever you have replaced the reader controller or initialized the RAM.

---

b. original stop position adjustment

FEEDER>ADJSUT>DOCST

c. original feed speed (magnification) adjustment

FEEDER>ADUST>LA-SPEED

4) Make adjustments using the following service mode items:

a. ADF sensor sensitivity adjustment

FEEDER>FUNCTION>SENS-INT

b. tray width adjustment

FEEDER>FUNCTION>TRY-A4

FEEDER>FUNCTION>TRY-A5R

FEEDER>FUNCTION>TRY-LTR

FEEDER>FUNCTION>TRY-LTRR

c. white plate data adjustment

COPIER>FUNCTION>CCD>CCD-ADJ

d. ADF white level adjustment

COPIER>FUNCTION>CCD>DF-WLVL1

COPIER>FUNCTION>CCD>DF-WLVL2

---



Be sure to perform white plate data adjustment before performing ADF white level adjustment.

---

After having made the foregoing adjustments, put the P-PRINT printout in the service book case, replacing the previous P-PRINT printout.

### 13.3.2 When Replacing the CCD Unit

Execute the following in service mode:

1) white plate data adjustment (COPIER>FUNCTION> CCD> CCD-ADJ)

2) ADF white level adjustment (COPIER>

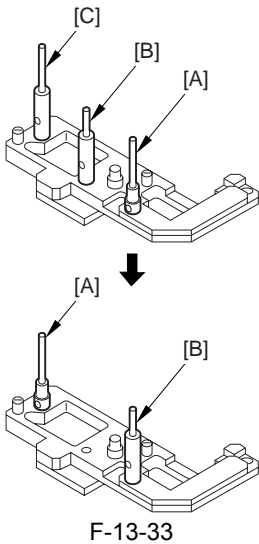




Be sure to perform white plate data adjustment before performing ADF white level plate.

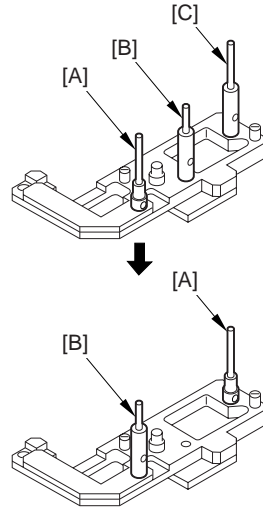
### 13.3.3 Adjusting the Position of the No. 1/No. 2 Mirror Base

1) Arrange the mirror positioning tool (FY9-3009-040) so that it is ready for use in the machine (by changing the pin position; REAR).



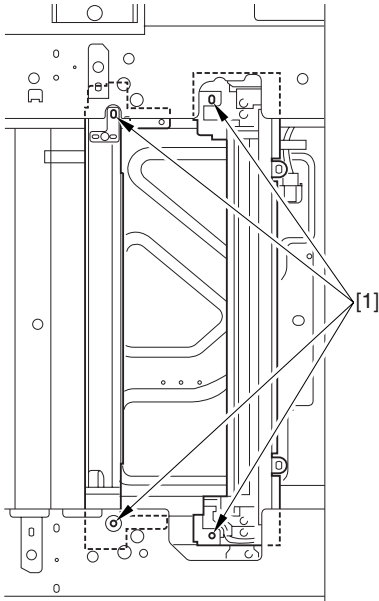
F-13-33

2) Arrange the mirror positioning tool so that it is ready for use in the machine (by changing the pin position; FRONT).

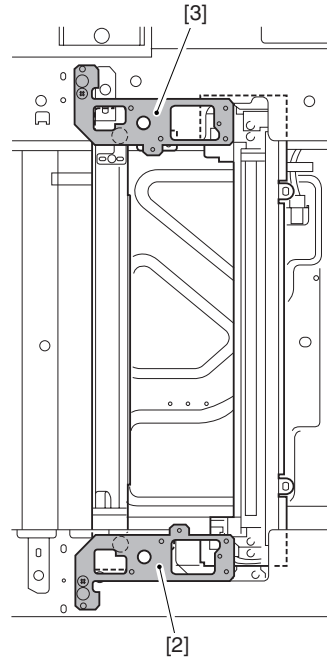


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3) Fit the pins of the mirror positioning tool (front [2]; rear [3]) into the appropriate holes of the No. 1/No. 2 mirror base).



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- 4) Secure the end of the cable that has temporarily been fixed in place on the hook of the reader unit frame.
- 5) Fully tighten the screws on the cable fixing plate both at the front and the rear.
- 6) Detach the mirror positioning tool (FRONT, REAR).
- 7) Put the detached parts back on by reversing the foregoing steps.

### 13.3.4 When Replacing the Platen Board Glass

Execute the following in service mode:

- 1) white plate data adjustment (COPIER>FUNCTION> CCD> CCD-ADJ)
  - 2) ADF white level adjustment (COPIER>FUNCTION> CCD> DF-WLVL1/2)
- 



Be sure to perform white plate data adjustment before performing ADF white level adjustment.

---

### 13.3.5 When Replacing the Reading Glass

Execute the following in service mode:

- 1) ADF white level adjustment (COPIER>FUNCTION>CCD>DF-WLVL1/2)

### 13.3.6 When Replacing the Scanning Lamp

Execute the following in service mode:

- 1) white plate data adjustment (COPIER>FUNCTION> CCD> CCD-ADJ)
- 2) ADF white level adjustment (COPIER>FUNCTION> CCD> DF-WLVL1/2)



Be sure to perform white plate data adjustment before performing ADF white level adjustment.

---

### 13.3.7 When Replacing the Inverter PCB

Execute the following service mode items:

- 1) white plate data adjustment (COPIER>FUNCTION> CCD> CCD-ADJ)
  - 2) ADF white level adjustment (COPIER>FUNCTION> CCD> DF-WLVL1/2)
- 



Be sure to perform white plate data adjustment before performing ADF white level adjustment.

---

## 13.4 Laser Exposure System

---

### 13.4.1 When Replacing the Scanner Unit

If the temperature of the fixing assembly is 150 deg C or higher when the main power switch is turned on, the machine will not execute potential control. If such is the case after replacing the scanner unit, manually execute potential control in service mode as follows:

- 1) Make the following selections in service mode: COPIER> FUNCTION> DPC> DPC; then, enter '1', and press [OK].
- 2) Turn off and then back on the main power switch.

## 13.5 Image Formation System

---

### 13.5.1 Outline of the Charging Wire

The photosensitive drum is surrounded by three charging wires (for primary charging, pre-transfer, and transfer/separation).

These charging wires are newly adopted brown wires (0.06 mm in diameter). Do not use a gold-plated wire, which has been used in the past; otherwise, image faults may occur.

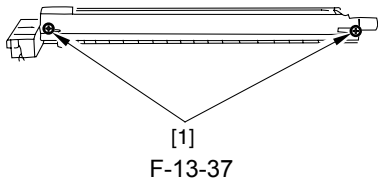
Further, be sure to use a strengthened polishing pad (in a blue holder) as the cleaning pad for the primary charging assembly and the transfer charging assembly.

### 13.5.2 Routing the Charging Wire

All charging wires (except the grid wire) are routed more or less in the same way; the following cites the primary charging assembly:

- 1) Remove the shielding plate (left, right) of the charging assembly. To prevent deformation (slack) in the primary charging assembly, be sure to work separately for the left shielding plate and the right shielding plate (i.e., do not loosen the mounting screws [1] of both shielding plates at the same time).

2) Remove the wire cleaner.



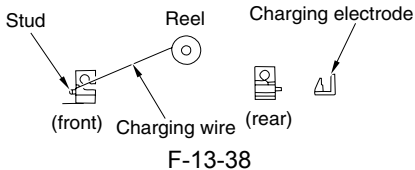
For other charging assemblies, remove the two lids.

3) Free a length of about 5 cm of charging wire from the charging wire reel (0.06 mm in diameter), and form a loop at its end with a diameter of about 2 mm.

**MEMO:**

To form a loop, wind the charging wire around a hex key once, and turn the hex key three to four times; then, twist the charging wire.

4) Cut the end (excess) of the twisted charging wire.  
5) Hook the loop on the stud.

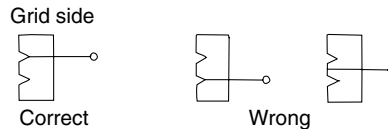
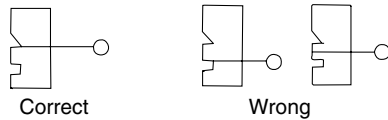
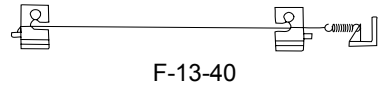


6) At the rear, hook the charging wire on the charging wire positioner; then, hook the charging wire tension spring on the charging wire where indicated to the following figure.



7) Cut off the excess of the charging wire with nippers.  
8) Pick the end of the charging wire tension spring with tweezers, and hook it on the charging power supply electrode.

In the case of the pre-transfer charging assembly, hook the spring on the pin at the front.



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Make sure of the following:

- The charging wire must not be bent or twisted.
  - The charging wire must be fitted in the V-groove of the charging wire positioner.
- 

- 9) Attach a cushion in front of the charging wire. (This does not apply to the primary charging assembly.)
  - 10) Mount the shielding plate (left, right).
- 



For other charging assemblies, mount the two lids.

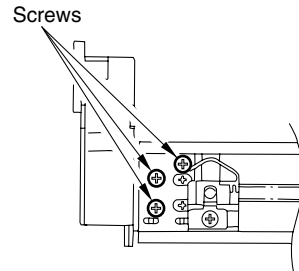
---

- 11) Mount the wire cleaner. At this time, pay attention to make sure that the wire cleaner is oriented correctly.
- 12) Wipe the charging wire with lint-free paper moistened with alcohol.

### 13.5.3 Routing the Grid for the Primary Charging Assembly

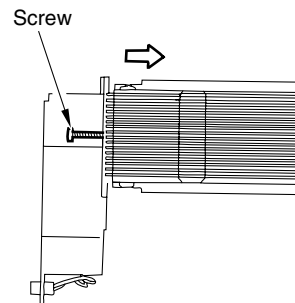
- 1) Loosen the two mounting screws used to secure the left and right shielding plates in place.
- 2) Loosen the three mounting screws used to secure the motor unit in place at the

front.



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- 3) Loosen the mounting screw, and move it in the direction indicated; then, fix it in place temporarily.
- 4) Free a length of about 5 cm of charging wire from the charging wire reel (0.1 mm in diameter), and form a loop at its end with a diameter of about 2 mm.



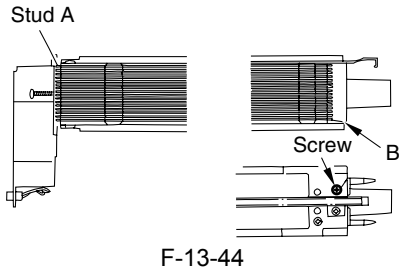
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---

#### MEMO:

To form a loop, wind the charging wire around a hex key once, and turn the hex key three to four times; then, twist the charging wire.

- 5) Cut the twisted charging wire (excess) with nippers.
- 6) Hook the loop on stud A.
- 7) After routing the wire for 31 runs, lead it through section B, and give it a half turn; then, put it between the washer and the motor unit, and wind it once around the mounting screw (clockwise), and secure it in place with a mounting screw.



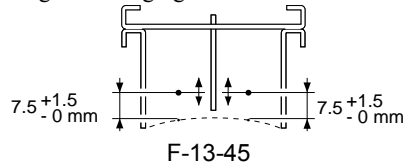
- 8) Cut the excess of the charging wire with nippers.
- 9) Tighten the mounting screw loosened in step 3).  
Keep tightening until the tension of the grid wire is even.  
Be sure to pay attention to avoid deformation (slack) of the charging assembly (as by tightening the mounting screw found on the front of the left/right shielding plate early).
- 10) Tighten the mounting screws loosened in steps 1) and 2).
- 11) Wipe the grid wire with lint-free paper moistened with alcohol.



1. Check to make sure that the grid wire is free of bending and twisting.
2. Be sure that the runs are laid at equal intervals (i.e., the wire is in the groove of the block).

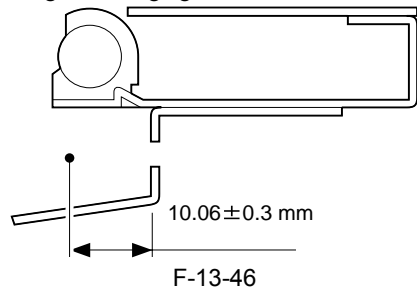
### 13.5.4 Adjusting the Height of the Charging Wire

[1] Primary Charging assembly  
Height of charging wire



<Tolerance>  
-/+1 mm

[2] Pre-transfer Charging assembly  
Height of charging wire

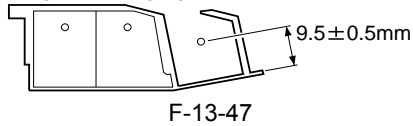


<Tolerance>  
No height adjusting

mechanism

[3] Transfer Charging assembly

Height of charging wire

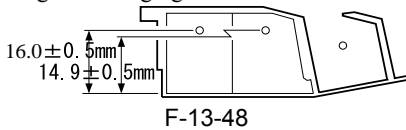


<Tolerance>

-/+2 mm

[4] Separation Charging assembly

Height of charging wire



<Tolerance>

-/+2 mm

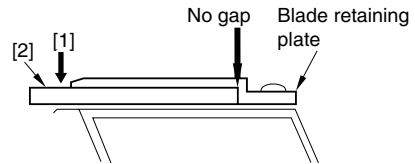
#### MEMO:

The height (position) of the primary charging wire and the transfer charging wire may be adjusted by turning the screw found at the back of the charging assembly; a single turn changes the position of the charging wire by about 0.7 mm.

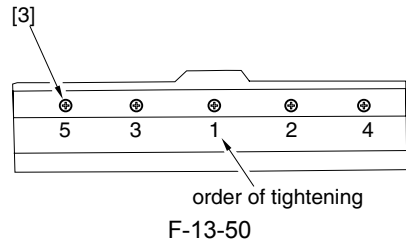
### 13.5.5 Mounting the Cleaning Blade

When mounting the cleaning blade, be sure that the side with the marking [1] will be the face.

- 1) Push in the cleaning blade [2] until it butts slightly again the rear.



- 2) Tighten the five mounting screws [3] lightly, stopping to turn them when resistance is felt.
- 3) Turn the screws tightened lightly in step 2) about 20 deg to 30 deg in the order indicated, tightening them fully.



After mounting the cleaning blade, check to make sure that the edge of the blade is not appreciably bent.

Further, be sure to clean the groove in the blade support plate before mounting the blade, as toner or the like in the groove can start to bend the blade.



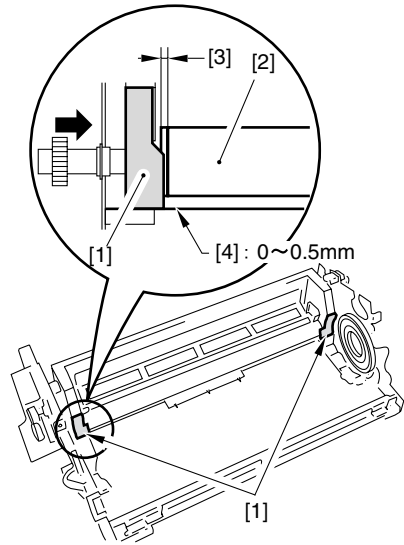
### 13.5.6 Mounting the Side Seal

1) Mount the side seal [1] to the cleaner housing where indicated (both ends). AT this time, be sure that the edge of the side seal is positioned as follows:

- When replacing the side seal [1] at the front, push the magnet roller [2] toward the rear and then make sure that the inner end of the side seal is within the area [3] of the washer.
- When replacing the side seal [1] at the rear, push the magnet roller [2] toward the front and then make sure that the inner end of the side seal is within the area [3] of the washer.

2) The bottom end of each side seal [1] must be 0 to 0.5 mm from the corner of the cleaner housing; i.e., point of reference [4].

3) Attach the side seal [1] at the front and the rear to the cleaner housing while making sure its position is as indicated.

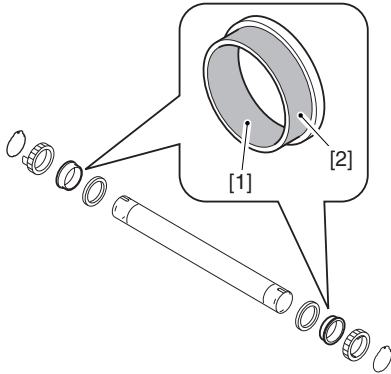


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## 13.6 Fixing System

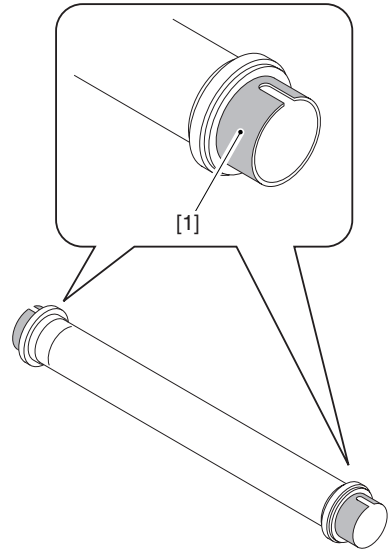
### 13.6.1 Applying Grease After Replacing the Fixing Roller

- Apply about 20 mg of grease (Molykote) on the inner [1] and outer [2] surfaces of the bushing until there is a white coating covering the entire sources.



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- There will likely be adhesion of grease on the ends [1] of the fixing roller when the bushing is fitted to the roller. Be sure to remove the adhesion.



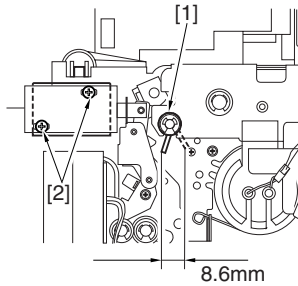
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### 13.6.2 Adjusting the Nip Width

There is no need for adjustment of the nip width.

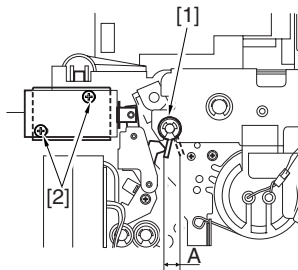
### 13.6.3 Adjusting the Position of the Fixing Web Solenoid (SL9)

- If the fixing web is new, Turn the screw [2] to adjust the position of the solenoid so that the shift distance of the drive lever [1] is 8.6 mm.



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- b. If the fixing web has been used at all,  
 Before removing the solenoid, check the position of the drive lever as found when the solenoid goes on. After replacing the solenoid, turn the screw [2] so that the drive lever [1] is located as it was before the replacement.



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### 13.6.4 After Replacing the Fixing Web

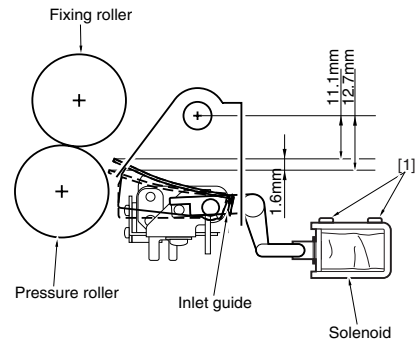
- If you have replaced the fixing web, be sure to reset the counter reading to '0' using the following service mode items:

COPIER>COUNTER>MISC>FIX-WEB

COPIER>COUNTER>DRBL-1>FIX-WEB

### 13.6.5 Adjusting the Position of the Fixing Inlet Guide Solenoid (SL1)

Turn the screw [1] to adjust the position of the solenoid so that the guide will be as shown in the figure when the solenoid goes on.

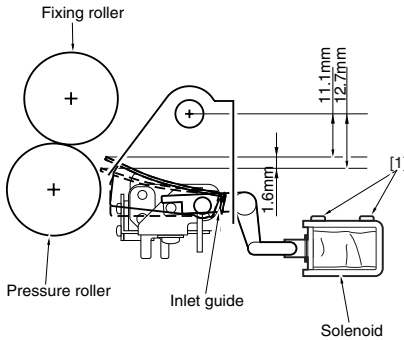


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### 13.6.6 Adjusting the Position of the Fixing Inlet Guide

- Adjust the position of the solenoid using the two screws [1] so that the fixing inlet guide will be positioned as indicated

when the solenoid turns on.



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<Points to Note When Making Adjustments in th Field>

- The inlet guide is in low position when the solenoid (SL1) goes on.
- The height of the inlet guide must be such that the difference between the front and the rear must be 0.2 mm or less.
- As necessary, adjust the height of the inlet guide by loosening the fixing screw on the height adjusting support plate.

## 13.7 Electrical Components

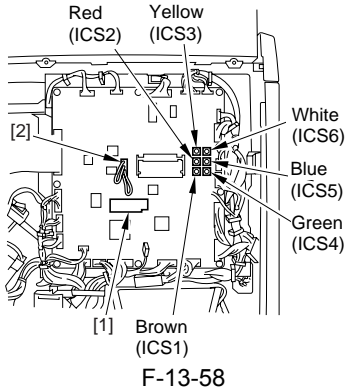
### 13.7.1 When Replacing the DC Controller PCB

Be sure to perform the following when replacing the DC controller PCB:

- 1) Transfer the 6 EEPROMs from the existing PCB to the new PCB. Refer to the color of the round label to make sure that the ROM is positioned correctly.
- 2) Enter the values indicated on the label [1] of the new PCB using the following service mode items:
  - COPIER> ADJUST> HV-TR> D-  
PRE-TR
  - COPIER> ADJUST> HV-TR> D-  
HV-TR
  - COPIER> ADJUST> HV-SP> D-  
HV-SP
  - COPIER> ADJUST> DEVELOP>  
D-HV-DE
- 3) Move the J303 shorting connector from the existing to new PCB.



Take full care. Failure to connect the shorting connector will cause the control panel display to fail.



### 13.7.2 When Replacing the HVT PCB

Enter the values indicated on the label of the HVT PCB using the following service mode items:

```
COPIER>ADJUST>HV-TR>H-PRE-TR
COPIER>ADJUST>HV-TR>HVT-TR
COPIER>ADJUST>HV-SP>HVT-SP
COPIER>ADJUST>DEVELOP>HVT-DE
```

### 13.7.3 After Replacing the HDD

1) Format the HDD.

Start up the machine in safe mode (i.e., while holding down the 2 and 8 keys, turn on the main power).

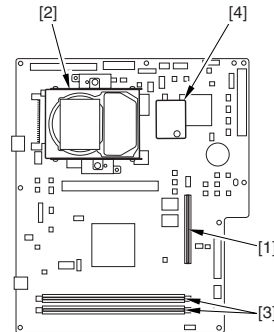
Using the HD format function of the SST, format all partitions (\$); for details, see the descriptions given for upgrading.

2) Download the system software.

Using the SST, download the following: LANGUAGE, RUI, PS-FRONT, OCR dictionary, SSL coding key, SSL CA certificate, MEAP content.

### 13.7.4 When Replacing the Main Controller PCB

If you are replacing the main controller PCB, be sure to transfer the following components from the old to new PCB:



- [1] Boot ROM
- [2] HDD
- [3] image memory (SDRAM)
- [4] counter memory PCB

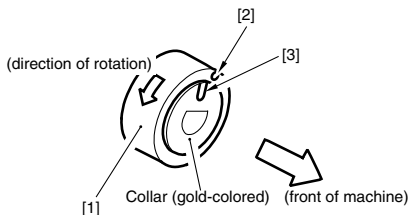
## 13.8 Pickup/Feeding System

### 13.8.1 Orientation of the Deck/Cassette Pickup Roller

The pickup roller may be mounted by reversing the steps used to remove it; however, be sure to keep the following in mind:

- The pickup rollers used at the front and the rear of the machine are not interchangeable.
- The collar of the pickup roller used at the front of the machine is gold-colored.

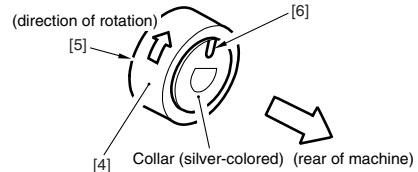
When mounting the pickup roller [1] to the pickup assembly, make sure that the round marking [2] found on the side of the roller and the round marking [3] found on the collar (gold-colored) are toward the front of the machine.



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- The collar of the pickup roller used at the rear of the machine is silver-colored.
- When mounting the pickup roller [4] to

the pickup assembly, make sure that the round marking [5] found on the side of the roller is toward the front of the machine while the round marking on the collar (silver-colored) is toward the rear of the machine.



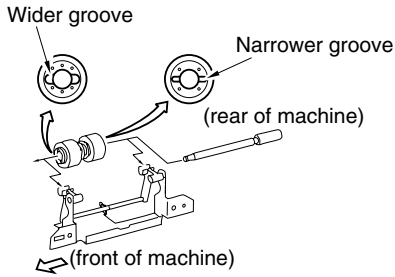
F-13-61

### 13.8.2 Orientation of the Separation Roller

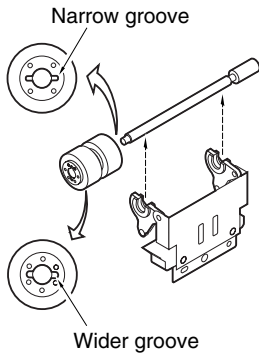
When replacing the separation roller, be sure it is oriented as follows:



Mounting the separation roller in the wrong orientation will lead to interference against crimping washer. Make sure it is mounted in the correct orientation.



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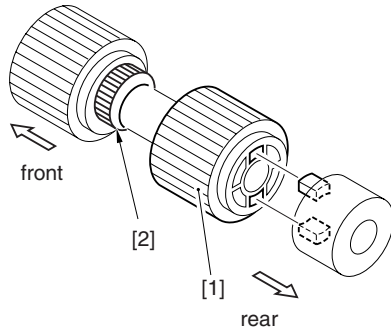
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### 13.8.3 Orientation of the Feeding Roller of the Deck/Cassette Pickup Assembly

When mounting the feeding roller assembly [1] to the cassette pickup assembly, be sure that the belt pulley [2] is at the front of the machine.



Check to make sure that the protrusion in the roller plate and the roller are engaged securely.

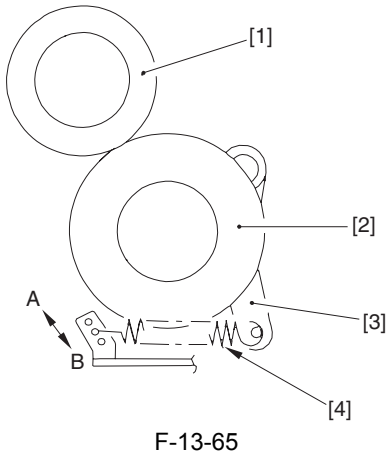


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### 13.8.4 Adjusting the Pressure of the Separation Roller of the Deck/Cassette

If double feeding or pickup failure occurs during pickup, change the position of the pressure spring of the separation roller:

- If double feeding occurs, move the hook of the spring in the direction of B.
- If pickup failure occurs, move the hook of the spring in the direction of A.



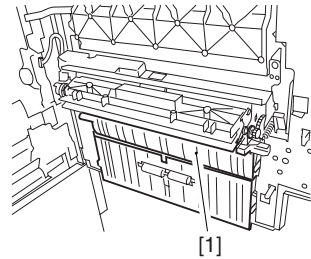
F-13-65

- [1] Feeding roller
- [2] Separation roller
- [3] Pressure lever
- [4] Pressure spring

### 13.8.5 Adjusting the Pressure of the Separation Roller of the Manual Feed Tray

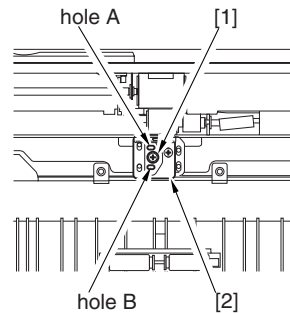
If double feeding or pickup failure occurs during pickup, adjust the position of the pressure spring of the separation roller.

- 1) Remove the right upper cover.
- 2) Remove the upper guide [1].



F-13-66

- If double feeding occurs, remove the mounting screw [1], and lower the mounting base [2]; then, tighten the mounting screw [1] in hole A.
- If pickup failure occurs, remove the mounting screw [1], and raise the mounting base [2]; then, tighten the mounting screw [1] in hole B.

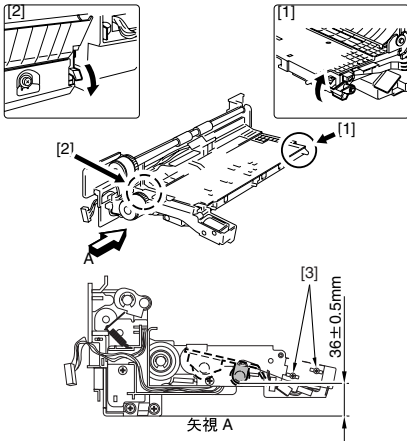


F-13-67



### 13.8.6 Adjusting the Position of the Pickup Solenoid (SL3, SL4) of the Cassette 3/4

Adjust the position of the solenoid using the two screws [3] so that the distance from the bottom of the pickup assembly to A of the roller arm is  $36 \pm 0.5$  mm when [1] and [2] are op-erated.

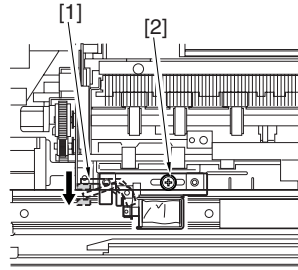


F-13-68

### 13.8.7 Adjusting the Position of the Delivery Flapper Solenoid (SL5)

Adjust the position of the mounting screw [2] using the screw [2] so that the drive lever [1] is pushed fully when the solenoid

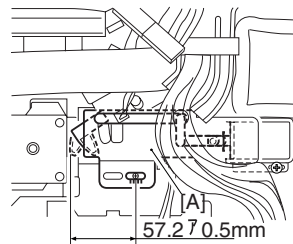
turns on (i.e., when the plunger is drawn).



F-13-69

### 13.8.8 Adjusting the Position of the Right Deck Pickup Solenoid (SL6)

Adjust the position of the solenoid so that the left edge of the arm 2 is  $57.2 \pm 0.5$  mm from the center of hole A of the solenoid mounting base.

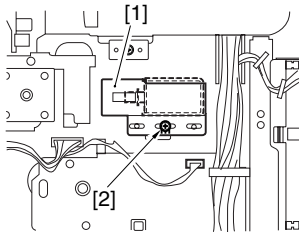


F-13-70

### 13.8.9 Adjusting the Position of the Left Deck Pickup Solenoid (SL7)

Before removing the left deck pickup solenoid from the support plate [1], take note of its position with reference to the fixing screw [2] of the solenoid. Or, mark the position for the solenoid by drawing a line on the support plate with a scribe.

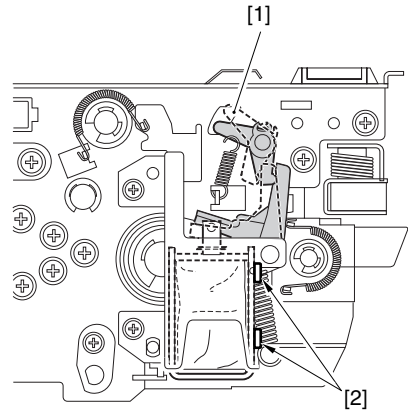
When mounting the solenoid on its own, be sure to secure it in its original position.



F-13-71

### 13.8.10 Adjusting the Position of the Reversing Flapper Solenoid (SL8)

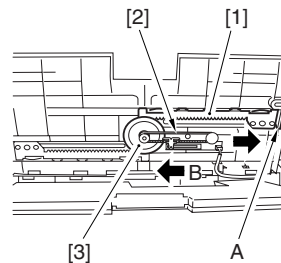
1) Adjust the position of the solenoid so that the drive lever [1] is pushed fully when the solenoid turns on (i.e., when the plunger is drawn).



F-13-72

### 13.8.11 Attaching the Side Guide Timing Belt in the Manual Feed Tray Assembly

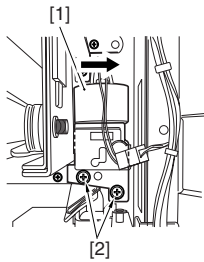
- 1) Butt the rack plate [1] of the manual feed tray against section A (open state).
- 2) Move the slide volume in the direction of B, and attach the timing belt [2] onto the pulley [3].



F-13-73

### 13.8.12 Adjusting the Position of the Lifter Motor M20 (M21) of the Cassette 3 (cassette 4)

- 1) While keeping the lifter motor M20 (M21) [1] to the right, tighten the screw [2] temporarily.



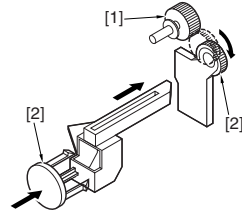
F-13-74

- 2) Set the cassette 3 (cassette 4) in the machine without paper.
- 3) Check to make sure that the lifter drive gear [1] is engaged with the lifter motor gear [2] from the right side of the machine; then, check also to make sure that the lifter drive gear is fully away from the lifter gear when the release button [3] of the cassette 3 (cassette 4) is pressed halfway.



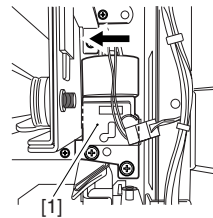
The expression "pressing the release button halfway" means the following:

- The separation roller moves down.
- The cassette is about to slide out.



F-13-75

- 4) If the filter drive gear is not fully away from the lifter motor gear, move the left motor M20 (M21) [1] to the left, and press the release button halfway once again to make a check.



F-13-76

- 5) Fully tighten the two screws of the lifter motor M20 (M21).
- 6) Mount back the removed parts, and turn on the machine.
- 7) Press the cassette release button under the following conditions, and turn on the machine:
  - the cassette contains no paper.
  - the cassette contains about 550 sheets of paper.

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# Chapter 14

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## Correcting Faulty Images

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## 14.1 Making Initial Checks

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### 14.1.1 Site Environment

The site must meet the following requirements:

1. The main source of power must provide the rated voltage. (The power plug must remain connected throughout the night.)
2. The site must not be subject to high temperature/humidity (near a water faucet, water boiler, humidifier) or low temperature. It must not be near a source of fire, and must not be subject to dust.
3. The site must not be subject to ammonium gas.
4. The site must be free of the direct rays of the sun; otherwise, curtains must be provided to block out the rays.
5. The room must be well ventilated.
6. The floor must keep the machine level.
7. The source of power must provide power night and day.

Check the site of installation to see if it meets the requirements.

### 14.1.2 Checking the Originals for Symptoms

Try to find out where the problem is caused by the originals or the machine:

1. The copy density is optimum when it is as indicated by the index (5  $\pm$  1).
2. An original with a reddish background prevents good contrast; e.g., red slips.
3. Check the original for density:

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**MEMO:**

A diazo copy (used as an original) or an original with transparency tends to produce prints that are likely to be judged "foggy".

An original prepared in pencil tends to produce prints that are likely to be judged "light".

---

### 14.1.3 Copyboard Cover, Copyboard Glass, and Standard White Plate

Check the copyboard cover, copyboard glass, and standard white plate for dirt and scratches. If soiled, clean it with mild detergent or alcohol; if scratched, replace it.

### 14.1.4 Checking the Charging Assemblies

1. Check each charging assembly for soiling and each charging wire for a fault (scratch, rust, etc.).
2. Clean the charging wire of each charging assembly and the shielding plate; if the dirt is excessive, replace it.
3. Check the type and the height of each charging assembly.
4. Check to make sure that each charging assembly is correctly mounted.
5. Check the charging wire cleaning pad (of each charging assembly) for displacement.

### 14.1.5 Checking the Developing Assembly

- 1) Check to make sure that the rolls on both ends of the developing assembly are in contact with the drum.  
Otherwise, "light images" may occur.
- 2) Check to make sure that the surface of the developing cylinder is coated with an even layer of toner.  
Otherwise, "light images" or "uneven density" may occur.

### 14.1.6 Checking the Paper

- 1) Check to see if the paper is of a recommended type.  
Advise the user that the use of paper not of a recommended type may not bring about the best image quality.
- 2) Check to find out if the paper is moist.  
Try using paper fresh out of package.  
Advise the user that the use of moist paper will adversely affect transfer, generating poor images. Advise him/her on the correct method of storing paper.

### 14.1.7 Checking the Periodically Replaced Parts

Check with the Scheduled Servicing Chart and the Periodically Replaced Parts Table; if any part has reached the end of its life, replace it.

### 14.1.8 Image Adjustment Basic Procedure

If the prints have uneven density (difference in density between front and rear), light images, or foggy background, perform the Image Adjustment Basic Procedure.

### 14.1.9 Others

Bringing in a machine from a cold to warm room in winter for installation can cause condensation inside the machine, leading to various problems.

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**MEMO:**

1. Condensation in the scanner (glass, mirror, lens) can cause dark images.
2. Condensation in the charging system can cause electrical leakage.
3. Condensation on the pickup/feeding guide plate can cause paper feeding faults.

If condensation is noted, dry wipe the parts, or leave the machine alone while powered for 60 min or so.

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## 14.2 Outline of Electrical Components

### 14.2.1 Clutch/Solenoid

#### 14.2.1.1 Clutches and Solenoids

<Reader Unit>

The reader unit does not have clutches and solenoids.

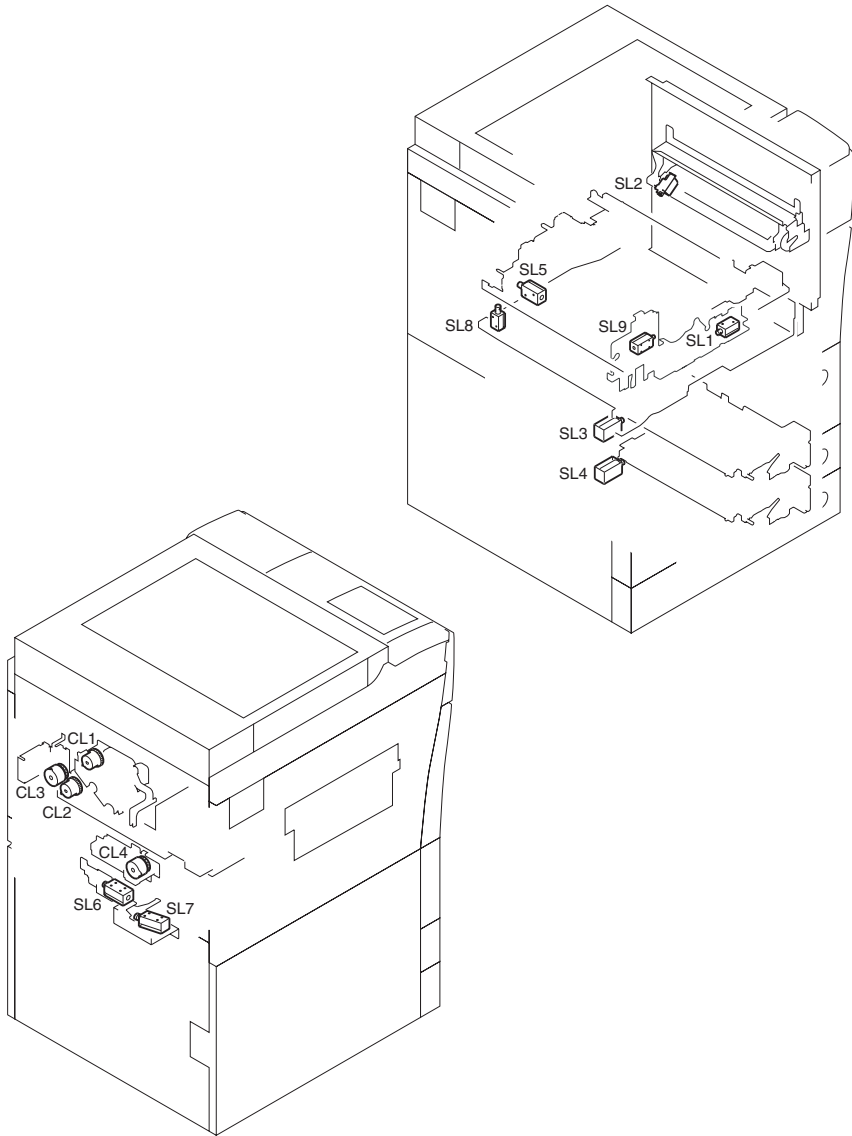
<Printer Unit>

T-14-1

Notation	Name	Description	Remarks
CL1	developing cylinder clutch	drives the developing cylinder	
CL2	registration clutch	drives the registration roller	
CL3	manual feed pickup clutch	drives the manual feed pickup roller	
CL4	left deck pull-off clutch	drives the left deck pull-off roller	
SL1	fixing inlet guide drive solenoid	drives the fixing inlet guide	
SL2	manual feed pickup solenoid	drives the manual feed pickup solenoid release	
SL3	cassette 3 pickup solenoid	drives the cassette 3 pickup	
SL4	cassette 4 pickup solenoid	drives the cassette 4 pickup	
SL5	delivery flapper solenoid	drives the delivery flapper	
SL6	right deck pickup solenoid	drives the right deck pickup	
SL7	left deck pickup solenoid	drives the left deck pickup	
SL8	cassette 1 pickup solenoid	drives the reversing flapper	
SL9	fixing web drive solenoid	drives the fixing web	

## T-14-2

Notation	Parts No.	PART-CHK	Duplexing drive PCB	Motor driver PCB	DC controller PCB
CL1	FF3-3964	CL>4			J108
CL2	FH7-5728	CL>5			J106
CL3	FH7-5729	CL>1			J108
CL4	FH7-5729	CL>2			J115
SL1	FK2-0831	SL>9 (recover) (SL10) (plunger drawn)			J106
SL2	FK2-0832	SL>5			J108
SL3	FH7-5702	SL>3			J110
SL4	FH7-5702	SL>4			J110
SL5	FM2-4171	SL>7			J106
SL6	FM2-3015	SL>1		J2105/ J2101	J104
SL7	FM2-3015	SL>2			J102
SL8	FK2-0838	SL>8	J2306/ J2302		J107
SL9	FK2-0839	SL>11			J106



F-14-1

## 14.2.2 Motor

### 14.2.2.1 Motors

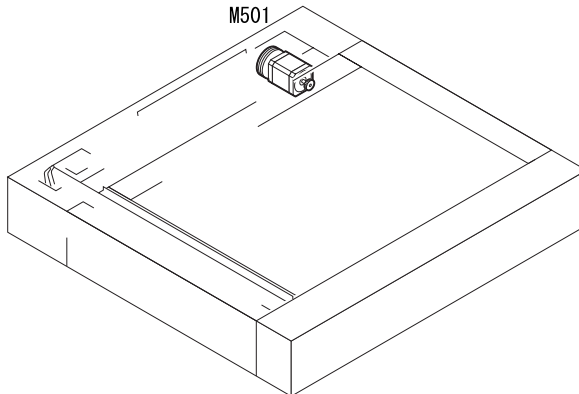
<Reader Unit>

T-14-3

Notation	Name	Description	Parts No.	E code
M501	scanner motor	drives the No. 1/No. 2 mirror base	FK2-0237	E202

T-14-4

Notation	Connector	
	I/F PCB	reader controller PCB
M501	J306/307	J203



F-14-2

&lt;Printer Unit&gt;

## T-14-5

Notation	Name	Description	Remarks
M1	drum motor	drives components associated with the photosensitive drum	
M2	main motor	drives major components of the printer unit	
M3	fixing motor	drives the fixing assembly	
M4	right deck lifter motor	drives the Lifter of the right deck	
M5	Left deck lifter motor	drives the lifter of the left deck	
M6	primary charging wire cleaning motor	drives the primary charging wire cleaner	
M7	pre-transfer charging wire cleaning motor	drives the pre-transfer charging wire cleaner	
M8	transfer separation charging wire cleaning motor	drives the transfer separation charging wire cleaner	
M9	toner supply motor	supplies toner from the toner bottle	
M10	toner stirring motor	stirs toner inside the sub hopper, supplies toner to the developing assembly	
M11	right deck pickup motor	drives the right deck pickup	
M12	cassette 3/4 pickup motor	drives cassette 3/4 pickup	
M13	delivery motor	drives the delivery assembly	
M14	reversal motor	drives the reversing assembly	
M15	shutter motor	drives the fixing assembly shutter	
M16	duplexing horizontal registration motor	drives the horizontal registration mechanism of the duplexing assembly	
M17	pre-registration motor	drives the pre-registration roller	
M18	duplexing feed right motor	drives the right side of the duplexing feed assembly	

Notation	Name	Description	Remarks
M19	duplexing feed left motor	drives the left side of the duplexing feed assembly	
M20	cassette 3 lifter motor	drives the lifter of the cassette 3	
M21	cassette 4 lifter motor	drives the lifter of the cassette 4	
M22	laser scanner motor	drives the polygon mirror	
M24	left deck pickup motor	drives the left deck pickup mechanism	
M25	vertical path duplexing feed motor	drives the curl-imparting roller, drives the duplexing outlet roller	
M26	vertical upper motor	drives the pickup vertical path 1/2 roller	
M27	vertical lower motor	drives the pickup vertical path 3/4 roller	

## T-14-6

Notation	Parts No.	PART-CHK	Error
M1	FK2-0801	MTR>2	E012-0000
M2	FK2-0802	MTR>3	E010-0000
M3	FK2-0803	MTR>4	E014-0000
M4	FG6-5039	MTR>25	
M5	FG6-5039	MTR>26	
M6	FH5-1138	MTR>17	
M7	FG6-9172	MTR>18	
M8	FG6-9172	MTR>19	
M9	FK2-0813	MTR>20 (CW) MTR>21(CCW)	
M10	FK2-0015	MTR>22	
M11	FK2-0830	MTR>5	
M12	FH6-1717	MTR>7	
M13	FK2-0827	MTR>14	
M14	FK2-0825	MTR>12	

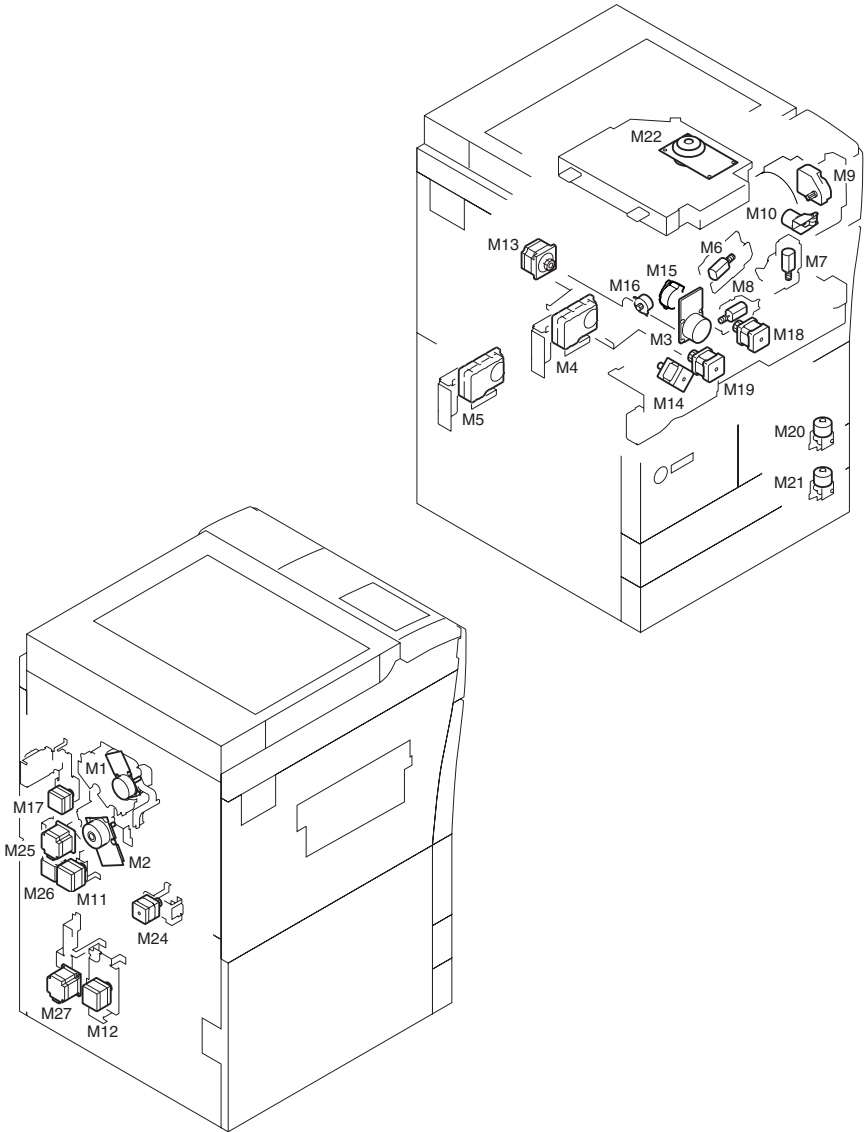
Notation	Parts No.	PART-CHK	Error
M15	FK2-0828	MTR>24	
M16	FK2-0144	MTR>23	
M17	FK2-0823	MTR>15	
M18	FK2-0826	MTR>13	
M19	FK2-0826	MTR>16	
M20	FK2-0814	MTR>27	
M21	FK2-0814	MTR>28	
M22	FM2-3670	MTR>1	E110-0001
M24	FH6-1717	MTR>6	
M25	FK2-0824	MTR>8	
M26	FK2-0820	MTR>10	
M27	FK2-0822	MTR>9	

T-14-7

Notation	Duplexing drive PCB	Motor driver PCB	DC controller PCB
M1			J108
M2			J108
M3			J106
M4		J2105/J2113	J105
M5		J2105/J2113	J105
M6			J103
M7			J103
M8			J106
M9			J103
M10			J103
M11		J2102/J2101	J104
M12		J2104/J2101	J104
M13			J106

<b>Notation</b>	<b>Duplexing drive PCB</b>	<b>Motor driver PCB</b>	<b>DC controller PCB</b>
M14	J2305/J2302		J107
M15			J128
M16	J2306/J2302		J107
M17		J2102/J2101	J104
M18	J2307/J2302		J107
M19	J2305/J2302		J107
M20			J113
M21			J113
M22			J116
M24		J2103/J2101	J104
M25		J2112/J2101	J104
M26		J2102/J2101	J104
M27		J2110/J2101	J104





F-14-3

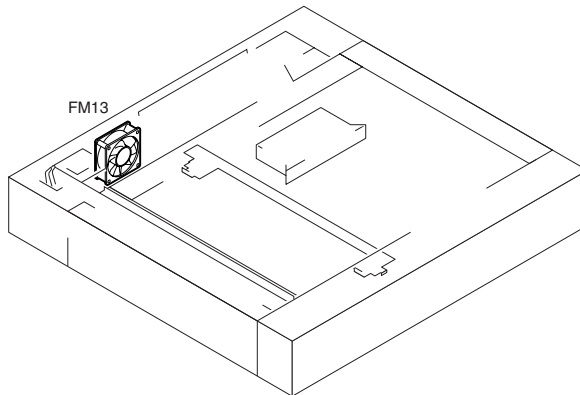
## 14.2.3 Fan

### 14.2.3.1 Fans

<Reader Unit>

T-14-8

Notation	Name	Description	Parts No.	Connector	
				Interface PCB	Reader controller PCB
FM501	reader unit cooling fan	cools the reader unit	FH5-1061	J313/J308	J202



F-14-4

<Printer Unit>

T-14-9

Notation	Name	Description
FM1	feed fan	discharges heat from the fixing unit
FM2	primary charging cooling fan	cools the primary charging assembly and the cleaner

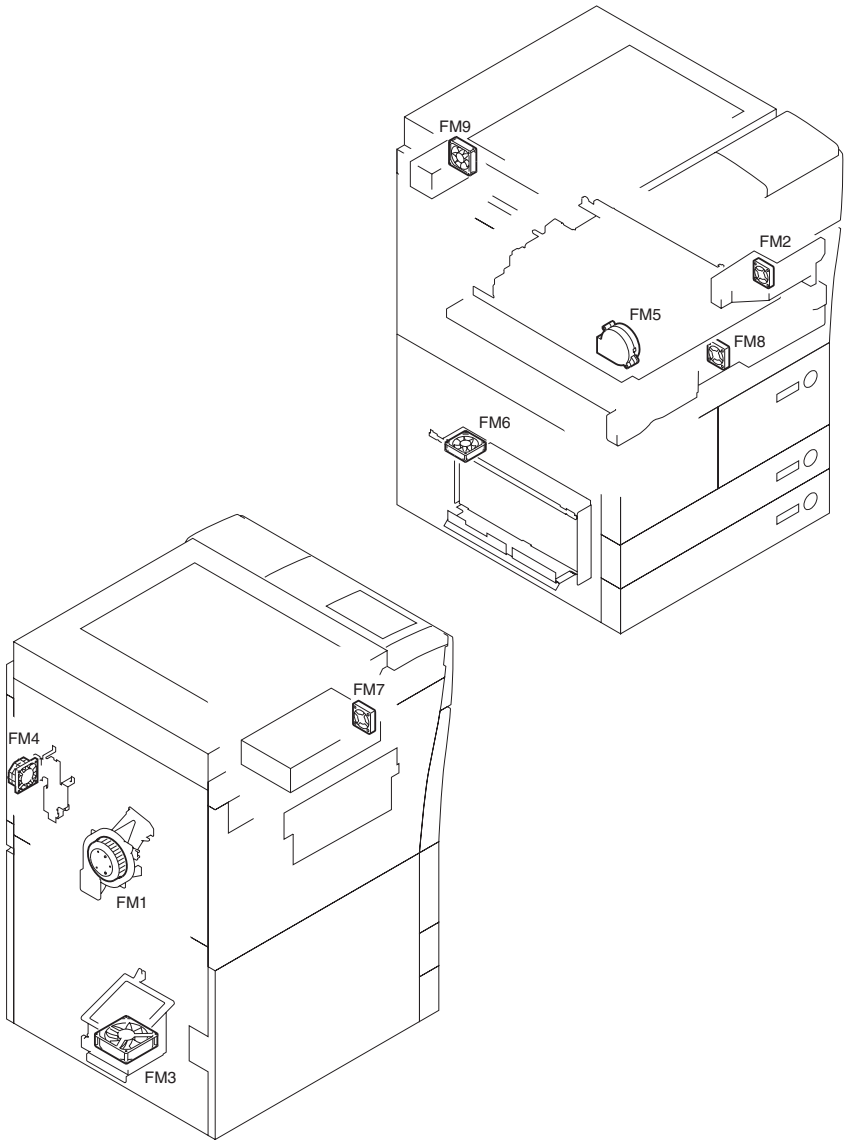
Notation	Name	Description
FM3	heat discharge fan	discharges exhaust from fans to the outside of the machine
FM4	controller cooling fan	cools the laser assembly, developing assembly, drive assembly, controller
FM5	curl-removing fan	removes curl from print paper after fixing
FM6	DC power supply fan	cools the power supply PCB
FM7	fixing heater power supply cooling fan	cools the power supply for fixing
FM8	duplexing feed fan	cools the duplexing feed motor
FM9	circulation duct fan	cools the inside of the machine

T-14-10

Notation	Parts No.	I/O		Error
FM1	FK2-0837	P020-6	1:ON	E805-0002
FM2	FK2-0103	P013-2: half-speed P013-3: full-speed	1:ON 1:OM	E824-0001
FM3	FK2-0840	P013-0: half-speed P013-1: full-speed	1:ON 1:ON	E805-0001
FM4	FK2-0844	P014-2 P014-3	1:ON 1:ON	E121-0001
FM5	FH6-1548	P014-6: half-speed P014-7: full-speed	1;ON 1:ON	-
FM6	FK2-0799/0800 (DC power supply unit)	P012-3	1:ON	E804-0000
FM7	FK2-0795	P014-0 P014-1	1:ON 1:ON	E804-0001
FM8	FH6-1742	P014-5	1:ON	-
FM9	FK2-0103	P023-2	1:ON	-

## T-14-11

<b>Notation</b>	<b>DC power supply PCB</b>	<b>Duplexing PCB</b>	<b>DC controller PCB</b>
FM1			J109
FM2			J103
FM3			J111
FM4			J108
FM5			J106
FM6			J102
FM7			J124
FM8		J2303/J2302	J107
FM9	CN4001/J4002		J124



F-14-5

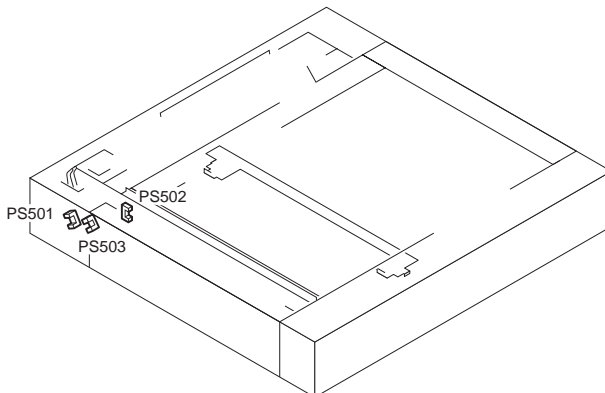
## 14.2.4 Sensor

### 14.2.4.1 Sensors

<Reader Unit>

T-14-12

Notation	Name	Description	Parts No.	Connector No.	
				Interface PCB	Reader controller PCB
PS501	ADF open/closed 1 sensor	detects the state (open/ closed) of the ADF	FK2-0149	J310/307	J203
PS502	Scanner HP sensor	detects scanner home position	FK2-0149	J310/308	J202
PS503	ADF open/closed 2 sensor	detects the timing of original size	FK2-0149	J310/308	J202



F-14-6

&lt;Printer Unit&gt;

## T-14-13

Notation	Name	Description
PS2	Right lower cover open/closed sensor	detects the Right lower cover open/closed
PS3	Manual feed tray open/closed sensor	detects the manual feed tray open/closed
PS4	Claw jam sensor	detects the claw jam
PS5	Right deck open/closed sensor	detects the right deck open/closed
PS6	Right deck lifter sensor	detects the right deck lifter
PS7	Right deck paper sensor	detects paper in the right deck
PS8	Right deck limit sensor	detects the right deck limit
PS9	Left deck open/closed sensor	detects the left deck open/closed
PS10	Left deck lifter sensor	detects the left deck lifer
PS11	Left deck paper sensor	detects paper in the left deck
PS12	Left deck limit sensor	detects the left deck limit
PS13	Cassette 3 paper sensor	detects paper in the cassette 3
PS14	Cassette 4 paper sensor	detects paper in the cassette 4
PS15	Cassette 3 open/closed sensor	detects the cassette 3 open/closed
PS16	Cassette 4 open/closed sensor	detects the cassette 4 open/closed
PS17	Cassette 3 lifter sensor	detects the cassette 3 lifter
PS18	Cassette 4 lifter sensor	detects the cassette 4 lifter
PS19	Right deck re-try sensor	detects the right deck re-try
PS20	Left deck re-try sensor	detects the left deck re-try
PS21	Cassette 3 re-try sensor	detects the cassette 3 re-try
PS22	Cassette 4 re-try sensor	detects the cassette 4 re-try
PS23	Manual feed paper sensor	detects the Manual feed paper
PS24	Vertical path 1 paper sensor	detects the vertical path 1 paper
PS25	Vertical path 2 paper sensor	detects the vertical path 2 paper
PS26	Vertical path 3 paper sensor	detects the vertical path 3 paper
PS27	Vertical path 4 paper sensor	detects the vertical path 4 paper

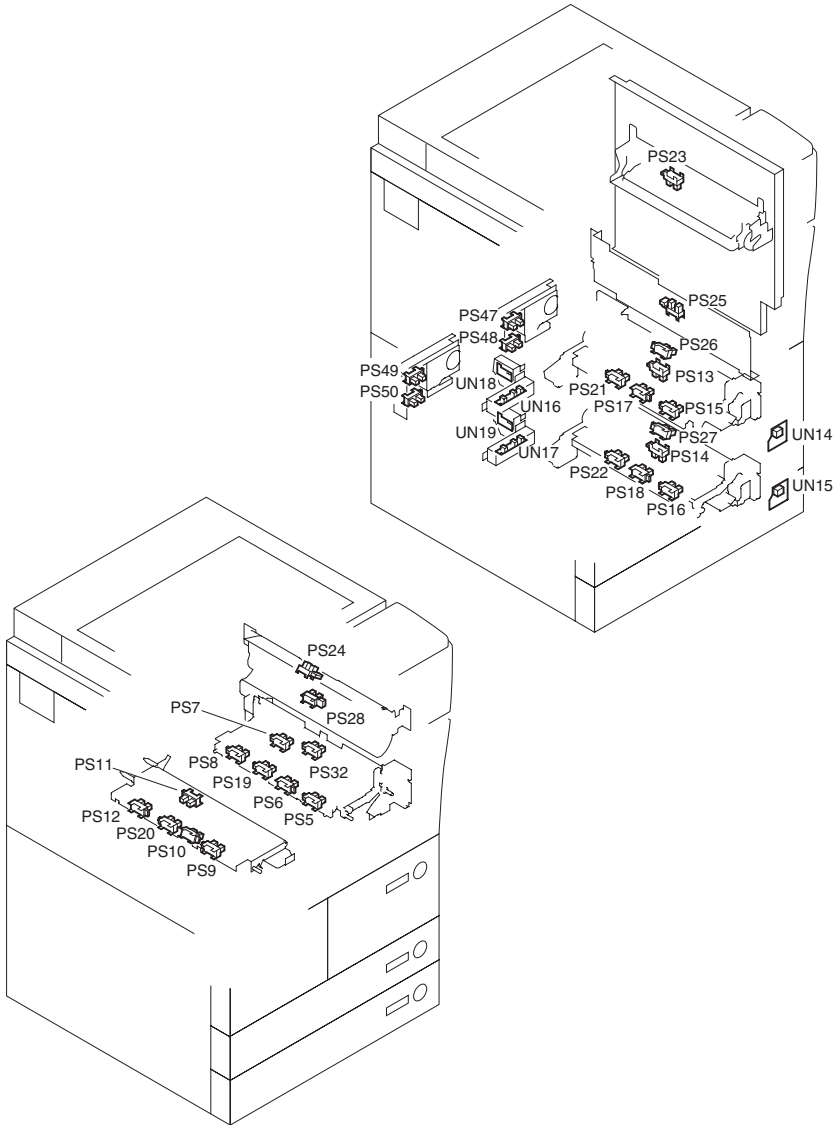
<b>Notation</b>	<b>Name</b>	<b>Description</b>
PS28	Laser write start sensor	detects the laser write start
PS29	Registration paper sensor	detects the registration paper
PS30	Duplex pre- registration sensor	detects the duplex pre- registration
PS31	Duplex horizontal registration sensor	detects the duplex horizontal registration
PS32	Right deck feed paper sensor	detects the right deck feed paper
PS33	Left deck feed paper sensor	detects the left deck feed paper
PS34	Duplexing paper sensor	detects the duplexing paper
PS35	Internal delivery sensor	detects the internal delivery
PS36	External delivery sensor	detects the external delivery
PS37	Reversal sensor 1	detects the reversal 1
PS38	Reversal sensor 2	detects the reversal 1
PS45	Fixing web length sensor	detects fixing web length
PS46	Delivery jam sensor	detects the delivery jam
PS47	Right deck level sensor (upper)	detects the right deck level (upper)
PS48	Right deck level sensor (lower)	detects the right deck level (lower)
PS49	Left deck level sensor (upper)	detects the left deck level (upper)
PS50	Left deck level sensor (lower)	detects the left deck level (lower)
PS51	Fixing inlet sensor	detects the fixing inlet
PS52	Fixing outlet sensor	detects the fixing outlet
PS53	Shutter HP sensor	detects the shutter HP
PS54	Toner access cover open/closed sensor	detects the toner access cover open/closed
UN13	Manual feed tray paper width sensor PCB	Detects the width of paper on the manual feed tray
UN14	Cassette 3 level sensor PCB	Detects the level of paper in the cassette 3
UN15	Cassette 4 level sensor PCB	Detects the level of paper in the cassette 4.
UN16	Cassette 3 paper width sensor PCB	Detects the width of paper in the cassette 3.
UN17	Cassette 4 paper width sensor PCB	Detects the width of paper in the cassette 4.
UN18	Cassette 3 paper length sensor PCB	Detects the length of paper in the cassette 3.
UN19	Cassette 4 paper length sensor PCB	Detects the length of paper in the cassette 4.



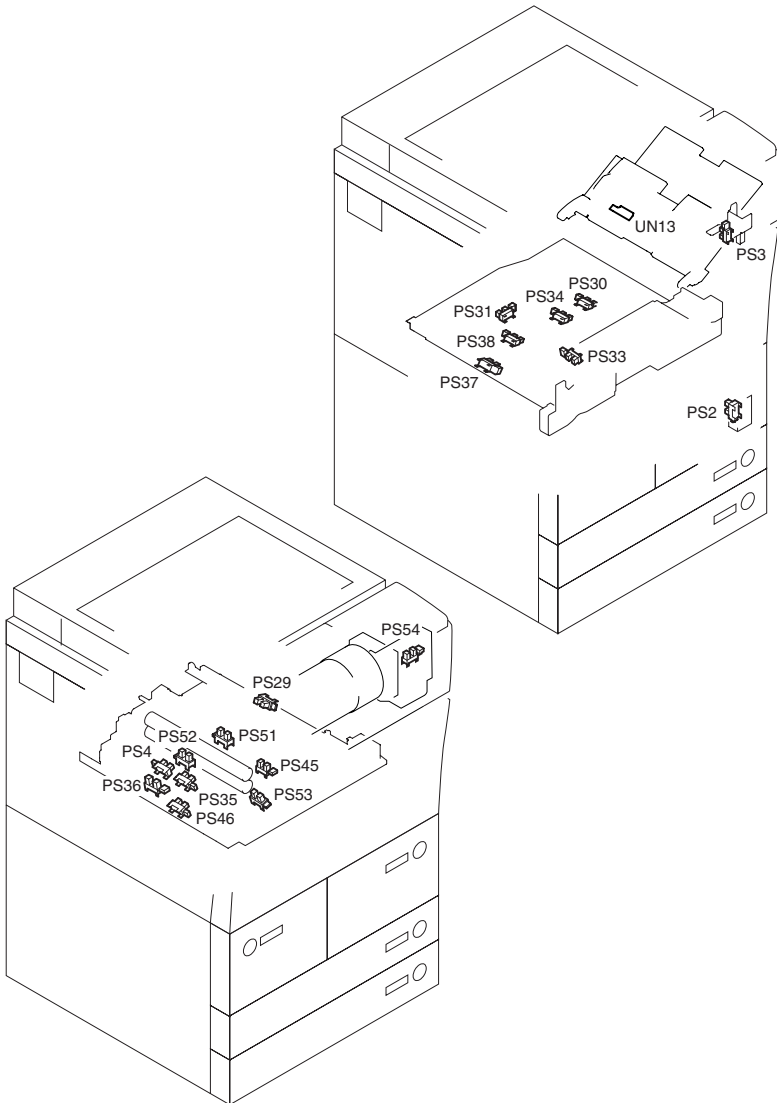
## T-14-14

Notation	Parts No.	I/O		DC controller PCB	JAM
PS2	FK2-0149	P009-13	0:open	J113	
PS3	FK2-0149	P009-0	0:open	J103	
PS4	FK2-0149	P001-14	0:present	J106	xx0F
PS5	FK2-0149	P009-11	0:open	J112	
PS6	FK2-0149	-	-	J112	
PS7	FK2-0149	P001-7	1:present	J112	
PS8	FK2-0149	P002-4	1:present	J112	
PS9	FK2-0149	P009-12	0:open	J115	
PS10	FK2-0149	-	-	J115	
PS11	FK2-0149	P001-9	1:present	J115	
PS12	FK2-0149	P008-4	1:present	J115	
PS13	FK2-0149	P001-3	1:present	J110	
PS14	FK2-0149	P001-5	1:present	J110	
PS15	FK2-0149	P009-8	0:open	J110	
PS16	FK2-0149	P009-9	0:open	J110	
PS17	FK2-0149	-	-	J110	
PS18	FK2-0149	-	-	J110	
PS19	FK2-0149	P001-2	1:present	J112	xx0B
PS20	FK2-0149	P002-2	1:present	J115	xx0C
PS21	FK2-0149	P002-0	1:present	J110	xx0D
PS22	FK2-0149	P002-1	1:present	J110	xx0E
PS23	FK2-0149	P001-0	0:present	J108	
PS24	FK2-0149	P001-8	1:present	J113	xx03
PS25	FK2-0149	P001-10	1:present	J113	xx04
PS26	FK2-0149	P001-4	1:present	J110	xx05
PS27	FK2-0149	P001-6	1:present	J110	xx06
PS28	FK2-0149	P002-8	1:present	J113	xx02

Notation	Parts No.	I/O		DC controller PCB	JAM
PS29	FK2-0149	P001-1	1:present	J106	xx01
PS30	FK2-0149	P002-5	1:present	J107	xx16
PS31	FK2-0149	P002-6	0:present	J107	
PS32	FK2-0149	P009-2	1:present	J112	xx07
PS33	FK2-0149	P001-15	1:present	J107	xx08
PS34	FK2-0149	P002-11	1:present	J107	xx15
PS35	FK2-0149	P001-12	0:present	J106	xx10
PS36	FK2-0149	P001-11	1:present	J106	xx11
PS37	FK2-0149	P002-3	1:present	J107	xx14
PS38	FK2-0149	P002-7	1:present	J107	xx13
PS45	FK2-0149	P002-12	1:absent	J128	
PS46	FK2-0149	P008-09	1:present	J106	xx12
PS47	FK2-0149	P006-8	1:present	J115	
PS48	FK2-0149	P006-12	1:present	J115	
PS49	FK2-0149	P006-9	1:present	J115	
PS50	FK2-0149	P006-13	1:present	J115	
PS51	FK2-0149	P008-8	1:present	J106	xx18
PS52	FK2-0149	P002-13	1:present	J106	xx17
PS53	FK2-0149	P002-14	0:HP	J106	
PS54	FK2-0149	P009-14	0:open	J103	
UN13	FG5-6289	-	-	J108	
UN14	FG6-1941	P009-5	1:present	J113	
UN15	FG6-1941	P009-6	1:present	J113	
UN16	FG5-1957	-	-	J111	
UN17	FG5-1957	-	-	J125	
UN18	FM2-3786	-	-	J111	
UN19	FM2-3786	-	-	J125	



F-14-7



F-14-8

## 14.2.5 Switch

### 14.2.5.1 Switches

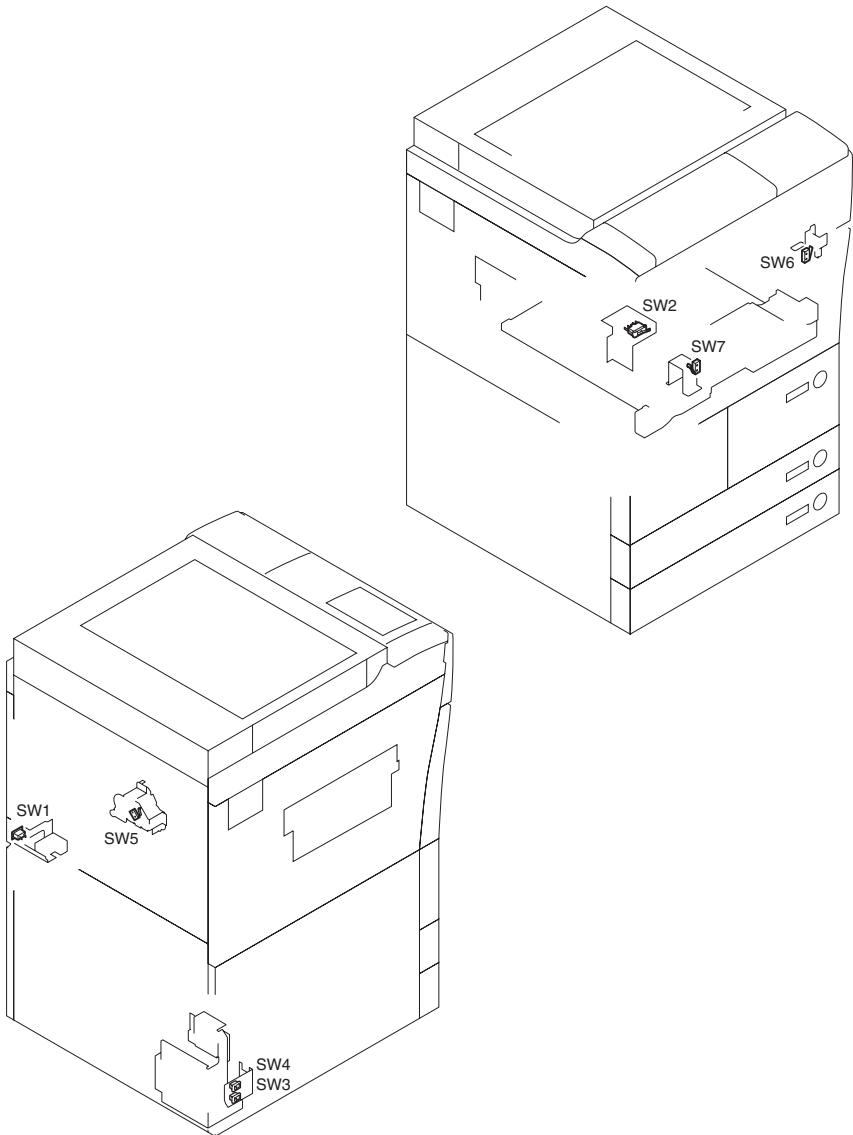
#### <Reader Unit>

The reader unit does not have switches.

#### <Printer Unit>

#### T-14-15

Notation	Name	Description	Parts No.
SW1	main power switch	turns on/off the main power	FK2-0796
SW2	front cover switch	detects the state (open/closed) of the front cover	WC4-5125
SW3	environment switch	turns on/off the drum heater	WC1-5179
SW4	cassette heater switch	turns on/off the cassette heater	WC1-5179
SW5	waste toner feedscrew lock detection switch	detects the state (locked) of the waste toner feedscrew	WC4-0153
SW6	manual feed tray open/closed detection switch	detects the state (open/closed) of the manual feed tray	FG2-6932
SW7	fixing feeding unit detection switch	detects the presence/absence of the fixing feeding unit	FG6-5483



F-14-9

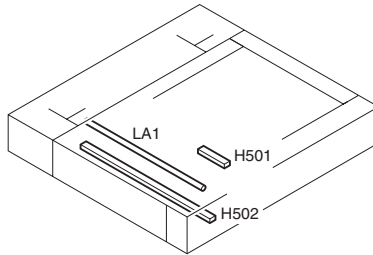
## 14.2.6 Lamps, Heaters, and Others

### 14.2.6.1 Lamps, Heaters, and Others

<Reader Unit>

T-14-16

Notation	Name	Description	Parts No.
H501	lens heater	prevents condensation on the lens	F26-4601 (100V; option)
			F26-4611 (230V; service part)
H502	mirror heater	prevents condensation on the mirror	F26-4601 (100V; option)
			F26-4611 (230V; service part)
LA1	scanning lamp	illuminates originals	FM2-3159 (No.1 mirror base unit)



F-14-10

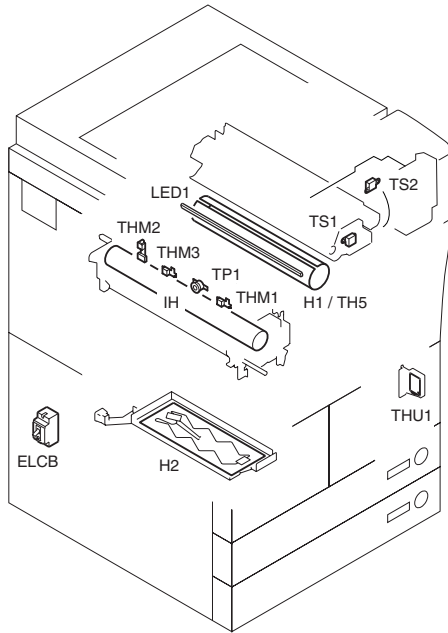
<Printer Unit>

T-14-17

Notation	Name	Description	Parts No.
LED1	pre-exposure lamp (LED)	removes residual charges from the surface of the photosensitive drum	FG6-9895 (pre-exposure unit)
IH	fixing heater	heats the fixing roller	FM2-3012

Notation	Name	Description	Parts No.
H1	drum heater	prevents condensation on the photosensitive drum	FK2-0786 (100V)
			FK2-0787 (120V)
			FK2-0788 (230V)
H2	cassette heater	prevents condensation in cassette (dries paper inside)	FM2-4176 (100V)
			FM2-4182 (230V; service part)
THM1	fixing main thermistor	performs fixing temperature control, detects error	FK2-0809 (thermistor unit)
THM2	fixing sub thermistor	performs fixing temperature control, detects error	FM2-4161
THM3	shutter thermistor	performs fixing temperature control, detects error	FK2-0809 (thermistor unit)
TH5	drum thermistor	turns on/off the drum heater	FK2-0786 (100V)
			FK2-0787 (120V)
			FK2-0788 (230V)
TP1	fixing thermal switch	serves as a safety mechanism for the fixing assembly	FM2-4214
ELCB	leakage breaker	prevents leakage of current	FK2-0791 (100V)
			FK2-0792 (120V)
			FK2-0793 (230V)
TS1	developing assembly toner sensor	detects the level of toner remaining inside the developing assembly	FK2-0812
TS2	sub hopper toner level sensor	detects the level of toner remaining inside the hopper	FK2-0812
THU1	temperature/humidity sensor	measures the temperature/ humidity inside the machine	WP2-5200





F-14-11

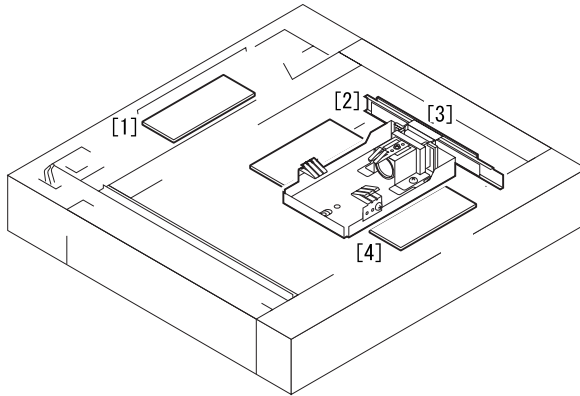
## 14.2.7 PCBs

### 14.2.7.1 PCBs

#### <Reader Unit>

T-14-18

Ref.	Name	Description	Parts No.
[1]	interface PCB	serves as the interface with the printer and ADF	FM2-3624
[2]	reader controller PCB	controls the reader unit	FM2-3623
[3]	CCD/AP PCB	performs analog image processing	FM2-3158 (CCD unit)
[4]	inverter PCB	drives the scanning lamp	FK2-0630



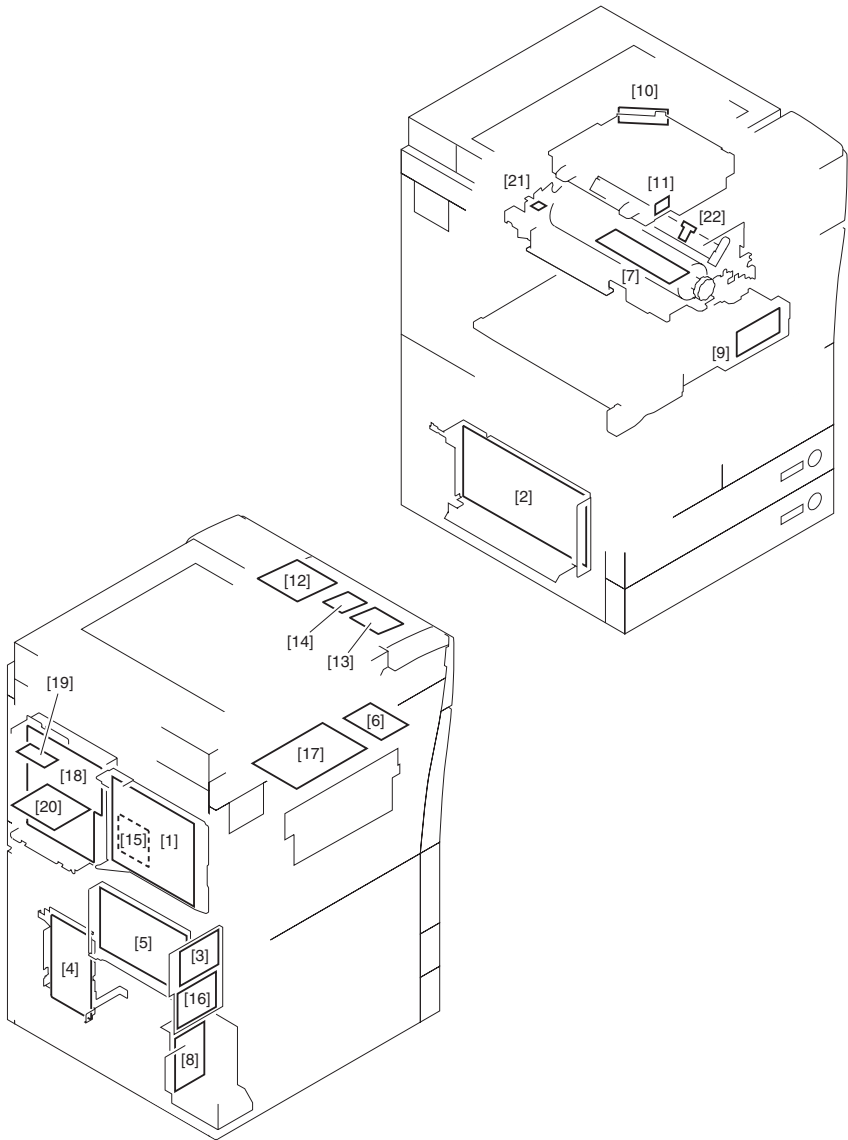
F-14-12

## &lt;Printer Unit&gt;

T-14-19

Ref.	Name	Description	Parts No.
[1]	DC controller PCB	controls the power supply to the printer unit/finisher	FM2-3646
[2]	DC power supply PCB	supplies DC power	FK2-0799 (100V/ 120V) FK2-0800 (230V)
[3]	AC driver PCB	controls the AC circuitry	FM2-3044 (100V; AC driver unit) FM2-3043 (120V; AC driver unit) FM2-3045 (230V; AC driver unit)
[4]	motor driver PCB	controls the motor	FM2-3655
[5]	HVT PCB	generates high voltage	FM2-3653
[6]	potential PCB	controls the surface potential of the photosensitive drum	FM2-3040

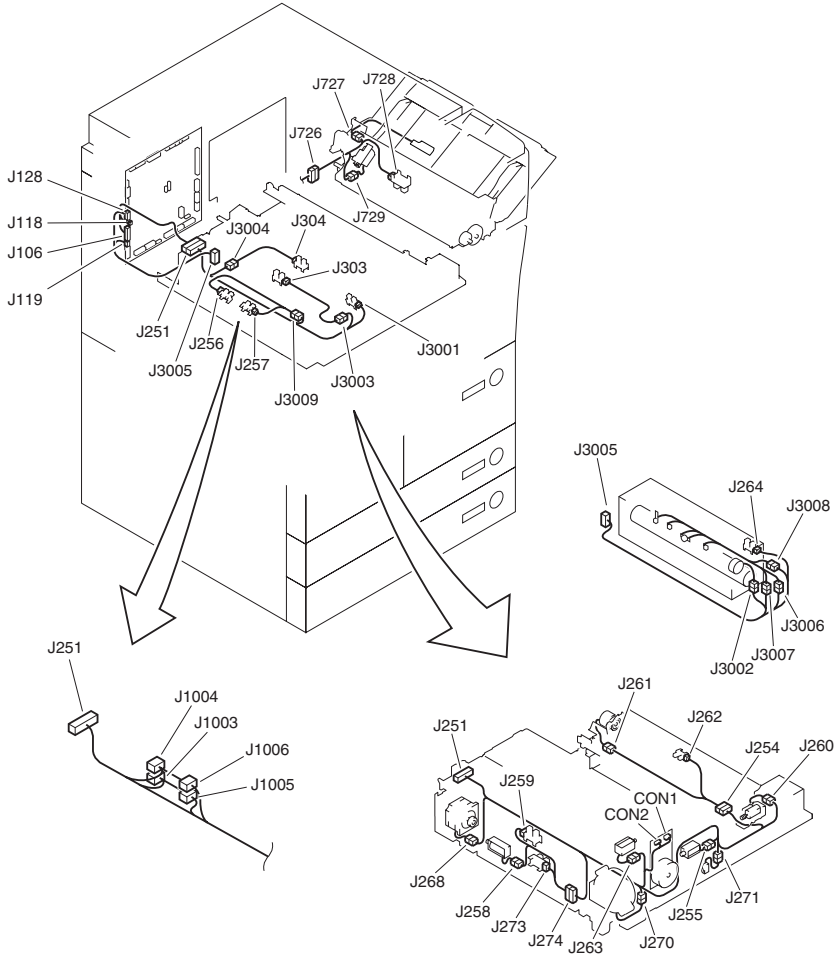
Ref.	Name	Description	Parts No.
[7]	drum heater control PCB	controls the drum heater	FM2-0841 (100V/ 120V)
			FM2-0842 (230V)
[8]	option power supply PCB	supplies power to the finisher	FK2-0797 (100V/ 120V)
			FK2-0798 (230V)
[9]	duplexing drive PCB	controls the sensors, motors, and solenoids of the duplexing unit	FM2-3654
[10]	laser drive PCB	controls the laser drive	FM2-3670 (laser scanner unit)
[11]	BD developing PCB	detects the laser beam	
[12]	control panel keypad PCB	controls the keys and LEDs	FM2-1250
[13]	control panel CPU PCB	controls the control panel	FM2-1249
[14]	control panel inverter PCB	adjusts the contrast of the control panel	FM2-1251
[15]	rush-current prevention PCB	prevents rush current to the fixing feeding/ duplexing unit	FG6-4978
[16]	capacitor PCB	removes noise	FM2-3044 (100V; AC driver unit)
			FM2-3043 (120V; AC driver unit)
			FM2-3045 (230V; AC driver unit)
[17]	fixing heater power supply PCB	controls the fixing heater	FM2-3647 (100V)
			FM2-3648 (120V)
			FM2-3649 (230V)
[18]	main controller PCB	performs digital image processing/system control	FM2-3794
[19]	differential PCB	converts communication signals	FM2-3796
[20]	PCI expansion PCB	serves as a relay PCB	FG3-1745 (option)
[21]	drum cleaner thermistor PCB	detects clogging of the cleaner	FM2-3661
[22]	potential sensor PCB	measures the photosensitive drum surface potential	FM2-3040



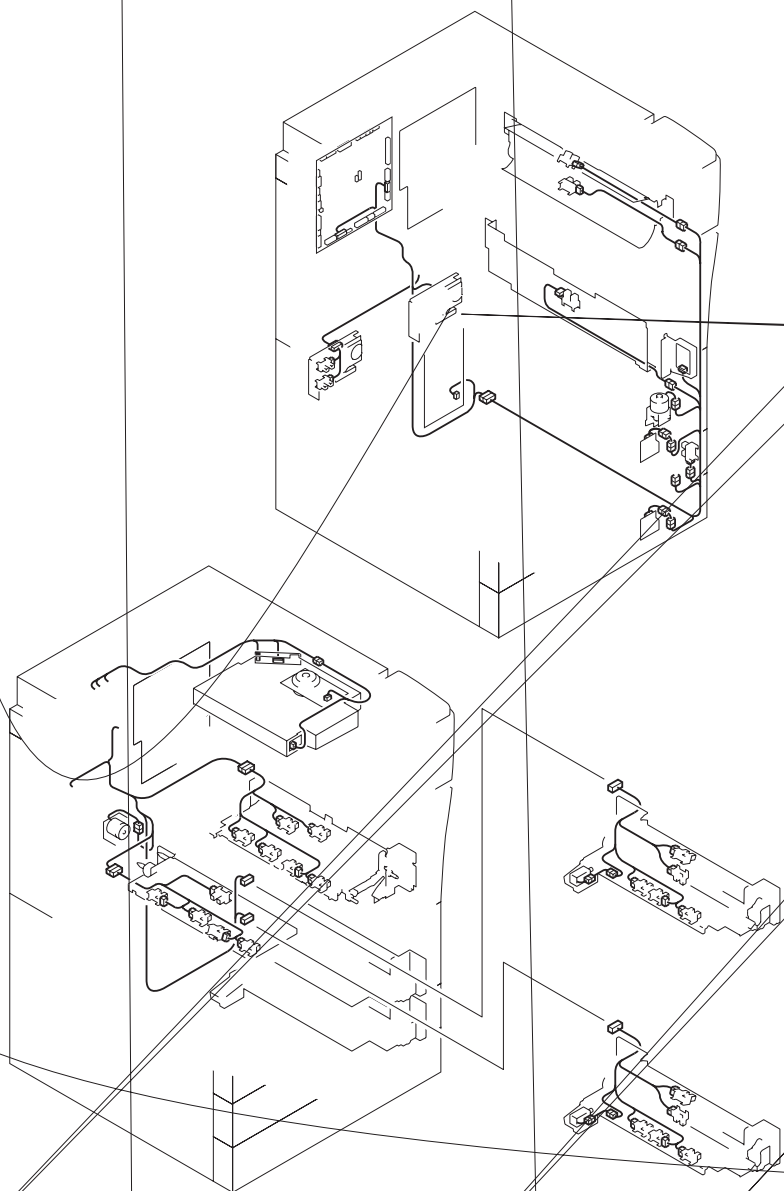
F-14-13

## 14.2.8 Connectors

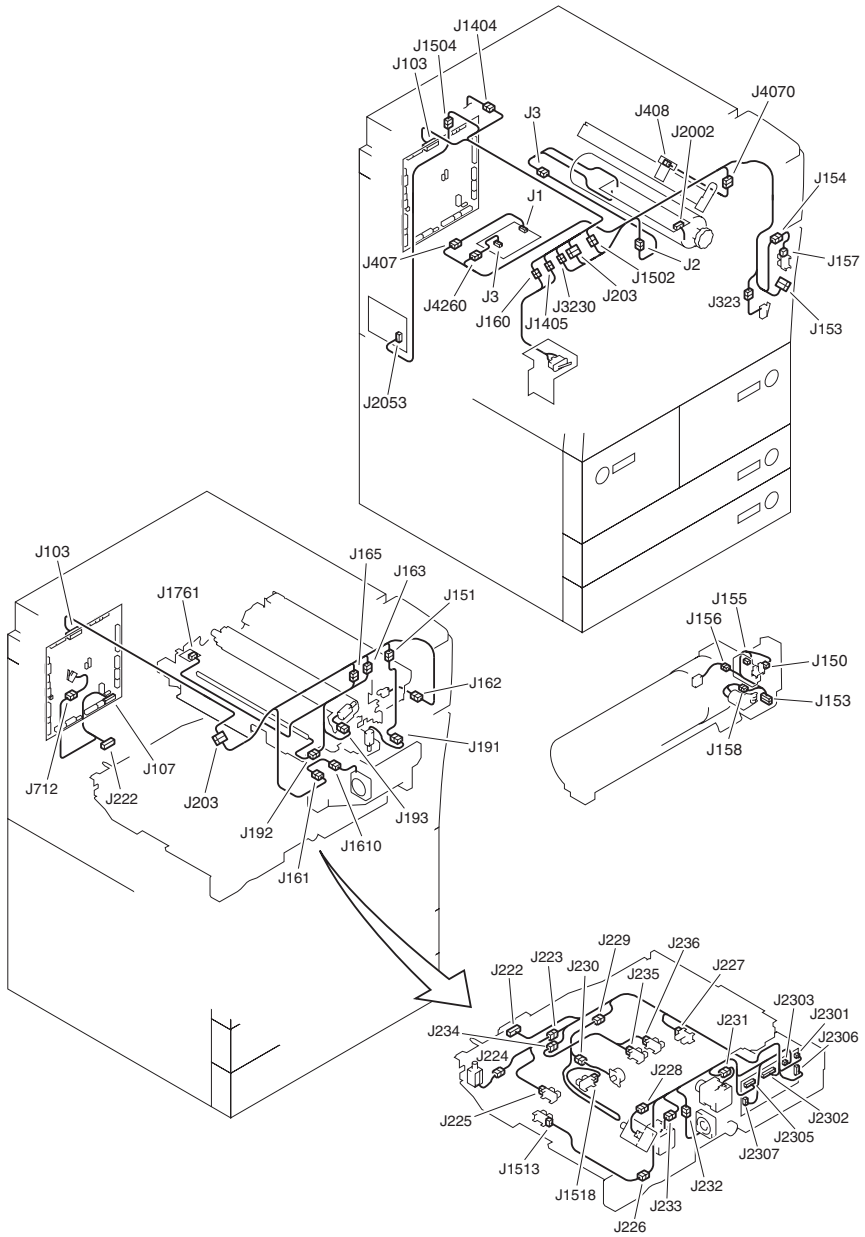
### 14.2.8.1 Connectors



F-14-14



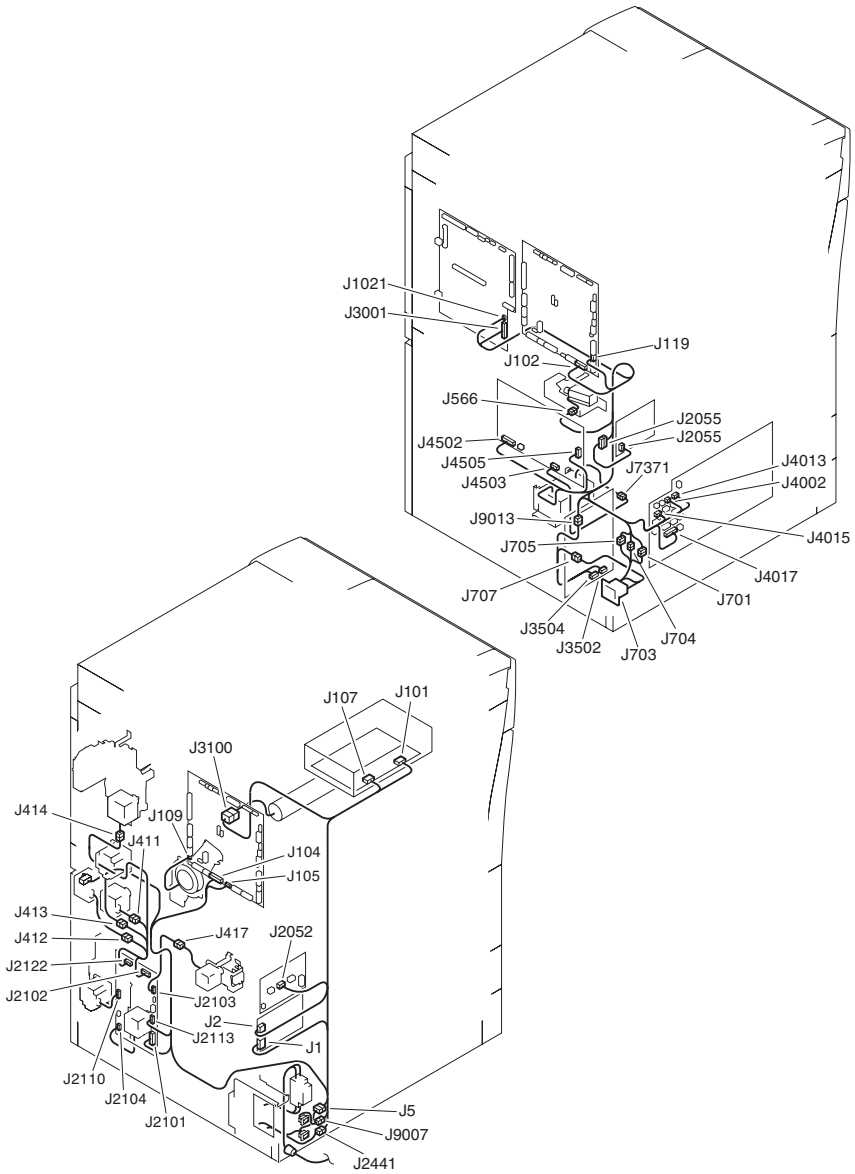
F-14-15



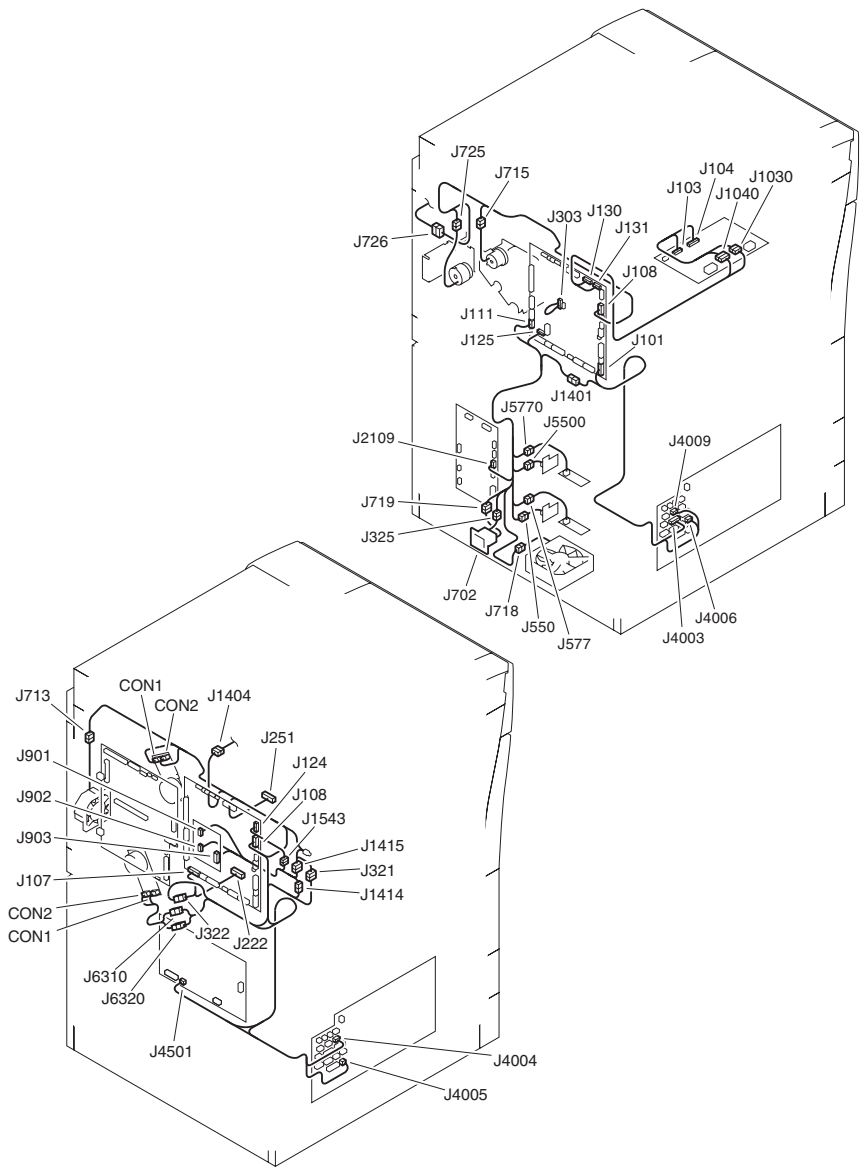
F-14-16







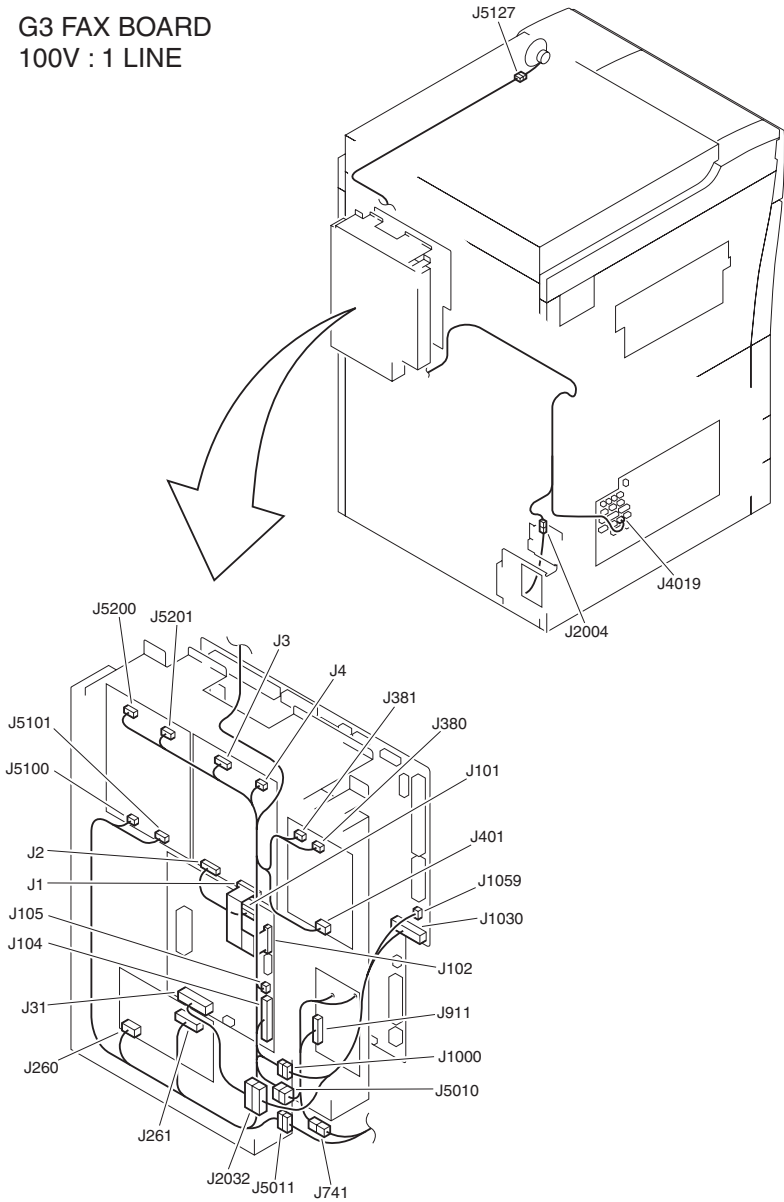
F-14-18



F-14-19

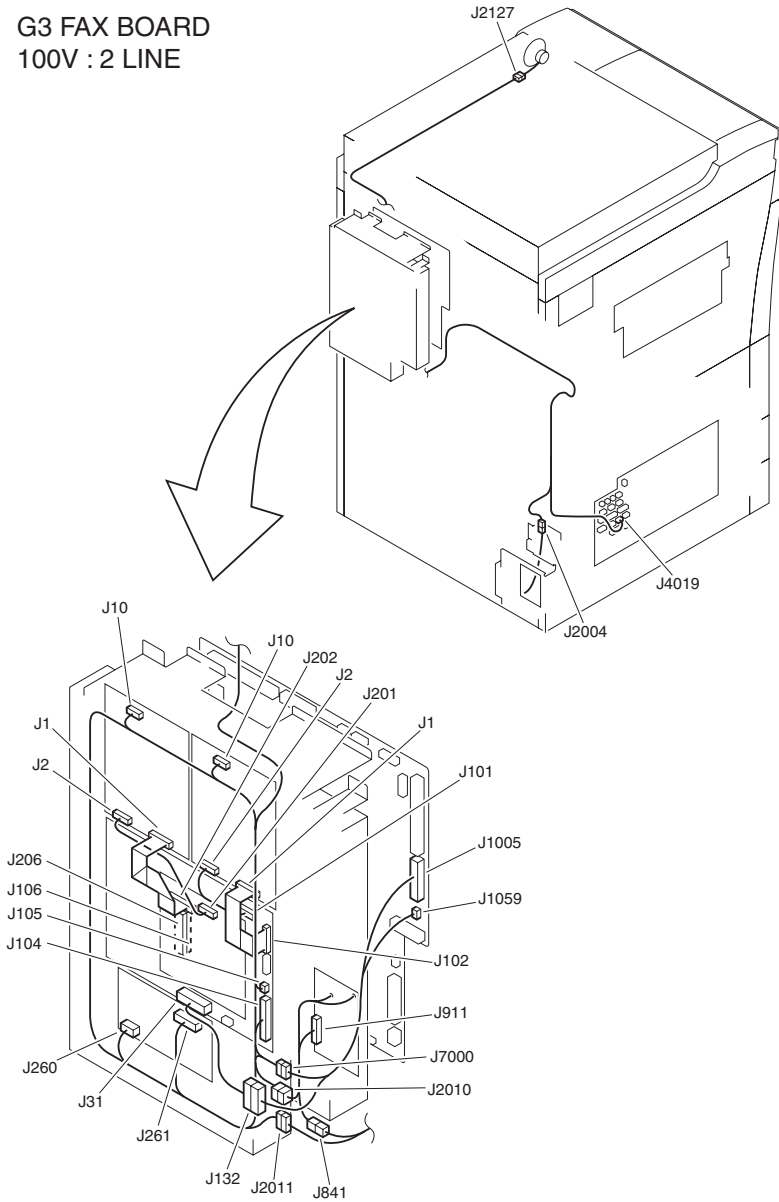


G3 FAX BOARD  
100V : 1 LINE



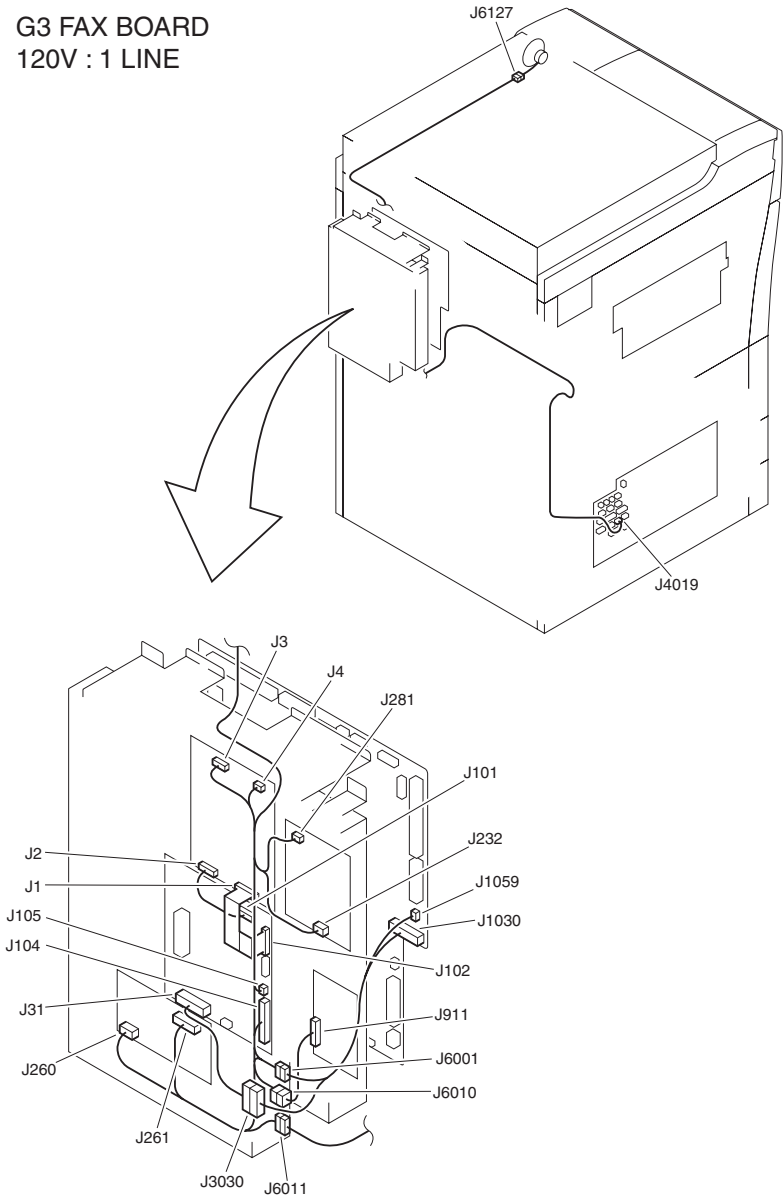
F-14-21

G3 FAX BOARD  
100V : 2 LINE



F-14-22

G3 FAX BOARD  
120V : 1 LINE



F-14-23

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# Chapter 15

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## Self Diagnosis

# Contents

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## 15.1 Error Code Table

### 15.1.1 Error Code

T-15-1

Code	Description
E000	the heater fails to heat
E001	there is an abnormal rise in temperature
E002	there is an error in the rise in temperature
E003	there is an error in the rise in temperature
E004	there is an error in the IH power supply/IH control mechanism
E005	there is no fixing web/there is an error in the detection of web solenoid connection
E010	there is a feed motor error
E012	there is a drum motor error
E013	the waste toner pipe is clogged
E014	there is a fixing motor error
E020	there is no toner in the developing assembly; there is an error in the detection of developing assembly toner sensor connection; there is an error in the detection of developing hopper toner sensor connection
E025	there is an error in the detection of toner feed motor over-current, there is an error in the detection of toner bottle motor over-current, there is an error in the detection of toner bottle motor connection
E032	the counter of the NE controller has malfunctioned
E061	there is a potential control error/there is an APC error
E100	there is a BD error
E110	there is a polygon motor error
E121	there is a controller cooling error
E196	the EEPROM is faulty
E202	there is an HP error
E225	there is an error in the intensity of light
E227	there is an error in the power supply (24 V)
E240	there is an error in the communication between the main controller PCB and the DC controller PCB

Code	Description
E248	there is an EEPROM error
E315	there is an image data error
E400	there is an ADF communication error
E413	there is an ADF shift motor error
E490	the ADF type is wrong
E503	there is a finisher internal communication error (finisher)
E505	there is a backup memory error in the finisher (finisher)
E514	there is a trailing edge assist motor error (finisher)
E519	there is a gear change motor error (finisher)
E530	there is a front alignment error (finisher)
E531	there is a staple error (finisher)
E532	there is a stapler shift error (finisher)
E535	there is a swing error (finisher)
E537	there is a rear alignment error (finisher)
E540	there is an upper tray ascent/descent error (finisher)
E542	there is a lower tray ascent/descent error (finisher)
E584	there is a shutter unit error (finisher)
E590	there is a punch motor error (punch unit)
E591	there is a punch dust sensor error (punch unit)
E592	there is a punch horizontal registration sensor error (punch unit)
E593	there is a punch shift motor error (punch unit)
E5F0	there is a saddle paper positioning error
E5F1	there is a saddle paper folding error
E5F2	there is a saddle guide error
E5F3	there is a saddle alignment error
E5F4	there is a saddle rear staple error
E5F5	there is a saddle front staple error
E5F6	there is a saddle butting error
E5F9	there is a saddle switch error

<b>Code</b>	<b>Description</b>
<b>E602</b>	the hard disk is faulty
<b>E604</b>	the image memory is faulty or inadequate
<b>E609</b>	the hard disk is faulty
<b>E610</b>	the HDD encryption key is faulty
<b>E674</b>	there is a fault in the communication between the fax controller PCB (2-line) and the main controller PCB
<b>E710</b>	the IPC initialization is faulty
<b>E711</b>	the IPC communication is faulty
<b>E713</b>	the communication with the finisher is faulty
<b>E717</b>	the communication with the NE controller is faulty
<b>E719</b>	the coin vendor is faulty
<b>E730</b>	the PDL software is faulty
<b>E732</b>	the reader communication is faulty
<b>E733</b>	the printer communication is faulty
<b>E740</b>	the Ethernet board is faulty
<b>E743</b>	the DDI communication is faulty
<b>E744</b>	the language file/boot ROM is faulty
<b>E745</b>	the TokenRing board is faulty
<b>E746</b>	the accessories board type is wrong
<b>E748</b>	the controller board and the SDRAM size do not match
<b>E749</b>	a change in the product composition has been detected
<b>E804</b>	there is a DC power supply fan error/there is an IH power supply cooling fan error
<b>E805</b>	there is a heat discharge fan error/there is a feed fan error
<b>E821</b>	the cleaner is clogged
<b>E824</b>	there is a primary charging cooling fan error
<b>E840</b>	there is a shutter error
<b>E841</b>	there is an error in the detection of fixing inlet guide solenoid connection

## 15.2 Error Code Details

### 15.2.1 Detail Error Code

T-15-2

Code	Description	Remedy
<b>E000</b>	The heater fails to heat. After correcting the fault, be sure to reset the error. (COPIER>FUNCTION>CLEAR>ERR)	
0000	After power-on, the reading of the main thermistor does not increase to 70 deg C or higher within 20 sec.	<ul style="list-style-type: none"> <li>- Replace the main/shutter thermistor.</li> <li>- Replace the DC controller PCB.</li> </ul>
0010	The power has been turned off and then on without resetting the error.	<ul style="list-style-type: none"> <li>- Reset the error.</li> </ul> (COPIER>FUNCTION>CLEAR>ERR)
<b>E001</b>	There is an abnormal rise in temperature. After correcting the fault, be sure to reset the error. (COPIER>FUNCTION>CLEAR>ERR)	
0001	There is an error or an open circuit in the main thermistor, shutter thermistor, or sub thermistor.	<ul style="list-style-type: none"> <li>- Check the connector of each thermistor for any fault in connection and wiring.</li> <li>- Replace the thermistor in question.</li> <li>- Replace the DC controller PCB.</li> </ul>
0002	The reading of the main thermistor, shutter thermistor, or sub thermistor is 230 deg C or higher for 2 sec.	<ul style="list-style-type: none"> <li>- Replace the thermistor in question.</li> <li>- Replace the DC controller PCB.</li> </ul>
0003	The reading is not 150 deg C or higher or 210 deg C or lower within 30 sec.	<ul style="list-style-type: none"> <li>- Turn off and then back on the power.</li> </ul>
0010	The power has been turned off and then back on without resetting the error.	<ul style="list-style-type: none"> <li>- Reset the error.</li> </ul> (COPIER>FUNCTION>CLEAR>ERR)
<b>E002</b>	There is an abnormal rise in temperature. After correcting the fault, be sure to reset the error. (COPIER>FUNCTION>CLEAR>ERR)	

Code	Description	Remedy
0000	The reading of the main thermistor is not 100 deg C 12 sec after it has exceeded 70 deg C.	<ul style="list-style-type: none"> <li>- Check the connector of the main/shutter thermistor for any fault in connection and wiring.</li> <li>- Check the main/shutter thermistor for mounting condition.</li> <li>- Replace the main/shutter thermistor.</li> <li>- Replace the fixing heater unit.</li> <li>- Replace the DC controller PCB.</li> </ul>
0001	The reading of the main thermistor is not 150 deg C 15 after it has exceeded 100 deg C.	
0010	The power has been turned off and then back on without resetting the error.	<ul style="list-style-type: none"> <li>- Reset the error.</li> </ul> (COPIER>FUNCTION>CLEAR>ERR)
<b>E003</b>	There is an abnormal rise in temperature. After correcting the fault, be sure to reset the error. (COPIER>FUNCTION>CLEAR>ERR)	
0000	The reading of the main thermistor is lower than 70 deg C for 2 sec or more after it has exceeded 100 deg C.	<ul style="list-style-type: none"> <li>- Check the connector of the main/shutter thermistor for any fault in connection and wiring.</li> <li>- Check the main/shutter thermistor for mounting condition.</li> <li>- Replace the main/shutter thermistor.</li> <li>- Replace the fixing heater unit.</li> <li>- Replace the DC controller PCB.</li> </ul>
0010	The power has been turned off and then back on without resetting the error.	<ul style="list-style-type: none"> <li>- Reset the error.</li> </ul> (COPIER>FUNCTION>CLEAR>ERR)
<b>E004</b>	The IH power supply is faulty/the IH control mechanism is faulty. After correcting the fault, be sure to reset the error. (COPIER>FUNCTION>CLEAR>ERR)	
0101	There is a mismatch between the input voltage and the IH power supply ID.	Replace the fixing heater power supply with one designed for the country of installation (voltage).

Code	Description	Remedy
0102	The IH current is faulty. (current leakage)	- Check the connector for any fault in connection. - Replace the fixing heater power supply. - Replace the DC controller PCB.
0103	The IH current is faulty. (no current)	
0104	There is an IH over-current.	
0105	The IH input voltage is too high.	
0106	The IH input voltage is too low.	
0201	At power-on (or, when IH is at reset), the IH control mechanism is not in an initial state.	
0202	At IH start-up, the IH control enable flag is not set within 1 sec after the start flag is set.	
0203	With IH at rest, the IH control flag is not released.	
0204	The 12-V power supply (IH relay) is identified as being off.	
0205	At IH start-up, the PWM_ON data is faulty ('0' or 'FFFF').	
<b>E005</b>	There is no fixing web/there is an error in the detection of web solenoid connection.	
0000	The absence of the fixing web has been detected for 5 sec or more.	- Replace the fixing web. - Replace the fixing web length sensor. - Replace the DC controller PCB. After correcting the fault, be user to reset the fixing web counter reading. (COPIER>COUNTER>MISC>FIX-WEB)
0001	At power-on, the connection of the web solenoid is not detected.	- Check the connector for any fault in connection. - Replace the solenoid.
0010	The power has been turned off and then back on without resetting the error.	- Reset the fixing web counter. (COPIER>COUNTER>MISC>FIX-WEB)
<b>E010</b>	There is a feed motor error.	
0000	The FG signal of the feed motor does not arrive for 2 sec or more even when the feed motor has been turned on.	- Check the connector for any fault in connection. - Replace the motor
<b>E012</b>	There is a drum motor error.	

Code	Description	Remedy
0000	The FG signal of the drum motor does not arrive for 2 sec or more even when the drum motor has been turned on.	<ul style="list-style-type: none"> <li>- Check the connector for any fault in connection.</li> <li>- Replace the motor.</li> </ul>
<b>E013</b>	The waste toner pipe is clogged.	
0000	The waste toner pipe is identified as being clogged for 4 sec or more.	<ul style="list-style-type: none"> <li>- Check the connector for any fault in connection.</li> <li>- Replace the waste toner feedscrew lock detecting switch.</li> <li>- Replace the waste toner feed unit.</li> <li>- Replace the DC controller PCB.</li> </ul>
<b>E014</b>	There is a fixing motor error.	
0000	The PULL lock signal of the fixing motor does not arrive for 2 sec even when the fixing motor has been turned on.	<ul style="list-style-type: none"> <li>- Check the connector for any fault in connection.</li> <li>- Replace the motor.</li> </ul>
<b>E020</b>	There is no toner in the developing assembly; there is an error in the detection of developing toner sensor connection; there is an error in the detection of hopper toner sensor connection	
0000	The presence of toner is detected inside the sub hopper and, in addition, the absence of toner is detected inside developing assembly for 120 sec continuously even when operation has been under way for the supply of toner to the developing assembly.	<ul style="list-style-type: none"> <li>- Check the connector of the developing toner sensor for any fault in connection.</li> <li>- Replace the developing toner sensor.</li> <li>- Replace the hopper toner sensor.</li> </ul>
0001	At power-on, the connection of the developing assembly toner sensor is not detected.	<ul style="list-style-type: none"> <li>- Check the connector for any fault in connection.</li> <li>- Replace the sensor.</li> </ul>
0002	At power-on, the connection of the developing hopper toner sensor is not detected.	<ul style="list-style-type: none"> <li>- Replace the connector for any fault in connection.</li> <li>- Replace the sensor.</li> </ul>
<b>E025</b>	There is a toner feed motor over-current detection error, there is a toner bottle motor connection detection error.	
0001	An over-current has been detected in the toner feed motor.	<ul style="list-style-type: none"> <li>- Check the connector for any fault in connection.</li> <li>- Replace the motor.</li> </ul>

Code	Description	Remedy
0002	An over-current has been detected in the toner bottle motor.	- Check the connector for any fault in connection. - Replace the motor.
0003	At power-on, the connection of the toner bottle motor is not detected.	- Check the connector for any fault in connection. - Replace the motor.
<b>E032</b>	The NE controller counter has malfunctioned.	
0001	An open circuit has been detected for the count pulse signal.	Turn off the main power, and check for an open circuit in the cable; then, turn the main power back on.
<b>E061</b>	There is a potential control error/there is an APC error.	
0001	As a result of potential control, the drum surface potential (VL2) of the background is 200 V or higher (i.e., causing a solid black image).	- Replace the potential sensor unit. - Replace the laser scanner unit. - Replace the DC controller PCB.
0002	The primary charging output used at time of printer output and the drum surface potential after laser output is identified as being 200 V or more (i.e., causing a solid black image).	
<b>E100</b>	There is a BD error.	
0001	A check is made of VLOCK at intervals of 100 msec while the laser is on. An error will be identified if it is not detected 10 times in sequence.	- Replace the laser scanner unit. - Replace the DC controller PCB.
<b>E110</b>	There is a polygon motor error.	
0001	- Although the polygon motor has been turned on, VLOCK is not detected at all within 76.5 sec. - At time of a shift from full-speed to half-speed control, VLOCK is not detected at all for 7.5 sec. - At time of half-speed control, a check is made of VLOCK at intervals of 100 msec. An error will be identified if it is not detected 10 times continuously.	- Replace the laser scanner unit. - Replace the DC controller PCB.
<b>E121</b>	There is a controller cooling fan error.	



Code	Description	Remedy
0001	Even though the controller cooling fan has been turned on, the controller cooling fan stop signal has been detected for 5 sec or more.	<ul style="list-style-type: none"> <li>- Check the connector for any fault in connection.</li> <li>- Replace the fan.</li> </ul>
<b>E196</b>	The EEPROM is faulty.	
1abb	There is a mismatch between the data that has been written in EEPROM and the data that has been read. (a: chip No. 0 through 5; bb: chip faulty address)	<ul style="list-style-type: none"> <li>- Initialize the RAM.</li> <li>- Replace the EEPROM.</li> <li>- Replace the DC controller PCB.</li> </ul>
2abb	The ID in EEPROM that has been read and the ID in ROM are compared. An error will be identified if they do not match. (a: chip No. 0 through 5; bb: chip faulty address)	
3abb	When the main power is turned on, the ID in EEPROM and the ID in ROM are compared. An error will be identified if they do not match. (a: chip No. 0 through 5; bb: chip faulty address)	<ul style="list-style-type: none"> <li>- Check the position and condition of the EEPROM.</li> <li>- Initialize the RAM.</li> <li>- Replace the EEPROM.</li> <li>- Replace the DC controller PCB.</li> </ul>
<b>E202</b>	There is a scanner HP error.	
0001	An error has occurred when the sensor was moved to home position. The scanner HP sensor is faulty; the scanner motor is faulty; the reader controller PCB is faulty.	<ul style="list-style-type: none"> <li>- Check the connector for any fault in connection.</li> <li>- Replace the scanner HP sensor.</li> <li>- Replace the scanner motor.</li> <li>- Replace the reader controller PCB.</li> </ul>
0002	An error has occurred when the sensor was moved from home position. The scanner HP sensor is faulty; the scanner motor is faulty; the reader controller PCB is faulty.	
<b>E225</b>	The intensity of light is inadequate.	
0001	At time of shading, the intensity is below a specific level.	<ul style="list-style-type: none"> <li>- Check the connector for any fault in connection.</li> </ul>
0002	ADFThe intensity is below a specific level between sheets (ADF).	<ul style="list-style-type: none"> <li>- Replace the scanning lamp.</li> <li>- Replace the inverter PCB.</li> <li>- Replace the reader controller PCB.</li> </ul>
<b>E227</b>	there is an error in the power supply (24 V).	

Code	Description	Remedy
0001	At power-on, the 24-V port is OFF.	- Check the connector for any fault in connection. - Replace the power supply.
0002	At the start of a job, the 24-V port is OFF.	
0003	At the end of a job, the 24-V port is off.	
0004	When a load is driven, the 24-V port is OFF.	
<b>E240</b>	The communication between the main controller PCB and the DC controller PCB is faulty.	
0000	There is an error in the communication between the main controller PCB and the CPU of the DC controller PCB.	- Check the connector for any fault in connection. - Replace the DC controller PCB. - Replace the main controller PCB.
<b>E248</b>	There is an EEPROM error.	
0001	An error has occurred at power-on.	- Replace the EEPROM. - Replace the reader controller PCB.
0002	An error has occurred at time of write operation.	
0003	An error has occurred at time of read operation after write operation.	
<b>E315</b>	There is a fault in the image data.	
0007	There is a JIBIG encode error.	- Turn off and then back on the power.
000d	There is a JBIG decode error.	
<b>E400</b>	There is an ADF communication error.	
0001	There is a check sum error.	- Check the connector for any fault in connection. - Replace the reader controller PCB. - Replace the ADF controller PCB.
0002	There is a reception status error.	
0003	There is a reception interrupt error.	
<b>E413</b>	There is a fault in the ADF shift motor.	
0001	The output of the shift HP sensor is identified as indicating open.	- Check the connector for any fault in connection. - Replace the sensor and motor in question. - Check the mounting condition of the area around the cam.
0002	The output of the shift HP sensor is identified as indicating closed.	
<b>E490</b>	The ADF type is wrong.	
0001	The ADF is not of a supported type.	- Replace the ADF with a supported type.
<b>E503</b>	There is an error in the finisher internal communication (finisher).	

Code	Description	Remedy
0002	There is an error in the communication between the finisher and the saddle unit.	- Check the connection between the saddle stitcher controller PCB and the finisher controller PCB.
0003	There is an error in the communication between the finisher and the punch unit.	- Check the communication between the saddle stitcher controller PCB and the finisher controller PCB.
<b>E505</b>	There is a finisher backup memory error (finisher).	
0001	An error has occurred in the data stored in the backup memory.	- Turn off the main power; check the DC controller PCB and the finisher controller PCB for wiring; check the 24-V system fuse; then, turn the main power back on.
0002	There is an error in the punch unit EEPROM data.	- Turn off the main power; check the DC controller PCB and the puncher controller PCB for wiring; then, check the 24-V system fuse; then, turn the main power back on.
<b>E514</b>	There is a trailing edge assist motor error (finisher).	
8001	The home position sensor does not go off even when the trailing edge assist motor has rotated for a specific period of time.	<ol style="list-style-type: none"> <li>1. Check the trailing edge assist home position sensor. Is the sensor normal?</li> <li>2. Check the wiring between the finisher controller PCB and the trailing edge assist motor. Is it normal?</li> <li>3. Check the trailing edge assist mechanism. Is there a fault?</li> <li>4. Try replacing the trailing edge assist motor. Is the problem corrected?</li> </ol>
8002	The home position sensor does not go on even when the trailing edge assist motor has rotated for a specific period of time.	
<b>E519</b>	There is a gear change motor error (finisher).	
8001	The home position sensor does not go off even when the gear change motor has rotated for a specific period of time.	<ol style="list-style-type: none"> <li>1. Check the gear change home position sensor. Is the sensor normal?</li> <li>2. Check the wiring between the finisher controller PCB and the change motor. Is it normal?</li> <li>3. Check the gear change mechanism. Is there a fault?</li> <li>4. Try changing the gear change motor. Is the problem corrected?</li> </ol>
0002	The home position sensor does not go on even when the gear change motor has rotated for a specific period of time.	

Code	Description	Remedy
<b>E530</b>	There is a front alignment error. (finisher)	
8001	The home position sensor does not go off even when the front alignment motor has rotated for a specific period of time.	<ol style="list-style-type: none"> <li>1. Check the aligning plate home position sensor. Is it normal?</li> <li>2. Check the wiring between the finisher controller PCB and the aligning plate front motor. Is it normal?</li> <li>3. Is there any mechanical obstacle in the path in which the aligning plate moves?</li> <li>4. Try replacing the aligning plate front motor. Is the problem corrected?</li> </ol>
8002	The home position sensor does not go on even when the front alignment sensor has rotated for a specific period of time.	
<b>E531</b>	There is a stapling error. (finisher)	
0001	The home position sensor does not go off even when the stapler motor has rotated for a specific period of time.	<ol style="list-style-type: none"> <li>1. Check the wiring between the finisher controller PCB and the stapler. Is it normal?</li> <li>2. Try replacing the stapler. Is the problem corrected?</li> </ol>
0002	The home position sensor does not go on even when the stapler motor has rotated for a specific period time.	
<b>E532</b>	There is a stapler shift error. (finisher)	
8001	The home position sensor does not go off even when the stapler shift motor has rotated for a specific period of time.	<ol style="list-style-type: none"> <li>1. Check the stapler shift home position sensor. Is the sensor normal?</li> <li>2. Check the wiring between the finisher controller PCB and the stapler shift motor. Is it normal?</li> <li>3. Is there any mechanical obstacle in the path of the stapler shift base?</li> <li>4. Try replacing the stapler shift motor. Is the problem corrected?</li> </ol>
8002	The home position sensor does not go on even when the stapler shift motor has rotated for a specific period of time.	
<b>E535</b>	There is a swing error. (finisher)	
8001	The home position sensor does not go off even when the wiring motor has rotated for a specific period of time.	<ol style="list-style-type: none"> <li>1. Check the wiring home position sensor. Is it normal?</li> <li>2. Check the wiring between the finisher controller PCB and the swing motor. Is it normal?</li> <li>3. Is there a fault in the swing mechanism?</li> <li>4. Try replacing the swing motor. Is the problem corrected?</li> </ol>
8002	The home position sensor does not go on even when the swing motor has rotated for a specific period of time.	

Code	Description	Remedy
<b>E537</b>	There is a rear alignment error. (finisher)	
8001	The home position sensor does not go off even when the swing motor has rotated for a specific period of time.	1. Check the aligning plate rear home position sensor. Is it normal? 2. Check the wiring between the finisher controller PCB and the aligning plate rear motor. Is it normal? 3. Is there a mechanical obstacle in the path of the aligning plate? 4. Try replacing the aligning plate rear motor. Is the problem corrected?
8002	The home position sensor does not go on even when the swing motor has rotated for a specific period of time.	
<b>E540</b>	There is an upper tray ascent/descent error. (finisher)	
8001	There is a fault in the upper tray ascent/descent motor clock.	1. Check the No. 1 tray area sensors 1 through 3. Are they normal? 2. Check the wiring between the finisher controller PCB and the No. 1 tray shift motor. Is it normal? 3. Is there a fault in the tray ascent/descent mechanism? 4. Try replacing the No. 1 tray shift motor. Is the problem corrected?
8002	There is an area fault.	
8003	The safety switch has gone on.	
<b>E542</b>	There is a lower tray ascent/descent error. (finisher)	
8001	There is a fault in the lower tray ascent/descent motor clock signal.	1. Check the No. 2 tray area sensors 1 through 3. Are the sensors normal? 2. Check the wiring between the finisher controller PCB and the No. 2 tray shift motor. Is it normal? 3. Is there a fault in the tray ascent/descent mechanism? 4. Try replacing the No. 2 tray shift motor. Is the problem corrected?
8002	There is an area error.	
0003	The safety switch has activated.	
<b>E584</b>	There is a shutter unit error. (finisher)	

Code	Description	Remedy
8001	The shutter open sensor fails to go off. (The shutter does not close.)	1. Check the shutter home position sensor. Is it normal?
0002	The shutter open sensor does not go on. (The shutter does not open.)	2. Check the wiring between the finisher controller PCB and the stack feeding motor and between the finisher controller PCB and the shutter open/close clutch. Is it normal? 3. Is there a fault in the shutter mechanism? 4. Try replacing the stack edging motor and the shutter open/close clutch. Is the problem corrected?
<b>E590</b>	There is a punch motor error. (punch unit)	
8001	The punch home position sensor is not detected even when the punch motor has been driven for 200 msec.	- Check the punch home position sensor, horizontal registration motor, and punch driver PCB; thereafter, turn off and then back on the main power.
8002	The puncher does not detect the punch home position sensor while the motor is at rest at time of punch motor initialization.	
<b>E591</b>	There is a punch dust sensor error. (punch unit)	
8001	The incoming light voltage is faulty in the presence of light.	- Turn off and then back on the main power.
8002	The incoming light voltage is faulty in the absence of light.	
<b>E592</b>	There is a punch horizontal registration sensor error. (punch unit)	

Code	Description	Remedy
8001	The incoming light voltage is faulty in the presence of light. (trailing edge sensor)	- turn off and then back on the main power.
8002	The incoming light is faulty in the absence of light and voltage. (trailing edge sensor)	
8003	The incoming light voltage is faulty in the presence of light. (horizontal registration sensor 1)	
8004	The incoming light voltage is faulty in the absence of light. (horizontal registration sensor 1)	
8005	The incoming light voltage is faulty in the presence of light. (horizontal registration sensor 2)	
8006	The incoming light voltage is faulty in the absence of light. (horizontal registration sensor 2)	
8007	The incoming light voltage is faulty in the presence of light. (horizontal registration sensor 3)	
8008	The incoming light voltage is faulty in the absence of light. (horizontal registration sensor 3)	
8009	The incoming light voltage is faulty in the presence of light. (horizontal registration sensor 4)	
800A	The incoming light voltage is faulty in the absence of light. (horizontal registration sensor 4)	
<b>E593</b>	There is a punch shift motor error. (punch unit)	
8001	In the presence of light, the incoming light voltage HP sensor does not go off.	- Turn off and the back on the main power.
8002	In the absence of light, the incoming light voltage HP sensor does not go on.	
<b>E5F0</b>	There is a saddle paper positioning error.	

Code	Description	Remedy
0001	The paper positioning plate home position sensor does not go on even when the paper positioning plate motor has been driven for 1.33 sec. paper positioning plate motor (M4S), paper positioning plate home position sensor (PI7S)	- Check the paper positioning plate motor (M4S) and the paper positioning plate home position sensor (PI7S).
0002	The paper positioning plate home position sensor does not go off even when the paper positioning plate motor has been driven for 1 sec. paper positioning plate motor (M4S), paper positioning plate home position sensor (PI7S)	
<b>E5F1</b>	There is a saddle paper folding error.	
0001	The number of detection pulses of the paper folding motor clock sensor is lower than a specific value. paper folding motor (M2S), paper folding motor clock sensor (PI4S)	- Check the paper folding motor (M2S) and the paper folding motor clock sensor (PI4S).
0002	The start of the paper folding home position sensor does not change even when the paper folding motor has been driven for 3 sec. paper folding motor (M2S), paper folding motor clock sensor (PI4S)	
<b>E5F2</b>	There is a saddle guide error.	
0001	The guide home position sensor does not go on even when the guide motor has been driven for 0.455 sec. guide motor (M3S), guide home position sensor (PI13S)	- Check the guide motor (M3S) and the guide home position sensor (PI13S).
0002	The guide home position sensor does not go off even when the guide motor has been driven for 1 sec. guide motor (M3S), guide home position sensor (PI13S)	
<b>E5F3</b>	There is a saddle alignment error.	



Code	Description	Remedy
0001	The aligning plate home position sensor does not go on even when the aligning motor has been driven for 0.5 sec. (if at time of initialization, 1.67 sec) alignment motor (M5S), aligning plate home position sensor (PI5S)	- Check the alignment motor (M5S) and the aligning plate home position sensor (PI5S).
0002	The aligning plate home position sensor does not go off even when the aligning plate has been driven for 1 sec. alignment motor (M5S), aligning plate home position sensor (PI5S)	
<b>E5F4</b>	There is a saddle rear stapler error.	
0001	The stitching home position sensor does not go on even when the stitching motor (rear) has been driven in reverse for 0.5 sec or more. stitching motor (rear, M6S), stitching home position sensor (rear, MS5S)	- Check the stitching motor (rear, M6S) and the stitching home position sensor (rear, MS5S).
0002	the stitching home position sensor does not go off even when the stitching motor (rear) has been driven in normal direction for 0.5 sec or more. stitching motor (rear, M6S), stitching home position sensor (rear, MS5S)	
<b>E5F5</b>	There is a saddle front stapling error.	
0001	The stitching home position sensor does not go on even when the stitching motor (front) has been driven in reverse for 0.5 sec or more. stitching motor (front, M7S), stitching home position sensor (front, MS7S)	- Check the stitching motor (front, M7S) and the stitching home position sensor (front, MS7S).
0002	The stitching home position sensor does not go off even when the stitching motor (front) has been driven in normal direction for 0.5 sec or more. stitching motor (front, M7S), stitching home position sensor (front, MS7S)	
<b>E5F6</b>	There is a saddle butting error.	

Code	Description	Remedy
8001	The paper pushing plate home position sensor does not go on even when the paper pushing plate motor has been driven for 0.3 sec or more. paper pushing plate motor (M8S), paper pushing plate home position sensor (PI14S)	- Check the paper pushing plate motor (M8S) and the paper pushing plate home position sensor (PI14S).
8002	The paper pushing plate home position sensor does not go off even when the paper pushing plate motor has been driven for 80 msec. paper pushing plate motor (M8S), paper pushing plate home position sensor (PI14S)	
8003	The number of detection pulses of the paper pushing plate motor clock sensor is lower than a specific value. paper pushing plate motor (M8S), paper pushing plate motor clock sensor (PI1S)	- Check the paper pushing plate motor (M8S) and the paper pushing plate motor clock sensor (PI1S).
8004	The paper pushing plate leading edge sensor does not go off even when the paper pushing plate motor has been driven for 80 msec. paper pushing plate motor (M8S), paper pushing plate leading edge position sensor (PI15S)	- Check the power pushing plate motor (M8S) and the paper pushing plate leading edge position sensor (PI15S).
8005	The paper pushing plate leading edge position sensor does not go on even when the paper pushing plate has been driven for 0.3 sec or more. paper pushing plate motor (M8S), paper pushing plate leading edge position sensor (PI15S)	
<b>E5F9</b>	There is a saddle switch error.	
0001	With any of the sensor identifying its respective cover as being closed, the inlet cover switch is identified as being open for 1 sec from the start of initial rotation or printing: - inlet cover sensor (PI9S) - front cover open/closed sensor (PI2S) - delivery power sensor (PI3S) Or, the front cover switch (MS2S) or the delivery cover switch (MS3S) is open. inlet cover switch (MS1S), front cover switch (MS2S), delivery cover switch (MS3S)	- Check the inlet cover switch (MS1S), front cover switch (MS2S), and the delivery cover switch (MS3S).

Code	Description	Remedy
0002	<p>With any of the following sensors identifying its respective cover as being closed, the front cover switch is identified as being open for 1 sec or more after the start of initial rotation or printing.</p> <ul style="list-style-type: none"> <li>- inlet cover sensor (PI9S)</li> <li>- front cover open/closed sensor (PI2S)</li> <li>- delivery cover sensor (PI3S)</li> <li>- front cover switch (MS2S), delivery cover switch (MS3S)</li> </ul>	- Check the front cover switch (MS2S) and the delivery cover switch (MS3S).
0003	<p>With any of the following sensors identifying its respective cover as being closed, the delivery cover switch is identified as being open for 1 sec or more from the start of initial rotation or printing:</p> <ul style="list-style-type: none"> <li>- inlet cover sensor (PI9S)</li> <li>- front cover open/closed sensor (PI2S)</li> <li>- delivery cover sensor (PI3S)</li> <li>- delivery cover switch (MS3S)</li> </ul>	- Check the delivery cover switch (MS3S).
<b>E602</b>		
0001	<p>[Cause] HD detection error: the HD cannot be detected; the machine fails to turn ready; an error state is returned.</p> <p>[Description] at time of Bootrom processing, BARSAC is started up and mounted (usrIde).</p> <p>[Timing] once at power-on</p>	- See details for E602.
0002	<p>[Cause] start-up file absent: the main CPU program does not exist on the HD (/BOOTDEV/BOOT/and lower).</p> <p>[Description] at time of Bootrom processing, when the system files are being loaded (usrIde).</p> <p>[Timing] once at start-up</p>	- See details for E602.
0003	<p>[Cause] HD write abort error: /BOOTDEV sector on the HD cannot be read.</p> <p>[Description] BARSAC (all areas at Bootable start-up)</p> <p>[Timing] once at start-up</p>	- See details for E602.

Code	Description	Remedy
0006	[Cause] SubBootable compatible with the PDL type does not exist in /BOOTDEV/BOOT. [Description] when SubBoot in oclibroot is being loaded [Timing] once at start-up of Bootable	- See details for E602.
0007	[Cause] ICC-Profile compatible with the PDL type does not exist in /BOOTDEV/PDL. [Description] beginning of oclibroot; the PDL team function is called and determined [Timing] once at start-up of Bootable	- See details for E602.
01XX	/DOSDEV is faulty.	- See details for E602.
02XX	/FSTDEV is faulty.	- See details for E602.
03XX	/DOSDEV2 is faulty.	- See details for E602.
04XX	/FSTPDEV is faulty.	- See details for E602.
05XX	/DOSDEV3 is faulty.	- See details for E602.
06XX	/PDLDEV is faulty.	- See details for E602.
07XX	/DOSDEV4 is faulty.	- See details for E602.
08XX	/BOOTDEV is faulty.	- See details for E602.
09XX	/DOSDEV5 is faulty.	- See details for E602.
FFXX	There is an error in a partition that cannot be identified.	- See details for E602.
<b>E604</b>	The image memory is faulty or inadequate.	
0000	The memory is inadequate for the model.	- Add memory.
<b>E609</b>	The hard disk is faulty.	
0008	At time of start-up, the HDD fails to reach a specific temperature within a specific period of time.	- Replace the hard disk. - Replace the DC controller PCB.
0009	At time of a sleep shift, the temperature is below a specific level.	
<b>E610</b>	The HDD encryption key is faulty. (hardware composition error, initialization error, ID key error, ID processing error)	

Code	Description	Remedy
0001	There is no encryption board.	- Check the hardware composition.
0002	The memory configuration is inadequate for the use of encryption.	
0101	The attempt to initialize the memory used for storage of the key has failed.	- Turn off and then on the main power.
0102	The attempt to initialize the encryption processing area has failed.	
0201	There is an error in the encryption processing area.	
0202	There is an error in the encryption processing area.	
0301	The attempt to create an ID key has failed.	
0302	A fault has been detected in the encryption key.	
0303	A fault has been detected in the encryption key.	
0401	An error has been detected at time of coding.	- Turn off and then on the main power.
0402	An error has been detected at time of decoding.	
<b>E674</b>	There is a fault in the communication between the fax controller PCB (2-line) and the main controller PCB.	
0001	An attempt to set fax device mode has failed.	- Check the connection of the cable between the fax controller PCB (2-line) and the main controller PCB. - Replace the ROM DIMM of the fax controller PCB (2-line). - Replace the fax controller PCB (2-line). - Replace the main controller PCB.
<b>E710</b>	There is a fault in IPC initialization.	
0001	At time of power-on, the communications IC on the main controller PCB does not become ready within 3 sec after start-up.	- Check the connection of the cable.
0002	At time of power-on, the communications IC on the DC controller PCB cannot be initialized.	
<b>E711</b>	There is a fault in the IPC communication.	

Code	Description	Remedy
0001	After power-on, the occurrence of an error has been written 4 times in 1.5 sec to the error register of the communications IC on the main controller PCB.	- Check the connection of the cable.
0002	After power-on, a fault has been detected by the communications IC on the DC controller PCB.	
<b>E713</b>	There is a fault in the communication with the finisher.	
0000	A fault has been detected in the communications IC on the finisher side.	- Check the connection of the cable. - Replace the finisher controller PCB. - Replace the DC controller PCB.
<b>E717</b>	There is a fault in the communication with the NE controller. After correcting the fault, be sure to reset the error. (COPIER>FUNCTION>CLEAR>ERR)	
0001	An error has occurred at time of NE controller start-up. The NE controller that was connected before power-off is not connected at power-on.	- Check the connection of the cable.
0002	There is an IP error while the NE controller is in operation. The IPC may have an open circuit or the IPC communication cannot be recovered.	
<b>E719</b>	There is a fault in the coin vendor. After correcting the fault, be sure to reset the error. (COPIER>FUNCTION>CLEAR>ERR)	

Code	Description	Remedy
0001	An error has occurred at time of coin vendor start-up. The coin vendor was connected before power-off, but is not connected at power-on.	- Check the connector of the cable.
0002	An IPC error has occurred while the coin vendor is in operation. The IPC may have an open circuit, or the IPC communication cannot be removed. The pickup/delivery signal line has an open circuit. An illegal connection has been detected.	
0003	While a unit price is being obtained at start-up, an error has occurred in the communication with the coin vendor.	
0011	An error has occurred at card reader start-up. The card reader that was connected before power-off is not connected at power-on.	
0012	An IPC error has occurred while the card reader is in operation. The IPC may have an open circuit, or the IPC communication cannot be recovered.	
<b>E730</b>	There is a fault in the PDL software.	
1001	There is an initialization error.	- Execute PDL resetting.
100A	An error has occurred that can be fatal to the system (e.g., initialization error).	- Turn off and then on the main power.
9004	There is a fault in the PAI communication with an outside controller.	- Turn off and then back on the main power. - Check the open I/F board and cable connection.
9005	There is a fault in video connection with an external controller.	- Replace the external controller open I/F board. - Replace the main controller PCB.
A006	absence of PDL response: there is no PDL response because of a fault in or the absence of Subbootable.	- Execute PDL resetting. - Turn off and then on the main power. - Check the connection of the SURF board. - Re-install the firmware. - Replace the main controller PCB.

Code	Description	Remedy
A007	There is a mismatch in version between the machine control software and the PDL control software.	<ul style="list-style-type: none"> <li>- Execute PDL resetting.</li> <li>- Turn off and then on the main power.</li> <li>- Execute full formatting and install the system software.</li> </ul>
B013	The font data is corrupted.	<ul style="list-style-type: none"> <li>- Turn off and then on the main power.</li> <li>- Re-install the system software.</li> <li>- Execute full formatting and install the system software.</li> </ul>
<b>E732</b>	There is a fault in the reader communication.	
0001	There is a DDI-S communication error.	<ul style="list-style-type: none"> <li>- Check the communication between the reader unit and the main controller.</li> <li>- Check the power supply of the reader unit. (Check to see if initialization takes place at start-up.)</li> <li>- Replace the reader controller PCB, reader relay PCB, or main controller PCB.</li> </ul>
<b>E733</b>	There is a fault in the printer communication.	
0000	The attempt at communication with the printer fails at start-up.	<ul style="list-style-type: none"> <li>- Check the connection of the cable between the DC controller and the main controller.</li> </ul>
0001	There is a DDI-P communication error.	<ul style="list-style-type: none"> <li>- Check the power supply of the printer. (Check to see if initialization takes place at start-up.)</li> <li>- Replace the DC controller PCB or the main controller PCB.</li> </ul>
<b>E740</b>	There is a fault in the Ethernet board.	
0002	The MAC address is illegal.	<ul style="list-style-type: none"> <li>- Replace the main controller PCB.</li> </ul>
<b>E743</b>	There is a fault in the DDI communication.	
0000	An SCI error has occurred; the reception data is faulty; a reception time-out error has occurred; a SEQ time-out error has occurred	<ul style="list-style-type: none"> <li>- Disconnect and then connect the connector between the reader unit and the printer unit.</li> <li>- Replace the cable, reader controller PCB, and main controller PCB.</li> </ul>
<b>E744</b>	There is a fault in the language file/boot ROM.	



Code	Description	Remedy
0001	There is a mismatch between the language version on the HDD and the version of Bootable.	- Download the language file of the correct version.
0002	The size of the language file on the HDD is too big.	
0003	There is no language file that is described in CONfig.txt on the HDD.	
0004	A switchover to a language file on the HDD cannot be made.	
1000	The boot ROM in question is one designed for a different model.	- Replace the boot ROM with one of the appropriate version.
2000	The engine ID is illegal.	- Turn off and then on the main power.
<b>E745</b>	There is a fault in the TokenRing board.	
0001	The attempt to execute PCI initialization has failed.	- Disconnect and connect the TokenRing board. - Replace the TokenRing board.
0002	The MAC address is faulty.	- Replace the TokenRing board.
0003	There is an error in the collection/setting of board information.	
0004	There is a connection error.	- Check the connection of the cable. - Replace the cable. - Check the MAU power supply. - Replace the MAU. - Replace the TokenRing board.
0005	An error other than the foregoing has occurred.	- Turn off and then on the main power.
<b>E746</b>	There is an error caused by a mismatch of the accessories board.	
0003	At start-up, a UFR board for a different mode has been detected.	- Replace the UFR board with one for the model in question.
<b>E748</b>	There is a fault in the combination of the controller board and the DRAM size.	
1001	The combination of the main controller PCB and the SDRAM is wrong.	- Check the correct SDRAM for the model in question.
<b>E749</b>	A change has been detected in the product composition.	
0000	A change has been made to the product composition (by PDL type, by MEAP type).	- Turn off and then on the main power. This error code is not indicated on the control panel. It is used in the error history.

Code	Description	Remedy
<b>E804</b>	There is a DC power supply fan error/there is an IH power supply cooling fan error.	
0000	The DC power supply fan stop signal has been detected for 5 sec or more even when the DC power fan is on.	- Check the connection of the connector. - Replace the fan.
0001	The IH power supply cooling fan stop signal has been detected for 5 sec or more even when the IH power supply cooling fan is on.	- Check the connection of the connector. - Replace the fan.
<b>E805</b>	There is a heat discharge fan error/there is a feed fan error.	
0001	The heat discharge fan stop signal has been detected for 5 sec or more even when the heat discharge fan is on.	- Check the connection of the connector. - Replace the fan.
0002	The feed fan stop signal has been detected for 5 sec even when the feed fan is on.	- Check the connection of the connector. - Replace the fan.
<b>E821</b>	There is a cleaner clogging error.	
0001	Clogging of toner inside the cleaner has been detected with reference to an abnormal rise in the cleaner thermistor.	- Remove the waste toner from inside the cleaner. - Replace the air filter of the heat discharge fan.
<b>E824</b>	There is a primary charging cooling fan error.	
0001	The primary charging cooling fan stop signal has been detected for 5 sec or more even when the primary charging cooling fan is on.	- Check the connection of the connector. - Replace the fan.
<b>E840</b>	There is a shutter error.	
0001	While the shutter is in operation, the sensor signal is not detected and, in addition, it is still not detected after 3 retries.	- Check the connection of the connector of the shutter motor and the shutter HP sensor. - check the mounting of the pin used to match the shutter gear phase of the fixing unit (See descriptions under "Points to Note When Mounting the Fixing Roller.")
0002	The interval of ON-OFF detection by the sensor in response to shutter operation is shorter than a specific time period.	- Replace the shutter HP sensor and the shutter motor.
<b>E841</b>	There is an error in the detection of fixing inlet guide connection.	
0001	At power-on, the connection of the fixing inlet guide solenoid is not detected.	- Check the connection of the connector. - Replace the solenoid.

## 15.3 Jam Code

### 15.3.1 Jam Code (machine proper)

T-15-3

Code	Jam
01xx	delay jam
02xx	stationary jam
0Axx	residual jam
0Bxx	cover open jam

T-15-4

Code	Sensor	Notation
xx01	registration sensor	PS29
xx02	write check sensor	PS28
xx03	vertical path 1 sensor	PS24
xx04	vertical path 2 sensor	PS25
xx05	vertical path 3 sensor	PS26
xx06	vertical path 4 sensor	PS27
xx07	right deck pull-off sensor	PS32
xx08	left deck pull-off sensor	PS33
xx0B	right deck retry sensor	PS19
xx0C	left deck retry sensor	PS20
xx0D	cassette 3 retry sensor	PS21
xx0E	cassette 4 delivery sensor	PS22
xx0F	fixing claw jam sensor	PS4
xx10	inside delivery sensor	PS35
xx11	outside delivery sensor	PS36
xx12	delivery assembly jam sensor	PS46

Code	Sensor	Notation
xx13	reversal sensor 2	PS38
xx14	delivery sensor 1	PS37
xx15	duplexing paper sensor	PS34
xx16	duplexing pre-registration sensor	PS30
xx17	fixing inlet sensor	PS51
xx18	fixing outlet sensor	PS52

### 15.3.2 Jam Code (finisher-related)

T-15-5

Code	jam
1001	inlet path sensor delay jam
1002	punch path sensor feed delay jam
1003	escape path sensor feed delay jam
1004	delivery path sensor delay jam
1101	inlet path sensor stationary jam
1102	punch path sensor feed stationary jam
1103	escape path sensor feed stationary jam
1104	delivery path sensor stationary jam
1200	finisher timing jam
1500	stapler staple jam
1300	power-on jam
1400	door open jam
1644	punch jam
1645	punch residual jam
1791	saddle feed path sensor feed delay jam
1792	saddle delivery sensor feed delay jam
1793	saddle inlet sensor feed delay jam
17A1	saddle feed path sensor feed stationary jam

Code	jam
17A2	saddle delivery sensor feed stationary jam
17A3	saddle inlet sensor feed stationary jam
1786	saddle stapler staple jam
1787	saddle power-on jam
1788	saddle door open jam

### 15.3.3 Jam Code (ADF-related)

T-15-6

Code	Sensor	Notation	Description
0001	post-separation sensor	PI7	The post-separation sensor does not detect paper when paper has been moved 452 mm after the start of separation.
0002	post-separation sensor	PI7	- The separation sensor detects paper when paper has been moved 500 mm (if extra-length, +200 mm) -45.5 mm after registration pickup. - the sensor goes on (paper with hole) before paper has been fed 12 mm after the detection of the trailing edge; the separation sensor detects paper after paper has been fed 50 mm from when the separation sensor has gone on.
0003	registration sensor	PI1	The registration sensor does not detect paper a feed length of 134.8 mm after the post-separation sensor has gone on.
0004	registration sensor	PI1	The read sensor goes off before the registration sensor goes off.
0005	read sensor	PI8	- The read sensor does not detect paper a feed length of 364.2 mm (182.1 x 2) from the point of registration. - The read sensor does not detect paper a feed length of 157.4 mm (78.7 x 2) from the point of No. 2 registration.

Code	Sensor	Notation	Description
0006	read sensor	PI8	- The read sensor detects paper a feed length of 500 mm (if extra-length, +200 mm) after the start of feed, resumed after a temporary stop for reading. - At time of LTRR/LGL identification in mix mode, the read sensor detects paper a feed length of 514 mm after the start of feed from the edging wait point.
0008	delivery reversal sensor	PI9	The delivery sensor detects paper a feed length of 161.9 mm after the trailing edge read end point.
0042	post-separation sensor	PI7	1st sheet, post-separation sensor, stationary
0043	registration sensor	PI1	1st sheet, registration sensor, non arrival
0044	registration sensor	PI1	1st sheet, registration sensor, stationary
0045	read sensor	PI8	1st sheet, read sensor, non arrival
0046	read sensor	PI8	1st sheet, read sensor, stationary
0047	delivery reversal sensor	PI9	1st sheet, delivery sensor, non arrival
0048	delivery reversal sensor	PI9	1st sheet, delivery sensor, stationary
0071	TIMING NG	-	fault in software timing
0073	TIMING NG	-	fault in shift motor
0090	ADF open/closed sensor 1	PS502	The ADF has been opened while in operation.
0091	ADF open/closed sensor 1	PS502	The ADF has been opened while in operating (paper wait).
0092	DF cover open/closed sensor	PI6	The cover has been opened while in operation (drive system in operation).
0093	DF cover open/closed sensor	PI6	The cover has been opened while in operation (paper wait).
0094	registration sensor, separation sensor, feed sensor, delivery reversal sensor	PI1, PI7, PI8, PI9	Paper has been detected in the path while the 1st sheet is being picked up.
0095	original set sensor, DF cover open/closed sensor, ADF open/closed sensor 1	PI5, PI6, PS502	With no paper in the tray or while the tray is open, the start of pickup operation is detected.

## 15.4 Alarm Code

### 15.4.1 Alarm Code

T-15-7

Location		Description	
04	pickup/feed system	0001	right deck lifter error
		0002	left deck lifer error
		0003	3rd cassette lifter error
		0004	4th cassette lifter error
		0008	optional deck lifter error
		0009	horizontal registration HP detection error
06	fixing system	0003	fixing web absent
11	drum cleaner system, waste toner collection system	0001	waste other case full
		0003	cleaner toner clogging
30	high-voltage system	0001	primary charging assembly leakage
		0002	transfer charging assembly leakage
		0003	separation charging assembly leakage
33	fan system	0001	delivery assembly curl-removing fan alarm
		0009	duplexing feed fan alarm
		0016	exhaust fan 1 alarm
60	sorter, finisher, shift tray as a whole	0001	shift tray alarm
61	sorter/finisher stapling system	0001	staple absent
62	saddle stitching system	0001	stitch absent
65	sorter/finisher puncher system	0001	punch case full

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# Chapter 16

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## Service Mode



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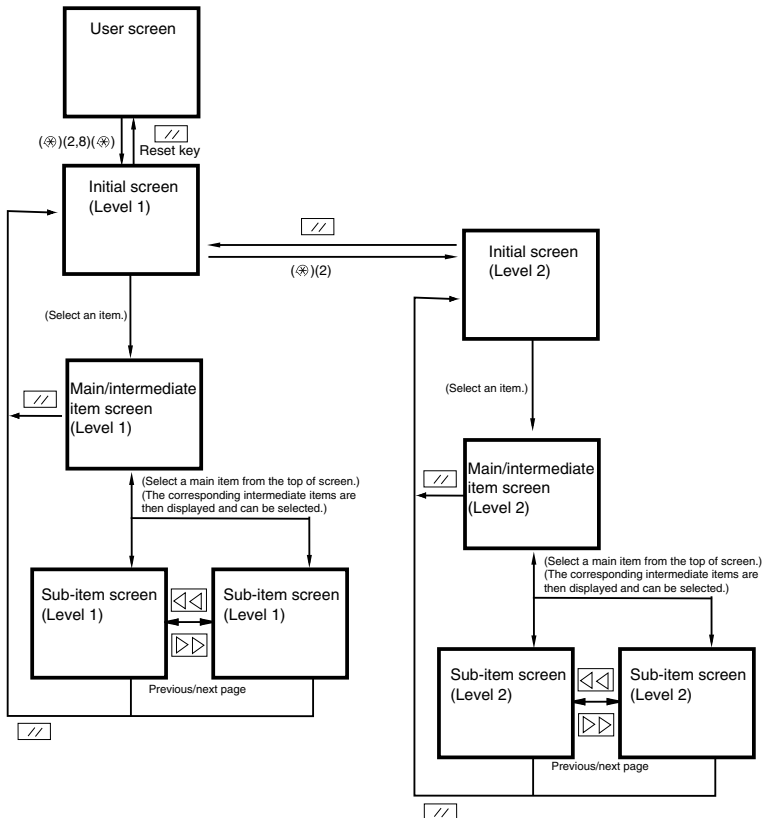
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## 16.1 Outline

### 16.1.1 Service mode screen configuration

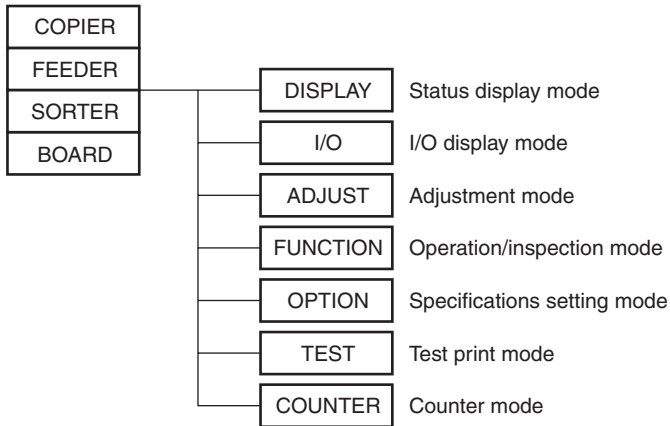
As shown below, the service modes use three screen levels: initial screen -> main/intermediate item screen -> sub-item screen.

One set of modes are used for normal maintenance (Level 1 modes), and another set are used for troubleshooting (Level 2 modes).



F-16-1

The copier has the 7 service modes listed below.



F-16-2



## 16.1.2 Entering or selecting service modes

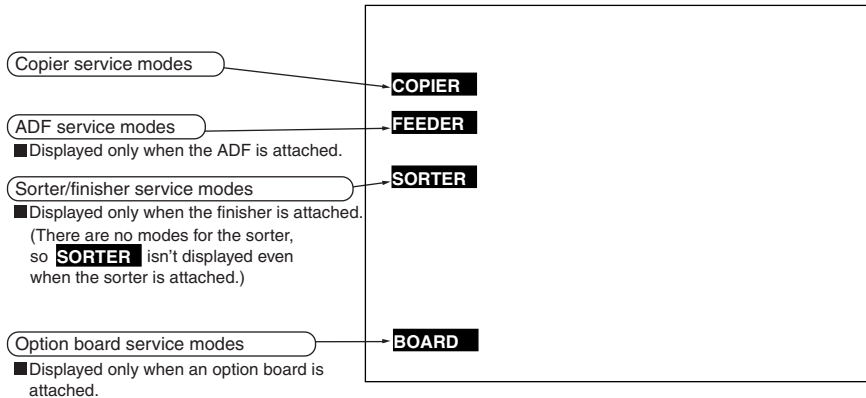
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To execute a copier operation using a service mode, remove the cable from the external controller or the cable from the network before entering the desired mode. Take care when using the FUNCTION (operation/inspection mode) mode, as the copier may malfunction and be damaged if a print job is received from outside while an operation is executing with this mode in effect.

---

- 1) Press the asterisk key () on the operation panel.
- 2) Press 2 and 8 simultaneously on the numeric keypad.
- 3) Press the asterisk key () on the operation panel.  
The initial screen (see below) now appears.



F-16-3

### 16.1.3 Exiting service modes

When the reset key is pressed once, the display returns to the service mode initial screen.

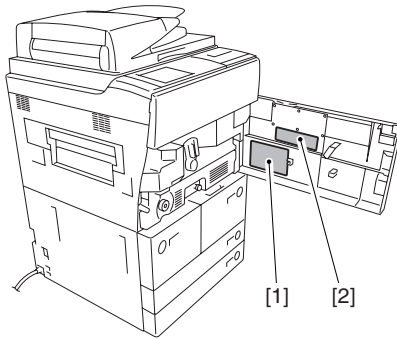
When the reset key is pressed twice, the service modes are exited, and the display returns to the user screen (standard screen).



When using the ADJUST, FUNCTION or OPTION service mode, be sure to turn the main power switch ON/OFF after exiting the mode.

### 16.1.4 Backing Up Service Mode

All machines are inspected at time of shipment, and adjustment values are recorded on their service labels. If you have replaced the reader controller PCB or the DC controller PCB, or if you have initialized the RAM, ADJUST and OPTION will be reset to their default settings. If you have made adjustments and changed any of the settings, be sure to update the settings recorded on the service label. If specific items are missing on the label, use its blank space.

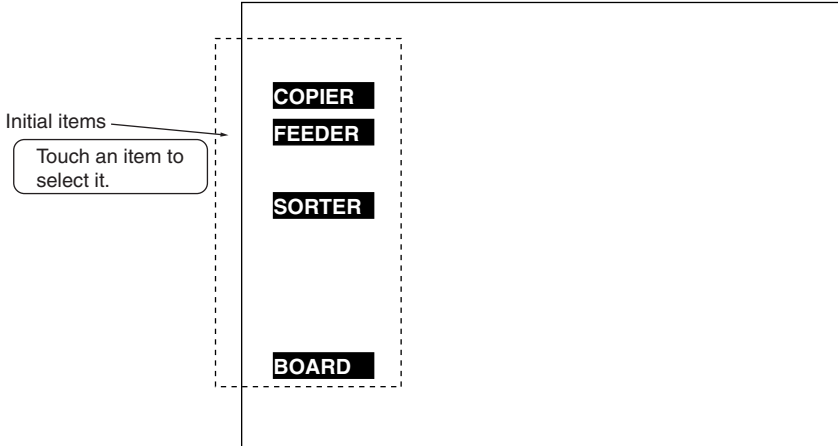


F-16-4

[1] Service label (for main controller PCB/DC controller PCB)

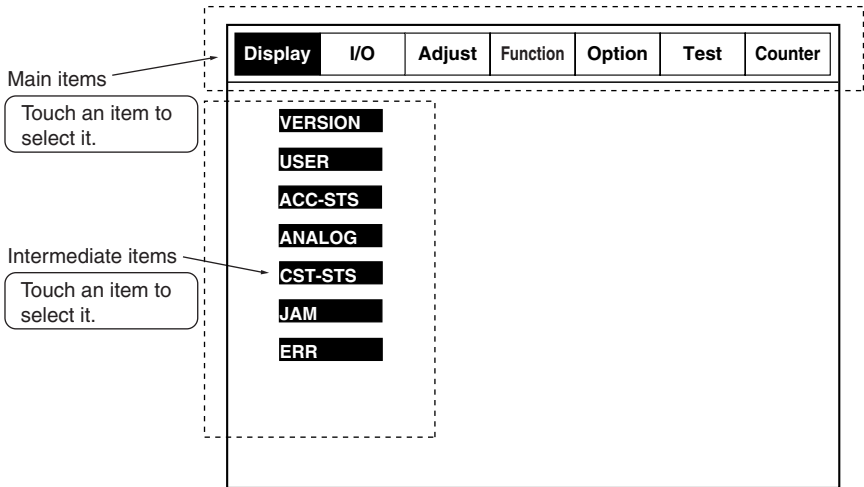
[2] Service label (for reader controller PCB)

### 16.1.5 Initial screen



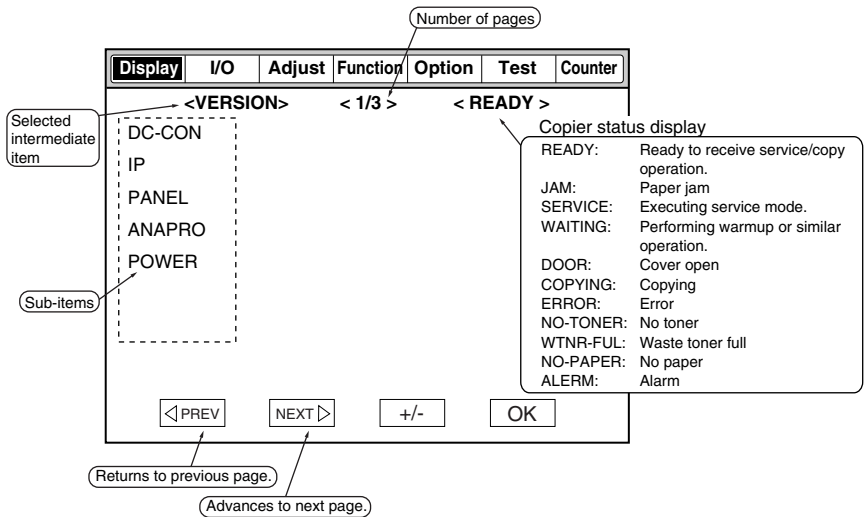
F-16-5

### 16.1.6 Main/intermediate item screen

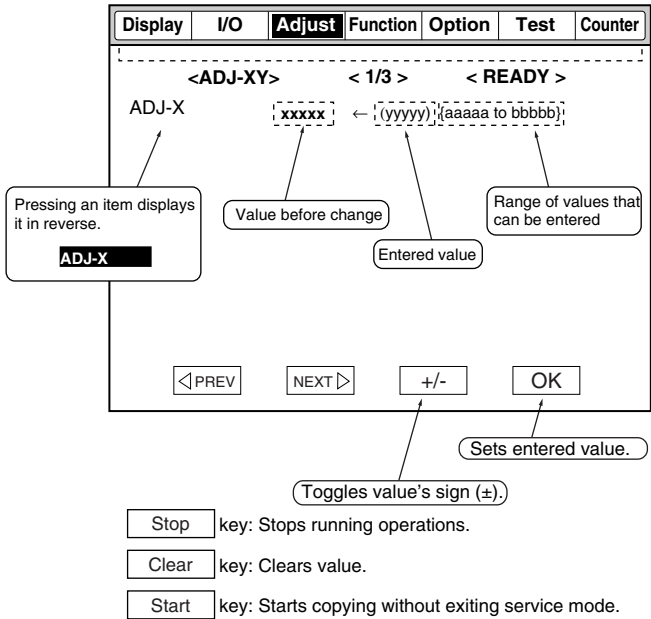


F-16-6

### 16.1.7 Sub-item screen



F-16-7



F-16-8



## 16.2 DISPLAY (Status Display Mode)

### 16.2.1 COPIER

#### 16.2.1.1 COPIER List

<VERSION>

T-16-1

COPIER > DISPLAY > VERSION		
Level 3 item	Description	Level
Use it to indicate the ROM version of a particular PCB (copier and accessory). -if <R-CON XX.YY>, XX indicates the version number and the YY, R&D control number. -if no PCB is connected, the indication will be <-,>.		
DC-CON	indicates the ROM version of the DC controller PCB.	1
R-CON	indicates the ROM version of the reader controller PCB.	1
PANEL	indicates the ROM version of the control panel CPU PCB.	1
FEEDER	indicates the ROM version of the DADF controller PCB.	1
SORTER	indicates the ROM version of the finisher controller PCB.	1
FAX	indicates the ROM version of the fax control PCB (for 2-line configuration).	1
NIB	indicates the version of the network software.	1
SDL-STCH	indicates the ROM version of the saddle stitcher controller PCB.	1
MN-CONT	indicates the ROM version of the main controller PCB.	1
DIAG-DVC	indicates the ROM version of the self-diagnosis device.	1
RUI	indicates the version of the remote UI.	1
PUNCH	indicates the version of the punch unit.	1
LANG-EN	indicates the version of the English language file.	1
LANG-FR	indicates the version of the French language file.	1
LANG-DE	indicates the version of the German language file.	1
LANG-IT	indicates the version of the Italian language file.	1
LANG-JP	indicates the version of the Japanese language file.	1

<b>COPIER &gt; DISPLAY &gt; VERSION</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>JAVA-VM</b>	indicates the version of JavaVM built into bootable.	1
<b>MEAP</b>	indicates the version of the MEAP content on the hard disk.	1
<b>OCR-CN</b>	indicates the version of OCR of the Chinese language file (simplified).	1
<b>OCR-JP</b>	indicates the version of OCR of the Japanese language file.	1
<b>OCR-KR</b>	indicates the version of OCR of the Korean language file.	1
<b>OCR-TW</b>	indicates the version of OCR of the Chinese language file (traditional).	1
<b>BOOTROM</b>	indicates the version of boot ROM of the main controller PCB. in "xx.yy_z," "z" indicate the type of boot ROM.	1
<b>TTS-JA</b>	indicates the version of the Japanese language audio dictionary.	1
<b>TTS-EN</b>	indicates the version of the English language audio dictionary.	1
<b>LANG-CS</b>	indicates the version of the Czech language file.	2
<b>LANG-DA</b>	indicates the version of the Danish language file.	2
<b>LANG-EL</b>	indicates the version of the Greek language file.	2
<b>LANG-ES</b>	indicates the version of the Spanish language file.	2
<b>LANG-ET</b>	indicates the version of the Estonian language file.	2
<b>LANG-FI</b>	indicates the version of the Finnish language file.	2
<b>LANG-HU</b>	indicates the version of the Hungarian language file.	2
<b>LANG-KO</b>	indicates the version for the Korean language file.	2
<b>LANG-NL</b>	indicates the version of the Korean language file.	2
<b>LANG-NO</b>	indicates the version of the Norwegian language file.	2
<b>LANG-PL</b>	indicates the version of the Polish language file.	2
<b>LANG-PT</b>	indicates the version of the Portuguese language file.	2
<b>LANG-RU</b>	indicates the version of the Russian language file.	2
<b>LANG-SL</b>	indicates the version of the Slovenian language file.	2
<b>LANG-SV</b>	indicates the version of the Swedish language file.	2
<b>LANG-TW</b>	indicates the version of the Chinese language file (traditional).	2
<b>LANG-ZH</b>	indicates the version of the Chinese language file (simplified).	2
<b>LANG-BU</b>	indicates the version of the Bulgarian language file.	2

COPIER > DISPLAY > VERSION		
Level 3 item	Description	Level
LANG-CR	indicates the version of the Croatian language file.	2
LANG-RM	indicates the version of the Romanian language file.	2
LANG-SK	indicates the version of the Slovakian language file.	2
LANG-TK	indicates the version of the Turkish language file.	2

&lt;ACC-ST&gt;

T-16-2

COPIER > DISPLAY > ACC-ST		
Level 3 item	Description	Level
FEEDER	indicates the connection of an ADF. 0: not connected; 1: connected	1
SORTER	indicates the connection of the finisher and puncher unit. sorter type 0: none; 1: finisher; 2: saddle finisher; 3: shift tray punch type 0: none; 1: 2-hole; 2: 2/3-hole; 3: 4-hole (fr); 4: 4-hole (sw)	1
DECK	indicates the connection of a paper deck. 0: not connected; 1: connected	1
CARD	indicates the connection of a card reader. 0: card reader connected, but card not inserted 1: card reader not connected, or card reader connected and card inserted (with machine ready for copying, [1]; with machine not ready for copying, [0])	1
DATA-CON	indicates the connection of a copy data controller. 0: not connected; 1: connected	1
RAM	indicates the size of the memory mounted on the main controller PCB. 256 MB, 512 MB	1
COINROBO	indicates the connection of a coin vendor. 0: not connected; 1: connected	1
NIB	indicates the connection of a network board. 0: not connected 1: Ethernet board connected 2: TokenRing board connected 3: Ethernet board and TokenRing board connected	1

COPIER > DISPLAY > ACC-STS		
Level 3 item	Description	Level
<b>PS/PCL</b>	indicates the presence/absence of PS/PCL firmware. 0: absent; 1: PS/PCL; 2: PS Kanji	1
<b>RIP1</b>	0: no; 1: yes	1
<b>NETWARE</b>	indicates the presence/absence of NetWare firmware. 0: absent; 1: present	1
<b>PDL-FNC1</b>	b31 : BDL b30 : PS b29 : PCL b28 : PDF b27 : LIPS b26 : N201 b25 : I5577 b24 : ESC/P b23 : HPGL b22 : HPGL2 b21 : IMAGING b20 : KS b19 : BMLinkS b18 to b16 : reserved (for possible addition of PDL)	1
<b>PDL-FNC2</b>	b15 to b0: reserved (for possible addition of PDL)	1
<b>HDD</b>	indicates the type name of the HDD.	1
<b>PCI1/2/3</b>	indicates the board name of PCI1/2/3. if not connected, indicates [-] (hyphen). if connected, indicates the board name. <Board Name> iSLTO: wireless LAN board Voice Board: voice guidance board 3DES+USB-HOST: security expansion board	1

## &lt;ANALOG&gt;

## T-16-3

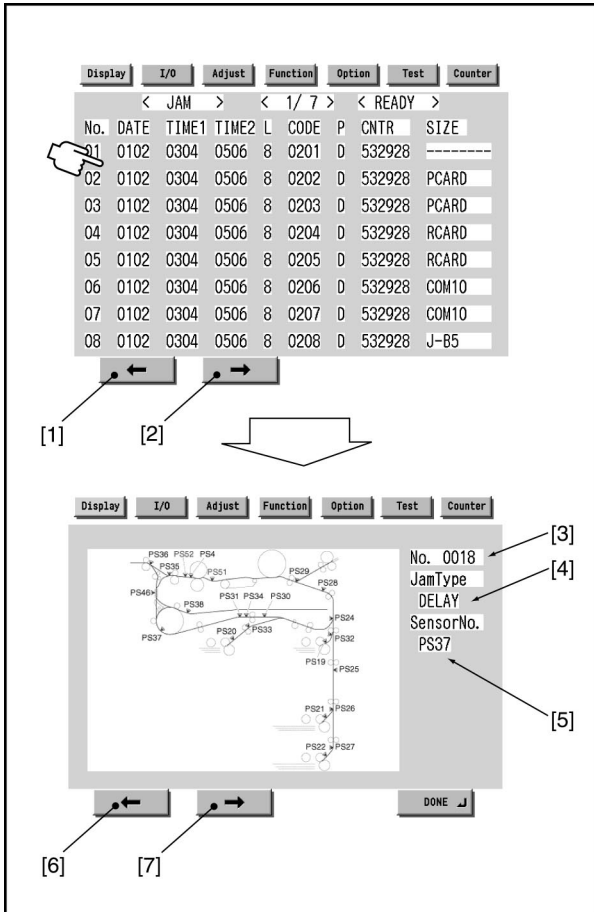
<b>COPIER &gt; DISPLAY &gt; ANALOG</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>TEMP</b>	indicates the machine inside temperature (environment sensor); in deg C	1
<b>HUM</b>	indicates the machine inside humidity (environment sensor); in % RH	1
<b>ABS-HUM</b>	indicates the moisture content (environment sensor); in g	1
<b>FIX-U</b>	fixing roller middle temperature (main thermistor, THM1) indicates the temperature of the middle of the fixing roller. between 0 and 255 deg C, in increments of 1 deg C	1
<b>FIX-UE</b>	fixing roller edge temperature (sub thermistor, THM2) indicates the temperature of the edge of the fixing roller. between 0 and 255 deg C, in increments of 1 deg C	1
<b>FIX-SHTR</b>	fixing roller end temperature (shutter thermistor, THM3) indicates the temperature of the edge of the fixing roller. between 0 and 255 deg C.	1

## &lt;CST-ST5&gt;

## T-16-4

<b>COPIER &gt; DISPLAY &gt; CST-ST5</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>WIDTH-C3</b>	indicates the width of paper in cassette 3 in terms of paper size; in mm.	2
<b>WIDTH-C4</b>	indicates the width of paper in cassette 4 in terms of paper size; in mm.	2
<b>WIDTH-MF</b>	indicates the width of paper in the manual feed tray; in mm.	2

<JAM>



F-16-9

Touch the appropriate notation for details.

- [1] To go to the previous page.
- [2] To go to the next page.
- [3] To find out the order of jams.
- [4] To find out the type of jam.
- [5] To find the sensor in question.

[6] To go to the previous Jam screen.

[7] To go to the next Jam screen.

<No.> Indicates the order of jams; 1 through 50 (the higher the number, the older the jam).

<DATE> indicates the date of occurrence of the jam in question.

<TIME1> indicates the time of occurrence of the jam in question.

<TIME2> indicates the time of jam recovery.

<L> indicates the location of the jam in question; 0 to 2 (0: copier; 1: feeder; 2: finisher).

<CODE> indicates the jam code in question.

<P> indicates the source of paper.

1: cassette 1

2: cassette 2

3: cassette 3

4: cassette 4

5: side paper deck

6: manual feed tray

7: duplexing assembly

<CNTR> indicates the reading of the soft counter used for the source of paper.

<SIZE> indicates the size of paper.

<ERR>

Display	T/O	Adjust	Function	Option	Test	Counter
< ERR > < 1 / 7 > < READY >						
No.	DATE	TIME1	TIME2	CODE	DTL	L P
01	---	---	---	---	---	- -
02	0102	0304	0506	E0708	090A	C OD
03	0102	0304	0506	E0708	090A	C OD
04	0102	0304	0506	E0708	090A	C OD
05	0102	0304	0506	E0708	090A	C OD
06	0102	0304	0506	E0708	090A	C OD
07	0102	0304	0506	E0708	090A	C OD
08	0102	0304	0506	E0708	090A	C OD

F-16-10

<No.> indicates how recent the jam in question is.

1 to 50 (the higher the number, the older the jam)

<DATE> indicates the date of occurrence of the error in question.

<TIME1> indicates the time of occurrence of the error in question.

<TIME2> indicates the recovery time.

<CODE> indicates the error code in question.

<DTL> indicates the detail code of the jam in question. (if none, '0000')

<L> indicates the location of the error in question.

0: main controller

1: DADF

2: finisher

3: not used

4: reader unit

5: printer unit

6: PDL board

7: fax board

<P> not used

<HV-ST>

T-16-5

COPIER > DISPLAY > HV-ST		
Level 3 item	Description	Level
PRIMARY	primary charging current; in uA	1
PRE-TR	pre-transfer (post) current; in uA	1
TR	transfer current (1st side); in uA	1
SP	separation current (1st side); in uA	1
BIAS	developing bias output value DC component; in V	1
SP-N2	separation current (2nd side); in uA	1
TR-N2	transfer current (2nd side); in uA	1



## &lt;CCD&gt;

## T-16-6

COPIER > DISPLAY > CCD		
Level 3 item	Description	Level
TARGET-G	indicates the shading target value of green.	2
GAIN-OG	indicates the gain level adjustment value of green for CCD odd-numbered bits.	2
GAIN-EG	indicates the gain level adjustment value of green for CCD even-numbered bits.	2

## &lt;DPOT&gt;

## T-16-7

COPIER > DISPLAY > DPOT		
Level 3 item	Description	Level
DPOT-K	COPIER>FUNCTION>DPC>OFST potential reflecting the value after execution; in V	1
VL1T	light-area potential target value; in V	1
VL1M	light-area potential measurement value; in V	1
VL2M	light-area potential measurement value for developing bias; in V	1
VDT	dark-area potential target value; in V	1
VDM	dark-area potential measurement value; in V	1
VL2M-P	light-area potential measurement value for developing bias for printer image; in V	1
VL1M-P	light-area potential measurement value for printer image; in V	1
VL1T-P	light-area potential target value for printer image; in V	1
VDM-P	light-area potential measurement value for printer image; in V	1
VDT-P	dark-area potential target value for printer image; in V	1
LLMT-P	laser output limit check for printer: 0: normal; 1: error	2
PLMT-P	primary charging current limit value setting for printer: 0: normal; 1: error	2
LLMT	laser power limit value setting: 0: normal; 1: error	2
PLMT	primary charging current limit value setting for copier: 0: normal; 1: error	2

COPIER > DISPLAY > DPOT		
Level 3 item	Description	Level
BIAS-P	developing bias for printer (result of potential control); in V	2
BIAS-C	developing bias for copier (result of potential control); in V	2
LPOWER-P	laser output value for printer (result of potential control)	2
LPOWER-C	laser output value for copier (result of potential control)	2
PRIM-P	primary charging current value for printer (result of potential control); in uA	2
PRIM-C	primary charging current value for copier (result of potential control); in uA	2

<SENSOR>

T-16-8

COPIER > DISPLAY > SENSOR		
Level 3 item	Description	Level
DOC-SZ	indicates the size of the original identified by the original size sensor.	2

<MISC>

T-16-9

COPIER > DISPLAY > MISC		
Level 3 item	Description	Level
LPOWER	indicates the laser intensity (real-time)	2

## &lt;ALARM-2&gt;

No.	DATE	TIME1	TIME2	CODE	DTL	CNTR
01	---	---	---	---	---	---
02	---	---	---	---	---	---
03	---	---	---	---	---	---
04	---	---	---	---	---	---
05	---	---	---	---	---	---
06	---	---	---	---	---	---
07	---	---	---	---	---	---
08	---	---	---	---	---	---

F-16-11

<No.> indicates the order of alarm occurrence; between 1 and 50 (the higher the number, the older the alarm)

<DATE> date of occurrence of the alarm in question

<TIME1> time of occurrence of the alarm in question

<TIME2> time of alarm recovery

<CODE> code of alarm location and alarm code

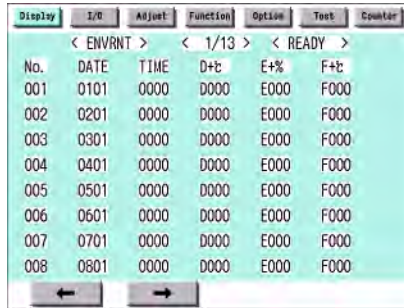
<DTL> alarm detail code

<CNTR> reading of the total counter at time of alarm occurrence

## &lt;ENVRNT&gt;

- Environment Indication

The readings of the environment sensor and the fixing thermistor (main) are indicated as a history of changes in the following: machine inside temperature (deg C), humidity (%), fixing roller surface (middle; deg C).



F-16-12

T-16-10

Item	Description
No.	order of data acquisition (the higher the number, the older the data)
DATE	date of data acquisition
TIME	time of data acquisition
D + deg C	machine inside temperature
E + %	machine inside humidity
F + deg C	fixing roller surface (middle) temperature

**Memo:**

The interval at which data is acquired may be changed using the following service mode item: COPIER>OPTION>BODY>ENVP-IN.

## 16.2.2 FEEDER

### 16.2.2.1 FEEDER List

T-16-11

COPIER > FEEDER > DISPLAY		
Level 3 item	Description	Level
<b>FEEDSIZE</b>	indicates the size of the original identified by the feeder.	1
<b>TRY-WIDE</b>	indicates the distance between original width detecting slides (detecting the width of paper; 0.1 mm). indicates the distance between the slides used to detect the width of originals in the ADF original tray (between 2 points).	1
<b>SPSN-LMN</b>	post-separation sensor light emission level indicates the manual adjustment value (light-emission voltage) of the post-separation sensor. optimum range: 179 or lower	1
<b>SPSN-RCV</b>	post-separation sensor light reception level indicates the light reception value (of the post-separation sensor after manual adjustment). optimum range: paper present: 154 or lower paper absent: 179 or higher	1
<b>RDSN-LMN</b>	read sensor light emission level indicates the manual adjustment value (light emission voltage) of the read sensor. optimum range: 179 or lower	1
<b>RDSN-RCV</b>	read sensor light reception level indicates the light reception level of the read sensor after manual adjustment. optimum range: paper present: 154 or lower paper absent: 179 or higher	1

<b>COPIER &gt; FEEDER &gt; DISPLAY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>DRSN-LMN</b>	delivery reversal sensor light emission level indicates the manual adjustment value (light emission voltage) of the delivery reversal sensor. optimum range: 905 or lower	1
<b>DRSN-RCV</b>	delivery reversal sensor light reception sensor level indicates the light reception voltage of the delivery reversal sensor after manual adjustment. optimum range: paper present: 154 or lower paper absent: 179 or higher	1

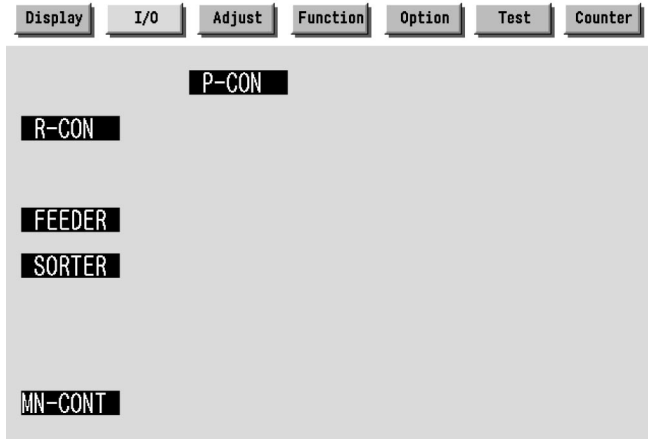
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## 16.3 I/O (I/O Display Mode)

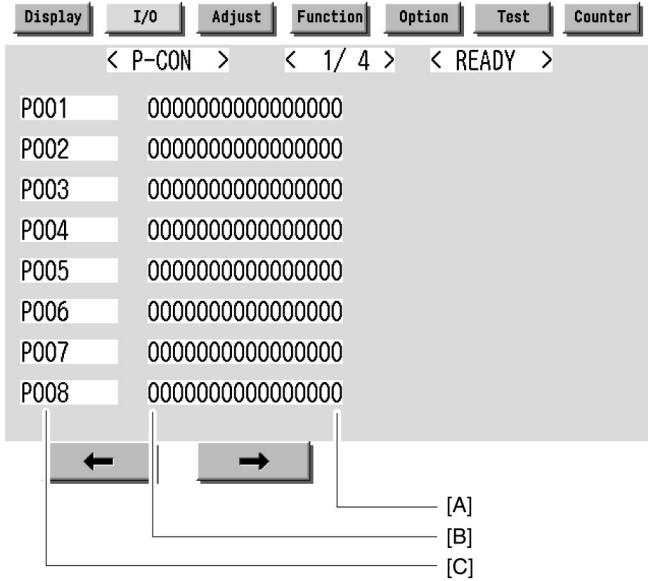
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### 16.3.1 Outline

The following provides a guide to the screen appearing in response to the following:  
COPIER>I/O.



F-16-13



F-16-14

- [A] bit 0
- [B] bit 15
- [C] address



## 16.3.2 &lt;R-CON&gt;

T-16-12

Address	bit	Description	Remarks
P001	0	delivery motor CLK	
	1	DDIS IF (OPT00-)	0: prohibit operation
	2	DDIS IF (SPRDY)	0: permit operation
	3	DDIS IF (OPTI0)	0: active
	4	ADF pickup motor CLK	
	5	fan power supply ON signal	1: ON
	6	ADF read motor CLK	
	7	size sensor ON	1: ON
P002	0	shift motor CLK	
	1	24V power monitor	0: normal
	2-3	not used	
	4	scanner motor CLK	
	5	13V power supply monitor	0: normal
	6	Canon Electronics switchover	0: Canon Electronics
	7	DDIS IF (SCPRDY)	0: permit operation
	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	

Address	bit	Description	Remarks
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: permit reception
	6	scanner motor Vref output	
	7	not used	
P005	0	PC connection IF (TxD)	
	1	PC connection IF (RxD)	
	2	fan lock detection signal	0: enable
	3	DDIS IF (SCTS)	0: permit reception
	4-7	not used	
P006	0	not used	
	1	PCB check terminal	1: normal
	2	DDIS IF (OPT11)	0: active
	3	DDIS IF (OPT01)	0: active
	4	ADF sensor interrupt input	0: active
	5	platen cover open/closed sensor interrupt input 0	1: cover open
	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 clock interrupt input	
	6	ADF read motor clock interrupt input	
	7	ADF reversal motor clock interrupt input	

Address	bit	Description	Remarks
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: enable
	7	CPU click output	
P009	0	not used	
	1	shading RAM chip select	0: select
	2	work RAM chip select	0: select
	3	ASIC register chip select	0: select
	4	ROM chip select	0: select
	5-7	not used	

### 16.3.3 <FEEDER>

T-16-13

Address	bit	Description	Remarks
P001	0	read sensor	0: paper present
	1	registration sensor	1: paper present
	2	delivery reversal sensor	0: paper present
	3	ADF cover open/closed sensor	0: ADF open
	4-7	not used	

Address	bit	Description	Remarks
P002	0	delivery motor current setting 1	
	1	deliver 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	feed motor current setting CUT	
	2	engagement motor current setting	
	3	feed motor mode setting	
	4	feed motor current setting 1	
	5	feed motor current setting 2	
	6	pickup motor current setting 1	
	7	pickup motor current setting 2	
P004	0	ADF cover open/closed sensor	0: ADF cover open
	1-6	not used	
	7	stamp present/absent	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	AB/Inch check 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	Description	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	

### 16.3.4 <SORTER>

T-16-14

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	
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	

Address	bit	Description	Remarks
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	

Address	bit	Description	Remarks
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*)	
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

Address	bit	Description	Remarks
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 plate 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

Address	bit	Description	Remarks
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
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

Address	bit	Description	Remarks
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 swing 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	

Address	bit	Description	Remarks
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	
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	

Address	bit	Description	Remarks
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 button TOP sensor (IRQ5*)	1: butting position
	6	trimmer IN (IRQ6*)	0: ON
P032	7	saddle feed motor CLK (IRQ7*)	
	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	

Address	bit	Description	Remarks
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	
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

Address	bit	Description	Remarks
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	ADD RA	not used	
P046	ADD RB	not used	
P047	AD0	trailing edge sensor	
P048	AD1	B5R sensor	



Address	bit	Description	Remarks
P049	AD2	A4R sensor	
P050	AD3	B4 sensor	
P051	AD6	dust sensor	
P052	AD7	A3 sensor	

### 16.3.5 <MN-CON>

not used

### 16.3.6 <P-CON>

#### T-16-15

Address	bit	Description	Remarks
P001	0	manual feed paper sensor signal	0: paper present
	1	registration paper sensor signal	1: paper present
	2	right deck retry sensor signal	1: paper present
	3	cassette 3 paper sensor signal	1: paper present
	4	vertical path 3 paper sensor signal	1: paper present
	5	cassette 4 paper sensor signal	1: paper present
	6	vertical path 4 paper sensor signal	1: paper present
	7	right deck paper sensor signal	1: paper present
	8	vertical path 1 paper sensor signal	1: paper present
	9	left deck paper sensor signal	1: paper present
	10	vertical path 2 paper sensor signal	1: paper present
	11	outside delivery sensor signal	1: paper present
	12	inside delivery paper sensor signal	0: paper present
	13	not used	
	14	claw jam sensor signal	0: paper present
15	left deck pull-off detection signal	1: paper present	

Address	bit	Description	Remarks
P002	0	cassette 3 retry sensor signal	1: paper present
	1	cassette 4 retry sensor signal	1: paper present
	2	left deck retry sensor signal	1: paper present
	3	reversal sensor 1 signal	1: paper present
	4	right deck limit sensor	1: paper present
	5	duplexing pre-registration signal	1: paper present
	6	duplexing horizontal registration sensor signal	0: paper present
	7	reversal sensor 2 signal	1: paper present
	8	write check sensor signal	1: paper present
	9	developing assembly toner sensor signal	0: toner low
	10	hopper toner sensor signal	0: toner low
	11	duplexing paper sensor signal	1: paper present
	12	fixing web length detection signal	1: web absent
	13	fixing output sensor signal	0: paper present
	14	shutter HP signal	0: HP/set position
15	waste toner feedscrew signal	0: lock	
P003	0	developing clutch ON signal	1:ON
	1	left deck pull-off clutch ON signal	1:ON
	2	manual feed pickup clutch ON signal	1:ON
	3	not used	
	4	roller bias ON signal	0:ON
	5	developing AC bias ON signal	0:ON
	6	high-voltage high-humidity switchover signal	0:ON
	7	high-voltage AC ON signal	0:ON
	8-11	not used	
	12	high-voltage remote signal	0:ON
	13	EEPROM select signal 1	1:ON
	14	EEPROM select signal 2	1:ON
	15	EEPROM select signal 3	1:ON

Address	bit	Description	Remarks
P004	0	cassette 3 size detection signal 0	
	1	cassette 3 size detection signal 1	
	2	cassette 4 size detection signal 0	
	3	cassette 4 size detection signal 1	
	4	fixing shutter thermistor overheating detection signal	1: overheating
	5	fixing sub thermistor overheating detection signal	1: overheating
	6	fixing main thermistor overheating detection signal	1: overheating
	7-8	not used	
	9	assist fan stop detection signal	1: stop
	10	circulation duct fan stop detection signal	1: stop
	11	hopper toner sensor connection detection signal	0: connected
	12	developing toner sensor connection detection signal	0: connected
	13	shutter set detection signal	0:HP
	14	relay OFF detection signal	1:OFF
	15	fixing inlet guide solenoid connection detection signal	1: not connected

Address	bit	Description	Remarks
P005	0	separation fan stop detection signal	1: stop
	1	primary charging cooling fan stop detection signal	1: stop
	2	DC power supply fan stop detection signal	1: stop
	3	heat discharge fan stop detection signal	1: stop
	4	fixing heater power supply fan stop detection signal	1: stop
	5	controller fan stop detection signal	1: stop
	6	duplexing feed fan stop detection signal	1: stop
	7	curl-removing fan stop detection signal	1: stop
	8	right deck paper level sensor (upper) signal	1: paper present
	9	left deck paper level sensor (upper) signal	1: paper present
	10	duplexing unit detection signal	0: present
	11	fixing/feed unit detection signal	0: present
	12	right deck paper level sensor (lower) signal	1: paper present
	13	left deck paper level sensor (lower) signal	1: paper present
	14	not used	
15	fixing web solenoid connection detection signal	1: not connected	
P006	0	fixing motor lock detection signal	1: locked
	1-6	not used	
	7	hopper MERR	1: error
	8	bottle MERR	1: error
	9	not used	
	10	bottle motor connection detection signal	0: connected
	11	shift tray full sensor signal	0: full
	12	shift tray paper sensor signal	0: paper present
	13	shift tray HP sensor L signal	1:HP
	14	shift tray HP sensor R signal	1:HP
	15	shift tray connector detection signal	0: connected

Address	bit	Description	Remarks
P007	0-7	not used	
	8	fixing inlet sensor signal	1: paper present
	9	delivery jam sensor signal	1: jam
	10	IH-PID0	0:ON
	11	IH-PID1	0:ON
	12	high-voltage separation error signal	0: error
	13	high-voltage transfer error signal	0: error
	14	high-voltage primary charging error signal	0: error
	15	12V monitor signal	0:12V ON
P008	0	manual feed door open/closed sensor signal	0: line
	1	right deck paper level sensor signal	1: paper present
	2	right deck pull-off sensor signal	1: paper present
	3	left deck paper level sensor signal	1: paper present
	4	left deck limit sensor signal	1: paper present
	5	cassette 3 paper level sensor signal	1: paper present
	6	cassette 4 paper level sensor signal	1: paper present
	7	not used	
	8	cassette 3 open/closed sensor signal	0: open
	9	cassette 4 open/closed sensor signal	0: open
	10	registration clutch ON signal	0:ON
	11	right deck open/closed sensor signal	0: open
	12	left deck open/closed signal	0: open
	13	lower right door open/closed sensor signal	0: open
	14	bottle cover sensor signal	0: open
15	front door open/closed sensor signal	1: open	

Address	bit	Description	Remarks
P009	0	shift tray connection detection signal	1: not connected
	1	shift tray motor (CCW) signal	0:ON
	2	shift tray motor (CW) signal	0:ON
	3	right deck pickup solenoid ON signal	0:ON
	4	left deck solenoid ON signal	1:ON
	5	cassette 3 solenoid ON signal	1:ON
	6	cassette 4 solenoid ON signal	1:ON
	7	manual feed holding plate release solenoid ON signal	1:ON
	8	motor enable signal	1:ENABLE
	9	reversing flapper 1 solenoid ON signal	1:ON
	10	reversing flapper 2 solenoid ON signal	0:ON
	11	fixing inlet guide solenoid ON signal (return)	1: ON (guide at low)
	12	fixing inlet guide solenoid ON signal (suction)	1: ON (guide at up)
	13	fixing web solenoid ON signal	1:ON
	14	drum heater relay SET signal	1:ON
15	drum heater delay RESET signal	1:ON	
P010	0	right deck lifter motor ON signal	0:ON
	1	left deck lifter motor ON signal	0:ON
	2	primary charging wire cleaning motor (CCW) signal	1:ON
	3	primary charging wire cleaning motor (CW) signal	1:ON
	4	pre-transfer charging wire cleaning motor (CCW) signal	1:ON
	5	pre-transfer charging wire cleaning motor (CW) signal	1:ON
	6	transfer/separation charging wire cleaning motor (CCW) signal	1:ON
	7	transfer/separation charging wire cleaning motor (CW) signal	1:ON

Address	bit	Description	Remarks
P011	0	drum motor ON signal	0:ON
	1	main motor ON signal	0:ON
	2	cassette heater ON signal	0:ON
	3-4	not used	
	5	bottle stirring motor ON signal	0:ON
	6	hopper stirring motor 2 ON signal	0: forward/1: reverse
	7	circulation duct fan (half-speed) ON signal	1: forward/0: reverse
P012	0	circulation duct fan (half-speed) ON signal	1:ON
	1	circulation duct fan (full-speed) ON signal	1:ON
	2	drum heater ON signal	0:ON
	3	power supply fan ON signal	0:ON
	4-5	not used	
	6	cassette 4 lifter motor ON signal	0:ON
	7	cassette 3 lifter motor ON signal	0:ON
P013	0	separation feed fan (half-speed) ON signal	1:ON
	1	separation feed fan (full-speed) ON signal	1:ON
	2	primary charging cooling fan (half-speed) ON signal	1:ON
	3	primary charging cooling fan (full-speed) ON signal	1:ON
	4	assist fan (half-speed) ON signal	1:ON
	5	assist fan (full-speed) ON signal	1:ON
	6	lower fan (half-speed) ON signal	1:ON
	7	lower fan (full-speed) ON signal	1:ON

Address	bit	Description	Remarks
P014	0	IH power supply cooling fan (half-speed) ON signal	1:ON
	1	IH power supply cooling fan (full-speed) ON signal	1:ON
	2	controller cooling fan (half-speed) ON signal	1:ON
	3	controller cooling fan (full-speed) ON signal	1:ON
	4	not used	
	5	duplexing feed fan (full-speed) ON signal	0:ON
	6	curl-removing fan (half-speed)	1:ON
	7	curl-removing fan (full-speed)	1:ON
P015	0	relay shut OFF signal	1:OFF
	1-2	not used	
	3	counter (total)	1:ON
	4	not used	
	5	pre-exposure LED ON signal	1:ON
	6	potential sensor ON signal	1:ON
	7	12V release signal	1:ON
	P016	0	DDI-PPRDY
1		DDI-CTS	
2		DDI-PO0	
3		DDI-PO1	
4		DDI-PO2	
5		DDI-PO3	
6		DDI-PO4	
7		DDI-PO5	



Address	bit	Description	Remarks
P017	0	DDI-CPRDY	
	1	DDI-PRSST	
	2	DDI-RST	
	3	DDI-PI0	
	4	not used	
	5	DDI-PI2	
	6	DDI-PI3	
	7	DDI-PI4	
P018	0	jam detection port	1: jam
	1-7	not used	
P019	0	not used	
	1	reversal motor clock signal	
	2-4	not used	
	5	duplexing left feed motor clock signal	
	6	not used	
	7	delivery motor clock signal	
P020	0	registration clutch ON signal	
	1-4	not used	
	5	pre-registration motor clock signal	
	6	not used	
	7	duplexing right feed motor clock signal	
P021	0	not used	
	1	DDI-TxD	
	2	not used	
	3	DDI-RxD	
	4	DDI-POWER	
	5	DDI-SCNST	
	6-7	not used	
P022	0-7	not used	

Address	bit	Description	Remarks
P023	0	FIN-RESET	
	1	FIN-MODE	
	2-7	not used	
P024	0-4	not used	
	5	pulse count INT	
	6	DMA-END-INT	
	7	DMA-REQ-INT	
P025	0	deck open detecting switch signal	0: closed
	1	deck paper absent sensor signal	1: paper present
	2	deck lifter upper limit sensor signal	1: upper limit
	3	deck pickup sensor signal	1: paper present
	4	deck feed sensor signal	1: paper present
	5	deck pickup clutch ON signal	1:ON
	6	not used	
7	deck paper supply position sensor signal	1:ON	
P026	0	deck paper level sensor signal	1: paper present
	1	deck lifter lower limit detection signal	1: lower limit
	2	deck set sensor signal	1: connected
	3	deck open sensor signal	1: closed
	4	deck ID1	1: connected
	5	deck ID2	0: connected
	6-7	not used	
P027	0	deck open LED ON signal	1:ON
	1	deck pickup roller release solenoid drive signal	1:ON
	2	not used	
	3	deck pickup clutch drive signal	1:ON
	4-5	not used	
	6	deck main motor drive signal	1:ON
	7	deck lifter motor drive signal	1:ON

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Address	bit	Description	Remarks
P028	0	deck lifer lower limit detection signal	1:ON
	1	deck open solenoid	1:ON
	2	deck main motor constant current setting	1:ON
	3-7	not used	

## 16.4 ADJUST (Adjustment Mode)

### 16.4.1 COPIER

#### 16.4.1.1 COPIER List

<AE>

T-16-16

COPIER > ADJUST > AE		
Level 3 item	Description	Level
AE-TBL	adjustment range: 1 to 9 (default: 5) - to obtain darker characters, increase the setting. - to obtain lighter characters, decrease the setting. If you have initialized the RAM on the reader controller PCB, enter the value indicated on the service label.	1

<ADJ-XY>

T-16-17

COPIER > ADJUST > ADJ-XY		
Level 3 item	Description	Level
	Use it to adjust the image read start position. - If you have initialized the RAM on the reader controller PCB or replaced the PCB, enter the value indicated on the service label. - If you have changed the setting of this item, record the new setting on the service label.	
ADJ-X	Use it to adjust the image read start position (X direction). adjustment range: 1 to 100 (default: 20)	1
ADJ-Y	Use it to adjust the image read start position (Y direction). adjustment range: 47 to 131 (default: 90)	1
ADJ-S	Use it to adjust the point at which data is collected for shading using the standard white plate. adjustment range: 20 to 200 (default: 50)	1

<b>COPIER &gt; ADJUST &gt; ADJ-XY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>ADJ-Y-DF</b>	Use it to adjust the main scanning position for feeder mode. adjustment range: 21 to 106 (default: 53)	1
<b>STRD_POS</b>	Use it to adjust the CCD read position for DF stream reading mode. adjustment range: 1 to 200 (default: 100)	1

&lt;CCD&gt;

## T-16-18

<b>COPIER &gt; ADJUST &gt; CCD</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>DFTAR-G</b>	Use it to adjust the shading target value for green for DF mode. adjustment range: 1 to 2047 (default: 1189)	1

&lt;LASER&gt;

## T-16-19

<b>COPIER &gt; ADJUST &gt; LASER</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>PVE-OFST</b>	Use it to adjust the laser write start position. adjustment range: -300 to 300	1
<b>POWER</b>	Use it to adjust the laser power (for non-potential control). adjustment range: 0 to 255	1

<DEVELOP>

T-16-20

<b>COPIER &gt; ADJUST &gt; DEVELOP</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>BIAS</b>	Use it to adjust the developing bias (for non-potential control). adjustment range: 0 to 600 (default: 180)	1
<b>HVT-DE</b>	Use it to enter an offset value for the high-voltage unit. adjustment range: -100 to 100 (default: 0)	1
<b>D-HV-DE</b>	Use it to enter the offset value for the high-voltage D/A output for the DC controller PCB. adjustment range: -50 to 50 (default: 0)	1
<b>TSPLY-ADJ</b>	Use it to adjust the toner supply distribution (axial direction) for the developing assembly. adjustment range: 1 to 5 (default: 3)	2

<DENS>

T-16-21

<b>COPIER &gt; ADJUST &gt; DENS</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>DENS-ADJ</b>	Use it to adjust the density of images (copier/printer). Use it to correct the F-value table in the event of fading in a high-density area or fogging in an image. adjustment range: 1 to 9 (default: 5) - to decrease fading, increase the value. - to decrease fogging, decrease the value. If you have initialized the RAM on the DC controller PCB, enter the value indicated on the service label.	1

&lt;BLANK&gt;

T-16-22

COPIER > ADJUST > BLANK		
Level 3 item	Description	Level
BLANK-T	Use it to enter the image leading edge non-image width.	1
	adjustment range: 1 to 500 (default: 0) If you have initialized the RAM on the DC controller PCB or replaced the PCB, enter the value indicated on the service label.	
BLANK-B	Use it to enter the image trailing edge non-image width.	1
	adjustment range: 0 to 2362 (default: 0) If you have initialized the RAM on the DC controller PCB or replaced the PCB, enter the value indicated on the service label.	

&lt;V-CONT&gt;

T-16-23

COPIER > ADJUST > V-CONT		
Level 3 item	Description	Level
EPOTOFST	Use it to enter the potential offset value. adjustment range: 0 to 255 (default: 0)	1
VL-OFST	Use it to enter the light-area target potential offset adjustment value. adjustment range: -5 to 5 (default: 0)	1
VD-OFST	Use it to enter the dark-area target potential offset adjustment value. adjustment range: -5 to 5 (default: 0)	1
DE-OFS-P	Use it to enter the offset value of the back contrast for printer images. adjustment range: -50 to 50 (default: 0)	1
VD-OFS-P	Use it to enter the target VD offset value for printer images. adjustment range: -5 to 5 (default: 0)	1
DE-OFST	Use it to enter the target D offset value for copier images. adjustment range: -50 to 50 (default: 0)	1

COPIER > ADJUST > V-CONT		
Level 3 item	Description	Level
VL-OFS-P	Use it to enter the target VL offset value for printer images. adjustment range: -50 to 50 (default: 0)	1

<HV-PRI>

T-16-24

COPIER > ADJUST > HV-PRI		
Level 3 item	Description	Level
PRIMARY	Use it to enter the current setting of the primary charging assembly. settings range: 0 to 1400 (default: 771)	1

<HV-TR>

T-16-25

COPIER > ADJUST > HV-TR		
Level 3 item	Description	Level
TR-N1	Use it to adjust the output level of the 1st side of plain paper for an N/N environment. adjustment range: 100 to 400 (default: 380)	1
TR-N2	Use it to adjust the output level of the 2nd side for an N/N environment. adjustment range: 100p to 400 (default: 310)	1
PRE-TR	Use it to adjust the current level of the pre-transfer charging assembly. adjustment range: -300 to 0 (default: 220)	1
HVT-TR	Use it to enter the transfer charging assembly high-voltage offset value for the high-voltage unit. adjustment range: -100 to 100 (default: 0)	1
H-PRE-TR	Use it to enter the pre-transfer charging assembly high-voltage offset value for the high-voltage unit. adjustment range: -100 to 100 (default: 0)	1



<b>COPIER &gt; ADJUST &gt; HV-TR</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>D-PRE-TR</b>	Use it to enter the pre-transfer charging assembly high-voltage offset value for the DC controller PCB. adjustment range: -50 to 50 (default: 0)	1
<b>D-HV-TR</b>	Use it to enter the transfer charging assembly high-voltage offset value for the DC controller PCB. adjustment range: -50 to 50 (default: 0)	1

&lt;HV-SP&gt;

T-16-26

<b>COPIER &gt; ADJUST &gt; HV-SP</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>SP-N1</b>	Use it to adjust the output level for the 1st side of plain paper for an N/N environment. adjustment range: -500 to 100 (default: -190)	1
<b>SP-N2</b>	Use it to adjust the output level for the 2nd side of plain paper for an N/N environment. adjustment range: -500 to 100 (default: -170)	1
<b>HVT-SP</b>	Use it to enter the separation charging assembly high-voltage offset level for the high-voltage unit. adjustment range: -100 to 100	1
<b>D-HV-SP</b>	Use it to enter the separation charging assembly high-voltage offset value for the DC controller PCB. adjustment range: -50 to 50	1

## &lt;FEED-ADJ&gt;

## T-16-27

<b>COPIER &gt; ADJUST &gt; FEED-ADJ</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>REGIST</b>	Use it to adjust the leading edge registration. adjustment range: -50 to 50	1
<b>ADJ-REFE</b>	Use it to adjust the horizontal registration for duplex mode. adjustment range: -50 to 50	1
<b>RG-MF</b>	Use it to adjust the registration for manual pickup. adjustment range: -50 to 50	1

## &lt;CST-ADJ&gt;

## T-16-28

<b>COPIER &gt; ADJUST &gt; CST-ADJ</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>C3-STMTR</b>	Use it to enter the paper width basic value for cassette 3 (STMTR). adjustment range: 0 to 255	1
<b>C3-A4R</b>	Use it to enter the paper width basic value for cassette 3 (A4R). adjustment range: 0 to 255	1
<b>C4-STMTR</b>	Use it to enter the paper width basic value for cassette 4 (STMTR). adjustment range: 0 to 255	1
<b>C4-A4R</b>	Use it to enter the paper width basic value for cassette 4 (A4R). adjustment range: 0 to 255	1
<b>MF-A4R</b>	Use it to enter the paper width basic value for the manual feed tray (A4R). adjustment range: 0 to 255	1
<b>MF-A6R</b>	Use it to enter the paper width basic value for the manual feed tray (A6R). adjustment range: 0 to 255	1

<b>COPIER &gt; ADJUST &gt; CST-ADJ</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>MF-A4</b>	Use it to enter the paper width basic value for the manual feed tray (A4). adjustment range: 0 to 255	1
<b>C3-LVOL</b>	Use it to enter the capacity of the cassette 3 (50 sheets). adjustment range: 0 to 255	1
<b>C3-HVOL</b>	Use it to enter the capacity of the cassette 3 (275 sheets). adjustment range: 0 to 255	1
<b>C4-LVOL</b>	Use it to enter the capacity of the cassette 4 (50 sheets). adjustment range: 0 to 255	1
<b>C4-HVOL</b>	Use it to adjust the capacity of the cassette 4 (275 sheets). adjustment range: 0 to 255	1

&lt;MISC&gt;

T-16-29

<b>COPIER &gt; ADJUST &gt; MISC</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>ATM</b>	Use it to make settings related to the atmospheric pressure of the site of installation. settings range: 0 to 2 (default: 0) 0: 1 to 0.75 atm (up to elevation of 2500 m) 1: 0.75 to 0.70 atm (elevation between 2500 and 300 m) 2: 0.70 to 0.65 atm (elevation between 300 and 3500 m)	1

## 16.4.2 FEEDER

### 16.4.2.1 FEEDER List

T-16-30

COPIER > FEEDER > ADJUST		
Level 3 item	Description	Level
DOCST	Use it to adjust the original image leading edge position. - a higher setting will delay the timing for the image leading edge. adjustment range: -50 to 50 (unit: 0.1 mm)	1
LA-SPEED	Use it to adjust the original feed speed in feeder stream reading mode. - a higher setting will increase the speed (i.e., contracts the image). adjustment range: -30 to 30 (unit: 0.1%)	1

## 16.4.3 SORTER

### 16.4.3.1 SORTER List

T-16-31

COPIER > SORTER > ADJUST		
Level 3 item	Description	Level
PNCH-HLE	Use it to adjust the length from the edge of paper to the punch hole. settings range: -4 to 2 (unit: mm)	1

## 16.5 FUNCTION (Operation/Inspection Mode)

### 16.5.1 COPIER

#### 16.5.1.1 COPIER List

<INSTALL>

T-16-32

COPIER > FUNCTION > INSTALL		
Level 3 item	Description	Level
<b>TONER-S</b>	Use it to stir the toner inside the developing assembly at time of installation. Procedure 1. Select the item to highlight. 2. See that the message "Check the developer" is indicated. At this time, check to see that the developing assembly is correctly mounted. 3. Press the OK key to start the operation. The operation will automatically stop after a specific period of time. during operation, time remaining (sec): at the end, if successful, '0'; if error, '0xFFFF'.	1
<b>CARD</b>	Use it to set up the card reader. Procedure Enter the number of a specific card (0 to 2001), and press the OK key. (As many as 100 cards may be used, starting from the number you have entered.) At this time, initialization will take place for card control information (group ID and ID No.).	1
<b>E-RDS</b>	Use it to specify the use of E-RDS. 0: off (do not use; default) 1: use RDS (transmit all counter information)	1
<b>RGW-PORT</b>	Use it to set the Sales Company server port number used for embedded-RDS. settings range: 1 to 6535	1

<b>COPIER &gt; FUNCTION &gt; INSTALL</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>COM-TEST</b>	Use it to check the connection to the server used for E-RDS. Procedure 1) Select the item to highlight, and press the OK key. 2) See where a connection has been made. (The result will be indicated as 'OK' or 'NG'.) OK: connection possible; NG: connection not possible	1
<b>COM-LOG</b>	Use it to indicate the details of the result of the communication test executed for the server used for E-RDS. Procedure 1) Select the item to highlight, and press [show info]. log information particulars: year, date, time, error code, error detail (128 characters max.)	1
<b>RGW-ADR</b>	Use it to specify the URL of the server used for E-RDS. Procedure 1) Select the item to highlight, and press [show information]. 2) When the URL input screen appears, enter the appropriate URL and press the OK key. (default: <a href="https://a01.ugwdevice.net/ugw/agnetif010">https://a01.ugwdevice.net/ugw/agnetif010</a> )	1

&lt;CCD&gt;

## T-16-33

COPIER > FUNCTION > CCD		
Level 3 item	Description	Level
<b>CCD-ADJ</b>	<p>Use it to execute CCD auto adjustment.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Place about 10 sheets of paper (the whitest of all papers used by the user, other than color print paper) on the platen glass.</li> <li>2) Select &lt;CCD-ADJ&gt; to highlight, and press the OK key.</li> <li>3) See that auto adjustment takes place (about 15 sec). During adjustment, &lt;ACTIVE&gt; will be indicated.</li> <li>4) See that the scanning lamp goes on twice during adjustment. At the end, the screen will show &lt;OK!&gt;.</li> <li>5) See that all items of service mode have been updated (COPIER&gt;ADJUST&gt;CCD). Record the new settings on the service label.</li> </ol> <p>If you have replaced the CCD unit, scanning lamp, inverter PCB, or platen board glass (standard white plate), be sure to execute this mode item.</p>	1
<b>DF-WLVL1/2</b>	<p>Use it to execute ADF white level adjustment (platen board scan/stream reading scan)</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Place a sheet of paper (of the type most frequently used by the user) on the platen board glass, and execute the following: COPIER&gt;FUNCTION&gt;CCD&gt;DF-WLVL1. The white level for book mode is read (checking the degree of transmission of the glass for book mode).</li> <li>2) Place a sheet of paper often used by the user in the DF, and execute the following: COPIER&gt;FUNCTION&gt;CCD&gt;DF-WLVL2. The white level for DF mode (stream reading) is read (checking the degree of transmission of glass for stream reading; reading both sides of the chart). face: computes DFTAR-R/G/B back: computes DFTAR2-R/G/B</li> </ol> <p>Caution:</p> <p>Be sure to execute both of the foregoing 2 items at the same time.</p>	1

<LASER>

T-16-34

COPIER > FUNCTION > LASER		
Level 3 item	Description	Level
<b>POWER</b>	<p>Use it to turn on the laser for laser power adjustment.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Select the item to highlight, and press the OK key.</li> <li>2) See that the laser goes on.</li> <li>3) See that the laser goes off in about 30 sec. (To turn it off in the middle, press the Stop key.)</li> </ol>	1

<DPC>

T-16-35

COPIER > FUNCTION > DPC		
Level 3 item	Description	Level
<b>DPC</b>	<p>Use it to force the execution of potential control.</p> <p>The machine is designed so that it will not perform potential control at power-on (recovery mode) if the temperature of the fixing assembly is 70 deg C or higher. If you have replaced the photosensitive drum or the laser unit, or if you have changed the drum potential setting, be sure to execute this mode item.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Select the item, and type in '1'; then, press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> <li>3) See that the machine executes potential control and stops it automatically.</li> </ol>	1



COPIER > FUNCTION > DPC		
Level 3 item	Description	Level
<b>OFST</b>	<p>Use it to adjust the offset value of the potential sensor.</p> <p>This mode item is part of the series of procedures you have to perform when you have replaced the potential sensor unit. Be sure never to execute it on its own.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Select the item to highlight, and press the OK key.</li> <li>2) See that the machine executes offset adjustment and stops it automatically.</li> </ol>	1

&lt;CST&gt;

T-16-36

COPIER > FUNCTION > CST		
Level 3 item	Description	Level
<b>C3-STMTR</b> <b>C3-A4R</b> <b>C4-STMTR</b> <b>C4-A4R</b>	<p>Use it to register the paper width basic value of the cassette 3/4.</p> <p>STMTR width: 139.5 mm; A4R width: 210 mm</p> <p>To make fine adjustments after registering a value, use the following:            ADJUST&gt;CST-ADJ&gt;C3-STMTR, C3-A4R, C4-STMTR, C4-A4R.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Put STMTR paper in the cassette, and adjust the slide guide plate to the width.</li> <li>2) Select C3-STMTR (C4-STMTR) to highlight, and press the OK key so that the machine executes auto adjustment and register the value.</li> <li>3) Likewise, repeat steps 1) and 2) to register the basic value for A4R.</li> </ol>	1
<b>MF-A4R</b> <b>MF-A6R</b> <b>MF-A4</b>	<p>Use it to register the paper width basic value for the manual feed tray.</p> <p>A4R width: 210 mm; A6R: 105 mm; A4 width: 297 mm</p> <p>To make fine adjustments after registering a basic value, use the following:            COPIER&gt;ADJUST&gt;CST-ADJ&gt;MF-A4R, MF-A6R, MF-A4.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Put A4R paper in the manual feed tray, and adjust the size guide to the width.</li> <li>2) Select MF-A4R to highlight, and press the OK key so that the machine executes auto adjustment and register the value.</li> <li>3) Likewise, repeat steps 1) and 2) for A6R and A4.</li> </ol>	1

## &lt;CLEANING&gt;

## T-16-37

COPIER > FUNCTION > CLEANING		
Level 3 item	Description	Level
WIRE-CLN	<p>Clean all charging wires 5 times (5 trips) all at the same time.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Select the item to highlight, and press the OK key.</li> <li>2) See that the notation changes to 'ACTIVE', indicating that the charging wires are being cleaned.</li> <li>3) See that the machine stops cleaning automatically. (To stop in the middle, press the OK key.)</li> </ol>	1

## &lt;FIXING&gt;

## T-16-38

COPIER > FUNCTION > FIXING		
Level 3 item	Description	Level
NIP-CHK	<p>Use it to generate printouts for automatic measurement of the fixing nip width.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Make about 20 A4 prints.</li> <li>2) Put A4 plain or recycled paper in the manual feed tray.</li> <li>3) Select the item to highlight, and press the OK key.</li> <li>4) See that the paper is picked from the manual feed tray, held in the fixing nip area, and discharged in about 20 sec.</li> <li>5) Check the nip width of the discharged paper: if b is from 4.5 to 6.5 mm, the nip may be considered normal. In the event of a fixing fault or wrinkling and if the difference between the front b and the rear c is appreciable, go to step 6) to make adjustments.</li> <li>6) Loosen the screw found on the side with the narrower nip; then, tighten the other screw to the same degree (so that the nip width is identical between front and rear).</li> </ol>	1

## &lt;PANEL&gt;

## T-16-39

COPIER > FUNCTION > PANEL		
Level 3 item	Description	Level
<b>LCD-CHK</b>	Use it to check for missing dots in the LCD. Procedure 1) Select the item, and press the OK key to start. See that the front of the touch panel starts to go on in the following order: white, black, red, green, blue. 2) Press the Stop key to end the operation.	1
<b>LED-CHK</b>	Use it to check the activation of the LEDs on the control panel. Procedure 1) Select the item, and press the OK key to start. See that the LEDs go on in sequence. 2) Press [LED-off] to end the operation.	1
<b>LED-OFF</b>	Check the LEDs on the control panel. Procedure 1) Select the item to end the operation for LED-CHK.	1
<b>KEY-CHK</b>	Use it to check the key inputs. Procedure 1) Select [KEY-CHK] so that the numbers and names of input keys appear. 2) Check a key to check. If normal, its corresponding character will appear on the touch panel. (See the table.) 3) Select [KEY-CHK] to end the ongoing check.	1
<b>TOUCHCHK</b>	Use it to adjust the coordinates of the analog touch panel. Procedure - Use it to match a specific point of the touch panel and its coordinates on the LCD. - If you have replaced the LCD assembly, be sure to execute this service mode item. 1) Select [TOUCH CHECK] to highlight, and press the OK key. 2) Press the 9 + symbols that appear on the touch panel to make adjustments.	1

Numbers and Names of Input Keys

T-16-40

Key	Indication on screen
0 to 9,#,*,*	0 to 9,#,*,*
Reset	RESET
Stop	STOP
User mode	USER
Start	START
Clear	CLEAR
ID	ID
Help	?
Counter Check	BILL

<PART-CHK>

T-16-41

COPIER > FUNCTION > PART-CHK		
Level 3 item	Description	Level
CL	Use it to select a clutch whose operation you want to check. (range: 1 to 5) Procedure 1) Select the item. 2) Using the keypad, type in the code of the clutch. 3) Press the OK key. 4) Press [CL-on] to check the operation.	1
CL-ON	Use it to start a check on the clutch. Procedure 1) Select an item, and press the OK key so that the clutch will repeatedly go on and off as follows: for 0.5 sec, on -> for 10 sec, off -> for 0.5 sec, on -> for 10 sec, off -> for 0.5 sec, on -> off.	1

COPIER > FUNCTION > PART-CHK		
Level 3 item	Description	Level
MTR	<p>Use it to select the motor whose operation you want to check. (range: 1 to 30)</p> <p>Procedure</p> <p>1) Select the item, and press the OK key so that the motor will repeatedly go on and off as follows: for 0.5 sec, on -&gt; for 10 sec, off -&gt; for 0.5 sec, on -&gt; for 10 sec, off -&gt; for 0.5 sec, on -&gt; off.</p>	1
MTR-ON	<p>Use it to start the operation of the motor.</p> <p>Procedure</p> <p>1) Select the item, and press the OK key so that the motor will repeatedly go on and off as follows:</p> <ul style="list-style-type: none"> <li>- for 20 sec on -&gt; off</li> <li>- the hopper stirring motor and horizontal registration motor: for 10 sec, on -&gt; off</li> <li>- shift tray motor: stops at front/rear HP</li> </ul> <p>Be sure to remove the toner bottle before checking the operation of the bottle motor (MTR=22); otherwise, the toner is likely to spill out inside the machine.</p>	1
SL	<p>Use it to select the solenoid whose operation you want to check. (range: 1 to 11)</p> <p>Procedure</p> <p>1) Select the item.</p> <p>2) Type in the code of the solenoid using the keypad.</p> <p>3) Press the OK key.</p> <p>4) Press [SL-on] to check the operation.</p>	1
SL-ON	<p>Use it to start the operation of the solenoid.</p> <p>1) Select the item, and press the OK key so that the solenoid will repeatedly go on and off as follows: for 0.5 sec, on -&gt; for 10 sec, off -&gt; for 0.5 sec, on -&gt; for 10 sec, off -&gt; for 0.5 sec, on -&gt; off.</p>	1

T-16-42

- Clutch

Code	Name
1	manual feed d pickup clutch (CL3)
2	left deck pull-off clutch (CL4)
3	side deck pickup clutch (CL102)
4	developing clutch (CL1)
5	registration roller clutch (CL2)

T-16-43

- Motor

Code	Name
1	laser scanner motor (M22)
2	drum motor (M1)
3	main motor (M2)
4	fixing motor (M3)
5	right deck pickup motor (M11)
6	left deck pickup motor (M24)
7	cassette 3/4 pickup motor (M12)
8	vertical path duplexing feed motor (M25)
9	vertical path lower motor (M27)
10	vertical path upper motor (M26)
11	side deck main motor (M101)
12	reversal motor (M14)
13	duplexing feed right motor (M18)
14	delivery motor (M13)
15	pre-registration motor (M17)
16	duplexing feed left motor (M19)
17	primary charging wire cleaning motor (M6)
18	pre-transfer charging wire cleaning motor (M7)

Code	Name
19	transfer/separation charging wire cleaning motor (M8)
20	hopper stirring motor (M9); CW rotation (feed/stirring)
21	hopper stirring motor (M9); CCW rotation (stirring)
22	bottle motor (M10) be sure to remove the toner bottle before starting a check.
23	duplexing horizontal registration motor (M16)
24	shutter motor (M15)
25	right deck lifter motor (M4)
26	left deck lifter motor (M5)
27	cassette 3 lifter motor (M20)
28	cassette 4 lifter motor (M21)
29	side deck lifter motor (M102)
30	shift tray motor (SM101)

## T-16-44

## - Solenoid

Code	Name
1	right deck pickup solenoid (SL6)
2	left deck pickup solenoid (SL7)
3	cassette 3 pickup solenoid (SL3)
4	cassette 4 pickup solenoid (SL4)
5	manual feed release solenoid (SL2)
6	deck pickup roller release solenoid (SL101)
7	delivery flapper solenoid (SL5)
8	reversing flapper solenoid (SL8)
9	fixing inlet guide drive solenoid (SL1); plunger returned
10	fixing inlet guide drive solenoid (SL1); plunger drawn
11	fixing web solenoid (SL9)

<CLEAR>

T-16-45

<b>COPIER &gt; FUNCTION &gt; CLEAR</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>ERR</b>	Use it to reset an error code. (codes: E000, E001, E002, E003, E004, E005) Procedure 1) Select the item, and press the OK key. 2) Turn off and then on the main power.	1
<b>DC-CON</b>	Use it to initialize the RAM on the DC controller PCB. The RAM will be initialized when the main power switch is turned off and then back on. Procedure 1) Print out the service mode particulars using the following: COPIER>FUNCTION>MISC-P->P-PRINT. 2) Select the item, and press the OK key. 3) Turn off and then on the main power switch. 4) As necessary, enter the data you have printed using P-PRINT.	1
<b>R-CON</b>	Use it to initialize the RAM on the reader controller PCB. The settings will be initialized when you turn off and then on the main power switch. Procedure 1) Print out the service mode particulars using the following: COPIER>FUNCTION>MISC-P->P-PRINT. 2) Select the item, and press the OK key. 3) Turn off and then back on the main power. 4) As necessary, enter the data you have printed using P-PRINT.	1
<b>JAM-HIST</b>	Use it to reset the jam history. The jam history will be reset when the OK key is pressed. Procedure 1) Select the item, and press the OK key.	1
<b>ERR-HIST</b>	Use it to reset the error code history. The error code will be reset when the OK key is pressed. 1) Select the item, and press the OK key.	1



<b>COPIER &gt; FUNCTION &gt; CLEAR</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>PWD-CLR</b>	Use it to reset the password of the system administrator. The password of 'system administrator' set in user mode is reset when the OK key is pressed. Procedure 1) Select the item, and press the OK key.	1
<b>CNT-MCON</b>	Use it to reset the service counter whose reading is kept by the main controller PCB. The counter reading is reset when the OK key is pressed. Procedure 1) Select the item, and press the OK key.	1
<b>CNT-DCON</b>	Use it to reset the service counter whose reading is kept by the DC controller PCB. The counter reading will be reset when the OK key is pressed. Procedure 1) Select the item, and press the OK key.	1
<b>OPTION</b>	Use it to reset the service mode setting OPTION to its default setting (as upon RAM initialization). The setting will be initialized when the OK key is pressed. The execution of this item will reset the data kept by the main controller, DC controller, and reader controller. Procedure 1) Print out the service mode particulars using the following: COPIER>FUTON>MISC-P>P-PRINT. 2) Select the item, and press the OK key.	1
<b>MMI</b>	Use it to reset the following settings of user mode: - backup user data for copier control panel (user settings) - common settings backup data (user settings) - various backup data except FAX data (sure settings) The settings will be initialized when the main power switch is turned off and then back on. Procedure 1) Select the item, and press the OK key. 2) Turn off and then back on the main power.	1

<b>COPIER &gt; FUNCTION &gt; CLEAR</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>MN-CON</b>	<p>Use it to reset the RAM on the main controller PCB.</p> <p>The RAM will be reset when the main power switch is turned off and then back on.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Print out the service mode particulars using the following: COPIER&gt;FUNCTION&gt;MISC-P&gt;P-PRINT.</li> <li>2) Select the item, and press the OK key.</li> <li>3) Turn off and then back on the main power.</li> <li>4) As necessary, enter the data you have printed out using P-PRINT.</li> </ol>	1
<b>CARD</b>	<p>Use it to reset the data related to card ID (group).</p> <p>The card ID-related data will be reset when the main power switch is turned off and then back on.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) Turn off and then back on the main power.</li> </ol>	1
<b>ALARM</b>	<p>Use it to reset the alarm log.</p> <p>The alarm log will be reset when the main power switch is turned off and then back on.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) Turn off and then back on the main power.</li> </ol>	1
<b>SND-STUP</b>	<p>Use it to reset the transmission read settings.</p> <p>The transmission read settings will be reset when the main power switch is turned off and then back on.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) Turn off and then back on the main power.</li> </ol>	2
<b>CA-KEY</b>	<p>Use it to reset the CA certificate and key.</p> <p>The CA certificate and the key will be reset when the main power switch is turned off and then back on.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) Turn off and then back on the main power.</li> </ol>	2

## &lt;MISC-R&gt;

## T-16-46

COPIER > FUNCTION > MISC-R		
Level 3 item	Description	Level
<b>SCANLAMP</b>	Use it to turn on the scanning lamp. Procedure 1) Select the item. 2) Press the OK key so that the scanning lamp goes on and remains on for 3 sec.	1

## &lt;MISC-P&gt;

## T-16-47

COPIER > FUNCTION > MISC-P		
Level 3 item	Description	Level
<b>P-PRINT</b>	Use it to print out service mode settings. Procedure 1) Select the item. 2) Press the OK key to generate a printout.	1
<b>USER-PRT</b>	Use it to print out user mode settings. Procedure 1) Select the item. 2) Press the OK key to generate a printout.	1
<b>PRE-EXP</b>	Checking the pre-exposure lamp (LED). 1) Select the item to highlight. 2) Press the OK key to execute various operations for several seconds. The operation will stop automatically. (full activation) 3) Press the OK key to generate a printout. Reference If the photosensitive drum suffers a fault as the result of lamp activation, rotate the drum.	1

COPIER > FUNCTION > MISC-P		
Level 3 item	Description	Level
<b>D-PRINT</b>	Use it to print out service mode settings (DISPLAY). The settings under DISPLAY will be printed (not including P-PRINT, LBL-PRINT, HIST-PRINT and ALARM). Procedure 1) Select the item. 2) Press the OK key to generate a printout.	1
<b>ENV-PRT</b>	Use it to print out a log of changes in the machine inside temperature/humidity and in fixing temperature. The log will show changes in the machine inside temperature/humidity and in fixing temperature (center) collected from the monitor outputs of the non-contact thermistor and the environment sensor. 1) Select the item. 2) Press the OK key to generate a printout.	1
<b>KEY-HIST</b>	Use it to print out the history of control panel key inputs. 1) Select the item. 2) Press the OK key to generate a printout.	2
<b>HIST-PRT</b>	Use it to print out the jam history and the error history. Procedure 1) Select the item. 2) Press the OK key to generate a printout.	2
<b>COM-PRT</b>	Use it to print out a history of errors occurring in communications with the Sales Company server used or E-RS. Procedure 1) Select the item. 2) Press the OK key to generate a printout.	2

<SENS-ADJ>

T-16-48

COPIER > FUNCTION > SENS-ADJ		
Level 3 item	Description	Level
<b>STCK-LMT</b>	Use it to adjust the position of the shift tray full sensor. If the tray is full, 'on' will be indicated; if empty, 'off' will be indicated.	2

## &lt;SYSTEM&gt;

## T-16-49

COPIER > FUNCTION > SYSTEM		
Level 3 item	Description	Level
DOWNLOAD	Use it to switch to download mode. Procedure 1) Select the item. 2) Press the OK key to start download mode.	1
CHK-TYPE	Use it to select the appropriate partition number for execution of HD-CHECK or HD-CLEAR. Procedure 1) Select the item. 2) Select the number of the partition you want using the keypad. 0: entire HDD (*1, *2) 1: image storage area 2: general-purpose file (user settings data, log data, PDL spool data) storage area 3: PDL-related file storage area 4: firmware storage area (*1, *2) 5: MEAP area 6: address book area (*1)  *1: cannot be initialized using HD-CLEAR. *2: can be initialized using the SST.	1
HD-CHECK	Use it to check and recover the partition you have selected using CHK-TYPE. procedure 1) Select the item. 2) Press the OK key. 3) See the result. (1: OK; 2: NG (hardware); 3: NG (software) (recovery sector/substitute sector also indicated))	1
HD-CLEAR	Use it to initialize the partition you have selected using CHK-TYPE. Procedure 1) Select the item. 2) Press the OK key.	1

## 16.5.2 FEEDER

### 16.5.2.1 FEEDER List

T-16-50

COPIER > FEEDER > FUNCTION		
Level 3 item	Description	Level
<b>SENS-INT</b>	Use it to adjust the sensitivity of individual sensors of the ADF. Be sure to clean the sensor area before executing the item. Procedure 1) Select the item, and press the OK key. 2) See that the execution ends automatically.	1
<b>MTR-CHK</b>	Use it to check the ADF motor on its own. Procedure 1) Press MTR-CHK to highlight. 2) Type in the appropriate motor number using the keypad. 3) Press the OK key. 4) Press MTR-on to start the check. Motor Number 0: pickup motor 1: feed motor	1
<b>TRY-A4</b>	Use it to execute automatic adjustment of paper width detection reference point 1 of the ADF original pickup tray. (A4)	1
<b>TRY-A5R</b>	Use it to execute automatic adjustment of paper width detection reference point 2 of the ADF original pickup tray. (A5R)	1
<b>TRY-LTR</b>	Use it to execute automatic adjustment of paper width detection reference point 1 of the ADF original pickup tray. (LTR)	1
<b>TRY-LTRR</b>	Use it to execute automatic adjustment of paper width detection reference point 2 of the ADF original pickup tray. (LTRR)	1

<b>COPIER &gt; FEEDER &gt; FUNCTION</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>FEED-CHK</b>	<p>Use it to check paper movement in the ADF on its own.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Press FEED-CHK to highlight.</li> <li>2) Type in the appropriate paper feed mode using the keypad.</li> <li>3) Press the OK key.</li> <li>4) Press FEED-on to check the operation.</li> </ol> <p>Paper Feed Mode Number</p> <p>0: simplex pickup delivery</p> <p>1: duplex pickup delivery operation</p> <p>2: simplex pickup delivery operation (w/ stamp)</p> <p>3: duplex pickup delivery operation (w/ stamp)</p>	1
<b>CL-CHK</b>	<p>Use it to check the ADF clutch on its own.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Press CL-CHK to highlight.</li> <li>2) Type in the appropriate clutch number.</li> <li>3) Press the OK key.</li> <li>4) Press CL-on to check the operation.</li> </ol> <p>Clutch Number</p> <p>0: pickup clutch</p>	1
<b>CL-ON</b>	<p>Use it to start the operation of the clutch.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Press CL-on and then the OK key to start the operation of the clutch.</li> <li>2) Press the OK key once again to stop the operation. (The operation will stop automatically in about 2 sec; however, the indication will not change to 'STOP' unless you press the OK key.)</li> </ol>	1
<b>FAN-CHK</b>	<p>Use it to check the ADF cooling fan on its own.</p> <p>Procedure</p> <ol style="list-style-type: none"> <li>1) Press FAN-CHK to highlight.</li> <li>2) Type in the fan number using the keypad.</li> <li>3) Press the OK key.</li> <li>4) Press FAN -on to check the operation.</li> </ol> <p>Fan Number</p> <p>0: cooling fan</p>	1

<b>COPIER &gt; FEEDER &gt; FUNCTION</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>FAN-ON</b>	<p>Use it to start fan operation.</p> <p>Procedure</p> <p>1) Press FN-on and then the OK key to start the operation of the fan.</p> <p>2) Press the OK key to stop the operation.</p> <p>(The fan will stop automatically in about 5 sec; however, the indication will not be 'STOP' unless the OK key is pressed.)</p>	1
<b>SL-CHK</b>	<p>Use it to check the ADF solenoid on its own.</p> <p>Procedure</p> <p>1) Press SL-CHK to highlight.</p> <p>2) Type in the solenoid number using the keypad.</p> <p>3) Press the OK key.</p> <p>4) Press SL-on to check the operation.</p> <p>Solenoid Number</p> <p>0: locking solenoid</p> <p>1: stamp solenoid</p>	1
<b>SL-ON</b>	<p>Use it to start the operation of the solenoid.</p> <p>Procedure</p> <p>1) Press SL to highlight and then the OK key to start the operation of the motor.</p> <p>2) Press the OK key once again to stop the operation.</p> <p>(The operation will stop automatically in about 5 sec; however, the indication will not be 'STOP' unless the OK key is pressed once again.)</p>	1
<b>MTR-ON</b>	<p>Use it to start the operation of the motor.</p> <p>Procedure</p> <p>1) Press MTR-on to highlight and then the OK key to start the operation of the motor.</p> <p>2) Press the OK key once again to stop the operation.</p> <p>(The operation will stop automatically in about 5 sec; however, the indication will not be 'STOP' unless the OK key is pressed.)</p>	1



<b>COPIER &gt; FEEDER &gt; FUNCTION</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>ROLL-CLN</b>	<p>ADF Roller Cleaning Mode</p> <p>Execute the mode so that the motor will rotate the roller. Force lint-free paper moistened with alcohol against the roller to clean it.</p> <p>Procedure</p> <ol style="list-style-type: none"><li>1) Press ROLL-CLN to highlight.</li><li>2) While the roller is rotating, force lint-free paper moistened with alcohol against the roller to clean.</li><li>3) Select ROLL-CLN to highlight and press the OK key so that the roller will stop.</li></ol>	1
<b>FEED-ON</b>	<p>Use it to check the movement of paper in the ADF on its own.</p> <p>Procedure</p> <ol style="list-style-type: none"><li>1) Press FEED-on and then the OK key so that paper movement will start according to the operation mode selected using FEED-CHK.</li></ol>	1

## 16.6 OPTION (Machine Settings Mode)

### 16.6.1 COPIER

#### 16.6.1.1 COPIER List

<BODY>

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COPIER > OPTION > BODY		
Level 3 item	Description	Level
<b>PO-CNT</b>	Use it to turn on and off the potential control mechanisms. setting: 0: off; 1: on (default)	1
<b>MODEL-SZ</b>	Use it to switchover the default magnification ratios and ADF original size detection. 0: AB (6R5E) 1: inch (5R4E) 2: A (3R3E) 3: AB/inch (6R5E)	1
<b>FUZZY</b>	Use it to turn on and off fuzzy control and to set the environment. 0: enable fuzzy control (default) 1: fix to low humidity environment mode (current level lower than standard) 2: fix to normal temperature/humidity mode 3: fix to high humidity mode (current level higher than standard)	1

COPIER > OPTION > BODY		
Level 3 item	Description	Level
<b>CONFIG</b>	<p>Use it to select multiple firmware items stored on the hard disk and switchover country, language, machine type, and paper size configuration.</p> <p>Procedure XXYYZZ XX: country (JP); YY: language (ja); ZZ (00): machine type; AA (00): paper size configuration. The indications will be in keeping with the following: COPIER&gt;DISPLAY&gt;USER&gt;LANGUAGE. (The notations in parentheses indicate defaults. The country and language notations are for indication only.)</p> <ol style="list-style-type: none"> <li>1) Select &lt;CONFIG&gt;.</li> <li>2) Select the appropriate item to highlight, and press the +/- key.</li> <li>3) See that each press on the +/- key changes the selections in sequence.</li> <li>4) When you have made all selections, press the OK key.</li> <li>5) Turn off and then on the main power switch.</li> </ol>	1
<b>TR_SP_C1</b>	<p>Use it to change the transfer/separation output settings when the right deck is used as the source of paper by way of providing a remedial measure.</p> <p>Setting 0: normal (default); 1: double transfer; 2: separation fault; 3: transfer fault</p>	1
<b>TR_SP_C2</b>	<p>Use it to change the transfer/separation output setting when the left deck is used as the source of paper by way of providing a remedial measure.</p> <p>Setting 0: normal (default); 1: double transfer; 2: separation fault; 3: transfer fault</p>	1
<b>TR_SP_C3</b>	<p>Use it to change the transfer/separation output setting when the cassette 3 is used as the source of paper by way of providing a remedial measure.</p> <p>0: normal (default); 1: double transfer; 2: separation fault; 3: transfer fault</p>	1
<b>TR_SP_C4</b>	<p>Use it to change the transfer/separation output setting when the cassette 4 is used as the source of paper by way of providing a remedial measure.</p> <p>0: normal (default); 1: double transfer; 2: separation fault; 3: transfer fault</p>	1
<b>TR_SP_MF</b>	<p>Use it to change the transfer/separation output setting when the manual feed tray is used as the source of paper by way of providing a remedial measure.</p> <p>Setting 0: normal (default); 1: double transfer; 2: separation fault; 3: transfer fault</p>	1

<b>COPIER &gt; OPTION &gt; BODY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>TR_SP_DK</b>	Use it to change the transfer/separation output setting when the side paper deck is used as the source of paper by way of providing a remedial measure. Setting 0: normal (default); 1: double transfer; 2: separation fault; 3; transfer default	1
<b>W/SCNR</b>	Use it to indicate the presence/absence of a reader unit. 0: reader unit absent (printer model) 1: reader unit present (default) When the presence of a reader unit is detected, the machine will automatically set it to '1'.	1
<b>DFDST-L1</b>	Use it to adjust the dust detection level for the ADF (sheet-to-sheet correction). A higher setting will cause the machine to be more sensitive to finer particles of dust. setting: 0 to 225 (Setting the item to '0' will disable the dust detection mechanism.)	1
<b>DFDST-L2</b>	Use it to add the dust detection level for the ADF (post-job detection). A higher setting will cause the machine to detect finer particles of dust. setting: 0 to 255 (Setting the item to '0' will disable the dust detection mechanism.)	1
<b>ENVP-INT</b>	Use it to set the interval at which a log is collected for the machine inside temperature/humidity and fixing temperature. COPIER>FUNCTION>MIS-P>ENV-PRT and COPIER>DISPLAY>ENVRNT setting 0 to 480 (default: 60; in min)	1
<b>BASE-SW</b>	Use it to switch from MEAP-full model to base model. setting 0: off (based model) 1: on (full model)	1
<b>SC-L-CNT</b>	Use it to change the threshold level of the paper size (large/small) for the scan counter. setting 0: count B4 as small size (default) 1: count B4 as large size	1

<b>COPIER &gt; OPTION &gt; BODY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>DHON-TM</b>	Use it to set the timing at which drum heater goes on in sleep mode (with reference to clock time). setting: 0 to 24 (default: 0; in hr)	1
<b>DHON-IVL</b>	Use it to set the timing at which the drum heater goes on in sleep mode (with reference to time after a shift to sleep mode). setting: 0, 15 to 1440 (default: 0; in min)	1
<b>DHOF-TM</b>	Use it to set the timing at which the drum heater goes off in sleep mode (with reference to clock time). setting: 0 to 24 (default: 01; in hr)	1
<b>DHOF-IVL</b>	Use it to set the timing at which the drum heater goes off in sleep mode (with reference to clock time). setting: 0, 15 to 1440 (default: 0; in min)	1
<b>CBLTINVL</b>	Use it to change the number of times the fixing web solenoid goes on. Make use of it when image faults occur as the result of soiling on the pressure roller. Setting 0: normal (default) 1: twice normal	1
<b>PO-CNTMD</b>	Use it to select the number of times the potential control mechanism goes on. 0: once at power-on 1: once at power-on and, in addition, 10 and 60 min thereafter (simplified potential control mode) 2: once at power-on and, in addition, 10 and 60 min thereafter (normal potential control mode; default)	2
<b>W-CLN-P</b>	Use it to set the interval at which the primary charging wire is automatically cleaned. setting: every 100 to 2000 (sheets; default at 2000)	2
<b>FIX-TEMP</b>	Use it to select down sequence mode. 0: normal (default) 1: standard + 10 deg C 2: standard - 5 deg C	2

<b>COPIER &gt; OPTION &gt; BODY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>IDL-MODE</b>	Use it to select idle rotation mode for the developing assembly. 0: fix to low humidity mode (off) 1: environment control (default) 2: fix to normal temperature/humidity mode (idle rotation for 120 sec) 3: fix to high humidity mode (idle rotation for 300 sec) 4: power save mode	2
<b>FSPD-S1</b>	Use it to select fixing enhancement mode. 0: normal (default) 1: fixing enhancement mode 2: not used	2
<b>TSPLY-SW</b>	Use it to switch over toner supply sequence. 0: environment control (default) 1: fix to low humidity mode (on for 1.4 sec, off for 1 sec) 2: fix to normal temperature/humidity mode (on for 1.5 sec, off for 1 sec) 3: fix to high humidity mode (on for 3 sec, off for 2 sec)	2
<b>SCANSLCT</b>	Use it to enable/disable the function used to compute the scan area from the selected paper size. setting 0: off (determine scan area by original detection) 1: on (determine scan area by paper size)	2
<b>OHP-TEMP</b>	Use it to switch over control temperature for transparency mode. setting 0: normal (default); 1: -5 deg C; 2: -10 deg C; 3: -15 deg C; 4: -20 deg C	2
<b>SENS-CNF</b>	Use it to set the arrangement of original sensors. setting 0: AB (default) 1: inch 2: A	2
<b>RAW-DATA</b>	Use it to specify how received data should be printed. If a received image has a fault, use this mode to find out if the fault is in the data or in image processing. setting 0: normal operation (default) 1: print as is	2

COPIER > OPTION > BODY		
Level 3 item	Description	Level
<b>SHARP</b>	Use it to change the level of sharpness (median value). setting: 1 to 5	2
<b>LAPC-SW</b>	Use it to switch over laser APC correction. 0: execute initial rotation APC if left alone for 10 min 1: execute initial rotation APC if left alone for 60 min (default) 2: execute initial rotation if left alone for 120 min 3: disable initial rotation APC only 4: disable	2
<b>FDW-DLV</b>	Use it to select face-up delivery or face-down delivery when the count is set to multiple. setting 0: normal (for a single original, face-up for all; default) 1: for a single original, face-up delivery if the count is set to '1'; otherwise, face-down	2
<b>COTDPC-D</b>	This item is for use at the factory. setting: 0 to 3 (default: 0)	2
<b>EVL-VDT</b>	Use it to switch over drum target potential to suit the environment of the site. setting: 0 to 6 (default: 1)	2
<b>RMT-LANG</b>	Use it to change the language for the remote UI to be used through the Web browser. Select the particular language using the + and - keys.	2
<b>HI-HUME</b>	Use it to change the developing bias frequency. If a separation fault occurs in a high humidity environment, set it to '1'. setting 0: 2700 Hz (default); 1: 200 Hz	2
<b>TPR-DECL</b>		2
<b>IFAX-LIM</b>	Use it to limit the number of output lines if an excess volume of data is received through i-fax. setting: 0 to 999 (default: 500) 0: no limit	2

<b>COPIER &gt; OPTION &gt; BODY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>DF-BLINE</b>	Use it execute a remedial measure in response to black lines caused by dust on the platen roller when the ADF is use (stream reading mode). setting 0: disable (default) 1: enable	2
<b>DRM-H-SW</b>		2
<b>SMTPTXPN</b>	Use it to change the SMTP transmission port number. setting: 0 to 65535	2
<b>SMTPRXPN</b>	Use it to change the SMTP transmission port number. setting: 0 to 65535	2
<b>POP3PN</b>	Use it to change the POP reception port number. setting: 0 to 65535	2
<b>RUI-DSP</b>	Use it to enable/disable a remote IU function (designed for the Disabilities Act). setting 0: do not show Copier screen on remote UI (default) 1: show Copier screen	2
<b>ORG-LGL</b>	Use it set a special paper size that the ADF cannot recognize (applicable to LGL communicated by the ADF). setting 0: LGL (default) 1: FOOLSCAP 2: A-FOOLSCAP 3: FORIO 4: G-LEGAL 5: OFFICIO 6: E-OFFICIO 7: A-OFFICIO 8: B-OFFICIO 9: A-LEGAL 10: M-OFFICIO	2



<b>COPIER &gt; OPTION &gt; BODY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>ORG-LTR</b>	Use it to set a special paper size that the ADF cannot recognize (applicable to LTR communicated by the ADF). setting 0: LTR (default) 1: G-LTR 2: A-LTR 3: EXECTIVE	2
<b>ORG-LTRR</b>	Use it to set a special paper size that the ADF cannot recognize (applicable to LTR-R communicated by the ADF). setting 0: LTR-R (default) 1: G-LTR-R 2: A-LTR-R 3: EXECTIVE-R	2
<b>ORG-B5</b>	Select a special paper size that the ADF cannot recognize (applicable to B5 communicated by the ADF). setting 0: B5 (default) 1: K-LEGAL	2
<b>UI-BOX</b>	Use it to enable/disable the display of the box screen on the control panel. setting 0: do not display 1: display (default)	2
<b>UI-SEND</b>	Use it to enable/disable display of the transmission screen on the control panel. setting 0: do not display 1: display (default)	2
<b>UI-FAX</b>	Use it to enable/disable display of the fax screen on the control panel. setting 0: do not display 1: display (default)	2

<b>COPIER &gt; OPTION &gt; BODY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>UI-EXT</b>	Use it to enable/disable display of the expansion screen on the control panel. setting 0: do not display 1: display (default)	2
<b>NW-SPEED</b>	Use it to select the appropriate data transmission speed when a connector is made to a service network. setting 0: auto (default) 1: 100Base-Tx 2: 10Base-T	2
<b>STS-PORT</b>	Use it to enable/disable the port for TOT synchronous command communications. setting 0: disable (off; default) 1: enable (on)	2
<b>CMD-PORT</b>	Use it to enable/disable the port for TOT asynchronous status communications. Use it to enable/disable the port for asynchronous status communications when FTUIF-over-TCP/IP is in use. setting 0: disable (off; default) 1: enable (on)	2
<b>MODELSZ2</b>	Use it to enable/disable platen board original size detection (for global support; AB/inch mix). setting 0: disable global detection (default) 1: enable global detection	2
<b>SZDT-SW</b>	Use it to enable/disable switchover of CCD size detection and photo size detection for platen board original size detection. setting 0: disable photo size detection 1: enable photo size detection	2

<b>COPIER &gt; OPTION &gt; BODY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>NS-CMD5</b>	Use it to limit the use of CRAM-MD5 authentication for SMTP authentication. Use it to put limits to the use of CRAM-MD5 authentication for SMTP authentication. setting 0: as determined by SMTP server (default) 1: do not use	2
<b>NS-GSAPI</b>	Use it to limit the use of GSSAPI authentication for restrictive SMTP authentication as part of GSSAPI authentication of SMTP authentication. setting 0: as determined by SMTP server (default) 1: do not use	2
<b>NS-NTLM</b>	Use it to limit the use of NTLM authentication for SMTP authentication. Use it to limit the use of NTLM authentication for SMTP authentication. setting 0: as determined by SMTP server (default) 1: do not use	2
<b>NS-PLNWS</b>	Use it to limit the use of PLAIN, LOGIN authentication, which is plain-text authentication of SMTP authentication (however, only where PLAIN, LOGIN authentication restrictive communication packets are encrypted). setting 0: as determined by SMTP server (default) 1: do not use	2
<b>NS-PLN</b>	Use it to limit the use of PLAIN, LOGIN authentication, which is plain-text authentication of SMTP authentication (however, only where PLAIN, LOGIN authentication restrictive communication packets are not encrypted). setting 0: as determined by SMTP server (default) 1: do not use	2
<b>NS-LGN</b>	Use it to limit the use of LOGIN authentication for restrictive SMTP authentication of LOGIN authentication. setting 0: as determined by SMTP server (default) 1: do not use	2

<b>COPIER &gt; OPTION &gt; BODY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>MEAP-PN</b>	Use it to change the HTTP port number of a MEAP application. setting: 0 to 65535 (default: 8000)	2
<b>SVMD-ENT</b>	Use it to see how to start service mode: setting 0: User Mode key -> 2 and 8 keys at the same time -> User Mode key (default) 1: User Mode key -> 4 and 9 keys at the same time -> User Mode key	2
<b>SSH-SW</b>	Use it to enable/disable the SSH server function. Setting 0: off (default) 1: on	2
<b>RMT-LGIN</b>	Use it to turning the SSH server function ON or OFF. Setting 0: off (default) 1: on	2
<b>RE-PKEY</b>	Use it to enable/disable regeneration of the SSH server key. setting 0: off (default) 1: on	2
<b>U-NAME</b>	Use it to set user names permitting connection to the SSH server. setting 8 characters max. (alphanumeric)	2
<b>U-PASWD</b>	Use it to set user passwords permitting connection to the SSH server. setting 8 characters max. (alphanumeric)	2
<b>DA-PORT</b>	Use it to enable/disable the port for TOT asynchronous status communication. setting 0: close (default) 1: open (w/ DA installed)	2
<b>DA-CNCT</b>	Use it to set the DA. setting 0: off (default) 1: on	2

<b>COPIER &gt; OPTION &gt; BODY</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>CHNG-ST5</b>	Use it to set the TOT status connection port number. setting 1 to 65535 (default: 20010)	2
<b>CHNG-CMD</b>	Use it to set the TOT command connection port number. setting 1 to 65535 (default: 20000)	2
<b>MEAP-DSP</b>	Use it to enable/disable a shift from the MEAP to native screen. setting 0: off (shift to native seen; default) 1: on (do not shift to native screen)	2
<b>ANIM-SW</b>	Use it to enable/disable display of the Error/Jam screen with a MEAP application in operation. setting 0: off (display warning screen; default) 1: on (do not display warning screen)	2
<b>MEAP-SSL</b>	Use it to set the HTTPS port for MEAP. setting 0 to 65535 (default: 8443)	2
<b>STNBY-TM</b>	Use it to switch over the standby shift time. setting 0: normal (default) 1: increase standby shift time until possibility of image distortion is absent	2
<b>KSIZE-SW</b>	for future use	2

&lt;USER&gt;

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<b>COPIER &gt; OPTION &gt; USER</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>COPY-LIM</b>	Use it to put an upper limit to the number of copies. setting: 1 to 9999 (default: 9999)	1

COPIER > OPTION > USER		
Level 3 item	Description	Level
<b>SLEEP</b>	Use it to enable/disable the sleep function. setting 0: off 1; on (default)	1
<b>WEB-DISP</b>	Use it to enable/disable the fixing web length warning message. setting 0: off (do not display) 1: on (display; default) If set to '0', the message will only be on the service mode screen.	1
<b>W-TONER</b>	Use it to enable/disable the waste toner case full message. setting 0: off (do not display) 1: on (display; default) If set to '0', the message will be only on the service mode screen.	1
<b>COUNTER1</b>	Use it to set soft counter 1 of the user mode screen. 101: total 1 (fixed)	1
<b>COUNTER2</b>	Use it to set soft counter 2 of the user mode screen. setting: 0 to 999	1
<b>COUNTER3</b>	Use it to set soft counter 3 of the user mode screen. setting: 0 to 999	1
<b>COUNTER4</b>	Use it to set soft counter 4 of the user mode screen. setting: 0 to 999	1
<b>COUNTER5</b>	Use it to set soft counter 5 of the user mode screen. setting: 0 to 999	1
<b>COUNTER6</b>	Use it to set soft counter 6 of the user mode screen. setting: 0 to 999	1
<b>CONTROL</b>	Use it to limit the use of the control card for PDL jobs. setting 0: do not limit (default) 1: limit	1
<b>B4-L-CNT</b>	Use it to specify where B4 should be counted as large or small size for soft counters 1 thorough 6. 0: count as small size (default) 1: count as large size	1

COPIER > OPTION > USER		
Level 3 item	Description	Level
<b>COPY-JOB</b>	Use it to enable/disable copy job reservation with a card reader/coin vendor in use. setting 0: enable copy job reservation (default) 1: disable copy job reservation	1
<b>PR-PSESW</b>	Use it to enable/disable the print pause function switch. setting 0: disable print pause function (default) 1: enable print pause function (display print output stop/resume button on user screen)	1
<b>IDPRN-SW</b>	Use it to switch over count increment jobs for the group control counter. 0: for PRINT, increment the following: box print, report print, SEND local print, PDL print (default) 1: for PRINT, increment the following: report print, SEND local print, PDL print	1
<b>CNT-SW</b>	Use it to switch over display of charge counter default items. setting 0: default total 1 (101; default) 1: default total 2 (102), copy total 2 (202), total A total 2 (127) 2: default total 1 (101), total small (104), total large (103), scan total 1 (501)	1
<b>TAB-ACC</b>	Use it to enable/disable automatic switchover of cassettes for tab (index) paper. setting 0: do not change over between tab sheets (default) 1: change over between tab sheets	1
<b>REMPNL</b>	Use it to enable/disable the remote panel function. 0: off (default) 1: on	1
<b>BCNT-AST</b>	Use it to switch over job types for the count of the box prints with ASSIST in use. setting 0: count as PDL job (default) 1: count as copy job	1

COPIER > OPTION > USER		
Level 3 item	Description	Level
<b>DOC-REM</b>	Use it to enable/disable the Remove Original message. setting 0: do not indicate (default) 1: indicate	1
<b>SIZE-DET</b>	Use it to enable/disable original size detection. 0: disable original size detection 1: enable original size detection	2
<b>DATE-DSP</b>	Use it to switch over data indication format: setting. 0: 'YY MM/DD 1: DD/MM 'YY 2: MM/DD/YY	2
<b>MB-CCV</b>	Use it to limit the users of the control cards for mail boxes. setting 0: do not limit (default) 1: limit	2
<b>TRY-STP</b>	Use it to switch over operation when the finisher tray becomes full. setting 0: normal (suspend operation when finisher tray becomes full; default) 1: suspend in relation to height detection 2: do not suspend	2
<b>MF-LG-ST</b>	Use it to set the Extra Length key. setting 0: normal (default) 1: indicate Extra Length key on supported mode screens	2
<b>SPECK-DP</b>	Use it to enable/disable display of the result of dust detection in stream reading mode. setting 0: do not display 1: display (default)	2
<b>CNT-DISP</b>	Use it to enable/disable indication of a serial number in response to a press on the Counter Check key. setting 0: display serial number (default) 1: do not display serial number	2



COPIER > OPTION > USER		
Level 3 item	Description	Level
<b>PH-D-SEL</b>	Select the number of lines for printing in photo mode. 0: 141 lines (default) 1: 134 lines	2
<b>OP-SZ-DT</b>	Use it to enable/disable original size detection for book mode. setting 0: off (require input of size on control panel; default) 1: on (use auto original size detection)	2
<b>NW-SCAN</b>	Use it to permit/not permit the network scan function. setting 0: do to permit network scan function (default) 1: permit network scan function  Caution: For the Japanese model, the value cannot be changed. For a non-Japanese model, PSPCL is fixed to '1'; the value may be changed on other models.	2
<b>HDCR-DSP</b>	Use it to set how HDD full deletion mode may operate. 1: using 0s, delete once (default) 2: using random data, delete once 3: using random data, delete 3 times	2
<b>JOB-INVL</b>	Use it to set the interval of jobs for an interrupt. setting 0: standard (at time of interrupt copy, continuously output next jobs; default) 1: output next job only after delivering last sheet of interrupt copy 2: output next job only after delivering last sheet of all jobs	2
<b>LGSW-DSP</b>	Use it to enable/disable display of 'enable/disable log indication' on the user mode screen. setting 0: do not display (default) 1: display	2

COPIER > OPTION > USER		
Level 3 item	Description	Level
<b>PCL-COPY</b>	Use it to set PCL command COPIES Meru/Pintubo/Hood compatibility. 0: use page-based control according to COPIES command value specified for each page (default) 1: Meru/Pinatubo/Hood compatibility mode 2 to 6535: reserved	2
<b>PRJOB-CP</b>	Use it to set the CCV count pulse generation for reception and report output. setting 0: do not generate count pulse (default) 1: generate count pulse	2
<b>DPT-ID-7</b>	Use it to select the 7-character input method for group ID registration and authentication. setting 0: normal (default) 1: use 7-character input	2
<b>RUI-RJT</b>	Use it to enable/disable connection of the HTTP port at 3 failed attempts at authentication by the RUI. setting 0: make invalid (default) 1: keep valid	2
<b>CTM-S06</b>	Use it to specify whether a password should be removed from the export file (file transmission address). setting 0: do not remove password from export file (default) 1: remove password from export file	2
<b>FREG-SW</b>	Use it to enable/disable display of the free area of the MEAP counter (SEND). setting 0: do not display (default) 1: display	2
<b>IFAX-SZL</b>	Use it to limit transmission size for i-fax transmission. setting 0: keep transmission size limit valid (using server/not using server) 1: keep transmission size limit invalid (only when not using server, default)	2

COPIER > OPTION > USER		
Level 3 item	Description	Level
<b>IFAX-PGD</b>	Use it to enable/disable page-based division transmission (only when the transmission data size upper limit is exceeded). setting 0: do not permit page-based division transmission in i-fax simple mode (default) 1: enable page-based division transmission in i-fax simple mode	2
<b>MEAPSAFE</b>	Use it to enable/disable switchover to safe mode for MEAP. 0: off (default) 1: on (safe mode)	2
<b>AFN-PSWD</b>	Use it to limit access to user mode. setting 0: off (shift to user mode screen without prompting for password; default) 1: on (shift to user mode after password match)	2
<b>PTJAM-RC</b>	Use it to enable/disable PDL jam recovery. setting 0: off (disable recovery) 1: on (enable recovery; default)	2
<b>SLP-SLCT</b>	Use it to enable/disable use of an existing network-based application. setting 0: do not use (default) 1: use  When set to '1', no shift takes place to sleep mode 3.	2
<b>PS-MODE</b>	Use it to set PS compatibility mode. setting 0: not compatible (default) 1: offer PS type 3 halftone command compatibility (dither reverse) 2: compatible with priority on resolution 3: reserved 4: compatible for EFI landscape/portrait mix 5 to 65535: reserved	2
<b>CNCT-RLZ</b>	Use it to enable/disable the use of the connection serialization function. setting 0: off (disable connection serialization function; default) 1: on (enable connection serialization function)	2

Soft Counter Specifications

100s: total

200s: copy (as needed, add 001 and up)

300s: print

400s: copy + print

500s: scan

600s: box print

700s: reception print

800s: report print

900s: transmission

<Guide to Symbols>

Yes: counter used in the machine.

large size: paper larger than B4.

small size: paper that is B4 or smaller.

numbers 1 and 2 under Description indicate the count for large size paper.

(The machine may be set so that it will count B4 and larger paper as a large size paper in service mode: COPIER>OPTION>USER>B4-L-CNT).

total A: total excluding local copy + remote copy.

total B: total excluding local copy + remote copy + box print.

copy: local copy + remote copy.

copy A: local copy + remote copy + box print.

print: PDL print + report print + box print.

print A: PDL print + report print.

scan: black-and-white scan + color scan

T-16-53

COPIER > COUNTER		
No.	Description	Level
101	total 1	Yes
102	total 2	Yes
103	total (large)	Yes
104	total (small)	Yes
105	total (full color 1)	

COPIER > COUNTER		
No.	Description	Level
106	total (full color 2)	
108	total (black-and-white 1)	Yes
109	total (black-and-white 2)	Yes
110	total (mono color; large)	
111	total (mono color; small)	
112	total (back-and-white; large)	Yes
113	total (black-and-white; small)	Yes
114	total 1 (duplex)	Yes
115	total 2 (duplex)	Yes
116	large (duplex)	Yes
117	small (duplex)	Yes
118	total (mono color 1)	
119	total (mono color 2)	
120	total (full color; large)	
121	total (full color; small)	
122	total (full color + mono color; large)	
123	total (full color + mono color; small)	
124	total (full color + mono color 2)	
125	total (full color + mono color 1)	
126	total A1	Yes
127	total A2	Yes
128	total A (large)	Yes
129	total A (small)	Yes
130	total A (full color 1)	
131	total A (full color 2)	
132	total A (black-and-white 1)	Yes
133	total A (black-and-white 2)	Yes

COPIER > COUNTER		
No.	Description	Level
134	total A (mono color; large)	
135	total A (mono color; small)	
136	total A (black-and-white; large)	Yes
137	total A black-and-white; small)	Yes
138	total A1 (duplex)	
139	total A2 (duplex)	
140	large A (duplex)	
141	small A (duplex)	
142	total A (mono color 1)	
143	total A (mono color 2)	
144	total A (full color; large)	
145	total A (full color; small)	
146	total A (full color + mono color; large)	
147	total A (full color + mono color; small)	
148	total A (full color + mono color 2)	
149	total A (full color + mono color 1)	
150	total B1	Yes
151	total B2	Yes
152	total B (large)	Yes
153	total B (small)	Yes
154	total B (full color 1)	
155	total B (full color 2)	
156	total B (black-and-white 1)	Yes
157	total B (black-and-white 2)	Yes
158	total B (mono color; large)	
159	total B (mono color ; small)	
160	total B (black-and-white; large)	Yes

COPIER > COUNTER		
No.	Description	Level
161	total B (black-and-white; small)	Yes
162	total B1 (duplex)	
163	total B2 (duplex)	
164	large B (duplex)	
165	small B (duplex)	
166	total B (mono color 1)	
167	total B (mono color 2)	
168	total B (full color; large)	
169	total B (full color; small)	
170	total B (full color + mono color; large)	
171	total B (full color + mono color; small)	
172	total B (full color + mono color 2)	
173	total B (full color + mono color 1)	
201	copy (total 1)	Yes
202	copy (total 2)	Yes
203	copy (large)	Yes
204	copy (small)	Yes
205	copy A (total 1)	Yes
206	copy A (total 2)	Yes
207	copy A (large)	Yes
208	copy A (small)	Yes
209	local copy (total 1)	Yes
210	local copy (total 2)	Yes
211	local copy (large)	Yes
212	local copy (small)	Yes
213	remote copy (total 1)	Yes
214	remote copy (total 2)	Yes

COPIER > COUNTER		
No.	Description	Level
215	remote copy (large)	Yes
216	remote copy (small)	Yes
217	copy (full color 1)	
218	copy (full color 2)	
219	copy (mono color 1)	
220	copy (mono color 2)	
221	copy (black-and-white 1)	Yes
222	copy (black-and-white 2)	Yes
223	copy (full color; large)	
224	copy (full color; small)	
225	copy (mono color; large)	
226	copy (mono color; small)	
227	copy (black-and-white; large)	Yes
228	copy (black-and-white; small)	Yes
229	copy (full color + mono color; large)	
230	copy (full color + mono color; small)	
231	copy (full color + mono color/2)	
232	copy (full color + mono color/1)	
233	copy (full color; large; duplex)	
234	copy (full color; small; duplex)	
235	copy (mono color; large; duplex)	
236	copy (mono color; small; duplex)	
237	copy (black-and-white; large; duplex)	
238	copy (black-and-white; small; duplex)	
245	copy A (full color 1)	
246	copy A (full color 2)	
247	copy A (mono color 1)	



COPIER > COUNTER		
No.	Description	Level
248	copy A (mono color 2)	
249	copy A (black-and-white 1)	Yes
250	copy A (black-and-white 2)	Yes
251	copy A (full color; large)	
252	copy A (full color; small)	
253	copy A (mono color; large)	
254	copy A (mono color; small)	
255	copy A (black-and-white; large)	Yes
256	copy A (black-and-white; small)	Yes
257	copy A (full color + mono color; large)	
258	copy A (full color + mono color; small)	
259	copy A (full color + mono color 2)	
260	copy A (full color + mono color 1)	
261	copy A (full color; large; duplex)	
262	copy A (full color; small; duplex)	
263	copy A (mono color; large; duplex)	
264	copy A (mono color; small; duplex)	
265	copy A (black-and-white; duplex)	
266	copy A (black-and-white; small; large)	
273	local copy (full color 1)	
274	local copy (full color 2)	
275	local copy (mono color 1)	
276	local copy (mono color 2)	
277	local copy (black-and-white 1)	Yes
278	local copy (black-and-white 2)	Yes
279	local copy (full color; large)	
280	local copy (full color; small)	

COPIER > COUNTER		
No.	Description	Level
281	local copy (mono color; large)	
282	local copy (mono color; small)	
283	local copy (black-and-white; large)	Yes
284	local copy (black-and-white; small)	Yes
285	local copy (full color + mono color; large)	
286	local copy (full color + mono color; small)	
287	local copy (full color + mono color 2)	
288	local copy (full color + mono color 1)	
289	local copy (full color; large; duplex)	
290	local copy (full color; small; duplex)	
291	local copy (mono color; large; duplex)	
292	local copy (mono color; small; duplex)	
293	local copy (black-and-white; large; duplex)	
294	local copy (black-and-white; small; duplex)	
002	remote copy (full color 1)	
003	remote copy (full color 2)	
004	remote copy (mono color 1)	
005	remote copy (mono color 2)	
006	remote copy (black-and-white 1)	Yes
007	remote copy (black-and-white 2)	Yes
008	remote copy (full color; large)	
009	remote copy (full color; small)	
010	remote copy (mono color; large)	
011	remote copy (mono color; small)	
012	remote copy (black-and-white; large)	Yes
013	remote copy (black-and-white; small)	Yes
014	remote copy (full color + mono color; large)	

COPIER > COUNTER		
No.	Description	Level
015	remote copy (full color + mono color; small)	
016	remote copy (full color + mono color 2)	
017	remote copy (full color + mono color 1)	
018	remote copy (full color; large; duplex)	
019	remote copy (full color; small; duplex)	
020	remote copy (mono color; large; duplex)	
021	remote copy (mono color; small; duplex)	
022	remote copy (black-and-white; large; duplex)	
023	remote copy (black-and-white; small; duplex)	
301	print (total 1)	Yes
302	print (total 2)	Yes
303	print (large)	Yes
304	print (small)	Yes
305	print A (total 1)	Yes
306	print A (total 2)	Yes
307	print A (large)	Yes
308	print A (small)	Yes
309	print (full color 1)	
310	print (full color 2)	
311	print (mono color 1)	
312	print (mono color 2)	
313	print (black-and-white 1)	Yes
314	print (black-and-white 2)	Yes
315	print (full color; large)	
316	print (full color; small)	
317	print (mono color; large)	
318	print (mono color; small)	

COPIER > COUNTER		
No.	Description	Level
319	print (black-and-white; small)	Yes
320	print (black-and-white; small)	Yes
321	print (full color + mono color; large)	
322	print (full color + mono color; small)	
323	print (full color + mono color/2)	
324	print (full color + mono color/1)	
325	print (full color; large; duplex)	
326	print (full color; small; duplex)	
327	print (mono color; large; duplex)	
328	print (mono color; small; duplex)	
329	print (black-and-white; large; duplex)	
330	print (black-and-white; small; duplex)	
331	PDL print (total 1)	Yes
332	PDL print (total 2)	Yes
333	PDL print (large)	Yes
334	PDL print (small)	Yes
335	PDL print (full color 1)	
336	PDL print (full color 2)	
339	PDL print (black-and-white 1)	Yes
340	PDL print (black-and-white 2)	Yes
341	PDL print (full color; large)	
342	PDL print (full color; small)	
345	PDL print (black-and-white; large)	Yes
346	PDL print (black-and-white; large)	Yes
351	PDL print (full color; large; duplex)	
352	PDL print (full color; small; duplex)	
355	PDL print (black-and-white; large; duplex)	

COPIER > COUNTER		
No.	Description	Level
356	PDL print (black-and-white; duplex)	
401	copy + print (full color; large)	
402	copy + print (full color; small)	
403	copy + print (black-and-white; large)	
404	copy + print (black-and-white; small)	
405	copy + print (black-and-white 2)	
406	copy + print (black-and-white 1)	
407	copy + print (full color + mono color; large)	
408	copy + print (full color + mono color; small)	
409	copy + print (full color + mono color/2)	
410	copy + print (full color + mono color/1)	
411	copy + print (large)	
412	copy + print (small)	
413	copy + print (2)	
414	copy + print (1)	
415	copy + print (mono color; large)	
416	copy + print (mono color; small)	
417	copy + print (full color; large; duplex)	
418	copy + print (full color; small; duplex)	
419	copy + print (mono color; large; duplex)	
420	copy + print (mono color; small; duplex)	
421	copy + print (black-and-white; large; duplex)	
422	copy + print (black-and-white; small; duplex)	
501	scan (total 1)	Yes
502	scan (total 2)	Yes
503	scan (large)	Yes
504	scan (small)	Yes

COPIER > COUNTER		
No.	Description	Level
505	black-and-white scan (total 1)	Yes
506	black-and-white scan (total 1)	Yes
507	black-and-white scan (total 2)	Yes
508	black-and-white scan (large)	Yes
509	black-and-white scan (small)	
510	color scan (total 1)	
511	color scan (total 2)	
512	color scan (large)	
601	color scan (small)	Yes
602	box print (total 1)	Yes
603	box print (total 2)	Yes
604	box print (large)	Yes
605	box print (small)	
606	box print (full color 1)	
607	box print (full color 2)	
608	box print (mono color 1)	
609	box print (black-and-white 1)	Yes
610	box print (black-and-white 2)	Yes
611	box print (full color; large)	
612	box print (full color; small)	
613	box print (mono color; large)	
614	box print (mono color; small)	
615	box print (black-and-white; large)	Yes
616	box print (black-and-white; small)	Yes
617	box print (full color + mono color; large)	
618	box print (full color + mono color; small)	
619	box print (full color + mono color 2)	

COPIER > COUNTER		
No.	Description	Level
620	box print (full color + mono color 1)	
621	box print (full color; large; duplex)	
622	box print (full color; small; duplex)	
623	box print (mono color; large; duplex)	
624	box print (mono color; small; duplex)	
625	box print (black-and-white; large; duplex)	
626	box print (black-and-white; small; duplex)	
701	reception print (total 1)	Yes
702	reception print (total 2)	Yes
703	reception print (large)	Yes
704	reception print (small)	Yes
705	reception print (full color 1)	
706	reception print (full color 2)	
707	reception print (grayscale 1)	
708	reception print (grayscale 2)	
709	reception print (black-and-white 1)	Yes
710	reception print (black-and-white 2)	Yes
711	reception print (full color; large)	
712	reception print (full color; small)	
713	reception print (grayscale; large)	
714	reception print (grayscale; small)	
715	reception print (black-and-white; large)	Yes
716	reception print (black-and-white; small)	Yes
717	reception print (full color + grayscale; large)	
718	reception print (full color + grayscale; small)	
719	reception print (full color + grayscale 2)	
720	reception print (full color + grayscale 1)	

COPIER > COUNTER		
No.	Description	Level
721	reception print (full color; large; duplex)	
722	reception print (full color; small; duplex)	
723	reception print (grayscale; large; duplex)	
724	reception print (grayscale; small; duplex)	
725	reception print (black-and-white; large; duplex)	
726	report print (black-and-white; small; duplex)	
801	report print (total 1)	Yes
802	report print (total 2)	Yes
803	report print (large)	Yes
804	report print (small)	Yes
805	report print (full color 1)	
806	report print (full color 2)	
807	report print (grayscale 1)	
808	report print (grayscale 2)	
809	report print (black-and-white 1)	Yes
810	report print (black-and-white 2)	Yes
811	report print (full color; large)	
812	report print (full color; small)	
813	report print (grayscale; large)	
814	report print (grayscale; small)	
815	report print (black-and-white; large)	Yes
816	report print (full color + grayscale; large)	Yes
817	report print (full color + grayscale; small)	
818	report print (full color + grayscale; small)	
819	report print (full color + grayscale 2)	
820	report print (full color; large; duplex)	
821	report print (full color; large; duplex)	



COPIER > COUNTER		
No.	Description	Level
822	report print (full color; small; duplex)	
823	report print (grayscale; large; duplex)	
824	report print (grayscale; small; duplex)	
825	report print (black-and-white; large; duplex)	
826	report print (black-and-white; small; duplex)	
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 scan (color)	
910	local copy scan (black-and-white)	
911	remote copy scan (color)	
912	remote copy scan (black-and-white)	
913	transmission scan total 1 (color)	
914	transmission scan total 1 (black-and-when)	
915	transmission scan total 2 (color)	
916	transmission scant total 2I (black-and-white)	Yes
917	transmission scan total 3 (color)	
918	transmission scan total 3 (black-and-white)	Yes
919	transmission scan total 4 (color)	
920	transmission scan total 4 (black-and-white)	
921	transmission scan total 5 (color)	
922	transmission scan total 5 (black-and-white)	Yes

COPIER > COUNTER		
No.	Description	Level
929	transmissions scan total 6 (color)	
930	transmission scan total; 6 (black-and-white)	Yes
931	transmission scan total 7 (color)	
932	transmission scan total 7 (black-and-white)	
933	transmission scan total 8 (color)	
934	transmission scan total 8 (black-and-white)	
935	universal transmission scan total (color)	
936	universal transmission scan total (black-and-white)	
937	box scan (color)	
938	box scan (black-and-white)	
939	remote scan (color)	
940	remote scan (black-and-white)	Yes
941	transmission scan/fax (color)	
942	transmission scan/fax (black-and-white)	
943	transmission scan/i-fax (color)	
944	transmission scan/i-fax (black-and-white)	
945	transmission scan/e-mail (color)	
946	transmission scan/e-mail (black-and-white)	
947	transmission scan/FTP (color)	
948	transmission scan/FTP (black-and-white)	
949	transmission scan/SMB (color)	
950	transmission scan/SMB (black-and-white)	
951	transmission scan/IPX (color)	
952	transmission scan/IPX (black-and-white)	
953	transmission scan/database (black-and-white)	
954	transmission scan/database (color)	

COPIER > COUNTER		
No.	Description	Level
955	transmission scan/local print (color)	
956	transmission scan/local print (black-and-white)	
957	transmission scan/box (color)	
958	transmission scan/box (black-and-white)	

&lt;CST&gt;

T-16-54

COPIER > OPTION > CST		
Level 3 item	Description	Level
<b>P-SZ-C1</b>	Use it to set the paper size (right deck). setting: 6: A4 (default); 15: B5; 18: LTR	1
<b>P-SZ-C2</b>	Use it to set the paper size (left deck). setting: 6: A4 (default); 15: B5; 18: LTR	1
<b>P-SZ-C4</b>	Use it to set the paper size (cassette 4).	1
<b>U1-NAMEto U4-NAME</b>	Use it to enable/disable display of a paper name when a size from a specific paper size group (U1 to U4) is detected. setting 0: on the touch panel, indicate U1, U2, U3, U4 (default) 1: indicate paper name selected in service mode: CST-U1, U2, U3, U4	2

COPIER > OPTION > CST		
Level 3 item	Description	Level
CST-U1/U2/U3/U4	<p>Use it to select paper names used in paper size groups.</p> <p>By setting any of the following special paper sizes for U1, U2, U3, and U4, these paper sizes may be recognized as special size papers for the universal cassette in question.</p> <p>setting</p> <p>24: Foolscap (CST-U2; default)</p> <p>25: Australian Foolscap</p> <p>26: Oficio</p> <p>27: Ecuadorian Oficio</p> <p>28: Bolivian Oficio</p> <p>29: Argentine Letter (U4; default)</p> <p>30: Argentine Letter-R</p> <p>31: Government Letter (U1; default)</p> <p>32: Government Letter (U1; default)</p> <p>32: Government Letter-R</p> <p>34: Government Legal (U3; default)</p> <p>35: Folio</p> <p>36: Argentine Oficio</p> <p>37: Mexico Oficio</p> <p>38: Executive</p>	2

<ACC>

T-16-55

COPIER > OPTION > ACC		
Level 3 item	Description	Level
COIN	<p>Use it to set the coin vendor mechanism.</p> <p>Use it to set the coin vendor mechanism.</p> <p>setting</p> <p>0: off</p> <p>1: on</p>	1

COPIER > OPTION > ACC		
Level 3 item	Description	Level
<b>DK-P</b>	Use it to set the size of paper used in the side paper deck. setting 0: A4 (default) 1: B5 2: LTR	1
<b>CCV2CT</b>	Use it to enable/disable large 2 count control. 0: off (disable 2-count control; default) 1: on (enable 2-count control; count pulse width/pulse width, 100 msec) 2: on (enable 2-count control; count pulse width/pulse width, 30 msec)	1
<b>CCV-LSZ</b>	Use it to set a threshold for small/large size identification used in large 2 count mode. setting: 0 to 458 (default: 364; in mm)	1
<b>CC-SPSW</b>	Use it to set control card I/F support. 0: do not support (default) 1: support	2

## &lt;INT-FACE&gt;

## T-16-56

COPIER > OPTION > INT-FACE		
Level 3 item	Description	Level
<b>IMG-CONT</b>	Use it to set the connection of the EFI controller. setting 0: no controller 1: EFI model (PINATUBO, Mt. Hood) 2: T/R, AHT model 3: EFI external controller present (Yukon/Pinatubo V2.0) 4: EFI external controller present (Meru V3.1)	1
<b>AP-OPT</b>	Use it to permit/not permit printing from application PrintMe built into the PS print server unit. setting 0: permit printing using unspecific ID (default) 1: permit printing using specific account 2: reject printing	2

COPIER > OPTION > INT-FACE		
Level 3 item	Description	Level
AP-ACCNT	Use it to set (CPCA) group ID for printing (job) from application PrintMe built into the PS print server unit. setting 0 to 9999999 (default: 0)	2
AP-CODE	Use it to set the (CPCA) path for printing (job) from application PrintMe built into the PS print server unit. setting 0 to 99999999 (default: 0)	2

<TEMPO>

T-16-57

COPIER > OPTION > TEMPO		
Level 3 item	Description	Level
F-POT-SW	Use it to enable/disable settings in the event of a transfer fault caused by a fault in the potential sensor. - Use it as a tentative remedy until the potential sensor is replaced. settling 0: off (default); 1: on	2
F-POT-D	Use it to make settings in relation to transfer faults caused by a fault in the potential sensor. - The setting will be valid only when F-POT-SW is set to '1'. - The degree of separation current may be 0>1>2. setting 0: if user tends to use originals with low image ratio (text original ) 1: if user tends to use originals with high image ratio (photo original) 2: do not use normally; however, use if double transfer occurs (dropout at about 50 mm of leading edge)	2
F-HUM-SW	Use it to enable/disable F-HUM-D settings in the event of a fault in the environment sensor. - Use it as a tentative remedy until the environment sensor is replaced. setting 0: off (default); 1: on (enable F-HUM-D setting)	2

COPIER > OPTION > TEMPO		
Level 3 item	Description	Level
<b>F-HUM-D</b>	Use it to manually set the humidity for the site of installation. - The machine assumes it as the output of the humidity sensor. - The setting will be valid only when F-HUM-SW is '1'. setting: 30 to 99 (default: 35%)	2

## &lt;LCNS-TR&gt;

T-16-58

COPIER > OPTION > LCNS-TR		
Level 3 item	Description	Level
EX: ST-XXXX 1 ( ) {0 to 0} [1] [2] [1]: for state indication, 0: not installed (default); 1: installed [2]: for invalidation execution, 0: execute (input accepted only if '0') Procedure (invalidation of transfer) 1) Select SET-XXXX, and type in '0'; then, press the OK key. 2) See that a transfer license number (24 characters) is indicated for TR-XXXX.		
<b>ST-SEND</b>	Use it to display the installation state/invalidate transfer of the SEND function as part of transfer invalidation.	2
<b>TR-SEND</b>	Use it to obtain a transfer license key for the SEND function as part of transfer invalidation.	2
<b>ST-ENPDF</b>	Use it to display the installation state/to execute transfer invalidation of the SEND encryption PDF transmission function as part of transfer invalidation.	2
<b>TR-ENPDF</b>	Use it to obtain a transfer license key for the SEND encryption PDF transmission function as part of transfer invalidation.	2
<b>ST-SPDF</b>	Use it to display the installation state/to execute transfer invalidation of the SEND searchable PDF transmission function as part of transfer invalidation.	2
<b>TR-SPDF</b>	Use it to obtain a transfer license key for the SEND searchable PDF transmission function as part of transfer invalidation.	2
<b>ST-EXPDF</b>	Use it to display the installation state/to execute transfer invalidation of the PDF expansion (composite function of encryption PDF + searchable PDF) as part of transfer invalidation.	2

<b>COPIER &gt; OPTION &gt; LCNS-TR</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>TR-EXPDF</b>	Use it to obtain a transfer license key for the PDF expansion kit (composite function of encryption PDF + searchable PDF) as part of transfer invalidation.	2
<b>ST-LIPS</b>	Use it to display the installation state/to execute transfer invalidation of LIPS as part of transfer invalidation.	2
<b>TR-LIPS</b>	Use it to obtain a transfer license key as part of transfer invalidation.	2
<b>ST-PDFDR</b>	Use it to display the installation state/to execute transfer invalidation of the PDF direct transmission mechanism as part of transfer invalidation.	2
<b>TR-PDFDR</b>	Use it to obtain a transfer license key as part of transfer invalidation.	2
<b>ST-SCR</b>	Use it to display the installation state/execute transfer invalidation of the encryption secured printing function as part of transfer invalidation.	2
<b>TR-SCR</b>	Use it to obtain a transfer license key for the encryption secured printing as part of transfer invalidation.	2
<b>ST-HDCLR</b>	Use it to display the installation state/to execute transfer invalidation of HDD encryption or full deletion as part of transfer invalidation.	2
<b>TR-HDCLR</b>	Use it to obtain a transfer license key for HDD encryption/full deletion as part of transfer invalidation.	2
<b>ST-CHSNG</b>	Use it to display the installation state/to execute transfer invalidation for chasing as part of transfer invalidation.	2
<b>TR-CHSNG</b>	Use it to obtain a transfer license key for chasing as part of transfer invalidation.	2
<b>ST-BRDIM</b>	Use it to display/execute transfer invalidation of Bar DIMM as part of transfer invalidation.	2
<b>TR-BRDIM</b>	Use it to obtain a transfer license key for bar DIMM as part of transfer invalidation.	2
<b>ST-VNC</b>	Use it to display the installation state/to execute transfer invalidation for VNC as part of transfer invalidation.	2
<b>TR-VNC</b>	Use it to obtain a transfer license key for VNC as part of transfer invalidation.	2
<b>ST-WEB</b>	Use it to display the installation state/execute transfer invalidation for a WEB browser as part of transfer invalidation.	2
<b>TR-WEB</b>	Use it to obtain a transfer license key for a WEB browser as part of transfer invalidation.	2



## 16.6.2 FEEDER

### 16.6.2.1 FEEDER List

T-16-59

COPIER > FEEDER > OPTION		
Level 3 item	Description	Level
<b>SIZE-SW</b>	Use it to enable detection of a mix of AB and inch originals. setting 0: ON (do not detect; default); 1: OFF (detect)	1
<b>LS-DBL</b>	Use it to enable/disable ADF high-speed duplex mode. setting 0: enable (execute high-speed duplex mode; normal mode; default) 1: disable (do not execute high-speed duplex mode; low-speed duplex mode)	1
<b>STAMP-SW</b>	Use it to indicate the presence/absence of a stamp. (If fitted, set '1' for STAMP-SW. setting 0: stamp absent 1: stamp present (default)	1

## 16.6.3 SORTER

### 16.6.3.1 SORTER List

T-16-60

COPIER > SORTER > OPTION		
Level 3 item	Description	Level
<b>BLNK-SW</b>	Use it to set the margin width on both sides of a crease when the saddle stitcher is in use. setting 0: normal width (5 mm) 1: extra width (10 mm; default)	1
<b>MD-SPRTN</b>	Use it to enable/disable accessory-independent mode in the event of a finisher error. setting 0: normal (disable accessory-independent mode; default) 1: enable (do not staple or align)	1

## 16.6.4 BOARD

### 16.6.4.1 BOARD List

T-16-61

COPIER > BOARD > OPTION		
Level 3 item	Description	Level
<b>FONDDL</b>	Use it to enable/disable display of the setting screen for font service when the PS kanji font downloaded is in use. setting 0: disable (do not display; default) 1: enable (display)	1

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<b>COPIER &gt; BOARD &gt; OPTION</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>MENU-1 to 4</b>	Use it to enable/disable display of levels 1 through 4 for the printer settings menu. setting 0: disable (do not display; default) 1: enable (display)	2

## 16.7 TEST (Test Print Mode)

### 16.7.1 COPIER

#### 16.7.1.1 COPIER List

<PG>

T-16-62

COPIER > TEST > PG		
Level 3 item	Description	Level
<b>TYPE</b>	Enter the type No. of the desired test print, and press the Start key to print out a test print. (Be sure to return it to '0' after printing.) 0: image from CCD (normal print) 1: grid 2: 17 gradations (error diffusion; T-BIC) 3: 17 gradations (dither screen) 4: blank 00H 5: halftone 80 H (error diffusion; T-BIC) 6: halftone 80 H (dither screen) 7: solid black FFH 8: horizontal line (space: 27 dots; line width: 40 dots) 9: horizontal line (space: 50 dots; line width: 60 dots) 10: horizontal line (space: 3 dots; line width: 2 dots) 11: halftone 60H (error diffusion; T-BIC) 12: halftone 60H (dither screen) 13: halftone 30H (error diffusion: T-BIC) 14: halftone 30H (dither screen) 15 to 20: for R&D	1
<b>TXPH</b>	Use it to switch between text mode or photo mode for test printing.	1
	setting: 0 to 4	

COPIER > TEST > PG		
Level 3 item	Description	Level
<b>PG-PICK</b>	Use it to select the source of paper for test printing. 1: right deck 2: left deck 3: cassette 3 4: cassette 4 5-6: not used 7: side deck 8: multifederer	1
<b>2-SIDE</b>	Use it to select the output mode for test printing. setting 0: simplex 1: duplex (at time of shipment/upon RAM initialization: 0)	1
<b>PG-QTY</b>	Use it to select the output mode for test printing. Use it to set a copy count for test printing. 1 to 999 (default: 1)	1

## &lt;NETWORK&gt;

## T-16-63

COPIER > TEST > NETWORK		
Level 3 item	Description	Level
PING	Use it to check the connection between the machine and a network (only if TCP/IP). Use it when checking the connection at time of installation or in the event of a network connection fault.	1

- 1) Hold down the control panel switch to start shut-down sequence. When ready, turn off the main power switch.
- 2) Connect the network cable to the machine, and turn on the main power switch.
- 3) Inform the user's system administrator that the installation of the machine is over, and ask him/her to make network settings.

4) Inform the system administrator that you are going to check the network connection, and find out the remote host address (i.e., the IP address of a PC terminal on the user's network).

5) Make the following selections in service mode: COPIER>TEST>NETWORK>PING; then, type in the IP address you obtained in step 4) When ready, press the OK key and then the Start key.

- The indication will be 'OK' if the connection to the network is correct. (End the work.)
- If the indication is 'NG', on the other hand, check the connection of the network cable; if the cable is normal, go to step 6). If a fault is found in the cable, correct it, and go back to step 5).

6) Make the following selections in service mode: COPIES>TEST>NETWORK>PING. Then, enter the local host address (i.e., IP address of the machine), and press the OK key.

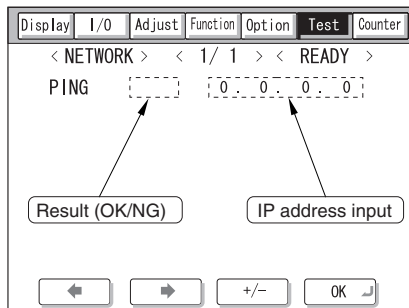
- If the indication is 'NG', suspect a fault in the IP address of the machine or of the network controller. Ask the system administrator for a check on the IP address, or replace the main controller PCB.

- If the indication is 'OK', on the other hand, the network settings and the network controller may be assumed to be normal. If so, suspect a fault in the user's network environment; report to the system administrator for remedial work.

7) Make the following selections in service mode: COPIER>TEST>NETWORK>PING; then, enter the local host address (i.e., IP address of the machine), and press the OK key.

- If the notation is 'NG', suspect a fault in the IP address of the machine or in the network controller. Contact the system administrator to obtain the correct IP address or replace the main controller PCB.

- If the notation is 'OK', the network settings and the network controller may be assumed to be free of faults. The fault is likely to be in the user's network environment. Contact the system administrator for remedial action.



F-16-15

## 16.8 COUNTER (Counter Mode)

### 16.8.1 COPIER

#### 16.8.1.1 COPIER List

<TOTAL>

T-16-64

COPIER > COUNTER > TOTAL		
Level 3 item	Description	Level
<b>SERVICE1</b>	total counter 1 for service Increases the count when paper is discharged outside the machine. (regardless of the size of paper, i.e., large or small) after 99999999, resets to 00000000	1
<b>SERVICE2</b>	total counter 2 for service Increases the count when paper is discharge outside the machine. (in the case of large size, increases by 2; in the case of small size, increases by 1) after 99999999, resets to 00000000	1
<b>COPY</b>	total copy counter Increases the count when copying is over and the paper is discharged outside the machine. after 99999999, resets to 00000000	1
<b>PDL-PRT</b>	PDL print counter Increases the count when paper is discharged outside the machine or duplex stacking occurs to suit the charge counter in PDL print mode. in the case of a blank sheet, the count remains unchanged; for both large and small sizes, the count is increased by 1 after 99999999, resets to 00000000	1
<b>FAX-PRT</b>	fax reception print counter Increases the count when paper is discharged outside the machine or duplex stacking occurs to suit the charge counter in fax reception mode. in the case of a blank sheet, the count remains unchanged; for both large and small sizes, the count is increased by 1; the reading may be reset after 99999999, resets to 00000000	1

<b>COPIER &gt; COUNTER &gt; TOTAL</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>RMT-PRT</b>	<p>remote print counter</p> <p>Increases the count when paper is discharged outside the machine or duplex stacking occurs to suit the charge counter in remote print mode.</p> <p>in the case of a blank sheet, the count remains unchanged; for both large and small sizes, the count is increased by 1; the reading may be reset after 99999999, resets to 00000000</p>	1
<b>BOX-PRT</b>	<p>box print counter</p> <p>Increase the count when paper is discharged outside the machine or duplex stacking occurs to suit the charge counter in box print mode.</p> <p>in the case of a blank sheet, the count remains unchanged; for both large and small sizes, the count is increased by 1; the reading may be reset after 99999999, resets to 00000000</p>	1
<b>RPT-PRT</b>	<p>report print counter</p> <p>Increases the count when paper is discharged outside the machine or duplex stacking occurs to suit the charge counter in report print mode.</p> <p>in the case of a blank sheet, the count remains unchanged; for both large and small sizes, the count is increased by 1; the reading may be reset after 99999999, resets to 00000000</p>	1
<b>2-SIDE</b>	<p>duplex copy/print counter</p> <p>Increases the count when paper is discharged outside the machine or when duplex stacking occurs to suit the charge counter and to indicate the number of duplex copies/prints.</p> <p>in the case of a blank sheet, the count remains unchanged; for both large and small sizes, the count is increases by 1; the reading may be reset after 99999999, reset to 00000000</p>	1
<b>SCAN</b>	<p>scan counter</p> <p>Increases the count when an original has been read, indicating the number of originals read.</p> <p>for both large and small sizes, the count is increased by 1; the reading may be reset after 99999999, resets to 00000000</p>	1



## &lt;PICKUP&gt;

## T-16-65

<b>COPIER &gt; COUNTER &gt; PICKUP</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>C1/2/3/4</b>	cassette 1/2/3/4 pickup total counter Indicates the number of sheets picked up from the cassette 1 (right deck)/2 (left deck)/3/4. after 99999999, resets to 00000000	1
<b>MF</b>	manual feeder pickup total counter Indicates the number of sheets picked up from the manual feed pickup unit. after 99999999, resets to 00000000	1
<b>DK</b>	deck pickup total counter Indicates the number of sheets picked up from the deck pickup unit. after 99999999, ret to 00000000	1
<b>2-SIDE</b>	duplex pickup total counter Indicates the number of sheets picked up for duplexing. after 99999999, resets to 00000000.	1

## &lt;FEEDER&gt;

## T-16-66

<b>COPIER &gt; COUNTER &gt; FEEDER</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>FEED</b>	ADF original pick total counter	1
<b>DFOP-CNT</b>	Indicates the number of times the ADF hinge has opened/closed. setting 0: OFF (default) 00000000 to 99999999	1

<JAM>

T-16-67

<b>COPIER &gt; COUNTER &gt; JAM</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>TOTAL</b>	total jam counter	1
<b>FEEDER</b>	feeder total jam counter	1
<b>SORTER</b>	finisher total jam counter	1
<b>2-SIDE</b>	duplexing unit jam counter	1
<b>MF</b>	manual feed pickup jam counter	1
<b>C1/2/3/4</b>	right deck/left deck/cassette 3/cassette 4 jam counter	1
<b>DK</b>	side paper deck jam counter	1

<MISC>

T-16-68

<b>COPIER &gt; COUNTER &gt; MISC</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>FIX-WEB</b>	fixing web counter (Be sure to reset the counter when the fixing web has been replaced.)	1
<b>WST-TNR</b>	waste toner counter (Be sure to reset the counter when waste toner has been disposed of.)	1

<PRDC-1>

T-16-69

<b>COPIER &gt; COUNTER &gt; PRDC-1</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>PRM-WIRE</b>	primary charging wire counter	1
<b>PRM-GRID</b>	primary grid wire counter	1

<b>COPIER &gt; COUNTER &gt; PRDC-1</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>PO-WIRE</b>	pre-transfer charging wire counter	1
<b>TR-WIRE</b>	transfer charging wire counter	1
<b>SP-WIRE</b>	separation charging wire counter	1
<b>PRM-CLN</b>	primary charging wire cleaner counter	1
<b>TR-CLN</b>	transfer charging wire cleaner counter	1
<b>PO-CLN</b>	pre-transfer charging wire cleaner counter	1
<b>SP-CLN</b>	separation charging wire cleaner counter	1
<b>TR-CLN2</b>	transfer charging wire cleaner 2 counter	1
<b>FIX-TH1</b>	fixing main thermistor (THM1) counter	1
<b>FIX-TH2</b>	fixing sub thermistor (THM2) counter	1
<b>OZ-FIL3</b>	ozone filter	1
<b>AR-FIL1</b>	air filter 1	1
<b>AR-FIL2</b>	air filter 2	1

&lt;DRBL-1&gt;

T-16-70

<b>COPIER &gt; COUNTER &gt; DRBL-1</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>PRM-UNIT</b>	primary charging assembly counter	1
<b>PO-UNIT</b>	pre-transfer charging assembly counter	1
<b>PO-SCRPR</b>	pre-transfer charging assembly scraper counter	1
<b>T/S-UNIT</b>	transfer/separation charging assembly counter	1
<b>PT-DRM</b>	photosensitive drum counter	1
<b>CLN-BLD</b>	cleaner blade counter	1
<b>SP-CLAW</b>	cleaner separation claw counter	1
<b>DVG-CYL</b>	developing cylinder counter	1
<b>DVG-ROLL</b>	developing spacer counter	1

<b>COPIER &gt; COUNTER &gt; DRBL-1</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>C3-PU-RL</b>	cassette 3 pickup roller counter	1
<b>C3-SP-RL</b>	cassette 3 separation roller counter	1
<b>C3-FD-RL</b>	cassette 3 feed roller counter	1
<b>C4-PU-RL</b>	cassette 4 pickup roller counter	1
<b>C4-SP-RL</b>	cassette 4 separation roller counter	1
<b>C4-FD-RL</b>	cassette 4 feed roller counter	1
<b>LD-PU-RL</b>	left front deck pickup roller counter	1
<b>LD-SP-RL</b>	left front deck separation roller counter	1
<b>LD-FD-RL</b>	left front deck feed roller counter	1
<b>RD-SP-RL</b>	right front deck separation roller counter	1
<b>RD-FD-RL</b>	right front deck feed roller counter	1
<b>RD-PU-RL</b>	right front deck pickup roller counter	1
<b>M-SP-RL</b>	manual feed tray separation roller counter	1
<b>M-FD-RL</b>	manual feed tray feed roller counter	1
<b>FX-UP-RL</b>	fixing roller counter	1
<b>FX-LW-RL</b>	pressure roller counter	1
<b>FX-IN-BS</b>	fixing heat insulating bush counter	1
<b>FX-WEB</b>	Indicates the number of times the fixing web has been taken up. If you have replaced the web, be sure to reset the reading in service mode: COPIER>COUNTER>MISC>FIX-WEB, COPIER>COUNTER>DRBL-1>FX-WEB.	1
<b>DLV-UCLW</b>	delivery upper separation claw counter	1
<b>DLV-LCLW</b>	delivery lower separation claw counter	1

&lt;DRBL-2&gt;

T-16-71

COPIER > COUNTER > DRBL-2		
Level 3 item	Description	Level
<b>DF-PU-RL</b>	Indicates the number of sheets picked up by the ADF pickup roller. (counter reading retained by the controller PCB) for both simplex and duplex modes, the count is increased by 1 (regardless of the number of sides); also, there is no distinction between large and small sizes	1
<b>DF-SP-PL</b>	Indicates the number of sheets separated by the ADF separation pad. setting rage/setting item 00000000 to 99999999	1
<b>DF-SP-PD</b>	Indicates the number of sheets picked up by the ADF separation pad. (counter reading retained by the controller PCB) for both simplex and duplex modes, the count is increase by 1 (regardless of the number of sides); also, there is no distinction between large and small sizes	1
<b>DF-FD-RL</b>	Indicates the number of sheets separated by the ADF separation plate. (counter reading retained by the controller PCB) in the case of simplex mode, the count is increased by 1 for each original read; in the case of duplex mode, the count is increased by 3 for each original read (to accommodate 3 feeding sessions, i.e., face, back, and idle); there is no distinction between large and small sizes	1
<b>LNT-TAP1</b>	Indicates the number of sheets moving past the ADF dust-collecting tape. for both simplex and duplex modes, the count is increased by 1 for each original read (not its sides)	1
<b>LNT-TAP2</b>	Indicates the number of sheets moving past the ADF dust-collecting tape. for both simplex and duplex modes, the count is increased by 1 for each original read (not its sides)	1
<b>LNT-TAP3</b>	Indicates the number of sheets moving past the ADF dust-collecting tape. for both simplex and duplex modes, the count is increased by 1 for each original read (not its sides)	1
<b>LNT-TAP4</b>	Indicates the number of sheets moving past the ADF dust-collecting tape. for both simplex and duplex modes, the count is increased by 1 for each original read (not its sides)	1

<b>COPIER &gt; COUNTER &gt; DRBL-2</b>		
<b>Level 3 item</b>	<b>Description</b>	<b>Level</b>
<b>LNT-TAP5</b>	Indicates the number of sheets moving past the ADF dust-collecting tape. for both simplex and duplex modes, the count is increased by 1 for each original read (not its sides)	1
<b>PD-PU-RL</b>	Indicates the number of sheets moving past the paper deck pickup roller. (counter reading retained by the controller PCB)	1
<b>PD-SP-RL</b>	Indicates the number of sheets moving past the paper deck separation roller. (counter reading retained by the controller PCB)	1
<b>PD-FD-RL</b>	Indicates the number of sheets moving past the controller PCB. (counter reading retained by the controller PCB)	1
<b>FIN-STPR</b>	stapler (handling tray assembly)	1
<b>SDL-STPL</b>	Indicates the number of times the stapler (saddle assembly) has operated. (counter reading retained by the DC controller PCB)	1
<b>FIN-BFFRL</b>	Indicates the number of times the puncher has swung.	1

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# Chapter 17

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## Upgrading

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## 17.1 Outline

### 17.1.1 Outline of Upgrading the Machine

The machine and its accessories may be upgraded by replacing DIMM-ROM or using the Service Support Tool (hereafter, SST) installed on a personal computer (PC).

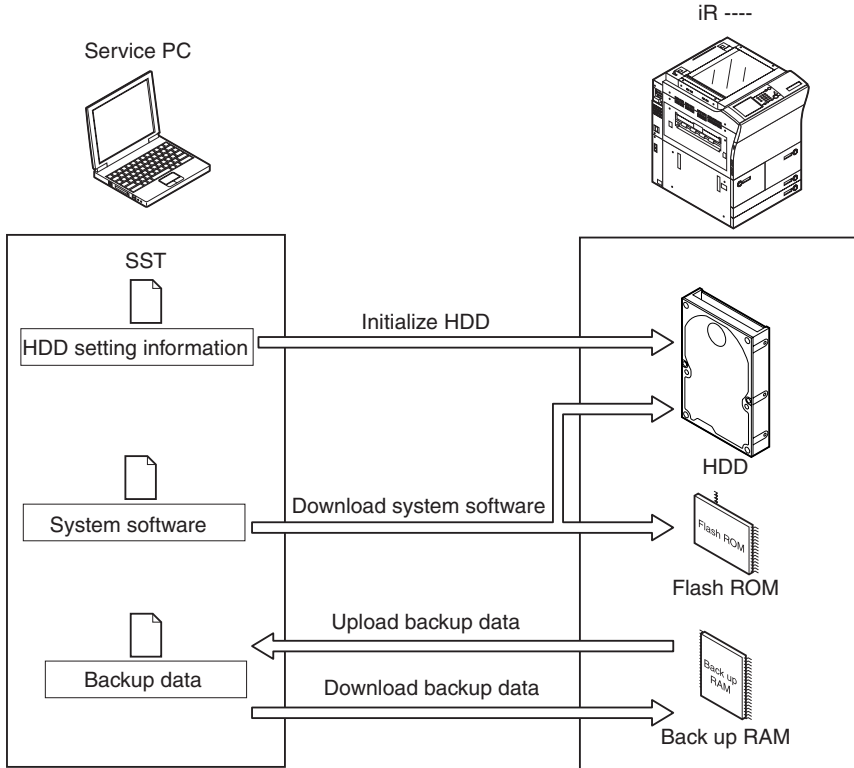
The following table shows the various system software used in conjunction with the machine and how they may be upgraded.

T-17-1

Type	Type of system software	Method of upgrading		Remarks
		SST	ROM-DIMM replacement	
Machine				
	System (main controller)	Yes	No	The machine controller is also used to control the Super G3 Fax Board.
	Language (language mode)	Yes	No	
	RUI (remote user interface)	Yes	No	
	Boot (boot program)	Yes	Yes	
	MEAP CONT (MEAP library)	Yes	No	
	SDICT (OCR dictionary)	Yes	No	
	KEY (encryption communication key)	Yes	No	
	TTS (voice dictionary)	Yes	No	
	DCON (DC controller)	Yes	No	
	RCON (reader controller)	Yes	No	The reader controller is also used to control the ADF.
Accessory				
	Multi-FAX Board	Yes	Yes	
	Fin_T (Finisher-T1/Saddle Finisher-T2)	Yes	No	A special service tool (downloader PCB: FY9-2034) is needed.

### 17.1.2 Outline of the Service Support Tool

The Service Support Tool (hereafter, SST) has the following functions:



F-17-1

The machine must be in download mode when the SST is used.

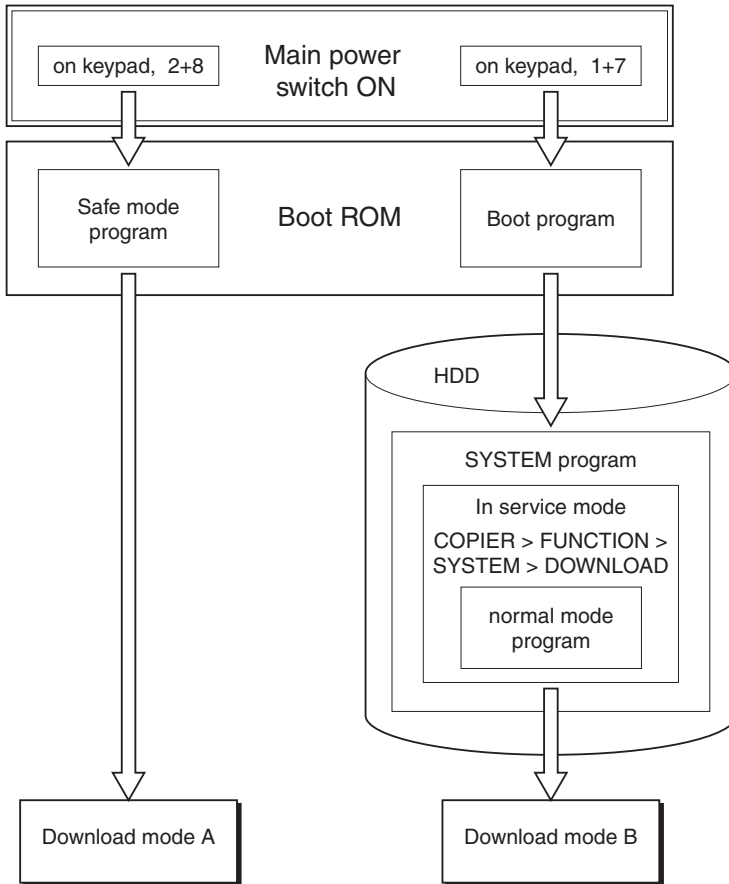
The download control program comes in 2 types:

**-Normal Mode (download mode B)**

turn on the main power while holding down 1+7; then, make the following selections in service mode: COPIER>FUNCTION>SYSTEM>DOWNLOAD

**-Safe Mode(download mode A)**

turn on the main power while holding down 2+8



F-17-2



Use safe mode for the following:

- when you have replaced the HDD.
- when the system fails to start up normally.

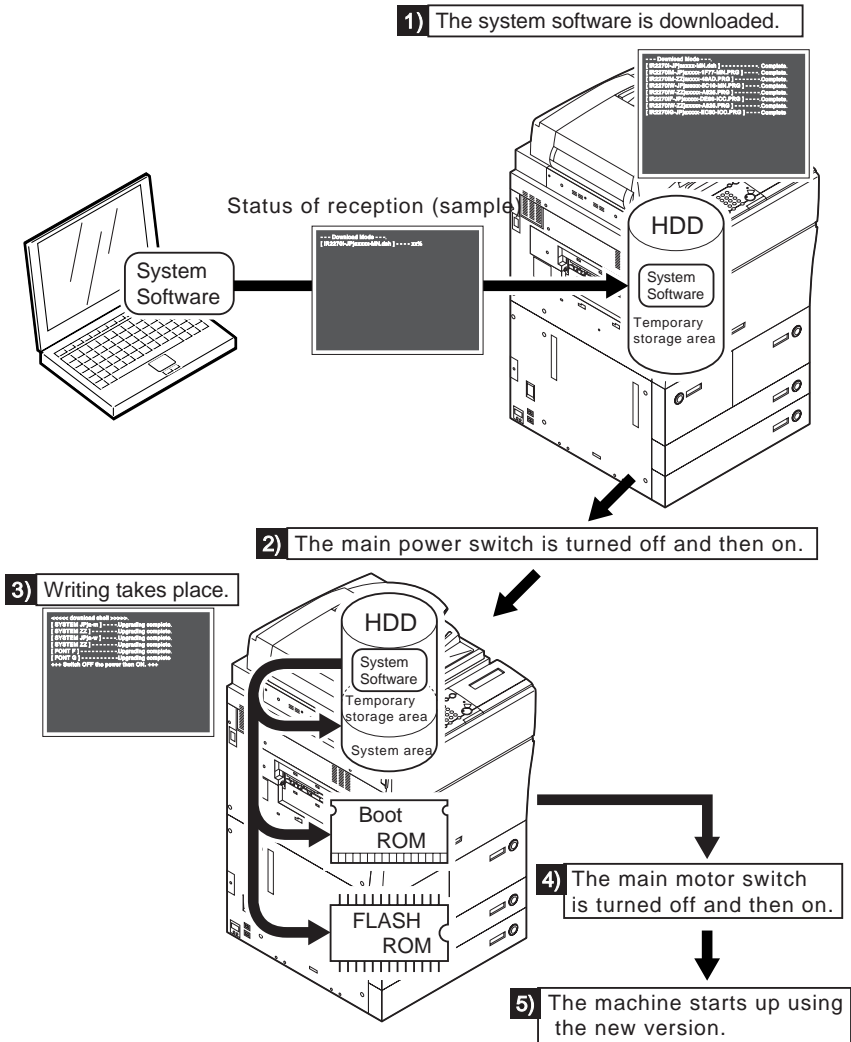
The following table shows the functions that may be used in download mode with the SST in use:

## T-17-2

Function	Download mode	
	Normal mode (download mode B)	Safe mode (download mode A)
Formatting the HDD	- -	Entire HDD BOOTDEV
	FSTDEV TMP_GEN TMP_PSS TMP_FAX APL_SEND APL_MEAP APL_GEN PDL_DEV FSTCDEV	- - - - - - - - -
Downloading the system software	-System -Language -RUI -Boot -G3FAX -Dcon -Rcon -SDICT -MEAPCONT -KEY -TTS	-System -Language -RUI -Boot - -Dcon -Rcon -SDICT -MEAPCONT -KEY -TTS
Uploading/downloading backup data	- -	-Sramimg -Meapback

### Installing the System Software

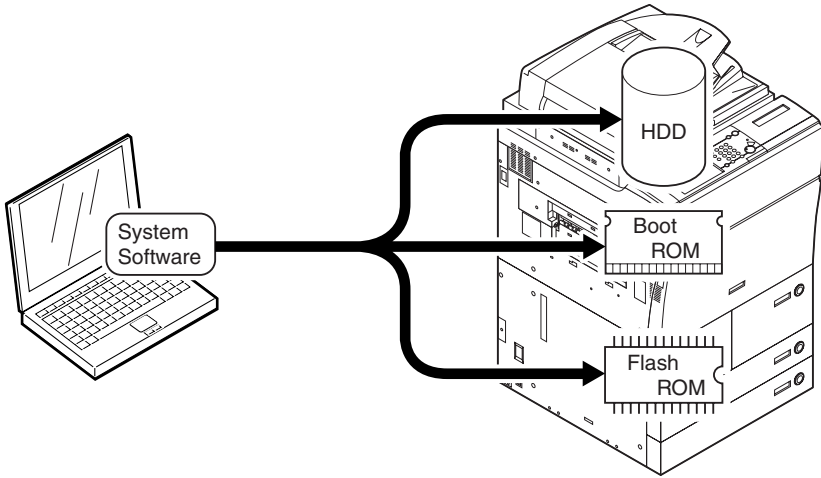
The system software that has been downloaded by the SST (version 3.11 or later) is saved in the temporary storage area of the HDD. You must then turn off and then on the main power switch so that the system software will be written to the system area and flash ROM when the machine starts up. When you turn off and then on the main power switch for a second time, the machine will start up using the new version of the system software.



F-17-3

If a previous version of the SST is used for downloading, the system software will be written directly to the HDD, boot ROM, and flash ROM.

The previous version of the SST is not enable to use for this model.



F-17-4

## 17.2 Making Preparations

### 17.2.1 Registering the System Software

You must first register the system software found on the System CD to the SST.

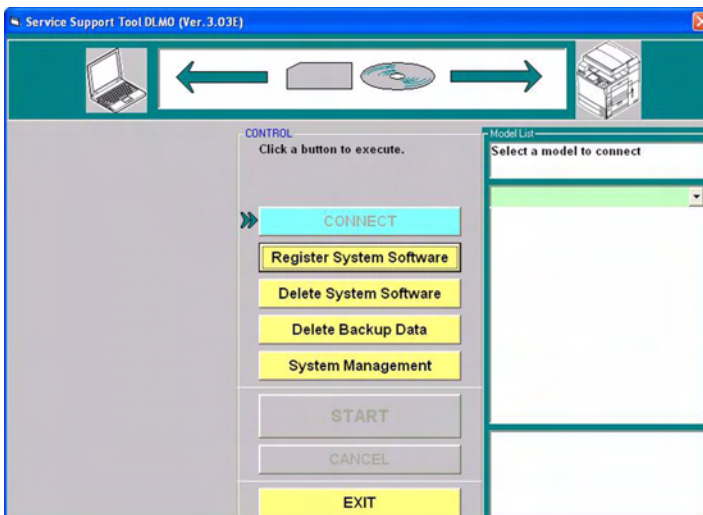
[Preparatory Work]

Items to Prepare

- PC to which the SST (version 3.11 or later) has been installed
- System CD for the iR6570/5570 Series

[Registering the System Software]

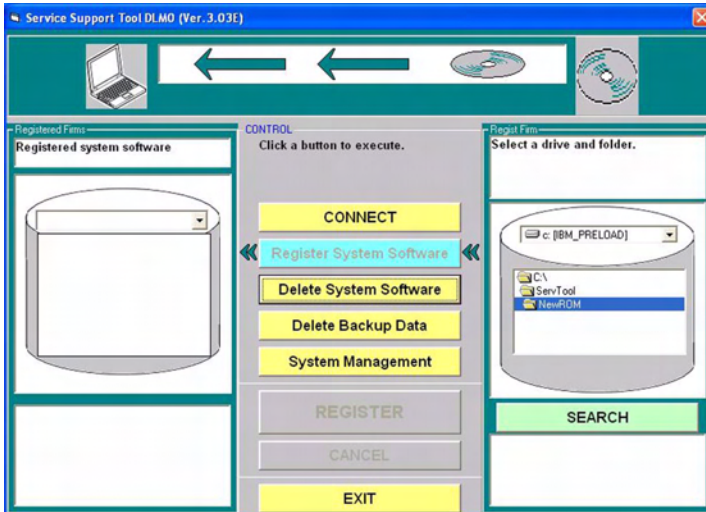
- 1) Start up the PC.
- 2) Set the system CD in the PC.
- 3) Start up the SST.
- 4) Click [Register System Software]



F-17-5

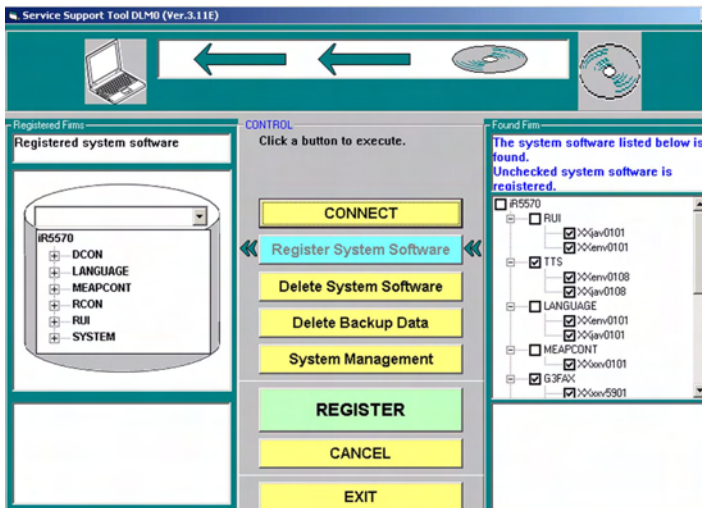


5) Select the drive in which you have set the System CD, and click [SEARCH].



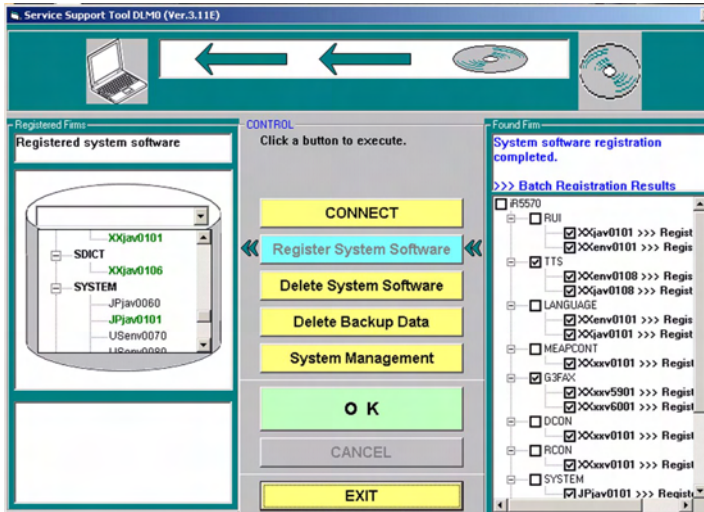
F-17-6

6) The list of system software found on the System CD appears. Remove the check from the folders and software you will not need; then, click [REGISTER].



F-17-7

7) When the result of registration is indicated, click [OK].



F-17-8

## 17.2.2 Making Connections

You are now ready to connect the PC to the machine.

[Preparatory Work]

Items to Prepare

- PC to which the SST (version 3.11 or later) and the system software for the iR6570/5570 series has been registered
- Twisted pair cross cable
  - 10Base-T: Category 3 or 5
  - 100Base-TX: Category 5

[Procedure]

- 1) Start up the PC.
- 2) Check the network settings of the PC.
  - At the command prompt, type 'IPCONFIG', and press the Return key.
  - Check to see that the network settings are as follows:
    - IP address: 172.16.1.160
    - subnet mask: 255.255.255.0

default gateway: any

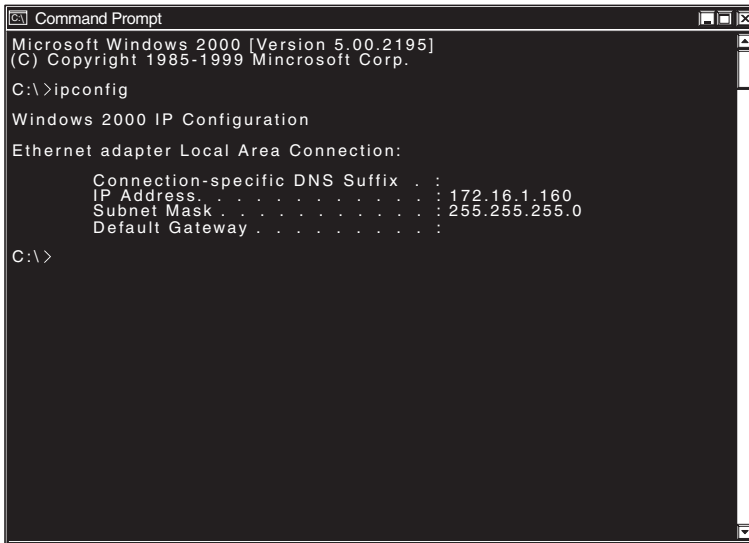
---



Do not use the following IP address:

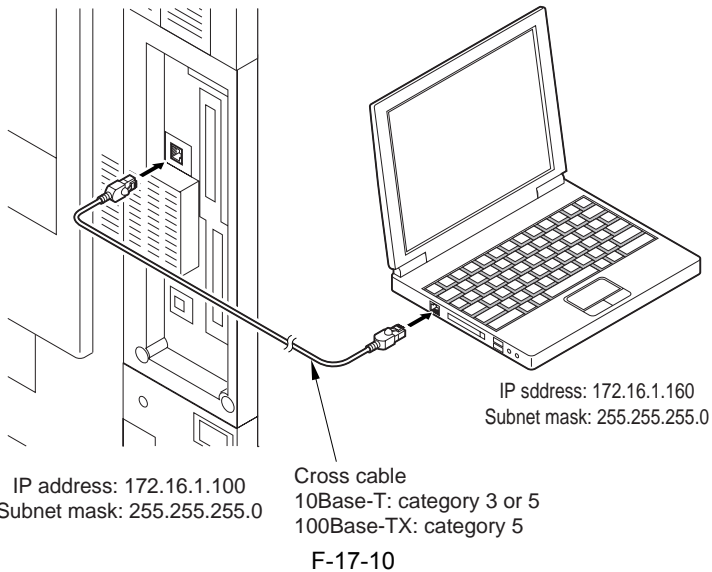
- 172.16.1.0
- 172.16.1.100
- 172.16.1.255

If the settings are not as indicated below, make the appropriate changes:



F-17-9

- 
- 3) Check to see that the Execute/Memory lamp on the control panel is off, and turn off the main power switch.
  - 3-1) Hold down the power switch on the control panel for 3 sec or more.
  - 3-2) Follow the instructions indicated on the control panel so that the main power switch may be turned off.
  - 3-3) Turn off the main power switch.
  - 4) Connect the PC to the machine using a cross cable.



5) Start up the machine to suit the download mode you will be using (iR4570/3570, 2870/2270 Series).

**- Normal Mode**

Turn on the main power switch while holding down 1+7.

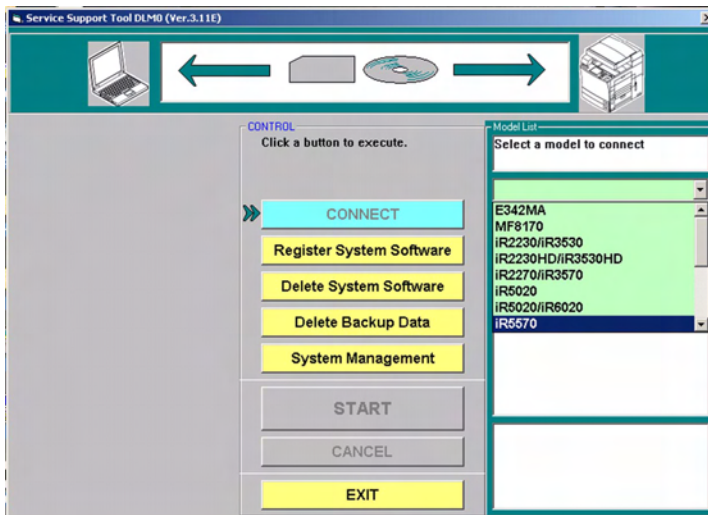
When the machine has started up, make the following selections: COPIER > FUNCTION > SYSTEM > DOWNLOAD.

**- Safe Mode**

Turn on the main power switch while holding down 2+8.

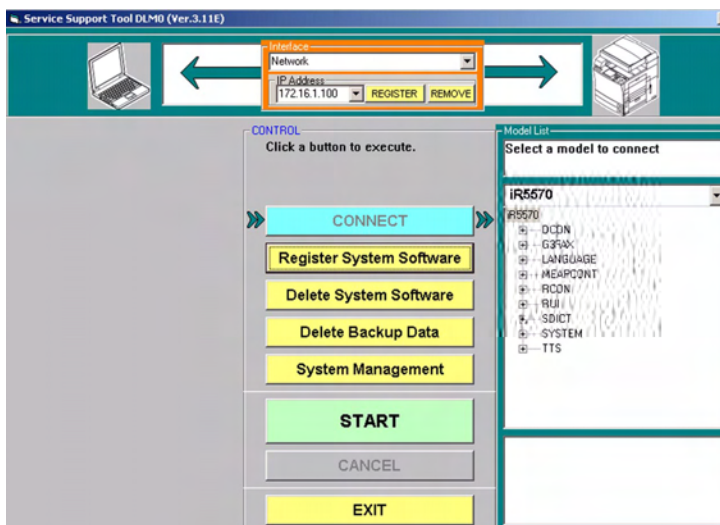
6) Start up the Service Support Tool.

7) Select the model of the machine to connect (iR5570).



F-17-11

8) Click [START].



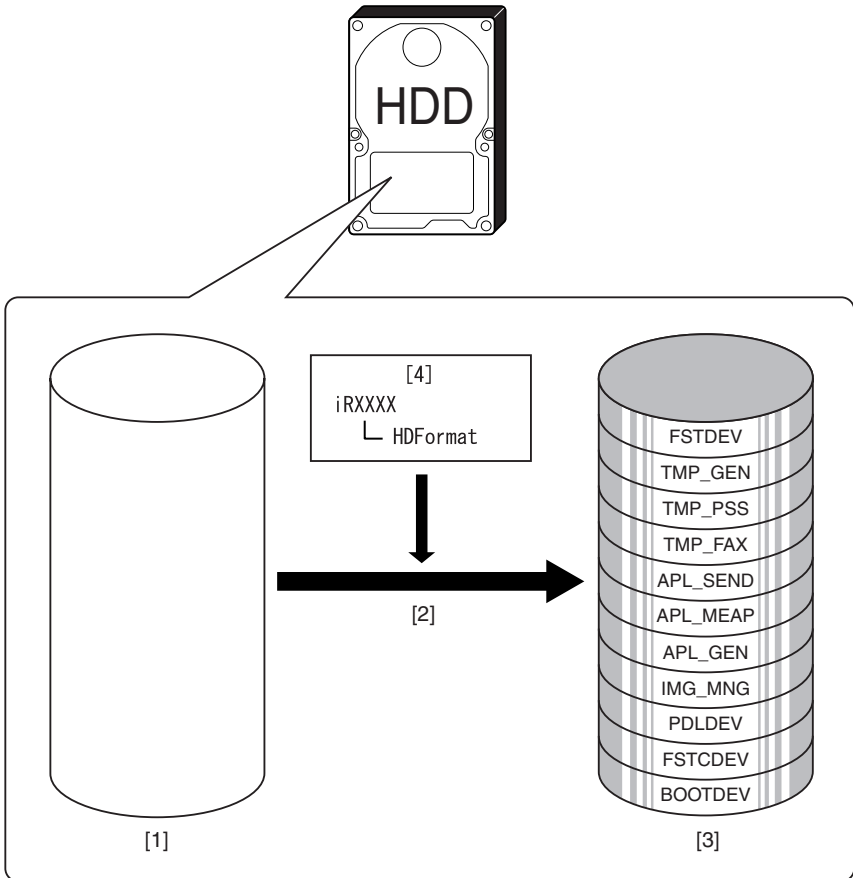
F-17-12

## 17.3 Formatting the HDD

### 17.3.1 Formatting All Partitions

When you format all partitions of the HDD, all individual partitions will be initialized and made ready for use by the main controller.

The information needed for partition settings is stored under HDFormat of the iRXXXX.

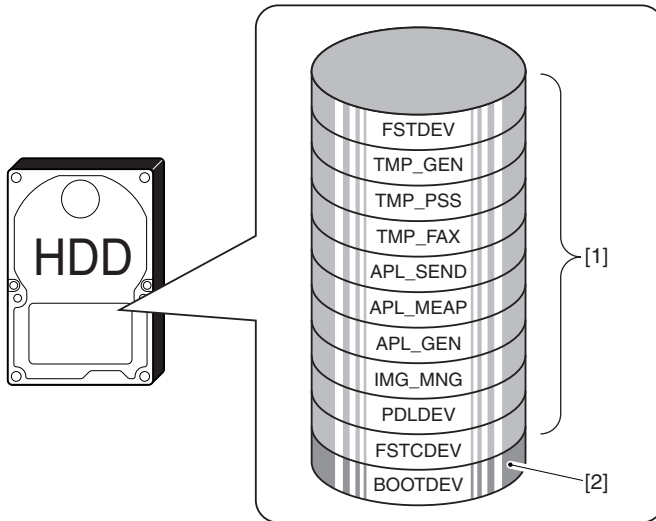


F-17-13

- [1] HDD (service part; without partition setup)
- [2] Formatting of all partitions (in safe mode only)
- [3] HDD after formatting
- [4] Partition setup information

### 17.3.2 Formatting Selected Partitions

You can also format (initialize) only those partitions that you select.



F-17-14

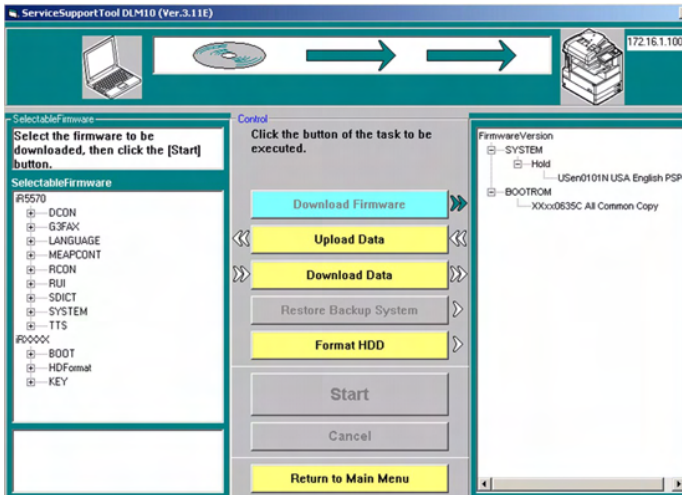
- [1] Formatting possible in normal mode
- [2] Formatting possible in safe mode (requires downloading of System and RUI after formatting)



1. Unless you have selected 'ALL', you may execute formatting without registering HDFormat.
  2. An attempt to format after selecting TMP\_FAX in the absence of a fax board will cause an error.
-

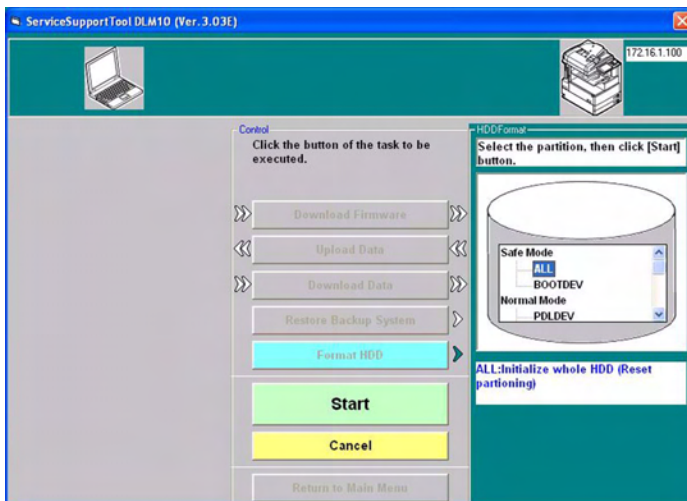
### 17.3.3 Formatting the Partitions

1) Click [Format HDD].



F-17-15

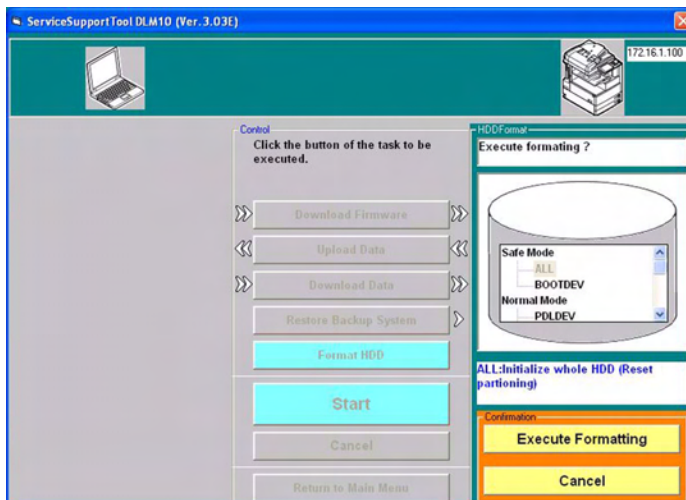
2) Select the partitions you want to format. Or, select 'ALL'.



F-17-16

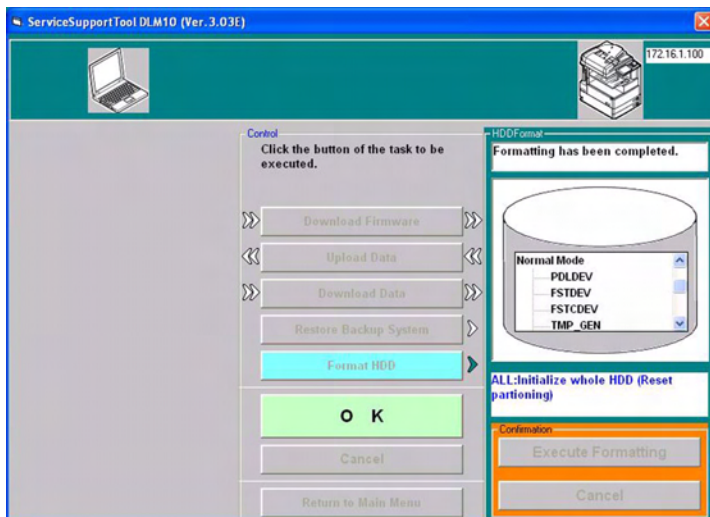


- 3) Click [Start].
- 4) When the Confirmation screen has appeared, click [Execute Formatting].



F-17-17

- 5) When the session has ended, click [OK].



F-17-18

6) Start a download session. Or, turn off and then on the machine to end the work.

---



- If you have formatted all partitions or formatted BOOTDEV, be sure to download System newly. (Otherwise, 'E602' will occur when you turn on the main power.)

---

## 17.4 Downloading System Software

### 17.4.1 Downloading System

#### 17.4.1.1 Outline

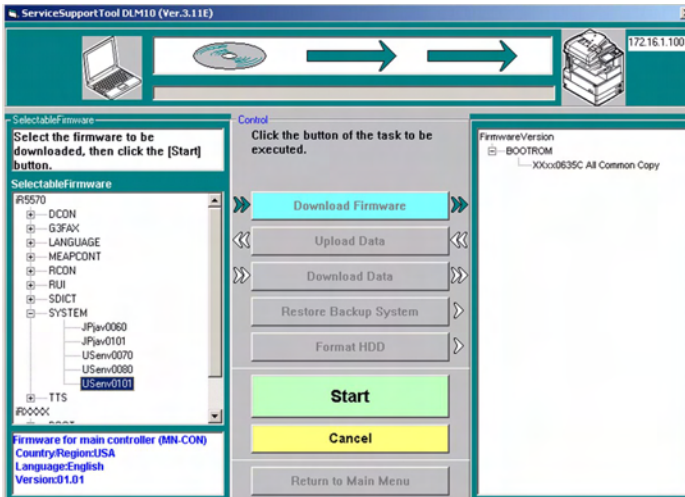
The system software comes in 2 types (one for use inside Japan and the other, outside Japan).

Unlike previous iR controllers, however, there is only one type of system software. (Previously, one type supported NetWare while the other did not. There is now only one type for the machine supporting NetWare.)

#### 17.4.1.2 Downloading Procedure

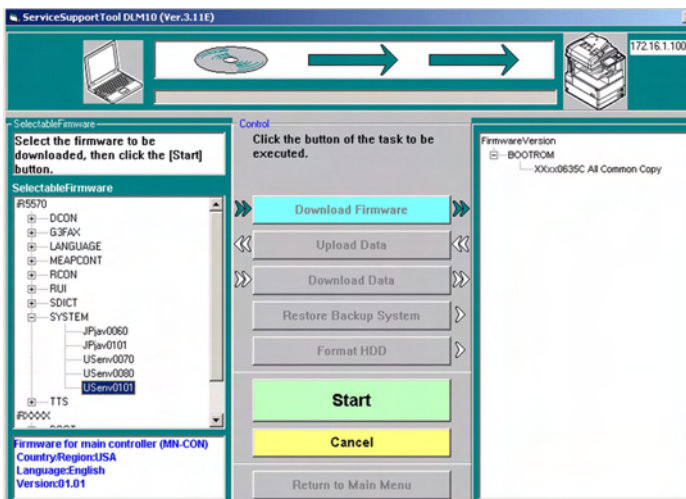
You can run a downloading session either in normal or safe mode.

- 1) Select the version of the system you want to download.



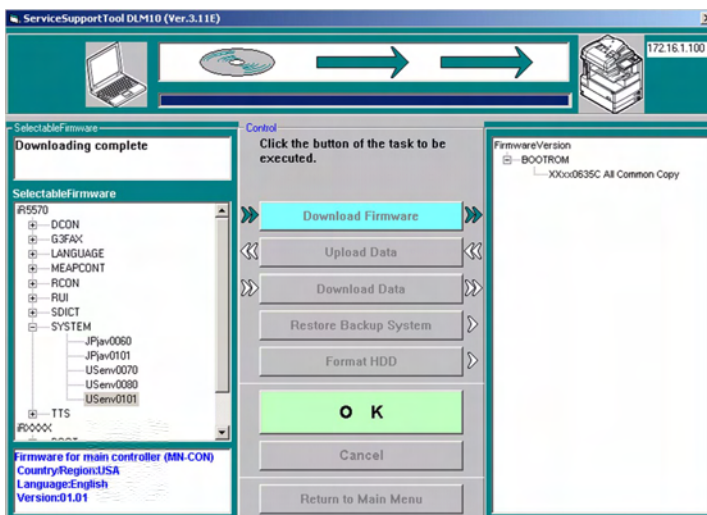
F-17-19

2) Click [Start].



F-17-20

3) When the session has ended, click [OK].

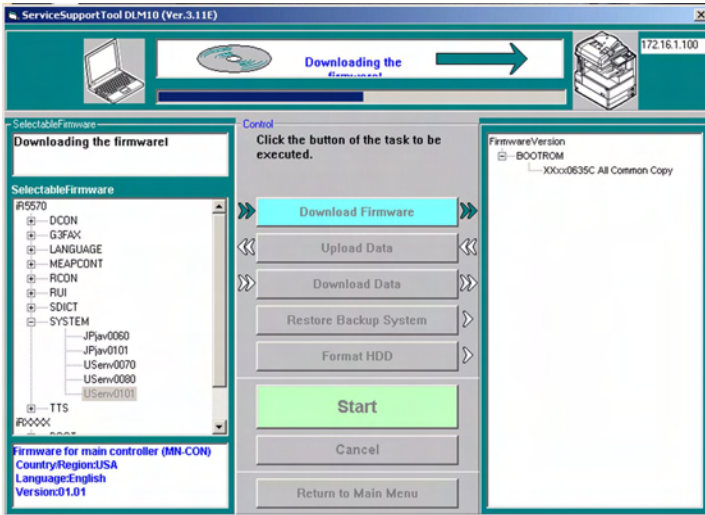


F-17-21

- 4) If you want to start another downloading session, see the appropriate instructions.
- 5) When you are done with downloading, turn off and then on the main power.
- 6) See the upgrade status indicated on the control panel. When a message appears asking you to turn off and then on the switch, turn off and then on the main power.



Be sure never to turn off the power while the machine is executing a downloading session or writing downloaded software. The ongoing session will be suspended and the machine may fail to start up.



F-17-22

```
<<<< download shell >>>>
[ SYSTEM JPja-m ] - - - - Upgrading complete
[ SYSTEM ZZ ] - - - - - Upgrading complete
[ SYSTEM JPja-w ] - - - - Upgrading complete
[ SYSTEM ZZ ] - - - - - Writing to HDD XX%
```

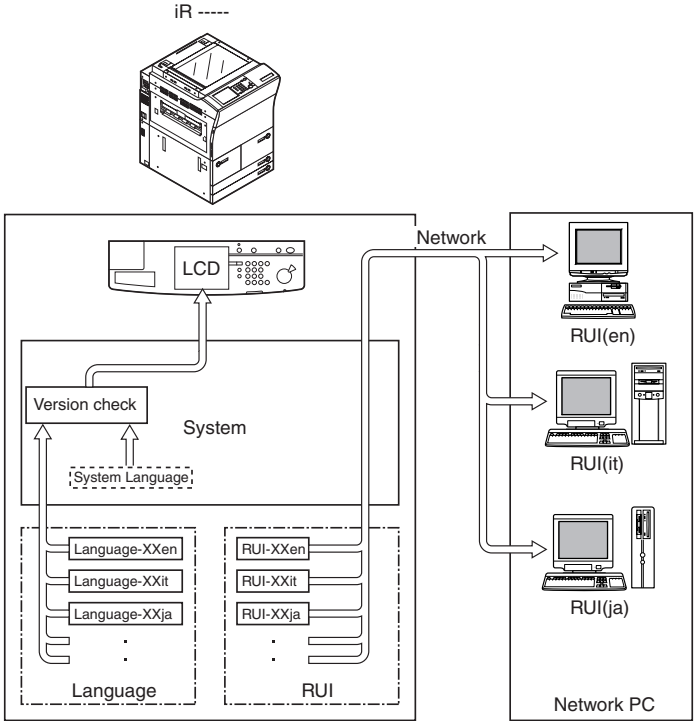
F-17-23

If the machine fails to start up, format BOOTDEV using HDFormat, and then download system software to be stored in the HDD such as System, Language, and RUI.

---

## 17.4.2 Downloading RUI, and Language

### 17.4.2.1 Outline



F-17-24

T-17-3

### Control Panel LCD Display Language

Check the version of System and Language.

1. If correct, You can switch languages by making the following selections in user mode:  
common settings>display language change.
2. If not correct, 'E744' will be indicated, and System Language will be used when the main power is turned off and then on.

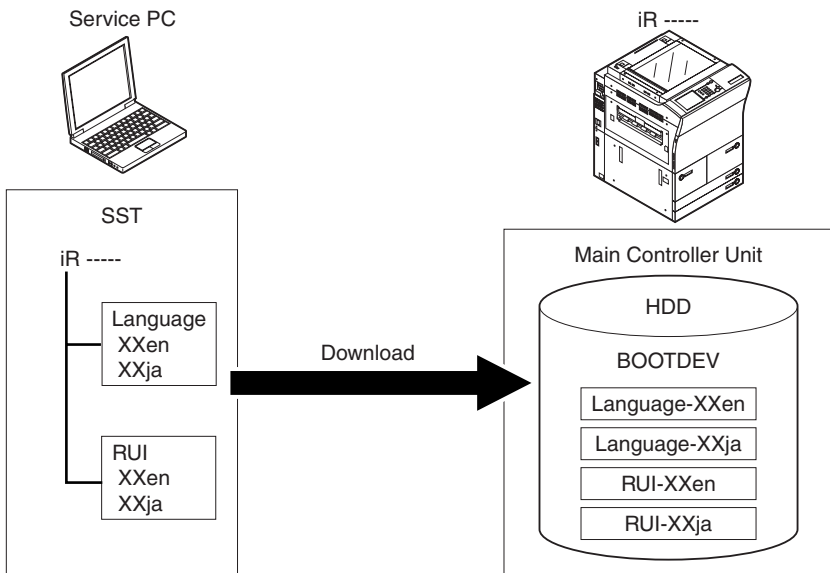
## T-17-4

## RUI Display Language

Select using the RUI.

You can select a different language for a different PC.

<Language Code>	<Language>
de	German
en	English
fr	French
it	Italian
ja	Japanese



F-17-25

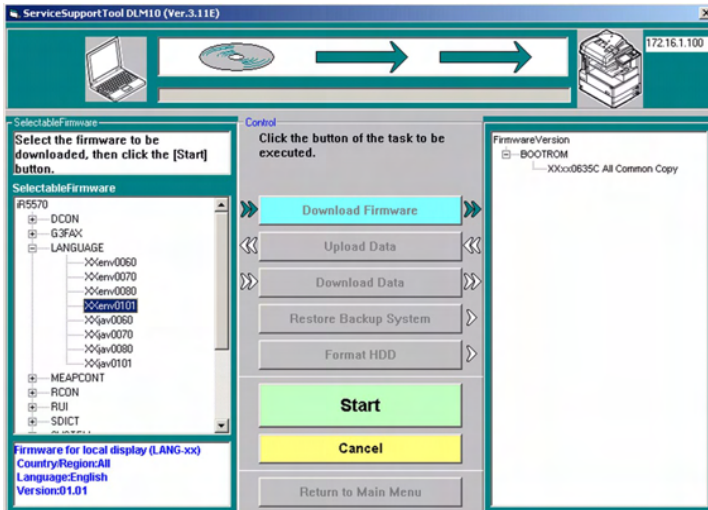


### 17.4.2.2 Downloading Procedure

You can run a download session in either normal or safe mode.

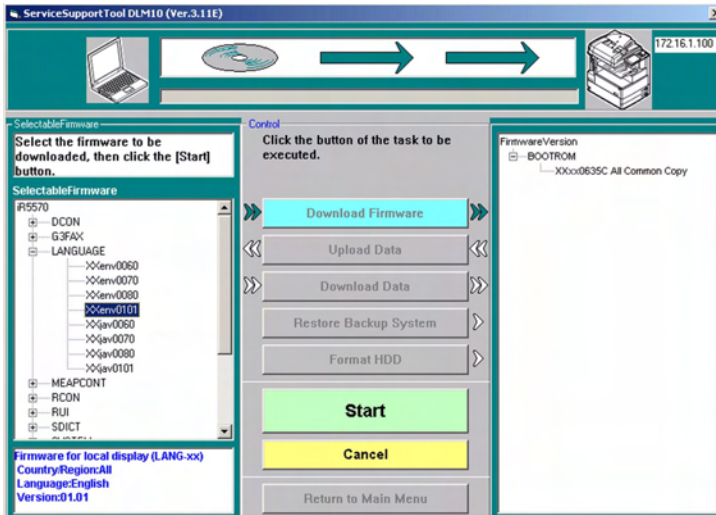
[In the Case of Language]

- 1) Select the version of Language to download.



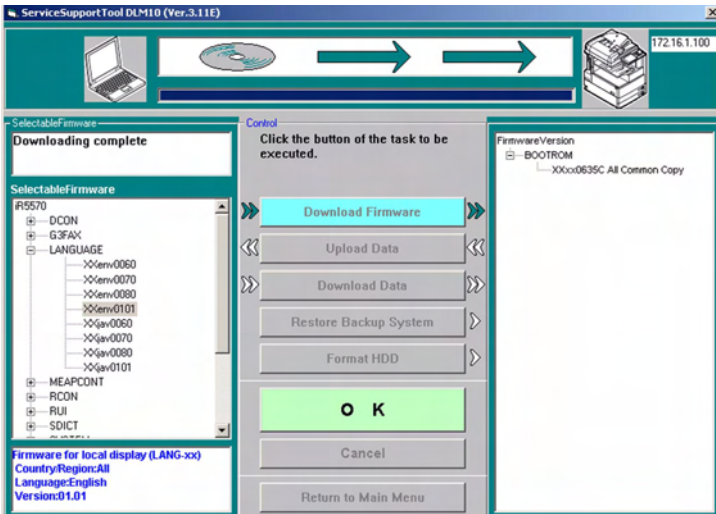
F-17-26

2) Click [Start].



F-17-27

3) When the result of the downloading session has appeared, click [OK].



F-17-28

- 4) If you want another downloading session, see the appropriate instructions.
  - 5) When you are done, turn off and then on the main power.
  - 6) See the status of upgrading indicated on the control panel. When a message appears asking you to turn off and then on the machine, turn off and then on the main power.
- 



Be sure never to turn off the power while the machine is executing a downloading session or writing downloaded software. Otherwise, the ongoing session will be suspended and the machine may fail to start up.

If the machine fails to start up, format BOOTDEV using HDFormat, and then download system software to be stored in the HDD such as System, Language, and RUI.

---

## 17.4.3 Downloading SDICT

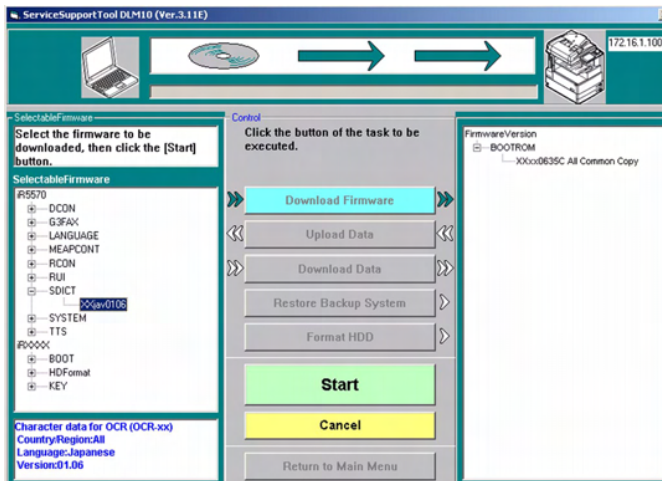
### 17.4.3.1 Outline

SDICT is a dictionary used when converting image data read by the reader unit into character code (OCR processing). This function is used in conjunction with the PDF Generation Expansion Kit.

### 17.4.3.2 Downloading Procedure

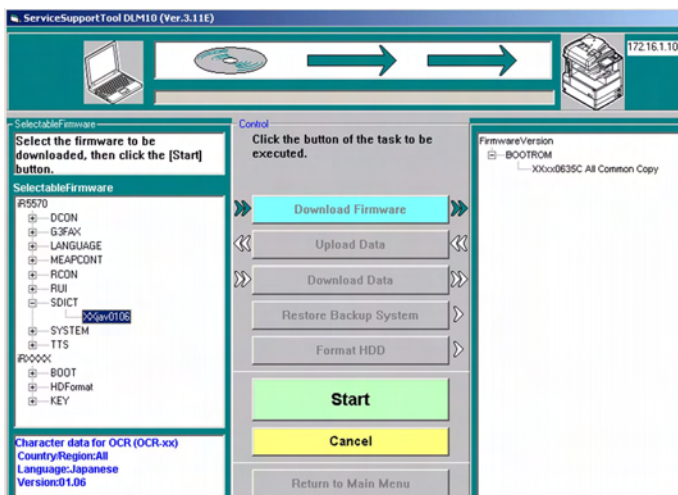
You can run a downloading session in either normal or safe mode.

1) Select the version of SDICT to download.



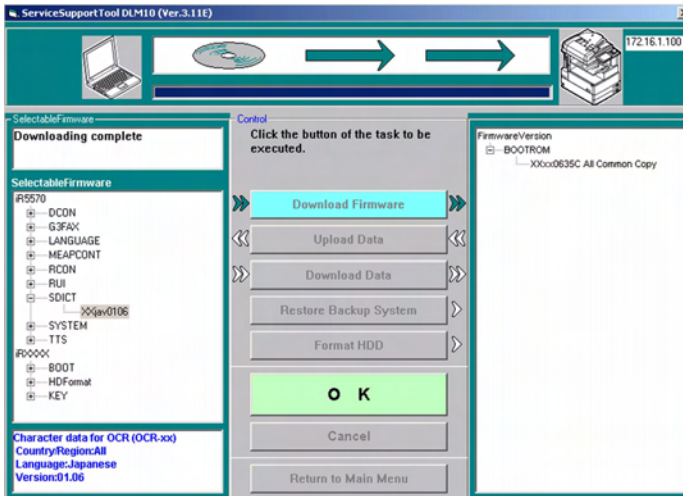
F-17-29

2) Click [Start].



F-17-30

3) When the session has ended, click [OK].



F-17-31

- 4) If you want to run another downloading session, see the appropriate instructions.
  - 5) When you are done, turn off and then on the main power.
  - 6) See the status of upgrading indicated on the control panel. When a message appears asking you to turn off and then on the switch, turn off and then on the main power.
- 



Be sure never to turn off the machine while it is executing a downloading session or writing downloaded software. Otherwise, the ongoing session will be suspended and the machine may fail to start up.

If the machine fails to start up, format BOOTDEV using HDFormat, and then download system software to be stored in the HDD such as System, Language, and RUI.

---

## 17.4.4 Downloading MEAPCONT

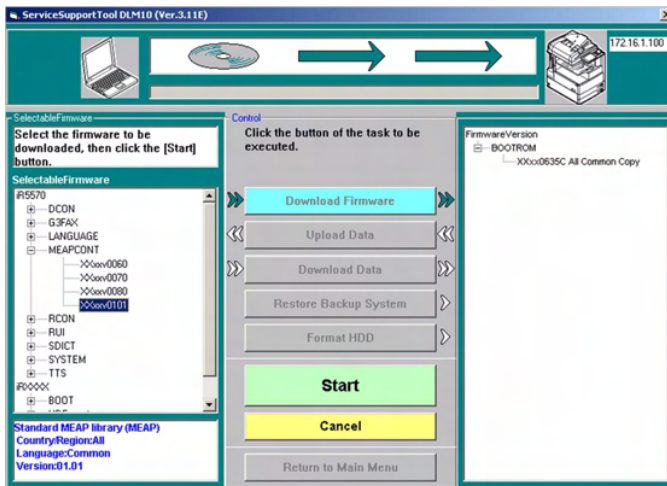
### 17.4.4.1 Outline

MEAPCONT is a standard library used in conjunction with a MEAP application.

### 17.4.4.2 Downloading Procedure

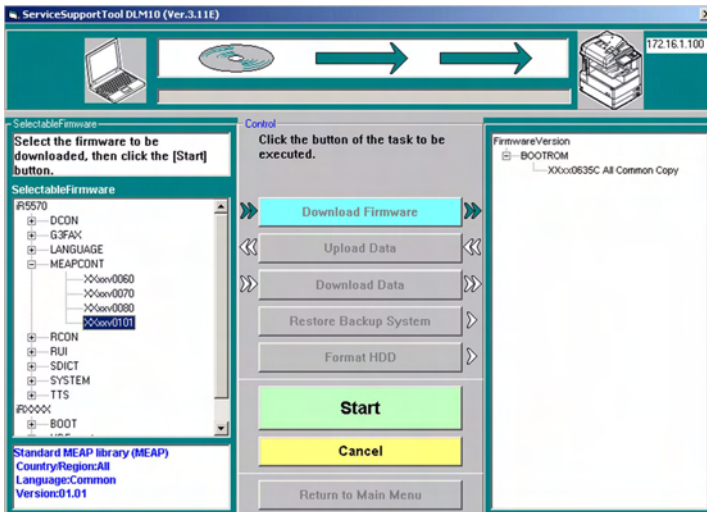
You can execute a downloading session in either normal or safe mode.

1) Select the version of MEAPCONT you want to download.



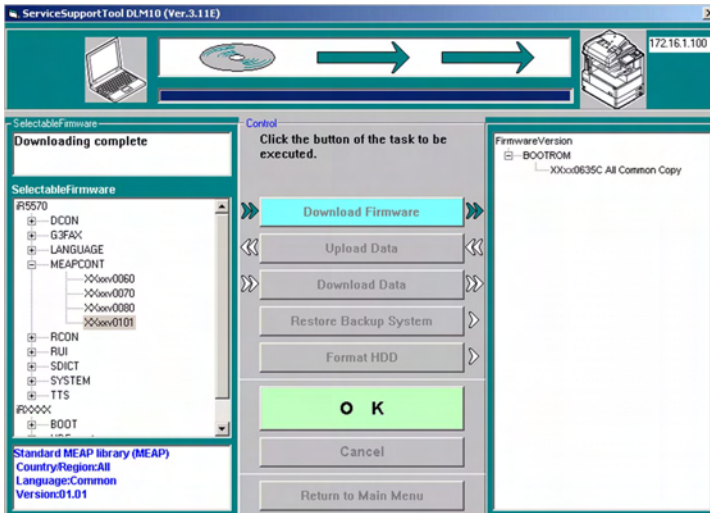
F-17-32

2) Click [Start].



F-17-33

3) When the downloading session has ended, click [OK].



F-17-34

- 4) If you want to run another downloading session, see the appropriate instructions.
  - 5) When you are done, turn off and then on the main power.
  - 6) See the status of upgrading indicated on the control panel. When a message appears asking you to turn off and then on the switch, turn off and then on the main power.
- 



Be sure never to turn off the machine while it is executing a downloading session or writing downloaded software. Otherwise, the ongoing session will be suspended and the machine may fail to start up.

If the machine fails to start up, format BOOTDEV using HDFormat, and then download system software to be stored in the HDD such as System, Language, and RUI.

---

## 17.4.5 Downloading KEY

### 17.4.5.1 Outline

KEY is in common among the models that have the new iR controller, and is registered under "iRXXXX" on the SST.

---



KEY has 2 types (XXxc and XXxp). Be sure to download both types.

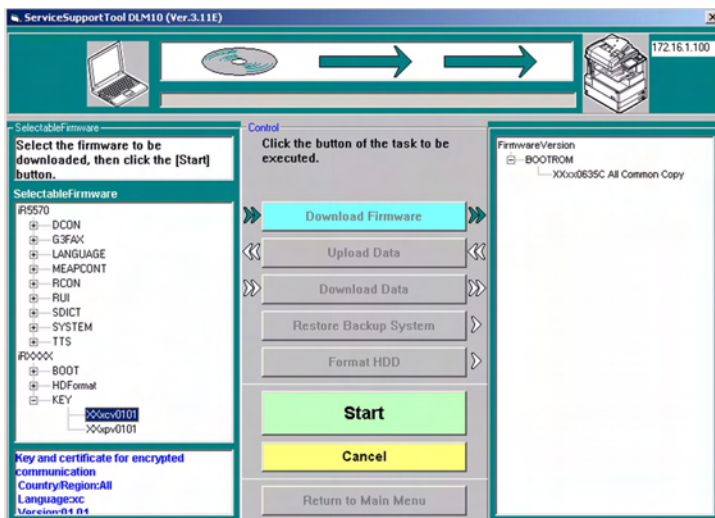
---

### 17.4.5.2 Downloading Procedure

You can execute a download session in either normal or safe mode.

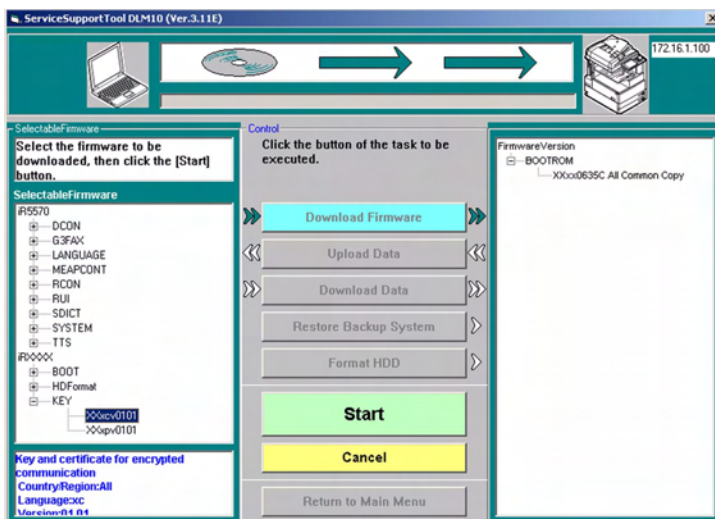
- 1) Select the version of KEY you want to download.





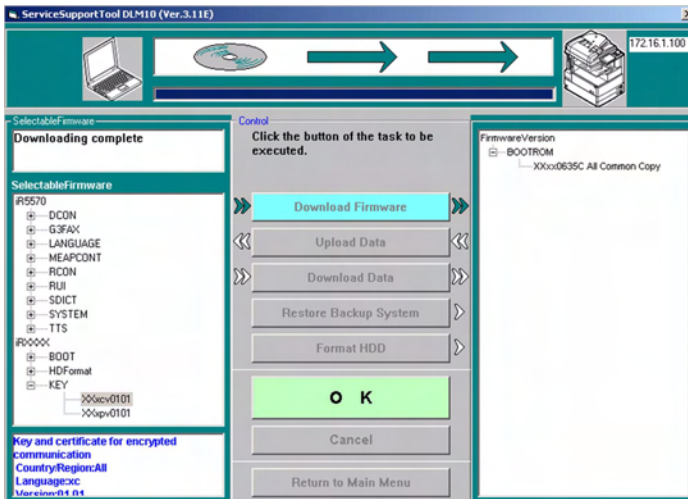
F-17-35

2) Click [Start].



F-17-36

- 3) When the downloading session has ended, click [OK].



F-17-37

- 4) If you want to execute a different downloading session, see the appropriate instructions.
- 5) When you are done, turn off and then on the main power.
- 6) See the status of upgrading indicated on the control panel of the machine. When a message appears asking you to turn off and then on the switch, turn off and then on the main power.



Be sure never to turn off the machine while it is executing a downloading session or writing downloaded system software. Otherwise, the ongoing write operation will be suspended and the machine may fail to start up.

If the machine fails to start up, format BOOTDEV using HDFormat, and then download system software to be stored in the HDD such as System, Language, and RUI.

## 17.4.6 Downloading the TTS

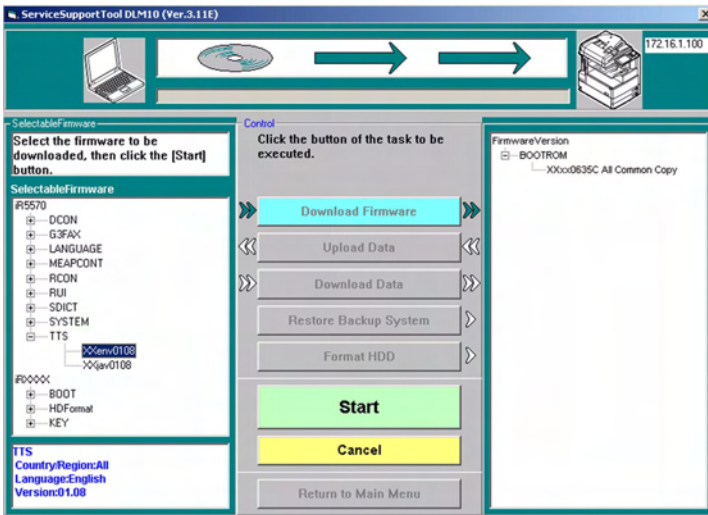
### 17.4.6.1 Outline

TTS is voice dictionary data when the voice guidance board is installed.

### 17.4.6.2 Downloading Procedure

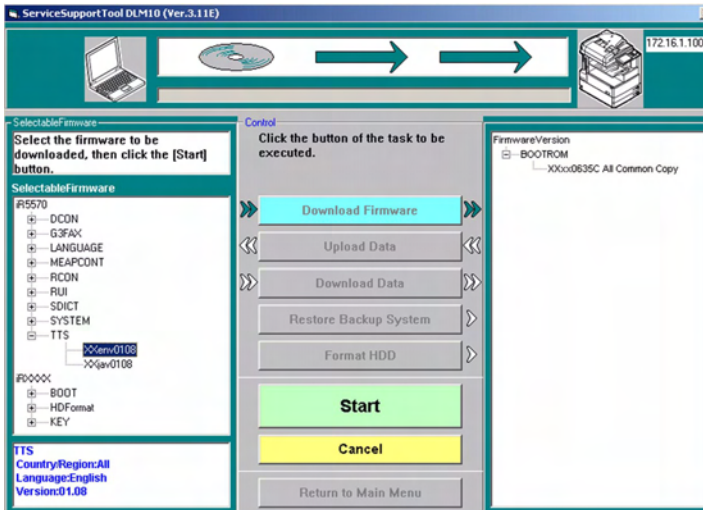
You can execute a download session in either normal or safe mode.

1) Select the version of TTS you want to download.



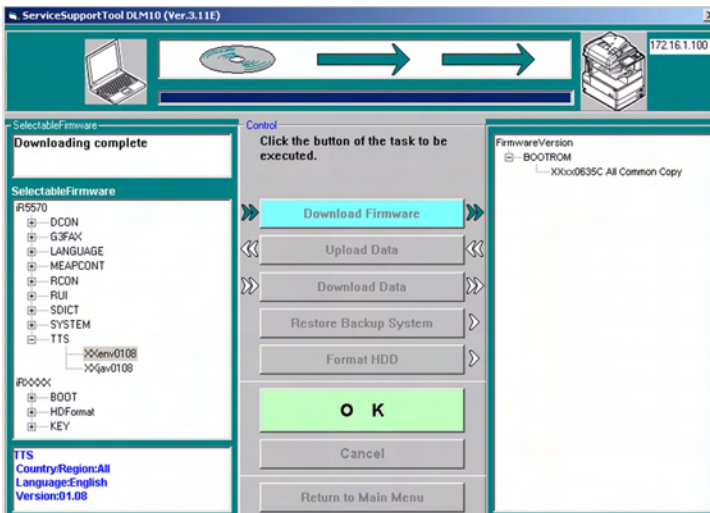
F-17-38

2) Click [Start].



F-17-39

3) When the downloading session has ended, click [OK].



F-17-40

- 4) If you want to execute a different downloading session, see the appropriate instructions.
  - 5) When you are done, turn off and then on the main power.
  - 6) See the status of upgrading indicated on the control panel of the machine. When a message appears asking you to turn off and then on the switch, turn off and then on the main power.
- 



Be sure never to turn off the machine while it is executing a downloading session or writing downloaded system software. Otherwise, the ongoing write operation will be suspended and the machine may fail to start up.

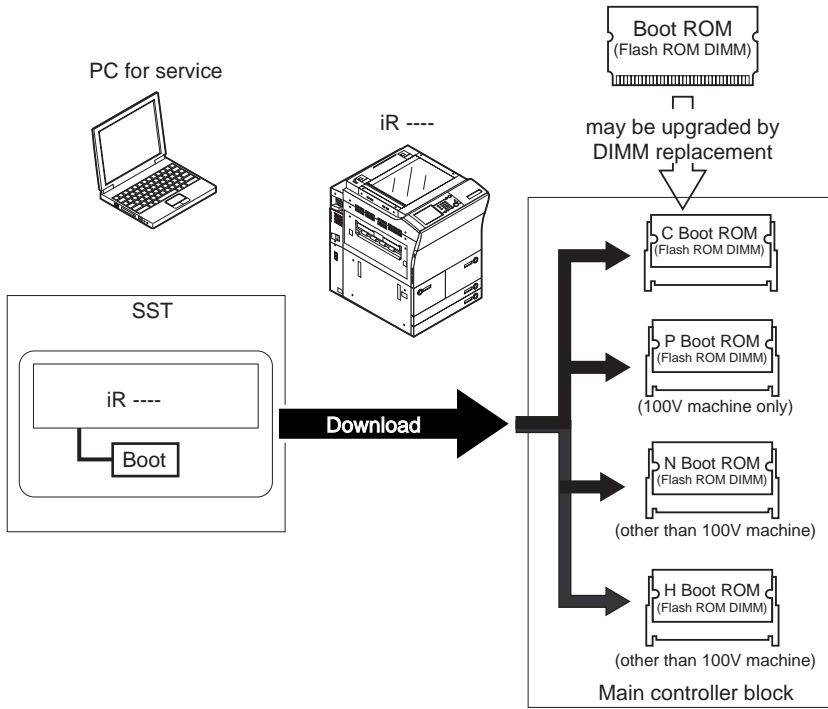
If the machine fails to start up, format BOOTDEV using HDFormat, and then download system software to be stored in the HDD such as System, Language, and RUI.

---

## 17.4.7 Downloading BOOT

### 17.4.7.1 Outline

Boot registered in the SST may be used in common for various types of boot ROMs. You cannot change the type of a boot ROM by means of downloading.



F-17-41

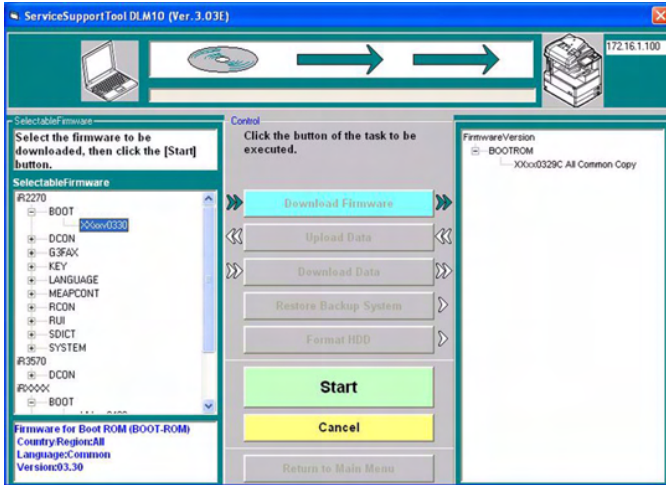


If a downloading session fails, you will have to replace the boot ROM.

### 17.4.7.2 Downloading Procedure

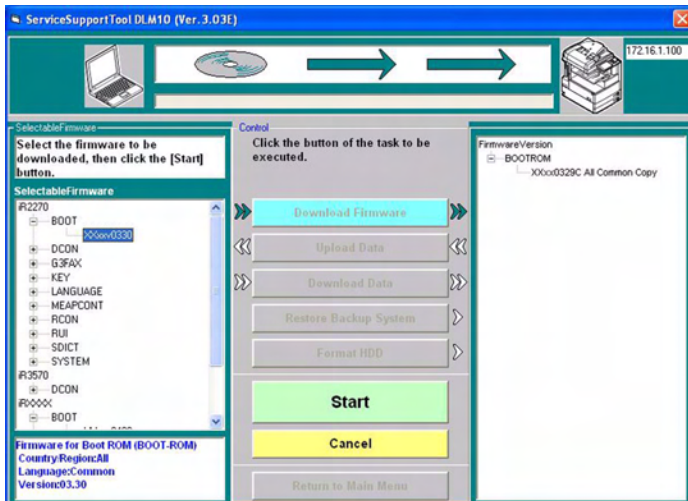
You can execute a downloading session in either normal or safe mode.

1) Select the version of BOOT to download.



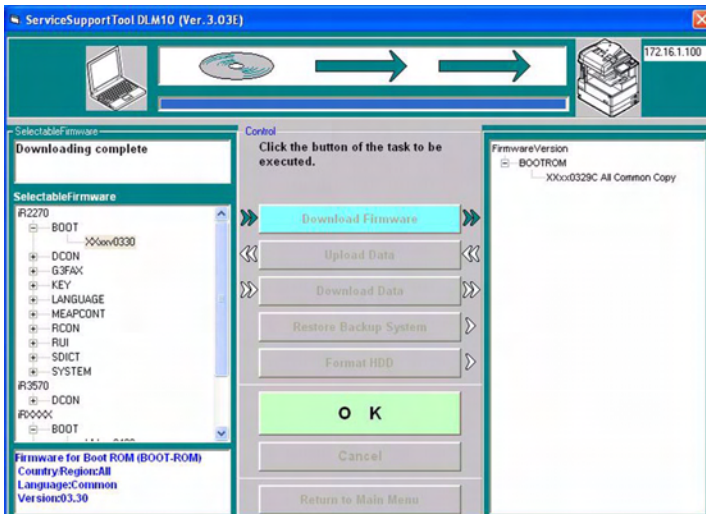
F-17-42

2) Click [Start].



F-17-43

3) When the downloading session has ended, click [OK].



F-17-44



- 4) If you want to execute a different downloading session, see the appropriate instructions.
  - 5) When you are done, turn off and then on the main power.
  - 6) See the status of upgrading indicated on the control panel of the machine. When a message appears asking you to turn off and then on the switch, turn off and then on the main power.
- 



Be sure never to turn off the machine while it is executing a download session or writing downloaded system software. Otherwise, the ongoing write operation will be suspended and the machine may not start up.

If the machine fails to start up, format BOOTDEV using HDFormat, and then download system software to be stored in the HDD such as System, Language, and RUI.

---

---



If the machine fails to start up, be sure to replace the boot ROM.

---

## 17.4.8 Downloading Dcon and Rcon

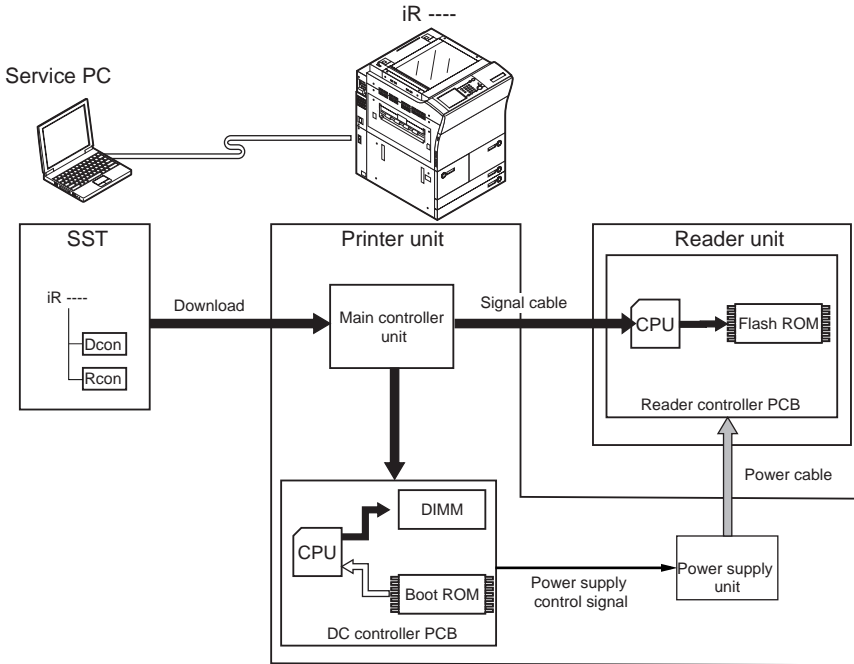
### 17.4.8.1 Outline

Dcon/Rcon is downloaded by way of the main controller unit.

---



- The DC controller PCB/reader controller PCB is equipped with a boot ROM, and downloading may be attempted multiple times in the event of failure.
  - The system software used in the DC controller differs between the iR3570/3570 and the iR2870/2270. The system software designed for the iR4570/3570 is stored as iR3570, while the system software designed for the iR2870/2270 is stored as iR2270. The machine has a mechanism to read the appropriate system software. It is a good idea to download both types of system software.
-



F-17-45



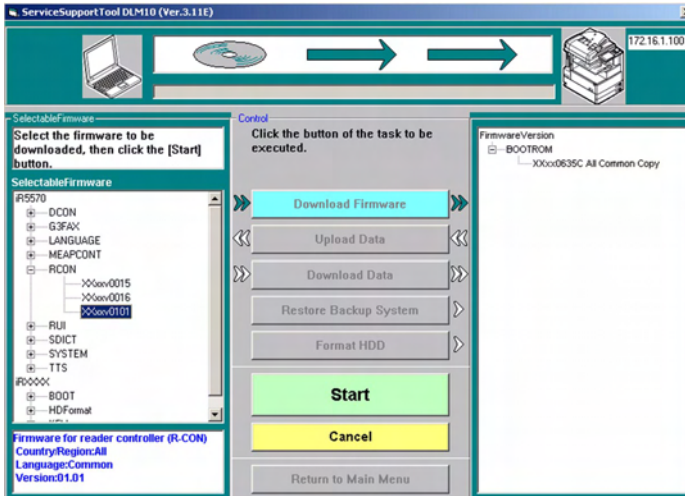
You will not be able to download Rcon unless the DC controller has started up normally (as, otherwise, the power supply control signal will not be valid and, as a result, the reader unit remains without power).

### 17.4.8.2 Downloading Procedure

You can execute a downloading session in either normal or safe mode. In the case of safe mode, however, you will not be able to find out the version of Dcon/Rcon, causing all downloading to occur (overwriting of the same version and downgrading).

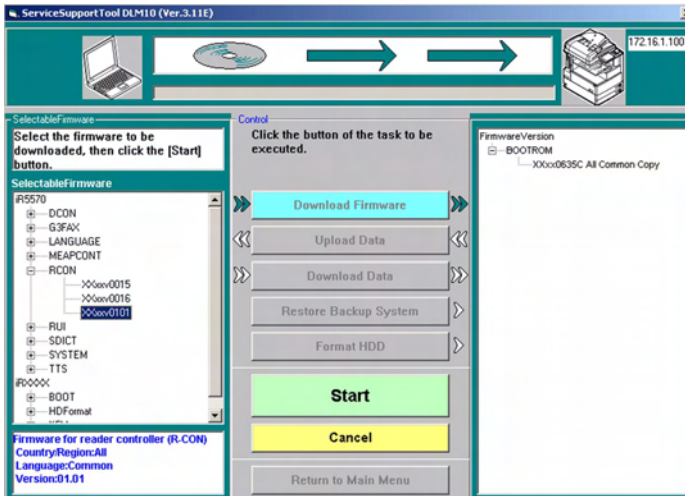
[Downloading Rcon]

- 1) Select the version of Rcon to download.



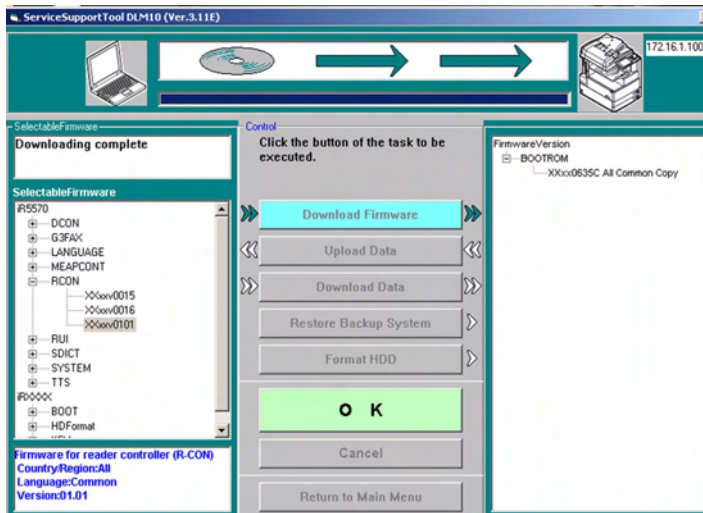
F-17-46

2) Click [Start].



F-17-47

3) When the downloading session has ended, click [OK].



F-17-48

- 4) If you want to execute a different downloading session, see the appropriate instructions.
- 5) When the downloading session has ended, turn off and then on the machine.
- 6) See the status of upgrading indicated on the control panel of the machine. When a message appears asking you to turn off and then on the machine, turn off and then on the machine.

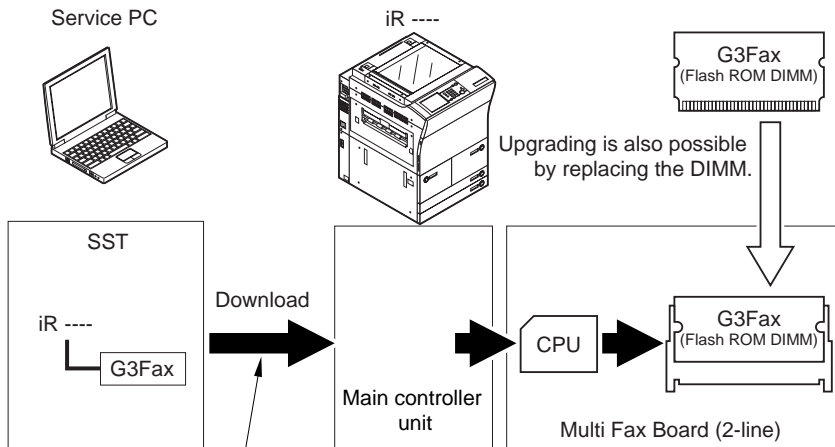


Be sure never to turn off the machine while it is executing a downloading session or writing downloaded system software. Otherwise, the machine may not be able to start up. If the machine fails to start up, format BOOTDEV using HDFormat, and then download system software to be stored in the HDD such as System, Language, and RUI.

## 17.4.9 Downloading G3 FAX

### 17.4.9.1 Outline

The Multi Fax Board-D1 (2-line) comes with a control CPU and its system software, which is downloaded by way of the main controller unit.



Downloading is possible only in normal mode.

F-17-49

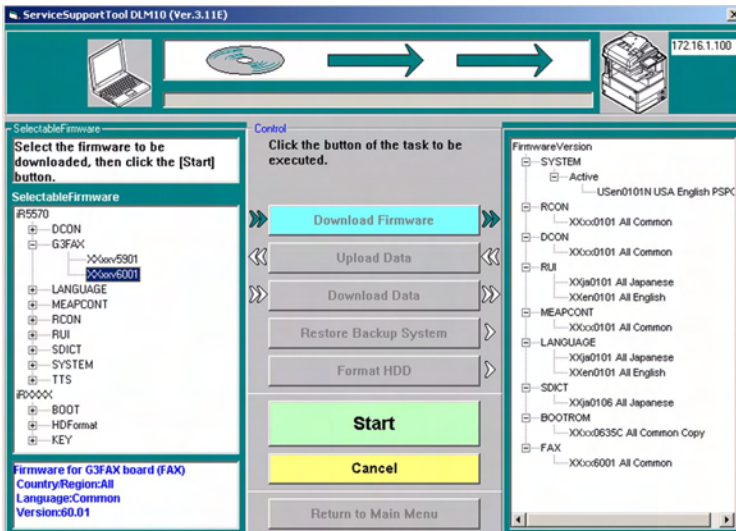


If a downloading session fails, you will have to replace the flash ROM DIMM.

## 17.4.9.2 Downloading Procedure

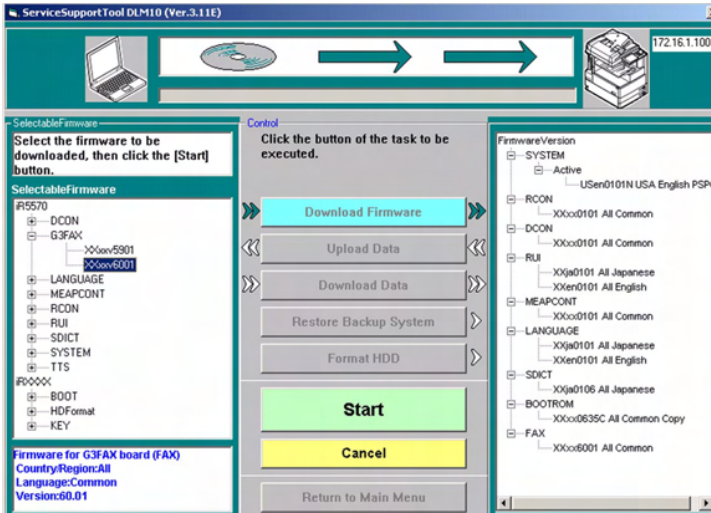
You will have to use normal mode for downloading.

1) Select the version of G3FAX you want to download.



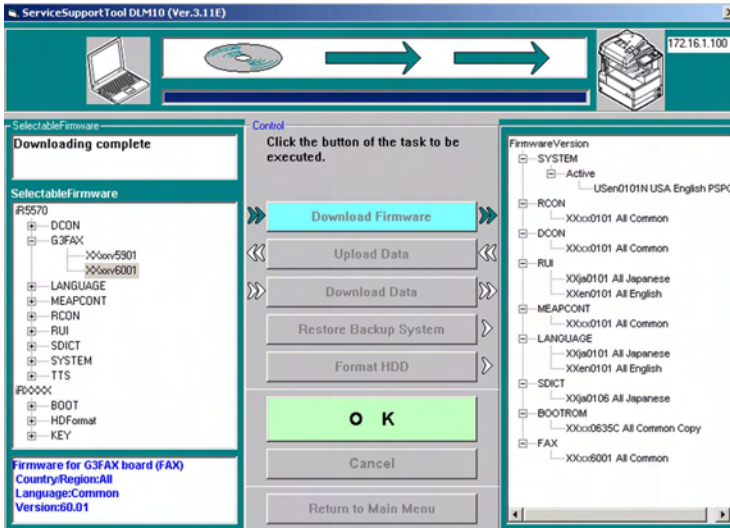
F-17-50

2) Click [Start].



F-17-51

3) When the downloading session has ended, click [OK].



F-17-52

- 4) When you are done, turn off and then on the main power of the machine.
- 5) See the status of upgrading indicated on the control panel of the machine. When a message appears asking you to turn off and then on the machine, turn off and then on the main power.



You will not be able to download G3Fax twice in succession. (Once downloading is executed, the board will be reset, causing download mode to end.)

Be sure never to turn off the machine while it is executing a downloading session or writing downloaded system software. Otherwise, the write operation (to the flash ROM DIMM of the G3 fax board) may fail, preventing board functions. In the event the board fails to function, be sure to replace the flash ROM DIMM found on the G3 fax board.

## 17.4.10 Uploading and Downloading Backup Data

### 17.4.10.1 Outline

SramImg is data that is stored in the SRAM of the main controller PCB, while MeapBack is a MEAP application and its data stored on the HDD.

T-17-5

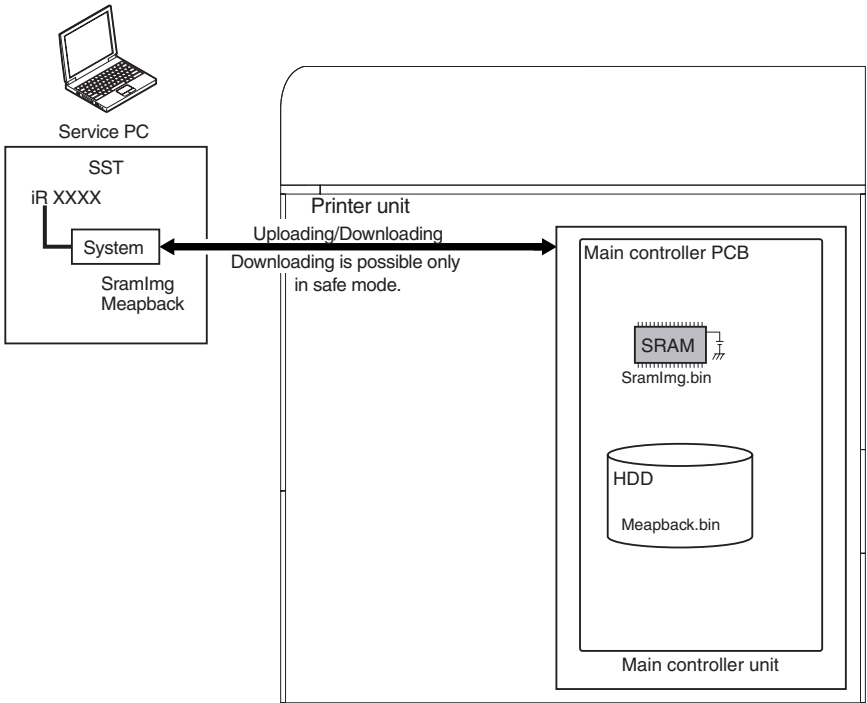
<b>Backup data</b>	<b>Files to select for downloading/uploading</b>
Main controller PCB backup RAM	SramImg.bin
MEAP application for R&D	MeapBack.bin Sublog.txt



- If you are replacing the main controller PCB, you can transfer such data as parts counter readings by uploading the data before replacement and downloading it after replacement.
- If you are replacing the HDD or executing 'ALL' or 'APL\_MEP', you can temporarily set aside MEAP applications by uploading MeapBack before execution and downloading it after execution.



- Only the machine uploaded can download SramImg and MeapBack.

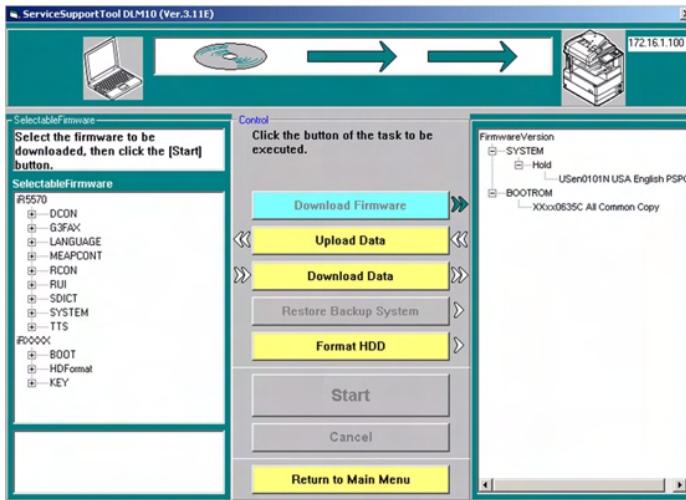


F-17-53

## 17.4.10.2 Uploading Procedure

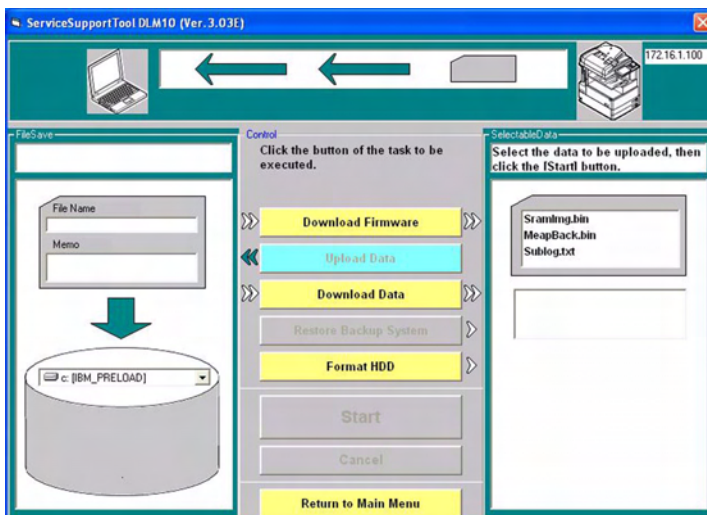
Use safe mode for uploading.

1) Select [Upload Data].



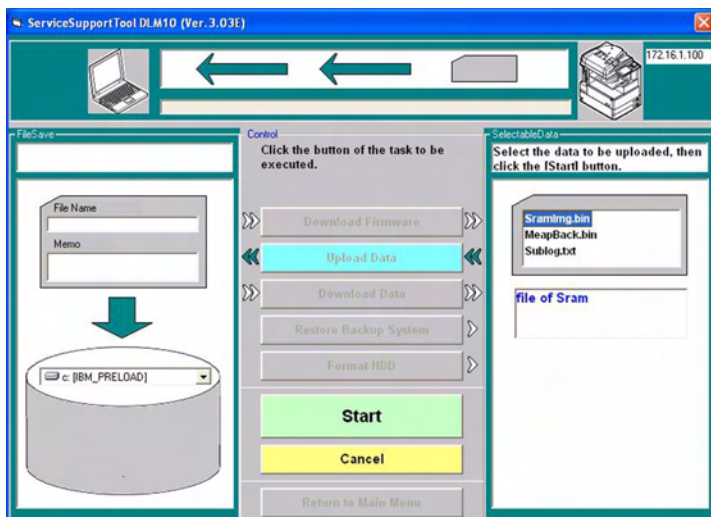
F-17-54

2) Select the data you want to back up.



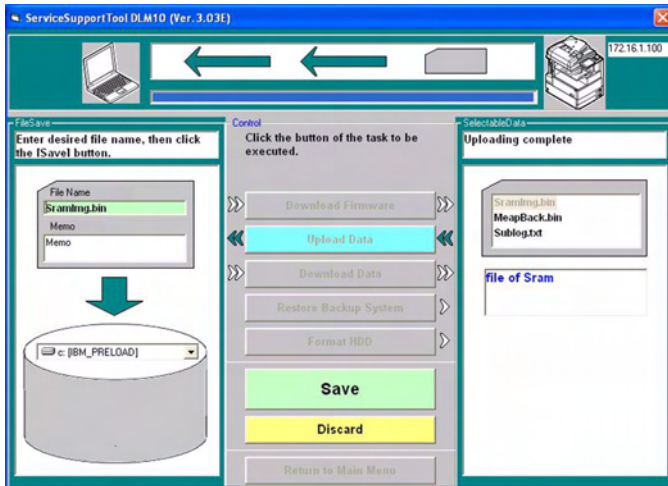
F-17-55

3) Click [Start].



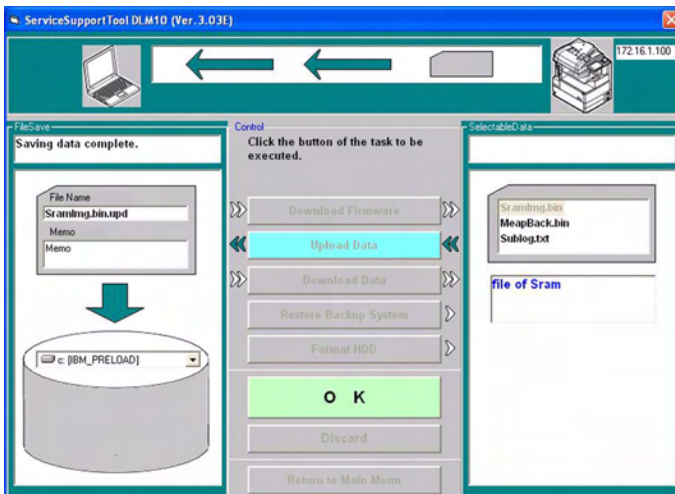
F-17-56

- 4) Enter a name of the file to be saved, and fill out a memo as needed. Then, click the save button.



F-17-57

- 5) Click [OK].

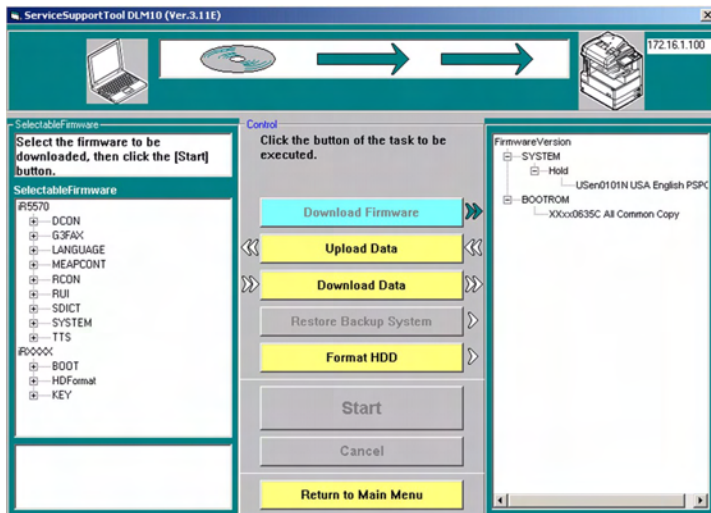


F-17-58

### 17.4.10.3 Downloading Procedure

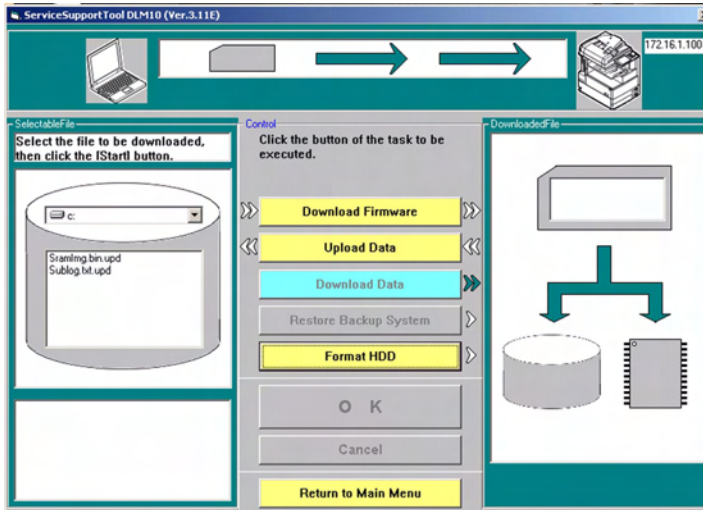
Use safe mode for downloading.

1) Select [Download Data].



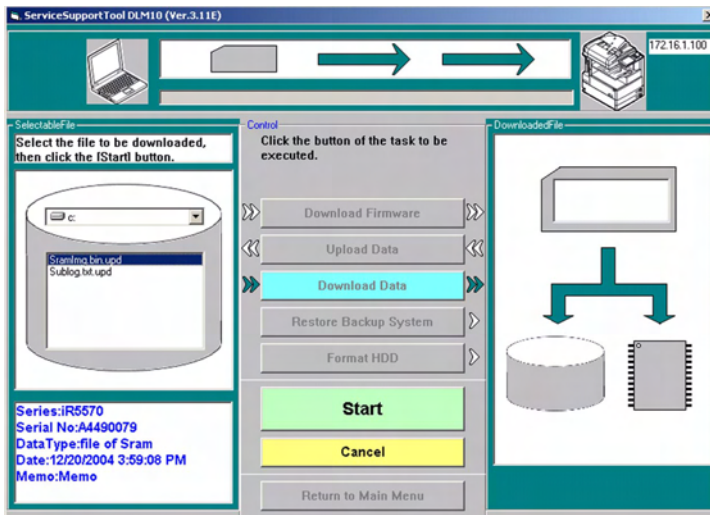
F-17-59

2) Select the data to download.



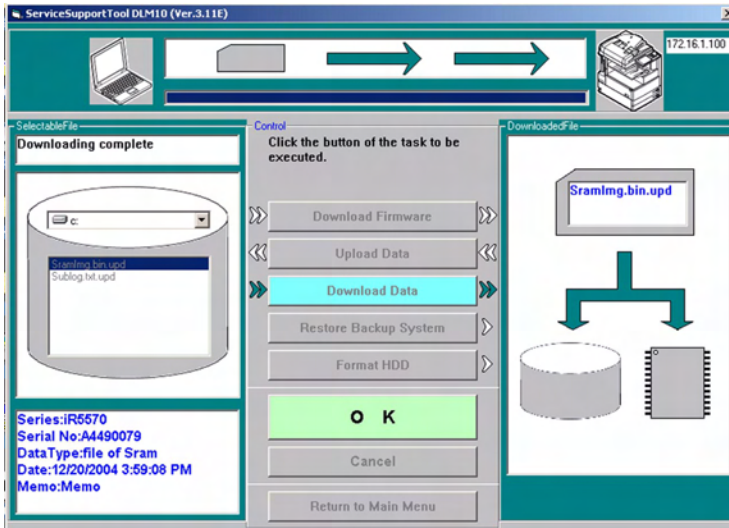
F-17-60

3) Click [Start].



F-17-61

4) Click [OK].



F-17-62

- 5) When you are done with downloading, turn off and then on the main power.
- 6) See the status of upgrading indicated on the control panel of the machine. When a message appears asking you to turn off and then on the switch, turn off and then on the main power.



Be sure not to turn off the machine while it is executing a downloading session or writing downloaded system software. The write operation will be suspended, and the machine may fail to start up.

If the machine fails to start up, format BOOTDEV using HDFormat, and then download system software to be stored in the HDD such as System, Language, and RUI.

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# Chapter 18

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## Service Tools



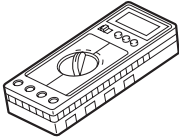
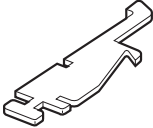
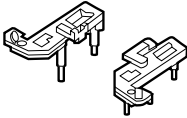
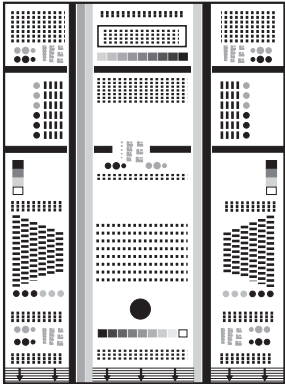
# Contents

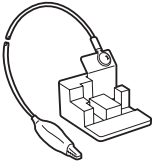
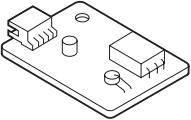
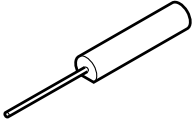
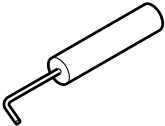
18.1 List of Special Tools .....	18-1
18.2 List of Solvents/Oils .....	18-3

## 18.1 List of Special Tools

The following special tools will be needed in addition to the standard tools set:

T-18-1

No.	Name	Toll No.	Shape	Rank	Remarks
1	Digital multimeter	FY9-2002		A	Used when making electrical checks.
2	Door switch	TKN-0093		A	
3	Mirror positioning tool (front, rear)	FY9-3009		B	Used when positioning the No. 1/No. 2 mirror.
4	NA-3 Test Sheet	FY9-9196		A	Used when adjusting/checking images.

No	Name	Toll No.	Shape	Rank	Remarks
5	Potential sensor electrode	FY9-3012		B	Used to make zero-level checks on potential sensors.
6	Environment sensor checking sensor	FY9-3014		B	Used to check the environment sensor.
7	Tester extension pin	FY9-3038		A	Used when making electrical checks.
8	Tester extension pin (L-shaped)	FY9-3039		A	Used when making electrical checks.

T-18-2

Rank:

A: each service person is expected to carry one.

B: each group of five persons is expected to carry one.

C: each workshop is expected to carry one.

## 18.2 List of Solvents/Oils

T-18-3

No.	Name	Uses	Composition	Remarks
1	Alcohol	Cleaning: e.g., glass, plastic, rubber parts; external covers.	Fluorescent family hydrocarbon, alcohol, surface activating agent, water	- Do not bring near fire. - Procure locally. - Substitute: IPA (isopropyl alcohol)
2	Solvent	Cleaning: metal part; oil, toner.	Fluorescent family hydrocarbon, chlorine family hydrocarbon, alcohol.	- Do not bring near fire. - Procure locally.
3	Heat resisting grease	Lubrication: fixing drive parts	Mineral family lithium soap, molybdenum disulfide,	Tool No.: CK-0427 (500 g/ can)
4	Lubricant		Mineral oil (paraffin family)	Tool No.: CK-0524 (100 cc)
5	Lubricant	Lubrication: drive parts, friction parts	Silicone oil	Tool No.: CK-0551 (20 g)
6	Drum cleaning powder	Cleaning: photosensitive drum	Cerium oxide	Tool No.: CK-0429
7	Lubricant	Lubrication: scanner rail	Silicone oil	Tool No.: FY9-6011 (50 cc)
8	Conducting grease	Lubrication: drum heater contact	Ether, polytetra fluethylene	Tool No.: FY9-6008 (10 g)

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# Appendix

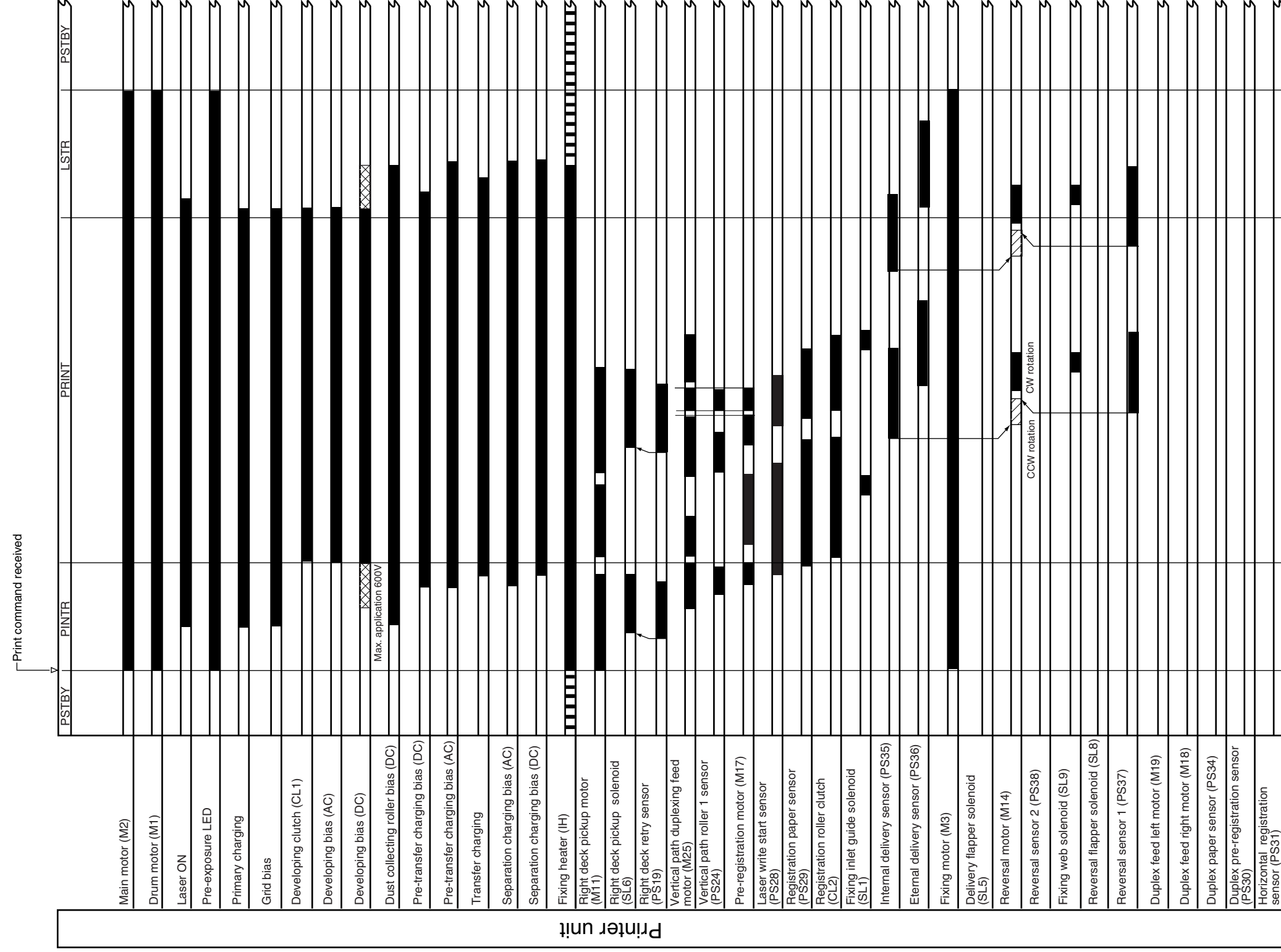
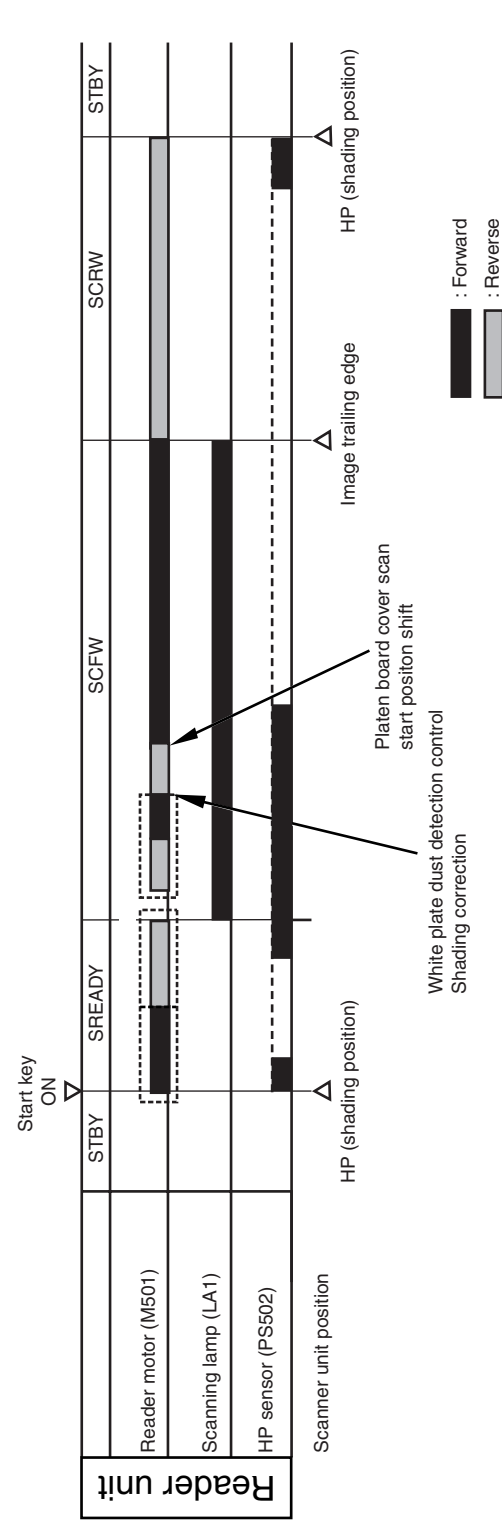
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	Copying/Printing (A4, 2 Sheets, Single-Sided, Direct; Right Deck (face-down delivery)) ..	1
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# 1 General Timing Chart

Copying/Printing (A4, 2 Sheets, Single-Sided, Direct; Right Deck (face-down delivery))



## 2 General Circuit Diagram

Signal Names

List Of Signals

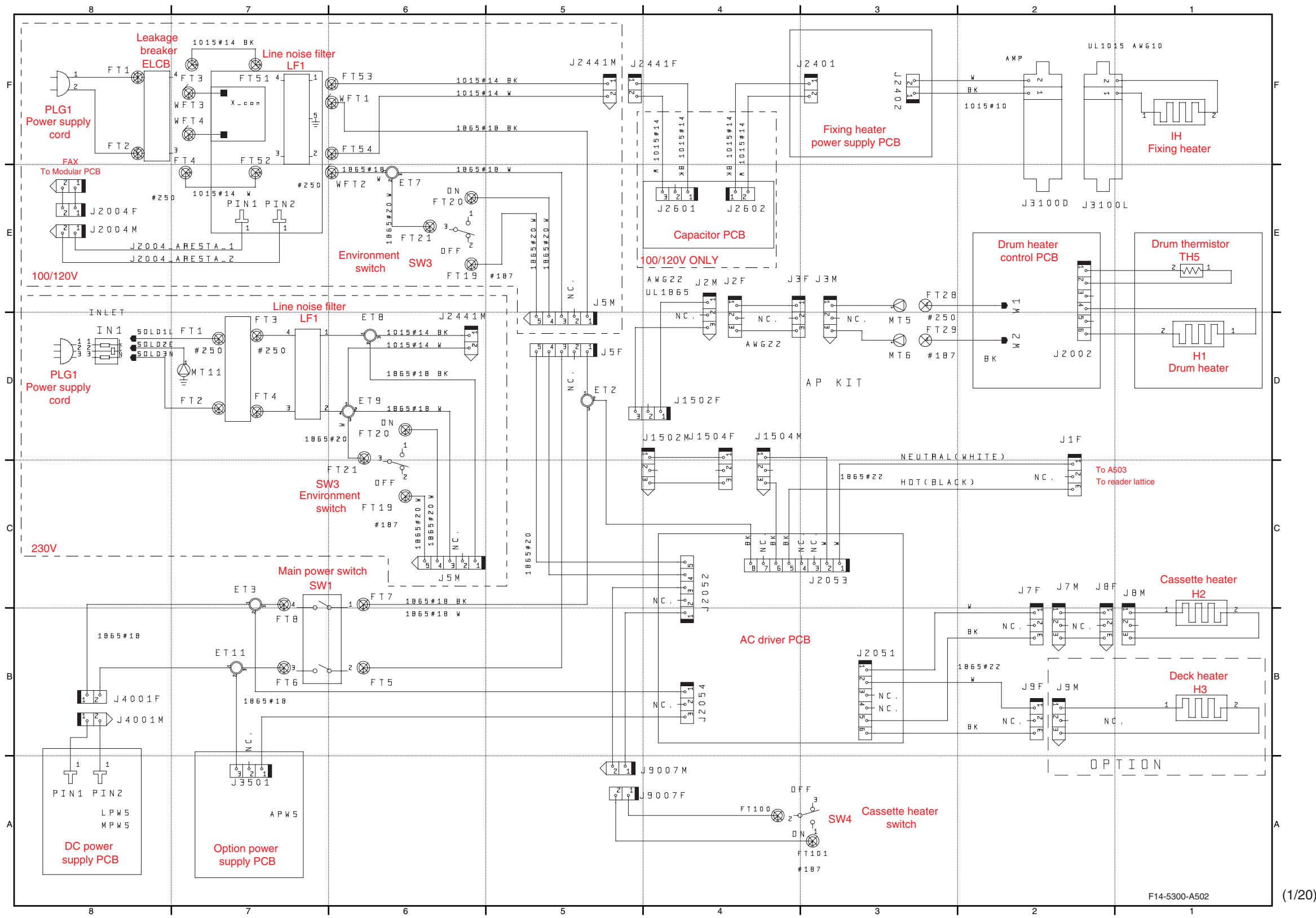
T-2-1

Notation	Signal name	Notation	Signal name
APKIT_TH_AD	AP kit inside temperature detection signal	CONTROLLER_FAN_DEETCT	controller fan lock detection signal
BOTTLE_COVER_SNS_DTC	toner bottle door open/closed detection signal	CONTROLLER_FAN_H/L	controller fan full-speed/half-speed drive signal
C1/RDK_SL_ON	right deck pickup solenoid drive signal	CURL_FAN_DETECT	curl-removing fan lock detection signal
C3/C4_FEED_MOTOR_A,A*,B,B*	cassette pickup motor drive signal A, A*, B, B*	CURL_FAN_ON	curl-removing fan drive signal
C3_LENGTH_1	C3 paper length detection signal 1	DC_SUPPLY_FAN_DETECT	DC power supply fan lock detection signal
C3_LENGTH_2	C3 paper length detection signal 2	DC_SUPPLY_FAN_DETECT	DC power supply fan lock detection signal
C3_LIFTER_MOTOR_ON	C3 lifter motor drive signal	DC_SUPPLY_FAN_ON	DC power supply fan drive signal
C3_LIFTER_ON	C3 lifter motor drive signal	DC_SUPPLY_FAN_ON	DC power supply fan drive signal
C3_LIFTER_SENSE	C3 lifter detection signal	DEL_JAM_SENSE	delivery residual paper detection signal
C3_OPEN_SENSOR	C3 open detection signal	DELIVERY_M_A,A*,B,B*	delivery motor drive signal A, A*, B, B*
C3_PAPER_SENSOR	C3 paper sensor	DEV_CL_ON	developing clutch drive signal
C3_PICKUP_SL_ON	C3 pickup solenoid drive signal	DEV_TONER_SENSOR	developing assembly toner detection signal
C3_PLEVEL_VR	C3 paper level detection signal	DRUM_M_ON	drum motor drive signal
C3_RETRY_SENSOR	C3 retry sensor paper detection signal	DUP_FEED_R_A,A*,B,B*	duplexing feed right motor drive signal A, A*, B, B*
C3_VOLUME_DTC	C3 paper width detection signal	DUPLEX_FAN_DETECT	duplexing feed fan lock detection signal
C4_LENGTH_0	C4 paper length detection signal 0	DUPLEX_FAN_ON	duplexing feed fan drive signal
C4_LENGTH_1	C4 paper length detection signal 1	DUPLEX_PAPER_SENSOR	duplexing paper detection signal
C4_LIFTER_MOTOR_ON	C4 lifter motor drive signal	FEED_FAN_DET	feed fan lock detection signal
C4_LIFTER_OM	C4 lifter motor drive signal	FEED_FAN_H/L	feed fan full-speed/half-speed drive signal
C4_LIFTER_SENSE	C4 lifter detection signal	FLAP_SL_ON	paper deflecting plate solenoid drive signal
C4_OPEN_SENSOR	C4 open detection signal	FRONT_DOOR_DETECT	front door closed detection signal
C4_PAPER_SENSOR	C4 paper sensor	FSR_ENT_SNS	fixing inlet paper detection signal
C4_PICKUP_SL_ON	C4 pickup solenoid drive signal	FSR_EXIT_SNS	fixing outlet paper detection signal
C4_PLEVEL_VR	C4 paper level detection signal	FSR_M_ON	fixing motor drive signal
C4_RETRY_SENSOR	C4 retry sensor paper detection signal	FUSER_F_SL_UP	fixing inlet guide solenoid drive signal (ascent)
C4_VOLUME_DTC	C4 paper width detection signal	FUSER_SL_DOWN	fixing inlet guide solenoid drive signal (descent)
CIR_DUCT_FAN_DTC	circulation duct fan lock detection signal	H_REGI_A,A*,B,B*	horizontal registration motor drive signal A, A*, B, B*
CIR_DUCT_FAN_H/L	circulation duct fan full-speed/half-speed drive signal	H_REGI_HP	horizontal registration HP detection signal
CLAW_JAM_SNS	claw jam detection signal	HEAT_DISCHARGE_FAN_DETECT	heat discharge fan lock detection signal

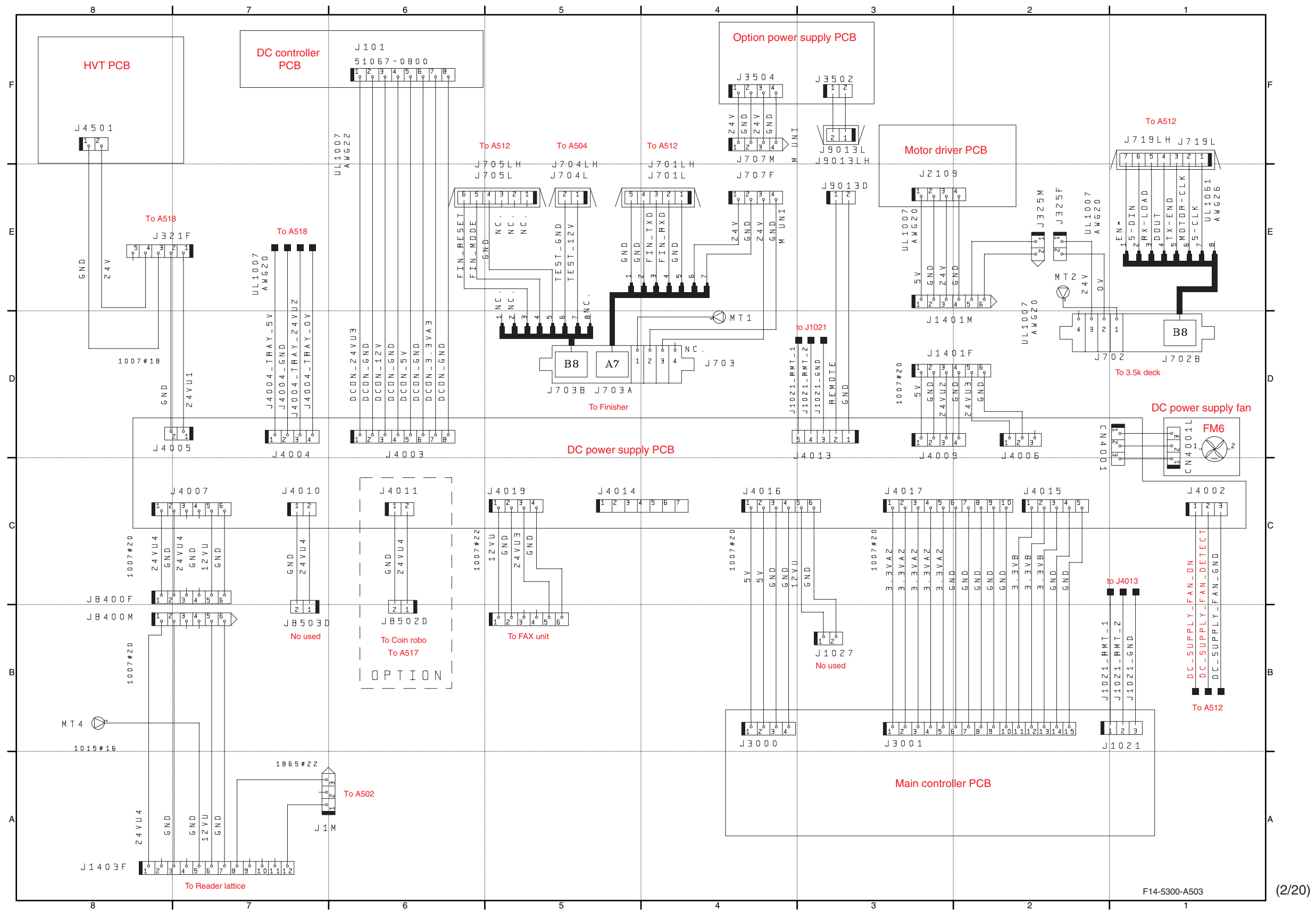


Notation	Signal name	Notation	Signal name
HEAT_DISCHARGE_FAN_H/L	heat discharge fan full-speed/half-speed drive signal	MLT_SL_ON	manual feed pickup solenoid drive signal
HOP_BOTTLE_ON	toner supply motor drive signal	MULTI_SENSOR	manual feed tray paper detection signal
HOP_LIFT_ON	toner stirring motor drive signal	MULTI_VOLUME	manual feed paper width detection signal
HOP_TONER_SENSOR	hopper toner detection signal	OPEN	ADF open detection signal 2
HP	scanner HP detection signal	PATH1_SENSOR	vertical path 1 paper detection signal
HVT_DEV_BIAS_AC	developing AC bias control signal	PATH2_SENSOR	vertical path 2 paper detection signal
HVT_DEV_BIAS_DC	developing DC bias control signal	PATH3_SENSOR	vertical path 3 paper detection signal
HVT_POST	pre-transfer bias control signal	PATH4_SENSOR	vertical path 4 paper detection signal
HVT_PRIMARY	primary bias control signal	PLATEN	ADF open detection signal
HVT_REMOTE	HVT drive signal	POST_CLEAN_OUT1	pre-transfer charging wire cleaning motor drive signal (forward)
HVT_ROLLER_BIAS	electrode roller bias control signal	POST_CLEAN_OUT2	pre-transfer charging wire cleaner motor drive signal (reverse)
HVT_SEPARATE	separation bias control signal	PRAIMARY_FAN_DETECT	primary charging cooling fan lock detection signal
HVT_TRANSFER	transfer bias control signal	PRAIMARY_FAN_H/L	primary cooling fan full-speed/half-speed drive signal
INT_DEL_SENSOR	inside delivery paper detection signal	PRE_LED_ON	pre-exposure LED drive signal
INV_FAN_DTC	fixing heater power supply fan lock detection signal	PRE_REGI_MOTOR_A,A*,B,B*	pre-registration motor drive signal A, A*, B, B*
INV_FAN_H/L	fixing heater power supply cooling fan full-speed/half-speed drive signal	PRE_REGI_SENSOR	pre-registration paper detection signal
LDECK_FEED_MOTOR_A,A*,B,B*	left deck pickup motor drive signal A, A*, B, B*	PRIMARY_CLEAN_OUT1	primary charging wire cleaner motor drive signal (forward)
LDECK_HIKINUKI_CL_ON	left deck pull-off sensor paper detection signal	PRIMARY_CLEAN_OUT2	primary charging wire cleaner motor drive signal (reverse)
LDECK_LIFTER_SENSOR	left deck lifter detection signal	RD_FEED_MOTOR_A,A*,B,B*	right deck pickup motor drive signal A, A*, B, B*
LDECK_LIMITER_SENSOR	left deck limit detection signal	RDECK_FEED_SNS	right deck pull-off sensor paper detection signal
LDECK_OPEN_SENSOR	left deck open detection signal	RDECK_LIFTER_SENSOR	right deck lifter detection signal
LDECK_PAPER_SENSOR	left deck paper detection signal	RDECK_LIMITER_SNS	right deck limit detection signal
LDECK_RETRY_SENSOR	left deck retry sensor paper detection signal	RDECK_PAPER_SENSOR	right deck paper sensor
LDK_FEED_SENSOR	left deck feed paper detection signal	RDECK_RETRY_SENSOR	right deck retry sensor paper detection signal
LDK_LIFTER_ON	left deck lifter motor drive signal	RDK_LIFTER_ON	right deck lifter motor drive signal
LDK_PICK_SL_ON	left deck pickup solenoid drive signal	RDK_PLEVEL_A_DTC	right deck paper level detection signal A
LDK_PLEVEL_A_DTC	left deck paper level detection signal A	RDK_PLEVEL_B_DTC	right deck paper level detection signal B
LDK_PLEVEL_B_DTC	left deck paper level detection signal B	RDOOR_UNDER_SENSOR	right door open/closed detection signal
LOCK	fan lock detection signal	REGI_CL_ON	registration clutch drive signal
MAIN_M_ON	main motor drive signal	REGI_CL_ON	registration clutch drive signal
MLT_FEED_CL_ON	manual feed pickup clutch drive signal	REGI_SENSOR	registration paper detection signal
MLT_PAPER_SENSOR	manual feed paper detection signal	REGI_SENSOR	registration paper detection signal



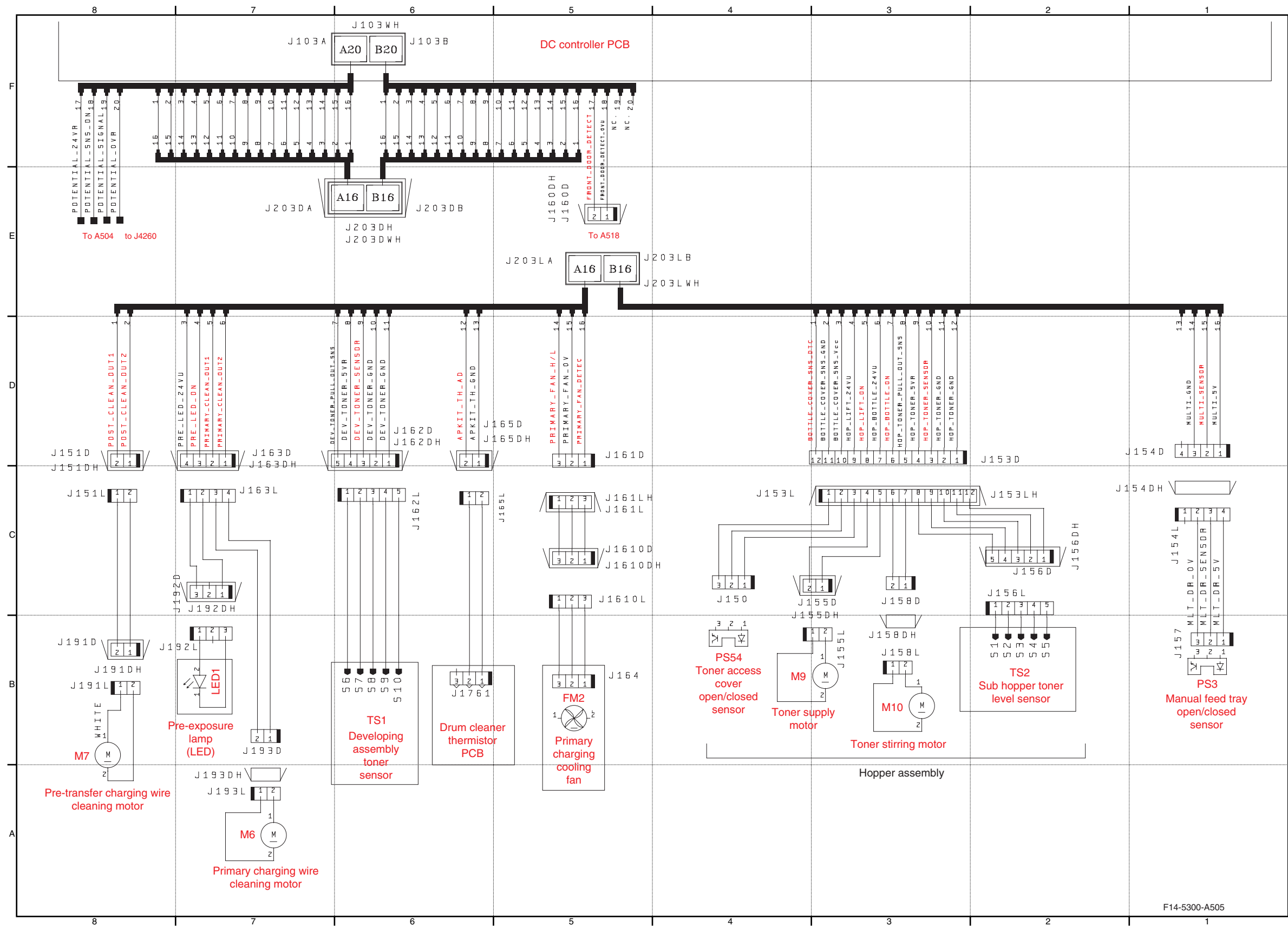


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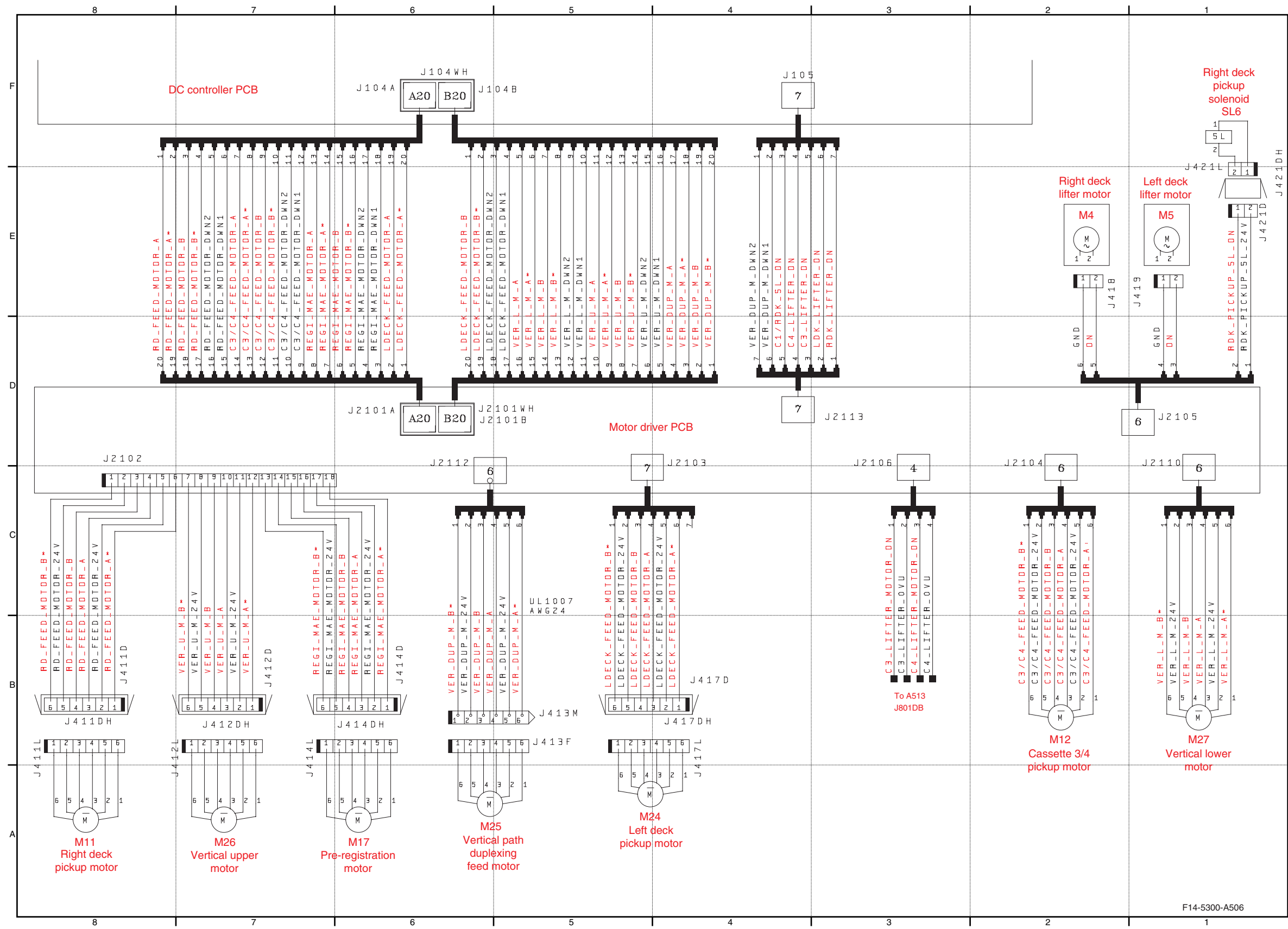
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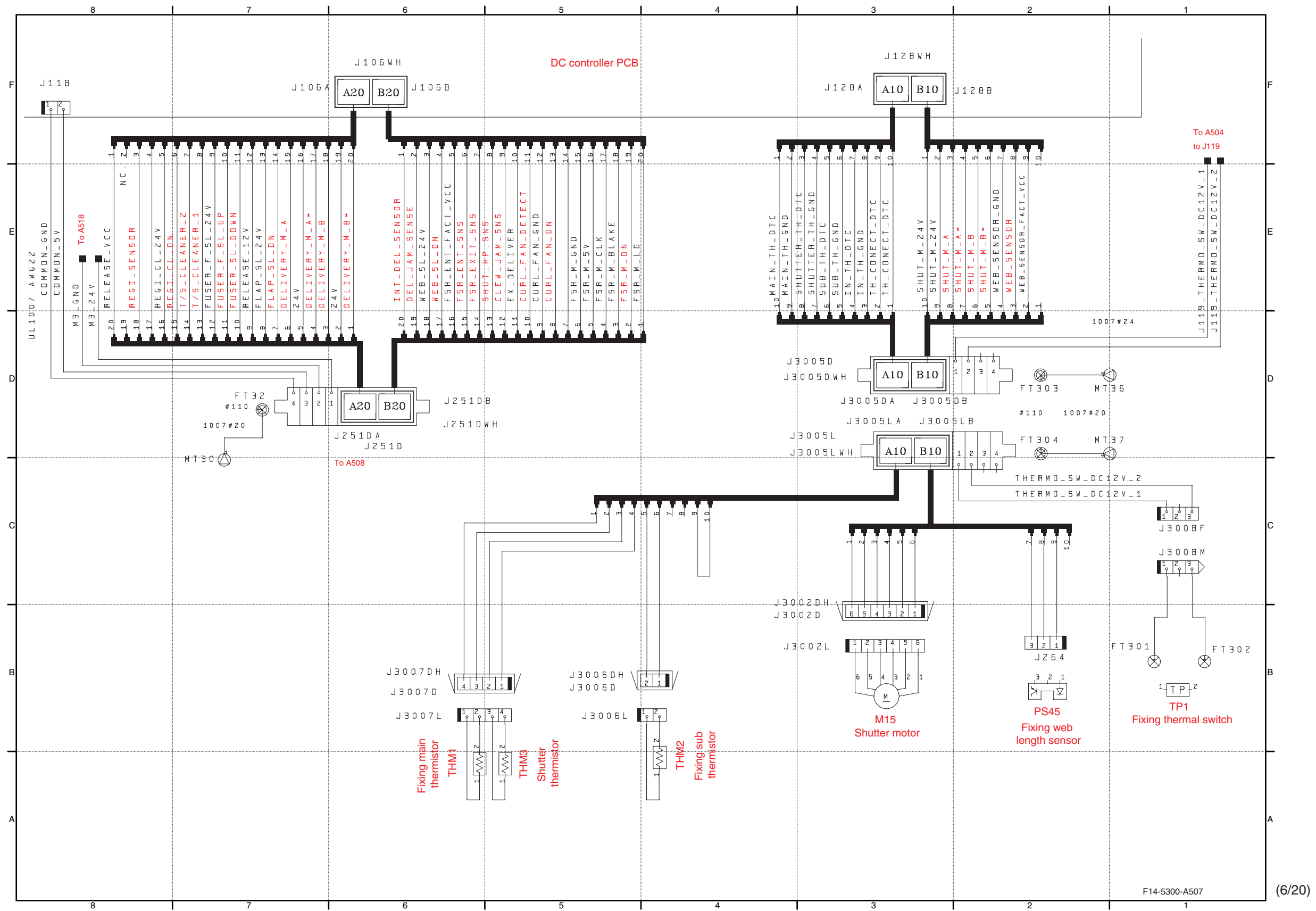




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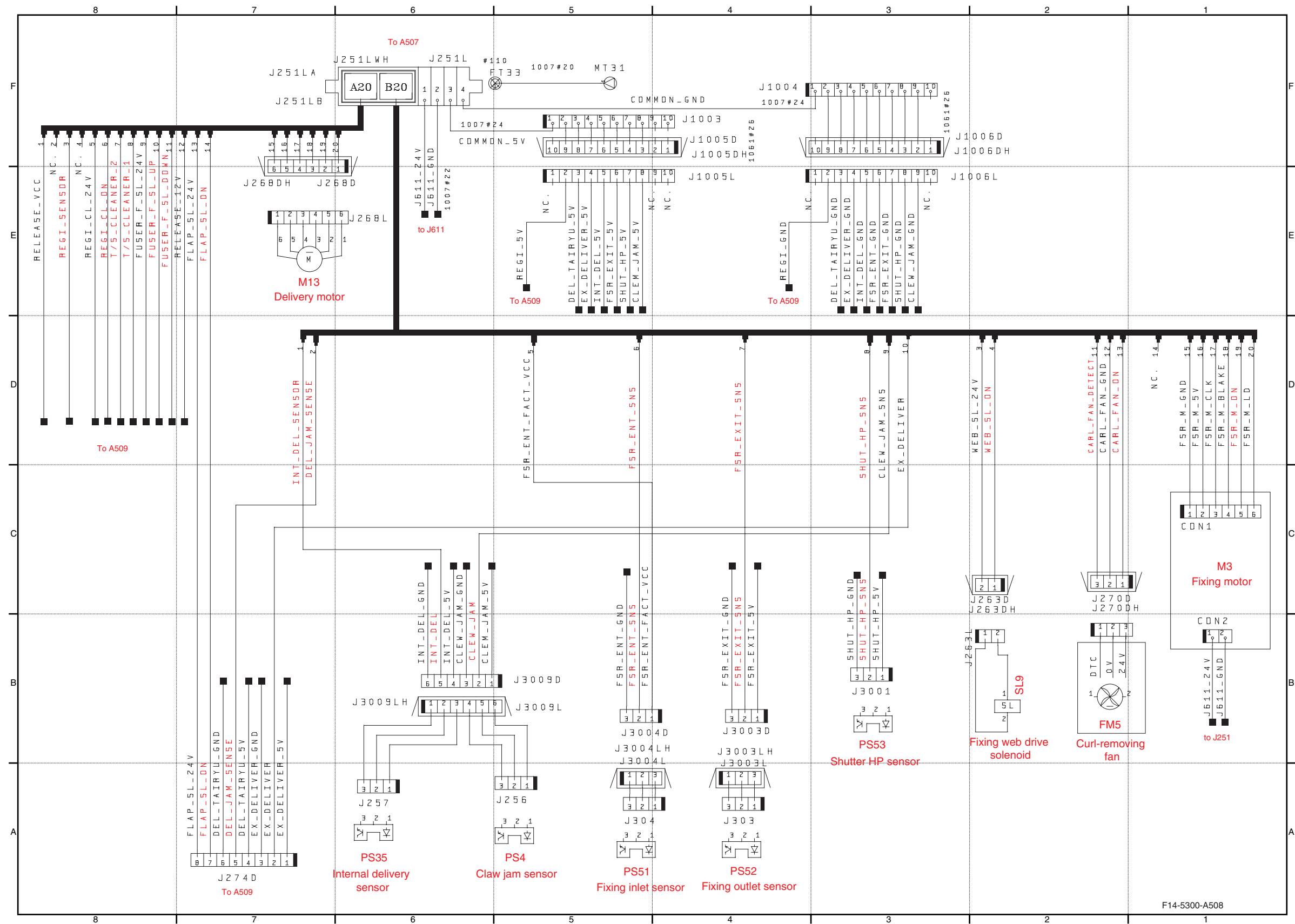
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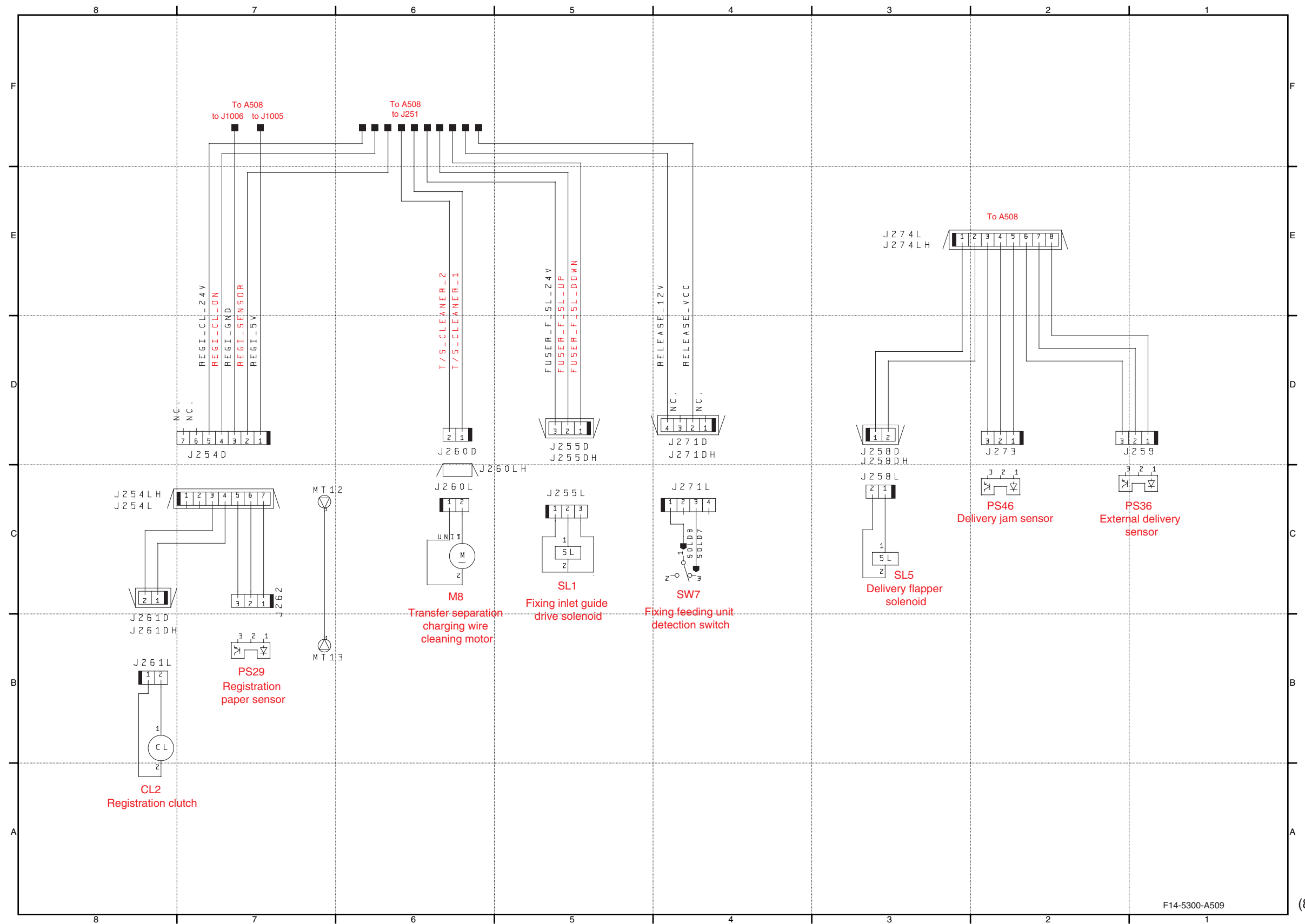
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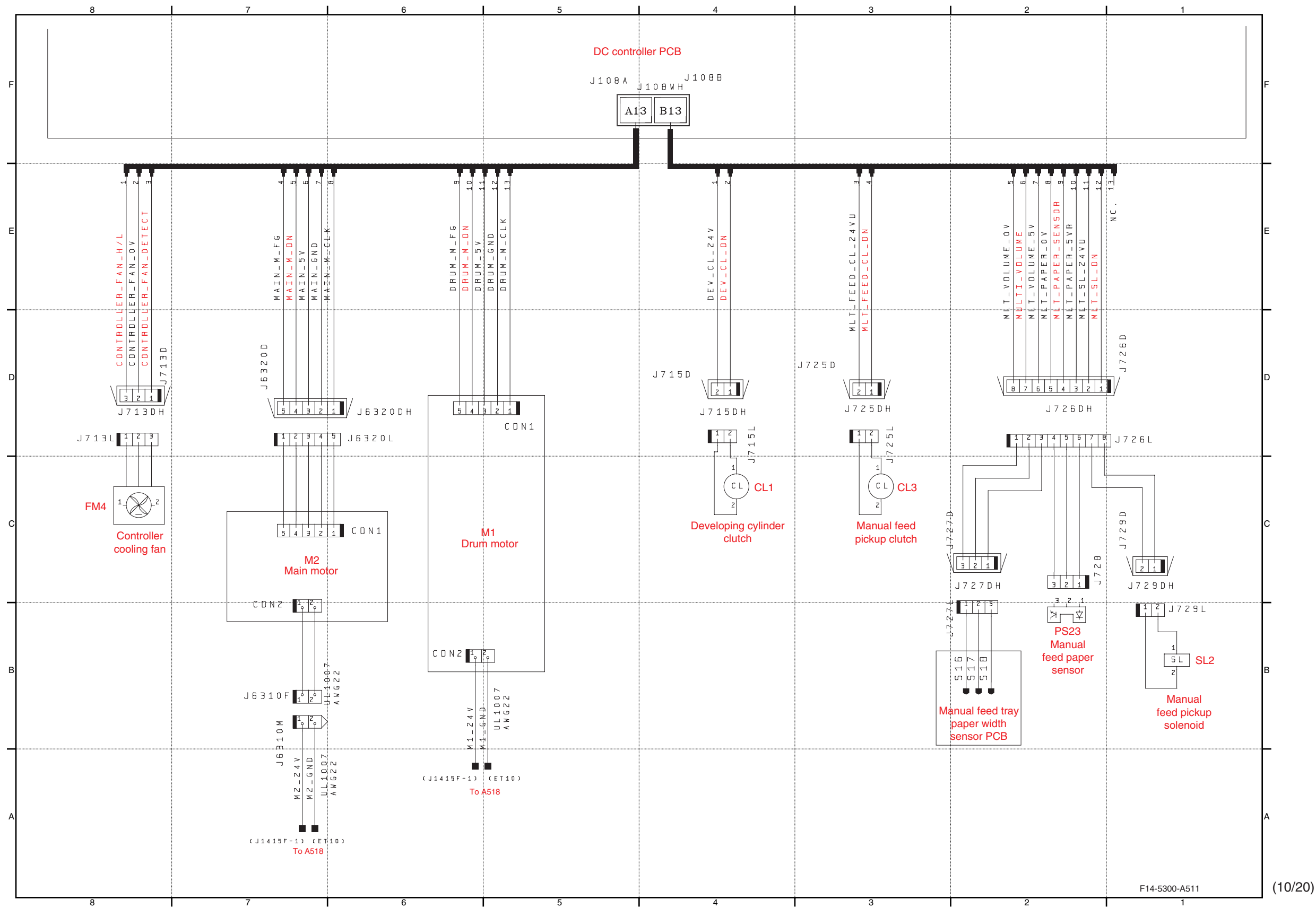
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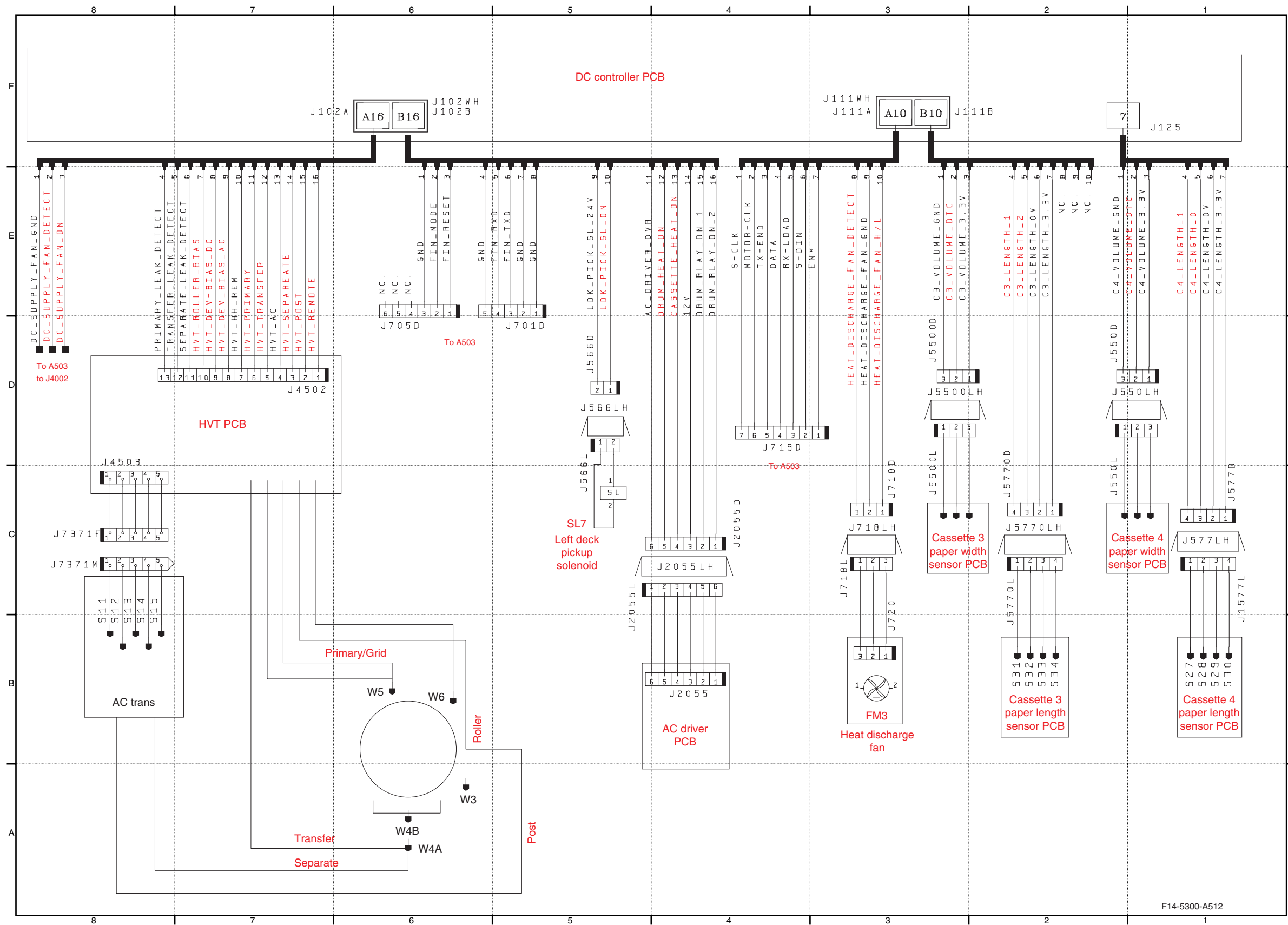


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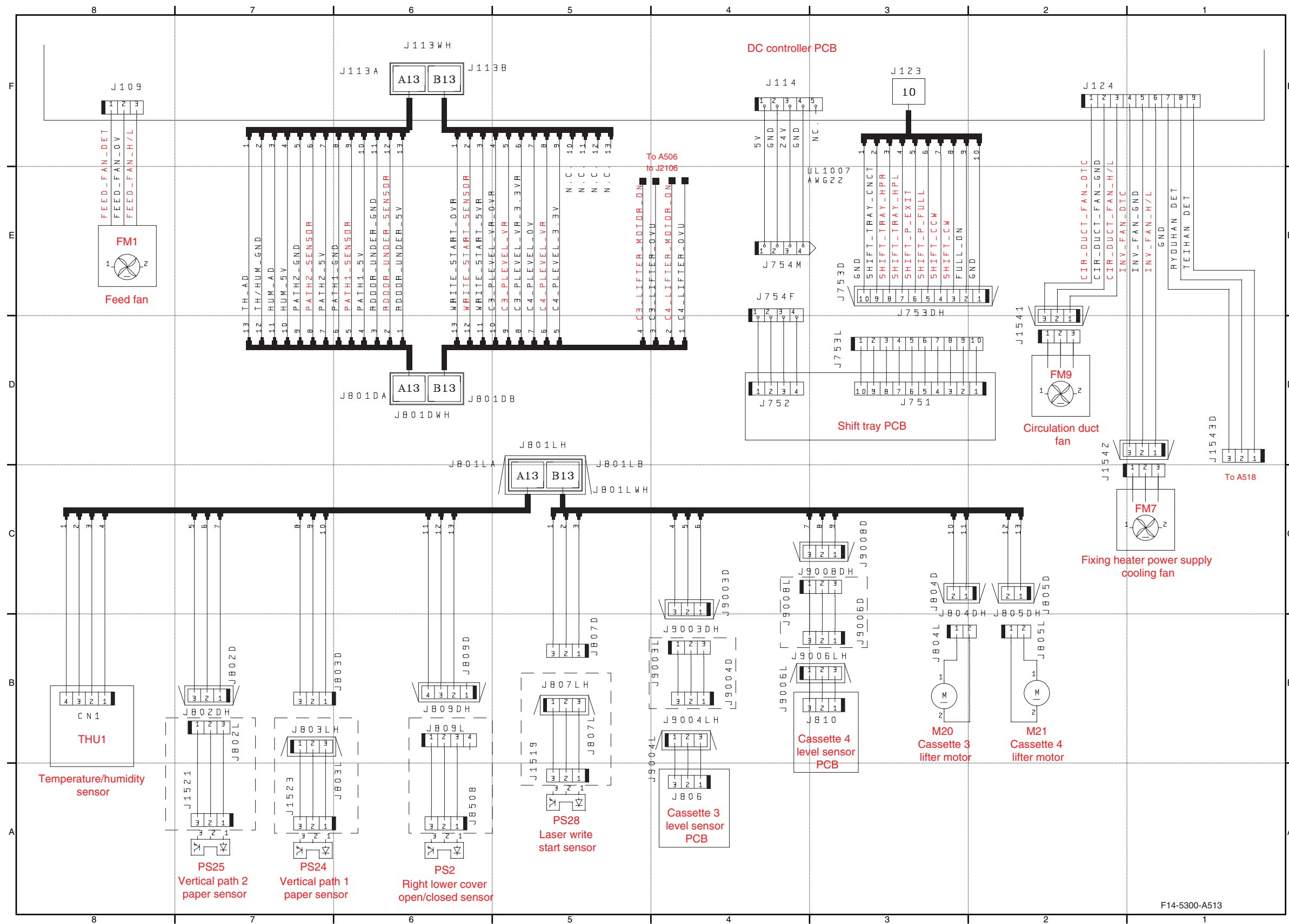
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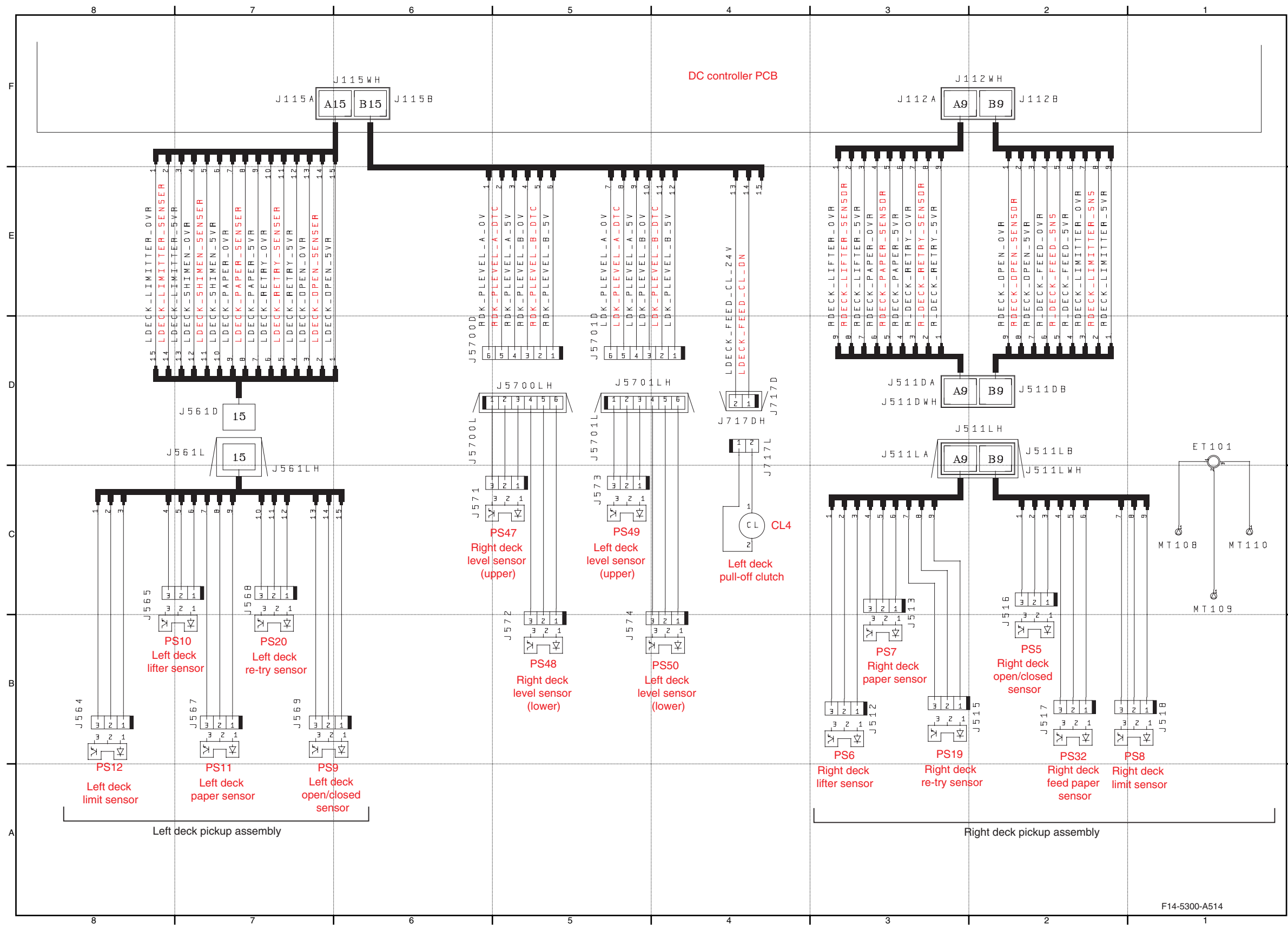
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F14-5300-A513

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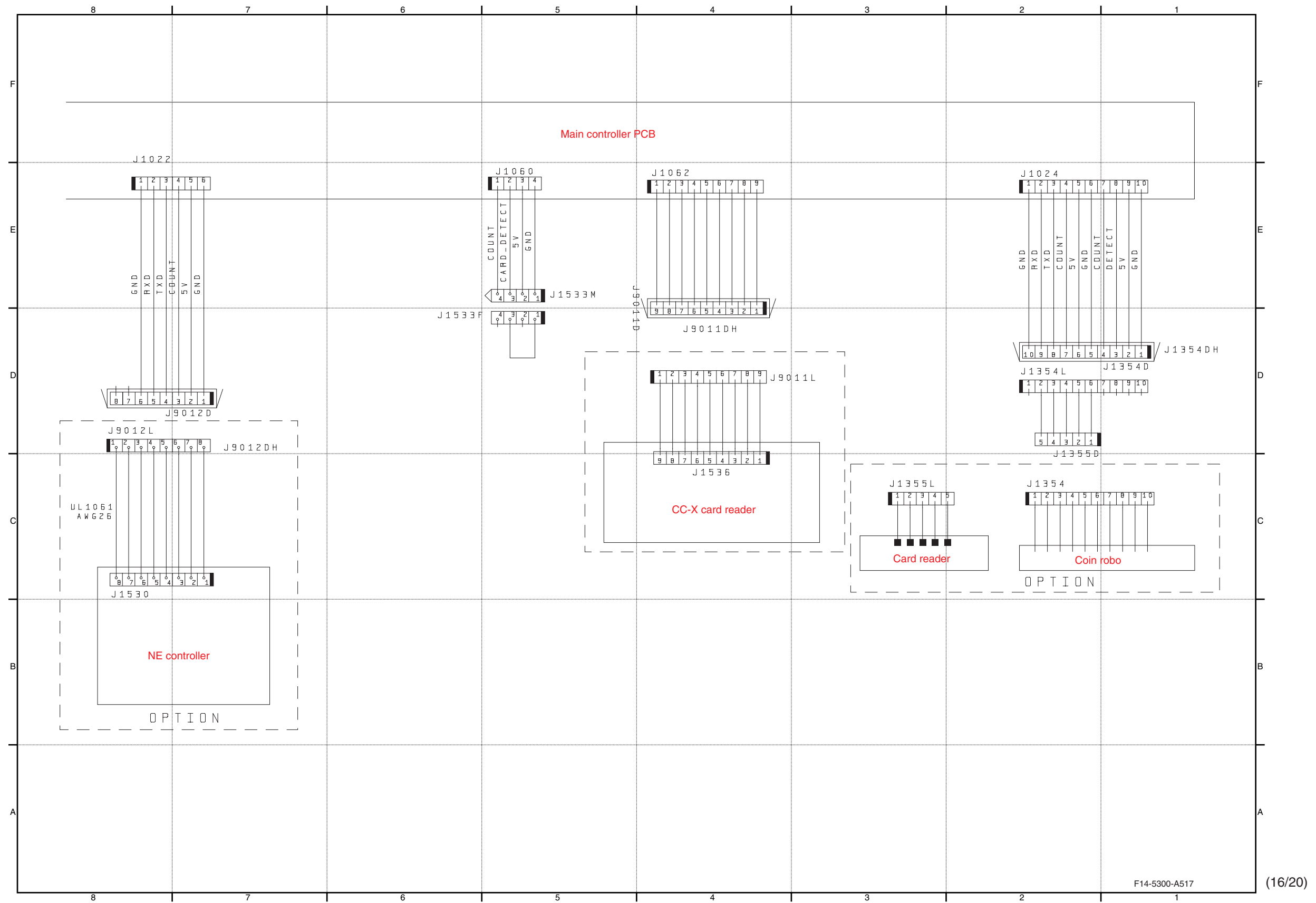
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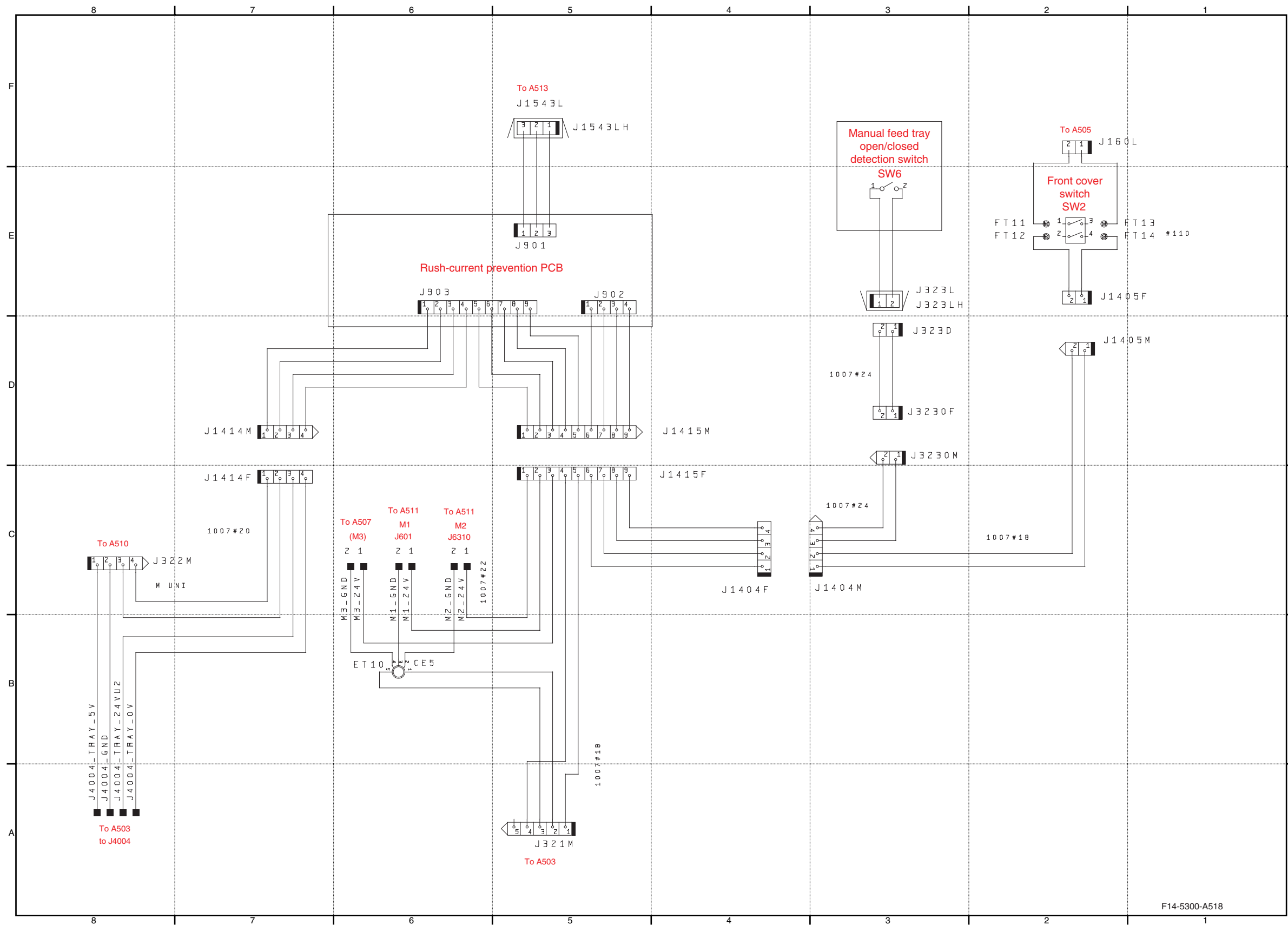






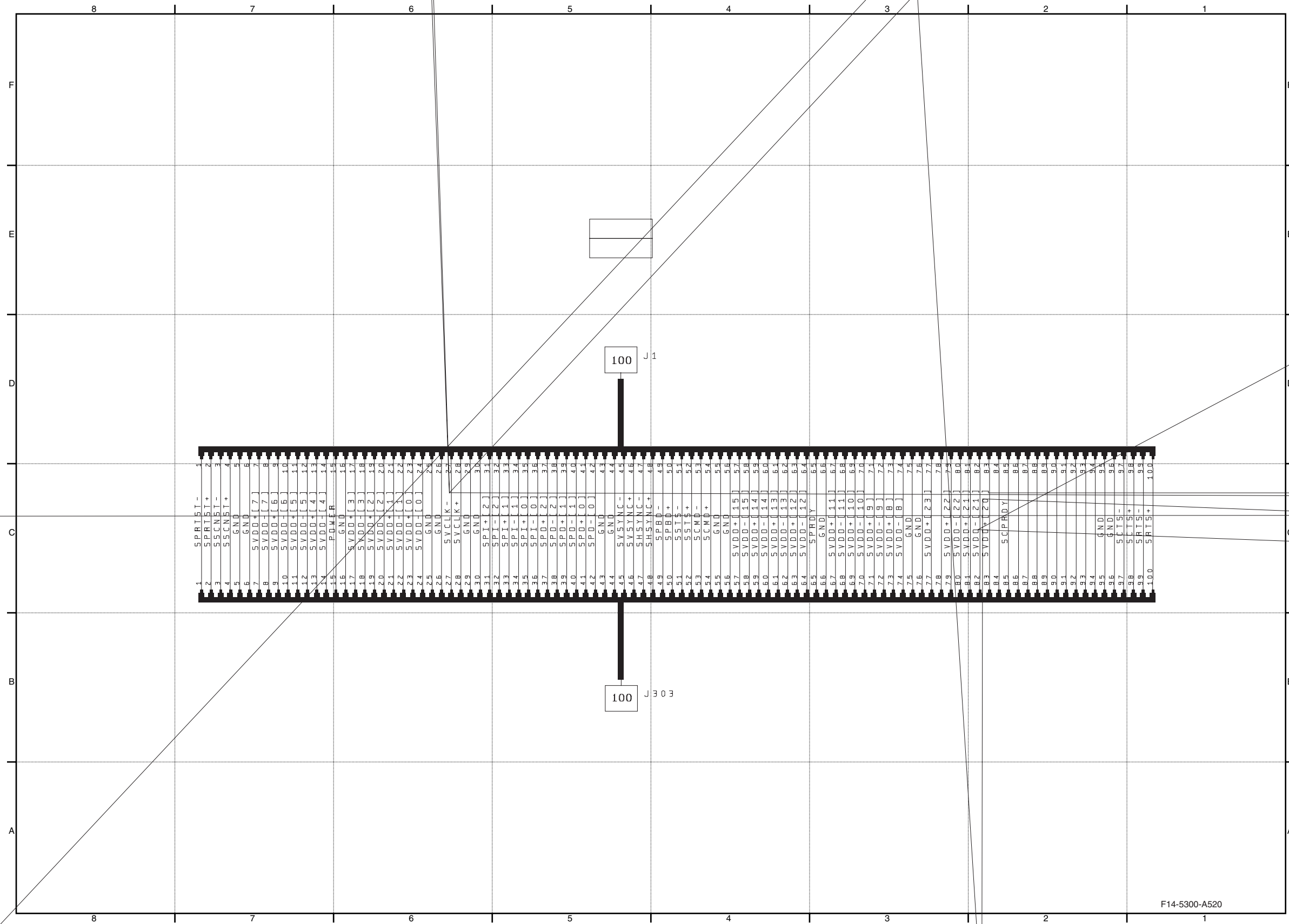


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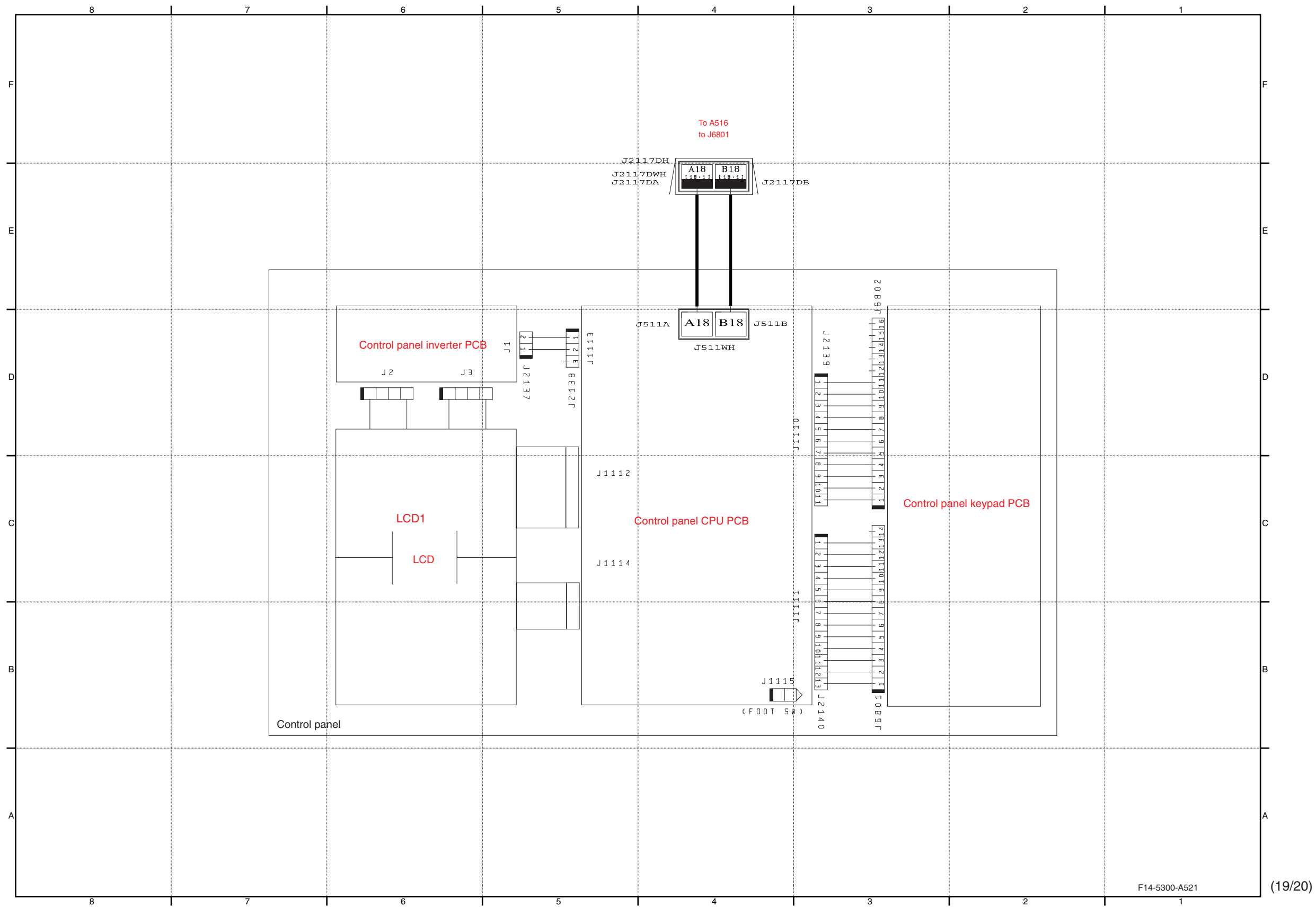
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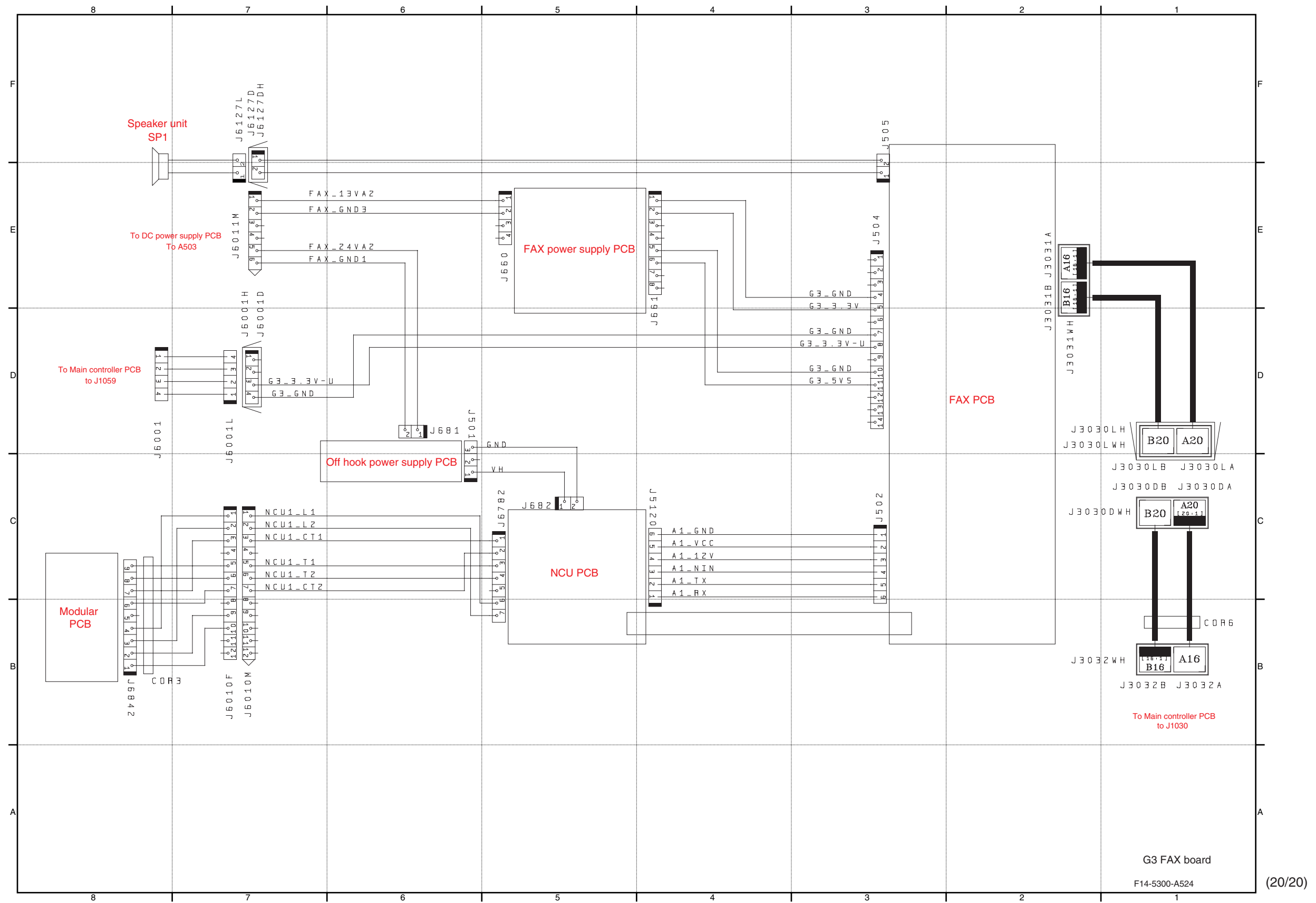
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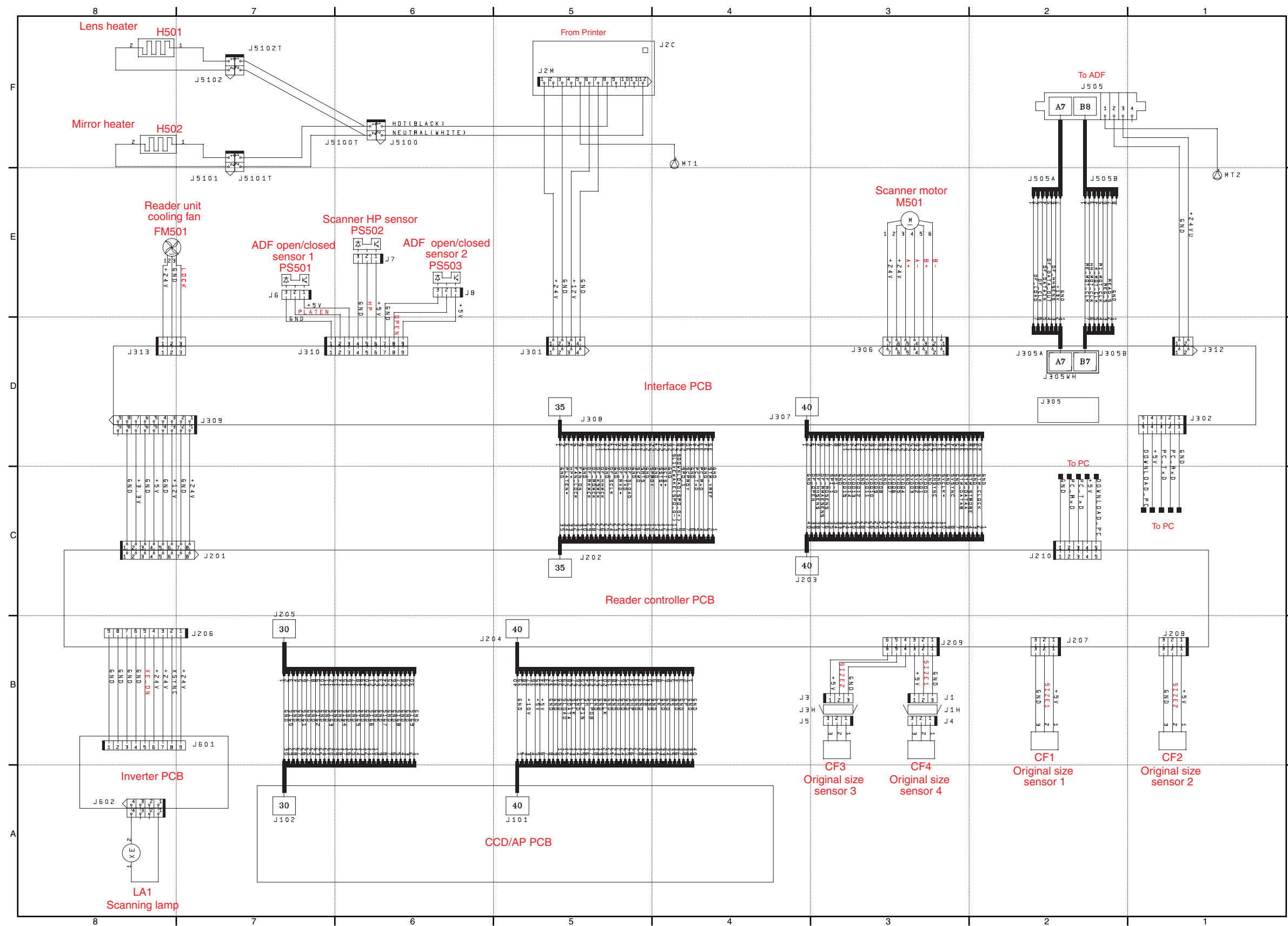
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**Canon**